

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

Facility Name: Betz Laboratories, Inc.
Facility Address: 4636 Somerton Road, Trevose, PA 19053-6783
Facility EPA ID #: PAD 00 972 2265

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”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	<u>X</u>			<u>TPH</u>
Air (indoors) ²				
Surface Soil (e.g., <2 ft)				
Surface Water				
Sediment				
Subsurf. Soil (e.g., >2 ft)	<u>X</u>			<u>TPH</u>
Air (outdoors)				

- 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:

Betz laboratories, Inc. (Betz) facility is located in Trevoise, Bensalem Township, Bucks County, Pennsylvania, and is currently known as GW Water and Process Technologies, which primarily conducts research and development activities in support of the production of water and process chemicals. The subject area was purchased by Betz in several purchases in 1964, 1965 and 1976. In 1998, Hercules Inc. purchased Betz Dearborn Corporation. In 2002, GE acquired Betz Dearborn from Hercules, Inc. The total facility complex was 96 acres before Lot 2 (46 acres) was sold to a developer on the early 2000s.

Lot 2

Lot 2 was investigated during 2003 and 2004 as part of due diligence activities. A Final Act 2 Report for the Lot 2 investigation was approved by PADEP April 22, 2008. A background clean-up standard was met, and therefore the property has unrestricted use. Currently, there is a housing development on Lot 2.

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.

Lot 1

In 1984, a spill at a tank farm at the Pilot Plant resulted in liquid recovery and residue cleaning. The tanks were subsequently removed and the soil was excavated due to total petroleum hydrocarbon (TPH) concentrations. A small area of impacted soil remains due to proximity to a pipe rack support column.

In 1990-1991, the all of the piping and associated soils were removed from the drain field (AOCs 1 and 2). It had been used until 1969 for transport of discharge of wastewater to a settling tank and septic drain fields. Piping, tanks, pads and sumps were removed as well as 4300 tons of soils were excavated and disposed off-site. Post-excavation sampling showed levels of contaminants were below health-based standards (MSCs). Currently a Fitness Center is located on the former drain field.

In 1990-1991, seven underground storage tanks (USTs) and two above ground rail cars were removed and contaminated soil excavated during plant decommissioning activities. Post excavation sampling showed TPH below detection limits.

Groundwater

A site-specific risk assessment documented in the 1991 Summary of Plant Decommissioning Activities and Risk Assessment concluded that a groundwater monitoring plan was necessary to determine what impact soil contamination near the production building had on groundwater. Groundwater was sampled on a quarterly basis in 1993 under PADEP oversight. TPH was found at levels exceeding standards in several of the wells over the sampling period. Approximately one gallon of floating product was removed from the groundwater using a skimmer system. The TPH levels declined significantly over the monitoring period. Monitoring was ended at that time. An additional groundwater investigation was performed in 2002 by the facility, analyzing for VOCs and SVOCs. Ethylbenzene and naphthalene were the primary constituents found at levels above drinking water standards; in wells near the former production plant. The downgradient wells were not found to be contaminated, therefore the plume appears to be on-site, localized and stable. No groundwater is used at the facility, and groundwater is not used as a drinking water source downgradient of the site.

References

Environmental Indicator Inspection Report for Betz Laboratories, Inc., Baker, December 2010

Final Report, Former GE Lot II Property, MWH, March 2008

Summary of Supplemental Groundwater Investigation, BetzDearborn, Inc Facility, Law Engineering, March 22, 2002

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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)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	No	No	No	No			No
Air (indoors)	_____	_____	_____				
Surface Soil (e.g., <2 ft)	_____	_____	_____	_____	_____	_____	_____
Surface Water	_____	_____			_____	_____	_____
Sediment	_____	_____			_____	_____	_____
Subsurf. Soil (e.g., >2 ft)				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.

Rationale and Reference(s):

See above

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 cannot 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 “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):

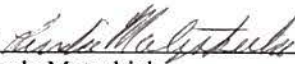
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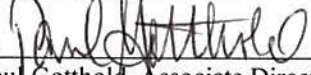
6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

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 Betz Laboratories, Inc. facility, EPA ID # PAD00 972 2265, located at 4636 Somerton Road, Treveose, PA 19053 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 09/23/2016
(print) Linda Matyskiela
(title) Project Manager

Supervisor (signature)  Date 9-23-2016
(print) Paul Gotthold, Associate Director
(title) Office of PA Remediation
(EPA Region or State) EPA Region III

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