

RCRA Hazardous Waste Management:

Federal Perspective- Basics and Common Violations

Susann Nachmann,
EPA Region I
Environmental Engineer
RCRA, EPCRA and Federal Facility Unit

STATE AUTHORIZED PROGRAMS

- Many States have Authorized HW Management Programs
- At least as Stringent as Federal Regs.... Sometimes more Stringent than Feds
- Remember to Check your State Regs too

One Major Source of Violations:

You do not understand:

The Definitions of Solid Waste and Hazardous Wastes

So....

You do not understand:

The types of Solid and Hazardous Wastes you generate

To Understand:

Conduct “Hazardous Waste Determinations”

When is a Waste a Waste?

When generated or no longer useable...

Next: Determine if the Waste is a Solid Waste...

Statutory Definition of Solid Waste:

....any garbage, refuse, sludge from a waste treatment plant, water supply plant or air pollution control facility, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material...

Almost Everything but.....

EXEMPTIONS from Solid Waste Definition

- Domestic sewage
- Industrial wastewater discharges
- Radioactive waste
- Spent wood preserving solutions that are reclaimed and reused in the wood preserving process
- Processed scrap metal that is recycled
- Irrigation return flow
- In situ mining waste
- Secondary materials that are reclaimed and returned to the original process (reclamation & return process must be totally enclosed)
- Used as substitutes for commercial products returned back to the original process without first being reclaimed or land disposed

When is a Solid Waste a Hazardous Waste?

First: Meet the definition of a SW.

Next: Check if exempt from HW Definition

Exemptions from Hazardous Waste Definition

- Agricultural wastes returned to the soils as fertilizers
- Fossil fuel combustion wastes
- Cement kiln dust (unless burned as hazardous waste fuel)
- Arsenic-treated wood wastes used for its intended purpose
- Used oil filters that have been hot drained
- Used chlorofluorocarbon refrigerants that are being reclaimed for re-use
- Samples collected for lab analysis (until they disposed of)
- Household waste
- Used oil that exhibits hazardous characteristics can be excluded if recycled (see [40 CFR Part 279](#))

Definition of Hazardous Waste

A Solid waste that:

- ❑ Exhibits characteristics of a hazardous waste,
- ❑ Has been listed in the regulations,
- ❑ Is a mixture of listed & non-haz. solid waste,
- ❑ Is a waste derived from treatment, storage, or disposal of a listed waste, or
- ❑ State regulated.

Characteristic Hazardous Waste

“Inherent Nature of the Waste”

<u>Nature</u>	<u>WASTE CODES</u>
<input type="checkbox"/> I gnitability	[D001]
<input type="checkbox"/> C orrosivity	[D002]
<input type="checkbox"/> R eactivity	[D003]
<input type="checkbox"/> T oxicity (TCLP)	[D004-D043]*
*(includes 8 RCRA metals)	

“ I Can Remember That ! ”

LISTED HAZARDOUS WASTES

3 General Categories:

- ☐ Non-specific Source Wastes
- ☐ Specific Source Wastes
- ☐ Commercial Chemical Products

5 Types of Listed HW:

F listed = Common Process, Non-specific Sources

e.g. F001-F002 spent halogenated solvents

K Listed = Specific Sources

e.g. K015- still bottoms from distillation of benzyl chloride

**P Listed = Pure/Unused/Commercial Grade
Acutely Hazardous**

e.g. P013- barium cyanide

**U Listed = Pure/Unused/Commercial Grade
Off-Spec/Discarded-may exhibit characteristic**

e.g. U002- acetone (ignitable)

State listed wastes

e.g. VT03- water miscible metal cutting/grinding fluid waste.

UNIVERSAL WASTES

- Widely generated/widely recycled subset of HW
- Reduced management standards to facilitate their recycling:

Examples

- Batteries
- Pesticides -Recalled/Unused Stock
- Mercury containing thermostats
- Fluorescent light ballasts [PCBs]
- Mercury containing lamps

Wastes Often Overlooked

- Expired chemicals
- Unused/Unwanted chemicals
- Facility Management wastes
- Dental wastes (amalgam)
- Photographic wastes (fixers, developers)

When are Mixtures Hazardous Waste

- Mix anything with a listed waste = HW
(e.g. spill residues, soil, debris, mixed with listed waste)
- Mixture of non-HW with a characteristic HW and mixture retains the characteristic
(Remember: ICRT!)

“RCRA EMPTY CONTAINERS”
EMPTY CONTAINERS ARE NOT HW IF:

Compressed Gas Cylinders— no pressure

P-listed Waste — triple rinsed (Rinsate managed as H.W.)

Other HW Containers - all waste removed and
< 1” of residue or
< 3% of container capacity (if less than 110 gal)

RCRA Step 1: Hazardous Waste Determinations

Your (Owner/Operator) Responsibility Utilizing:
Process knowledge of:

Generation points,

Waste contents (product labeling, MSDSs,
Trade Association Information),

Impacts of process modifications & X-
contamination,

Expiration dates

❑ Analysis (per methodology in Regs)

RCRA Step 2: Generator Classifications

You Identified the HWs, How Much You Generate per Month and Accumulate on Site

Determines Your Generator Size (Classification)

Less generated/accumulated = Smaller Classification = Less Management Standards

Each Class = Stds. for maximum monthly generation & accumulation amounts & storage times.

Federal Classifications (Small to Large):

- **Conditionally Exempt Small Quantity Generators (CESQGs)**
- **Small Quantity Generators (SQGs)**
- **Large Quantity Generators (LQGs)**

[Check: State Regs may use different generator names and sizes]

Conditionally Exempt Generator

Generates per month:

- < 220# (100 kg) - H. W.
- < 2.2 # (1 kg) - Acutely H.W.
- < 220 # (100 kg) - residual or contaminated material from cleanup of acutely H.W.

Accumulate:

- < 2200 # (1000kg) - H.W.
- <2.2 # (1 kg) - acutely H.W.
- <220 # (100 Kg) - material from cleanup of acutely H.W.

Max. Storage Time: not limited

Small Quantity Generator [SQG]

Generate per month:

$\geq 220\#$ (100 kg) but $< 2200\#$ (1000 kg) H. W.

Never Accumulate:

more than 13,200 # (6000 kg) H.W.

Max. Storage Time: not to exceed 180 days

Large Quantity Generator [LQG]

Generate per month:

- ≥ 2200# (1000 kg) - H. W.
- ≥ 2.2 # (1 kg) - Acutely H.W.
- ≥ 220 # (100 kg) - residual or contaminated material from cleanup of acutely H.W.

Accumulate at any one time:

- > 13,200 # (6000kg) H.W.
- ≥ 2.2 # (1 kg) Acutely H.W.
- ≥ 220 # (100 Kg) material from cleanup of acutely H.W.

Max. Storage Time: not to exceed 90 days

RCRA Step 3.....

You Know Steps 1 + 2: Now Notify Your HW Activity to EPA or State (if authorized).....

You will get a 'location specific' EPA Identification Number used to track your activity/shipments

Next Major Source of Violations:

Mismanagement of identified hazardous wastes

**Failure to follow
RCRA Management Standards
And
Recordkeeping Requirement**



STANDARDS FOR.....

- ☐ Container Management
- ☐ Record Keeping/Reporting
- ☐ Housekeeping
- ☐ Accumulation Time Limits
- ☐ Emergency Preparedness Needs
- ☐ Employee Training
- ☐ Inspections

Main Container Storage Areas

- ☐ Labeling
- ☐ Dating
- ☐ Compatibility (wastes and/or container types)
- ☐ Aisle space
- ☐ Open vs. closed
- ☐ Condition of containers
- ☐ Special requirements for ignitable and reactive wastes

Satellite Storage Areas

- ☐ At or near point of generation,
- ☐ Under control of operator,
- ☐ Less than 55 gallons [TOTAL],
- ☐ Labeled “hazardous waste,” with words that describe contents, (for some state) waste codes
- ☐ Compatibility,
- ☐ Closed when not adding or removing wastes.

UNIVERSAL WASTE

- ❑ Containerized and closed
- ❑ Label describing content
- ❑ Dating (keep less than 1 year)
- ❑ Record/Log of accumulation time

Main Container Storage Areas Inspections

- At least weekly,
- During regular business days,
- Looking for leaks, deterioration, aisle space, compatibility, housekeeping, storage beyond time limit etc....
- Documentation [keep 3 years]

Hazardous Waste Management Training

- SQG= Relevant to duties
- LQG= Initial and annual refresher training

Relevant to job duties performed
and

Completed & documented per an
established training program

Emergency Preparedness

For LQGs: Up-to-Date HW Contingency Plans:

- ❑ Describe response actions
- ❑ Emergency contacts
- ❑ Arrangements with locals
- ❑ Emergency Coordinators
- ❑ Emergency equipment/locations
- ❑ Evacuation plans/muster areas

Emergency Preparedness Tools at Main Container Storage Areas

- ❑ Alarm systems
- ❑ Communication devices
- ❑ Extinguishers
- ❑ Adequate water
- ❑ Aisle space
- ❑ Spill control equipment

HW Mani- fests (for HW or Non- HW)

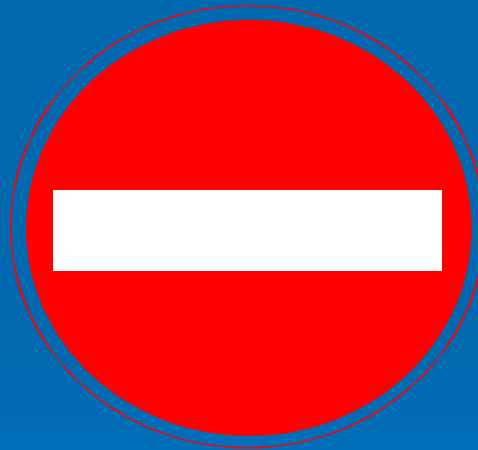
Please print or type (Form designed for use on elite (12 - pitch) typewriter)

Form Approved: OMB No. 2050 - 0039 Expires 9 - 30 - 91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No.		2. Page 1 of		Information in the shaded areas is not required by Federal law					
3. Generator's Name and Mailing Address						A. State Manifest Document Number							
4. Generator's Phone ()						B. State Generator's ID							
5. Transporter 1 Company Name				6. US EPA ID Number		C. State Transporter's ID							
7. Transporter 2 Company Name				8. US EPA ID Number		D. Transporter's Phone							
9. Designated Facility Name and Site Address				10. US EPA ID Number		E. State Transporter's ID							
						F. Transporter's Phone							
						G. State Facility's ID							
						H. Facility's Phone							
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit Wu/Vol		15. Waste No.	
a.						No. Type							
b.													
c.													
d.													
J. Additional Descriptions for Materials Listed Above						K. Handling Codes for Wastes Listed Above							
15. Special Handling Instructions and Additional Information													
<p>16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.</p> <p>If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.</p>													
Printed/Typed Name						Signature						Month Day Year	
17. Transporter 1 Acknowledgement of Receipt of Materials													
Printed/Typed Name						Signature						Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials													
Printed/Typed Name						Signature						Month Day Year	
19. Discrepancy Indication Space													
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.													
Printed/Typed Name						Signature						Month Day Year	

EPA Form 8700 - 22 (Rev. 9 - 88) Previous editions are obsolete.

What not to do.....



Re: Hazardous Waste Determinations

Lack of or Mischaracterized H.W. determinations:

What we want...

Properly identified hazardous wastes that are correctly labeled and stored

[e.g. The words "Hazardous Waste, " a description of the contents, the accumulation start date, proper aisle space, good container condition with compatibility considerations etc....]

Otherwise.....



HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

ACCUMULATION
START DATE _____

E.P.A.
WASTE NO. _____

D.O.T. PROPER
SHIPPING NAME _____

U.N. OR
N.A. NO. _____

GENERATOR
NAME _____

ADDRESS _____

CITY _____ STATE _____

E.P.A.
I.D. NO. _____

MANIFEST
DOCUMENT NO. _____

**HAZARDOUS WASTE
HANDLE WITH CARE**



Open Containers

Find: No cover, no bung, funnel in opening, loose drum ring.

Want: All containers of hazardous waste closed unless materials are being added or removed

Satellite Accumulation Area (SAA) Violations

- ☐ Storage not at or near point of generation
- ☐ Not under operator's control
- ☐ More than allowed volumes

No or Inadequate Hazardous Waste Management Training

A poor training program will lead to poor waste management!

- ❑ No training program
- ❑ If applicable, no initial, annual training
- ❑ Lapsed training
- ❑ No job descriptions specified for employees with HW mgmt. duties
- ❑ Job descriptions no longer applicable to employee
- ❑ Training not relevant to employee duties
- ❑ Training not documented

Hazardous Waste Manifest Violations

CRADLE TO GRAVE DOCUMENTATION!!!

- ❑ Copies not maintained
- ❑ Photocopies maintained in lieu of actual records
- ❑ Final copy not maintained (most important manifest document!)

What we want...

- ❑ Copies of completed manifests maintained for 3 years, with copies of exception reports

Contingency Plan Violations

Missing, incomplete and/or not up-to-date contingency plans

Inspection Violations

- ❑ No inspections
- ❑ Missed inspections
- ❑ Not all areas inspected
- ❑ Inspections/corrective actions/dates/inspector identification not documented

[OK to document a problem and its solution !!]

Want...Inspections of main accumulation areas and satellite accumulation areas (state specific)

- Weekly for container storage areas
- Daily for tanks

Storage > 90/180 Days

What we find...

- ❑ Forgotten drums
- ❑ Just didn't ship

The accumulation of HWs for longer periods of time requires the additional protective measures of a Permit....

What we want...

- ❑ Wastes regularly moved off-site in less than 90/180 days (unless CESQG)

EXAMPLES OF VIOLATIONS FOUND DURING INSPECTIONS





























I am,
for disposal
4/10/02

42302













WARNING
NAME OF MATERIAL Waste
CONCENTRATION _____
DEPARTMENT Env
SHIP 11/1/91
SPECIAL STORAGE REQ'S None
SPECIAL HANDLING REQ'S None DATE 11/1/91
SIGNATURE OF DEPT HEAD _____
HAZARDOUS WASTE

WA
NAME OF MATERIAL _____
CONCENTRATION _____

WARNING
PERFORMIC ACID
10%
DEPARTMENT ENVI
COOL DRY PLACE
DO NOT EAT OR DRINK
DATE 11/1/91
HAZARDOUS WASTE

4 9 91













Please open door
When Dumping Waste,
the smell has become
Overpowering Thanks.

**IF YOU START A NEW
WASTE DRUM NOT ON
THE RAISED PLATFORM,
YOU MUST WRITE THE
ACCUM. START DATE ON
THE WASTE LABEL.**

Thank you for your cooperation

6 14 00

EXAMPLES OF WHAT TO DO..Good Job!!!



AGE SHOP

HAZARDOUS WASTE SATELLITE ACCUMULATION POINT

IN CASE OF SPILL CALL
BASE FIRE DEPT EXT 511

SATELLITE ACCUMULATION POINT MONITORS

PRIMARY MR PAUL BEACHELL

ALTERNATE MR JOSEPH MONTANEZ

ALTERNATE MR RAYMOND MOREHOUSE

EXT. 2143

NO SMOKING COMBUSTIBLE LIQUIDS

WASTE TYPE

ENGINE OIL / DIESEL
ANTIFREEZE
OIL FILTERS

HYDRAULIC FLUID
FUEL FILTERS
DIESEL FUEL
ENGINE OIL
SPILL RESIDUE

ENGINE OIL / SYN

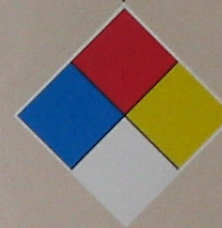
USED BLAST MEDIA
SOLVENT MATS

WASTE CODE

RECYCLE
RECYCLE
RECYCLE

RECYCLE
0001
0001
RECYCLE
MAD1
RECYCLE

BIO TEST REQ
BIO TEST REQ



CAUTION

NEVER MOVE THIS
SYSTEM WITH ITEMS
STORED INSIDE



DANGER

STORAGE OF 1A
AND DISPENSING OF
1A AND 1B FLAMMABLE
LIQUIDS IS PROHIBITED





Focused on Generators, Waste Identification, Container Management and Common Violations...

WHAT IF MY HAZARDOUS WASTE IS STORED IN TANKS??????

EPA Web Site for Understanding Hazardous Waste Tank Management:

Introduction to United States Environmental Protection Agency RCRA Tanks (40 CFR Parts 264/265, Subpart J)

<http://www.epa.gov/osw/inforesources/pubs/hotline/training/tanks05.pdf>

Good General Reference for Understanding RCRA: RCRA Orientation Manual

<http://www.epa.gov/osw/inforesources/pubs/orientat/>

Remember....Always refer to the following for specific requirements:

- Federal Regulations: 40 CFR Parts 260-279; and
- Your state's hazardous waste regulations. (Many states have Authorized RCRA Programs)

Whew!!!! Any Questions ???

