

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: U.S. Bronze Foundry & Machine, Inc.
Facility Address: 18649 Brake Shoe Road; Woodcock Township, PA 16335-0458
Facility EPA ID #: 004 318 416

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

 X If yes - check here and continue with #2 below.
 If no - re-evaluate existing data, or
 if data are not available skip to #6 and enter "IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for nonhuman (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Controls" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program, the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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Facility Background

The U.S. Bronze facility is a 40-acre property located in the southwest corner of Woodcock Township in Crawford County, approximately 2.5 miles north of Meadville, PA. The facility is bordered on the north and south by residential areas, on the west by French Creek and on the east by Conrail tracks and U.S. Route 19.

The Property has been operated since 1947 by several organizations for the production of non-ferrous brass and bronze castings. The facility was first operated by ABEX from 1947-1987, then ABC Rail Company from 1987 to 1988, and finally US Bronze has operated at the facility since 1988. Prior to US Bronze's occupancy of the Property, various material management practices were used at the Property, including disposal of solid waste in an on-site landfill, reclamation of liquid wastes in lagoons and basins, use of foundry sand for fill material in the south parking lot, and placement of foundry sand on the ground surface in various areas.

U.S. Bronze currently operates as a foundry and machine shop producing non-ferrous castings, and semi-finished and finished machined products. The products consist mostly of bearings and bushings used in the mining, sugar, steel and other heavy industries. The general operations of the plant consist of melting alloys and casting metal into sand or metal-chilled molds. The castings go through a general cleaning operation and then are machined and inspected. Wastes generated during plant operations include waste silica foundry sands, dust collected from the sand reclamation operation, waste material generated from the shell sand operation and stoddard solvent. Discharges from air pollution control systems (baghouses) generated from the melting operation of brass and bronze and containing hazardous concentrations of lead and cadmium are shipped to an accepted destination.

In the early 1960s ABEX began utilizing a 3.1 acre portion of their property southwest of the main building and South Parking Area for the storage and disposal of various types of high metals content wastes. Baggouse dusts and lagoon sludges containing hazardous levels of lead were deposited in this landfill. The landfill, which contains approximately 31,600 cubic yards of waste, was successfully closed in 1985 in compliance with PADEP and USEPA regulations.

ABEX also operated two wastewater treatment lagoons west of the North Parking Area as part of their industrial waste treatment facility. The lagoons were identified as containing hazardous wastes in ABEX's Part A Application. The impoundments were clay-lined and operated from an unknown date until 1984 when alternate methods of processing and recycling wastewater eliminated the wastewater discharge to the lagoons. Under approval of the ABEX's NPDES permit, the plant properly closed both lagoons in 1985.

Results of previous investigations indicate that portions of the Property contain inorganic constituents, primarily metals such as lead, copper, and zinc, at concentrations of potential concern. A Site Characterization (SC), implemented between 2003 and 2006 divided the site into five distinct areas.

- **Fuel Tank Area**

This area located on the northeastern side of the Facility contains four decommissioned 20,000-gallon above ground storage tanks (ASTs). Historically, the tanks were used from 1947 through 1984 and contained No. 1 and No. 2 fuel oil. One of the tanks was also used to store facility generated waste oils occasionally. Based on data collected during the SC and subsequent rounds of groundwater attainment sampling, the concentrations of regulated substances related to petroleum compounds in subsurface soils or groundwater were below applicable statewide health standards (SHSs). Therefore, no remedial activities are required to address this area.

- **South Parking Lot Area**

At the time of the SC, the South Parking Lot Area was a one-acre area that included an asphalt parking lot located southwest of the main building. This area also included a steep grass-covered slope extending from the parking area to the field in the southwestern portion of the property. Spent foundry sands and limited quantities of other fill materials from Facility operations were used to bring the parking lot to grade between 1959 and 1969. The spent foundry sands are known to contain elevated levels of metals, primarily

lead, which exceed the applicable PADEP SHSs. In Fall 2008, an asphalt cover system was placed over the existing parking lot and a composite and geocomposite cover system was placed on the western slope of the area. These covers, along with institutional controls designed to maintain the engineered components and limit future site activities in this area effectively eliminated potential future exposure pathways.

- **Slag Reclamation Basin/Bank Area**

This area is comprised of a former wastewater management basin and the adjacent bank, located in the north central portion of the property, and extending onto an adjacent unused portion of a residential property to the north. The Slag Reclamation Basin (SRB) was used to manage solids from the reclamation process. These solids were periodically excavated and placed on the adjoining Bank Area. At the time of the SC, the SRB had been filled to grade with sludge, debris, and soils that contained elevated concentrations of metals, primarily lead. Waste materials consisting of dried sludge and foundry sand were also seen in the Bank Area and the adjacent residential property. Approximately 4,500 cubic yards of waste materials are believed to have been deposited in this area.

- **Metals Impacted Soils and Sediment (MISS) Area**

This area includes the entire property, except the closed on-site landfill, Fuel Tank Area, South Parking Lot Area and SRB Area. The area also includes a portion of the adjacent residential property and the sediments in the adjacent surface water bodies. Most of the surface and subsurface soil samples collected from most of the MISS area did not exhibit contaminant concentrations above the applicable SHSs. However, metals (primarily lead) were detected at elevated concentrations compared to SHSs at the following locations: a 2-acre area surrounding the SRB area, a 0.5-acre area in the Equipment Storage Area north of the foundry building, a 0.1-acre area in the center of the field north of the entrance road and sediments in a portion of the unnamed tributary adjacent to the Bank Area and in drainage features adjacent to stormwater outfalls on the western portion of the site.

- **Facility Groundwater**

Groundwater from 12 monitoring wells, the Facility production well and one temporary monitoring well was sampled as part of the SC activities. The results of the groundwater monitoring indicated slightly elevated total lead concentrations at three locations; however, corresponding dissolved phase lead concentrations were not detected above the applicable SHSs in any of the samples.

U.S. Bronze Foundry & Machine, Inc. is seeking a release of environmental liability under the Pennsylvania Department of Environmental Protection's (PADEP) Act II Land Recycling Program and has enrolled in PADEP's and U.S. EPA Region 3's "One Cleanup Program" initiative. This program assures that the Facility's RCRA Corrective Action obligations are satisfied concurrently with the PADEP Act II requirements. The Facility has already received Act II releases of liability for the South Parking Lot and Fuel Tank Areas.

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2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "contaminated"¹ above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale/Key Contaminants</u>
Groundwater	<u>X</u>	<u> </u>	<u> </u>	Total Lead was detected in a few monitoring wells in excess of the applicable PADEP Medium Specific Concentration (MSC)
Air (indoors) ²	<u> </u>	<u>X</u>	<u> </u>	No contaminants of indoor air concern have been detected in vicinity of any Facility or off-site buildings.
Surface Soil (e.g., <2 ft)	<u>X</u>	<u> </u>	<u> </u>	Lead, antimony, zinc detected in excess of applicable PADEP MSCs at several locations.
Surface Water	<u>X</u>	<u> </u>	<u> </u>	Lead, copper and zinc were detected in surface water samples collected at outfalls and along the unnamed tributary.
Sediment	<u>X</u>	<u> </u>	<u> </u>	Lead, antimony, copper and zinc detected in excess of EPA Region 3 Freshwater Sediment Screening Benchmark
Subsurface Soil (e.g., >2 ft)	<u>X</u>	<u> </u>	<u> </u>	Lead, antimony, copper detected in excess of applicable PADEP MSCs at several locations.
Air (outdoors)	<u> </u>	<u>X</u>	<u> </u>	No evidence to suspect a release of hazardous constituents to outdoor air exists.

_____ If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support documentation demonstrating that these "levels" are not exceeded.

X _____ If yes (for any media) – continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

See Following Page

¹ "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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Groundwater:

The Facility is located within the Appalachian Plateau physiographic province and is underlain by the Mississippian Age Bedford Shale. The shale is overlain by Pleistocene Age Kent Till, which ranges in thickness from 25 feet to 50 feet and consists of poorly sorted silt, sand, gravel and clay. The uppermost water bearing zone occurs in the till under unconfined conditions and the depth to water is typically between 5 feet and 25 feet below the ground surface (bgs). This aquifer is used for water supply on site and potentially in the surrounding residential areas. Groundwater levels and the local topography both indicate that groundwater in the unconfined aquifer discharges into the adjacent French Creek and/or its unnamed tributary and groundwater flow direction is generally to the west/northwest across the site.

For the 2006 SC, a Facility-wide groundwater monitoring network including 12 on-site monitoring wells, the Facility production well and one on-site temporary monitoring well was established. The network included five existing wells used to monitor the closed landfill, three existing wells in the vicinity of the Slag Reclamation Basin, and four new wells (two installed in the South Parking Lot Area, one downgradient from the Fuel Tank Area and one downgradient from the contaminated soils in the field on the northern and western portion of the Facility).

Groundwater data associated with two rounds of sampling collected as part of the SC indicated several samples slightly exceeding the PADEP Statewide Health Standard (SHS) for total lead. However, corresponding dissolved phase lead results at these locations were below the practical quantitation limit (PQL), and the total suspended solids concentration was elevated at each location where an exceedance for lead was observed. This suggests that the higher total lead concentrations were due to biases introduced during the sampling procedure and that the dissolved phase data are more representative of actual aquifer conditions. No other groundwater contaminants were detected in excess of their respective SHSs during the SC sampling events or subsequent attainment sampling events.

Air (indoors):

The vast majority of contamination observed at the site is metals contamination in soils, which present no risk to the indoor air pathway. The only area where elevated petroleum hydrocarbons and detectable concentrations of petroleum related volatile organic compounds were detected was the Former Fuel Tank Area. Diesel range organic (DRO) concentrations were detected in this area ranging from 8.6 mg/kg to 45,000 mg/kg. Although there were detectable concentrations of at least one No. 1 and No. 2 fuel oil related contaminant in each of the 21 samples collected in this area during the Site Characterization, none of the concentrations was above its respective PADEP MSC. Furthermore, no volatile organic compounds of indoor air concern were detected in the groundwater samples collected from monitoring well MW-4, located immediately outside and downgradient from the fuel tanks or from the Facility production well (PW-1) located approximately 450 feet west (downgradient) of the Former Fuel Tank Area.

Surface and Subsurface Soil:

The on-site landfill, North and South Lagoons and South Parking Lot Area are all known to contain metals (primarily lead) contaminated wastes. However, each of these areas has been addressed by containing those wastes in place with maintained engineered covers, thereby eliminating the possibility of an exposure pathway in those areas. While total petroleum hydrocarbon (TPH) diesel range organic (DRO) concentrations were observed in both surface and subsurface soils in the Fuel Tank Area, no fuel oil related contaminants of concern were detected above their respective PADEP MSC values in this area.

Surface and subsurface soils within the Slag Reclamation Basin/Bank Area (SRB) are known to contain elevated concentrations of metals including lead, antimony and zinc. Prior to 1950, materials from the slag reclamation process were pumped from the building via underground piping to the basin. Sludge from the basin was periodically excavated and placed on the bank between the basin and the unnamed tributary that borders the northern portion of the site. A fine grained sludge was left in place after the basin was closed and the basin was reportedly filled with

plan debris, off-spec materials and other plant derived solid waste materials until the area was filled to grade in the late 1970s. It is estimated that the former basin contains 4,200 cubic yards of contaminated sludge and other waste materials and the Bank Area is estimated to contain another 400 cubic yards of waste materials. Two composite samples of the waste materials obtained from borings near the center of the basin exceeded the RCRA toxicity characteristic threshold for lead. The waste materials do not appear to be adversely impacting the subsurface soils beneath the basin as only one sample out of the ten collected below the waste/soil interface ((SRB-03A, 526 mg/kg at a depth of 11 feet) exhibited a lead concentration in excess of the PADEP MSC of 450 mg/kg however, each of the three subsurface samples collected within the Bank Area (depths between 2 and 3 feet bgs) contained lead at concentrations that exceeded the MSC. Lead was found at elevated concentrations (as high as 17,800 mg/kg) in 14 of the 18 surface soil samples collected in the SRB/Bank Area.

Based on the Site Characterization findings, waste was identified on a small portion of the adjacent property between the property boundary and the unnamed tributary. There was no evidence that waste materials migrated across the unnamed tributary to other portions of the residential property. This was confirmed through soil sampling as lead concentrations as high as 12,200 mg/kg were detected on the south side of the unnamed tributary on the residential property while no MSC exceedances were observed in samples collected on the north side of the stream.

X-ray fluorescence (XRF) screening was utilized in the North Area of the facility, including the SRB/Bank Area to delineate the extent of soil contamination. A total area of 2.2 acres around the SRB/Bank Area and extending down slope to the west was identified as containing soils in excess of the PADEP MSC for lead. The XRF screening indicated that the majority of the contamination occurs primarily in the surface soils except in a few areas of the SRB/Bank Area. Additional smaller areas containing elevated lead concentrations include the equipment storage area located immediately north of the foundry building and a small area in the central portion of the field north of the entrance road to the Facility.

Surface Water:

A total of six surface water samples were collected as part of the SC activities from French Creek, the unnamed tributary, and stormwater outfalls that discharge to French Creek. No metals were detected in the surface water samples collected from French Creek. Detectable concentrations of lead, copper and zinc were observed in the samples collected at the outfalls and from the unnamed tributary. The copper and zinc concentrations detected were below their respective maximum contaminant levels (MCL). While there currently is no MCL for lead, two of the samples collected at stormwater outfall locations did exhibit lead concentrations as high as 0.36 mg/l.

Sediment:

As part of the SC activities, sediment samples were collected from Facility stormwater drainage features, portions of the unnamed tributary, and the main channel of French Creek. The sediment samples collected from the stormwater drainage features and unnamed tributary were compared to soil screening levels because flow in these areas is intermittent. The sediments in the unnamed tributary along the length of the Bank Area were found to exceed the soil screening levels, primarily for lead (found at a concentration as high as 868 mg/kg in sample MIS-8-SED). Sixteen sediment samples have been collected from French Creek, with the majority of those collected from the banks of a backwater portion of the stream near Stormwater Outfall 002. Since this portion of French Creek flows perennially, contaminant concentrations were compared to both EPA Region 3 Freshwater Sediment Screening Benchmarks (FSSBs) and EPA Sediment Quality Guidelines Probable Effect Concentrations (PECs). Each sample collected downstream of the northern property boundary contained at least one contaminant at a concentration greater than its corresponding FSSB. Lead and copper were the most common contaminants observed, but a few samples also contained antimony, arsenic and zinc in excess of the FSSB. No exceedances of FSSBs were observed in upstream background sample SED-12. PEC exceedances were only seen in samples collected within the backwater area in the general vicinity of Outfall 002.

Air (outdoors):

A release of contaminants from source areas to the air above a risk-based level is not suspected. The concentrations of VOCs observed at the site do not warrant a concern for a release to the atmosphere. The site is sufficiently vegetated to prevent a release of wind-blown contaminated soils/dust from the site to neighboring properties.

Ref.: Site Characterization Report, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania,

prepared by GeoSyntec Consultants, September 2006; Final Report – Fuel Tank Area Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, September 2009; Final Report, South Parking Lot Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, October 2009; Risk Assessment Report, Metals Impacted Soils and Sediments Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, October 2009; Final Environmental Indicator Inspection Report, U.S. Bronze Foundry & Machine, Woodcock Township, PA, prepared by Foster Wheeler Environmental Corporation, December 2002; Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, USEPA, November 2002; Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard, January 24, 2004.

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3. Are there complete pathways between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

<u>"Contaminated Media"</u>	<u>Residents</u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food</u> ¹
Groundwater	No	No	No	No			No
Air (indoors)							
Soil (surface, e.g., <2 ft)	Yes	Yes	No	Yes	Yes	Yes	No
Surface Water	Yes	No			Yes	No	No
Sediment	Yes	No			Yes	No	No
Soil (subsurface e.g., >2 ft)				Yes			No
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table

1. Strike-out specific Media including Human Receptors -- spaces for Media which are not "contaminated" as identified in #2 above.
2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media – Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations, some potential "Contaminated" Media– Human Receptor combinations (Pathways) do not have check spaces ("_____"). While these combinations may not be probable in most situations, they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media–receptor combination) – skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet) to analyze major pathways.

_____ If yes (pathways are complete for any "Contaminated" Media– Human Receptor combination) – continue after providing supporting explanation..

_____ If unknown (for any "Contaminated" Media– Human Receptor combination) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Groundwater:

Although total lead concentrations in several samples were above the PADEP SHS, corresponding dissolved phase lead results at these locations were below the PQL. Furthermore, the total suspended solids concentration was elevated at each location where an exceedance for total lead was observed. This suggests that the higher total lead concentrations were due to biases introduced during the sampling procedure and that the dissolved phase data are more representative of actual aquifer conditions. No other groundwater contaminants were detected in excess of their respective SHSs during the SC sampling events or subsequent attainment sampling events. Lead concentrations in groundwater samples collected from the on-site production well have always been below the 5

¹ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

ug/l SHS. Based on the local geohydrology, groundwater from the upper aquifer at the site is believed to discharge into French Creek and is not suspected to migrate onto neighboring properties.

Surface and Subsurface Soil:

Unaddressed surficial soil contamination currently exists at the areas of the site described above, as well as the portion of the residential property immediately north of the Facility but south of the unnamed tributary. Therefore, all of the exposure pathways from surface soil to human receptors are potentially complete except for day-care and food. There are no known day-care facilities in the immediate site vicinity and no food crops/products are grown at the Facility. A potential complete pathway exists from the subsurface soils to construction workers that could come into contact with buried waste materials at the site.

Surface Water:

Lead was detected in surface water samples collected at outfall locations at concentrations as high as 0.36 mg/l, but was not detected in French Creek, the only perennial body of water in the immediate vicinity of the Facility known to be used for recreational purposes. There are no Facility-related work activities that would necessitate workers coming into contact with surface waters at the site, thereby eliminating this pathway. No contamination above MCLs has been documented in the surface water samples collected from the fishable portions of French Creek. The potential for a complete pathway from surface water containing lead (i.e. along the unnamed tributary adjacent to the SRB/Bank Area) to residents and trespassers does exist.

Sediment:

Lead, copper, antimony, arsenic and zinc were detected at concentrations greater than their respective EPA sediment quality criteria both along the unnamed tributary and French Creek near the backwater area around Outfall 002. There are no Facility-related work activities that would necessitate workers coming into contact with sediments at the site, thereby eliminating this pathway. Although recreational usage of the portion of French Creek near Outfall 002 has never been documented, the potential for a complete pathway exists. The potential for a complete pathway from metals contaminated sediments to residents and trespassers also exists.

Ref.: Site Characterization Report, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, September 2006; Final Report – Fuel Tank Area Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, September 2009; Final Report, South Parking Lot Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, October 2009; Risk Assessment Report, Metals Impacted Soils and Sediments Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, October 2009; Final Environmental Indicator Inspection Report, U.S. Bronze Foundry & Machine, Woodcock Township, PA, prepared by Foster Wheeler Environmental Corporation, December 2002.

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4. Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be "significant" (i.e., potentially² "unacceptable" levels) because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

If no (exposures (can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway)— skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

 X

If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway)— continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

If unknown (for any complete pathway)— skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Surface and Subsurface Soil:

With the exception of the equipment storage area located immediately north of the foundry building, the vast majority of soil contamination exists in areas of the site not utilized for any purpose by the current site workers. The current site workers are familiar with and site visitors are informed of the locations of hot spots so that these areas are avoided as much as possible, thereby minimizing exposures.

U.S. Bronze Foundry and Machine, Inc. is accessible via a fenced entrance from Brake Shoe Road in the northeast portion of the Facility. Furthermore, accessing the contaminated areas in the vicinity of the Bank Area and portion of the contaminated residential property is prohibitive due to vegetation and steep embankments. The combination of the terrain and fencing around the property amply dissuades trespassers from accessing the site in general. The residential property owner is aware of the contamination on the property and does not utilize that portion of the property for any purpose.

The Facility is in the process of proposing remedial action consisting of consolidation and capping of the remaining contaminated soils on site and on the residential property. Workers involved in the remediation will be familiar with the contaminants and risks, and will follow the proper health and safety protocols to minimize exposure to themselves and the surrounding environment. Following remediation, certain land use restrictions will be contained in an environmental covenant to maintain the integrity of the cover system and further minimize potential exposures.

Surface Water

The intermittently flowing unnamed tributary holds no recreational value for onsite workers, residents from the adjacent property to the north, or trespassers. Therefore, the surface water in the unnamed tributary does not present an

² If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a Human Health Risk Assessment specialist with appropriate education, training and experience.

unacceptable risk to human health due to the infrequency with which contact to water with detectable amounts of metals would occur. No metals contamination was ever detected in surface water samples collected from French Creek, a perennial water body with recreational usage.

Sediment

The intermittently flowing unnamed tributary and the backwater portion of French Creek near Outfall 002 hold no recreational value for on-site workers, residents from the adjacent property to the north, or trespassers. Therefore, the contaminants in the sediments in the unnamed tributary and French Creek do not present an unacceptable risk to human health due to the infrequency with which contact to sediments with detectable amounts of metals would occur.

Ref.: Site Characterization Report, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, September 2006; Final Report – Fuel Tank Area Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, September 2009; Final Report, South Parking Lot Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, October 2009; Risk Assessment Report, Metals Impacted Soils and Sediments Site, U.S. Bronze Foundry and Machine, Inc., Meadville, Pennsylvania, prepared by GeoSyntec Consultants, October 2009; Final Environmental Indicator Inspection Report, U.S. Bronze Foundry & Machine, Woodcock Township, PA, prepared by Foster Wheeler Environmental Corporation, December 2002.

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5. Can the "significant" exposures (identified in #4) be shown to be within acceptable limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits)– continue and enter a "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")– continue and enter a "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) – continue and enter "IN" status code.

Rationale and Reference(s): _____

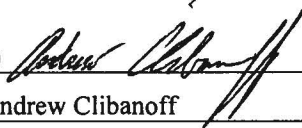
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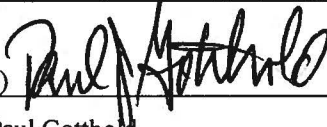
6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the U.S. Bronze Foundry & Machine facility, EPA ID 004 318 416, located at 18649 Brake Shoe Road, Woodcock Township, PA under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

NO - "Current Human Exposures" are NOT "Under Control."

IN - More information is needed to make a determination.

Completed by: (signature)  Date 7/30/10
(print) Andrew Clibanoff
(title) RCRA Project Manager

Supervisor: (signature)  Date 8-3-2010
(print) Paul Gotthold
(title) Associate Director, Office of
Pennsylvania Remediation
EPA Region 3

Locations where References may be found

All reference documents can be found at the USEPA Region III Office in Philadelphia

Contact telephone and e-mail numbers:

(name) Andrew Clibanoff
(phone #) 215-814-3391
(e-mail) clibanoff.andrew@epa.gov

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

