UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
EMERGENCY RESPONSE BRANCH 1
25089 CENTER RIDGE ROAD
WESTLAKE, OH 44145

AUG 19 2010

MEMORANDUM

SUBJECT: ACTION MEMORANDUM - Request for an Emergency Removal Action and an Exemption from the $2 Million Statutory Limit at the Indiana Brass Site, Frankfort, Clinton County, Indiana (Site ID #B5XQ)

FROM: Shelly Lam, On-Scene Coordinator
Emergency Response Branch 1/Response Section 1

THRU: Jason H. El-Zein, Chief
Emergency Response Branch 1

TO: Richard C. Karl, Director
Superfund Division

I. PURPOSE

The purpose of this memorandum is to request and document your approval to expend up to $4,170,046 to conduct an emergency removal action and for an exemption from the $2 million statutory limit at the Indiana Brass Site in Frankfort, Indiana (the Indiana Brass Site or the Site). Emergency Response Branch (ERB) 1 Chief Jason El-Zein verbally authorized funding of $100,000 on July 19, 2010, to conduct the following: establish Site security and incident command post, including access control measures; develop and implement a Site-specific Health and Safety Plan, including an Air Monitoring Plan, and a Site Emergency Contingency Plan; prepare a detailed work plan; perform sampling and analysis to determine extent of contamination in soil; develop and implement a plan to control, contain, and remove highly-concentrated contaminated soil; properly abandon temporary piezometers that may be acting as a conduit for migration to groundwater; and assess nearby residential properties for Site-related contamination.

The response actions proposed herein are necessary in order to mitigate threats to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances at the Site, an abandoned plating shop and foundry. The presence of hazardous substances existing at the Site has been documented, including toxic wastestreams.

The removal action proposed herein is to complete the following: demolish and/or remove structurally unsound parts of the Site building to allow workers to conduct cleanup operations safely; inventory and perform hazard characterization on substances contained in vaults and drums; perform multi-media sampling and analysis to determine disposal options; transport and dispose off Site any hazardous substances, pollutants and contaminants at a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) approved disposal facility in accordance with U.S. EPA's Off-Site Rule (40 Code of Federal Regulations [CFR] § 300.440); and, take any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the United States Environmental Protection Agency (U.S. EPA) On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment.

This response action will be conducted in accordance with Section 104(a)(1) of CERCLA, 42 United States Code (USC) § 9604(a)(1), to abate or eliminate the immediate threat posed to public health and/or the environment by the presence of the hazardous substances at the Site. The OSC is requesting an exemption from the $2 million statutory limit. The uncontrolled conditions of the hazardous substances present at the Site require that this action be classified as an emergency removal action. This initial removal action will require approximately 110 working days to complete.

There are no nationally significant or precedent setting issues associated with the Site. The Site is not on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # IND 006 421 085

A. Physical Location and Description

The Indiana Brass Site is located at 800 W. Clinton Street in Frankfort, Clinton County, Indiana, 46041 (see Figure A-1). The geographical coordinates for the Site are Latitude 40.2806° North and Longitude 86.5198° West. The Site is approximately 5 acres in size, and contains the remains of a 85,000 square foot plating shop and foundry. The Site is located in a residential, commercial, and industrial area of Frankfort, approximately 0.2 miles west of the downtown area. Approximately 3,400 people live within 1 mile of the Site. Residences are located approximately 250 feet from the east property boundary, 800 feet from the north property boundary, and 600 feet from the south property boundary.

Adjoining properties include:

North: Warehouse attached to the Site building, beyond which is a railroad and an abandoned property formerly operated by Exide Battery and Del Monte;

East: Winski Brothers scrap recycling, which operated as Wallace Manufacturing & Wm G. Morris Coal, Wood and Tile Yard from the 1800's through the early 1900's;

South: Barbara Shop Hair Salon and Stoeller Automation, both of which were formerly part of the Indiana Brass Site and previously the Union Hotel; and

West: Norfolk Southern abandoned rail roundhouse.

The abandoned facility (see Figure A-3, Photo 1) caught fire on June 3, 2010. The Indiana Department of Environmental Management (IDEM) responded to the fire. The state OSC observed pits and drums relating to former plating operations.

During a Site visit on July 1, 2010, and a Site Assessment on July 7-8, 2010, the U.S. EPA OSC documented numerous drums, plating vaults with unknown liquid contents, uncontained foundry sand, and other debris scattered across the Site (Photos 2-3). Numerous 55-gallon drums containing burnt and unknown contents were documented inside the building (Photo 4). The Site is currently vacant and open to trespassing (Photos 5 and 6).

The area surrounding the Indiana Brass Site was screened for Environmental Justice (EJ) concerns using Region 5's EJ Assist Tool (which applies the interim version of the national EJ Strategic Enforcement Assessment Tool (EJSEAT)). Census tracts with a score of 1, 2, or 3 are considered to be high-priority potential EJ areas of concern according to EPA Region 5. The Indiana Brass Site is in a census tract with a score of 3 (Attachment A). Therefore, Region 5 considers this Site to be a high-priority potential EJ area of concern. Please refer to the attached analysis for additional information.

B. Site Background - City of Frankfort

The City of Frankfort commissioned Phase I and II Environmental Site Assessments (ESA) and an asbestos survey as part of Brownfield Assessment Grants. Each of the assessments is summarized below:

Phase I ESA

The Phase I ESA was conducted in May 2005 (Troy Risk, 2005). The Site was a steam sawmill in the 1800's. In 1902, the facility was the Frankfort Metal Works and in 1911 the Indiana Brass Company. The facility was a foundry for the production of metal components until its closure in 2001.

Recognized environmental conditions included the following:

- Site history as a foundry from 1902 through 2001. During its operation, the facility handled various raw materials such as metals, sand, corrosives, alcohols and oils;
- Site history as a plating shop;
- Two former underground storage tanks (UST) that contained fuel oil;

- Potential presence of foundry-related fill material beneath the Site;
- Foundry sand storage;
- Corrosive containers and chemical spills in the loading dock area;
- Subsurface vaults;
- Presence of asbestos-containing materials (ACM) identified during an asbestos survey; and
- Lead-based paint in the building.

An asbestos survey was conducted in May 2005 (ACT, 2005). Twenty-six samples were collected for ACM from materials such as pipe wrapping, insulation, plaster, fiberboard, pressboard, etc. Laboratory analytical results confirmed that 11 samples contained chrysotile asbestos.

A Phase II ESA was conducted at the Site in 2006 under a Brownfield Site Assessment Grant (Troy Risk, 2007). During the Phase II ESA, surface soil samples, subsurface soil, groundwater, pit water, sand, and wipe samples were collected for analysis including volatile organic compounds (VOC); Resource Conservation and Recovery Act (RCRA) metals; benzene, toluene, ethylbenzene, xylenes (BTEX); total petroleum hydrocarbons (TPH); polynuclear aromatic hydrocarbons (PAH); and polychlorinated biphenyls (PCB).

The results of the Phase II ESA indicated that media collected were impacted by various hazardous substances, pollutants, and contaminants, including trichlorethene (TCE), TPH, arsenic, lead, cadmium, and chromium. TCE concentrations were as high as 8,550 micrograms per kilogram (ug/kg) in subsurface soil and 87.6 micrograms per liter (ug/L) in groundwater. Lead concentrations were as high as 4,167 milligrams per kilogram (mg/kg) in surface soil and 0.135 milligrams per liter (mg/L) in groundwater. Additionally, one wipe sample had an Aroclor 1254 concentration of 87.4 micrograms per cubic meter (ug/m^3).

C. Site Background - IDEM

On June 4, 2010, IDEM responded to an industrial fire that occurred at the Indiana Brass facility. IDEM observed three in-ground holding areas or pits - two in the south portion of the property and a smaller pit in the middle of the facility closer to the east side. Several of the interior pits contained unknown liquids. Additional pits outside the facility were noted on the east side of the property. IDEM also observed numerous drums, some of which had been burnt in the fire. IDEM referred the Site to U.S. EPA via an Incident Report (IDEM, 2010).

D. Site Background – U.S. EPA

On July 8-9, 2010, U.S. EPA and Superfund Technical Assessment and Response Team (START) performed a Site Assessment (Weston Solutions, 2010). Activities performed during the Site Assessment included:

- Documenting Site conditions;

- Conducting a structural inspection of the building;
- Conducting air monitoring;
- Conducting soil monitoring using an x-ray fluorescence (XRF) detector; and
- Collecting samples from drums, soil, ash, and plating pits.

U.S. EPA Site Assessment sampling results are found in Tables B-1 through B-3. These results indicate that there are total arsenic, copper, and lead concentrations above the preliminary remediation goals for industrial soil at the surface; concentrations of leachable lead (D008) and cadmium (D006) in surface soil above the Toxicity Characteristic Leachate Procedure (TCLP) regulatory limits; and methylene chloride in drums; and methylene chloride and TCE in pits.

A structural engineer conducted a structural inspection of the Site building. The inspection report documented that the structure is significantly damaged. Some areas may be relatively safe, but other areas may need shoring, bracing, or removal of hazards (RW Armstrong, 2010) prior to conducting a removal action.

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

The conditions present at the Indiana Brass Site present an imminent and substantial threat to the public health, or welfare, and the environment based upon the factors set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), as amended, 40 CFR Part 300. These factors include, but are not limited to, the following:

1) **Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;**

During the July 1, 2010, Site visit and July 8-9, 2010, Site Assessment, the OSC documented numerous drums, plating vaults with unknown liquid contents, uncontained foundry sand, and other debris scattered across the Site. Numerous 55-gallon drums containing burnt and unknown contents were documented inside the building. Preliminary screening of soil and ash with a x-ray fluorescence (XRF) detector indicated lead was detected at concentrations up to 44,000 parts per million (ppm).

The Site Assessment involved sampling surface soil, ash, contents of accessible drums, and suspected ACM on the Site. Analytical results from the Site Assessment indicated the presence of elevated concentrations of hazardous substances, as defined by section 101(14) of CERCLA.

Potential migration pathways and exposure mechanisms include: human and animal activities, surface drainage, and wind dispersion. Potential receptors include nearby residents, trespassers, and Site workers. Direct contact with hazardous substances is possible, and the close proximity of residential areas to the Site greatly increases the

likelihood of exposure to human populations. Potential exposure could occur through each of the migration pathways and cause imminent endangerment to human health and the environment.

Total arsenic results ranged from 9.46 to 503 mg/kg, and exceeded U.S. EPA's industrial Preliminary Remediation Goal (PRG) 1.6 mg/kg in the eight soil samples collected. The Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQ indicates that breathing high levels of inorganic arsenic can cause sore throat 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. 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 U.S. EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, 2007a).

Copper was detected above the industrial PRG of 41,000 mg/kg in three of the eight samples. Copper concentrations above the PRG ranged from 304,000 to 639,000 mg/kg. The ATSDR ToxFAQ on copper indicates that high levels of copper can be harmful. Breathing high levels of copper can cause irritation of the nose and throat. Ingesting high levels of copper can cause nausea, vomiting, and diarrhea. Very high doses of copper can cause damage to the liver and kidneys, and can even cause death (ATSDR, 2004).

Total lead concentrations detected at the Site ranged from 1,470 – 54,700 mg/kg, and exceeded the industrial PRG of 800 mg/kg in the eight samples collected. Additionally, TCLP results for lead ranged from 5.86 to 884 micrograms per liter (mg/L) in the four samples collected; these results exceed the TCLP regulatory limit of 5 mg/L outlined at 40 CFR 261.24. According to the ATSDR ToxFAQ, lead can affect almost every organ and system in your 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 (ATSDR, 2007b).

Leachable levels of cadmium were detected in one sample at a concentration of 4.633 mg/L, which exceeds the TCLP regulatory limit of 1.0 mg/L outlined at 40 CFR 261.24. According to ATSDR, 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. DHHS has determined that cadmium and cadmium compounds are known human carcinogens (ATSDR, 2008).

Five of eight samples contained chrysotile asbestos. According to the ATSDR ToxFAQ, asbestos mainly affects the lungs and the membrane that surrounds the lungs. Breathing high levels of asbestos fibers for a long time may result in scar-like tissue in the lungs and in the pleural membrane (lining) that surrounds the lung. This disease is called asbestosis and is usually found in workers exposed to asbestos, but not in the general public. People with asbestosis have difficulty breathing, often a cough, and in severe cases heart enlargement. Asbestosis is a serious disease and can eventually lead to disability and death. Breathing lower levels of asbestos may result in changes called plaques in the pleural membranes. Pleural plaques can occur in workers and sometimes in people living in areas with high environmental levels of asbestos. Effects on breathing from pleural plaques alone are not usually serious, but higher exposure can lead to a thickening of the pleural membrane that may restrict breathing. DHHS, the World Health Organization (WHO), and the EPA have determined that asbestos is a human carcinogen (ATSDR, 2001).

Approximately 3,400 people live within 1 mile of the Site. Residences are located 250 feet from the east property boundary, 800 feet from the north property boundary, and 600 feet from the south property boundary. The Site was unsecure and open to trespassing. As such, actual or potential exposure could occur to nearby human populations.

2) **Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;**

During the Site Assessment, the OSC documented drums across the Site. Numerous 55-gallon drums with burnt or unknown contents were located inside and outside the building. Samples collected from two drums indicated the presence of methylene chloride, which is a hazardous substances, as defined by section 101(14) of CERCLA. Three pits were sampled, and the analytical results indicated that the pits contained methylene chloride and TCE. In addition, several 55-gallon drums were inaccessible and were not sampled during the Site Assessment because parts of the building were structurally unsound. The contents of these remaining drums are unknown.

It was noted during the Site Assessment that the tops of the two drums containing methylene chloride were open. As such, these hazardous substances pose a threat of release.

3) **High levels of hazardous substances or pollutants or contaminants in soils at or near the surface, that may migrate;**

Analytical results from the Site Assessment documented the presence of high levels of hazardous substances in soils at or near the surface. Total metals were detected in multiple surface samples at concentrations exceeding the industrial PRGs. Additionally, five of the nine surface samples collected for asbestos indicated the presence of chrysotile asbestos. Four samples exceeded the TCLP regulatory limit for lead and one sample exceeded the limit for cadmium. There is potential for hazardous substances in surface soils to migrate. Additionally, the Phase II ESA performed for the City of Frankfort indicates that metals and VOCs have migrated to deeper soils and groundwater.

4) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

Indiana receives annual average rainfall of 40 inches. Average temperatures range from 25-35 degrees Fahrenheit (°F) in the winter to 70-80 °F in the summer. Excessive late-winter rainfall is the cause for the widespread floods in Indiana. Clinton County, Indiana, historical tornado activity is above Indiana state average of 20 tornadoes per year (Indiana State Climate Office, 2010).

During the Site Assessment, the OSC documented that the building is open to the environment due to a recent fire. Waste material was stored in uncovered and uncontained conditions. Sample results from the Site Assessment indicate hazardous substances are present in surface soils on Site. Weather conditions, including high wind and rain, could contribute to an increased risk of migration of hazardous substances or pollutants.

5) The availability of other appropriate Federal or State response mechanisms to respond to the release;

In an Incident Report dated June 8, 2010, IDEM's Emergency Response Section referred the Site to U.S. EPA. IDEM is not able to provide resources to immediately mitigate the threat of release.

IV. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on Site, and the potential exposure pathways described in Sections II and III, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

Emergency Exemption:

Section 104(c) under CERCLA, as amended by SARA, limits a Federal emergency response to $2 million unless three criteria are met. The quantities and levels of lead present at the Indiana Brass Site warrant the $2 million exemption based on the following factors:

A. Continued emergency response are immediately required to prevent, limit, or mitigate an emergency;

The high concentrations of lead, other metals, and asbestos in surface soils at the Site constituents an imminent threat to human health and the environment. Site conditions and unrestricted access to the Site permits direct contact with impacted soils and migration by wind and rain.

B. There is an immediate risk to public health or welfare or the environment;

Total lead had been found in surface soils at concentrations as high as 54,700 mg/kg, approximately 68 times the industrial PRG. Leachable concentrations of lead are as high as 884 mg/L, approximately 176 times the TCLP regulatory limit. In addition, arsenic, copper, leachable cadmium, and asbestos were detected in Site soils. High metals concentrations combined with the condition of the Site building present an immediate risk to public health and welfare.

C. Assistance will not otherwise be provided on a timely basis.

In an Incident Report dated June 8, 2010, IDEM's Emergency Response Section referred the Site to U.S. EPA. IDEM is not able to provide resources to immediately mitigate the threat of release. IDEM has been affected by state budget cuts, and does not have adequate financial resources to commit to the cleanup.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

The OSC proposes to undertake the following response actions to mitigate threats posed by the presence of hazardous substances at the Indiana Brass Site:

1. Conduct emergency removal actions to complete the following tasks:

    a. Establish Site security and incident command post, including access control measures as appropriate;

    b. Develop and implement a Site-specific Health and Safety Plan, including an Air Monitoring Plan, and a Site Emergency Contingency Plan;

    c. Prepare a detailed work plan to accomplish the project in the most effective, efficient and safe manner;

d. Perform sampling and analysis to determine extent of contamination in soil;

e. Develop and implement a plan to control, contain, and remove highly concentrated contaminated soil;

f. Properly abandon temporary piezometers that may be acting as a conduit for migration to groundwater; and

g. Assess nearby residential properties for site-related contamination.

2. In addition, conduct the following actions to support further anticipated removal actions:

a. Demolish and/or remove structurally unsound parts of the Site building to allow workers to conduct cleanup operations safely;

b. Inventory and perform hazard characterization on substances contained in vaults and drums;

c. Perform multi-media sampling and analysis to determine disposal options;

d. Transport and dispose off-site any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with U.S. EPA's Off-Site Rule (40 CFR § 300.440); and,

e. Take any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA OSC determines may pose an imminent and substantial endangerment to the public health or the environment.

The removal actions will be conducted in a manner not inconsistent with the NCP. The OSC has initiated planning for provision of post-removal Site control consistent with the provisions of Section 300.415(l) of the NCP.

The threats posed by uncontrolled substances considered hazardous meet the criteria listed in Section 300.415(b)(2) of the NCP, and the response actions proposed herein are consistent with any long-term remedial actions which may be required. Elimination of hazardous substances, pollutants and contaminants that pose a substantial threat of release is expected to minimize substantial requirements for post-removal Site controls.

The estimated costs to complete the activities outlined above are summarized on the next page. These activities will require an estimated 110 on-site working days to complete. Detailed cleanup contractor costs are presented in Attachment 1.

REMOVAL PROJECT CEILING ESTIMATE

EXTRAMURAL COSTS:

Regional Removal Allowance Costs:	
Total Cleanup Contractor Costs (Includes a 20% contingency)	$3,410,677
Other Extramural Costs Not Funded from the Regional Allowance	
Total START, including multiplier costs	$215,450
Subtotal, Extramural Costs	$3,626,127
Extramural Costs Contingency (15% of Subtotal, Extramural Costs)	$543,919
TOTAL REMOVAL ACTION PROJECT CEILING	**$4,170,046**

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the Site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

Applicable or Relevant and Appropriate Requirements

All applicable and relevant and appropriate requirements (ARAR) of Federal and State law will be complied with to the extent practicable. The OSC sent a letter on July 21, 2010, to Harry Atkinson at IDEM requesting the identification of any applicable State ARARs. Any State ARARs identified in a timely manner will be complied with to the extent practicable.

All hazardous substances, pollutants or contaminants removed off-site pursuant to this removal action for treatment, storage and disposal shall be treated, stored, or disposed at a facility in compliance, as determined by U.S. EPA, with the U.S. EPA Off-Site Rule, 40 CFR § 300.440.

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

Delayed or no action will result in increased potential of the toxic and hazardous substances to release, thereby threatening the environment and the health and welfare of nearby residents and other persons who are in proximity to the Site.

VIII. OUTSTANDING POLICY ISSUES

None

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Enforcement Confidential Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $6,925,281.[1]

($4,170,046 + $113,810) + (61.66% x $4,283,856) = $6,925,281

X. RECOMMENDATION

This decision document represents the selected removal action for the Indiana Brass Site located in Frankfort, Clinton County, Indiana. This document has been 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 (see Attachment II).

Conditions at the Site meet the NCP § 300.415(b)(2) criteria for an emergency removal action. The total project ceiling, if approved, will be $4,170,046. Of this, as much as $3,954,596 comes from the Regional removal allowance. You may indicate your decision by signing below.

APPROVE: _____ DATE: 8/19/10
Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Director, Superfund Division

[1] Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific direct costs, consistent with the full cost 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.

Enforcement Addendum

Figures:

- A-1 Site Location Map
- A-2 Site Layout Map
- A-3 Photo Log

Tables:

- B-1 Laboratory Analytical Results for Soil
- B-2 Laboratory Analytical Results for Liquids
- B-3 Laboratory Analytical Results for Asbestos

Attachments:

- I. Detailed Cleanup Contractor Cost Estimate
- II. Administrative Record Index
- III. Region V EJ Analysis
- IV. Independent Government Cost Estimate

cc: David Chung, U.S. EPA, 5203-G
Michael Chezik, U.S. DOI, **w/o Enf. Addendum**
Max Michael, IDEM **w/o Enf. Addendum**
Harry Atkinson, IDEM **w/o Enf. Addendum**
Greg Zoeller, Indiana Attorney General

ENFORCEMENT CONFIDENTIAL ADDENDUM

INDIANA BRASS SITE
FRANKFORT, CLINTON COUNTY, INDIANA

AUGUST 2010

(REDACTED 1 PAGE)

ENFORCEMENT CONFIDENTIAL
NOT SUBJECT TO DISCOVERY

FIGURE A-1

SITE LOCATION MAP

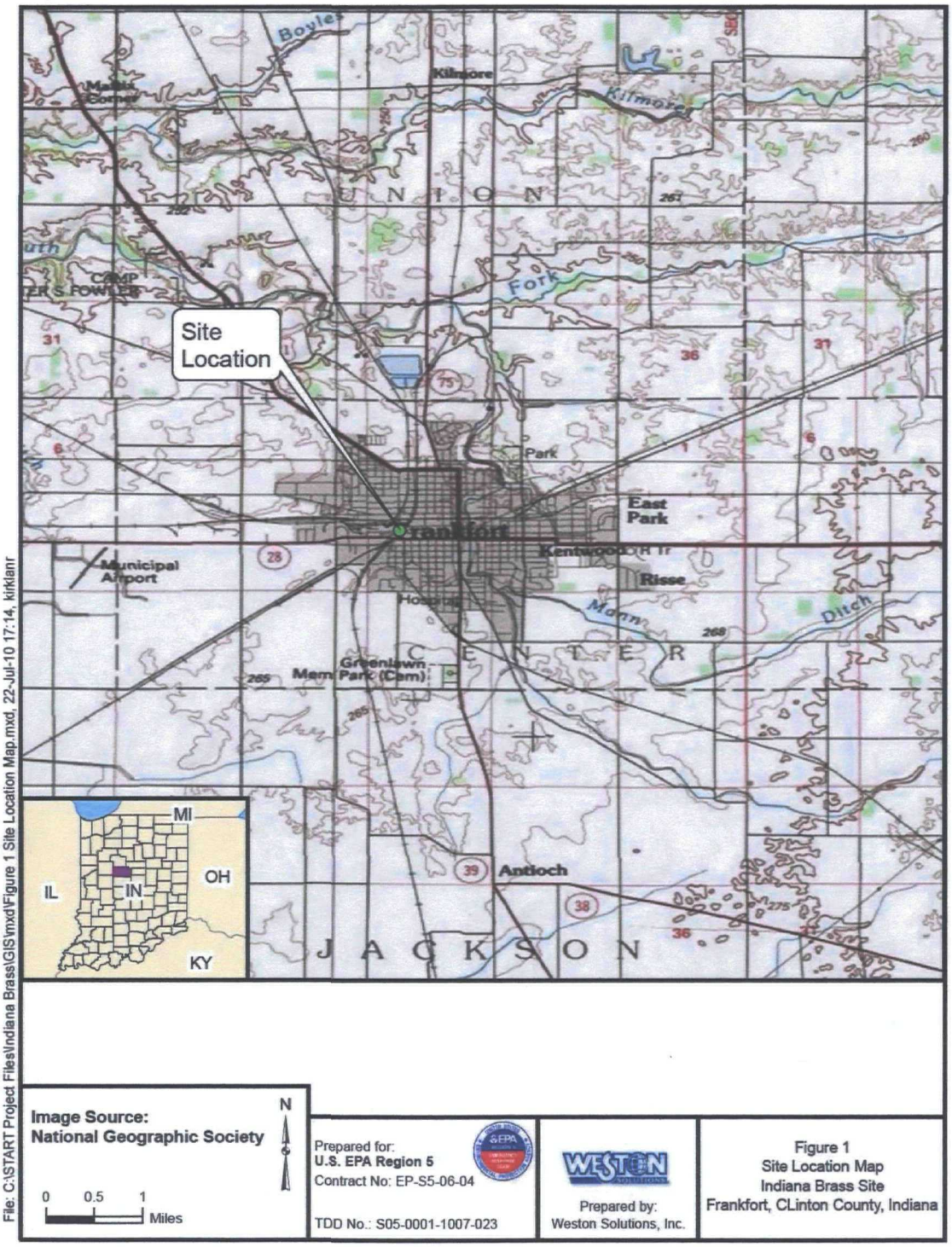


FIGURE A-2

SITE LAYOUT MAP

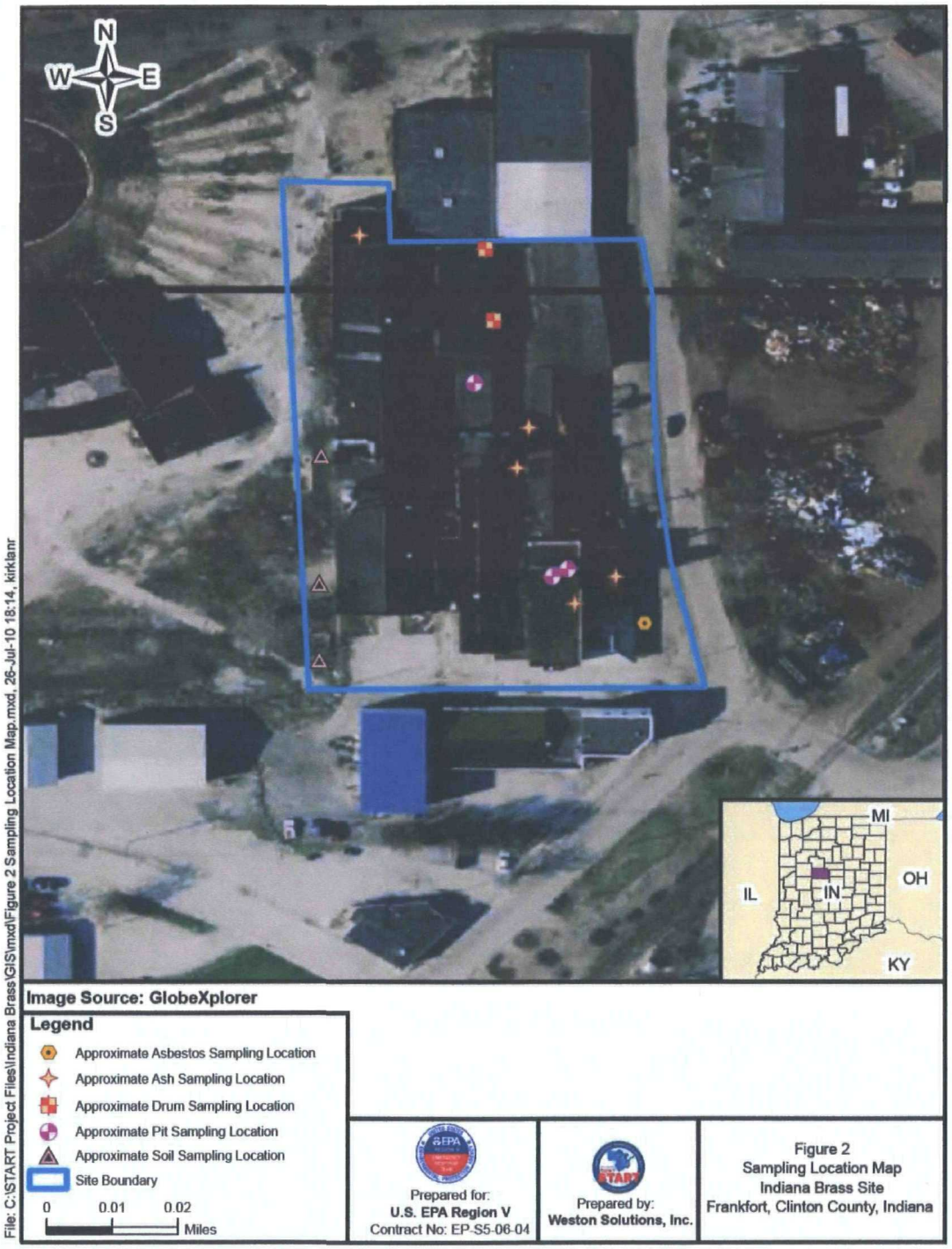


FIGURE A-3

PHOTO LOG

Photo 1: Indiana Brass Site

Photo 2: View of waste drums and collapsed roof

Photo 3: Vaults with unknown liquid contents

Photo 4: Drums inside of building

Photo 5: Indiana Brass facility open to trespassing

Photo 6: Indiana Brass facility open to trespassing

TABLE B-1

LABORATORY ANALYTICAL RESULTS FOR SOIL

TABLE B-1
LABORATORY ANALYTICAL RESULTS FOR SOIL
INDIANA BRASS SITE

Parameter	Action Levels	Sample Designation							
		IndBrass-Soil 1	IndBrass-Soil-2	IndBrass-Soil-3	IndBrass-Ash 1	IndBrass-Ash 2	IndBrass-Ash 3	IndBrass-Ash 4	IndBrass-Ash 5
Sample Type		Surface Soil	Surface Soil	Surface Soil	Ash	Ash	Ash	Ash	Ash
Total Metals (mg/kg)[1]	EPA Preliminary Remediation Goals (PRG) for Industrial Soil[2]								
Aluminum	**990,000**	5020	3370	7080	3230	7360	12,100	5690	741
Antimony	**410**	21.0	319	22.9	338	43.2	233	289	23.1
Arsenic	**1.6**	**9.46**	**33.1**	**12.7**	**13.3**	**43.7**	**503**	**38.2**	**10.6**
Barium	**190,000**	163	8.76	77.3	9.4	250	300	131	18.4
Beryllium	**2,000**	0.574	<0.569	1.5	<0.492	<0.483	1.93	3.75	<0.68
Calcium	**NA**	67,700	916	62,100	171	51,700	52,700	14,200	8540
Cadmium	**800**	2.83	9.32	3.52	5.59	11.8	352	69.0	726
Chromium[3]	**1,500,000**	144	12.0	23.3	6.52	103	90.5	377	18.4
Cobalt	**300**	7.07	14.7	9.62	44	17.5	17.7	42.9	3.29
Copper	**41,000**	21,300	**592,000**	22,800	**639,000**	40,800	8460	**304,000**	20,700
Iron	**720,000**	29,400	2,360	52,800	2,650	89,800	33,700	36,300	13,700
Lead[4]	**800**	**1740**	**34,100**	**1810**	**9580**	**5850**	**5750**	**27,200**	**54,700**
Magnesium	**NA**	32,300	297	19,100	<98.3	12,700	27,100	4510	3630
Manganese	**23,000**	355	43.3	251	39.3	753	604	523	113
Mercury[5]	**310**	<0.105	<0.0954	<0.108	<0.0986	<0.096	3.33	0.235	<0.133
Nickel	**20,000**	727	1530	122	1500	329	176	3040	98.9
Potassium	**NA**	576	<114	924	<98.3	822	1940	483	<136
Selenium	**5,100**	<4.98	<5.69	<5.17	134	<4.83	8.65	5.86	<6.8
Silver	**5,100**	5.74	120	5.83	62.3	12	4.64	235	15.2
Sodium	**NA**	873	36,200	984	51,700	3,940	6490	10,900	2430

TABLE B-1 (CONT)
LABORATORY ANALYTICAL RESULTS FOR SOIL
INDIANA BRASS SITE

Parameter	Action Levels	Sample Designation							
		IndBrass-Soil 1	IndBrass-Soil-2	IndBrass-Soil-3	IndBrass-Ash 1	IndBrass-Ash 2	IndBrass-Ash 3	IndBrass-Ash 4	IndBrass-Ash 5
Sample Type		Surface Soil	Surface Soil	Surface Soil	Ash	Ash	Ash	Ash	Ash
Total Metals (mg/kg)[1]	**EPA Preliminary Remediation Goals (PRG) for Industrial Soil[2]**								
Thallium	**NA**	<4.98	<5.69	<5.17	<4.92	<4.83	<5.32	<5.43	<6.8
Vanadium	**72**	17.9	6.66	22.9	6.58	42.7	57.2	26.5	11.4
Zinc	**310,000**	6720	234,000	5850	273,000	30,600	35,200	64,600	32,100
TCLP[6] Metals (mg/L)[7]	**TCLP Regulatory Limit**								
Arsenic	**5**	<0.1	<0.1	<0.1	NS[8]	NS	NS	NS	<0.1
Barium	**100**	1.68	0.515	0.961	NS	NS	NS	NS	0.404
Cadmium	**1**	0.0344	0.103	0.0426	NS	NS	NS	NS	**4.63**
Chromium	**5**	0.0187	0.0421	<0.01	NS	NS	NS	NS	<0.01
Lead	**5**	**5.86**	**884**	**9.45**	NS	NS	NS	NS	**148**
Mercury	**0.2**	<0.0002	<0.0002	<0.0002	NS	NS	NS	NS	<0.0002
Selenium	**1**	<0.1	<0.1	<0.1	NS	NS	NS	NS	<0.1
Silver	**5**	<0.01	<0.01	<0.01	NS	NS	NS	NS	<0.01
Volatile Organic Compounds (VOC)[9] (mg/kg)	**EPA PRG for Industrial Soil**								
2-Butanone	**200,000**	<1.05	<1.00	<1.14	2.24	2.92	6.64	2.30	NS
All other VOC		BDL[10]	BDL	BDL	BDL	BDL	BDL	BDL	NS
Total Cyanide (mg/kg)	**EPA PRG for Industrial Soil**								
Cyanide, Total[11]	**20,000**	11.7	2.37	1.01	6.82	1.35	4.52	4.26	NS

TABLE B-1 (CONT)
LABORATORY ANALYTICAL RESULTS FOR SOIL
INDIANA BRASS SITE

Notes:

1. mg/kg = milligrams per kilogram
2. PRG = U.S. EPA Preliminary Remediation Goal, May 2010.
3. Industrial PRG for trivalent chromium [Cr(III)] was used as action level.
4. Lead values for samples IndBrass-Soil 1, IndBrass-Soil 2, IndBrass-Soil 3, and IndBrass-Ash 5 were obtained from laboratory report 10G0479 (Belmont Labs, July 14, 2010)
5. Industrial PRG for inorganic mercury salts was used as action level.
6. TCLP = Toxicity Characteristic Leachate Procedure
7. mg/L = milligrams per liter
8. NS = Not sampled
9. VOC = Volatile Organic Compounds
10. BDL = Below Detection Limits
11. Industrial PRG for CN anion was used as action level.

TABLE B-2

LABORATORY ANALYTICAL RESULTS FOR LIQUIDS

TABLE B-2
LABORATORY ANALYTICAL RESULTS FOR LIQUIDS
INDIANA BRASS SITE

Parameter	Action Level	Sample Designation				
		IndBrass-Pit 1	IndBrass-Pit 2	IndBrass-Pit 3	IndBrass-Drum 1	IndBrass-Drum 2
Sample Type		Pit	Pit	Pit	Drum	Drum
Total Metals (mg/L)[1]	Maximum Contaminant Level (MCL)[2]					
Aluminum	NA[3]	0.204	0.164	2.61	NS[4]	NS
Antimony	6.0	0.0330	<0.005	0.00847	NS	NS
Arsenic	10	<0.005	0.00734	0.0904	NS	NS
Barium	2,000	0.137	0.0765	0.0788	NS	NS
Beryllium	4.0	<0.0005	<0.0005	0.000510	NS	NS
Calcium	NA	43.3	49.4	60.1	NS	NS
Cadmium	5.0	0.00281	0.00322	0.015	NS	NS
Chromium	100	0.00627	0.00793	0.0122	NS	NS
Cobalt	NA	<0.005	<0.005	0.0051	NS	NS
Copper	1,300	0.709	0.190	2.45	NS	NS
Iron	NA	0.792	4.94	19.0	NS	NS
Lead	15	0.370	0.115	1.06	NS	NS
Magnesium	NA	32.0	24.1	18.6	NS	NS
Manganese	NA	0.0610	0.274	0.671	NS	NS
Mercury	2.0	<0.0002	<0.0002	<0.0002	NS	NS
Nickel	NA	0.0159	0.00755	0.0409	NS	NS
Potassium	NA	7.90	17.2	18.2	NS	NS
Selenium	50	<0.01	<0.01	<0.01	NS	NS
Silver	NA	<0.0005	<0.0005	0.00117	NS	NS
Sodium	NA	20.1	15.0	24.0	NS	NS
Thallium	2.0	<0.001	<0.001	<0.001	NS	NS

TABLE B-2 (CONT)
LABORATORY ANALYTICAL RESULTS FOR LIQUIDS
INDIANA BRASS SITE

Parameter	Action Level	Sample Designation				
		IndBrass-Pit 1	IndBrass-Pit 2	IndBrass-Pit 3	IndBrass-Drum 1	IndBrass-Drum 2
Sample Type		Pit	Pit	Pit	Drum	Drum
Total Metals (mg/L)[1]	**Maximum Contaminant Level (MCL)[2]**					
Vanadium	**NA**	0.00667	0.00835	0.0138	NS	NS
Zinc	**NA**	0.807	3.02	11.3	NS	NS
TCLP[5] Metals (mg/L)	**TCLP Regulatory Limit**					
Arsenic	**5**	<0.1	<0.1	<0.1	NS	NS
Barium	**100**	0.501	0.421	0.414	NS	NS
Cadmium	**1**	<0.01	<0.01	<0.01	NS	NS
Chromium	**5**	<0.01	<0.01	<0.01	NS	NS
Lead	**5**	0.259	0.0793	<0.05	NS	NS
Mercury	**0.2**	<0.0002	<0.0002	<0.0002	NS	NS
Selenium	**1**	<0.1	<0.1	<0.1	NS	NS
Silver	**5**	<0.01	<0.01	<0.01	NS	NS
Volatile Organic Compounds (VOC)[6] (ug/L)[7]	**MCL**					
2-Butanone	**NA**	19,500	<1,000	<1,000	<50,000	<20,000
Acetone	**NA**	12,300	<1,000	<1,000	<50,000	<20,000
Methylene Chloride	**5.0**	**5280**	**242**	**232**	**36,000**	**12,000**
Trichloroethene	**5.0**	<1000	**803**	**713**	<10,000	<4000

TABLE B-2 (CONT)
LABORATORY ANALYTICAL RESULTS FOR LIQUIDS
INDIANA BRASS SITE

Parameter	Action Level	Sample Designation				
		IndBrass-Pit 1	**IndBrass-Pit 2**	**IndBrass-Pit 3**	**IndBrass-Drum 1**	**IndBrass-Drum 2**
Sample Type		Pit	Pit	Pit	Drum	Drum
Volatile Organic Compounds (VOC)[6] (ug/L)[7]	**MCL**					
All other VOC		BDL[8]	BDL	BDL	BDL	BDL
Miscellaneous						
Cyanide (mg/L)	**200**	<0.01	<0.01	<0.01	<0.01	0.0459
pH	**<2 or >12.5**	7.66	7.31	7.44	NS	NS
Flashpoint (°F)[9]	**<140**	>151.422	>151.422	>151.422	>151.422	>151.422

Notes:

1. mg/L = micrograms per liter
2. MCL = Maximum Contaminant Level
3. NA = Not Applicable
4. NS = Not Sampled
5. TCLP = Toxicity Characteristic Leachate Procedure
6. VOC = Volatile Organic Compounds
7. ug/L = micrograms per liter
8. BDL = Below Detection Limits
9. °F = Degrees Fahrenheit
10. Bold result exceeds action level.

TABLE B-3

LABORATORY ANALYTICAL RESULTS FOR ASBESTOS

TABLE B-3
LABORATORY ANALYTICAL RESULTS FOR ASBESTOS
INDIANA BRASS SITE

Sample Designation	Sample Type	Asbestos
10G0481-01	Debris	NAD[1]
10G0481-02	Debris	Chrysotile
10G0481-03	Debris	Chrysotile
10G0481-04	Debris	NAD
10G0481-05	Debris	Chrysotile
10G0481-06	Debris	NAD
10G0481-07	Debris	NAD
10G0481-08A	Debris	Chrysotile
10G0481-08B	Debris	Chrysotile

Notes:

1. NAD = No Asbestos Detected

ATTACHMENT I

DETAILED CLEANUP CONTRACTOR COST ESTIMATE

INDIANA BRASS SITE
FRANKFORT, CLINTON COUNTY, INDIANA
AUGUST 2010

The estimated cleanup contractor (ERRS) costs necessary to complete the removal action at the Indiana Brass Site are as follows:

Personnel & Equipment	$1,047,154
Materials/Misc	$793,006
Transportation & Disposal	$1,002,071
Total	$2,842,231
Plus 20% Contingency	$568,446
Total ERRS Contractor Costs	**$3,410,677**

ATTACHMENT II

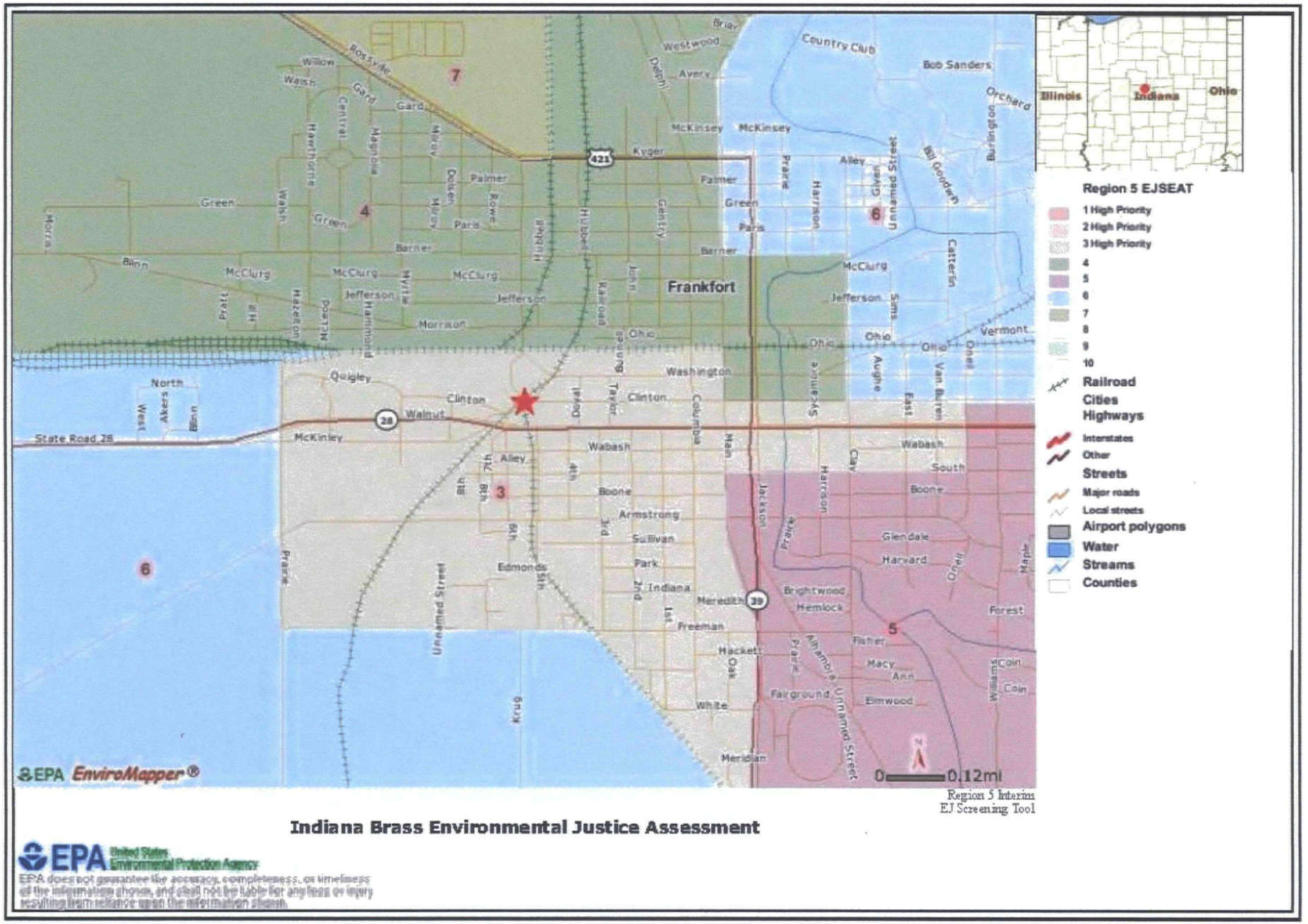
U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
INDIANA BRASS SITE
FRANKFORT, CLINTON COUNTY, INDIANA
JULY 2010

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	09/00/01	ATSDR	File	ToxFAQs Sheet for Asbestos CAS # 1332-21-4	2
2	09/00/04	ATSDR	File	ToxFAQs Sheet for Copper CAS # 1332-21-4	2
3	05/19/05	Griggs, B. & D. Griggs ACT Environmental Services	Eaton, B., Troy Risk, Inc.	Letter Report: Results of May 10, 2005 Asbestos Investigation At Indiana Brass	36
4	07/19/05	Troy Risk, Inc.	City of Frankfort	Phase I Environmental Site Assessment for the Former Indiana Brass	34
5	07/19/05	Troy Risk, Inc.	City of Frankfort	Phase I Environmental Site Assessment for the Former Indiana Brass - Appendices	143
6	01/23/07	Troy Risk, Inc.	City of Frankfort	Phase II Brownfield Site Investigation for the Former Indiana Brass	165
7	08/00/07a	ATSDR	File	ToxFAQs Sheet for Arsenic CAS# 7440-38-2	2
8	08/00/07b	ATSDR	File	ToxFAQs Sheet for Lead CAS# 7439-92-1	2
9	09/00/08	ATSDR	File	ToxFAQs Sheet for Cadmium CAS# 7440-43-9	2
10	06/04/10	IDEM	File	Incident Report: No. 2010-06-043 for the Former Indiana Brass Facility	3
11	07/19/10	Indiana State Climate Office	File	Indiana Climate Fact Sheet	3
12	07/21/10	Lam, S., U.S. EPA	Atkinson, H., IDEM	Letter re: U.S. EPA Request for State ARARs for the Indiana Brass Site	2
13	00/00/00	Riley, C., RW Armstrong	File	Hazards Evaluation Form For the Indiana Brass Building	3
14	00/00/00	Lam, S., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Indiana Brass Site **(PENDING)**	
15	00/00/00	Weston Solutions		Site Assessment Report for the Indiana Brass Site **(PENDING)**	

ATTACHMENT III

REGION 5 EJ ANALYSIS



Indiana Brass Environmental Justice Assessment

EPA United States Environmental Protection Agency

ATTACHMENT IV

INDEPENDENT GOVERNMENT COST ESTIMATE

INDIANA BRASS SITE
FRANKFORT, CLINTON COUNTY, INDIANA

AUGUST 2010

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

(REDACTED 4 PAGES)