DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: **Electro-Platers of York**
Facility Address: **209 East Willow Street, Wrightsville, PA 17368**
Facility EPA ID #: **PAD015139470**

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 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).

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			Trichloroethylene, Vinyl Chloride, and chromium exceed PADEP Non-Residential Used Aquifer MSCs and EPA MCLs
Air (indoors)[2]		X		VOC groundwater and soil sample results below screening levels
Surface Soil (e.g., <2 ft)	X			Benzo(a)pyrene, Arsenic, Beryllium, Cadmium, Chromium, Lead, Zinc, and Nickel exceed one, or a combination of, Residential and Non-Residential Direct Contact MSCs and Soil-to-Groundwater MSCs
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)	X			Arsenic, Cadmium, Chromium, and Lead exceed one, or a combination of, Residential and Non-Residential Direct Contact MSCs and Soil-to-Groundwater MSCs
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.

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): Electroplaters of York (EPY) was an electroplating facility that was contracted by various businesses who supplied prefinished metal components for custom electroplating. EPY conducted operations at the facility from 1968 until December 21, 2004. Electroplating operations included: plating with zinc, cadmium, chromium, nickel, brass and silver; pickling steel; and depositing electroless nickel. Wastewater treatment for destruction of cyanide, chromium reduction, chemical precipitation, flocculation, coagulation, and settling with sludge dewatering occurred on site. The facility used trichloroethene (TCE) for vapor degreasing.

[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.

A Limited Phase II Environmental Site Assessment (ESA) (ECS, March 2006) included a geophysical survey, advancement of soil borings, installation of temporary monitoring wells, and excavation of test pits. The limited investigation was performed in effort to determine whether historical uses of the property had resulted in adverse impacts to the environmental integrity of the property.

The facility was previously used for industrial purposes and it is currently owned by the Wrightsville Borough with intended use for non-residential purposes (i.e., recreational uses). Therefore, for the purposes of this EI, a preliminary evaluation of the groundwater data using Non-Residential Used Aquifer MSCs was conducted.

The vertical and horizontal extent of soil and groundwater contamination could not be determined within the scope of the Limited Phase II ESA; therefore, the Wrightsville Borough applied for, and received an EPA Region III Brownfield Assessment Grant (BAG) to perform investigation activities to determine the nature and extent of identified contamination.

Groundwater: As part of the BAG investigation, five pairs of nested groundwater monitoring wells (5 shallow @ ~25 ft deep and 5 deeper @ ~ 100 ft deep) were installed to complement the existing EPY wells in analyzing groundwater conditions. During the first sampling event, TCE and VC were detected at concentrations above their respective PADEP Non-Residential Used Aquifer MSCs and EPA Maximum Contaminant Levels (MCLs) in 5 of the 12 groundwater wells. Based on the second round of groundwater sampling, the results were the same or lower suggesting a stable or declining concentration plume. This trend continued through to the most recent sampling event (May 2016).

Indoor air: Groundwater and soil sample results are below screening levels which concludes that indoor air is not known or reasonably suspected to be contaminated above appropriately protective risk-based levels.

Surface Soil: As part of the BAG investigation, in excess of 35 soil borings and samples from shallow and deep locations were collected. Benzo(a)pyrene, Arsenic, Beryllium, Cadmium, Chromium, Lead, Zinc, and Nickel exceed one, or a combination of, Residential and Non-Residential Direct Contact MSCs and Soil-to-Groundwater MSCs in surface (0-2') soils.

Surface Water: The First Quarter 2017 Quarterly Progress Report discusses that concentrations of identified contaminants have been modeled to confirm no unacceptable risks with respect to discharge to the river. The Second Quarter 2017 Quarterly Progress Report explains there was continued work with the groundwater fate and transport modeling for potential discharges to the adjacent river. However, the most recent round of groundwater monitoring results (May 2016) available to the EPA indicate that no wells adjacent the river have concentrations of contaminants exceeding any of their respective MSCs or MCLs. Groundwater modeling is being finalized and expected to be presented in the Remedial Investigation and Cleanup Report to confirm that contaminated groundwater does not discharge into surface water.

Sediment: Shallow surface soil samples taken downgradient (towards the river), from locations where surface soils impacts are noted, are below residential direct contact MSCs and there is no reason to expect sediment has been impacted by transport of the soil contamination.

Subsurface Soil: As part of the BAG investigation, in excess of 35 soil borings and samples from shallow and deep locations were collected. Arsenic, Cadmium, Chromium, and Lead exceed one, or a combination of, Residential and Non-Residential Direct Contact MSCs and Soil-to-Groundwater MSCs in subsurface (2-15') soils.

Outdoor Air: Outdoor air is not reasonably suspected to be contaminated above appropriately protective risk-based levels.

References:
Limited Phase II Environmental Site Assessment - ECS, March 2006
Environmental Indicator Report – Baker, September 2010
EPA Region III Brownfield Assessment Grant Number 004096475 documents:
Status Update – September 2015
Quarterly Progress Report Third Quarter 2016
Revised Work Plan and Schedule 9/7/2016
Quarterly Progress Report Fourth Quarter 2016
Quarterly Progress Report First Quarter 2017
Quarterly Progress Report Second Quarter 2017

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

X 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.

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

Rationale and Reference(s):

Since 2014, EPY has been undergoing investigation activities under the BAG. During these activities, and currently, fencing exists around the portion of the site where sampling activities are performed in separate areas of investigation (AOIs) where historic impacts have occurred. Signage exists on the fencing indicating the site is being assessed under a BAG, preventing residential, worker, and recreation exposures and likely deterring unauthorized trespassing and potential exposures. Currently, the site is owned by the Wrightsville Borough which occupies and uses one building outside the AOIs as an office building. No day-cares exist on or near EPY. No construction is occurring during the BAG study. Therefore, EPA has determined that under current use conditions, there are no complete exposure pathways.

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):

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):

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.

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):

__X__ 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 **Electro-Platers of York** facility, EPA ID # **PAD015139470**, located at **209 East Willow St Wrightsville, PA 17368** 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 9/26/17

(print) Kevin Bilash

(title) RCRA Project Manager

Supervisor (signature) _____ Date 9-26-17

(print) Paul Gotthold

(title) Assoc. Dir Div. LCD

(EPA Region or State) EPA Region III

Locations where References may be found:

USEPA Region III
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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.