



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1
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BOSTON, MA 02109-3912

CONTAINS ENFORCEMENT-SENSITIVE INFORMATION

MEMORANDUM

DATE: August 16, 2012

SUBJ: Request for a Ceiling Increase and a Change in the Scope of Response to Continue the Removal Action at the Hilton Chrome Superfund Site, Lawrence, Massachusetts – **Action Memorandum Addendum**

FROM: Karen Way, On-Scene Coordinator *by email; for MSB*
Emergency Response and Removal Section I

THRU: Michael S. Barry, Acting Chief *MSB*
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TO: James T. Owens III, Director
Office of Site Remediation and Restoration

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed change in scope and ceiling increase at the Hilton Chrome Superfund Site, 75 Holly Street, Lawrence, MA. The initial AM was signed by the Director of the Office of Site Remediation and Restoration on April 9, 2012.

A change in the scope of response is necessary to mitigate the risks associated with the current threats to public health and the environment. An increase in the ceiling is necessary to sustain removal activities and mitigate the continued potential release of hazardous substances from the Site.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# : MA5000002675
SITE ID# : 01HW
CATEGORY : Time-Critical

A. Site Description

1. Removal site evaluation

See Action Memorandum dated April 4, 2012

2. Physical location

See Action Memorandum dated April 4, 2012

3. Site characteristics

See Action Memorandum dated April 4, 2012

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

See Action Memorandum dated April 4, 2012; in addition the presence of contaminated soils and debris within and around the deteriorating building constitutes a potential threat to public health and the environment. Exposure to the elements will hasten the degradation of the building, and thereby increase the potential of a release.

5. NPL status

The site is not currently on the National Priorities List, and has not received a Hazardous Ranking System rating.

B. Other Actions to Date

1. Previous actions.

See Action Memorandum dated April 4, 2012

2. Actions conducted by EPA since signing of the Action Memo dated April 4, 2012 and the Action Memo Addendum dated July 9, 2012

Removal action activities began on May 9, 2012 and included the following:

- Clear vegetation and grade the ground behind the building structures to create an appropriate staging area for consolidated hazardous waste;
- Clear and dispose of general solid waste and debris to safely access hazardous materials and contaminated vats and drums;

- Sample all vats, drums and other containers for analysis for disposal;
- Consolidate and segregate all drums and other containers present;
- Pump liquid contents of vats into 250-gallon totes;
- Remove sludge and solidified hazardous wastes from vats and transfer to 55-gallon drums for disposal;
- Remove and dispose of all process piping;
- Remove and dispose of contaminated wood flooring and concrete blocks;
- Solidify, remove and dispose of sludge from under vats and wood flooring;
- Remove and dispose of all suspected PCB containing light ballasts;
- Remove and dispose of all fluorescent bulbs;
- Conduct soil and water sampling within the building to further determine the extent of contamination; and,
- Conduct soil sampling from test pits excavated at the rear of the property to further determine the extent of contamination.

3. The reasons for requesting a ceiling increase and a change in scope are:

Additional funds are needed to continue the ongoing removal action activities. Based upon the continued assessment of the Site during the current removal action, the extent of contamination in soil underneath the building and in soil on the site are greater than originally anticipated, requiring a change of scope to address these areas. Additionally, the volumes of hazardous wastes within the facility were greater than originally estimated. During the removal activities, the following specific conditions were encountered:

- The concrete floor beneath the former sulfuric acid vat has been corroded to the soil surface, from spillage during the time when the Site was in operation. Due to the deteriorated condition of the building, infiltrating rainwater accumulates in this area, leaches sulfuric acid out of the concrete and then infiltrates into the subsurface soil. Water in this area was found to have a pH of ~2 and a soil sample taken beneath the corroded concrete was found to have elevated concentrations of arsenic and lead.
- In the workshop area, a vent/overflow pipe was discovered and also a hole in the wall near the floor that lead to a half moon shaped hole cut out of the concrete subfloor. Samples taken in this area contained elevated levels of hexavalent chromium, total chromium, nickel, cyanide and had a pH of 3.6.
- A drainage hole the size of a 4" pipe was discovered in the wastewater treatment area, after the treatment vats were removed. The cement block floor in this area had corroded and sections of it had been removed, exposing the soil beneath to any hazardous wastes that were spilled while being processed. Samples were collected in this area had elevated levels of cadmium, total chromium, lead and nickel.

- Samples collected in exposed soils and the sewer line sump in the west wing and exposed soils in the north and south vat lines in the east wing, detected elevated concentrations of hexavalent chromium, total chromium, arsenic, cadmium, lead, nickel and zinc.
- A suspected leach field type structure was detected under the 18" concrete floor in the south wing of the building and several potential historical flow paths into it from the workshop and wastewater treatment areas are evident.
- Elevated concentrations of heavy metals were detected in the samples taken from the soil surrounding the building.

Some outside soils, open pathways to the sub-surface in the building and potentially some subsurface soils under the building will need to be addressed. Due to the deteriorated and unsound condition of the building, any work to address the contamination beneath the building concrete floors could compromise the safety of the workers and the surrounding community and may require some demolition to safely address the contamination in the soil.

C. State and Local Authorities' Roles

1. State and local actions to date.

See Action Memorandum dated April 4, 2012.

2. Potential for continued State/local response

See Action Memorandum dated April 4, 2012.

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

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

Metal plating chemicals and residues present a hazard to public health and the environment. Based on Site conditions and information on the hazardous substances present, the Site poses a potential threat to the local community and to the Spicket River.

Hexavalent Chrome ((chromium (VI)) – Breathing high levels of chromium (VI) can cause irritation to the lining of the nose, nose ulcers, runny nose, and breathing problems such as asthma, cough, shortness of breath, or wheezing. The concentrations of chromium

in air that can cause these effects may be different for different types of chromium compounds, with effects occurring at much lower concentrations for chromium (VI) compared to chromium (III).

The main health problems seen in animals following ingestion of chromium (VI) compounds are irritation and ulcers in the stomach and small intestines and anemia. Spleen damage and damage to the male reproductive system have also been seen in laboratory animals exposed to chromium (VI).

Skin contact with certain chromium (VI) compounds can cause skin ulcers. Some people are extremely sensitive to chromium (VI). Allergic reactions consisting of severe redness and swelling of the skin have been noted.

The U.S. Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have determined that chromium (VI) compounds are known human carcinogens. In workers, inhalation of chromium (VI) has been shown to cause lung cancer. Chromium (VI) also causes lung cancer in animals. An increase in stomach tumors was observed in humans and animals exposed to chromium (VI) in drinking water.¹

Lead - The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It 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 can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High level exposure in men can damage the organs responsible for sperm production.

The Department of Health and Human Services (DHHS) has determined that lead and lead compounds are reasonably anticipated to be human carcinogens and the EPA has determined that lead is a probable human carcinogen. The International Agency for Research on Cancer (IARC) has determined that inorganic lead is probably carcinogenic to humans and that there is insufficient information to determine whether organic lead compounds will cause cancer in humans.²

¹ Excerpts from Agency for Toxic Substances and Disease Registry (ATSDR). 2008. Toxicological Profile for Chromium. (Draft/or Public Comment). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

² Agency for Toxic Substances and Disease Registry (ATSDR). 2007. Toxicological Profile for Lead (*Update*). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service

Nickel - The U.S. Department of Health and Human Services (DHHS) has determined that nickel metal may reasonably be anticipated to be a carcinogen and nickel compounds are known human carcinogens. The International Agency for Research on Cancer (IARC) has determined that some nickel compounds are carcinogenic to humans and that metallic nickel may possibly be carcinogenic to humans. The EPA has determined that nickel refinery dust and nickel subsulfide are human carcinogens. These cancer classifications were based on studies of nickel workers and laboratory animals.³

Cadmium - Breathing high levels of cadmium can severely damage the lungs. Eating food or drinking water with very high levels severely irritates the stomach, leading to vomiting and diarrhea. Long-term exposure to lower levels of cadmium in air, food, or water leads to a buildup of cadmium in the kidneys and possible kidney disease. Other long-term effects are lung damage and fragile bones.

The Department of Health and Human Services (DHHS) has determined that cadmium and cadmium compounds are known human carcinogens. It's not known if cadmium causes birth defects in people. The babies of animals exposed to high levels of cadmium during pregnancy had changes in behavior and learning ability. There is also some information from animal studies that high enough exposures to cadmium before birth can reduce body weights and affect the skeleton in the developing young.⁴

Cyanide – See Action Memorandum dated April 4, 2012.

Sulfuric Acid – See Action Memorandum dated April 4, 2012. *High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate [§300.415(b)(2)(iv)];*

High concentrations of metals (hexavalent chromium, total chromium, lead, nickel, cadmium, arsenic, zinc) and cyanide were found in the soil samples taken on the property above the Massachusetts Contingency Plan (MCP) *Direct Contact Exposure-Based Soil Concentrations* S-1 and S-3 levels. All samples taken within the building had one or more metals concentrations above both the S-1 and S-3 levels. Three out of eleven samples taken within the building had hexavalent chromium concentrations above the S-1 levels and one of the samples had a cyanide concentration above the S-1 level. One of the three samples taken outside had a lead concentration above both the S-1 and S-3 levels.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [§300.415(b)(2)(v)];

³ Agency for Toxic Substances and Disease Registry (ATSDR). 2005. Toxicological profile for Nickel. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

⁴ Agency for Toxic Substances and Disease Registry (ATSDR). 2008. Toxicological profile for Cadmium (*Draft for Public Comment*). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Severe winter weather typical of New England and seasonal rains are likely to further degrade the facility and potentially fully expose the contaminated soils to the elements and cause a release to the environment as noted above. Also, there is a high likelihood that the Spicket River will flood at some point, flushing the contaminants present in the soils into the environment.

The availability of other appropriate Federal or State response mechanisms to respond to the release [§300.415(b)(2)(vii)];

Hilton Chrome is no longer in business and does not have the resources to address the containers.. MassDEP does not have available resources to address the contamination at this time.

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

The Site building has been repeatedly vandalized, which has increased the exposure of the building to the elements.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances at or from this Site, if not addressed by implementing the response action selected in this action memorandum, may present an imminent and substantial endangerment to public health, welfare, and the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description

The general scope of the proposed action will be to perform additional site sampling to determine the nature and extent of contamination from the Site to protect public health, welfare, and the environment. Specific actions include:

- Develop and implement a health and safety plan;
- Prepare and implement air monitoring plan assuring protection of cleanup workers and adjacent residents;
- Conduct a site reconnaissance walk with the cleanup contractor;

- Conduct all necessary professional surveys and sampling to define the course of the continued removal action ;
- Obtain all necessary permits;
- Provide site security as determined necessary by the OSC based on Site conditions;
- Mobilize personnel and equipment;
- Delineate work zones and decontamination area;
- Secure interior rainwater to subsurface pathways;
- If required to address subsurface soils underneath the building:
 - Strategically raze portions of the approximately 20,000 sq.ft. building as required;
 - Segregate and stage the building debris for disposal if required;
 - Demolish and remove contaminated concrete flooring in areas required;
 - Remove concrete flooring in areas required to access contaminated soil;
 - Segregate and stage the concrete floor for disposal;
 - Excavate subsurface contaminated soil, segregate and stage for disposal where required;
- Perform any necessary additional sampling, analysis and characterization of hazardous materials;
- Remove contaminated soils outside the building as required;
- Backfill excavated areas to grade, approximately 5,000 tons, with clean fill;
- Coordinate disposal of all materials at an EPA-approved disposal facility;
- Secure the property as necessary upon demobilization;
- Repair any response-related damages; and
- Demobilize all equipment and personnel.

2. Community Relations

The OSC will remain involved with the local community during the course of the removal action through press releases, fact sheets, and public meetings as necessary.

3. Contribution to Remedial Performance

The cleanup proposed in this Action Memorandum Addendum is designed to mitigate the threats to human health and the environment posed by the Site. The actions taken at the Site would be consistent with and will not impede any future responses.

4. Applicable or Relevant and Appropriate Regulations (ARARs)

Federal ARARs:

40 CFR Part 262 Standards Applicable to Generators of Hazardous Waste:

Subpart B - The Manifest

- 262.20 : General requirements for manifesting
- 262.21 : Acquisition of manifests
- 262.22 : Number of copies of manifests
- 262.23 : Use of the manifest

Subpart C - Pre-Transport Requirements

- 262.30 : Packaging
- 262.31 : Labeling
- 262.32 : Marking

Subpart D - Recordkeeping and Reporting

- 262.40 : Recordkeeping

40 CFR Part 264 Standards for Owners and Operators of Hazardous waste Treatment, Storage, and Disposal Facilities:

Subpart I - Use and Management of Containers

- 264.171 : Condition of containers
- 264.172 : Compatibility of waste with containers
- 264.173 : Management of containers
- 264.174 : Inspections
 - 264.175 : Containment
 - 264.176 : Special requirements for ignitable or reactive waste
 - 264.177 : Special requirements for incompatible wastes

40 CFR Part 264 Hazardous Waste Regulations - RCRA Subtitle C:

- 268-270 : Hazardous and Solid Waste Amendments Land Disposal Restrictions Rule

40 CFR Part 300.440 Procedures for Planning and Implementing Off-Site Response Actions (Off-Site Rule)

State ARARs:

The OSC will coordinate with State officials to identify additional State ARARs, if any. In accordance with the National Contingency Plan and EPA Guidance Documents, the OSC will determine the applicability and practicability of complying with each ARAR which is identified in a timely manner.

B. Estimated Costs and Schedule

This time-critical removal action is planned to start as soon as practicable after the signing of this Action Memorandum Addendum. EPA anticipates completing this action within six months.

1. CEILING FROM ORIGINAL ACTION MEMORANDUM

Extramural Costs	Current AM Ceiling	Proposed Increase	Proposed Ceiling
<i>Regional Allowance Costs:</i>			
ERRS Contractor ⁵	\$401,000.00	\$620,000.00	\$1,021,000.00
<i>Other Extramural Costs Not Funded From The Regional Allowance:</i>			
START Contractor	\$101,000.00	\$40,000.00	\$141,000.00
Subtotal, Extramural Costs	\$502,000.00	\$660,000.00	\$1,162,000.00
Extramural Cost Contingency <i>(20% of Subtotal, Extramural Costs; rounded to nearest thousand)</i>	\$100,400.00	\$132,000.00	\$232,400.00
TOTAL REMOVAL ACTION PROJECT CEILING	\$602,400.00	\$792,000.00	\$1,394,400.00

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

The absence of a response action as detailed above will allow the Site to further deteriorate and will increase environmental and public health risks by the release or threat of release of hazardous substances.

VII. OUTSTANDING POLICY ISSUES

There have been no outstanding policy issues identified to date.

⁵ Emergency Rapid Response Services

VIII. ENFORCEMENT

See attached Enforcement Strategy.

The total EPA costs for this removal action addendum based on full-time accounting practices that will be eligible for cost recovery are estimated to be \$1,394,400 (extramural costs) + \$110,400 (EPA intramural costs) = \$1,504,800 X 1.3284 (regional indirect rate) = **\$1,998,976⁶**.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Hilton Chrome Site in Lawrence, MA, developed in accordance with CERCLA, as amended, and is not inconsistent with the National Contingency Plan. The basis for this decision will be documented in the administrative record to be established for the Site.

Conditions at the Site meet the NCP Section 300.415 (b) (2) criteria for a removal action due to the following:

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate [§300.415(b)(2)(iv)];

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

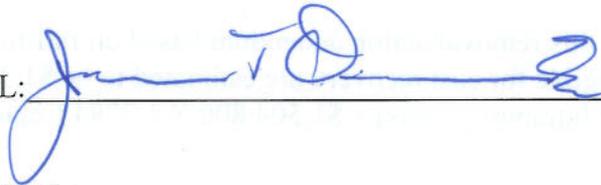
Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [§300.415(b)(2)(v)];

The availability of other appropriate Federal or State response mechanisms to respond to the release [§300.415(b)(2)(vii)];

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

⁶Direct Costs include direct extramural costs \$1,394,400 and direct intramural costs \$110,400. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific costs 32.84% x \$1,998,976, consistent with the full accounting methodology effective October 2, 2000. These estimates do not include pre-judgement interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

I recommend that you approve the proposed removal action addendum. The total extramural removal action project ceiling if approved will be \$1,394,000.

APPROVAL:  _____ DATE: 8/20/12

DISAPPROVAL: _____ DATE: _____