

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>Prior Coated Metals, Inc.</u>
Facility Address:	<u>2233 26th Street SW, Allentown, PA 18103</u>
Facility EPA ID #:	<u>PAD 056 602 923</u>

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 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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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	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
Subsurface Soil (e.g., >2 ft)	X			See below
Air (outdoors)		X		See below

_____ 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):

The Prior Coated Metals Facility (PCM) has been in operation at its Allentown, PA location since 1981. The facility is situated on approximately 4.5 acres of land. PCM cleans, pretreats and coats coils of cold rolled steel, galvanized steel and aluminum. The Facility is located in an industrial park and is bordered by industrial properties.

There are two buildings located on-site (the manufacturing building and the main office), both constructed in 1962. The manufacturing building encompasses approximately 105,300 square feet of the northern portion of the property. The manufacturing building houses the coating line, slitter, packaging line, three storage/warehouse areas, a maintenance shop/office, five chemical drum storage areas, the solvent distillation room, the plant office, and a locker room. Additions to the manufacturing building include a 9,000 square foot paint and solvent storage room constructed along the southeastern corner of the manufacturing building in 1964 and a 2,250 square foot wastewater treatment plant (WWTP) constructed on the northeastern corner of the manufacturing building in 1986. The main office building encompasses 2,240 square feet of the property along 26th Street. A fenced retention basin is located on the northwestern portion of the property. A shed for pallet storage is located on the northern portion of the property. The majority of the Site is asphalt-covered; however, grass-covered areas exist. Access to the property has been and is currently unrestricted.

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) suggests 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.

The site is located in an industrial park and is bordered by other industrial properties. Properties owned by Northern Lehigh Erectors Corp and Robert Landmesser are located to the north of the site, across Mitchell Avenue. Properties owned by Baer Industrial Park and Weppco Associates are located to the east of the site. A property owned by Bastian Company, Inc. is located to the south of the site. Properties owned by Hemlock, LLC and Placement Real Estate are located to the west of the site, across 26th Street SW.

Subsurface Soil Remediation - Septic Tank Removal

As a result of former site operations, historical discharges of organic solvents and paint wastes have occurred behind the site building in a narrow strip of land that borders a wooded area, up against the property line. A septic tank located to the plant east of the Paint Storage Room and Spent Solvent/Paint Cartridge Area exterior wall was identified by PCM on January 8, 2011 and removed in March 2011. Following tank removal, observed impacted soil was excavated to the extent practicable. Due to the structural concerns with excavation adjacent to a building, not all impacted soil based on field-screening could be removed. A total 80 cubic yards (100 tons) of soil was excavated and disposed off-site. Post-excavation soil sampling results indicate that concentrations of 1,2,4-TMB, 1,3,5-TMB, ethylbenzene, naphthalene, toluene, PCE, TCE, and total xylenes exceeded their respective PADEP MSCs in soil at the septic tank excavation. These contaminants were located 6-6.5 ft bgs, and below the facility concrete flooring. These exceedances were subsequently delineated horizontally as part of the soil characterization activities associated with the Paint Storage and Coating Rooms. This area was re-graded following excavation activities.

Post-excavation soil analytical results indicated concentrations of 1,2,4-TMB, 1,3,5-TMB, ethylbenzene, naphthalene, PCE, toluene, TCE and total xylenes above their respective PADEP Act 2 MSCs at several locations. A summary of these exceedances is provided below.

Parameter/MSC max. Value in mg/kg	Sample Location with MSC Exceedance in mg/kg	Depth (feet bgs)
Ethylbenzene / 70	PE-1 90	7-7.5
	PE-2 130	11.5-12
	PE-3 170	11.5-12
	PE-4 200	10-10.5
	PE-6 88	7-7.5
Naphthalene / 10	PE-1 87	7-7.5
	PE-2 17	11.5-12
	PE-3 140	11.5-12
	PE-4 45	10-10.5
	PE-5 21	10-10.5
	PE-6 44	7-7.5
	PE-7 44	9-9.5
Toluene / 100	PE-1 2900	7-7.5
	PE-2 1900	11.5-12
	PE-3 3000	11.5-12
	PE-4 2000	10-10.5
	PE-5 730	10-10.5
	PE-6 2000	7-7.5
	PE-7 560	9-9.5
PCE / 0.5	PE-1 9.4	7-7.5
	PE-3 8.6	11.5-12

Parameter/MSC max. Value in mg/kg	Sample Location with MSC Exceedance in mg/kg	Depth (feet bgs)
TCE / 0.5	PE-1 40	7-7.5
	PE-2 47	11.5-12
	PE-3 51	11.5-12
	PE-4 50	10-10.5
	PE-5 19	10-10.5
	PE-6 68	7-7.5
	PE-7 8.4	9-9.5
1,2,4-TMB / 8.4	PE-1 230	7-7.5
	PE-2 35	11.5-12
	PE-3 330	11.5-12
	PE-4 85	10-10.5
	PE-5 37	10-10.5
	PE-6 120	7-7.5
	PE-7 75	9-9.5
1,3,5-TMB / 2.3	PE-1 80	7-7.5
	PE-2 12	11.5-12
	PE-3 100	6-6.5
	PE-4 27	10-10.5
	PE-5 11	10-10.5
	PE-6 43	7-7.5
	PE-7 24	9-9.5
	PE-13 2.5	10-10.5
Total Xylenes / 1000	PE-4 1010	10-10.5

Site restoration activities were completed following septic tank removal and sampling activities. The excavation was backfilled to grade with certified clean virgin fill. Approximately 65 tons of clean stone fill was placed on-site and compacted.

There will be no completed pathways between soil contamination and human receptors at this facility. PCM is purchasing a portion of the adjacent property from Weppco Associates so that all soil impacts are contained on property owned by PCM.

Groundwater

Groundwater characterization activities were completed between August 2011 and September 2013 to further assess site groundwater quality. The investigation was completed to evaluate groundwater quality at existing well locations and in areas where VOC soil impacts were previously identified above the PADEP soil to groundwater numeric values.

The scope of the groundwater characterization activities included the collection of groundwater samples from temporary well points outside the Paint Storage Room and Spent Solvent/Paint Cartridge Area, installation of three overburden monitoring wells and six bedrock monitoring wells, and the completion of seven groundwater monitoring and sampling events from the expanded well network (14 wells).

The water table generally occurs within the bedrock material, at depths of approximately 61 to 75 feet bgs.

However, based on observations during soil boring advancement and overburden well installation activities, seasonally perched groundwater has been encountered in the overburden material in the vicinity of the former septic tank at depths ranging from 8 to 30 feet bgs.

Metal coating operations resulted in the release of solvents to soil and groundwater at the property. The primary constituents of concern in soil and groundwater are toluene, 1,2,4-TMB, 1,3,5-TMB, ethylbenzene, tetrachloroethene (PCE), trichloroethene (TCE), Naphthalene, Ethylbenzene, and Total Xylenes. The facility continues manufacturing and painting at this address.

A receptor evaluation was completed based on the identification of site groundwater impacts to evaluate the presence of potential receptors (e.g. potential potable wells, surface water) in the vicinity of the site. A well search (2,500 foot radius of site) was completed using the DCNR Pennsylvania Groundwater Information System online database and information obtained from the local municipal water supplier (the City of Allentown). A summary of the well search results is provided below:

- No domestic (potable) wells were identified.
- Eleven industrial wells were identified side gradient of the facility including one well 640 feet west of the facility, three wells 880 feet east of the facility, and seven wells 1,040 feet west of the facility.
- Four industrial wells were identified down gradient of the site approximately 1,200 feet north of the facility.
- Three properties were identified south (upgradient) of the site that do not have municipal water connections and thus the possibility exists that these properties use domestic wells for their water supply. These properties are located at approximate distances of 1,200 feet, 1,840 feet and 2,240 feet from the facility.
- All other tax parcels within 2,500 feet of the site have a municipal water connection, according to the city of Allentown.

Groundwater sampling results for the September 2013 sampling event at shallow monitoring well MW-6S (this well exhibits the most contamination at the facility) indicate 1,1,1-TCA (882 ug/L)[MSC max. value of 200 ug/L], 1,1-DCE (64.9 ug/L) [MSC max. value of 7 ug/L], 1,2,4-TMB (105 ug/L) [MSC max. value of 62 ug/L], 1,3,5-TMB (64.2 ug/L) [MSC max. value of 53 ug/L], benzene (35.1 ug/L) [MSC max. value of 5 ug/L], cis-1,2-DCE (727 ug/L) [MSC max. value of 70 ug/L], PCE (10.5 ug/L) [MSC max. value of 5 ug/L], toluene (517,000 ug/L) [MSC max. value of 1,000 ug/L], and TCE (7,020 ug/L) [MSC max. value of 5 ug/L], were present at concentrations above their PADEP Act 2 MSC. These overburden groundwater quality results are generally consistent with the prior sample collected at this location in October 2011.

Remedial investigative findings to date show groundwater containing dissolved solvents has not migrated off-site.

Soil Gas Characterization

Based on the results of site characterization activities, the extent of soil gas impacts has been delineated. A concentration of toluene was identified in soil gas above its PADEP Residential and Non-Residential Soil Gas MSC at only one location within the Paint Storage Room during one of two soil gas sampling events. However, subsequent conservative vapor intrusion assessment using the J&E model indicates no potential indoor air risk to the site building. The results of the model indicate that the hazard quotient values for toluene are well below the PADEP threshold level of 1.0, in accordance with 25 Pa. Code §250.402. Based on the model results, no additional vapor intrusion evaluation is necessary.

In addition a basement study was completed, at the request of PADEP in the March 2013 meeting. The study identified properties within 2,500 feet of the site that have a reported basement, based on tax parcel records. No properties with basements were identified within 1,000 feet downgradient of the site, therefore decreasing the

concern for vapor intrusion if groundwater impacts are present.

There are presently no completed pathways between "contamination" and human receptors at this facility.

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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)

"Contaminated Media"	<u>Residents</u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food</u> ³
Groundwater	No	No	No	No	No	No	No
Air (indoors)	No	No	No	No	No	No	No
Soil (surface, e.g., <2 ft)	No	No	No	No	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	No	No	No	No	No	No
Air (outdoors)	No	No	No	No	No	No	No

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.

Rationale and Reference(s):

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"** (i.e., potentially⁴ "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."

_____ 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): _____

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 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): _____

