United States Environmental Protection Agency
Region VII
POLLUTION REPORT

Date: Saturday, August 20, 2005
From: Davis, Garvey, Nold

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Subject: Omaha Lead Site
Greater Omaha Nebraska Area, Omaha, NE
Latitude: 41.2033000
Longitude: -95.9308000

POLREP No.:	69	**Site #:**	NESFN0703481
Reporting Period:	8/13-20/05	**D.O. #:**	0006
Start Date:	4/4/2005	**Response Authority:**	CERCLA
Mob Date:	4/4/2005	**Response Type:**	Time-Critical
Demob Date:		**NPL Status:**	NPL
Completion Date:		**Incident Category:**	Removal Action
CERCLIS ID #:	NESFN0703481	**Contract #**	68-S7-02-04
RCRIS ID #:			

Site Description

ASARCO Incorporated (ASARCO) operated a lead refinery at 500 Douglas Street in Omaha, Nebraska, for over 100 years beginning in the 1870s. The operation of the refinery ceased in 1997. As a routine part of the refinery operation, lead particles were emitted into the atmosphere at the refinery.

In addition, the Gould Incorporated lead battery recycling plant was located at 555 Farnam Street in Omaha and was a secondary smelter of lead from discarded lead batteries. The blast furnace used to smelt the lead at the Gould plant emitted lead particles into the air from that refinery. The Gould plant closed in 1982.

Several other facilities in the Omaha area used lead in their manufacturing processes. A few of these included Carter White Lead at 21st and Locust Street which produced white lead paint bases and red lead and litharge protective coatings until 1936, Omaha Shot and Lead which later became Lawrence Shot and Lead, and then became National Lead Company which manufactured lead shot by melting pig lead, Grant Storage Battery Company, Storage Battery Factory, and Exide Corporation which manufactured lead storage batteries.

Numerous other locations in the Omaha area such as foundries, iron works, metal salvaging companies, and other manufacturers used or processed lead at their facilities.

The EPA considers 400 parts per million (ppm) as a screening level for lead contamination in residential soils. Concentrations of lead exceeding 400 ppm have been found in one or more non-foundation samples at 8,967 residential properties at the Site. These include 92 licensed child-care centers and 287 elevated blood level (EBL) residences. More than 2,500 additional residential properties have been identified with at least one non-foundation sample exceeding 800 ppm that are eligible for a soil response under this Action Memorandum Amendment. At least 7,000 additional residential properties remain to be sampled.

Response activities were initiated in August 1999 and are continuing. The removal action involving highly contaminated properties was initiated in August 2002. Excavation and replacement of lead-contaminated residential soils has occurred to date at properties meeting the time-critical removal thresholds described in previous Action Memoranda and amendments. At the end of the 2004 construction season, removal response actions had been completed at 713 residential properties. Removal response is also ongoing

under an interagency agreement with the U.S. Army Corps of Engineers.

Data collected through the 2004 sampling event has identified approximately 2,500 additional properties that have one or more non-foundation soil-lead concentrations of 800 ppm or greater. Additional child care facilities and EBL properties will be addressed as they are discovered.

Current Activities

On March 31, 2005 an Action Memorandum Amendment was signed. The purpose of this amendment is to change the previously approved scope of work and to seek a funding ceiling increase for continued removal response at the Omaha Lead Site (Site), which encompasses eastern Omaha, Nebraska. Two Action Memoranda have previously been approved for work at the Site. The first Action Memorandum was approved on August 2, 1999, and addressed lead-contaminated soils exceeding 400 parts per million (ppm) at child care facilities and residences where a child with an elevated blood-lead level (EBL) exceeding 15 micrograms per deciliter (µg/dl) lived and was amended on August 3, 2001, to lower the EBL threshold from 15 µg/dl to 10 µg/dl. The second Action Memorandum was approved on August 22, 2002, and addressed lead-contaminated soils at highly contaminated properties at the Site where one non-foundation sample exceeded 2,500 ppm. This second Action Memorandum was amended on March 25, 2004, to combine the activities of both Action Memoranda into a single response action and increase the funding and scope to include residential properties with lead-contaminated soil above 1,200 ppm. The purpose of the current Action Memorandum Amendment is to expand the scope of the removal action to include elements of an Interim Record of Decision (ROD) issued on December 15, 2004, for the Site, and to increase the expenditure ceiling to allow funding of these activities.

The removal action will allow continued removal response to address the highest priority lead-contaminated residential properties at the Site. The Action Memorandum Amendment enables several significant enhancements to the ongoing removal response action including:

• Lowering the action level from 1,200 ppm to 800 ppm for residential properties that are not otherwise eligible for response on the basis of high child-impact or EBL lead levels;

• Modifying the cleanup level to continue excavating until reaching a residual concentration of less than 400 ppm in the upper foot of soil, or less than 1,200 ppm at depths of one foot or greater. In garden areas, excavation will continue until reaching a residual concentration of 400 ppm in the upper two feet of soil, or less than 1,200 ppm at depths of two feet or greater. The installation of a physical barrier prior to backfilling will be discontinued;

• Expanding the types of properties that are considered high child-impact areas, and therefore eligible for response if non-foundation lead concentrations exceed 400 ppm, to include schools, churches, parks, vacant lots, and other properties where children could congregate;

• Providing for stabilization of deteriorating, exterior lead-based paint in cases where the continued protectiveness of the remedy would be threatened by loose and flaking paint; and

• Providing for high-efficiency cleaning of household interiors for remediated properties when interior dust concentrations exceed the allowable standards established by the United States Department of Housing and Urban Development (HUD), and the U.S. Environmental Protection Agency (EPA). These standards allow a maximum dust loading of 40 micrograms per cubic feet (µg/ft2) for floors and 250 µg/ft2 for window sills.

The EPA will continue to prioritize eligible properties, giving preference to the residences that house children with EBLs and child care facilities.

Continued activities are being centralized from the Missouri River Treatment Plant located at 5600 S. 10th Street, Omaha, Nebraska, 68107-3501. The city of Omaha has partnered with the EPA to allow the use of a portion of the facility.

During this reporting period, there were 6 properties excavated, 7 backfilled, and 10 sodded. There have been 165 total properties excavated, 158 backfilled, and 144 sodded during phase IV of the removal action which commenced on Auguat 15, 2005.

Dry, warm weather conditions prevailed during the reporting period that allowed productive work activities.

As a project summary, during Phase I of the removal action, there were 32 properties completed. During

Phase II there were 112 properties completed. Finally, Phase III resulted in a total of 306 properties completed.

It should be noted that as an additional safeguard, the EPA sampled the sod that is currently being applied to all properties that have had a removal action performed. This sampling effort included analysis for total lead, herbicides, pesticides, semi-volatiles and volatile organic compounds. The resulting levels were below any levels of concern.

Also, an investigation concerning the large concrete pad where EPA has stockpiled lead contaminated soils at the Missouri River Treatment Plant, pending disposal was initiated. City representatives have commented that the concrete pad has been damaged by EPA's use. Various concrete sub-contractor experts visited the pad and determined the the sub-surface grade seemed to be suspect and contributed to the concrete pad damage. Bi-weekly elevations will be obtained by EPA to monitor the 9 inch-thick concrete, rebar reinforced pad. These elevation readings will be reviewed to assure that any additional damage is not occurring. The city has allowed EPA's continued use of the area and a tentative decision to likely have both the city and EPA jointly repair the concrete pad at the conclusion of EPA's use seems imminent.

Planned Removal Actions

Residential yards will be divided into a number of sections and one multi-aliquot composite sample will be collected from each section. The number of sections in each yard will depend upon the size of the yard. For properties less than 5,000 square feet, separate sections will generally be designated for the front yard, back yard, and side yard (if substantial). For properties greater than 5,000 square feet, the lot will generally be divided into four sections of roughly equal surface area. Properties over one acre in size will be divided into approximate one-quarter acre sections. A five-aliquot composite sample will typically be collected from each section. In addition, a four-aliquot composite sample will typically be collected from any drip zone within 6 to 30 inches from the exterior walls. A separate composite sample is collected from distinct play areas, gardens, and gravel driveways with incomplete barriers, if present. Soil samples will generally be analyzed for lead content using X-Ray Fluorescence Spectroscopy. A representative number of samples will be sent off-site for laboratory confirmation analysis in accordance with quality assurance/quality control plans. Sample results are compared to appropriate soil action levels. If one or more non-drip zone sections exceed the appropriate action level, the property becomes eligible for Superfund response.

Soil will be excavated using lightweight excavation equipment and hand tools in the portions of the yard where the surface soil exceeds an applicable action level. Non-contaminated soil will be used to replace the soil removed after excavation, returning the yard to its original grade and elevation. The EPA will not use protected soils from the Loess Hills for backfill of excavated properties at the Site.

After the soil has been replaced, a grass lawn will be re-established through either sodding or hydro-seeding. The EPA anticipates that most, if not all, residential yards will be restored through placement of sod. Sodding provides a more immediate cover and requires less maintenance to establish. Sod must be used in sloped areas of properties that would be subject to erosion. Hydro-seeding offers potential cost savings relative to sodding, but can present more difficulty in establishing a high quality lawn. Hydro-seeding may be considered for very large properties, or for unoccupied properties, in lieu of sodding. Hydro-seeding would be applied to a property only with the agreement of the property owner and when circumstances assure that a quality grass cover can be effectively established. Installation of landscaping features, including mulch, crushed stone, landscaping cloth, sand, wood chips or other forms of vegetation may be considered in remediated areas where grass cover can not be established.

The amended action involves the excavation and removal of lead-contaminated soils, backfilling the excavated areas to original grade with clean topsoil, and restoring a grass lawn at remediated properties. Excavation would be performed at properties where exposure to lead-contaminated soils is of greatest concern. Generally, the properties that will be designated for response include:

1) Any residential-type property where at least one non-foundation sample exceeds 800 ppm lead;

2) Residences with any non-foundation sample exceeding 400 ppm lead where a child identified with an EBL (greater than 10 µg/dl) resides;

3) Child care facilities and other high child-impact areas with any non-foundation sample exceeding 400 ppm lead.

During remediation activities, clean access to the residence will be provided at all times. Clean access will

provide residents with access to their home that avoids contact with potentially contaminated soil. Sidewalks will be thoroughly brushed and/or washed off with water after each workday to provide as clean an entry as possible to the residence. In the absence of a sidewalk, placement of plywood, pallets, plastic, or using other temporary measures to prevent exposure and tracking of soils will provide a clean pathway to the residence. All residents will be required to avoid the construction area during remediation activities. Unsafe excavation areas or stockpiled soils will be visually identified with banner guard or other type of barrier to prevent accidents and exposure.

Outdoor faucets and hydrants from private residences and public areas may be used as water supply sources, with the property owner's permission.

Installation of a non-contaminated soil cover may be considered for areas contaminated at levels less than 1,200 ppm as an acceptable alternative to, or in combination with, excavation to reduce cost in special cases such as large parks or open spaces. Installation of a soil cover on residential properties in lieu of excavation and soil replacement will generally not be considered, and would not be performed without the informed consent of the individual property owner. Installation of a non-contaminated soil cover would only be considered in areas where surface soil-lead concentrations are greater than 400 ppm, but less than 1,200 ppm, and where drainage and other site-specific considerations would otherwise accommodate placement of a soil cover. The soil cover would consist of a minimum of 12 inches of non-contaminated soil. Installation of a non-contaminated soil cover would not occur in areas where surface soils exceed 1,200 ppm lead.

Air monitoring will be conducted during removal activities, if necessary, to ensure that airborne particulates do not contain harmful levels of lead. No visible dust will be allowed to leave the excavation areas.

In order to prevent the re-contamination of the non-contaminated soil placed in yards after excavation, loose and flaking exterior lead-based paint that threatens the continued protectiveness of the remedy will be stabilized on affected structures prior to soil excavation. Only those homes and other structures where lead-based paint is visibly flaking and deteriorating will be addressed. Loose and flaking paint will be removed primarily through wiping, or wet scraping, although power washing may be considered on surfaces where limited damage to the siding or structure would be expected. Once loose and flaking paint has been removed, an encapsulant or other appropriate material will be applied to stabilize the affected surface. Coating material used to stabilize affected surfaces will be color-matched to the existing surface to the extent practicable.

Procedures used to stabilize lead-based paint will be consistent with HUD requirements presented in "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (HUD, June 1995)". Contractors working on removal of lead-based paint will operate in conformity with the Residential Lead-Based Paint Hazard Reduction Act, the Toxic Substances Control Act, and Title 178, Chapter 23 of the Nebraska Administrative Code.

At residences where soil cleanup actions are conducted, sampling may be performed to assess lead concentrations in interior dust. Homes that exceed the EPA and the HUD standards for lead in interior dust that allow a maximum dust loading of 40 µg/ft2 for floors and 250 µg/ft2 for window sills will be eligible for a thorough interior cleaning using high-efficiency equipment. Interior cleaning of affected residences will be provided, in accordance with the HUD procedures, on a voluntary basis for willing residents, after the soil cleanup is completed in the yard.

Next Steps

The Interim ROD issued December 15, 2004, increased the scope of the response action to include other eligible properties described above. Based on information in the Omaha Lead Site Remedial Investigation, the ROD estimated that 5,600 properties exceed 800 ppm lead, or are otherwise eligible for response based on high child-impact or EBLs. The current action increases the scope of the removal response to include all elements of the ROD and increases the funding ceiling to provide continued response at an estimated 300 of these properties.

Key Issues

The EPA's health protection goal is that there be no more than a five percent probability that any child exposed to lead at the Site will have a blood-lead level exceeding 10 µg/dl. A Baseline Human Health Risk Assessment was finalized for the site in June 2004. This risk assessment concluded that on the basis of data collected from the Site, 34 percent of children are predicted to exceed the health-based goal.

Disposition of Wastes

The tenth and eleventh, lead contaminated stockpiles that have been generated during this phase of the

project were transported during the week of August 15, 2005 to the Loess Hills Regional Landfill. Approximately 1,600 cubic yards of material was sent to the landfill.

response.epa.gov/OmahaLeadPhaseIV