INDIANA
DEPARTMENT OF
ENVIRONMENTAL
MANAGEMENT

EPA

Fact Sheet
October 2007
USS Lead, East Chicago, Indiana

Availability Session Nov. 8

Everyone is invited to attend a public meeting/availability session about the post-closure operation and maintenance of the corrective action management unit (CAMU)/landfill associated with the former USS Lead Refinery. The meeting will be held:

Thursday, Nov. 8
5:30 p.m. – 7:30 p.m.
151st Street Recreation Center
4925 Gladiola St.
East Chicago, IN

Information will be displayed about the site, and IDEM and U.S. EPA representatives will be available for discussions during this time.

For Additional Information

Regarding Post-Closure Care, Contact:
Ruth Jean, IDEM
317-232-3398 or 800-451-6027, press 0, request ext. 2-3398, or e-mail rjean@idem.IN.gov

Regarding the CAMU, Contact:
Mirtha Capiro, U.S. EPA, Region 5
312-886-7567, or e-mail capiro.mirtha@epa.gov

The Indiana Department of Environmental Management (IDEM) and the United States Environmental Protection Agency (U.S. EPA) Region 5 have prepared this joint fact sheet to inform the public of the history and current issues at U.S.S. Lead, East Chicago, Indiana.

Facility History

U.S. Smelter and Lead Refinery, Inc. (USS Lead) is located on a 79-acre tract of land in East Chicago, Indiana. From 1906 to 1920, the Delamar Copper Refinery operated at the facility as a copper smelter. In 1920, the property was purchased by U.S. Smelting Refining and Mining and the facility became a lead refinery. The property was later purchased by USS Lead. Between 1972 and 1973, USS Lead was converted to a secondary lead smelter, recovering lead from automobile batteries. All operations ceased in 1985. The facility's hazardous waste management units included calcium sulfate sludge waste piles and baghouse dust waste piles. Other sources of contamination at the facility included stack emissions from blast furnace operations, a slag pile located in the southeast portion of the wetlands, and oil releases into the canal from a nearby above-ground tank. Sharon Steel Corporation, which owned USS Lead, filed for bankruptcy in 1987 and was assigned to Mining Remedial Recovery Co. (MRRC) by the bankruptcy court.

USS Lead is subject to an IDEM interim agreed order and the U.S. EPA requirements under a unilateral administrative order.

Corrective Action Management Unit (CAMU)

Corrective Action Management Units, or "CAMUs," are protective units created under the Resource Conservation and Recovery Act (RCRA) to facilitate treatment, storage, and disposal of hazardous wastes managed for implementing cleanup. Enacted in 1976, RCRA, also known as the Solid Waste Disposal Act, is a federal law that allows for the regulation and management of hazardous waste.

In March 1996, U.S. EPA issued a Statement of Basis that evaluated three remedial alternatives for cleanup of hazardous waste contamination at USS Lead: alternative 1 (excavation, consolidation, and on-site disposal), alternative 2 (excavation, on-site treatment, and off-site disposal), and alternative 3 (excavation, off-site treatment and off-site disposal). The Statement of Basis identified the following as the preferred remedy: alternative 1 for excavation, consolidation and on-site disposal using a CAMU. The CAMU design for USS Lead includes a subsurface slurry wall around the 11-acre CAMU, an engineered final cover, and a long-term ground-water monitoring system in accordance with IDEM requirements.

An official public notice on the Statement of Basis appeared on March 25, 1996, in the Gary, Indiana, *Post-Tribune* and an announcement was broadcast over local public radio. U.S EPA held a public comment period from March 26 to April 24, and from May 20 to June 25, 1996. The administrative record was made available at the East Chicago Public Library, Gary Public Library, Whiting Public Library, and the U.S. EPA Region 5 Chicago office. A public hearing was held at Riley Park Community Center on June 20, 1996.

U.S. EPA issued a CAMU designation for the USS Lead facility on Nov. 8, 1996, along with a response to public comments.

The CAMU facilitates the safe and cost-effective disposal of remediation waste (lead contaminated soil, sediments, debris, and slag) from the site-wide cleanup along with residual soil contamination from various hazardous waste piles subject to IDEM closure and post-closure requirements. Baghouse dust and calcium sulfate sludge from the waste piles were transported off-site for proper disposal. Waste material consolidated in the CAMU consisted of former site buildings, blast furnace slag, battery chips, lead contaminated soil, and contaminated sediment from the on-site canal (stabilized with lime).

Upon completion of soil excavation and disposal activities (November 2002), USS Lead completed construction of the CAMU under the U.S. EPA legal order and completed closure according to IDEM's Interim Agreed Order. The engineered cap design for the CAMU was modified to include a native vegetative cover in coordination with the Natural Resources Damage Assessment (NRDA) for the Grand Calumet River. In addition, the soil excavation in the wetland areas was aimed at recreating the original dune/swale environment. U.S. EPA and IDEM coordinated activities with the NRDA.

Final Cover (Cap)

The CAMU cap consists of the following:

1. Cushion layer: A six-inch thick layer of compacted sand to provide a smooth uniform sub-grade. This layer provides a physical barrier between the geocomposite membrane and the compacted waste below.

2. Geocomposite membrane: This layer is composed of a geosynthetic clay liner (GCL) covered by a 40-milimeter high-density polyethylene (HDPE) geomembrane. The GCL is sodium bentonite (an absorbent type of clay) between two fabric layers. Sodium bentonite expands when wet. The

property of swelling makes sodium bentonite useful as a sealant. The HDPE liner is basically a strong plastic liner. Together, this layer protects the CAMU.

3. Cover layer: The final cover is composed of a 36-inch layer of sand serving as a drainage layer and vegetative base. The sand cover was planted with a diverse mix of native grasses and plants.

The CAMU cap will protect the ground water by preventing rain and snowmelt from soaking through the waste and picking up contaminants. Ground water monitoring, described below, will ensure the cap is functioning properly.

Slurry Wall

The slurry wall consists of a self-hardening, clay-cement mixture. It's a four-inch thick wall extending around the CAMU and 30 feet below the surface to a natural, thick clay layer called the Largo Formation. This wall prevents contamination inside the CAMU from leaving the facility.

The ground water level inside the CAMU is lowered to ensure that contamination does not escape through the slurry wall. This is referred to as an "inward hydraulic gradient." If a leak developed, the water level inside would start to rise. The inward hydraulic gradient has been accomplished by installing six extraction wells operating at a combined total flow rate of approximately three to four gallons per minute. The water extracted is discharged to a sanitary sewer owned by the East Chicago Sanitary Sewer District.

Ground Water Monitoring

Currently, 18 ground water monitoring wells are on the property in addition to the six extraction wells. Five of the 18 are upgradient wells, while the remaining 13 are down-gradient wells. Since November 2000, ground-water monitoring has been conducted quarterly. Ground water protection standards for each substance are based on the Federal Maximum Contaminant Levels (MCLs) found in the Federal Safe Drinking Water Act and, as applicable, ground water background conditions. After several years of monitoring, lead has not been detected in ground water above the MCL of .050 milligrams/liter. Other metals that are present in the waste at lesser concentrations have been detected in ground water, including arsenic, cadmium, selenium, and antimony. The post-closure permit will allow IDEM to monitor these concentrations closely and require corrective action when the ground water protection standard is exceeded. Nine wells will be used for compliance monitoring.

The uppermost aquifer at the USS Lead site is the Calumet Aquifer, extending to a depth of approximately 30 feet below grade. This aquifer is not utilized locally as a drinking water source; instead, the City of East Chicago operates a water treatment plant obtaining the water from Lake Michigan.

Inspections

Inspections will be performed by USS Lead on a quarterly basis, though IDEM may consider semi-annual inspections if USS Lead can demonstrate that the CAMU cap is functioning properly over a period of time. Inspections will focus on security, the CAMU cap, vegetation, drainage, and potential sink holes called subsidence in scientific terms.

Draft Post-Closure Permit

The intent of the Post-Closure Permit is to monitor the operation and maintenance of the CAMU. The draft post-closure permit details activities required to maintain the cap, conduct inspections, and comply with ground water monitoring requirements.

Public Participation

During previous comment periods in 1996, U.S. EPA accepted comments on the proposed remedy for the use of a CAMU at the USS Lead facility. U.S. EPA received five written comments by mail and five oral comments at the public meeting. Fourteen people participated in the public meeting, including community members and groups. Upon completion of public participation, U.S. EPA issued a CAMU designation and response to comments for the USS Lead facility.

In addition to the public participation provided by U.S. EPA in regards to establishment of the CAMU, IDEM set a public comment period on the Draft Post-Closure Permit that closed Sept. 14. The official public notice was published on July 31, 2007, in *The Times*, Munster, Indiana, and broadcast over local radio station *WJOB*. IDEM's Final Permit Decision is pending.

More Information

Copies of the Draft Post-Closure Permit from the USS Lead site are available for public review at IDEM's Northwest Regional Office, 8315 Virginia St., Ste. 1, Merrillville, Ind., and the IDEM File Room at 100 N. Senate Ave. in Indianapolis, Indiana. More information about the site can be found on the following Web page: www.in.gov/idem/permits/land/notices/index.html

Additional activities associated with the USS Lead Facility will be handled by the Superfund Division of U.S. EPA. Superfund will announce the dates and locations for meetings associated with these activities at a later date.