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: **Copperhead Chemical Company**
Facility Address: **120 River Road, Tamaqua, PA 18252-9446**
Facility EPA ID #: PAR000030874

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 #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)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater		X		risk assessment showed no COI above non-res levels
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		risk assessment showed no COI above non-res levels
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		risk assessment showed no COI above non-res levels
Air (outdoors)		X		

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.

☐ 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:

The ICI Explosives USA Inc. (EUSA), operations at Tamaqua ceased between 1996 and 1998. In order to expedite investigation, clean-up and potential resale of the property, EUSA was divided into four parcels: two of which were sold to Copperhead Chemical Company (Corona and Wakefield).

EUSA conducted site-wide remedial investigations that began in the 1980's in addition to quarterly groundwater monitoring at this site between 1992 and 1998. Low levels of lead, arsenic and mercury were found in the groundwater. No other contaminants were found at levels exceeding their health-based limits.

Risk assessments were used for the Corona and Wakefield parcels to address the lead, arsenic and mercury found in the soil, groundwater and surface water. Most samples that exceeded Non-Residential Statewide Health Standards were still at relatively low concentrations. The risk assessment for Wakefield and Corona parcels showed that none of the Constituents of Interest were at a level of concern for non-residential uses of the property.

Recent Regulatory actions:

Corona area, (662 acres) contained the former nitroglycerin operations at EUSA:
- On August 22, 1997, EPA sent a letter to PADEP and EUSA, stating that no additional clean-up of the parcel was necessary under our Corrective Action program. Any further work would be accomplished under PADEP's Act 2 Program.
- Parcel was sold to Copperhead Chemical in October 1997.
- Pennsylvania's Act 2 program granted liability protection to this parcel in 1998.
- EPA issued a Final Decision on September 28, 2007, requiring only "no potable groundwater uses" and "non-residential land use" language in the deed. This requirement was previously implemented. No further corrective action was required.

Wakefield area (227 acres):
- On November 6, 1998, EPA sent a letter to PADEP and EUSA, stating that no additional clean-up of the parcel was necessary under our Corrective Action program. Any further work would be accomplished under PADEP's Act 2 Program.
- Parcel was sold to Copperhead Chemical in January 1999.
- Pennsylvania's Act 2 program granted liability protection to this parcel in 2002.
- EPA issued a Final Decision on September 28, 2007, requiring only "no potable groundwater uses" and "non-residential land use" language in the deed. This requirement was previously implemented. No further corrective action was required.

References:

- Letter to ICI: No Further Action at Western Parcel (signed by Linda Matyskiela, EPA), August 22, 1997
-Letter to ICI: No Further Action at Wakefield Parcel (signed by Paul Gotthold, EPA), November 6, 1998
-Remedial Investigation Report, a Portion of the Walker Township Property; prepared by prepared by Woodward-Clyde and RBR Consulting Inc.; October, 1998 *(Wakefield)*
-Supplemental Remedial Investigation Report, a Portion of the Walker Township Property; prepared by URS Greiner Woodward Clyde and RBR Consulting Inc; November 1998 *(Wakefield) (response to PADEP oral comments of October 28, 1998 meeting)*
-Second Supplemental Remedial Investigation Report, a Portion of the Walker Township Property; prepared by URS Greiner Woodward Clyde and RBR Consulting Inc; February 5, 1999 *(Wakefield)*

-Wakefield Property, Review of Remedial Investigation Report; April 30, 1999 *(response to PADEP February 26, 1999 comment letter on Remedial Investigation Report and Supplements for Wakefield)*
-Third Supplemental Remedial Investigation Report, a Portion of the Walker Township Property; prepared by URS Greiner Woodward Clyde; July 30, 1999 *(Wakefield) (response to PADEP written comments of February 26, 1999 and oral comments of March 12, 1999 meeting)*
- Letter to ICI: Approval of Remedial Investigation Report (signed by Joseph Brogna, PADEP), Jan. 3, 2002
- US EPA Final Decision and Response to Comments, ICI Explosives USA, Inc., PAD071203046, September 28, 2007

Footnotes:

[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.

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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	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
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):

[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 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 "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).

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 Copperhead Chemical Company facility, EPA ID # PAR000030874, located at 120 River Road, Tamaqua, Pennsylvania 18252, under current and reasonably expected conditions. Specifically, this determination indicates that soil and groundwater are not "contaminated" above health levels. The groundwater will not be used for drinking water and land will not be used for residential purposes. Such language is in the deeds. 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 04/04/2011
(print) Linda Matyskiela
(title) Project Manager

Supervisor (signature) Date 04/11/2011
(print) Paul Gotthold, Associate Director
(title) Office of PA Remediation
(EPA Region or State) EPA Region III

Locations where References may be found:

US EPA Region III
Land and Chemicals Division
1650 Arch Street
Philadelphia, PA 19103

Contact telephone and e-mail numbers
(name) Linda Matyskiela
(phone #) 215-814-3420
(e-mail) matyskiela.linda@epa.gov