

# FACT SHEET

## Crab Orchard National Wildlife Refuge Explosives/Munitions Manufacturing Area (EMMA) Operable Unit (OU) Remedial Action

EMMA OU Fact Sheet

March 1998

### *Introduction*

This fact sheet describes the proposed Remedial Action to address contaminated soils within the Explosives/Munitions Manufacturing Area (EMMA) Operable Unit (OU) at the Crab Orchard National Wildlife Refuge. This fact sheet is provided by the U.S. Army Corps of Engineers (USACE), in consultation with the U.S. Environmental Protection Agency (USEPA), the Illinois Environmental Protection Agency (IEPA), and the U.S. Fish and Wildlife Service (USFWS).

This fact sheet summarizes:

- Site background information
- The Record of Decision (ROD), which describes the selection of the remedy
- The specific activities necessary to implement the remedy
- The proposed schedule for completion of the remedy

### *Site Background Information*

The former Illinois Ordnance Plant (IOP) is located approximately 5 miles west of Marion, Illinois. The former IOP was a load, assemble, and pack facility producing high explosive general-purpose bombs, anti-tank mines, and shells/projectiles. Explosives and munitions were produced from June 1942 until August 1945.

The former IOP property was transferred to the U.S. Department of Interior in 1947. In that same year, most of the property was established as the Crab Orchard National Wildlife Refuge. In 1987, the Refuge was placed on the Superfund National Priorities List, a list identifying hazardous waste sites requiring cleanup.

Within the Refuge, six separate types of cleanup (designated as "operable units" or OUs) have been identified based on the type of contamination present. This fact sheet deals only with the Explosives/Munitions Manufacturing Area (EMMA) OU, which includes 15 distinct locations within the Refuge that were identified as potential explosives or munitions disposal or detonation areas.

Upon investigation and evaluation of the 15 suspect EMMA OU locations, 2 of these locations were determined to require remediation to protect public health and the environment. These two locations are designated as COC-3 and COP-4 (the COC and COP labels refer to the location's proximity to the Crab Orchard Cemetery and Crab Orchard Plant, respectively). Both sites are less than 4 acres in area.

The principal contaminants at the COC-3 and COP-4 locations are explosive compounds (e.g., trinitrotoluene, or TNT) and lead. Small areas at both locations contain explosive compounds in soils at



concentrations greater than 10%, a level that the U.S. Army has determined requires special safety considerations. Although the actual risk of fire or explosion while handling these soils is low, cleanup activities will be monitored by specially trained explosive safety experts as a precautionary measure.

### *Record of Decision*

As part of the Superfund regulatory process, a Record of Decision (ROD) is issued by the U.S. EPA, which identifies the selected cleanup approach and the rationale for its selection. The ROD for the EMMA OU was issued in February 1997, and specified measures to remove the most highly contaminated soils and prevent direct contact with any remaining soils. Specifically, the following remedial actions were prescribed for COC-3 and COP-4:

- Excavation and offsite treatment (incineration) for soils with over 10% explosives content
- Removal of an additional 2-ft of soil at COP-4
- Post-excavation soil sampling and analysis to ensure that remaining soils are not considered hazardous waste
- Placement of a minimum of 2 feet of clean soil over the excavated areas and adjacent areas with levels of lead and explosive compounds over a specified action level
- Grading and seeding of the area to allow the reestablishment of natural plant species
- Institutional controls (e.g., deed restrictions) to restrict subgrade construction or water well installations
- Long term maintenance and groundwater monitoring

### *Implementing the Remedy*

The actions described in the ROD are relatively straightforward, and for the most part, will resemble a typical earthwork project. One novel aspect of the proposed remedy is the use of an onsite laboratory to define the limits of excavation and the area to be covered. The onsite laboratory will expedite excavation work and will allow more precise delineation of the areas to be remediated. Anticipated activities involved in implementing the remedy include:

- Clearing of trees
- Access road improvements
- Establishment of work zones and staging areas
- Soil sampling and analysis to establish remediation limits
- Excavation, blending, and offsite disposal of contaminated soils
- Confirmation soil sampling and analysis
- Construction and grading of soil cover
- Seeding and maintenance of area
- Decontamination of equipment prior to demobilizing from site

In addition to the precautionary measures to address explosive safety issues, measures will be taken to control runoff and dust generation during construction.

### *Remedial Action Schedule*

A Draft Remedial Action Work Plan describing the activities listed above was submitted to the U.S. EPA, the IEPA, and the USFWS in early March. In addition to the Draft RA Work Plan, a separate submission addressing explosive safety will soon be submitted for review by U.S. Army explosive experts located in Huntsville, AL. These reviews should be completed in time to allow the remedy to be implemented during the 1998 construction season.

**Summary**

The proposed Remedial Action at the EMMA OU locations is designed to remove the most highly contaminated soils and reduce any residual contamination from direct contact by humans or wildlife. The proposed remedy seeks to restore the locations in a manner consistent with the surrounding property use as a wildlife refuge, and will be implemented in a manner to minimize environmental and safety concerns during construction.

**For Further Information**

If you have any questions regarding this fact sheet or any other aspect of the proposed Remedial Action of the EMMA OU, please contact one of the following individuals:

**U.S. Army Corps of Engineers**

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**U.S. Fish and Wildlife Service**

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**Open House**

*The USACE will host an Open House and informational meeting on Thursday, March 19, 1998, at the Crab Orchard National Wildlife Refuge Visitor Center. The Open House will be held from 5 p.m. to 7 p.m. followed by the informational meeting. The USACE and its contractor will present the proposed remedial action at the EMMA OU, and will be available to answer questions and receive comments.*

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Please complete the following form if you wish to be placed on the mailing list for OE EE/CA activities.

Return the form to:

Gary Chisholm ■ U.S. Army Corps of Engineers  
600 Dr. Martin Luther King, Jr., Place ■ Louisville, Kentucky 40202-2230 ■ (502) 625-7010

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Please send information regarding the Refuge OE EE/CA activities to the following address:

Name/Title \_\_\_\_\_  
Organization \_\_\_\_\_  
Street Address \_\_\_\_\_  
City/State/Zip \_\_\_\_\_  
Phone Number (Work) \_\_\_\_\_ (Home) \_\_\_\_\_