

January 2009 Update

East Helena Superfund Site
East Helena, Montana
(Five-Year Review Date: 3/31/2006)

Brief Site History: East Helena Superfund Site includes all of the community of East Helena and surrounding lands and developments within Lewis and Clark County and Jefferson County, Montana. The site includes a lead and zinc smelting facility which operated from 1888 to 2001, numerous residential subdivisions, small commercial businesses, and surrounding rural agricultural and undeveloped lands. Asarco Incorporated shut down the East Helena Plant smelting operations on April 4, 2001. The 160-acre plant included numerous process and administrative buildings, material holding areas, storage tanks and other facilities.

During the early to mid 1970s the State of Montana Air Quality and Water Quality Bureaus began conducting investigations of smelter emissions and surface water discharges at the East Helena smelter facility. Early measurements of air quality and soil metal levels confirmed the long-held suspicion that lead, cadmium and other contaminants were accumulating in the soils and were also present at high levels in street and household dust throughout the community.

Smelting operations deposited lead, arsenic, copper, zinc, cadmium, and some 15 other hazardous substances into the surrounding area. These sources have impacted people, the air, soils, surface water, groundwater, vegetation, livestock and wildlife.

Cleanup Activities: The site was divided into five Operable Units: OU1- Process Ponds; OU2-Groundwater; OU3-Surface Soils, Surface Water, Vegetation, Livestock, Fish and Wildlife, Air; OU4-Slag Pile; and OU-5 Ore Storage Areas. In 1989 a Record of Decision (ROD) was issued to address OU1 and the following work was completed.

- *Lower Lake:* Two one-million-gallon process water handling and storage tanks were constructed and put into operation to replace the need for Lower Lake. Several thousands of cubic yards of highly contaminated sediments were dredged from Lower Lake, dewatered and dried to a cake consistency, and safely stored on-site awaiting recycling or disposal. Dried sediments that were not recycled were later placed in a Corrective Action Management Unit (CAMU) by the RCRA program. A High Density Sludge (HDS) Water Treatment Plant was built in 1994 and a storm water runoff collection tank was completed in 1997. and remaining sediments were placed in a Corrective Action Management Unit (CAMU) in 2002.

- *Speiss Granulating Pond and Pit:* Soils were excavated to the maximum depth practicable without compromising the integrity of adjacent structures. The Speiss granulating process was changed from a water-spray to an air-spray process to eliminate continued downward percolation of process water into underlying ground water.
- *Former Thornock Lake:* Sediments were excavated and recycled on-site.
- *Acid Plant Water Treatment Facility:* Substantial excavation and replacement work was done to eliminate leakage, seepage and percolation of acid plant waste water. New treatment facilities were constructed and acid plant sediment handling procedures were upgraded to prevent direct contact between the saturated sediments and the ground or ground water.

Current Status: A 1999 5-Year Review suggested that an Explanation of Significant Differences (ESD) be written to amend the recommendations of the 1989 ROD for OU 1 which covered the Process Ponds, but EPA determined that the transfer of some responsibilities to RCRA negated the need for the ESD. Other events occurring since the last review included Asarco's suspension of operations for the East Helena Plant in April of 2001 and the construction of a CAMU in 2002 to contain the dried sediments dredged from Lower Lake.

Summary of Protectiveness: The remedy as implemented is not yet fully protective of aquatic life, plants and waterfowl having direct contact with the Lower Lake. Because humans have no contact with either Lower Lake or any portion of the contaminated groundwater, there is no presumption of persistent exposure or unacceptable risk to human health from Lower Lake contaminants.

Issues Impacting Protectiveness: According to the data and documents reviewed, the remedy is largely functioning as intended by the ROD. All major physical and construction related remedy elements have been completed, except for remediation of the drying pad between Upper and Lower Lakes. However, the contaminant levels in Lower Lake have not met the standards prescribed in the ROD for copper and arsenic.

Note: This paragraph (Issues Impacting Protectiveness) and the preceding paragraph (Summary of Protectiveness) fail to explain that the CERCLA remedy was implemented to the extent that it was possible to be implemented before it left the Superfund Program. Limitations imposed on the extent to which the remedy was implemented were two-fold. First, the smelter remained an operating facility throughout the 1990s and until April 2001. Second, and more important to the CERCLA remedy, in the mid-1990s, before the CERCLA remedy was fully implemented, the RCRA program assumed responsibility for the operating facility. These circumstances resulted in a modified approach to the overall site cleanup, placing highest priority on areas affecting human health. Site investigations are still in the planning and early implementation phases for Lower Lake and the former sediment drying area located between Upper Lake and Lower Lake under the RCRA program.

**East Helena Superfund Site
Five-Year Review 2008 Update Table
(Review Date 3/31/06)**

Issues	Recommendations/ Follow-up Actions	Follow-up Actions (Status/Due Date)	Status of Follow-up Actions 12/08	Responsible Party
1) The prescribed standards for surface water in Lower Lake have not been met.	Lower Lake water should be treated in the HDS facility until it reaches prescribed standards. If this approach is deemed invalid, an evaluation should be conducted to determine the most appropriate treatment method.	2011	On going: Under evaluation by the RCRA program. No action has been taken to require Asarco to meet these requirements of the ROD (or the subsequent ESDs) but these areas will be assessed and remediated, as appropriate, during the RCRA corrective action process.	Asarco
2) As prescribed by the ESD, the drying area between Upper and Lower Lakes has not yet been completely or adequately remediated.	The area between Upper and Lower Lake should be remediated. The ESD states, "the sediments under the pad (in the contaminated area between Upper and Lower Lake) shall be excavated and smelted after all Lower Lake sludges and sediments are excavated, dried, and removed from this area." However, because the plant is closed and smelting is no longer an option, the contaminated material should be disposed of under RCRA regulations.	2011	On going: Under evaluation by the RCRA program. No action has been taken to require Asarco to meet these requirements of the ROD (or the subsequent ESDs) but these areas will be assessed and remediated, as appropriate, during the RCRA corrective action process.	Asarco

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<p>3) A 1993 ESD stated that “monitoring wells shall be installed downgradient from Lower Lake and between Lower Lake and Prickly Pear Creek prior to remediation of Lower Lake, but not later than July 1, 1993, to monitor for compliance with performance standards.” Under RCRA, some wells have been installed. However, no performance standards have been set for groundwater.</p>	<p>Groundwater monitoring wells should be installed as prescribed by the ESD. Performance standards should be developed for groundwater related to OU1.</p>	<p>2011</p>	<p>On going: Under evaluation by the RCRA program. No action has been taken to require Asarco to meet these requirements of the ROD (or the subsequent ESDs) but these areas will be assessed and remediated, as appropriate, during the RCRA corrective action process.</p>	<p>EPA</p>