

EMS

at

Marine Corps Air Station  
Camp Pendleton, CA

*What gets Measured gets Managed*

***OFEE Federal and Environmental Symposium - West  
18 June 2008***

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URS Group, Inc.  
San Diego, CA*





# Preliminaries

- Introduction
- Disclaimer
- Presentation Overview
  - Theory and Design
  - Development and Proofing
  - Utility and Application



# Themes

- EMS tailored to the structure/culture/mission of the organization it serves.
- Environmental enterprise decentralized by establishing metrics and means of communication.
- Quantitative, rigorous EMS well-suited to support compliance with EO 13423





**URS**

# MCAS EMS

## From Agency Mandate to Local Strategy



## Environmental Management at Marine Corps Bases and Stations

- Purpose: Support to the installation's mission of training, sustaining, and deploying of Marines.
- Centralized action vs. decentralized action
- At the outset of EMS development, USMC:
  - Had mature and capable environmental staffs
  - Had efficient, effective media programs
  - Hoped that EMS would add value to solid program



## Environmental Management System: A Tool

- Not a philosophy
  - USMC already has an environmental doctrine
  
- Not “theory”
  - Environmental management hierarchy underlies Marine Corps’ Compliance and P2 programs
  - Ecosystem Based Management, etc. underlies conservation programs



## MCAS Camp Pendleton EMS Project Philosophy

- Premises
  - MCAS already had a “functional” EMS
  - MCAS EMS would be modest in engaging the “general workforce”
  
- Approach
  - Use EMS mandate to impose more rigor on MCAS environmental program
  - Refine existing tactics, techniques, procedures



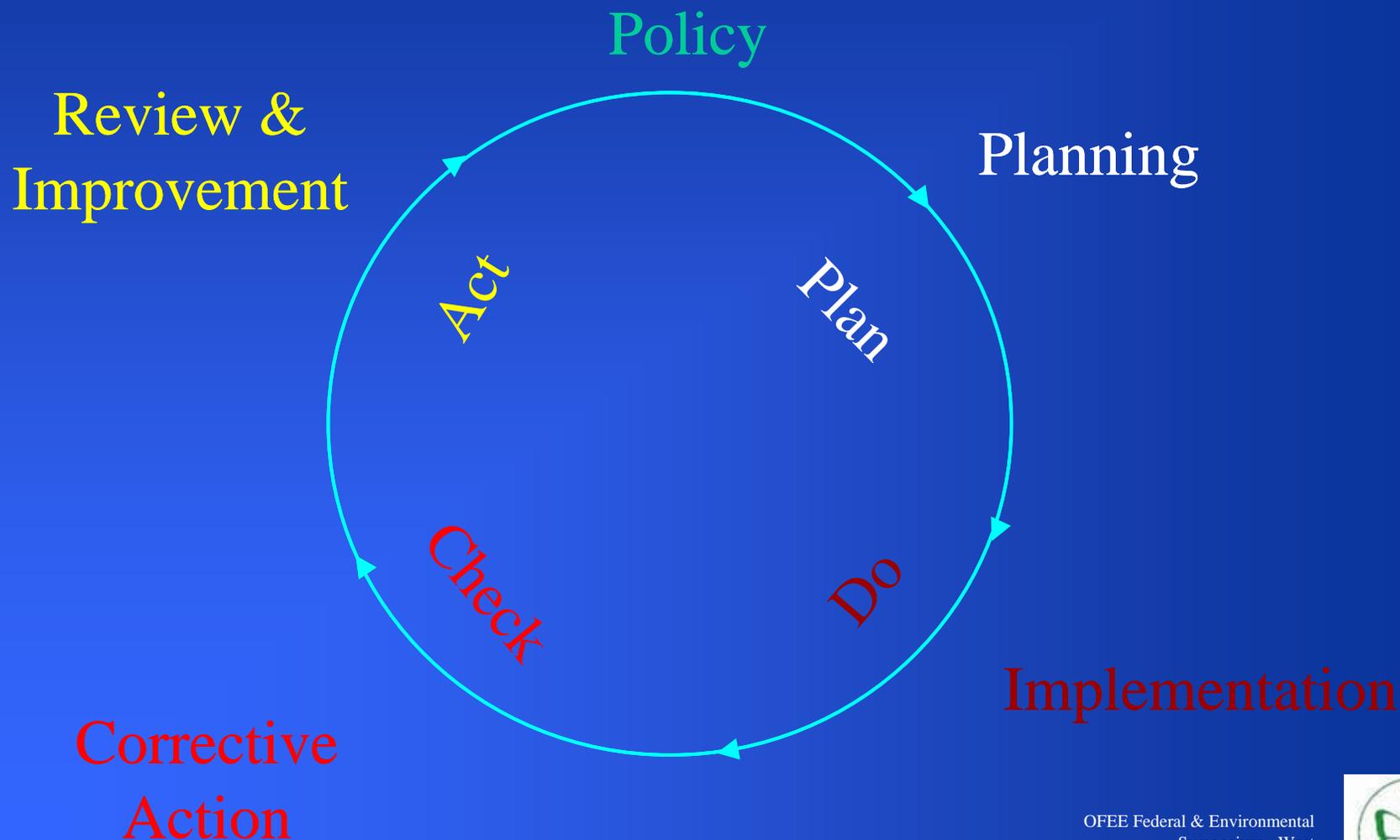
## MCAS Camp Pendleton EMS Project

- End-State
  - EMS is characterized by simple, practical function
  - There is a minimum of “documentation”
  
- Strategy
  - Focus the effort
  - Automate routine functions
  - Improve “business dynamic”
  - Enhance management awareness and insight



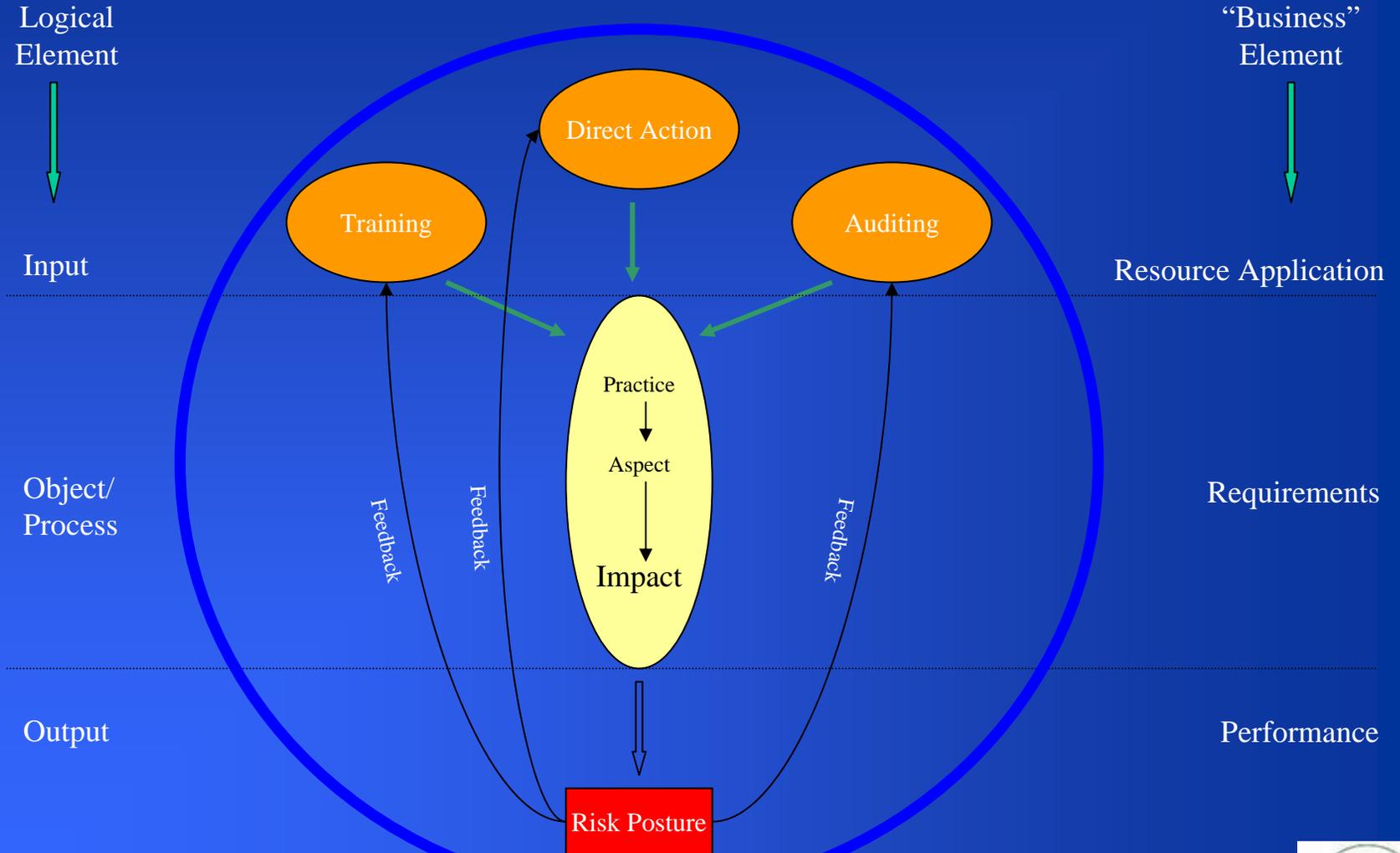


# Standard Model





## MCAS Business Feedback Model

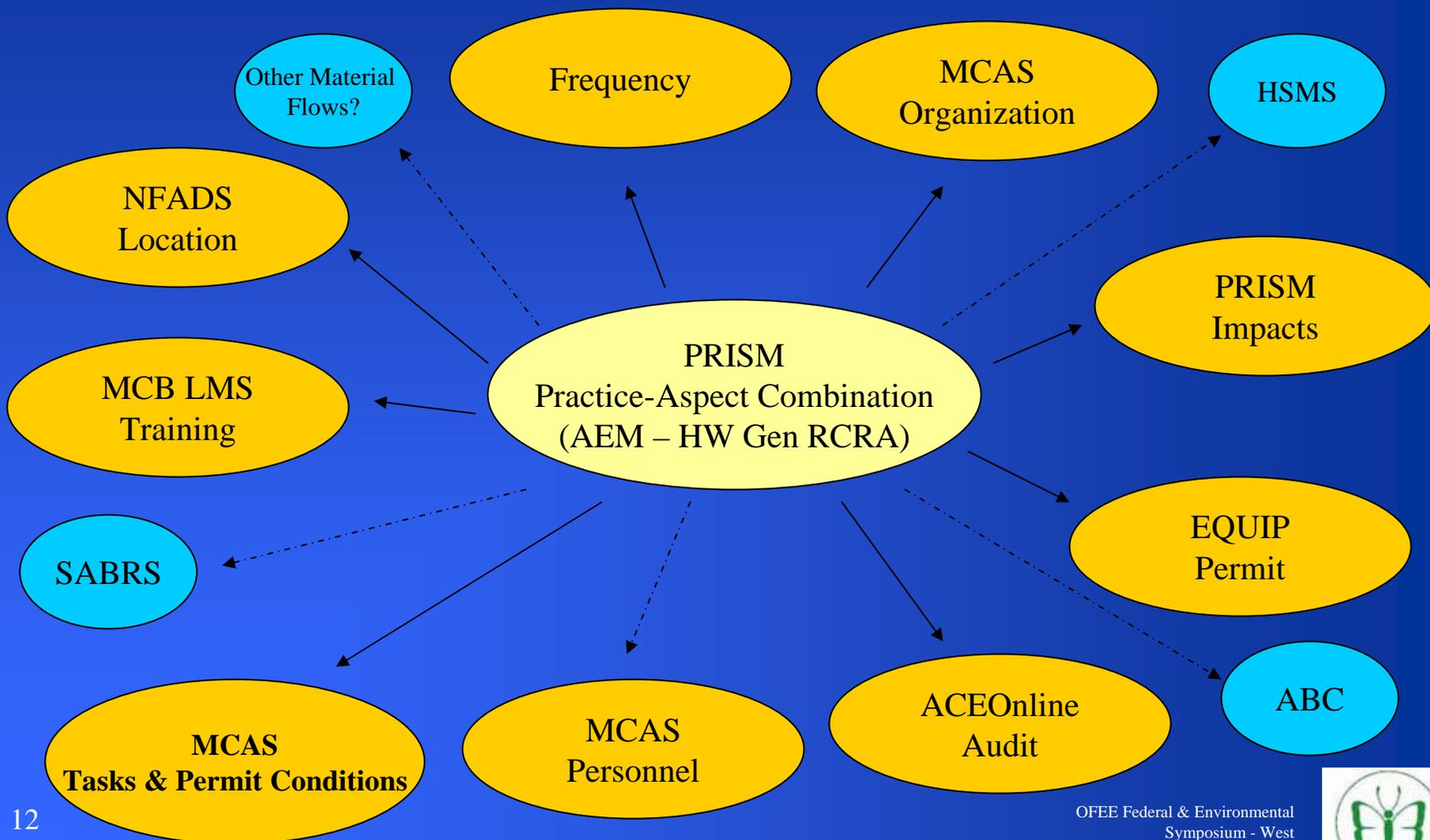


## How to Establish Feedback?

- Number of Notices of Violations?
  - USMC environmental metrics?
  - Environmental risk!
- 
- From what information can we derive risk?



# Availability of Information



## Information Management = EMS Database

- Import! (Use everyone else's work)
- Manipulate and associate environmental information
- Focus on quantitative data



## Deriving Risk

- Risk = Probability x Consequence
- Four types of consequences  $\longrightarrow$  Mission
  - Legal/ Technical/ Financial/ Political
- Three types of risk associated with environmental management:
  - Risk of not doing things required of you
  - Risk of not being prepared for contingency
  - Risk of not planning for the future





## Example: Risk Comparison

Facility	Marine Corps Air Station	
Practice	Aircraft equipment maintenance	Aircraft washing
Aspects	HM use, HW generation, chemical or HW spill, waste oil generation	Wastewater discharge
Impacts	Personnel exposure, depletion of resources, surface water quality degradation	Water consumption, electricity use
Risk	Relatively high	Relatively low

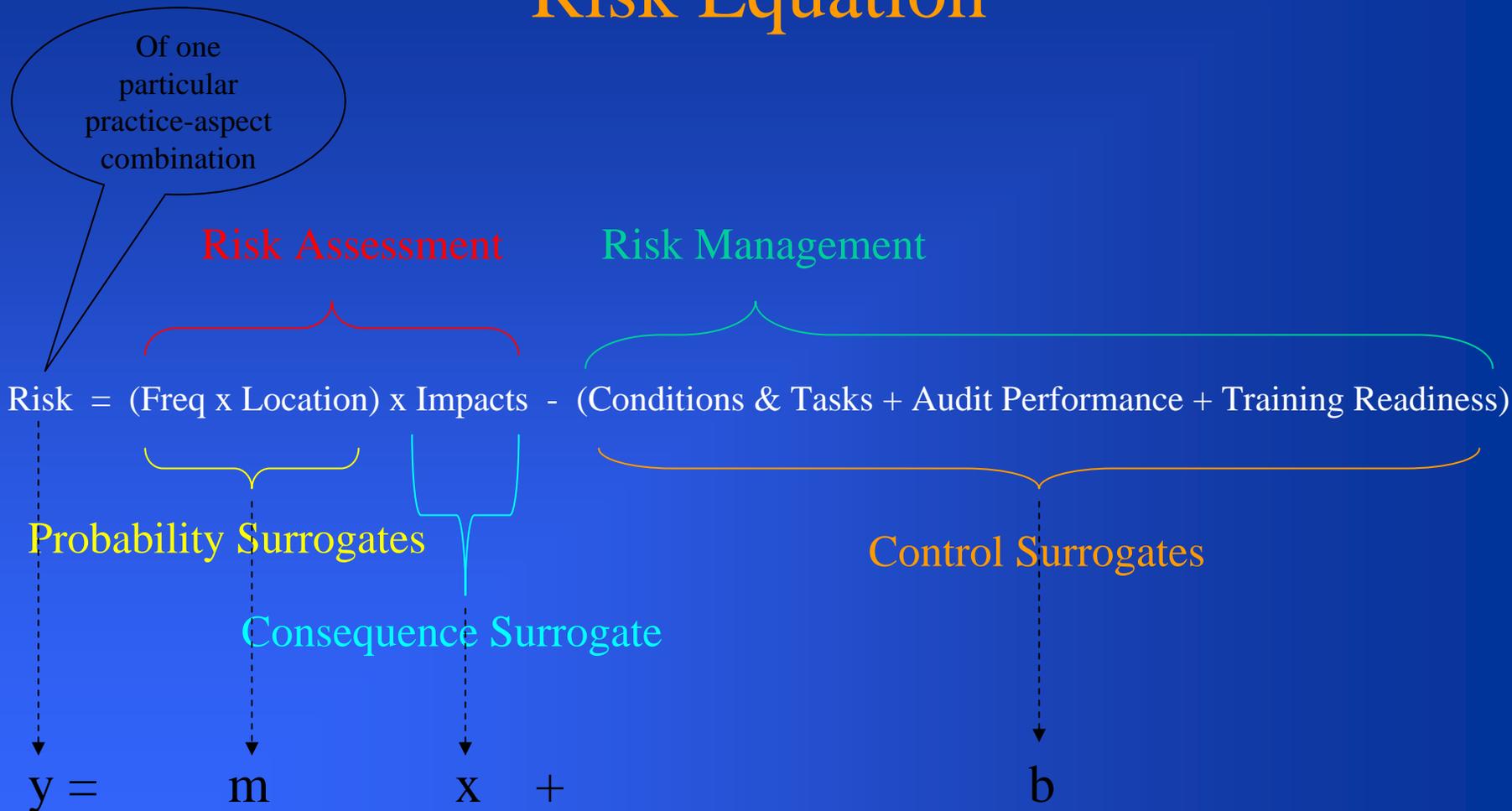


## Environmental Risk Logic

- Risk =  $f$  (probability, consequence, control)
- “Probability”
  - Prevalence of a practice-aspect combination
  - Surrogates: location, frequency
- “Consequence”
  - Adverse results of a practice-aspect occurrence
  - Surrogate: impact
- “Control”
  - Mitigation of undesirable impacts of a practice-aspect combination
  - Surrogates: condition & tasks, auditing, training



# Risk Equation



## Practice-Aspect Inventory

### Risk Ranking Scores

Risk Scores range from 0-10, 10 Indicating Highest Risk, 0 Indicating Lowest Risk.

Practice-Aspect	Risk Ranking Score
Aircraft Equipment Maintenance - General - HM Use General	10
Aircraft Equipment Maintenance - General - Waste Oil/POL Gen	3.69
Aircraft Equipment Maintenance - General - HW Gen Universal Waste	3.06
Aircraft Equipment Maintenance - General - HW Gen RCRA	2.81
Aircraft Washing - Waste Oil/POL Gen	2.12
Aircraft Washing - HW Gen RCRA	1.88
Aircraft Helicopter Fueling/Defueling - HW Gen RCRA	1.25
Portable Engine/Generator O&M - Air Emissions Combustion	0.58
Paint Removal - Dry Abrasive Blasting - Air Emissions Particulate	0.58
Vehicle Refueling - Air Emissions VOC	0.58
Soil Excavation/Grading - Stormwater Disch Nonpoint	0.58
Soil Excavation/Grading - Air Emissions Particulate	0.58
Emergency Generators - Air Emissions Combustion	0.58
Aircraft Equipment Maintenance - General - Spill Chemical or HW	0.57
Aircraft Washing - Wastewater Disch Industrial Waste	0.56
HCP Operation - HW Gen RCRA	0.56
Paint Booth Dry Filter - HW Gen RCRA	0.56
Paint Removal - Dry Abrasive Blasting - HW Gen RCRA	0.44
Degreasing-Solvent - HM Use General	0.44
Emergency Generators - Spill Fuels/POL	0.41
HM Storage Area - Spill Chemical or HW	0.37
Paint Removal - Chemical Stripping - HW Gen RCRA	0.31
Fuel Storage - Above Ground Tanks - Spill Fuels/POL	0.29
Aircraft Helicopter Fueling/Defueling - Spill Fuels/POL	0.29
Degreasing-Solvent - Spill Chemical or HW	0.27
Fuel Storage - Underground Tanks - Spill Fuels/POL	0.27
Fuel Transport - Tank Trucks - Spill Fuels/POL	0.26
Fuel Storage - Underground Tanks - Air Emissions VOC	0.25
HM Storage Area - Air Emissions VOC	0.25
HW Satellite Accumulation Area - Air Emissions VOC	0.25

# MCAS Risk Values



# Assessing the Methodology

- Internal Consistency
  - Regression Analysis
  
- External Validity
  - Premise of a “most likely set” of PA
  - Comparison with like installations using different methodologies



# Utility

- Dashboard gauges (measurements that leaders can manage to!)
- Risk metrics to provide insight
- Awareness & Communication
  - Roles & responsibilities
  - Training requirements
  - Performance
  - Document & record control



# Measurements for Management

**MCAS Camp Pendleton Environmental Management System Database**
Close

**Perspectives**

- Billet
- Organization
- Program
- Practice-Aspect

## Environmental Dashboard Measures

*Specify Time frame for Audit Performance:*

Current Year to Date  
 Previous Year  
 Cumulative

Date Range:

- Date Range -

-

- Start date -      - End date -

-- Click to

🔍

Refine Search --

**Audit Performance**

**Training Readiness**

**Risk**

--Overall (Default)--

**Top Performers**

- MCAS HHS
- HMLA 267
- HMLA 367
- HMM 268
- MAG 46 DET A
- HMT 303
- HMLA 169
- HMM 364
- HMMT 164
- MALS 39
- HMLA 369

--Overall (Default)--

**Top Performers**

- MCAS
- OTHER
- MAG 39
- NAMTRAGRU DET
- MCB CAMP PENDLETON
- MCAS HHS
- MCAS ORDNANCE
- MCAS ENVIRONMENTAL
- MALS 39
- MAG 46 DET A
- HMLA 367

--Overall (Default)--

Highest Risk

- MCAS PWD
- MCAS FUELS
- MALS 39
- HMLA 369
- HMLA 267
- MAG 46 DET A
- HMMT 164
- HMLA 367
- OTHER
- HMT 303
- HMM 364





## Measurements for Management

**MCAS Camp Pendleton Environmental Management System Database**
Close

Perspectives

- Billet
- Organization
- Program
- Practice-Aspect

### Environmental Dashboard Measures

Specify Time  
frame for Audit  
Performance:

Current Year to Date  
 Previous Year  
 Cumulative

Date Range:

 -

- Date Range -

-- Click to

- Start date -

- End date -

Refine Search --

**Audit Performance**

--Overall (Default)--

Top Performers

- CETEP
- Air Quality
- Hazardous Waste/Used Oil
- Environmental Management System
- Recycling Program
- Underground Storage Tanks
- Emergency Planning & Response
- Installation Restoration
- Water Quality
- Above Ground Storage Tanks
- Oil Water Separators

**Training Readiness**

--Overall (Default)--

Top Performers

- Uncharacterized
- Installation Restoration
- Recycling Program
- CETEP
- Shop Towel Recycling
- Environmental Program Management
- Water Quality
- Underground Storage Tanks
- Audit/Inspection
- Oil Water Separators
- Above Ground Storage Tanks

**Risk**

--Overall (Default)--

Highest Risk

- Hazardous Waste/Used Oil
- Emergency Planning & Response
- Water Quality
- Pollution Prevention
- Audit/Inspection
- Oil Water Separators
- Shop Towel Recycling
- Environmental Program Management
- Air Quality
- Above Ground Storage Tanks
- Underground Storage Tanks

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# Measurements for Management

Close

## MCAS Camp Pendleton Environmental Management System Database

**Perspectives**

- Billet
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### Environmental Dashboard Measures

**Specify Time frame for Audit Performance:**

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 Previous Year  
 Cumulative

Date Range:  -

- Start date -      - End date -

- Date Range -

-- Click to

Refine Search --

#### Audit Performance

--Overall (Default)--

**Top Performers**

- MALS Cold Solvent Degreaser Chief, 911490
- MCAS Environmental CETEP Coordinator
- MALS GSE Paint Booth Chief, 850408
- MCAS Armory Solvent Tank Chief, 980093
- MCAS Armory Solvent Tank Chief, 980094
- MALS Aerospace Paint Booth Chief, 850407
- MALS Abrasive Blast Booth Chief, 974788
- MCAS Environmental Hazardous Waste Site Manager
- Squadron HazMat Section Head
- Squadron HazMat NCO
- MALS T-700 Test Cell Chief, 860932

#### Training Readiness

--Overall (Default)--

**Top Performers**

- MCB AC/S Environmental SNCOIC
- Prudential Overall Supply
- MCAS Environmental CETEP Coordinator
- MCAS Environmental Training Manager
- MCAS Environmental Red Rag Program NCO
- MCAS Environmental Recycling Program NCO
- MCAS Environmental Science Manager
- MCAS Environmental Training NCO
- MCAS Environmental Emergency Response NCO
- MCAS Environmental NCO
- MCAS Environmental Hazardous Waste Site NCO

#### Risk

\* Risk not measured for individual Billets

--Overall (Default)--

**Highest Risk**



# Measurements for Management

## MCAS Camp Pendleton Environmental Management System Database

Close

### Perspectives

- Billet
- Organization
- Program
- Practice-Aspect

### Environmental Dashboard Measures

Specify Time frame for Audit Performance:

Current Year to Date  
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Date Range:  -

- Date Range -  
 - Start date -      - End date -

-- Click to  Refine Search --

### Audit Performance

--Overall (Default)--

#### Top Performers

HW Accumulation Area - Spill Chemical or HW  
 HCP Operation - Spill Chemical or HW  
 HW Accumulation Area - Air Emissions VOC  
 Emergency Generators - Spill Fuels/POL  
 HM Storage Area - Spill Chemical or HW  
 HCP Operation - HW Gen RCRA  
 Fuel Transport - Tank Trucks - Spill Fuels/POL  
 Fuel Storage - Underground Tanks - Spill Fuels/POL  
 HW Satellite Accumulation Area - Air Emissions VOC  
 Fuel Storage - Above Ground Tanks - Spill Fuels/POL  
 Degreasing-Solvent - Spill Chemical or HW

### Training Readiness

--Overall (Default)--

#### Top Performers

Aircraft Washing - Spill OWS Backup/Bypass  
 Aircraft Equipment Maintenance - General - HW Gen RCR  
 Aircraft Equipment Maintenance - General - HM Use Gen  
 HW Satellite Accumulation Area - Spill Chemical or HW  
 Degreasing-Solvent - Air Emissions VOC  
 Controlled Burn Operations - Air Emissions Combustion  
 Used Oil/Antifreeze Accumulation - Spill Fuels/POL  
 Fuel Transport - Tank Trucks - Air Emissions VOC  
 Paint Removal - Chemical Stripping - Spill Chemical or HW  
 Paint Removal - Chemical Stripping - HW Gen RCRA  
 Paint Removal - Chemical Stripping - HM Use General

### Risk

--Overall (Default)--

#### Highest Risk

Aircraft Equipment Maintenance - General - HM Use Gen  
 HM Storage Area - Air Emissions VOC  
 HW Satellite Accumulation Area - Air Emissions VOC  
 Emergency Generators - Air Emissions Combustion  
 Jet Engine Test Cell - Air Emissions Combustion  
 Degreasing-Solvent - HM Use General  
 Paint Removal - Dry Abrasive Blasting - Air Emissions Part  
 Vehicle Refueling - Air Emissions VOC  
 Aircraft Equipment Maintenance - General - Spill Chemical  
 HW Accumulation Area - Air Emissions VOC  
 Fuel Storage - Underground Tanks - Air Emissions VOC



# Utility

- Dashboard gauges (measurements that leaders can manage to!)
- **Metrics/reports to provide insight**
- Awareness & Communication
  - Roles & responsibilities
  - Training requirements
  - Performance
  - Document & record control





# Risk Prioritization

## Practice-Aspect Inventory

### Risk Ranking Scores

*Risk Scores range from 0-10, 10 Indicating Highest Risk, 0 Indicating Lowest Risk.*

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Portable Engine/Generator O&M - Air Emissions Combustion	0.58
Paint Removal - Dry Abrasive Blasting - Air Emissions Particulate	0.58
Vehicle Refueling - Air Emissions VOC	0.58
Soil Excavation/Grading - Stormwater Disch Nonpoint	0.58
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# Practice/ Aspect/ Impact (by program)

## ✓ QA REPORT: Practice-Aspect Associations (sorted by Program)

### Program: **Air Quality**

<u>Practices</u>	<u>Associated Aspects</u>
Emergency Generators	Air Emissions Combustion
HCP Operation	Spill Chemical or HW
HW Accumulation Area	Air Emissions VOC
	Spill Chemical or HW
Jet Engine Test Cell	Air Emissions Combustion
	Spill Fuels/POL
Paint Booth Dry Filter	Air Emissions Particulate
	Air Emissions VOC
	HM Use General
	Spill Chemical or HW
Paint Removal - Chemical Stripping	Air Emissions VOC
Paint Removal - Dry Abrasive Blasting	HW Gen RCRA
Soil Excavation/Grading	Air Emissions Particulate
	Stormwater Disch Nonpoint
Vehicle Refueling	Air Emissions VOC
	Spill Fuels/POL

### Program: **Emergency Planning & Response**

<u>Practices</u>	<u>Associated Aspects</u>
Aircraft Equipment Maintenance - General	HW Gen Universal Waste
	Spill Chemical or HW
	Waste Oil/POL Gen
Aircraft Helicopter Fueling/Defueling	Spill Fuels/POL
Aircraft Washing	Waste Oil/POL Gen
Degreasing-Solvent	HM Use General
	Spill Chemical or HW
Emergency Generators	Spill Fuels/POL
Fuel Storage - Above Ground Tanks	Spill Fuels/POL





Practice/  
Aspect/  
Impact  
(by location)

✓ **QA REPORT: ice-Aspect Location, Frequency, and Impacts**

✦ **Practice-Aspect: Aircraft Equipment Maintenance - General - HM Use General**

Associated Impact(s)	Primary Risk	Impact Factor
Personnel Exposure	legal	3
Electricity Consumption	fiscal	10
Depletion of Nonrenewable Resources	fiscal	2

Location(s)	Frequency
202133 / TACTICAL SUPPORT VAN PADS	Daily
23110 / HAZ FLAM STORE @B2399	
23118 / T-700 TEST CELL	
23119 / T-58 TEST CELL	
23121 / LINE MAINTENANCE SHELTER	
23122 / STORAGE AIR ORG UNITS MARCOR	
23127 / VAN PAD GUARD HOUSE	
23135 / STORAGE SHED	
23136 / LINE MAINTENANCE SHELTER	
23144 / AIRCRAFT MAINT HANGAR	
23157 / VAN DOOR STORAGE BLDG	
23170 W / AIRCRAFT MAINT HANGAR	
23172 / HAZ SATLITE SITE FOR BLDG 2360	
23177 / GSE HOLDING SHED (WEST)	
23178 / GSE HOLDING SHED(EAST)	
23179 / GSE HOLDING SHED (SOUTH)	
23197 / SUPPLY VAN PAD	
23205 / AVIATION ARMAMENT SHED A	
23206 / AVIATION ARMAMENT SHED B	
23207 / AVIATION ARMAMENT SHED D	
23208 / AVIATION ARMAMENT SHED E	
23209 / AVIATION ARMAMENT SHED F	
23210 / EQUIP SHED HUMIDITY CONTROL	
23213 / MALS METAL SHOP	
2378 / INTERMEDIATE MAINT. HANGAR	
2379 / ENGINE MAINTENANCE SHOP	
2380 / ORDNANCE SHOP/MACS-1	
2385 / GSE SHOP MALS 39	
2386 / AIRCRAFT MAINT HANGAR	
2396 / AIRCRAFT MAINT HANGAR	
2397 W / AIRCRAFT MAINT HANGAR	
OPEN STORAGE	



# Reports to Provide Insight

## ✓ QA REPORT: **Permits and Permit-Conditions**

### ❖ Permit #: 850408

Notes:

**Equipment Description:** GSE Paint Booth

**Regulatory Authority:** San Diego APCD

**Expiration Date:** 4/30/2007

**Renewal Date:**

**Regulatory Concern:** VOC Emissions

❖ **Location:** 2385 / GSE SHOP MALS 39

❖ **Program:** Air Quality

### ❖ Associated Organizations and Billets

Organization

MALS 39

MALS 39

MALS 39

MALS 39

Billet

MALS GSE Paint Booth Chief, 850408

MCAS Environmental Air Permit Manager

MCAS Environmental Air Permit NCO

MCAS Environmental Compliance Officer

### ❖ Associated Permit Conditions:

### ❖ Frequency: ❖ Regulatory Driver:

A copy of the records provided by the manufacturer or supplier are maintained.	As Required	SDAPCD Rule 67.20(f)(1)(iv)
A current list of coating materials (thinner, surface prep, equipment cleaner, etc.) are maintained: type of coating material used, coating category (pretreatment), manufacturer, and identification of all low VOC primers or primer surfacers.	As Required	SDAPCD Rule 67.20(f)(1)(i)(A)-(C)
Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.	As Directed	N/A
All coatings applied to automotive parts and products comply with Rule 67.20 requirements.	As Required	SDAPCD Rule 67.2
All containers used to store or transfer VOC-containing wastes are closed except when being accessed or when empty.	As Required	SDAPCD Rule 67.17(d)(2)
All containers used to store, transfer, or apply VOC-containing materials are closed when not in use.	As Required	SDAPCD Rule 67.17(d)(1)
All Rule 67.20 recordkeeping requirements are met.	As Required	SDAPCD Rule 67.20(f)
All solvent materials, materials containing solvents, and other materials containing organic compounds are stored in closed containers.	As Required	SDAPCD Rule 67.17(d)(1),(2),(4)
All VOC containing wastes, including paper or cloth, are stored in closed containers.	As Required	SDAPCD Rule 67.17(d)(4)
Application equipment, surface prep solvents, gun cleaning solvents, and the method of gun cleaning comply with Rule 67.20 requirements..	As Required	SDAPCD Rule 67.20(d)(5),(7)
Coating applied to metal parts and products comply with all provisions of Rule 67.3.	As Required	SDAPCD Rule 67.3





✓ **QA REPORT: Program - Billet Associations**

*Program*

*Associated Billets*

❖ *Air Quality*

MALS Abrasive Blast Booth Chief, 974788  
 MALS Aerospace Paint Booth Chief, 850407  
 MALS Cold Solvent Degreaser Chief, 911490  
 MALS GSE Paint Booth Chief, 850408  
 MALS T-400 Test Cell Chief, 860933  
 MALS T-58 Test Cell Chief, 977790  
 MALS T-700 Test Cell Chief, 860932  
 MCAS Armory Solvent Tank Chief, 980093  
 MCAS Armory Solvent Tank Chief, 980094  
 MCAS Environmental Air Permit Manager  
 MCAS Environmental Air Permit NCO  
 MCAS Environmental Chief  
 MCAS Environmental Compliance Officer  
 MCAS Environmental NCO  
 MCAS Environmental Officer  
 MCAS Environmental Operations NCO  
 MCAS PWD Maintenance Coordinator, 980157

❖ *Audit/Inspection*

MCAS Environmental Chief  
 MCAS Environmental Compliance Officer  
 MCAS Environmental Hazardous Material Handler  
 MCAS Environmental Hazardous Material Manager  
 MCAS Environmental Hazardous Waste Site Manager  
 MCAS Environmental Hazardous Waste Site NCO  
 MCAS Environmental NCO  
 MCAS Environmental Officer  
 MCAS Environmental Operations NCO  
 MCAS Environmental Tanks UST/AST/OWS NCO

❖ *CETEP*

MCAS Environmental CETEP Coordinator  
 MCAS Environmental Chief  
 MCAS Environmental NCO  
 MCAS Environmental Officer  
 MCAS Environmental Training Instructor  
 MCAS Environmental Training Manager  
 MCAS Environmental Training NCO

❖ *Emergency Planning & Response*

MCAS Environmental Chief  
 MCAS Environmental Emergency Response NCO  
 MCAS Environmental Hazardous Waste Handler  
 MCAS Environmental Tanks UST/AST/OWS NCO  
 MCAS PWD Officer  
 Squadron HazMat NCO  
 Squadron HazMat Section Head

❖ *Environmental Management System*

MALS Abrasive Blast Booth Chief, 974788  
 MALS Aerospace Paint Booth Chief, 850407  
 MALS GSE Paint Booth Chief, 850408

Reports to  
 Provide Insight



# Utility

- Dashboard gauges (measurements that leaders can manage to!)
- Risk metrics to provide insight
- **Awareness & Communication**
  - Roles & responsibilities
  - Training requirements
  - Performance
  - Document & record control



# Organizations, Roles, Responsibilities

## ✓ QA REPORT: Organization (Billets and Personnel)

### + Organization: MCAS

Billet(s)	Billeted Personnel			
	Rank	Last Name, First Name	Phone	Email
MCAS Armory Solvent Tank Chief, 980094	SGT	CUSTODIO, RAUL	(760) 763-0724	raul.custodio.mx@usmc.mil
MCAS Armory Solvent Tank Chief, 980093	SGT	CUSTODIO, RAUL	(760) 763-0724	raul.custodio.mx@usmc.mil

### + Organization: MALS 39

Billet(s)	Billeted Personnel			
	Rank	Last Name, First Name	Phone	Email
MALS Cold Solvent Degreaser Chief, 911490	SGT	Hincks, Jayson	(760) 763-1314	jayson.hincks@usmc.mil
Squadron HazMat NCO	CPL	STATON, Jason	(760) 763-1314	jason.staton@usmc.mil
Squadron HazMat Section Head	SSGT	Dewitt, Lance	(760) 725-7397	lance.dewitt@usmc.mil
Squadron HazMat NCO	CPL	MORROW, BRUCE	(760) 725-3891	bruce.i.morrow@usmc.mil
MALS T-58 Test Cell Cell Chief, 977790	SSGT	ANDERSON, GREGORY	(760) 725-8421	gregory.m.anderson@usmc.mil
MALS T-400 Test Cell Chief, 860933	SSGT	ANDERSON, GREGORY	(760) 725-8421	gregory.m.anderson@usmc.mil
MALS Aerospace Paint Booth Chief, 850407	CPL	FREDERICK, DAVID	(760) 725-9963	david.c.frederick1@usmc.mil
MALS GSE Paint Booth Chief, 850408	SGT	MEAD, RYAN	(760) 725-3678	ryan.mead@usmc.mil
MALS Abrasive Blast Booth Chief, 974788	SGT	MEAD, RYAN	(760) 725-3678	ryan.mead@usmc.mil
MALS T-700 Test Cell Chief, 860932	SSGT	ANDERSON, GREGORY	(760) 725-8421	gregory.m.anderson@usmc.mil
Squadron HazMat NCO	LCPL	HILL, JOSEPH	(760) 725-3398	joesph.j.hill@usmc.mil





# Detailed Responsibilities

✓ QA REPORT: Internal Tasks <small>(sorted by frequency)</small>	
<b>Task Frequency: Daily</b>	
<p>Are Hazardous Waste IAW Applicable Regulations, and Orders stored? .....</p> <p><b>ECE ID# (if applicable):</b> Internal Task ID# 1505</p> <p><b>Audit Question Mod:</b> Has the following task been completed satisfactorily, and at the prescribed frequency?</p> <p><b>Task Statement Mod:</b></p> <p><b>Notes:</b></p> <p><b>Associated Billets:</b> <b>Associated Programs:</b> .....</p> <p>MCAS Environmental Hazardous Waste Site Manager Hazardous Waste/Used Oil</p>	
<p>Are metal containers holding ignitable hazardous waste (e.g., solvents) grounded? .....</p> <p><b>ECE ID# (if applicable):</b> Internal Task ID# 1520</p> <p><b>Audit Question Mod:</b> Has the following task been completed satisfactorily, and at the prescribed frequency?</p> <p><b>Task Statement Mod:</b></p> <p><b>Notes:</b></p> <p><b>Associated Billets:</b> <b>Associated Programs:</b> .....</p> <p>Hazardous Waste/Used Oil</p>	
<p>Coordinate daily pick-up and transportation of hazardous waste, used oil filters, and White Rags from satellite areas to the HazMat 60-day storage site. ....</p> <p><b>ECE ID# (if applicable):</b> Internal Task ID# 1498</p> <p><b>Audit Question Mod:</b> Has the following task been completed satisfactorily, and at the prescribed frequency?</p> <p><b>Task Statement Mod:</b></p> <p><b>Notes:</b></p> <p><b>Associated Billets:</b> <b>Associated Programs:</b> .....</p> <p>MCAS Environmental Operations NCO Hazardous Waste/Used Oil</p>	
<p>Drive perimeter road to inspect Sites 1, 2, and 3, for Mugwort wilting .....</p> <p><b>ECE ID# (if applicable):</b> Internal Task ID# 99291994</p> <p><b>Audit Question Mod:</b> Has the following task been completed satisfactorily, and at the prescribed frequency?</p> <p><b>Task Statement Mod:</b></p> <p><b>Notes:</b></p> <p><b>Associated Billets:</b> <b>Associated Programs:</b> .....</p> <p>MCAS Environmental Science NCO Uncharacterized</p>	
<p>Empty all transfer containers daily and ensure serviceability .....</p> <p><b>ECE ID# (if applicable):</b> Internal Task ID# 99292082</p> <p><b>Audit Question Mod:</b> Has the following task been completed satisfactorily, and at the prescribed frequency?</p> <p><b>Task Statement Mod:</b></p> <p><b>Notes:</b></p> <p><b>Associated Billets:</b> <b>Associated Programs:</b> .....</p> <p>Squadron HazMat NCO .....</p> <p>Squadron HazMat Section Head .....</p>	



# Environmental SOPs

## Environmental Standard Operating Procedures (Billet ESOPs)

### ❖ MCAS Environmental Compliance Officer

Permit #: 980094

Equipment: Remote Reservoir Cleaner

► Permit Requirements

Emissions

- Records of the types, amounts, and dates of solvents added to and removed from each solvent cleaner are maintained for three years and made available to the SDAPCD upon request.

Reference: SDAPCD Rule 67.6(d)(5)(ix)

Frequency: As Required

- Solvent agitation is achieved only by means of pump circulation, mechanical mixing, or with ultrasonic. Gas agitation is not used. No porous or absorbent materials, such as cloth, leather, wood, or rope are cleaned with solvent.

Reference: SDAPCD Rule 67.6(d)(5)(vi),(viii)

Frequency: As Required

- Cleaned parts are allowed to drain until dripping ceases.

Reference: SDAPCD Rule 67.6(d)(6)(i)

Frequency: As Required

- The solvent reservoir is closed at all times except when the reservoir is being cleaned or repaired.

Reference: SDAPCD Rule 67.6(d)(6)(iii)

Frequency: As Required

- The portion of the solvent cleaner where parts are cleaned is not exposed to drafts greater than 40 meters/min (131 ft/min).

Reference: SDAPCD Rule 67.6(d)(6)(iv)

Frequency: As Required

Permit #: 980093

Equipment: Remote Reservoir Cleaner

► Permit Requirements

Emissions

- A permanent, conspicuous, legible label listing the applicable operating requirements must be posted on or near the above permitted equipment.

Reference: N/A

Frequency: Undetermined

- Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.

Reference: N/A

Frequency: As Directed

Report generated: Monday, December 03, 2007





**✓ QA REPORT: Required Training**

<i>Billet</i>	<i>Training Required of Billet</i>
<input checked="" type="checkbox"/> <b>MALS Abrasive Blast Booth Chief, 974788</b>	HAZCOM HW Handler/Refresher Paint Removal - Chemical/Abrasive
<input checked="" type="checkbox"/> <b>MALS Aerospace Paint Booth Chief, 850407</b>	HAZCOM HW Handler/Refresher Paint Booth: Water Wash/Dry Filter Painting - Paint Gun Cleaning
<input checked="" type="checkbox"/> <b>MALS Cold Solvent Degreaser Chief, 911490</b>	HAZCOM HW Handler/Refresher
<input checked="" type="checkbox"/> <b>MALS GSE Paint Booth Chief, 850408</b>	HAZCOM HW Handler/Refresher Paint Booth: Water Wash/Dry Filter Painting - Paint Gun Cleaning
<input checked="" type="checkbox"/> <b>MALS T-400 Test Cell Chief, 860933</b>	HAZCOM HW Handler/Refresher
<input checked="" type="checkbox"/> <b>MALS T-58 Test Cell Cell Chief, 977790</b>	HAZCOM HW Handler/Refresher
<input checked="" type="checkbox"/> <b>MALS T-700 Test Cell Chief, 860932</b>	HAZCOM HW Handler/Refresher
<input checked="" type="checkbox"/> <b>MCAS Armory Solvent Tank Chief, 980093</b>	HAZCOM HW Handler/Refresher Weapons Maintenance Degreasing Solvent
<input checked="" type="checkbox"/> <b>MCAS Armory Solvent Tank Chief, 980094</b>	HAZCOM HW Handler/Refresher Weapons Maintenance Degreasing Solvent

## Training Requirements





## Training Summary Report (Training Readiness)

Personnel Sorted by Unit

Unit: HMLA 169

JENSEN, DANIEL R

Rank: SGT

Phone: (760) 763-1732

Email: daniel.jensen@usmc.mil

Required Training	Date Completed	Compliance Status
First Responder Operations/Refresher	4/4/2007	Expired
HAZCOM	6/27/2007	Current
HW Handler/Refresher	11/22/2006	Expired
Tactical Equipment O&M - Aircraft/Helicopter Fueling		Not Taken
Training Area O&M - Controlled Burn Operations		Not Taken
Painting - Paint Gun Cleaning		Not Taken
HCP Operations		Not Taken
HM Storage Area		Not Taken
HW Storage Area		Not Taken
HW Accumulation Site		Not Taken
HW Transportation		Not Taken
Used Oil Accumulation		Not Taken

ROBINSON, SHAWN P

Rank: LCPL

Phone: (760) 763-1732

Email: shawn.robinson@usmc.mil

Required Training	Date Completed	Compliance Status
First Responder Operations/Refresher	1/31/2007	Expired
HAZCOM	6/27/2007	Current
HW Handler/Refresher	11/22/2006	Expired
Tactical Equipment O&M - Aircraft/Helicopter Fueling		Not Taken
HCP Operations		Not Taken
HM Storage Area		Not Taken
HW Storage Area		Not Taken
HW Accumulation Site		Not Taken
HW Transportation		Not Taken
Used Oil Accumulation		Not Taken

# Performance (Training Reports)



# Performance (Audits)

## MCAS Camp Pendleton Environmental Management System Database

### Audits

To edit an existing audit event, select (highlight) an audit event from the list below and double-click with mouse.

Optional: sort-by selection

<input checked="" type="radio"/> Date	<input type="radio"/> Audit Type	<input type="radio"/> Program	<input type="radio"/> Unit	<input type="radio"/> Location	<input type="radio"/> Permit	<input type="radio"/> Billet	<input type="radio"/> Score
11/28/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMM 364			Squadron HazMat NCO	89.66%
11/28/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMM 364			Squadron HazMat Section Head	86.49%
11/28/2007	Billet Performance (ESOP Implementation)	Environmental Management	MCAS ENVIRONMEN			MCAS Environmental Science NCO	100.00%
11/28/2007	Billet Performance (ESOP Implementation)	Recycling Program	MCAS ENVIRONMEN			MCAS Environmental Recycling Program NCO	75.00%
11/28/2007	Billet Performance (ESOP Implementation)	Underground Storage Tanks	MCAS ENVIRONMEN			MCAS Environmental Tanks UST/AST/OWS NCO	70.00%
11/27/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMT 303			Squadron HazMat NCO	89.66%
11/27/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMT 303			Squadron HazMat Section Head	91.89%
11/26/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMLA 267			Squadron HazMat NCO	100.00%
11/26/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMLA 267			Squadron HazMat Section Head	100.00%
11/26/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMLA 367			Squadron HazMat NCO	100.00%
11/26/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMLA 367			Squadron HazMat Section Head	100.00%
11/26/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMMT 164			Squadron HazMat NCO	96.55%
11/26/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMMT 164			Squadron HazMat Section Head	97.30%
11/23/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	MALS 39			Squadron HazMat NCO	100.00%
11/23/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	MALS 39			Squadron HazMat Section Head	100.00%
11/22/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMLA 369			Squadron HazMat NCO	86.21%
11/22/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMLA 369			Squadron HazMat Section Head	89.19%
11/21/2007	Billet Performance (ESOP Implementation)	Hazardous Waste/Used Oil	MCAS ENVIRONMEN	23171 / PMO/ENV/HAZMAT	457320 (MCAS 90-Day Site)		94.87%
11/17/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	MAG 46 DET A			Squadron HazMat NCO	100.00%
11/17/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	MAG 46 DET A			Squadron HazMat Section Head	100.00%
11/15/2007	Billet Performance (ESOP Implementation)	Hazardous Waste/Used Oil	MCAS ENVIRONMEN	23171 / PMO/ENV/HAZMAT	457320 (MCAS 90-Day Site)		94.87%
11/8/2007	Billet Performance (ESOP Implementation)	Hazardous Waste/Used Oil	MCAS ENVIRONMEN	23171 / PMO/ENV/HAZMAT	457320 (MCAS 90-Day Site)		94.87%
11/1/2007	Billet Performance (ESOP Implementation)	Hazardous Waste/Used Oil	MCAS ENVIRONMEN	23171 / PMO/ENV/HAZMAT	457320 (MCAS 90-Day Site)		94.87%
10/31/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMMT 164			Squadron HazMat NCO	96.55%
10/31/2007	Hazardous Waste SAS	Hazardous Waste/Used Oil	HMMT 164			Squadron HazMat Section Head	97.30%
10/31/2007	Billet Performance (ESOP Implementation)	Environmental Management	MCAS ENVIRONMEN			MCAS Environmental Science NCO	100.00%
10/31/2007	Billet Performance (ESOP Implementation)	Recycling Program	MCAS ENVIRONMEN			MCAS Environmental Recycling Program NCO	75.00%
10/31/2007	Billet Performance (ESOP Implementation)	Underground Storage Tanks	MCAS ENVIRONMEN			MCAS Environmental Tanks UST/AST/OWS NCO	70.00%

**View Audit Report**

To view an audit report, select (highlight) an audit event from the list above, and click the button at left.

To add a new audit event, click the button at right.

**Add/Edit Audit Events**

**Return to Main Menu**



# Communication

## (CO's Policy Statement, ESOP, Training)



**MARINE CORPS AIR STATION  
CAMP PENDLETON, CALIFORNIA**

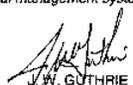
**STATEMENT ON ENVIRONMENTAL POLICY**



The natural environment is a critical element of the training and support mission of MCAS Camp Pendleton. Accordingly, it is the policy of MCAS Camp Pendleton to protect and enhance our air, water, natural, and cultural resources. MCAS Camp Pendleton will:

- \* Continue to comply with all environmental laws, regulations, and the policies of higher headquarters;
- \* Integrate sound environmental practices into all of our operations and business decisions;
- \* Continue to seek pollution prevention opportunities and implement waste minimization programs;
- \* Review all proposed activities for potential environmental impact in accordance with the National Environmental Policy Act;
- \* Finalize the clean up of contaminated sites;
- \* Communicate environmental commitments to all levels of the MCAS Camp Pendleton organization and its tenants to increase awareness of this environmental protection policy;
- \* Grow our excellent partnership with the local community and regulatory agencies to continue a proactive environmental program, and;
- \* Continue to educate our Marines, Sailors, and civilian Marines about their responsibility to protect the environment and recognize them for their outstanding participation.

*"Marine Corps Air Station Camp Pendleton will sustain and enhance mission readiness through compliance with relevant environmental laws and regulations, prevention of pollution, and will pursue continual improvement of our environmental program through an environmental management system."*

  
**J.W. GUTHRIE**  
 Colonel, U.S. Marine Corps  
 Commanding Officer, MCAS Camp Pendleton

### Environmental Standard Operating Procedures

*Billet-Holder: ANDERSON, GREGORY M*

❖ *MALS T-400 Test Cell Chief, 860933*

Permit #: 860933

Equipment: T400 Test Cell

► *Permit Requirements*

Emissions

- Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.  
*Reference: NIA* *Frequency: As Directed*
- Records of engine operation and total fuel usage per engine test shall be maintained for at least 3 years at the testing facility.  
*Reference: NIA* *Frequency:*
- The maximum fuel flow rate during testing shall not exceed 1320 pounds per hour.  
*Reference: NIA* *Frequency:*
- The test cell operation shall be limited to testing a maximum of three (3) twin-packs during any calendar day.  
*Reference: NIA* *Frequency:*
- The test cell operation shall be limited to testing a maximum of three hundred seven (307) twin-packs of model T-400 engines during any calendar year.  
*Reference: NIA* *Frequency:*

► *Internal Task Requirements*

- Report all significant spills to the Environmental Department.  
*Notes:* *Frequency: As Required*
- Complete and forward spill records to MCAS Environmental Office for any spills > 5 gallons.  
*Notes:* *Frequency: As Required*

Report generated: Wednesday, August 15, 2007





## Communication (CO's Policy Statement, ESOP, Training)

### Required Training Summary Report (Training Readiness)

**ANDERSON, GREGORY M**

**Rank:** SSGT

**Phone:** (760) 725-8421

**Email:** gregory.m.anderson@usmc.mil

**Billets:** MALS T-400 Test Cell Chief, 860933

MALS T-58 Test Cell Cell Chief, 977790

MALS T-700 Test Cell Chief, 860932

<i>Required Training</i>	<i>Date Completed</i>	<i>Compliance Status</i>
HAZCOM	6/27/2007	Current
HW Handler/Refresher		Not Taken



# Document and Record Control

**MCAS Camp Pendleton Environmental Management System Database**

**Add/Edit/Review Document Information**

Search: select-by category:

Select:

---

Document Title:

Document Type:

**Document Location**

Hyperlink:  Web Access:

Physical Location:  Code:

**Document Details** (as applicable)

Author:

Version:

Volume:

# of Pages:

**Document Associations** (as applicable)

Permit #:   
search current Permits inventory (above)

Permit # - Other:

Program:

**Document Dates** (as applicable)

Document Date:

Expiration Date:

**Notes**



# CY 08 Environmental Targets and Objectives (Measurable Management )

- Objective 1: 10% improvement in overall training and auditing measures
- Objective 2: 10% reduction in overall risk measures
- Objective 3: Sustaining & refinement of MCAS EMS methodology and system



# Exportability

- Database structure is established, so...
  - Repopulate data tables
  - Adjust coefficients accommodate management interests
  - Design “perspectives” to suit requirements
  - Be creative!



# Executive Order 13423

- Every element of EO 13423 is “EMS-able”
- 7 of 12 EO elements have quantitative goal
- Every element connected to diverse agents
- EMS can be an excellent means to establish awareness at upper management level

*“What gets measured gets managed”*



# Questions

Contact Information:

Rob Rouse, URS Corporation

[Rob\\_Rouse@urscorp.com](mailto:Rob_Rouse@urscorp.com)

Office: 619-243-2882

Cell: 619-384-5702



# Methodology Testing

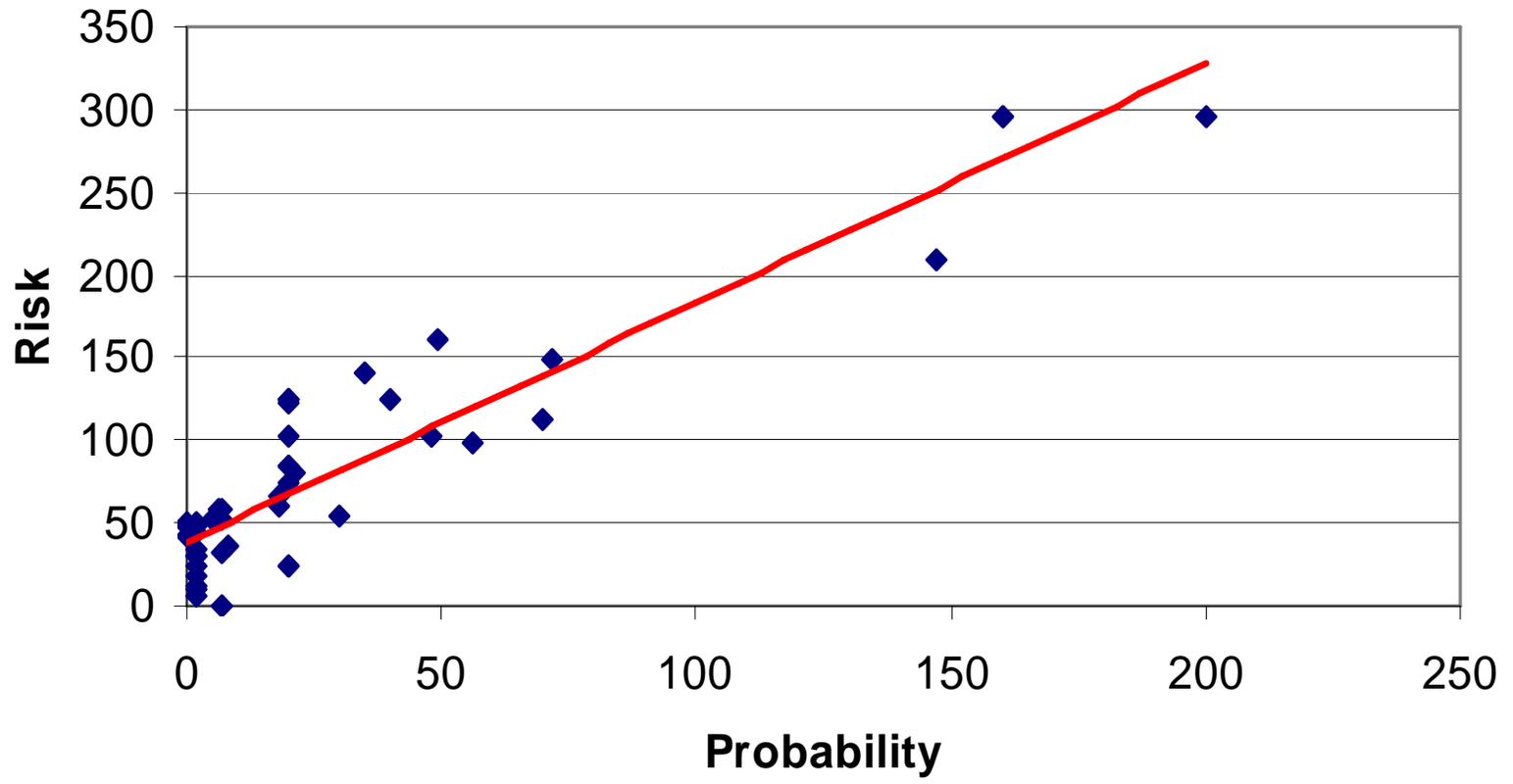
- Regression Analysis
  - Do the lines go the right way? That is, how good is the information?





## Risk vs. Probability

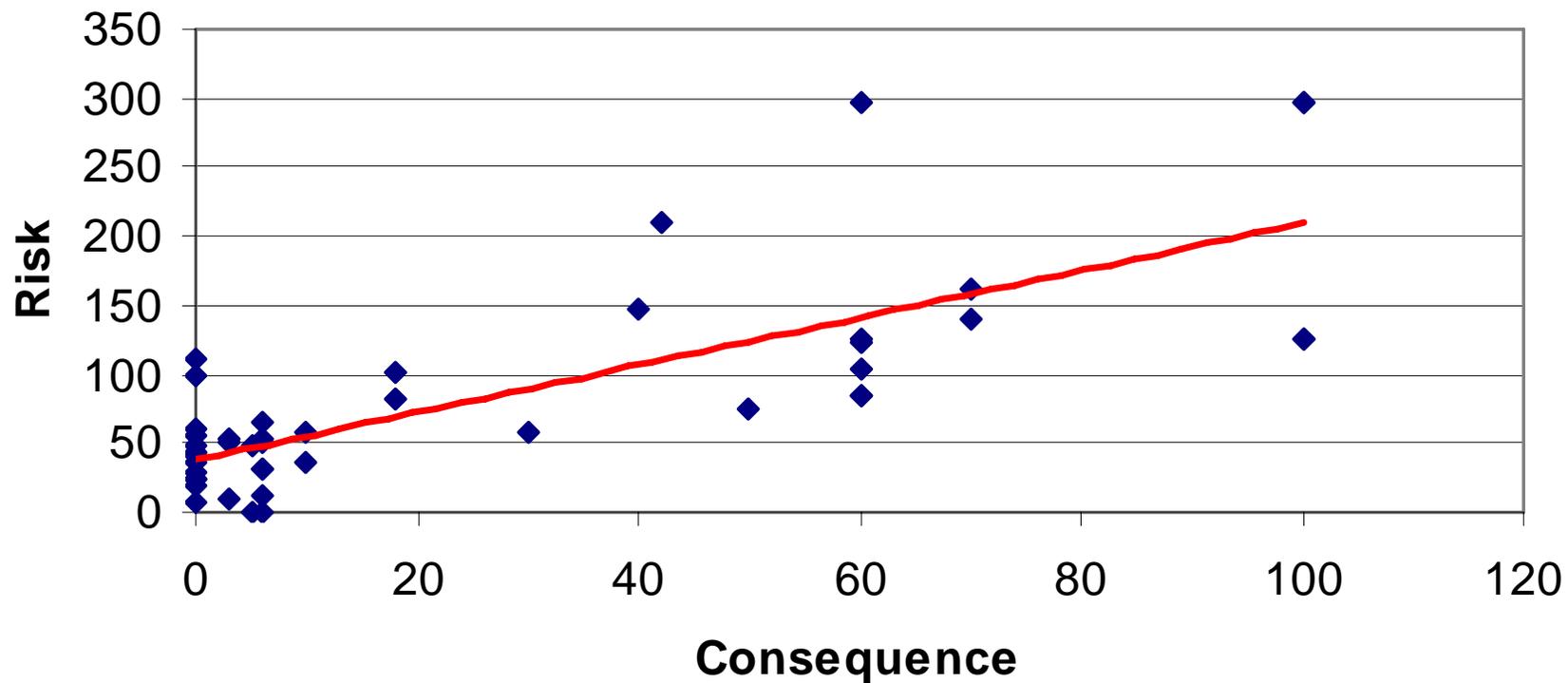
$R^2 = 0.85$

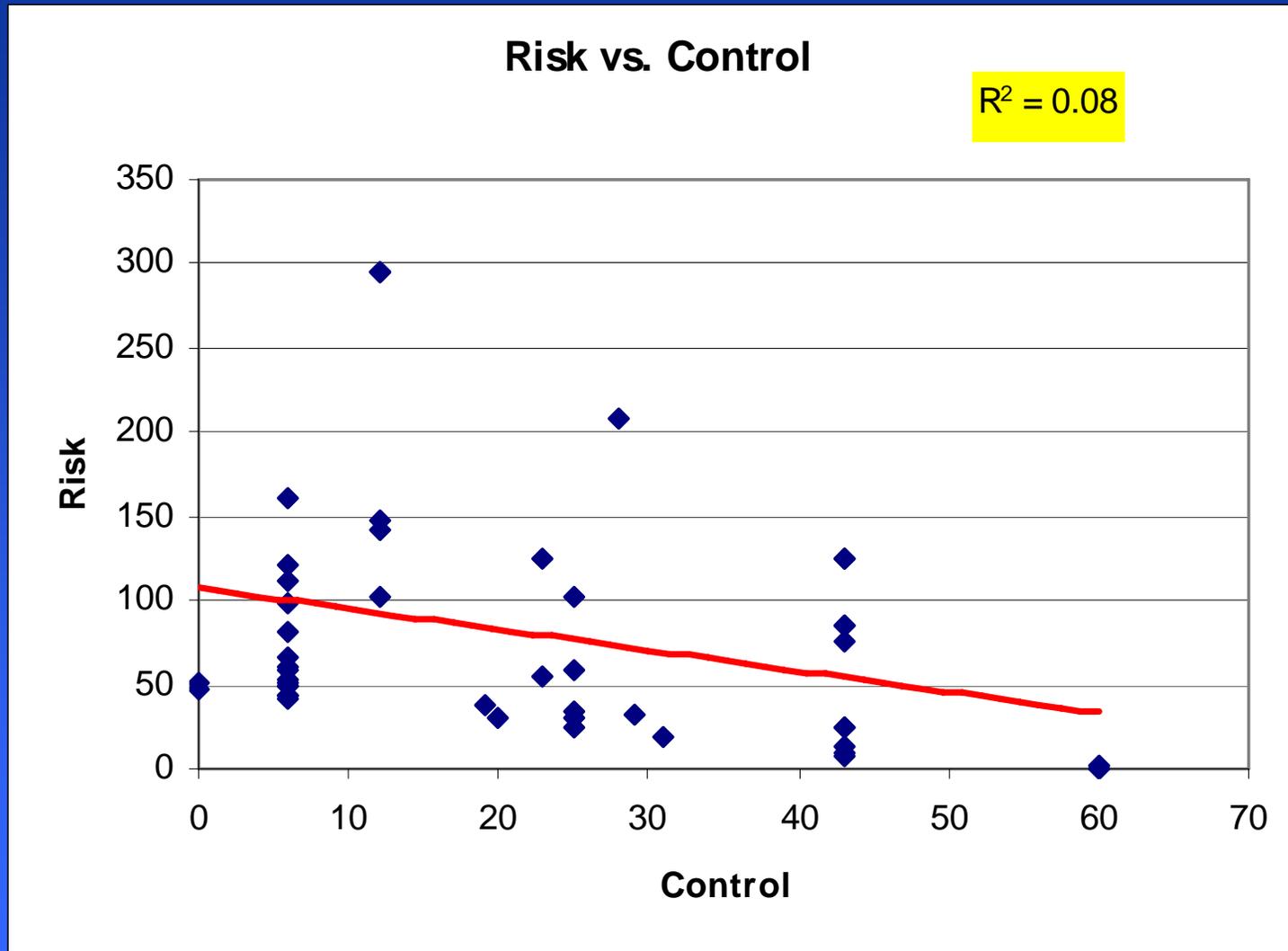




# Risk vs. Consequence

$R^2 = 0.60$





# Methodology Testing

- Benchmark Analysis
  - Does this method produce results that are intuitively correct? That is, how good is the equation?
  - Based on the notion that there is some “most likely” ordering of PAI at similar facilities



# Benchmark Bases

Practice	Aspect	Cherry Point (No Scale)	MCAS Iwakani (Scale of 0 - 763.34)	29 Palms (Scale of 1.27 - 275.5)	MCB Quantico (Scale of 0.18 - 128)	MCB Hawaii (Scale 0.16 - 39.23)	Avg.
Aircraft Washing	HW Gen RCRA	4	4	4	4	3	3.8
Aircraft Washing	Waste Oil/POL Gen	4	4	4	4	3	3.8
Aircraft Washing	Wastewater Disch Industrial Waste	4	4	4	4	3	3.8
Aircraft Washing	Spill OWS Backup/Bypass	4	4	4	4	2	3.6
Aircraft Equipment Maintenance - General	HW Gen RCRA	4	3	4	2	4	3.4
Aircraft Equipment Maintenance - General	Spill Chemical or HW	4	3	4	2	4	3.4
.	.	.	.	.	.	.	
.	.	.	.	.	.	.	
.	.	.	.	.	.	.	
Aircraft Equipment Maintenance - General	Waste Oil/POL Gen	4	3	4	2	4	3.4
Soil Excavation/Grading	Stormwater Disch Nonpoint	0	3	3	2	3	2.2
Used Oil/Antifreeze Accumulation	Spill Fuels/POL	0	3	3	2	3	2.2
Paint Removal - Dry Abrasive Blasting	HW Gen RCRA	0	3	2	2	3	2
Paint Removal - Chemical Stripping	Air Emissions VOC	0	2	2	2	3	1.8
Paint Removal - Chemical Stripping	HW Gen RCRA	0	2	2	2	3	1.8
Paint Removal - Chemical Stripping	Spill Chemical or HW	0	2	2	2	3	1.8
Paint Removal - Chemical Stripping	HM Use General	0	2	2	2	2	1.6
Excluded non-CPEN practice-aspects							
Used upper 10% as H, bottom 10% as L, everything else was M							



# Benchmark Analysis

Practice	Aspect	USMC Rank	MCAS Rank	Difference
Aircraft Equipment Maintenance - General	HM Use General	11	2	9
Aircraft Equipment Maintenance - General	HW Gen RCRA	6	3	3
Aircraft Equipment Maintenance - General	HW Gen Universal Waste	12	4	8
Aircraft Equipment Maintenance - General	Spill Chemical or HW	5	1	4
Aircraft Equipment Maintenance - General	Waste Oil/POL Gen	7	8	1
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
Aircraft Helicopter Fueling/Defueling	HW Gen RCRA	8	9	1
Aircraft Helicopter Fueling/Defueling	Spill Fuels/POL	9	27	18
Portable Engine/Generator O&M	Air Emissions Combustion	22	35	13
Soil Excavation/Grading	Air Emissions Particulate	35	32	3
Soil Excavation/Grading	Stormwater Disch Nonpoint	43	29	14
Used Oil/Antifreeze Accumulation	Spill Fuels/POL	44	16	28
Vehicle Refueling	Air Emissions VOC	14	44	30
Vehicle Refueling	Spill Fuels/POL	15	45	30
			<b>Average</b>	<b>13.4</b>
			<b>Agreement</b>	<b>45.2%</b>



# Qualitative to Quantitative

**MCAS Camp Pendleton Environmental Management System Database**

**Quantitative Equivalence**

➡ *Select a Qualitative Impact Measure or General Risk Factor from one of the list boxes below:*

**- Qualitative Impact Measures -**

	Coefficient
fiscal	3
legal	5
mission/technical	4
no	0
political	1
somewhat	1
TBD	1
yes	2

**- Frequency Measures -**

	Coefficient
Daily	30
Weekly	20
Bi-weekly	10
Monthly	6
Quarterly	4
Semi-annually	2
Annually	1
As Required	1
Undetermined	1
As Directed	1

**- General Risk Factors -**

	Coefficient
Location	1
Organization	1
Frequency	1
Permit	1
Task	1
Audit	2
Training	2
Impact	1

➡ *Edit Quantitative Equivalence Coefficient here:*

Save Changes 

Return to PAIR Menu

Return to Main Menu





## MCAS Camp Pendleton Environmental Management System Database

### Add / Edit Practice - Aspect (PA) to Location and Frequency

Click to Open an Inventory Editor:

- Add/Edit Practices
- Add / Edit Aspects
- Add / Edit Impacts

Select PA:

Switch to Select by Location

To create a new PA-Location combo or to modify an existing one, identify Frequency here:

Select Frequency

Reset/Clear Program

Associated Locations	Frequency
23108 / HAZ FLAM STORE	Daily
23109 / HAZ FLAM STOR @B2396	Daily
23110 / HAZ FLAM STORE @B2399	Daily
23111 / HAZ FLAM STORE @ 2397	Daily
23140 / HAZ FLAM STORAGE	Daily
23143 / HAZ FLAM STOR @B23166	Daily
23168 / HAZMAT SATLITE BLDG @23170 W	Daily
23169 / HAZMAT SATLITE BLDG@23170(E)	Daily
23172 / HAZ SATLITE SITE FOR BLDG 2360	Daily

Non-Associated Locations
201076 / TAXIWAY CLASS A
201901 / AIRCRAFT PARKING APRON
202080 / PARKING AREA-23 AREA
202133 / TACTICAL SUPPORT VAN PADS
202919 / TOWWAY
204020 / PARKING-25 AREA
204022 / ROAD-25 AREA
206003 / COMBAT ORD LOADING PD
206006 / ARMING DEARMING PAD
220109 / MCB FMD HQ
22165 / MCB AC/S Environmental HQ
223201 / LPG TANK @B23170
223202 / LPG TANK @ B23101
223204 / LPG TANK @ B23145
223205 / LPG TANK @B23122
223206 / LPG TANK @B2360
223207 / ACFT READY FUEL STG TANK
223208 / EXPEDITIONARY AIR CNTRL SITE
23074 / NEW CHLORINATING FACILITY

Add  
Remove

To EDIT the PROGRAM of a PA combo selected (highlighted) above, choose the appropriate Program from the drop-down (above) and click here:

Edit

Click to Switch Association Editor:

- PA to Impact Editor
- Practice to Aspect Editor

Save Changes:

Return to PAIR Menu

Return to Main Menu

