

**United States Environmental Protection Agency**  
**Region VII**  
**POLLUTION REPORT**

**Date:** Tuesday, May 4, 2010

**From:** Jim Silver

**Subject:** On Going Activities

Southwest Jefferson County Mining Site OU 00

13291 State Rd CC, DeSoto, MO

Latitude: 38.1394353

Longitude: -90.4693197

<b>POLREP No.:</b>	9	<b>Site #:</b>	A7D2
<b>Reporting Period:</b>	3/29/2010 to 5/04/2010	<b>D.O. #:</b>	0019
<b>Start Date:</b>	10/1/2007	<b>Response Authority:</b>	CERCLA
<b>Mob Date:</b>	10/1/2007	<b>Response Type:</b>	Time-Critical
<b>Demob Date:</b>		<b>NPL Status:</b>	Non NPL
<b>Completion Date:</b>		<b>Incident Category:</b>	Removal Action
<b>CERCLIS ID #:</b>	MON000705443	<b>Contract #</b>	EP-R7-07-12
<b>RCRIS ID #:</b>			

#### **Site Description**

The Jefferson County Lead District Site consists of high concentrations of lead contamination from mining. The ore would normally be hauled from the mines to the concentrators (also known as mills) where it was formed into lead concentrate. Lead concentrate at the site was/is derived from the physical concentration of lead sulfide ore and is typically 70 to 80 percent - 700,000 to 800,000 parts per million (ppm) lead sulfide.

The primary problem areas at this site which require action are lead contaminated soils in yards, drinking water wells contaminated with metals, and lead contaminated dust in homes along these roadways.

Jefferson County is located in southeastern Missouri and bordered on the north by St. Louis County and the Meramec River; on the east by the Mississippi River; on the south by St. Genevieve and St. Francis Counties; and on the west by Washington and Franklin Counties. The county encompasses 664 square miles. According to the 2000 Census, the population of Jefferson County is 198,099 people. The county seat is located in Hillsboro, Missouri, organized Jefferson County in 1818, and named in honor of former President Thomas Jefferson.

Mining activities in Jefferson County began in the early 1800s, in southern Jefferson County, where the Cambrian dolomite source rock is concentrated along the Big River and other major streams. The first production operation was a lead shot tower erected in 1809, in the southern part of Herculaneum. Two mines were in operation as early as 1818. The Gray's mine located on the Big River and the McKane's Mine located on the Dry Creek. Many other mines opened in the 1830s and 1840s, for the production of lead, zinc, and barium (tiff). By 1855, three smelters were operating in Jefferson County, including the Valles Mines, the Mammoth Mines, and the Sandy Mines. Historical records indicate that over three million pounds of lead was shipped out of Jefferson County annually during this time period, making it one of the leading lead producers.

The Inventory of Mines Occurrences and Prospects database lists 253 historical sites associated with mining and production operations in Jefferson County. Of these, 202 of the mining sites were designated for lead or lead and other commodities, particularly zinc and barium (tiff). Most of the remaining sites were exclusively tiff mines. Past mining operators in Jefferson County included the St. Joe Lead Company (now the Doe Run), the Valles Mining Company, the Big River Lead Company, Del Stocking, the Magnolia Mining & Milling Company, the Sandy Mining Company, the National Lead Company, the Bennett Lead & Zinc Company, the Walther Mining Company, Ed Dixon, the Big River L.M., the M. & Development Company, and Iva Schmitz-Rome & John. Of these operators, the Doe Run is the only mining operator currently listed in Jefferson County. Their predecessor, the St. Joe Lead Company, opened the Doe Run's smelter in 1892. In 2003, the Doe Run smelter was producing over 100,000 tons of lead a year. The Valles Mining company still exists but no longer mines for lead. According to historical records, the company operated the lead mining and smelting operation at Valles Mines from approximately 1824 through the 1930s. The ruins of several ore-milling structures, a former smelter, chat

piles, and mill wastes are still present in the vicinity of the Valles Mines.

In September 2006, the U.S. Environmental Protection Agency (EPA) began an integrated site assessment, which included soil and groundwater sampling in the area. During this sampling event, EPA sampled the soil at 353 residences located on or near mining or mine waste disposal areas. Based on this data, approximately 22 percent (55) of these residential properties had soils which exceeded 400 parts per million (ppm), and roughly 6 percent (22) had soils which exceeded 1200 ppm for lead. Beginning in September 2006, EPA also sampled approximately 304 private drinking water wells in Jefferson County. Of these 304 wells sampled, 36 (12 percent) were found with lead levels greater than 15 parts per billion (ppb) and 2 with cadmium levels greater than 5 ppb. Of those wells with lead greater than 15 ppb, 16 (5 percent) had lead levels greater than 30 ppb.

### **Current Activities**

EPA continues to sample residential yards and private drinking water wells.

Properties with soil lead levels above the time-critical removal action level of 1,200 ppm - 113.

Properties cleaned up to date - 75.

Private drinking water wells identified to date with lead levels above the removal action level of 15 ug/L (ppb) - 38.

Private drinking water wells identified with cadmium above the removal action level of 5 ug/L - 2.

Properties with alternate water offered to date - 40.

### **Planned Removal Actions**

EPA continues to sample residential yards and private drinking water wells. EPA will continue to offer alternative drinking water to residents with contaminated drinking water wells, and continue with excavation of contaminated residential yards.

### **Next Steps**

EPA is working with county officials to draft an ordinance that would prohibit the selling of lead contaminated soil and gravel in Jefferson County.

Complete study of filtration systems and begin installation of point-of-use filtration systems in homes with contaminated drinking water.

### **Key Issues**

A different type of straw matting is being used successfully to prevent erosion of newly backfilled and seeded yards, increasing germination success, and saving the cost of regrading.

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