



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE – SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

CONTAINS ENFORCEMENT-SENSITIVE INFORMATION

MEMORANDUM

DATE: July 7, 2010

SUBJ: Request for a Removal Action at the Former Tombarello & Sons Property Site,
Lawrence, Essex County, Massachusetts - **Action Memorandum**

FROM: Mike Barry, On-Scene Coordinator
Emergency Response and Removal Section I

MS Barry 7/7/2010

THRU: David McIntyre, Chief *D McIntyre*
Emergency Response and Removal Section I

Arthur V. Johnson III, Chief *AV Johnson*
Emergency Planning & Response Branch

TO: James T. Owens III, Director *JTO*
Office of Site Remediation and Restoration

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action at nine residential properties and the abutting abandoned industrial facility in Lawrence, Massachusetts. Hazardous substances present in surficial soils, if not addressed by implementing the response actions selected in this Action Memorandum, will continue to pose a threat to human health and the environment. There are no nationally significant or precedent-setting issues associated with the Site, and there has been no use of the On-Scene Coordinator's (OSC) \$200,000 warrant authority.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# : MAD019426238
SITE ID# : 01FQ
CATEGORY : Time-Critical

A. Site Description

1. Removal site evaluation

The "Site" consists of nine privately-owned residential properties (total of approximately 2 acres) and an abandoned former metal scrap recycling facility (14 acres) known as Tombarello and Sons. Operations had included magnetic separation of metals from soil and truck driving instruction, both of which generated dust for many years. The residential properties have reportedly been contaminated due to their proximity to the facility. They are all currently occupied, and their condition and features are consistent with well-maintained homes.

Tombarello had erected a fence between the homes and the facility in the mid-1960s, and later maintained it to help mitigate fugitive dust from entering the residential properties.

On April 2, 2008 the Site was referred by letter to EPA from the Massachusetts Department of Environmental Protection (MassDEP), who had already sampled the nine residential properties and the facility, as a potential removal action. On April 29, 2008, EPA performed a Preliminary Assessment/Site Investigation (PA/SI) on the residential properties.¹

2. Physical location

The impacted residential properties are located at 19-53 Hoffman Avenue in Lawrence, Essex County, Massachusetts (Map 33, Lots 14, 13, 12, 12a, 11, 10-1, 10-2, 9 and 8), north of the Tombarello property the address of which is 207 Marston Street (Map 33, Lot 17); (42 43' 10.88 North latitude, 071 08' 29.41 West longitude). This mixed industrial/ residential area is bounded on the east by I-495, on the west by Marston Street, on the north by the Hoffman Avenue, and on the south by industrial properties. A middle school is located across Marston Street from the Tombarello property.

3. Site characteristics

The Tombarello property is generally level, contains several buildings and building foundation pads, and is secured with chain-link fencing. Most of the equipment, metal and debris have been removed, but some, including one excavator, remains. The surface is a mostly bare soil/gravel mix with some sparse vegetation and some soil piles. A drainage ditch runs from the north to the southwest, adjacent to I-495. Sampling on the northern property boundary indicates contamination with PCBs and metals in surface soil (see Table 1 on page 3).

The residential properties are well-maintained and contain homes, lawn, decorative shrubbery/trees and a variety of outbuildings and patios. Elevated levels of polychlorinated biphenyls (PCBs) and metals have been detected throughout the back yards (see Table 2 on page 4).

¹ The facility was not inspected at that time because of access issues.

A narrow strip of land in the back of some of the residential properties is legally part of the Tombarello & Sons property, but had been incorporated as an integral part of the resident's back yards for years because the fence was placed inside the Tombarello & Sons property and a vegetative border evolved.

According to the Region ArcGIS mapping tool, within one mile of the Site there are:

- 21,968 residents;
- 8 public and private schools;
- One day care center;
- One hospital;
- Two nursing homes.

According to the EPA Region 1 Environmental Justice Mapping Tool, the Site is not in an environmental justice area.

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

Analysis of 17 soil samples from the northern property line of the Tombarello & Sons property detected PCBs, lead, cadmium, chromium and barium in excess of MassDEP and/or EPA screening levels for unrestricted residential use.

Table 1: Tombarello Site Northern Property Line Contaminant Concentrations in mg/kg (ppm)				
	PCB (Ar-1260)	Lead	Cadmium	Chromium
MAX	6.33	1730.00	17.00	57.70
AVE	2.51	391.16	4.14	33.00
MassDEP S-1	2	300	2	30
ATSDR	1			
Imminent Hazard (MADEP)	10		60	

Analysis of 129 soil samples from the residential properties detected PCBs, lead, cadmium, chromium and arsenic in excess of MassDEP and/or EPA screening levels for unrestricted residential use.

The PA indicated that the pathway of the contaminants to the abutting yards was both by air via wind and dust and by surface water run-off. SI sampling supports these pathways by indicating that the contamination is on or near the ground surface. In the following table summarizing the data, highlighted entries indicate exceedences of allowable contaminant levels and associated properties.

Table 2: Tombarello Site Residential Contaminant Concentrations in mg/kg (ppm)					
Residence	PCB	Lead	Cadmium	Chromium	Arsenic
19 Hoffman	0.68	171.60		14.80	31.20
21 Hoffman	1.47	141.60		24.60	
25 Hoffman	1.01	300.00	1.80		
27/29 Hoffman	0.36	88.50		24.50	13.50
31 Hoffman	1.44	158.50		26.50	
33 Hoffman	0.30	114.80			
41 Hoffman	1.70	595.50	5.20	30.75	
51 Hoffman	2.82	273.50	1.90	25.90	
53 Hoffman	1.26	153.30	2.80	30.50	
MassDEP S-1	2.00	300.00	2.00	30.00	20.00
ATSDR	1.00				

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.** MassDEP performed & directed sampling is described below.
2. **Current actions.** There are no other current EPA actions.

C. State and Local Authorities' Roles

1. **State and local actions to date.** MassDEP retained Shaw E & I to sample the Hoffman Ave. residential back yards for PCBs and RCRA 8 metals in 2007. This is documented in a Shaw E & I Letter Report dated 11/17/2007.

At MassDEP's direction, First Lawrence Financial, the secured lender for the facility, contracted for sampling of the northern property line for PCBs and RCRA 8 metals in early 2007. This is documented in a Weston Solutions, Inc Immediate Response Action Completion Report dated April 2007.

The City of Lawrence Inspectional Services Department ordered the ceasing of dust creating activities at least once, circa 2006.

MassDEP has listed the Tombarello property with a Release Tracking Number (RTN 3-18126) in the State's Massachusetts Contingency Plan (the MCP) waste site cleanup program, 310 CMR 40.000. Using new risk methodology, they advocated a much

lower residential soil PCB cleanup level than the 1.0 mg/kg that EPA uses nationwide. This conflicted with EPA's intended approach to the removal action, not the least of which was the increased scope and cost of the project under the newly-proposed level. The Site was put on hold by mutual agreement between EPA and DEP while this issue was resolved. This has now occurred in favor of using the EPA residential soil cleanup level for PCBs.

2. **Potential for continued State/local response.** MassDEP doesn't have the resources to conduct a removal action, but will continue to play an active support, public outreach and state regulatory role. MassDEP will inform the residents of the sampling results on their yards in coordination with the EPA removal project. The City of Lawrence has been in danger of default or being placed into State Receivership and doesn't have the resources to remedy this situation.

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)];

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)];

PCBs and RCRA metals contamination in surficial soils in residential yards and on the Tombarello and Sons property presents a threat to residents of both the impacted households and in the surrounding area, children attending school across the street and the general public. The exposure pathways include direct exposure and via exposure to dust from wind transport. Specific pathways include:

- Dermal contact during gardening, other normal yard activities and via dust;
- Ingestion, especially by children when playing;
- Inhalation, especially by children when playing in areas where the soil is bare and via dust;
- Ingestion through the food web from gardening activities, and;
- On-going exposure and recontamination due to suspension of dust from exposed soil on the 14-acre facility.

Specifically, PCBs (primarily Arochlor 1260), lead, cadmium, chromium and arsenic contamination are at concentrations greater than either the MassDEP S-1 standards for residential soils and/or ATSDR levels for unrestricted residential use.

PCBs - The most commonly observed health effects in people exposed to large amounts of PCBs are skin conditions such as acne and rashes. Studies in exposed workers have shown changes in blood and urine that may indicate liver damage. Animals that ate food containing large amounts of PCBs for short periods of time had mild liver damage and some died. Animals that ate smaller amounts of PCBs in food over

several weeks or months developed various kinds of health effects, including anemia; acne-like skin conditions; and liver, stomach and thyroid gland injuries.

Other effects of PCBs in animals include changes in the immune system, behavioral alterations, and impaired reproduction. The Department of Health and Human Services (DHHS) has concluded that PCBs may reasonably be anticipated to be carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined that PCBs are probably carcinogenic to humans.²

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.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.

The health effects in children are expected to be similar to the effects seen in adults (kidney, lung, and bone damage depending on the route of exposure). A few studies in animals indicate that younger animals absorb more cadmium than adults. Animal studies also indicate that the young are more susceptible than adults to a loss of bone and decreased bone strength from exposure to cadmium.

Although a definitive link between cadmium and human birth defects has not been established, 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

² Agency for Toxic Substances and Disease Registry (ATSDR). 2000. *Toxicological Profile for Polychlorinated Biohenyls (PCBs)*. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service

³ 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.

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.

Arsenic - Breathing high levels of inorganic arsenic may cause sore throats or irritated lungs. Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen. The International Agency for Research on Cancer (IARC) has determined that inorganic arsenic is carcinogenic to humans.⁶

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

None exist.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.⁷

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

Specific removal activities will include the following:

- Conduct a site walk with the cleanup contractor;
- Conduct additional sampling as needed to assess contaminant disposition and concentration;
- Perform health & safety monitoring;
- Perform public communication and outreach activities;
- Install security and/or health and safety fencing as necessary;
- Provide security guard service as required by the OSC;
- Clear vegetation, debris and other interfering structures as needed;

⁶ Agency for Toxic Substances and Disease Registry (ATSDR). 2007. Toxicological Profile for Arsenic (*Update*). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

⁷ In accordance with OSWER Directive 9360.0-34, an endangerment determination is made based on relevant action levels, cleanup standards, risk management guidance, or other relevant information published and relied upon by the State of Massachusetts and by the Agency for Toxic Substances and Disease Registry.

- Inventory and document existing property conditions, including foundations, driveways, ornamental vegetation, landscaping and yard structures such as pools, outbuildings and patios;
- Excavate contaminated soil such that residential properties will meet MassDEP and/or ATSDR residential standards, and the facility meets appropriate commercial standards, on an average basis;
- Remove other incidental hazardous substances at the direction of the OSC;
- Perform confirmation sampling and analysis;
- Perform dust control and mitigation measures as necessary;
- Backfill excavations;
- Pre-treat hazardous substances if beneficial for off-site disposal options;
- Dispose of hazardous substances at EPA-approved off-site disposal facilities; and
- Repair response-related damages; including replanting of lawns, ornamental vegetation, landscaping, fences, etc.

2. Community relations

Community relations will include outreach by the OSC to abutters and the local community, including distribution of informative fliers, and, specific to the private properties involved, the OSC having face-to-face meetings with the residents. Use of other means of communication, e.g., press releases or use of epaosc.net, will be undertaken and incorporated into the Community Response Plan (CRP).

MassDEP has already done extensive community relations for this Site and will be coordinated with closely.

3. Contribution to remedial performance

The cleanup proposed in this Action Memorandum is designed to mitigate the threats to human health and the environment, and will be consistent with and will not impede any future responses.

4. Description of alternative technologies

Although use of alternative technologies is not anticipated, they will be considered if deemed beneficial. Technology to optimize the confirmation samples and accelerate the removal action pace, such as use of an on-site lab or statistical analysis, will be considered.

5. Applicable or relevant and appropriate requirements (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)

40 CFR Part 761.60 and Parts 761.202-218 : TSCA requirements for disposal of PCBs

State ARARs: Massachusetts Contingency Plan, 310 CMR 40.0975 (6)(a), Table 2; MCP Method 1 Soil Category S-1 Standards.

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.

6. Project schedule

All work is expected to be completed within one year from the mobilization date.

B. Estimated Costs

COST CATEGORY		CEILING
<i>REGIONAL REMOVAL ALLOWANCE COSTS:</i>		
ERRS Contractor		\$1,029,000.00
<i>OTHER EXTRAMURAL COSTS NOT FUNDED FROM THE REGIONAL ALLOWANCE:</i>		
START Contractor		\$176,000.00
Extramural Subtotal		\$1,205,000.00
Extramural Contingency	20%	\$241,000.00
TOTAL, REMOVAL ACTION CEILING		\$1,446,000.00

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

Delayed action will increase public health risks to the residents due to potential contact with contaminated soil in excess of MassDEP and ATSDR guidance levels.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding precedent-setting policy issues associated with this Site. Discussions regarding PCB cleanup concentration were undertaken with MassDEP before MassDEP concurred to using the ATSDR standard concentration of 1.0 ppm that EPA has used for other sites nationwide.

VIII. ENFORCEMENT ... For Internal Distribution Only

See attached Enforcement Strategy.

The total EPA costs for this removal action based on full-time accounting practices that will be eligible for cost recovery are estimated to be \$1,446,000 (extramural costs) + \$53,100 (EPA intramural costs) = \$1,499,100 X 1.4541 (regional indirect rate) = **\$2,179,841.00⁸**.

⁸Direct Costs include direct extramural costs \$1,446,000 and direct intramural costs \$53,100. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific costs [45.41% x \$1,499,100, consistent with the full accounting methodology effective October 2, 2000. These estimates do not include pre-judgment 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.

IX. RECOMMENDATION

This decision document represents the selected removal action for the residential properties abutting the Former Tombarello & Sons Property 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 meet the NCP Section 300.415 (b) (2) criteria for a removal action due to the following:

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)];

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)];

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

I recommend that you approve the proposed removal action. The total removal action project ceiling if approved will be \$1,446,000.

APPROVAL: _____

DATE: _____

DISAPPROVAL: _____

DATE: _____



Address **207 Marston St**
Lawrence, MA 01841

Get Google Maps on your phone



Text the word "GMAPS" to 466453





