

**Documentation of Environmental Indicator Determination**  
**RCRA Corrective Action**  
**Environmental Indicator (EI) RCRIS code (CA725)**  
**Current Human Exposures Under Control**  
March 2, 2004

**Facility Name:** Cabot Performance Mataterials  
**Facility Address:** 377 Beaver Run Road, Revere, PA 18953-0239  
**Facility EPA ID #:** PAD 014 512 388

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.

**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.

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”<sup>1</sup> 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	___	NO	___	_____
Air (indoors) <sup>2</sup>	___	NO	___	_____
Surface Soil (e.g., <2 ft)	___	NO	___	_____
Surface Water	___	NO	___	_____
Sediment	___	NO	___	_____
Subsurf. Soil (e.g., >2 ft)	___	NO	___	_____
Air (outdoors)	___	NO	___	_____

- 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.

Rationale and Reference(s):

In February 2002, all plant activities were sealed all equipment was removed from the site. All existing buildings are in the process of being demolished.

The Cabot Performance Metals site (formerly Penn Rare Metals) is located approximately 0.75 miles southeast of the unincorporated village of Revere at 377 Beaver Run Road in Nockamixon Township, Bucks County, Pennsylvania. The facility property includes 7 acres of land on the east side of Beaver Run Road and another 95 acres on the west side of the road where the plant buildings are still located. The site was originated in 1959 with the relocation of Penn Rare Metals from Horsham, Pennsylvania. The latest activities at the plant included metal refinery operations resulting in production of cesium, rubidium, and germanium salts, as well as germanium oxides, germanium tetrachloride, tellurium metals, and niobium alloys. The products were also included ferro-columbium and nickel-columbium; these alloying materials are used in producing alloy steels of various grades suitable for use in jet engines.

All wastes at the facility were residual wastes. To protect human health and the environment the site is being cleaned under the PADEP, Act 2 “Land Recycling Program.”

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<sup>1</sup> “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).

<sup>2</sup> Recent evidence (from the CO Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above contaminated groundwater than previously believed. While this is a rapidly developing field current evidence (1/99) suggest that indoor air in structures located above (and adjacent to) contaminated groundwater should not be assumed to be acceptable without physical evidence.

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In January, 2004 the groundwater was monitored and collected from two property wells. Shallow groundwater level is 70-75 feet below the ground surface. The groundwater discharges to Rapp Creek, which discharges into Tinicum Creek approximately two miles south of the site. Rapp Creek and Tinicum Creek are protected under Pennsylvania Chapter 93 Water Quality Standards for the maintenance and/or propagation of fish species. The groundwater at the Cabot site is not an environmental media of concern.

A risk assessment for the Cabot, Revere site for the current site conditions was conducted in January, 2004. A site model for current exposures for human health revealed several Constituents of Potential Concerns (COPCs) in surface water, surface soils and sediment. A model was developed in accordance with the US EPA Region III Risk - Based Concentrations for industrial soils and tap water. The COPCs were used to develop a quantitative risk assessment for current human health exposures. A total cancer risk of  $3 \times 10^{-7}$  was estimated. According to assessment a current human health risks and hazards are well within acceptable US EPA Region III risk assessment guidelines. Thus, the Cabot Performance Metals Revere site currently pose no unacceptable human health risks.

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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**

“Contaminated” Media	Potential Human Receptors (Under Current Conditions)					
	Res.	Worker	Const.	Tresp.	Recreat.	Food3
Groundwater	NO	NO	NO	NO		—
Air (indoors)	NO	NO	NO	NO		
Soil (surface, e.g., <2 ft)	NO	NO	NO	NO	—	—
Surface Water	NO	NO	NO	NO	—	—
Sediment	NO	NO	NO	NO	—	—
Soil (subsurface e.g., >2 ft)	NO	NO	NO	NO		
Air (outdoors)	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): see page 2

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4. Can the exposures from the complete pathways identified in #3 be reasonably expected to be “significant”<sup>4</sup> (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

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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 each potentially “unacceptable” exposure.

\_\_\_ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s): see page 2

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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):

Yes, "Current Human Exposures Under Control" at the Cabot Performance Materials, located 377 Beaver Run Road, Revere, PA, EPA ID # PAD 014 512 388 has been verified.

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

IN - More information is needed to make a determination.

Completed by (signature) /s/ Date 3-2-04  
(print) Ioff, Victoria  
(title) Remedial Project Manager

Supervisor (signature) /s/ Date 3-3-04  
(print) Gotthold, Paul  
(title) Branch Chief  
(EPA Region or State) EPA, Region III, PA Operations Branch

Locations where References may be found:

1650 Arch Street, 3WC22  
EPA files.

telephone and e-mail numbers:

(name) Ioff, Victoria  
(phone #) 215-814-3415  
(e-mail) Ioff.vickie@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.