

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Barth Smelting Facility - Removal Polrep
Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region II

Subject: POLREP #4
RV3 Monitoring Remedy - FINAL
Barth Smelting Facility
A22L
Newark, NJ
Latitude: 40.7361892 Longitude: -74.1402096

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From: Kimberly Staiger, OSC

Date: 9/22/2016

Reporting Period: October 15, 2015 to September 22, 2016

1. Introduction

1.1 Background

| | | | |
|----------------------------|--------------|--------------------------------|----------------|
| Site Number: | A22L | Contract Number: | EP-S2-10-03 |
| D.O. Number: | 76 | Action Memo Date: | 9/26/2013 |
| Response Authority: | CERCLA | Response Type: | Time-Critical |
| Response Lead: | EPA | Incident Category: | Removal Action |
| NPL Status: | Non NPL | Operable Unit: | |
| Mobilization Date: | 9/24/2016 | Start Date: | 12/4/2013 |
| Demob Date: | 9/24/2016 | Completion Date: | 9/24/2016 |
| CERCLIS ID: | NJN008010373 | RCRIS ID: | |
| ERNS No.: | | State Notification: | 10/21/2013 |
| FPN#: | | Reimbursable Account #: | |

1.1.1 Incident Category

Emergency Removal Action

1.1.2 Site Description

Barth Smelting Corp. operated on Block 2442, Lots 10, 11, 12 from at least 1946 until approximately 1982, and produced brass and bronze ingots and also worked with non-ferrous metals. Prior operators include General

Lead Batteries, a manufacturer of lead acid batteries, and the New Jersey Zinc Company, a former zinc smelter. Barth was listed as an unrecognized Battery Lead Smelter site with a paper titled "Discovering Unrecognized Lead Smelting Sites by Historical Methods" written by William Eckel et al, and published in the American Journal of Public Health, April 2001, however, several resources exist labeling Barth Smelting as a secondary copper smelting facility.

The New Jersey Zinc and Iron Company, also known as the Newark Zinc Works, formerly operated on the property now occupied by the Newark Housing Authority's Terrell Homes. The Zinc Works was one of the first commercial zinc oxide plants in the United States and operated on this location from 1848 to 1910. In 1946, the Millard E. Terrell Homes, a family development with 275 units, was constructed on the property formerly occupied by the New Jersey Zinc and Iron Company.

1.1.2.1 Location

The Terrell Homes are located in a mixed residential/industrial neighborhood within the Ironbound Section of Newark, Essex County, New Jersey. The property was formerly home to the New Jersey Zinc and Iron Company from 1848 to 1910. The property is bounded to the west by the Passaic River and the Essex County Riverfront Park, to the east by Chapel Street, to the north by the former Barth Smelting Corp. property, and to the west by a large commercial property.

1.1.2.2 Description of Threat

Lead concentrations have been detected exceeding the EPA residential soil screening level of 400 mg/kg within the top one inch of soil at the Terrell Homes housing complex within the grassy area immediately adjacent the Community Building which serves as a recreational area for the residents and contains a basketball court and a water park area (sprinklers). The highest concentration of lead detected in the top one inch of soil at this location is 1,600 mg/kg.

Direct contact with the elevated levels of lead within the top one inch of soil may occur through common outdoor activities that occur in the play area, or by tracking lead contaminated dirt inside the home. Contact with the lead contaminated soils may present a health risk to residents, particularly young children.

The effects of exposure to lead are the same whether it enters the body through breathing or swallowing. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults to lead has resulted in decreased performance in some tests that measure functions of the nervous system. Lead exposure may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people, and may also cause anemia.

Lead is a cumulative poison where increasing amounts can build up in the body eventually reaching a point where symptoms and disability occur. Particularly sensitive populations are women of child-bearing age, due to the fetal transfer of lead, and children. Cognitive deficits are associated with fetal and childhood exposure to lead. An increase in blood pressure is the most sensitive adverse health effect from lead exposure in adults. Effects on the kidney, nervous system and heme-forming elements are associated with increasing blood lead concentrations, both in children and adults. Other symptoms include: decreased physical fitness, fatigue, sleep disturbance, aching bones, abdominal pains, and decreased appetite.

The Department of Health and Human Services (DHHS) has determined that lead and lead compounds are reasonably anticipated to be human carcinogens based on limited evidence from studies in humans and sufficient evidence from animal studies, and the EPA has determined that lead is a probable human carcinogen.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Elevated levels of lead were found to be present within the top two feet of soil within the former playground area during a December 3-4, 2012 sampling event. Additional soil borings were installed throughout the Terrell Homes property to determine if historic operations conducted on this property and adjacent properties had impacted the soils. Soil borings located in a grassy area adjacent the Community Building, which serves as a recreational area for the residents, contained elevated levels of lead, which pose a significant threat to the residents.

All soil samples were collected from each soil boring installed on the property at the following depth intervals: 0 to 1 inches, 1 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches below ground surface (bgs). The soil samples were field screened with a portable X-Ray Fluorescence and submitted for laboratory analysis for Target Analyte List (TAL) Metals plus tin and mercury. Lead was detected as high as 9,800 ppm in the 0-1" depth along the property line behind the Community Building.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

An Action Memorandum was signed on September 26, 2013 authorizing EPA to conduct a time-critical removal action to address the threats posed by lead contaminated soil on the Terrell Homes, a residential multi-family public housing complex owned by the Newark Housing Authority. Soil sampling data has identified this area of the Site to contain elevated levels of lead which poses a significant threat to the residents.

This is the third removal action conducted on this property.

2.1.2 Response Actions to Date

Soil samples collected from the playground area of the Terrell Homes property on December 3-4, 2012 indicated that elevated levels of lead were present in the top two feet of soil in the playground area. EPA mobilized to the Terrell Homes with ERRS on February 21, 2013 to install 6' high temporary chain link fencing around the playground portion of the property restricting access to the lead contaminated soils. Signs were placed on the fencing warning residents to keep out of the fenced off area.

Additional soil sampling performed in March and May 2013 confirmed the presence of elevated concentrations of lead along the northern property line of the Terrell Homes and extending approximately 25 feet onto the

unpaved areas of the property. EPA mobilized to the Barth Smelting site with ERRS on May 13, 2013 to install additional 6' high temporary chain link fencing to restrict access to the grassy area adjacent the community building and recreation area within the northern portion of the property. This fencing is an extension of the original temporary fencing. All of the grassy areas along the northern property boundary of Terrell Homes have been fenced off.

EPA mobilized to the Terrell Homes portion of the Barth Smelting site with ERRs on December 4, 2013 to initiate the removal action. Removal activities began at the Barth Smelting site on Thursday, December 5th with the removal of trees, shrubs and fencing as necessary for the removal of contaminated soil. A total of ten trees one foot or larger in diameter have been removed from within the excavation area. The 10' high chain link fencing present along the northern property boundary within the fenced off area was removed on December 6 and December 9, 2013 and has been staged on the 99 Chapel Street property.

Soil excavation was started in the former playground area adjacent Chapel Street on December 11, 2013. The top one foot of lead-contaminated soil has been removed from the grassy areas within the fenced off area. Geotextile fabric has been lain across the bottom of the excavation and along the northern property line sidewall before backfilling the excavation. Backfilling and soil regrading was completed on December 20, 2013. RST conducted background dust monitoring during all soil intrusive work.

EPA mobilized to the Terrell Homes portion of the Barth Smelting site with ERRs on September 15, 2014 to begin restoration activities. Restoration activities began with the mowing and removal of weeds within the fenced area, raking soils to remove large trash and debris (ie - brick/river rock), placing up to 6" of topsoil across the entire excavated, regrading of the area, hydroseeding, planting trees and shrubs, mulching vegetation, and installing patio pavers in the former sitting area of the playground. All restoration work was completed on Friday, October 10, 2014.

The newly installed grass and vegetation was monitored for a one year period to ensure their growth. In early September 2015, it was noted that several trees did not survive the summer and the grass did not grow in certain areas previously addressed.

EPA returned to the site property on September 16, 2015 to replace the previous plantings and re-seed the excavated area. A subcontractor was hired to install the new trees, hydro-seed, and provide adequate watering to ensure the growth of the newly planted vegetation.

Site visits were conducted by EPA throughout the one year period to monitor the vegetation. With the exception of three trees at the rear of the property, the growth of the vegetation has been successful. The three trees will be replaced at no cost to the government by the subcontractor on September 24, 2016, in accordance with the one-year guarantee provided when the trees were planted.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

PRPs have not been identified to date, but a PRP search will continue.

2.1.4 Progress Metrics

| <i>Waste Stream</i> | <i>Medium</i> | <i>Quantity</i> | <i>Manifest #</i> | <i>Treatment</i> | <i>Disposal</i> |
|---------------------|---------------|-----------------|-------------------|------------------|-----------------|
| Lead | Soil | 638 tons | N/A | Landfill cover | Landfill |
| | | | | | |
| | | | | | |

2.2 Planning Section

2.2.1 Anticipated Activities

No anticipated activities. Restoration is complete.

2.2.1.1 Planned Response Activities

None

2.2.1.2 Next Steps

None

2.2.2 Issues

The Terrell Homes is located in the Ironbound section of Newark, a recognized Environmental Justice community that has many disadvantages. The Terrell Homes property is a low-income public housing development with 275-units. Occupance of public housing at Newark Housing Authority properties is dictated by income, with preferences for elderly, disabled and DYFS (Division of Youth and Family Services) referrals.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

2.4.1 Narrative

An Action Memorandum to conduct a time-critical removal action at the Barth Smelting Site was signed on September 26, 2013. This is the third removal action on this Site.

ERRS contractor mobilized to the Site to receive delivery of equipment on December 4, 2013. ERRS mobed to the site to begin removal activities on December 5, 2013. Fencing, trees and shrubs have been removed as necessary for the soil excavation. Excavation activities and T&D has been completed. Site was secured until restoration activities could be completed.

ERRS contractor mobilized to the Site to receive delivery of equipment and begin restoration activities on September 15, 2014. Restoration included the placement of additional top soil, regrading, planting vegetation, hydroseeding and installing patio pavers.

During the one year monitoring period, the vegetation originally planted did not survive and required replacement. Hydro-seeding and planting of new vegetation took place on September 15, 2016. Newly planted vegetation was watered and monitored regularly to ensure proper plant growth. All restoration and monitoring activities have been completed.

Estimated Costs *

| | Budgeted | Total To Date | Remaining | % Remaining |
|---------------------------|---------------------|---------------------|---------------------|---------------|
| Extramural Costs | | | | |
| ERRS - Cleanup Contractor | \$704,000.00 | \$244,000.00 | \$460,000.00 | 65.34% |
| TAT/START | \$100,000.00 | \$36,000.00 | \$64,000.00 | 64.00% |
| CLP | \$25,000.00 | \$2,700.00 | \$22,300.00 | 89.20% |
| Intramural Costs | | | | |
| | | | | |
| Total Site Costs | \$829,000.00 | \$282,700.00 | \$546,300.00 | 65.90% |

* 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.

2.5 Other Command Staff

Not applicable

3. Participating Entities

Newark Housing Authority
Newark Department of Health

4. Personnel On Site

All personnel have demobed from the Site.

5. Definition of Terms

ERRS - Emergency and Rapid Response Services
RST - Removal Support Team
NHA - Newark Housing Authority

6. Additional sources of information

6.1 Internet location of additional information/report

Additional information on the Barth Smelting site can be found at <http://www.epa.gov/region2/superfund/removal/barth/index.html> and at www.epaossc.org/Barthsmelting.

7. Situational Reference Materials

No information available at this time.