



# Military Munitions Policy and Guidance – A Regulator's Perspective

SEPTEMBER 14, 2020

US EPA FEDERAL FACILITIES RESTORATION AND REUSE OFFICE

FEDERAL FACILITIES TRAINING

1

1

## Group Poll

How many years of experience do you have with munitions  
cleanup?

- A. 0-2 years
- B. 2-5 years
- C. 5-10 years
- D. More than 10 years

FEDERAL FACILITIES TRAINING

2

2

## Course Overview

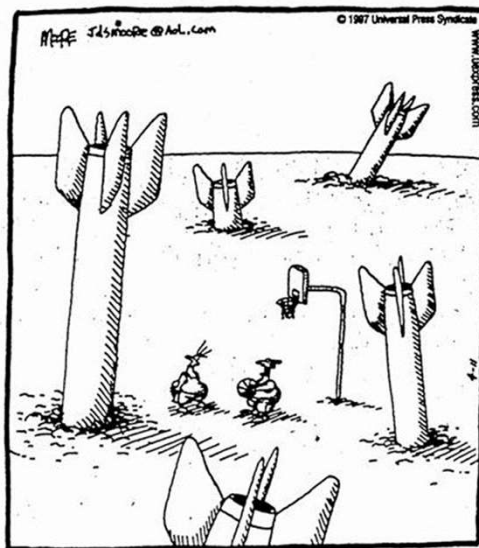
- Munitions Response Authorities under CERCLA
- DoD Military Munitions Response Program (MMRP)
- Fort Ord Case Study
- EPA Regulations and Guidance
- Detection Technologies
- UFP-QAPP
- EPA and DoD Partnerships
- MMRP Unique Challenges



This Photo by Unknown Author is licensed under CC BY

3

### IN THE BLEACHERS



"Maybe we shouldn't play here."

The Problem

4



5

# Munitions Response Authorities under CERCLA

---

FEDERAL FACILITIES TRAINING 6

6

## CERCLA Response Authorities

- ❑ Removal actions – §104
- ❑ Remedial actions – §104 and 121
- ❑ Federal Facilities – §120
- ❑ On-site actions are exempt from administrative and permitting requirements.
- ❑ *Key Point* – same regulatory process for munitions as other contaminants

7

### CERCLA Removal Actions (§104)

Removal process is generally implemented more quickly than remedial approach

#### Three types of removal actions:

- Emergency, time-critical = “hours”
- Time-critical = less than six months to plan
- Non-time-critical = greater than six months to plan

8

## CERCLA Remedial Response (§104 and 121)

---

- Used to achieve permanent remedies (investigation and response).
- Typically will address:
  - Land use issues
  - Type of remedy
  - Use of institutional controls
  - Soil and groundwater remediation
- Remedial actions must meet CERCLA and NCP criteria and NCP expectations.

9

## Executive Order (E.O.) 12580

---

- Delegates President's CERCLA Authority to Federal Land Holding Agencies
- Most statutory functions are delegated to EPA Administrator
- Lead agency is responsible for cleanup of the site
- Agencies must address responsibility when transferring property

10

## E.O. 12580 (cont.)

- ❑ Delegation of authority is subject to CERCLA Section 120
- ❑ Federal agency conducts CERCLA response action
- ❑ EPA concurs/approves on remedial actions at NPL sites per FFA and may select remedies if parties don't agree
- ❑ State and Tribal governments
  - Are consulted
  - Have independent authorities

11

## NCP Expectations

- ❑ Treat principal threats
- ❑ Use combination of treatment and land use controls/institutional controls (LUCs/ICs) where appropriate
- ❑ LUCs/ICs where appropriate
- ❑ Innovative technologies

Source: 40 CFR 300.430(a)(1)(iii)

12

# DoD Military Munitions Response Program (MMRP)

13



## MMRP

- Definitions
- Key Regulatory Drivers
  - CERCLA (Superfund)
  - RCRA (Solid/Hazardous Waste)
  - Executive Order (EO) 12580
  - Superfund Amendments and Reauthorization Act (SARA)
    - Extended CERCLA to Federal Facilities and established the Defense Environmental Restoration Program (DERP)
  - National Oil and Hazardous Substances Pollution Contingency Plan (NCP)
- EPA Policy and Guidance
- DoD Policy and Guidance
- State Laws and Requirements

14

## What is the MMRP?

- ❑ Defense Environmental Restoration Program (DERP)\*
  - Installation Restoration Program (IRP)
  - Military Munitions Response Program (MMRP)
- ❑ In 2001 10 U.S.C. Section 2710 directed DoD to establish the MMRP to address Munitions Response Sites (MRSs) known or suspected to contain UXO, DMM, or MC.
- ❑ MMRP addresses Munitions Response Areas (MRA) and Munitions Response Sites (MRS) on:
  - Active Installations
  - Formerly Used Defense Sites (FUDS) Properties
  - Base Realignment and Closure (BRAC) Locations

\*10 U.S.C. Section 2701

15

## Agencies Involved with Munitions Response

- ❑ Environmental Protection Agency (EPA)
- ❑ DoD
- ❑ States
- ❑ Tribes
- ❑ Federal Land Managers (e.g., Department of Interior, Department of Agriculture)
- ❑ Other Stakeholders

16



## EPA Oversight and Regulatory Offices

---

- ❑ Federal Facilities Restoration and Reuse Office (FFRRO), OLEM
- ❑ Office of Resource Conservation and Recovery (ORCR), OLEM
- ❑ Office of Superfund Remediation and Technology Innovation (OSRTI), OLEM
- ❑ Federal Facilities Enforcement Office (FFEO), OECA
- ❑ Regional Offices

EPA Military Munitions Website:  
<https://www.epa.gov/fedfac/military-munitionsunexploded-ordnance>

17

## DoD Organization

---

- ❑ Office of the Secretary of Defense
  - DoD Explosives Safety Board
- ❑ DoD Components
  - Secretariat and Staff
  - Field Operating Agency/Installation Remedial Project Mangers
  - DoD Component Explosives Safety Offices
    - U.S. Army Technical Center for Explosives Safety
    - Naval Explosive Ordnance and Safety and Security (NOSSA)
    - Air Force Safety Center

18

## Definitions

- The term “**military munitions**” includes all types of conventional and chemical ammunition products and their components, produced or used by the armed forces for national defense and security

[Full definition at 10 U.S.C. 101(e)(4)]

- The term “**munitions constituents**” means any materials originating from unexploded ordnance, discarded military munitions, or other military munitions

[Full definition at 10 U.S.C. 2710(e)(3)]

## Definitions (cont.)

- The term “**munitions and explosives of concern**” or **MEC** refers to specific categories of military munitions that may pose unique explosives safety risks:
  - Unexploded Ordnance (UXO);
  - Discarded Military Munitions (DMM); or
  - Munitions constituents (MC) present in high enough concentrations to pose an explosive hazard.

[Full definition at 32 CFR 179.3 ]

## Definitions (cont.)

- The term “**unexploded ordnance**” or **UXO** refers to military munitions that have been:
  - primed, fuzed, armed, or otherwise prepared for action, and
  - have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material and
  - remain unexploded either by malfunction, design, or any other cause

[Full definition at 10 U.S.C. 101(e)(5)]

- The term “**discarded military munitions**” or **DMM** means military munitions that have been abandoned without proper disposal.

[Full definition at 10 U.S.C. 2710(e)(2)]

21

## Quiz

What is the difference between UXO and DMM?

- A) There is none.
- B) UXO has been fired/emplaced and DMM has not.
- C) DMM has been fired/emplaced and UXO as not.
- D) UXO is MEC and DMM is not.

22

## MMRP Site Inventory

---

- ❑ The FY Defense Environmental Programs Annual Report to Congress identifies the
  - Number of munitions response sites (MRSs)
  - Funding obligated to cleanup MRSs

<https://www.denix.osd.mil/arc/index.html>

<https://www.denix.osd.mil/mmrp/mrsi/home/>

23

## Munitions Response Site Prioritization Protocol (MRSPP)

---

- ❑ 32 CFR Section 179 established the Protocol to evaluate the primary hazards at munitions response sites.
- ❑ Three modules evaluate the unique characteristics of each hazard type:
  - Explosive Hazard Evaluation (EHE) Module
  - Chemical Warfare Material Hazard Evaluation (CHE) Module
  - Health Hazard Evaluation (HHE) Module
- ❑ National level ranking tool
- ❑ Review and update each munitions response site (MRS) priority at least annually to reflect any new information that affects the MRS priority.

24

# MMRP Unique Challenges

- ❑ No promulgated regulatory standards or “safe” levels
- ❑ Unique risks
  - Acute hazard
  - Direct interaction may cause serious injury or death
  - Discrete hazardous items, not plumes
  - Attractive nuisance

25



## MMRP Unique Challenges (cont.)

- ❑ Variety of site conditions –MRS may vary greatly in size and topography
- ❑ Many types of munitions

26



27

MMRP  
Unique  
Challenges  
(cont.)

-  Technology limitations
-  Costs – may be orders of magnitude greater than traditional contaminants

FEDERAL FACILITIES TRAINING 28

28

## Quiz

DERP is an acronym for what?

- A) Deterring Explosives Restoration Program
- B) Defense Environmental Restoration Program
- C) Dangerous Environment Response Program
- D) Defensive Engagement Response Program

FEDERAL FACILITIES TRAINING

29

29

## Fort Ord Case Study

FEDERAL FACILITIES TRAINING

30

30

# EPA Regulations and Guidance

---

31

## Munitions and RCRA

---

- ❑ RCRA is the source of Military Munitions Rule.
- ❑ Authorized States may exercise their RCRA authorities through orders and permits.
- ❑ Examples of RCRA Authority
  - Characteristics tests
  - Management standards for hazardous waste
  - Standards for excluding processed scrap metal that can be recycled
  - Management standards for open burning/open detonation (OB/OD)

32



## EPA Military Munitions Rule (February 12, 1997)

---

- ❑ Avoids imposing RCRA Subtitle C on operational military ranges
  - Exempts munitions used for intended purpose and remaining on operational ranges from regulatory definition of solid waste under RCRA.
  
- ❑ Identifies when a military munitions becomes a waste
  
- ❑ Maintains RCRA Federal-State-Tribal Relationship

33

## EPA Military Munitions Rule (cont.)

---

- ❑ Exempts the following from being subject to RCRA:
  - “Unsanitized” nuclear weapon components
  - Unserviceable munitions
  - Munitions used in training, research, development, test, and evaluation and range clearance of active/inactive ranges
  - Munitions being repaired, recycled, disassembled, reclaimed or reconfigured
  
- ❑ Includes the following as being subject to RCRA:
  - Overpacked leaking munitions
  - Abandoned munitions
  - On-range disposal (landfill) of munitions

34

## EPA Military Munitions Rule (cont.)

- ❑ Emergency Response
  - Military Munitions Rule states that an explosives or munitions emergency response may be taken if there is an imminent and substantial threat to human health and the environment.
  - RCRA Munitions Rule exempts explosives or munitions involved emergency responses from RCRA Subtitle C hazardous waste regulatory requirements.

FEDERAL FACILITIES TRAINING

35

35

## EPA Munitions Response Guidelines (OSWER Directive 9200.1-101, July 27, 2010)

- ❑ Provides a framework to EPA Regional Offices overseeing responses involving munitions and explosives of concern (MEC) at locations other than operational ranges.
- ❑ Guides responding to sites where explosive hazards may be an additional or principal threat.
- ❑ Addresses situations where DoD Components conduct munitions response as the Lead Agency, and the EPA is responsible for oversight.

[Munitions Response Guidelines \(OSWER Directive 9200.1-101\)](#)

FEDERAL FACILITIES TRAINING

36

36

## EPA Munitions Response Guidelines

- General regulatory authorities
- Use of the CERCLA, RCRA, and other authorities
- Involvement of State and Tribal environmental regulator and the public
- Explosives safety principles
- Site characterization principles
- Geophysical Detection Techniques for MEC
- Transfer of ranges
- Land use and institutional controls
- Enforcement principles

FEDERAL FACILITIES TRAINING

37

37

## EPA Munitions Policy Issues

---

- Munitions as a hazardous waste/hazardous substance
- Principal threat waste determination
- Unlimited use/unrestricted exposure (UU/UE)
- Risk/Hazard Assessment

FEDERAL FACILITIES TRAINING

38

38

# Detection Technology

---

39



## MEC Detection Technologies

---

**Magnetic methods:** A **passive** detection method that measures naturally occurring and man-made magnetic fields



**Electromagnetic methods:** An **active** detection method that generates a signal, which in turn, induces buried metal to generate a magnetic field

40



## MEC Geophysical Systems Types

**Digital Systems:** digital geophysical mapping (DGM) systems.

- Records all the data
- Comprehensive analysis → identifies anomalies

**Analog Systems:** analog geophysical mapping (AGM), also commonly called 'mag and flag' (M&F) or 'mag and dig'

- No record of data or interpretation
- "Real-time" analysis identifies anomalies

41

41

## Advanced Geophysical Classification

New **MEC** EM technologies have been developed and tested under the Strategic Environmental Research and Development Program & Environmental Security Technology Certification Program



**DAGCAP**- DoD Advanced Geophysical Classification Accreditation Program



42

42

# UFP QAPP

---

43

## QUIZ

What does UFP-QAPP stand for?

- A. Uniform Font Program for Quality Assurance in Proposed Plans
- B. Understated Facts Project for Quality Assumption Project Plans
- C. Uninformed Federal Policy for Quality Aggregated Pilot Programs
- D. Uniform Federal Policy for Quality Assurance Project Plans

44

## UFP-QAPP Policy and Applicability

---

- ❑ The Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) is a tool to guide project teams through the systematic planning process.
  
- ❑ UFP QAPP Munitions Response Toolkit
  - Module 1 - Remedial Investigation (RI)/Feasibility Study (FS)
  - Module 2 - Remedial Action (RA)
    - Updating the AGCMR-QAPP as MR-QAPP Module 2
    - Will expand AGCMR-QAPP beyond just the use of AGC

UFP QAPP info and other information at:  
<https://www.epa.gov/fedfac/assuring-quality-federal-cleanups>

## EPA and DoD Partnerships

---

- ❑ Partnering between DoD and EPA maximizes transparency, public participation, and collaboration that is vital to ensure cost effective and efficient decisions about the MMRP.
  
- ❑ [UXO Management Principles](#), March 7, 2000
  
- ❑ Munitions Response Dialogue
  
- ❑ [Intergovernmental Data Quality Task Force](#)



## Other Munitions Sites

- ❑ OB/OD operating sites
- ❑ Operational Ranges
  - Addressed under various regulations, as appropriate
  - NOT DERP eligible

FEDERAL FACILITIES TRAINING

47

47

## Summary

- ❑ EPA oversees DoD's cleanup of munitions response sites using the CERCLA process or as hazardous waste under RCRA Subtitle C.
- ❑ CERCLA is the preferred response mechanism for munitions response actions.
- ❑ DoD Components may conduct CERCLA response actions per the NCP. Response activities may include removal actions, remedial actions, or a combination of the two.
- ❑ Same process as other hazardous substances.

FEDERAL FACILITIES TRAINING

48

48



Questions?

Contact Info:

Doug Maddox

USEPA Federal Facilities Restoration  
and Reuse Office

[maddox.doug@epa.gov](mailto:maddox.doug@epa.gov)

202-564-0553

FEDERAL FACILITIES TRAINING

49