

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Monday, December 22, 2008

From: Matthew Huyser

Subject: Initial POLREP

Smokey Mountain Smelters
1508 Maryville Pike, Knoxville, TN
Latitude: 35.9191830
Longitude: -83.9264810

POLREP No.:	1	Site #:	A4MD
Reporting Period:	11/18/2008-11/20/2008	D.O. #:	
Start Date:	11/18/2008	Response Authority:	CERCLA
Mob Date:	11/17/2008	Response Type:	Time-Critical
Demob Date:		NPL Status:	Non NPL
Completion Date:		Incident Category:	Removal Action
CERCLIS ID #:	TND098071061	Contract #	
RCRIS ID #:			

Site Description

The Smokey Mountain Smelters Site was originally a series of fertilizer and agricultural chemical companies which operated from the 1920s to the 1960s. Smokey Mountain Smelters (SMS), also known as Rotary Furnace, Inc., operated at the Site from 1979 to 1994 and has been inactive since that time. The facility was a secondary aluminum smelting operation. The process involved the melting of scrap aluminum and aluminum dross (a waste by-product of primary and secondary aluminum smelting) and casting the molten aluminum ingots. Raw materials at the facility primarily consisted of scrap aluminum and aluminum dross. Waste material from the SMS operation was primarily saltcake, a residue from dross smelting with high salt and low metal content. Other waste materials included baghouse dust and discarded aluminum dross. Much of the Site is covered in a waste pile consisting of saltcake and aluminum dross that was dumped directly on the land surface without a liner or drainage controls.

In 1983, the Tennessee Department of Health & Environment (DHE) Division of Solid Waste Management issued a notice to SMS with the conclusion that the Site was "unsuitable for use as an industrial landfill;" however, landfilling on-site continued to occur for several years afterward. In addition, the Knox County Department for Air Pollution Control (KCDAPC) documented numerous citizen complaints regarding excessive air emissions from the Site and cited SMS for several air quality violations in the 1980s.

The total SMS Site is approximately 13 acres in size and includes one large industrial process building, a small lagoon, a large outside saltcake waste pile, and three mid-sized indoor dross waste piles. The process building is approximately 100 feet wide by 300 feet long, and 50 feet high; it houses some equipment and three 900 cubic-yard (each) piles of aluminum dross. Portions of the north and east walls of the building have collapsed. The spring-fed lagoon measures approximately 25 feet wide by 100 feet long and is located to the southeast of the process building. The saltcake waste pile is approximately 50,500 cubic yards in size and covers an area of about 4 acres on the south side of the process building. Surface runoff from the Site generally flows to the southwest. Leachate and surface runoff discharges to an unnamed tributary stream, reaching Flenniken Branch and eventually the Tennessee River.

Multiple sampling events between 1997 and 2006 have been conducted at the Site to characterize the composition and contaminant concentrations in the waste piles, the raw material piles, the on-site lagoon, leachate to the unnamed tributary, and downstream impacts to the unnamed tributary and Flenniken Branch. Dross and saltcake are exothermically water-reactive materials that release heat and ammonia gas, and leach aluminum, ammonia, chlorides, and other contaminants.

In 1997, the Tennessee Division of Superfund (DSF) collected surface water and waste samples at SMS. Elevated levels of ammonia, arsenic, lead, and aluminum were found in surface waters at the Site. Elevated levels of aluminum, PAHs, heptachlor, heptachlor epoxide and ammonia were found in the on-site waste pile. Headspace air samples over the waste pile measured elevated concentrations of

ammonia. DSF collected additional samples from the Site in 2001, 2003, and 2004 to monitor ongoing surface water conditions. In 2006 EPA Environmental Response Team also conducted a removal site evaluation collecting surface soil, samples from the dross and saltcake stockpiles, and surface water from the unnamed tributary. Analysis of these later samples showed that contaminant concentrations in surface waters leaving the Site had increased for arsenic, lead, and aluminum. Elevated levels of chlorides were found in surface waters leaving the Site that were significantly above background levels. Elevated concentrations of ammonia, chlorides, and pH were found along the entire length of the unnamed tributary to the Flenniken Branch downstream of the Site.

A residential apartment community (560 units) is located 75 from the southern boundary of the Site fenceline. During a 2008 Site visit the EPA OSC observed that access controls were not adequate to keep trespassers out of the property. A few breeches and pathways have been found in the fenceline on the southern boundary that allows access to the site from the apartment complex. A time critical removal action was initiated to provide stronger security measures in order to keep trespassers away from the water-reactive dross material, and collect additional data to determine if further waste removal or treatment action is necessary.

Current Activities

On November 18, 2008, EPA and ERRS contractor Environmental Restoration arrived on-site to begin installation of site security measures. Steel signs measuring 24” x 24” were manufactured several days earlier; the signs consisted of a red background with large white lettering that read: “danger / do not enter / peligro / no entrar / by order of the / United States EPA”. The signs were erected on green steel posts at several entrances surrounding the site and along fencelines where holes have previously been cut in fencing to gain access.

On November 19, ERRS completed installation of the signs along the southeast boundary, bordered by a CSX rail line, and directly across the railroad from the apartment complex. Signs were erected at approximately 40-foot intervals along the site property line, and directly in front of common-use entry points. ERRS also began repairing the fencing that had been cut and damaged at the southeastern access point across from the apartment complex.

On November 20, ERRS completed repairs to the fencing and packed up their equipment for demobilization until January.

Planned Removal Actions

- Install security measures to prohibit access to the Site by unauthorized personnel (ONGOING); and,
- Investigate the nature and extent of waste materials dumped at the Site, and hazardous substances, pollutants, and contaminants being released from the Site, including control measures to prevent future releases.

Next Steps

ERRS and EPA will return to the site in January to clear the original roadway at the northwestern boundary to the site so that crews accessing the site to conduct assessment work will be able to mobilize larger pieces of equipment into the site safely. ERRS will also move brush and vegetative debris into common alternate access points.

Key Issues

As a substitute security measure to fencing, ERRS will move brush and vegetative debris into common alternate access points to discourage and impede access to the site for trespassers. This method was chosen as opposed to clearing a perimeter and constructing a new fence because all previous fences have been damaged or destroyed by trespassers. It is anticipated that large piles of brush, much of it containing thorns or other sharp branches, will be a more successful deterrent. Landscape features such as high grass, dense vegetation, steep inclines, and muddy areas exist around the Site but are avoided at all alternate access points, so dense vegetation will be added to impede these paths.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
ERRS - Cleanup Contractor	\$62,000.00	\$5,945.60	\$56,054.40	90.41%
Intramural Costs				

Total Site Costs	\$62,000.00	\$5,945.60	\$56,054.40	90.41%
-------------------------	-------------	------------	-------------	--------

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

response.epa.gov/SMS

POLREP #1 Last Updated 5/2/2012