

**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:** Bethlehem Apparatus Company, Inc. (Hellertown Plant)  
**Facility Address:** 890 Front Street Hellertown, PA 18055  
**Facility EPA ID #:** PAD002390961

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 #8 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).

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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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater		X		Not known or reasonably suspected to be contaminated
Air (indoors) <sup>2</sup>		X		Not known or reasonably suspected to be contaminated
Surface Soil (e.g., <2 ft)		X		Not known or reasonably suspected to be contaminated
Surface Water		X		Not known or reasonably suspected to be contaminated
Sediment		X		Not known or reasonably suspected to be contaminated
Subsurf. Soil (e.g., >2 ft)		X		Not known or reasonably suspected to be contaminated
Air (outdoors)		X		Not known or reasonably suspected to be contaminated

- 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):

Footnotes:

<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 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.

**Groundwater:**

Groundwater is not known or reasonably suspected to be contaminated at the Bethlehem Apparatus Company, Inc. (BAC), Hellertown plant. There are no RCRA- regulated aboveground or underground storage tanks at the Facility. Review of PADEP documents and discussions with site personnel confirm that there have been no known releases or spills at the Site that would indicate the presence of impacted groundwater.

The Hellertown Borough Water Authority (HBWA) supplies potable water to the Facility. BAC does not use groundwater in its daily operations. (Environmental Indicator Inspection Report Nov. 2007)

**Indoor Air:**

There have been no known/documented releases to site soils or groundwater relative to BAC's operations that would warrant a vapor intrusion assessment. Generally, exposure to on-site workers via the indoor air pathway can be attributed to regular plant operations due to the presence of mercury. However, it is presumed that this exposure is in compliance with OSHA regulations. (Environmental Indicator Inspection Report Nov. 2007)

**Surface Soils (0-2 feet):**

All process lines are above ground. The floors throughout the manufacturing facility are coated with rubberized epoxy paint. The floors are washed regularly, and the waste water is pre-treated prior to off-site disposal. The majority of the property beyond the building footprint is covered by an asphalt parking area, with the exception of a small grass area immediately behind the building. There have been no known/documented releases to surface soil from BAC's operations. There is no reason to suspect that surface soils have been impacted at the Site. (Environmental Indicator Inspection Report Nov. 2007)

**Subsurface Soil (>2 feet):**

All process lines are above ground. The floors throughout the manufacturing facility are coated with rubberized epoxy paint. The floors are washed regularly, and the water pre-treated prior to off-site disposal. The majority of the property beyond the building footprint is covered by an asphalt parking area, with the exception of a small grass area immediately behind the building. There have been no known/documented releases to subsurface soil from BAC's operations. There is no reason to suspect that subsurface soils have been impacted at the Site. (Environmental Indicator Inspection Report Nov. 2007)

**Surface Water:**

The nearest surface water body to the Site is Saucon Creek, which is located approximately 200 feet west of the Facility. Silver Creek is located approximately a quarter mile south of the Site.

Until April 14, 2004, BAC operated with an NPDES permit. Currently, BAC operates under the No Exposure Certification for Discharges of Stormwater Associated with Industrial Activities (Certification ID: NNOEX01202). Industrial wastewater generated on-site is treated through several settling tanks and a carbon filtration system prior to disposal off-site. Sanitary wastewater generated on-site is treated through several settling tanks and a carbon filtration system before it is discharged to the City of Bethlehem Publicly Owned Treatment Works (POTW). There have been no known/documented releases to surface water from BAC's operations. There is no reason to suspect that the nearest surface water bodies have been impacted by the Facility. (Environmental Indicator Inspection Report Nov. 2007)

**Sediment:**

Until April 14, 2004, BAC operated under the NPDES permit. Currently, BAC operates under the No Exposure Certification for Discharges of Stormwater Associated with Industrial Activities (Certification ID: NNOEX01202). There have been no known/documented releases to sediment from BAC's operations. There is no reason to suspect that sediment have been impacted. (Environmental Indicator Inspection Report Nov. 2007)

**Outdoor Air**

BAC currently holds air permits for their emissions sources (Source ID PAD002390961; PADEP permit number 48-319-005 and 48-319-005A). The sources are routinely inspected by PADEP. A PADEP investigation occurred on August 21, 1989 due to complaints of smoke and odors. In 1997 BAC modified the ventilation system to include six 90-pound coal based activated carbon filters to address the smoke and odors. Since the installation of carbon units, no visible or detectable odors have been observed. There have been no violations associated with these permitted sources. Currently, there is no reason to suspect that outdoor air has been substantially impacted by the Site that would warrant further investigation. (Environmental Indicator Inspection Report Nov. 2007)

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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)

<b><u>“Contaminated” Media</u></b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
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):

<sup>3</sup> 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”**<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

Rationale and Reference(s):

<sup>4</sup> 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 **Bethlehem Apparatus Company, Inc.** facility, EPA ID # **PAD002390961**, located at **890 Front Street Hellertown, PA 18055** 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 5/12/09 \_\_\_\_\_  
(print) Khai M. Dao \_\_\_\_\_  
(title) RCRA Project Manager \_\_\_\_\_

Supervisor (signature) \_\_\_\_\_ Date 5/14/09 \_\_\_\_\_  
(print) Paul Gotthold \_\_\_\_\_  
(title) Assoc. Director, Pennsylvania Remediation Branch \_\_\_\_\_  
(EPA Region or State) EPA Region III \_\_\_\_\_

Locations where References may be found:

US EPA Region III  
Waste & Chemicals Management Division  
1650 Arch Street  
Philadelphia, PA 19103

Contact telephone and e-mail numbers

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