UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

JUN 05 2012

ACTION MEMORANDUM

SUBJECT: Approval for a Potentially Responsible Party-Lead, Time-Critical Removal Action at the Former Carter White Lead Site, Omaha, Douglas County, Nebraska

FROM: Mike B. Davis, On-Scene Coordinator
Planning and Preparedness South Section

THRU: Mary Peterson, Chief
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TO: Cecilia Tapia, Director
Superfund Division

Site ID: A7P4

I. PURPOSE

The purpose of this Action Memorandum is to request approval to initiate a potentially responsible party (PRP)-lead, time-critical removal action described herein as the Former Carter White Lead site (Site). The Site is a former lead-based white pigment manufacturing facility which occupies a city block in east Omaha, Douglas County, Nebraska.

Investigations conducted by the U.S. Environmental Protection Agency determined that lead contaminated soil is present at the Site, which is the subject of this removal action. As detailed below, the objective of this removal action is to protect public health, or welfare, or the environment by responding to the release of hazardous substances into the environment as presented by soils contaminated with lead. Contaminated soil exceeding the applicable action levels as detailed below will be excavated, treated if necessary, and transported for disposal at a licensed facility.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID#: NEN000704909
Removal Category: Time-Critical
Nationally Significant: No

A. Site Description

1. Removal site evaluation

The Former Carter White Lead Facility manufactured lead-based white paint pigments from 1881 to 1926, when the company ceased operations. In the early twentieth century, the daily output of the facility was about 32,000 pounds of white lead.

An investigation and remedial action are ongoing to address widespread lead contamination in the Omaha, Nebraska, area (referred to as the Omaha Lead Site [OLS]). In November 2004, as part of the OLS project, the EPA screened surface soils at 2706 North 21st Street East and 2802 North 21st Street East, two properties adjacent to the Site. The lead concentrations in those soils were below the 400 milligrams per kilogram (mg/kg) lead screening level.

There have been several past investigations at the Site. The Open Door Mission, the current property owner for the north portion of the Site, retained Jacobson Helgoth Consultants, Inc. (JHC), to provide professional environmental consulting services regarding one parcel of the Site. From September through December 2004, JHC conducted several soil investigations to determine the extent of lead impact. JHC collected a total of 38 soil samples from 0 to 2 feet below ground surface (bgs) under the asphalt parking lot on the referenced parcel using direct push technology and a truck-mounted drill rig. The soil samples were analyzed for total lead by the EPA Method 6010. Lead was detected in all of the soil samples, with concentrations ranging from 65.7 to 9,796 mg/kg. Sixteen of the samples underwent Toxicity Characteristic Leachate Procedure (TCLP) analysis and contained concentrations of lead in leachate ranging from 0.12 to 91.7 milligrams per liter (mg/L).

In October 2005, the EPA conducted a Preliminary Assessment (PA) at the Site. Field activities included: (1) in situ analysis of surficial soils for metals using a portable X-ray fluorescence (XRF) analyzer, and (2) collection of soil samples for laboratory confirmation analysis. The PA focused on the unpaved areas of the Site. A total of 111 samples collected across the Site identified ubiquitous lead contamination in surficial soil. The maximum detected concentration was 17,800 mg/kg and the average concentration of all samples was 1,700 mg/kg.

In July 2009, the EPA conducted a Removal Site Evaluation (RSE) at the Site. The main objective of the RSE was to delineate the extent of lead-contaminated soil. RSE sampling was conducted on July 13 and 14, 2009. Field activities included in situ XRF readings on-site and off-site, collection of surface and subsurface soil samples for field screening and laboratory analysis for metals, and collection of soil samples for lead speciation. First, in situ samples were analyzed using XRF to demonstrate conformance with data from the October 2005 PA. After data conformance was demonstrated, in situ samples were analyzed using XRF from systematic locations on adjacent properties to delineate the lateral extent of lead contamination in surficial soil. In total, 45 in situ XRF readings were taken. The EPA also collected six surface soil samples (including one background sample) for confirmatory lab analysis to demonstrate statistical correlation with in situ XRF analysis. Surface soil concentrations of lead ranged from 18 mg/kg in an off-site delineation sample to 5,063 mg/kg in a central location within the Site.

Six subsurface soil borings were also sampled from depths ranging from 0 to 8 feet bgs to approximate the vertical extent of lead contamination in soil across the Site. The highest levels of lead contamination at the Site were detected between 2 to 4 feet bgs, with maximum concentrations around

22,000 mg/kg. Lead concentrations decreased significantly at depths below 4 feet bgs. Correspondingly, soil borings indicated a transition from fill material and debris to predominately native silty clays at 4 to 5 feet bgs across the Site.

Sampling from adjacent properties and at background locations indicates that the area of soil contamination does not extend appreciably beyond the footprint of the Former Carter White Lead Facility. Three samples from a drainage swale in the right-of-way on the north and east sides of the Omaha Box Company, south of the Site across Avenue J, identified surficial lead concentrations ranging from 485 mg/kg to 731 mg/kg, which is statistically elevated relative to background, but does not exceed the Regional Screening Level for industrial properties of 800 mg/kg. One surficial sample from the roadside right-of-way along North 21st Street immediately west of the Site identified lead at 1,740 mg/kg.

Lead speciation analysis was conducted on three samples to identify and quantify the forms of lead present at the Site. Lead speciation was conducted by the University of Colorado's Laboratory of Environmental and Geological Studies. The most common form of lead in soil (74 to 84 percent by mass) was cerussite, also known as white lead ore, which is a mineral consisting of lead carbonate that was formerly used as an ingredient for the manufacturing of white lead paint.

Findings from the PA and RSE are summarized as follows:

- Soil contamination: Surface and subsurface soil sampling identified widespread lead contamination on the parcels comprising the Site. Soil concentrations ranged from around 100 mg/kg to around 22,000 mg/kg total lead. Detected levels of lead in surface soil exceed the risk-based screening levels for recreational and residential receptors. More importantly, the average concentration of lead at the Site, which likely represents typical exposure conditions, exceeds all screening levels except for the one day/week recreational visitor. Contamination extends to a depth of 4 to 5 feet bgs, where soil borings indicate a transition from fill and construction debris to native geologic materials.

- Potential groundwater contamination: No groundwater sampling was conducted at this Site. During a Phase 1 Environmental Site Assessment conducted by a contractor for Open Door Mission in 2001, an attempt was made to collect groundwater samples from two shallow (below 15 feet bgs) monitoring wells located on an adjacent property east of 22nd Street, but these wells were found to be dry. The vertical extent of soil contamination was readily delineated and did not extend to the water table. Due to the predominately insoluble nature of the primary contaminant, and considering that soil sampling indicates that the extent of contamination does not extend to the water table, a significant release to groundwater is not expected to have occurred.

- Unrestricted access: Currently there is no fencing around the Site to inhibit access. The Site is regularly accessed by patrons of immediately surrounding properties operated by the Open Door Mission. Pedestrian traffic is frequent and recurrent. A portion of the Site is used for parking by the surrounding Open Door Mission organizations. Routine vehicle traffic across the Site generates considerable airborne dust, as witnessed during the July 2009 sampling event, further contributing to human exposures.

2. Physical location

The Site is located in the city of Omaha, Nebraska, between North 21st Street East and North 22nd Street East, and East Locust Street and Avenue J, in the southwest one-quarter of Section

12, Township 15 North, Range 13 East (U.S. Geological Survey 1994). The approximate geographic coordinates of the subject property are 41.2841 degrees north latitude and 95.9032 degrees west longitude.

North of the Site is the Omaha Airport Authority. To the east, southwest and west of the Site is Open Door Mission property. Open Door Mission provides support programs for those recovering from life-altering addictions and abuse. Southwest of the Site, located at the corner of North 21st Street East and Avenue J, is the Open Door Mission building which is a residential outreach and shelter facility for men. Currently, Open Door Mission is developing a new residential building on the southwest corner of North 21st Street East and East Locust Street for disadvantaged women and families. To the east, at the corner of North 22nd Street East and East Locust Street, is an Open Door Mission apartment house and children's playground which is currently not in use. South of the Site is the Omaha Box Company, which began production as a wooden box manufacturer in 1890. Presently, Omaha Box Company is an independent, corrugated paper manufacturer and distributor.

The area immediately surrounding the Site is primarily commercial with some light industry and residential. The 2000 Census data indicated that the population within four miles of the Site is approximately 81,373 persons. Of these, 88 residents live within one-quarter of a mile. Daycare and residential facilities are located adjacent to the Site. Employees of FleetPride and the Open Door Mission organizations are present at the Site as well as patrons of these entities.

The Site is located in a primarily commercial and industrial area. The Missouri River is approximately one-half mile south of the Site and Carter Lake is approximately one-half mile north of the Site. With the exception of manmade storm water conveyances, there are no streams or creeks directly influenced by runoff from the site. The Region 7 Omaha Council Bluffs Sub-area Contingency Plan includes a detailed analysis of environmentally sensitive areas and endangered and threatened species. There are no known environmentally sensitive habitats in the immediate vicinity of the Site. The nearest sensitive area is the Boyer Chute National Wildlife Refuge, approximately 10 miles north of the Site.

3. Site characteristics

The former Carter White Lead facility manufactured lead-based white paint pigments from 1881 to 1926, when the company ceased operations. In the early twentieth century, the daily output of the facility was about 32,000 pounds of white lead. No portion of the Site is currently or has ever been owned by any federal agency. No state or local government body has been an owner or operator of any facility or operation which contributed to contamination at the Site. There have been no previous removal actions taken at the Site.

Businesses currently on the Site include the Carter Lake Outreach Center building and a FleetPride truck service center. The Carter Lake Outreach Center building is located on the north-central portion of the Site along East Locust Avenue between 21st and 22nd Streets and is owned by Open Door Mission. The Carter Lake Outreach Center building is a thrift store used for distributing clothing and household items. FleetPride is located on the southeast portion of the Site. FleetPride leases the property for use as a heavy-duty truck repair and maintenance facility. The southwest portion of the Site is an unmaintained gravel parking lot. The two parcels comprising the south portion of the Site are owned by Morgan Wheel and Engine Company. There is currently a development plan designed by Open Door Mission which includes the purchase and redevelopment of the south portion of this Site into a vocational and educational training center, along with a grassy yard and a paved parking area.

4. Release or threatened release into the environment of a hazardous substance, or pollutant, or contaminant

Based on the results of sampling, a soil release associated with known activities at the former Carter White Lead facility has been established. The primary contaminant of concern at the Site is lead. Soil contamination is widespread across the footprint of the former facility boundaries and extends to a depth of approximately 4 to 5 feet bgs.

Lead is listed as hazardous substances pursuant to 40 CFR § 302.4. As such, it is a "hazardous substance" as defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601(14).

5. National Priorities List (NPL) status

The Site is not currently on nor is it proposed for listing on the NPL.

6. Maps, pictures, and other graphic representations

The Administrative Record for this response action contains all the documents which form the basis for this response action, including relevant Site maps, figures and data summaries.

B. Other Actions to Date

1. Previous actions

- EPA PA, report dated December 21, 2005
- EPA RSE, report dated March 11, 2010

2. Current actions

There are no ongoing response actions at this Site to reduce the risks posed by the lead contamination.

C. State and Local Authorities' Roles

1. State and local action to date

This Site was identified in a 104(e) information request response from NL Industries, Inc. ("NL") as a location where Carter White Lead, a wholly owned subsidiary of NL, formerly operated. The Nebraska Department of Environmental Quality (NDEQ) does not plan any enforcement or cleanup actions related to this Site. The EPA requested that NDEQ identify state ARARS on December 14, 2009, and NDEQ responded on March 25, 2010, by providing a generalized list of state regulations and guidelines.

2. Potential for continued state/local action:

The EPA project manager met with the NDEQ Brownfields coordinator regarding reuse and redevelopment opportunities. NDEQ is following up with Open Door Mission regarding a

CERCLA section 128(a) assessment and assistance with redevelopment plans currently designed for the Site. Other than potential redevelopment assistance, the EPA is not aware of any state or local activities planned for the Site.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT AND STATUTORY AND REGULATORY AUTHORITIES

Section 300.415(b) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) provides that the EPA may conduct a removal action when it determines that there is a threat to human health, or welfare, or the environment based on one or more of the eight factors listed in section 300.415(b)(2). The factors that justify a removal action at the Site are outlined as follows:

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

Analytical results from samples collected by the EPA indicate that hazardous substances have been released into the environment. Lead was detected in surface soils up to 17,800 mg/kg. Subsurface lead concentrations were as high as 21,800 mg/kg. The Site is not fenced or otherwise secured. The 2000 Census data indicated that the population within four miles of the Site is 81,373. The nearest known sensitive receptors are residential outreach facilities for men, women and children located adjacent to the Site. The Site is regularly accessed by patrons of immediately surrounding properties operated by the Open Door Mission. Pedestrian traffic is frequent and recurrent. The Site itself is in use by the Carter Lake Outreach Center (thrift store), a FleetPride truck service center and for parking by the surrounding Open Door Mission organizations. Routine vehicle traffic across the Site generates considerable airborne dust, further contributing to human exposures and contaminant migration.

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.

Lead was detected in surface soils at concentrations up to 17,800 mg/kg. Detected levels of lead in surface soil exceed applicable risk-based screening levels for recreational and residential receptors as determined by an EPA Region 7 toxicologist. More importantly, the average concentration of lead at the Site, which likely represents typical exposures conditions, exceeds all screening levels except for the one day/week recreational visitor. For these reasons, levels of lead in surface soils at the Site pose unacceptable human health risks to recreational and residential receptors under current and future use conditions. Lead-contaminated soils may migrate via airborne dusts, surface runoff to nearby storm water and surface water bodies, construction and utility worker activity, children and adults transporting soils/dusts into nearby residential facilities and homes and foot traffic into residences.

300.415(b)(2)(v) – Weather conditions that may cause hazardous substances, pollutants or contaminants to migrate.

Lead has been detected in surface soils at concentrations up to 17,800 mg/kg. Both physical observations at the time of the RSE and sampling data indicate that lead-contaminated soils migrate via airborne dusts to residential-use properties located adjacent to the Site. Precipitation may cause the lead contamination to migrate via surface runoff and percolate into groundwater.

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

No other state or federal authorities are able to respond to the release of hazardous substances at the Site.

300.415(b)(2)(viii) – Other situations or factors that may pose threats to public health or welfare of the United States or the environment.

In addition to the above-listed factors, the EPA considered studies conducted which assess the effects of lead on human health. The EPA also relies on widely accepted toxicological references and on case studies which assess human health effects.

Lead is (1) classified as a Group B2 - probable human carcinogen by the ingestion route of exposure, (2) a bluish grey heavy metal and a constituent of D008 hazardous waste, and (3) toxic and has no known function in the human body. Young children are most susceptible to the toxic effects of lead. Long-term exposure to even low levels of lead can cause irreversible learning difficulties, mental retardation and delayed neurological and physical development. In adults, exposure to lead affects primarily the peripheral nervous system and can cause impairment of hearing, vision and muscle coordination. Lead also damages the blood, kidneys, heart and reproductive system. The early effects of lead poisoning are nonspecific and difficult to distinguish from the symptoms of minor seasonal illnesses. Lead poisoning causes decreased physical fitness, fatigue, sleep disturbance, headache, aching bones and muscles, digestive symptoms (particularly constipation), abdominal cramping, nausea, vomiting and decreased appetite. With increased exposure, symptoms include anemia, pallor, a lead line on the gums and radial nerve damage causing weakness in the hands and wrists. Central nervous system effects include severe headaches, convulsions, coma, delirium and possibly death. The kidneys can also be damaged after long periods of exposure, with loss of kidney function and progressive azotemia. Reproductive effects in women include decreased fertility, increased rates of miscarriage and stillbirth, decreased birth weight, premature rupture of membrane and/or pre-term delivery. Reproductive effects in men include erectile dysfunction, decreased sperm count, abnormal sperm shape and size and reduced semen volume. Lead exposure is associated with increases in blood pressure and left ventricular hypertrophy. A significant amount of lead that enters the body is stored in the bone for many years and can be considered an irreversible health effect.

IV. ENDANGERMENT DETERMINATION

The actual or threatened release of a hazardous substance from this Site presents an imminent and substantial endangerment to the public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COST

A. Proposed Actions

1. Proposed actions description

Soil/Waste Excavation, Removal, and Replacement – Lead is the only contaminant of concern detected above applicable action levels at the Site. Lead-contaminated soil will be excavated and transported off-site for disposal. The southwest portion of the Site is currently vacant except for use as a parking lot by nearby facilities and for storage of construction materials and other

items for use by FleetPride and Open Door Mission. Contaminated soils underlying the Carter Lake Outreach Center building, the FleetPride truck service center building and existing structurally sound caps including asphalt and concrete parking areas will not be excavated. The objective of the excavation will be to mitigate lead contamination to levels determined to be protective for current and prospective future uses of the Site. The cleanup will be consistent with the Superfund Lead-Contaminated Residential Sites Handbook, OSWER 9285.7-50, August 2003, and will focus on mitigating impacts to human health and the environment given the site-specific property uses and exposure pathways including reasonably anticipated future uses. The depth of excavation will be a minimum of 12 inches in all accessible areas of the Site, and 24 inches in a pre-designated area which may be utilized as a garden area pending future redevelopment plans for the site.

Based on previous sampling, excavated remediation waste may exhibit a characteristic of hazardous waste for lead toxicity as defined in 40 CFR Subpart C. However, the remediation waste will not be a listed hazardous waste as defined in 40 CFR Subpart D. If contaminated soils need to be stabilized on-site prior to disposal to treat the toxicity characteristics, an Area of Contamination (AOC) will be delineated and soils will be treated in situ within the delineated AOC. If treatment or management of remediation waste occurs within an AOC, remediation waste will be managed in place for no longer than 90 days. Additionally, best management practices will be implemented to prevent cross-media contamination through particulate dispersion and runoff which are substantially equivalent to the performance standards for staging piles outlined in 40 CFR § 264.554(d)(1)(i)-(ii) and CFR § 264.554(d)(2), including fugitive dust suppression, stockpile liner(s) and cover(s), filter berms and silt fencing. Transportation and disposal of the soil will be completed in accordance with all applicable local, state and federal requirements.

After removing the soils from the affected area, confirmation sampling will be conducted using field-based instrumentation and laboratory analysis to ensure that all removal objectives have been achieved and the area will be backfilled, regraded and restored to original conditions or in a manner consistent with future uses as requested by the property owner(s). The backfill source will be evaluated to ensure the material could not reasonably be expected to have been impacted by hazardous substances, pollutants or contaminants.

Post Removal Site Controls – Institutional controls will be required because lead contaminated soil will remain on-site at levels that do not allow unlimited use and unrestricted exposure to soils, namely, contaminated soils underlying the Carter Lake Outreach Center building, the FleetPride truck service center building and existing asphalt and concrete parking areas that will not be excavated. Therefore, the EPA and NDEQ will jointly coordinate with the current property owners to identify and select institutional controls that are necessary to protect human health and the environment after the removal action is complete. The EPA expects that institutional controls will be implemented and maintained by the property owners.

Restrictive environmental covenants will be placed on the properties in which residual contamination remains in place that will, in perpetuity, notify any potential purchaser of the known extent of contamination. Such covenants would specify the location and extent of all residual contamination, require approval from the EPA and NDEQ prior to any construction activities which disturb contaminated soil, and require notification for anyone engaged in subsurface activities such as utility or construction workers to the presence of residual contamination. Such notice would be consistent with the EPA guidance on institutional controls and the Nebraska Uniform Environmental Covenants Acts, LB 298. Additionally, portions of the Site may require listing on the "Nebraska Public Record," which is an inventory of contaminated properties in the state that are not suitable for

unrestricted land use and have institutional controls. Institutional controls would remain in place until contamination at the Site reaches levels considered safe for any-use scenario based upon an evaluation of risk in accordance with appropriate and applicable EPA guidance and directives.

2. Contribution to remedial performance

The enforcement-lead actions proposed in this Action Memorandum should not impede any future remedial plans or other response. The cleanup level for lead will be consistent with other EPA cleanup actions for lead-contaminated soil at residential properties.

3. Engineering Evaluation/Cost Analysis (EE/CA)

Since this is a time-critical removal action, an EE/CA was not developed for this action.

4. Applicable or relevant and appropriate requirements (ARARs)

Section 300.415(j) of the NCP provides that removal actions shall, to the extent practicable considering the exigencies of the situation, attain ARARs under federal environmental or state environmental facility siting laws. The following specific ARARs have been identified for this removal action.

Federal

- Occupational Safety and Health Act Standards at 29 CFR part 1910 will be applicable to all actions.

- Department of Transportation (DOT) regulations at 49 CFR parts 107 and 171 to 177, DOT hazardous material transportation regulations, may be relevant and appropriate for transportation of the contaminated soils.

- The CERCLA off-site rule promulgated pursuant to CERCLA section 121(d)(3), 42 U.S.C. § 9621(d)(3), and formally entitled "Amendment to the National Oil and Hazardous Substances Pollution Contingency Plan; Procedures for Planning and Implementing Off-Site Response Action: Final Rule," 58 Fed. Reg. 49200 (Sept. 22, 1993), codified at 40 CFR in situ § 300.440, will be applicable for wastes disposed off-site.

- Alternative Treatment Standards for Contaminated Soil, codified at 40 CFR § 268.49, may be applicable if contaminated soil exhibits any characteristic of hazardous waste at the time it is generated.

- The AOC policy, as articulated in the NCP, may be relevant and appropriate if contaminated soils need to be treated on-site. Treatment within an AOC will be conducted in conformance with applicable policy and guidance. See 53 FR 51444 for a detailed discussion in the proposed NCP preamble; and 55 FR 8758-8760, March 8, 1990, for the final NCP preamble discussion. See also, the March 13, 1996, EPA memorandum, "Use of the Area of Contamination Concept During RCRA Cleanups," and most recently the "Hazardous Remediation Waste Management Requirements (HWIR media)" in Federal Register / Vol. 63, No. 229 / Monday, November 30, 1998.

- Section 402 of the Clean Water Act references Best Management Practices (BMPs) for storm water management. Storm water management BMPs will be implemented as appropriate to mitigate runoff of contaminated soil during this removal action.

State

- On December 14, 2009, the EPA project manager submitted a request to NDEQ to identify site-specific state ARARs. On March 25, 2010, NDEQ submitted to the EPA project manager a generalized compendium of the state of Nebraska's ARARs and relevant guidance, including the Nebraska Uniform Environmental Covenants Act Neb. Rev. Stat. 76-2601 to 76-2613, and remediation goals (RGs) provided in the Nebraska Voluntary Cleanup Program Guidance. State ARARs will be considered to the extent practicable during this removal action.

5. Project schedule

Response activities are anticipated to begin within 30 days of the signing of this Action Memorandum. It is anticipated that the project will require approximately 10 days to complete.

B. Estimated Costs

The PRP will implement and complete the work described in this Action Memorandum. The costs associated with the removal action are discussed in the attached Confidential Enforcement Addendum.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will result in a continued threat to public health, or welfare, or the environment, and in particular will continue to expose residents and workers to the contaminated soils exceeding federal action levels.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

See attached Confidential Enforcement Addendum.

IX. RECOMMENDATION

This decision document represents the selected removal action for addressing the hazardous substances, pollutants or contaminants present at the Site. The removal action was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet NCP Section 300.415(b) criteria for a removal action, and I recommend your approval of the proposed PRP-lead removal action.

Approved:

Cecilia Tapia, Director
Superfund Division

Date 6/5/12

Attachment