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: **Huntington Alloys**
Facility Address: **3200 Riverside Drive, Huntington, WV 25705-1771**
Facility EPA ID #: **WVD 076 826 015**

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?

☒ 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.

FACILITY BACKGROUND

The Huntington Alloys facility (Facility) is located on a 140-acre site in Huntington, West Virginia. The Guyandotte River borders the southwestern and western boundary of the Facility which ultimately discharges into the Ohio River, which is approximately 0.75 miles downstream of the Facility. The Huntington flood wall surrounds a portion of the facility at the southwest area. The northern boundary borders active rail-lines and the southern boundary borders residential and commercial property. Pat's Branch, a tributary of the Guyandotte River, flows beneath the western section of the Facility through a 66-inch concrete culvert from the northeast to the southeast prior to discharging into the Guyandotte River. Paved roads and mini rails provide access the other departments and buildings throughout the facility. The closest residences are located less than a mile to the southeast of the facility.

The Facility manufactures nickel alloys including: semi-finished nickel products, electrofluxed metals, extrusion dies, seamed tubing, seamless tubing, and ingots. Manufacturing portions of the Facility consist of five main buildings including the Melt Shop Building, Primary Mill Building , Strip Building, Bar and Wire Building, and the Cold Draw Building. Manufacturing processes at the Huntington plant include melting of metals to produce alloy ingots; extruding and tube-reducing to form tubing products; heat-treating to aid processing and improve physical properties; and machining, grinding/pickling to remove surface oxides/defects. The Facility operates a small chromium electroplating unit which consists of three metal tanks with an approximate capacity of 1,000 gallons each. This unit is used to chrome plate a very limited number of small dyes and the operation does not generate hazardous waste on a continuous basis.

In 1991 and 1993, a preliminary review and Visual Site Inspection (VSI) of the Facility was completed during which twenty-one solid waste management units (SWMUs) and three areas of concern (AOCs) were identified. An amendment to the VSI was completed in 1994 and a RCRA Facility Assessment (RFA) was completed in 1996. In October 2009, a RCRA site visit was conducted by WVDEP and EPA to consolidate relevant information from the Huntington Alloys Corporation that would be used to augment the existing facility information.

In June 2012, the Facility submitted the *Phase I RFI/SA Work Plan* to investigate subsurface conditions at twenty-two solid waste management units (SWMUs) was completed at the Facility from October through December 2012. In February 2013, the Facility submitted the *Project Update: Phase I RFI/SA Field Investigation* as an interim summary prior to submitting a comprehensive report.

On May 13, 2013, the Facility's Voluntary Remediation Program (VRP) application was approved and a Voluntary Remediation Agreement (VRA) was executed on January 13, 2014. On March 31, 2014, the Facility submitted a *Phase I Site Assessment Work Plan Addendum* to further assess the chemicals of potential concern (COPC) in groundwater at the twenty-two (22) SWMUs previously investigated from October through December 2012.

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 non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" 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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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)?

	Yes	No	Rationale / Key Contaminants
Groundwater	X		See Below
Air (indoors)[2]	X		See Below
Surface Soil (e.g. <2 ft)	X		See Below
Surface Water	X		See Below
Sediment	X		See Below
Subsurf. Soil (e.g., >2 ft)	X		See Below
Air (outdoors)		X	

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

☒ 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.

Groundwater

Groundwater sampling was conducted during the Phase I RFI/SA from October to December 2012. As provided by the Phase I RFI/SA Work Plan, approved by WVDEP on June 25, 2012, analytical results are compared to the West Virginia Voluntary Remediation Program De Minimis Values (DMVs). For groundwater, the DMVs assume that groundwater beneath the Site is used for residential potable supply the analytical results for the groundwater indicate that the groundwater at the Facility is impacted and the following constituents exceed the groundwater De Minimis standards:

- Metals: aluminum, lead, manganese, nickel, thallium, arsenic, beryllium, cadmium, copper, cobalt, selenium, vanadium, and hexavalent chromium
  - The highest exceedance for each metal was iron 137,000 µg/L, lead 79.4 µg/L, manganese 26,400 µg/L, nickel 154,000 µg/L, thallium 2.7 µg/L, arsenic 47.1 µg/L, beryllium 14.3 µg/L, cadmium 14.2 µg/L, copper 750 µg/L, cobalt 750 µg/L, selenium 97.8 µg/L, vanadium 227 µg/L, and hexavalent chromium 690 µg/L
- Volatile Organic Compounds (VOCs): bromodichloromethane, 1,4 dioxane, carbon tetrachloride, chloroform, dichloroethane, dichloroethene, trichloroethene, tetrachloroethene, cis-1,2-dichloroethene and vinyl chloride
  - The highest exceedance for each VOC was: bromodichloromethane 1.1 µg/L, 1,4-dioxane 293 µg/L, carbon tetrachloride 3,400 µg/L, chloroform 1930 µg/L, 1,1-dichloroethane 166 µg/L, 1,1-dichloroethene 534 µg/L, trichloroethene 1,020 µg/L, tetrachloroethene 370 µg/L, cis-1,2-dichloroethene 73.4 µg/L, and vinyl chloride 40.3 µg/L
- Semi-volatile Organic Compounds (SVOCs): benzo(a)anthracene, naphthalene, bis(2-ethlyhexl)phthalate, and pentachlorophenol
  - The highest exceedance for each SVOC was: benzo(a)anthracene 0.362 µg/L, naphthalene 0.510 µg/L, bis(2-ethlyhexl)phthalate 23.2 µg/L, and pentachlorophenol 14.4 µg/L

Indoor Air

There are twenty-one (21) SWMUs located in the central portion of the facility in close proximity to the buildings. Groundwater samples were collected from ten (10) monitoring wells (TMW-07, TMW-08, TMW-09, TMW-13, TMW-14, TMW-15, TMW-16, TMW-17, TMW-18, and TMW-19). Two temporary wells, TMW-16 and TMW-17, were situated in a high traffic area and were abandoned after collecting groundwater samples. The results of the groundwater sampling showed that the exceedances of the groundwater standards were more prevalent in the central part of the facility. Because of the close proximity of the buildings in this area, indoor air is potentially suspected to be above appropriately protective risk-based levels.

Nine VOCs exceeded groundwater standards in the central portion of the facility: trichloroethene, chloroform, 1,1-dichloroethane, carbon tetrachloride, 1,1-dichloroethene, tetrachloroethene, bromodichloromethane, 1,4-dioxane and cis-1,2-dichloroethene.

- The highest exceedance for each VOC was: trichloroethene (1,940 µg/L; TMW-17), chloroform (1,930 µg/L; TMW-18), 1,1-dichloroethane (117 µg/L; TMW-16), carbon tetrachloride (3,444 µg/L; TMW-18), 1,1-dichloroethene (534 µg/L; TMW-17), tetrachloroethene (370 µg/L; TMW-17), bromodichloromethane (0.43 µg/L; TMW-15), 1,4-dioxane (207 µg/L; TMW-16) and cis-1,2-dichloroethene (73.4 µg/L; TMW-17).

Surface/Subsurface Soils

During the Phase I RCRA Facility Investigation/Site Assessment (RFI/SA) field investigation conducted in October through December 2012, a total of 23 soil borings were advanced and soil samples were continuously collected. Only three metals exceeded the DMVs for industrial soil cobalt, nickel, and hexavalent chromium

- Cobalt exceeded the industrial soil DMV in 44 samples; the highest exceedance was 683 mg/kg in the 5-6ft sample from SB-07.
- Nickel exceeded the industrial soil DMV in 3 samples; the highest exceedance was 267,000 mg/kg in the 5-6ft sample from SB-06.
- Hexavalent Chromium exceeded the industrial soil DMV in 1 sample, 112 mg/kg in the 20-22ft sample from SB-15.

Surface Water/Sediment

The Facility is operating under a West Virginia National Pollutant Discharge Elimination System (NPDES) Permit, #WV0114618, for storm water discharge from Outlets 001 and 002. The storm water discharges to the Guyandotte River through the two outlets, which are both 0.78 miles from the mouth of the Ohio River. Outlets 001 and 002 are for intermittent discharge of storm water only; Outlet 001 flows into a 66-inch concrete culvert the runs north to south approximate 20-25 feet below ground. Outlet 002 flows into a drainage ditch.

Outdoor Air

The Facility is operating under a WVDEP issued Title V Permit # R30-01100007-2013 for operations that involve possible air releases include dust storage, various tank vents, and various furnaces. All furnaces at the Facility are fueled either by electricity or natural gas and no emissions have been observed. Additionally, there is no evidence of complaints or issues associated with outdoor air.

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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?

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

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	Yes	No	Yes	No	No	No
Air (indoors)	No	Yes	No	Yes	No	No	No
Soil (surface, e.g. <2 ft)	No	Yes	No	Yes	No	No	No
Surface Water	No	No	No	No	No	No	No
Sediment	No	No	No	No	No	No	No
Soil (subsurface e.g. >2 ft)	No	Yes	No	Yes	No	No	No
~~Air (outdoors)~~							

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):

The Huntington Alloys facility is an industrial facility and the foreseeable use of the facility will continue to be industrial. This developed portion of the facility and the area around the buildings are covered by asphalt/concrete. Although the closest residence is less than a mile from the Facility's property, trespassers would not be able to access the site since the facility is surrounded by a seven foot high chain link fence that surrounds the property. Entry into the Facility is through a guarded gate. The Huntington Flood Wall surrounds the southwest portion Facility. Therefore, the only potential receptors are site workers (including potential construction workers) and visitors.

Groundwater
Groundwater at the facility is not used as a potable water resource. There is a potential for on-site workers (including construction workers and consultants) involved in an excavation project to be exposed to groundwater by direct contact, incidental ingestion, and inhalation of vapors. However, proactive measures such as a Health and Safety Plan (HASP) and site health and safety practices are followed by workers and construction workers would greatly reduce the possibility of direct dermal or inhalation exposure to impacted groundwater.

Indoor Air
Exposure to indoor air could occur by on-site industrial workers; however, the buildings at the Facility are not "typical" industrial buildings (e.g., many have bay doors that are often open) and these buildings are all not occupied 8 hours per day for 5 days per week.

Soil (Surface and Subsurface)
Exposure to potentially impacted soil will most likely by on-site industrial workers. Exposure to surface and sub-surface soil by excavation workers could also occur, in the event of a construction project, utility repair, or other activity that requires excavation. The presence of vegetation, asphalt, concrete, etc., as well as, protective clothing worn by on-site workers would reduce the possibility of direct exposure to soil.

Surface Water/Sediment
Groundwater in not being discharged to surface water and intermittent storm water discharges through two outlets located in the western portion of the facility. Although Outlet 001 has exceeded the discharge limit for hexavalent chromium of 0.011 mg/L during storm sampling events, it is highly unlikely industrial workers and/or construction workers could be exposed to surface water and sediment.

For Outlet 001, surface water run-off from heavy rainfalls discharges through 2ft x 2ft metal grates situated throughout the Facility into piping that is approximately 8 to 10 feet below ground. The intermittent surface water then flows from the underground piping into a 66-inch concrete culvert the runs north to south approximately 20-25 feet below ground. Access to the concrete culvert is either through a manhole and climbing down approximately 25 feet or by climbing down an approximately 15 foot Gabion wall. For Outlet 002, surface water discharges into a drainage ditch that is situated in a wooded area. Access to this Outlet 002 is limited by a chain link fence and the Huntington Flood Wall. Historic storm water sampling has shown that the Facility has met the discharge limits for at Outlet 002.

Additionally, the Facility cleaned out the storm water discharge lines in July 2013. The Facility also maintains a site wide Groundwater Protection Plan and a site wide Storm Water Pollution Protection Plan.

Outdoor Air
All furnaces at the Facility are fueled either by electricity or natural gas and no emissions have been observed and there is no evidence of complaints or issues associated with outdoor air.

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

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" 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."

☐ 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):

Groundwater
Groundwater at the Facility is not used as a potable water resource and there are no potable water supply wells at the Facility. The public water supply is located several miles upstream of the Facility, which draws its water from the Ohio River. During the Phase I RFI/SA from October to December 2012, groundwater was documented beneath the silty clay between 20 to 28 feet below land surface (bls). On-site workers (including construction workers and contractors) can potentially be exposed to constituents in groundwater in the event of a construction project, utility repair, subsurface excavation projects, groundwater sampling or remediation. Although some VOCs, SVOCs, metals exceeded the DMVs for groundwater, the limited duration and frequency of exposure result in the potential exposure being considered insignificant. Proactive measures such as a Health and Safety Plan (HASP) and site health and safety practices adhered to by day-to-day workers and excavation workers would greatly reduce the possibility of exposure to impacted groundwater. Additionally, the Facility maintains a Groundwater Protection Plan.

Indoor Air
There are buildings at Huntington Alloys within 100 feet of contaminated groundwater; therefore, there is the potential for vapor intrusion from shallow groundwater into these buildings and potential exposure by the workers to indoor air. However, the buildings at the Facility are not "typical" industrial buildings (e.g., many have bay doors that are often open) and these buildings are all not occupied 8 hours per day for 5 days per week.

In July/August 2013, the former 50,000-gallon spent acid storage tank (SWMU-5), which was situated underground within the footprint of an old concrete tank that was lined with acid resistant brick, was closed and a new tank was constructed. Located in the Central Area of the Facility, SWMU-5, known as a Monel Tank, was used to store spent pickling acid, sludge from the pickling rinse water, and spent pickling solution from Huntington Alloy's Burnaugh, Kentucky Plant. The new spent acid tank configuration consists of an above ground 50,000-gallon closed top fiberglass tank, which is located inside the current acid reclamation building. A concrete containment system surrounds the entire tank, which is designed to hold 110 percent of the new tanks capacity.

Soil (Surface and Subsurface)

The majority of the Facility is covered by building and asphalt/concrete. The closest residence is less than a mile from the Facility's property. It is highly unlikely that trespassers would be able to access the site since the facility is surrounded by a seven foot high chain link fence and entry into the Facility is through a guarded gate. On-site workers (including construction workers and contractors) can potentially be exposed to constituents in surface or subsurface soil in the event of a construction project, utility repair, subsurface excavation projects, or remediation. Although some metals exceeded the DMVs for industrial soil, the limited duration and frequency of exposure result in the potential exposure being considered insignificant. Proactive measures such as a Health and Safety Plan (HASP) and site health and safety practices adhered to by day-to-day workers and excavation workers would greatly reduce the possibility of exposure to impacted groundwater.

[4] 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.

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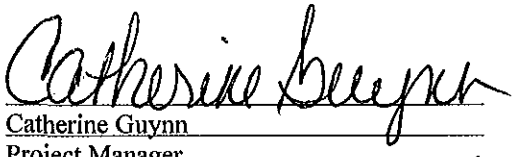
6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☒ 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 Huntington Alloys Facility, EPA ID # WVD076826015, located at 3200 Riverside Drive, Huntington, WV 25705-1771. Specifically, this determination indicates that the migration of "contaminated" groundwater is 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  Date 8-20-2014

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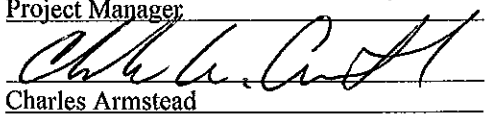
Supervisor  Date 8-20-2014

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