

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Wednesday, September 16, 2009

From: Gary Andrew, OSC

Subject: Removal Site Evaluation

Broadway Street Lead

Lenoir City, TN

Latitude: 35.7850429

Longitude: -84.2712951

POLREP No.:	1 Site #:	A4ZH
Reporting Period:	D.O. #:	
Start Date:	Response Authority:	CERCLA
Mob Date:	Response Type:	
Demob Date:	NPL Status:	Non NPL
Completion Date:	Incident Category:	Removal Assessment
CERCLIS ID #:	Contract #	
RCRIS ID #:		

Site Description

The Broadway Street Lead Site (Site) is located in Lenoir City, Tennessee approximately 25 miles southwest of Knoxville along the banks of the Tennessee River. The Site consists of residential, commercial and public properties located in the vicinity of the former Lenoir Car Works (LCW) facility. Many of the residential properties are located within a few hundred feet of the old foundries.

The LCW began operation some time before 1893 as the Bass Foundry and Machine Shops producing wheels for the railroad. By 1907 the operation had been purchased by Southern Railway and produced hopper cars, initially employing over 500 men. The facility occupied approximately 100 acres and included a machine and blacksmith shop, a wood shop, an erecting shop, and a boiler and engine house topped by an imposing smokestack. The engine house powered the complex and supplied electricity to parts of Lenoir City. In the mid-1920s wooden freight cars were declared unsafe, and orders decreased, although the steel foundry, the iron foundry, and the old brass foundry continued to produce four to five hundred wheels per day. During World War II the machine shop was converted to a second steel foundry and produced various castings for oceangoing freighters and other craft.

After World War II diesel engines made the old steam engines obsolete, and the iron foundry closed in 1957. Steel and wrought-iron wheels replaced iron wheels and led to the closing of the steel foundry in 1963. The last area to close was a newer, more modernized brass foundry, where journal bearings and insulated glued rail joints were produced. This is likely the only facility at LCW to have air pollution control devices. These are thought to have been installed in the 1970's according to State records. Prior to this, fumes were vented through the windows of the facilities.

As part of the LCW operation slag and foundry sand were disposed of on site. It is estimated that the property has 180,000 cubic yards of foundry sand on it. The property is now owned by Southern Region Industrial Realty, Inc and is being addressed by the Remediation Division of the Tennessee Department of Environmental Conservation (TDEC). The close proximity of the LCW operations to residential properties in the city prompted an off- site investigation by the Tennessee Department of Health (TDH). At the request of TDH, TDEC conducted sampling in the area. The investigation revealed potential lead and arsenic contamination on residential properties adjacent to the LCW property. TDEC referred the Site to EPA for further delineation.

Current Activities

Sampling conducted by the Tennessee Department of Environment and Conservation (TDEC) in 2007 indicated potential lead contamination on properties along West Broadway and Halls Ferry Road. EPA mobilized August 31, 2009 to conduct a Removal Site Evaluation (RSE). Surface soil samples were taken from approximately 50 residential properties. These samples were analyzed for the presence of lead and arsenic. Lead was detected on several properties in excess of the Removal Action Levels (RALs). Lead levels below the RALs were detected on many of the properties. The 2007 and 2009 sampling results were plotted on a map of the area. The results showed two very tight groupings with

results from both sampling events in both groups. One group lies at the Northwest end of Halls Ferry Road, an area that abuts directly to the LCW property. The other group was within yards of the foundries between the 500 and 900 block of West Broadway. The maximum lead level found from the EPA sampling event was 1000mg/kg. Lead levels below the RALs, but above background, exist at over 30 of the properties.

In February 2009, the site was forwarded to the EPA Region 4 Emergency Response and Removal Branch (ERRB) for consideration using CERCLA removal authorities. On November 1, 2009, ERRB completed a review of the site information and concluded that the site meets the criteria as set forth in 40 CFR 300.415 (b) (2) for a time critical removal action.

Planned Removal Actions

Lead is a hazardous substance, listed in the Title 40 of the Code of Federal Regulations (CFR) Section 302.4, as referred to in Section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended. Lead contaminated soils at the Site pose a significant threat to public health. The threat comes primarily from potential human exposure to the hazardous substance. Direct contact and ingestion of the hazardous substance is the primary pathway of exposure. Continued release of the hazardous substance may cause potential chronic health effects to persons living nearby.

Lead is present in on-site surface soils, posing the following threats to public health or welfare as listed in Section 300.415 (b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

- Section 300.415 (b)(2)(i) "Actual or potential exposure to nearby human populations, or the food chain from hazardous substances pollutants or contaminants."

The RSE disclosed that there is significant lead contamination that is closely associated with the locations of the former manufacturing or disposal operations of the LCW. EPA Region 4 Technical Services Section (TSS) recommends a removal action level of 400 ppm lead for generic residential exposure scenarios. Concentrations exceeding this level at the Site were confirmed through XRF analysis and laboratory analysis. The maximum lead concentration detected in surface soils was 1,000 ppm.

There are residential, commercial, and other properties currently located within the footprint of the Site. Potential human exposure to site related contaminants may occur via inhalation of wind borne dust, inadvertent ingestion of contaminated soil, and direct contact with the contaminated surface soils.

- Section 300.415 (b)(2)(iv) "High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate."

Analytical results reveal that high lead levels are present at or near the surface creating a potential for migration to off-site locations. Lead concentrations exceeding the RAL of 400 ppm was confirmed through XRF analysis and laboratory analysis. The maximum lead concentration detected in surface soils in was 1,000 ppm.

The Site is adjacent to Fort Loudon Lake on the Tennessee River. All drainage from the Site and the LCW property lead to the waterway. A small, unnamed stream drains the West Broadway street area, runs across the LCW property and discharges to the river, creating the potential for site contaminants to migrate to the Tennessee River.

- Section 300.415 (b) (2) (vii) "The availability of other appropriate federal or state response mechanisms to respond to the release."

After determining the potential for hazardous materials contamination at the Site, TDEC referred it to EPA for further evaluation. After a discussion of the RSE findings TDEC requested that EPA continue to address all Site issues.

Due to the threat and/or future threat to human health from the hazardous substance, the Site achieves removal eligibility base on the removal criteria listed above.

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