Information Paper

Defense Environmental Restoration Program (DERP)
Formerly Used Defense Sites (FUDS)

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Site Inspections Under the Military Munitions Response Program (MMRP)

Purpose

This information paper provides regulators, tribes, and other stakeholders answers to basic questions about the U.S. Army Corps of Engineers (USACE)'s initiative to conduct Site Inspections (SI) on Munitions Response Sites (MRSs) located on Formerly Used Defense Sites (FUDS) by the end of Fiscal Year (FY) 2010, under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

Overview

In 2004, the Office of the Deputy Under Secretary of Defense for Installations and Environment (ODUSD(I&E)) established a goal to complete an SI for each MRS in its inventory by the end of FY 2010. DoD established this goal to ensure that all MRSs are adequately assessed and prioritized for further action. The SI is a critical step in identifying and assessing potential hazards present and collecting the data necessary for determining priorities for further action. The SI is also important for developing a conceptual site model that leads to design of necessary response actions.

To accomplish the goal for the FUDS MMRP, USACE developed a nation-wide approach to conducting SIs. Each eligible FUDS project containing one or more MRS is evaluated in compliance with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and in adherence to DoD, Army, and USACE policy, guidance, and requirements. In 2005, USACE obligated approximately $10M for program start-up activities and the award of contract task orders for 77 SIs. In December 2005, USACE awarded an additional 119 SIs and plans to award another 50 or so later in 2006. The annual USACE SI budget for FY06 to FY10 is $25M. The total number of SIs required, based on the current inventory of MMRP projects, is 962.

USACE's primary objective for the SI is to determine whether an MMRP FUDS project warrants further munitions response or no further action should be taken on the part of DoD. Using existing MRS information as a basis, USACE is conducting reconnaissance inspections and collecting environmental samples as well as other site-specific data to meet this and other SI objectives.

Authority

USACE conducts munitions response actions under the provisions of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), Executive Orders 12580 and 13016, and the safety requirements of the DoD Explosives Safety Board (DDESB). USACE Engineering Regulation (ER) 200-3-1, the FUDS Program Policy, specifies that the CERCLA remedial process be followed for projects in the MMRP. By legal definition, the following is encompassed in the MMRP: Unexploded ordnance (UXO) and discarded military munitions (DMM), together referred to as munitions and explosives of concern (MEC); and munitions constituents (MC). MC are considered MEC when found at concentrations high enough to present an explosive hazard (see p. 6 for legal definitions).

USACE MMRP SI Process

The following activities are conducted during the MMRP SI:

- Review of historical documentation (e.g., FUDS inventory progress reports (INPRs), Archives Search Reports (ASRs), and reports of previous investigations) to identify pertinent data gaps and develop an understanding of MRS history
- Formation of a Technical Project Planning (TPP) team and preparation of a conceptual site model per Engineering Manual (EM) 1110-1-1200, Conceptual Site Models for Ordnance and Explosives (OE) and Hazardous, Toxic, and Radioactive Waste (HTRW) Projects
- Execution of TPP sessions with environmental regulators and safety officials, affected American Indians and Alaska Natives, and other stakeholders (e.g., property owners), as appropriate, to determine data quality objectives and discuss the scope of the SI
- Preparation of a draft and final TPP memorandum to document TPP discussions and agreements, with distribution to attendees
- Preparation of a draft and final project-specific work plan, with copies delivered to environmental regulators and safety officials, affected American Indians and Alaska Natives, and other stakeholders, as appropriate, to provide opportunity for review and comment
- Execution of field work, including reconnaissance inspections and any appropriate soil, sediment, groundwater, and surface water sampling to evaluate potential environmental contamination from MC
- Collection of other data necessary for:
  - USACE and its contractors to evaluate each MRS using DoD's Munitions Response Site Prioritization Protocol (Protocol)
  - U.S. Environmental Protection Agency (EPA) to evaluate the FUDS project using the Hazard Ranking System (HRS)
- Execution of a second TPP session to discuss the results of the SI and draft SI report, including the draft Protocol results, with the TPP team
- Preparation and distribution of a draft and final SI report for review and comment

The amount and type of fieldwork required during an SI varies, depending on available information, the MRS's history and conditions, and the agreed upon data quality objectives.

Given the MRS's history and the type of munitions involved, the presence of a single MEC may signal a need for a detailed investigation of the nature and extent of contamination (i.e., a remedial investigation and feasibility study (RI/FS)). The SI teams use existing data, reconnaissance observations, and magnetometer-assisted surface inspections, where necessary, to determine whether MEC is present and, in general, where it is located. USACE is not conducting any intrusive investigations for MEC during the SI.

For MC, historical information on the type, amount, and location of munitions-related activities that could have resulted in MC being present, as well as migration pathways and the location of receptor populations, are used to determine whether and where soil, sediment, surface water, or groundwater samples are collected. Biased sampling locations are selected in those areas most likely to contain MC. Samples are collected and analyzed by a combination of approved field screening and testing methods and EPA-approved laboratory methods.

If separate non-munitions related environmental contamination concerns that are associated with DoD's past use of the property are identified during the MMRP SI, the project team will notify the USACE Geographic District, which in turn will evaluate the hazard for potential addition of an HTRW or other type of project under the FUDS program. The exception is when the non munitions-related contamination is considered incidental or specifically tied to MC-related contamination (e.g., evaluation of skeet ranges for polynuclear aromatic hydrocarbons).

Regulatory Involvement

The involvement and support of environmental regulators, safety officials, American Indians, and Alaska Natives is critical to the success of an SI, as land owners and surrounding communities attempt to understand the CERCLA process and potential risks, and as USACE and other stakeholders consider future actions. The Army and USACE have made a commitment to working with regulators, officials, and tribes to achieve mutually agreeable response actions. To that end, USACE is involving these stakeholders, as appropriate, in the SI planning stages and is providing them the opportunity for review and comment on project-specific documents.

USACE or its representative delivers project-specific read-ahead packages and coordinates the proposed times and locations of TPP sessions with applicable environmental regulators, safety officials, and affected American Indians and Alaska Natives. TPP sessions are held in accordance with EM 200-1-2, Technical Project Planning (TPP) Process. At those TPP sessions, input is sought from participants to assist in the development of the conceptual site model, and attempts are made to develop a consensus regarding data collection needs and data quality objectives.

After the initial TPP session, USACE provides a 45-day regulatory review period on the draft project-specific work plan, which is a supplement to the applicable programmatic regional work plan. Upon completion of fieldwork and preparation of the draft SI report, USACE provides a 45-day review period for the draft SI report. After this review period, a second TPP session is held to discuss the results of the SI and determine if the agreed-upon project data quality objectives have been achieved. When multiple regulatory agencies are involved, it is important that the lead regulator be clearly identified and communicated to all parties.

Public Involvement

USACE conducts public involvement activities during the SI per Engineering Pamphlet (EP) 1110-3-8, Public Participation in the Defense Environmental Restoration Program for Formerly Used Defense Sites. To assess the concerns of the community and affected parties, USACE contacts and discusses the project with local government officials, property owners, and other stakeholders. Stakeholders other than regulators and tribes described above who are directly involved with the property may be included in TPP sessions; however, each FUDS and its associated community needs are unique, and public involvement activities vary from project to project.

Lead regulators play an important role in providing information about SI activities to the public. Where Restoration Advisory Boards or Technical Advisory Committees exist, USACE involves them in TPP sessions, as appropriate, and provides copies of draft work plans and reports for their review and comment. When the SI indicates an RI/FS is required, USACE will prepare a public involvement plan and conduct community interviews as soon as practicable.

A general information fact sheet about the FUDS MMRP SI has been prepared and is distributed to interested landowners and other members of the community, as needed. As appropriate, information sessions are held with the general public to address community concerns and explain SI activities.

USACE SI Organization

To provide consistency and ensure project objectives are being met, the USACE Military Munitions Center of Expertise (MM CX) in Huntsville, Alabama, is assisting Headquarters USACE in overall management of the MMRP SI program. As part of that effort, the MM CX provides guidance to project managers and ensures appropriate reviews of SI deliverables are conducted. USACE also conducts independent technical reviews through a multi-disciplinary review team.

Contracts have been awarded to conduct SIs in four regions of the U.S. and its territories, and USACE regional program managers in four authorized technical centers manage and oversee the contracts. The regional program managers are located at the MM Design Centers in Baltimore, Maryland; Huntsville, Alabama; and Omaha, Nebraska; and at the South Pacific Division Range Support Center, which includes personnel in Albuquerque, New Mexico and across California, (see summary table below for regional responsibilities). The Chemical Warfare Materiel (CWM) Design Center in Huntsville, Alabama is responsible for conducting SIs at MMRP FUDS projects known or suspected to contain CWM.

USACE Geographic Districts play a key role in the SI. The Districts provide additional project information, contact property owners to obtain rights of entry, coordinate TPP sessions, review all project deliverables, and conduct general project oversight. The Geographic Districts also coordinate document reviews with the TPP team members and are responsible for establishing permanent project records.

USACE Regional Responsibilities
for FUDS MMRP SIs in FY 2005 and 2006

- **Northeast U.S:**
  - MM Design Center: Baltimore, Maryland
  - Geographic Districts: Baltimore, New England, New York, and Norfolk
  - Contractor: Alion Science & Technology
  - States: Connecticut, Maine, Vermont, Delaware, Massachusetts, Maryland, New Jersey, New Hampshire, New York, Pennsylvania, Rhode Island, Virginia, and Washington D.C., and West Virginia

- **Southeast U.S. and Pacific:**
  - MM Design Center: Huntsville, Alabama
  - Geographic Districts: Charleston, Jacksonville, Mobile, Savannah, Wilmington, Louisville (Kentucky projects only), Honolulu, and Alaska
  - Contractor: Parsons Infrastructure & Technology Group
  - States and Territories: North Carolina, Kentucky, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Alaska, Hawaii, the Pacific Island Territories, and Puerto Rico

- **Midwest and Northwest U.S:**
  - MM Design Center: Omaha, Nebraska
  - Geographic Districts: Louisville, Kansas City, Omaha, and Seattle
  - Contractor: Shaw Environmental
  - States: Washington, Oregon, Idaho, Michigan, Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Indiana, Wisconsin, Illinois, Iowa, Missouri, Ohio, and Utah

- **Western U.S:**
  - Range Support Center: South Pacific Division, California
  - Geographic Districts: Albuquerque, Los Angeles, Sacramento, Fort Worth, Little Rock, and Tulsa
  - Contractor: Parsons Infrastructure & Technology Group
  - States: Arizona, California, New Mexico, Nevada, Texas, Oklahoma, Arkansas, and Louisiana

References

Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 UXC § 9601 *et seq.*)

Superfund Amendments and Reauthorization Act of 1986 (10 USC § 2701 *et seq.*)

National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300)

Executive Order 12580, Superfund Implementation, 23 January 1987

Executive Order 13016, CERCLA Amendments (Amends 12580), 28 August 1996

Munitions Response Site Prioritization Protocol (32 CFR Part 179)

DoD 6055.9-STD, DoD Ammunitions and Explosives Safety Standards

USACE Engineering Regulation (ER) 200-3-1, FUDS Program Policy

USACE Engineering Manual (EM) 200-1-2, Technical Project Planning Process

EM 1110-1-1200, Conceptual Site Models for Ordnance and Explosives (OE) and Hazardous, Toxic, and Radioactive Waste (HTRW) Projects

USACE Engineering Pamphlet (EP) 1110-3-8, Public Participation in the Defense Environmental Restoration Program for Formerly Used Defense Sites

Definitions

Discarded Military Munitions (DMM). Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of, consistent with applicable environmental laws and regulations. (10 USC 2710(e)(2))

Munitions and Explosives of Concern (MEC): This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks means: (A) UXO, as defined in 10 USC 101(e)(5); (B) DMM, as defined in 10 USC 2710(e)(2); or (C) Munitions constituents (MC) (e.g., TNT, RDX), as defined in 10 USC 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

Munitions Constituents (MC): Any materials originating from UXO, DMM, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions. (10 U.S.C. 2710(e)(3))

Munitions Response. Response actions, including investigation, removal actions and remedial actions to address the explosives safety, human health, or environmental risks presented by UXO, DMM, or MC, or to support a determination that no removal or remedial action is required.

Munitions Response Site (MRS). A discrete location that is known to require a munitions response.

Unexploded Ordnance (UXO). Military munitions that: (A) have been primed, fuzed, armed, or otherwise prepared for action; (B) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (C) remain unexploded whether by malfunction, design, or any other cause. (10 U.S.C. 101(e)(5) (A) through (C))

MMRP Resources on the Internet

- DoD Environmental Cleanup: https://www.denix.osd.mil/denix/Public/Library/Cleanup/CleanupOfc/index.html. Provides information on the Defense Environmental Restoration Program (DERP) with links to current MMRP initiatives, including the Munitions Response Site Prioritization Protocol.
  - From https://www.denix.osd.mil, find documents on munitions response program by selecting Browse by DUSD(I&E)/Subject Areas/Cleanup/Defense Environmental Restoration Program/Program Categories/Military Munitions Response Program
  - For copy of Protocol in Federal Register: http://www.gpoaccess.gov/fr/index.html Browse back issues/DoD/MRSPP (Oct 5, 2005)

- Munitions Inventory: http://derparc.egovservices.net/Derparc_FY04/do/mmrp. Provides information on specific areas where munitions are known or suspected.

- DoD Explosives Safety Board: http://www.ddesb.pentagon.mil. Provides information on DoD safety policy and procedures for conducting ordnance clearance projects.

- DoD safety education program: https://www.denix.osd.mil/denix/public/library/explosives/UXOsafety/uxosafety.html Provides basic educational material to be used for UXO safety communications.

- USACE FUDS Program: http://hq.environmental.usace.army.mil/programs/fuds/fuds.html. Provides a link to ER 200-3-1 and other information on the FUDS program.

- USACE Military Munitions Center of Expertise: http://www.hnd.usace.army.mil/oew/techguid.aspx. Provides multiple guidance

documents (engineering pamphlets and manuals) for USACE-led munitions response activities.

- Interstate Technical Regulatory Commission (ITRC) UXO Team: http://www.itrcweb.org/teampublic_UXO.asp. Provides munitions response guidance documents and internet-based training.

- EPA Munitions Response Guidance: http://www.epa.gov/swerffrr/pdf/mra_hbook_5_05.pdf Handbook on the Management of Munitions Response Actions (~300 pages)

- EPA CERCLA Guidance: http://www.epa.gov/superfund/sites/npl/hrsres NPL-HRS toolbox for SI guidance (1992) http://w.epa.gov/fedfac/pdf/ff_si_guide.pdf Federal Facilities Remedial Site Investigation (SI) Summary Guide

- Munitions Constituents:

  http://www.hnc.usace.army.mil/oew/Proceddocsnw.aspx USACE Technical Update on MC sampling procedures and analytical requirements.

  http://el.erdc.usace.army.mil USACE Environmental Laboratory, Engineer Research and Development Center (Vicksburg, MS). Multiple technical papers on the distribution and fate of energetics on DoD testing and training ranges. From home page, select "What We Provide" link/Documents (under Technology Transfer Products)/ Technical Reports/ Strategic Environmental Research and Development Program (SERDP)

  www.crrel.usace.army.mil/techpub USACE Engineer Research and Development Center, Cold Regions Research and Development Center (CRREL) (Hanover, NH). Multiple technical reports on identity and distribution of energetics at military live-fire ranges. From web site, browse "Environmental Cleanup" under Subject Areas to see a list of technical reports.

  http://pubs.drdc-rddc.dnd.ca/BAIS/pcandid/www/engpub/SF Defence Research and Development Canada, technical reports on military range sampling in Canada.

  http://fate.clu-in.org/exp.asp U.S. EPA Field Analytical Technologies Encyclopedia (FATE) explosives module. Provides background information on MC and technologies available to characterize explosives and degradation products.