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: Former American National Can Company
Facility Address: 221 South 10th Street, Lemoyne, PA 17043
Facility EPA ID #: PAD003024551

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. Is 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			Chlorinated organic solvents (PCE and TCE) were detected in groundwater at concentrations above the MCLs
Air (indoors)[2]		X		Predicted indoor air concentrations are within the EPA's allowable risk ranges.
Surface Soil (e.g., <2 ft)		X		Releases were addressed and remediated
Surface Water		X		No releases documented
Sediment		X		No releases documented
Subsurf. Soil (e.g., >2 ft)		X		Releases were addressed and remediated
Air (outdoors)		X		No releases documented

☐ 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):

Background: The facility consisted of an approximately 38 acres property bordered on the east and northeast by South10th Street. The north and northwest was bound by a railroad line. The west and south side is bound by South 18th Street and S.R. 581 (Harrisburg Expressway).

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.

The former facility consisted of seven buildings which occupied an overall footprint of approximately 260,000 square feet. The buildings were expanded to cover a total area of approximately 886,000 square feet with structures and associated paved areas covering approximately 85 percent of the total area of the property. The property is currently a warehouse facility. American Can Company was the original owner and operator of the facility, later known as American National Can Company until it ceased operations in 1993. The facility is currently owned by Keystone Lemoyne Partners, LP.

The facility decorated and coated metal sheets for metal containers. Operations at the facility began in 1953. The manufacturing process consisted of: (1) cutting and forming cylinders with sheet metal; (2) sealing the ends with lead-and tin-based solder until 1980 (replaced by electric arc welding after 1980); and (3) spraying the insides of the cans with butoxyethanol as a disinfectant. Then, the cans were labeled. Wastes generated from the production of cans and labeling process included wastewater containing lead, and solvents, methyl isobutyl ketone (MIBK), xylene, toluene, acetone, lacquer, methylene chloride, tetrachloroethylene (PCE). The facility received Act 2 release in 2001 that required land and groundwater uses restrictions.

Investigation and remediations

Investigations and remedial actions conducted at the facility consisted of four UST closures, drums removal, remediation of contaminated soil, and remedial investigations under Act 2. The facility's attainment of Statewide Health Standards (SHS) for soil and Site-Specific Standards for groundwater was demonstrated and approved by PADEP in 1999 and 2001, respectively. The facility is restricted to non-residential uses and groundwater use at the facility is prohibited.

Soil: Methyl ethyl ketone, acetone, methylene chloride, toluene, ethylbenzene, xylene, cumene, naphthalene, and lead were detected in soils at the facility. Contaminated soils were excavated. Analyses of confirmatory post-excavation soil samples collected from the identified areas of environmental concern indicated that the remaining soil constituents met the Act 2 Non-Residential MSCs and EPA's non-residential soil direct contact screening levels. The property is restricted to non-residential uses (Deed Restrictions recorded on October 19, 1999).

Groundwater: PCE was detected in groundwater at the facility at concentrations as high as 110 ug/l, above the MCL of 5 ug/l. TCE was detected in groundwater at the facility at concentrations as high as 8.8 ug/l, above the MCL of 5 ug/l. The main groundwater flow system beneath the site is generally northeast/east toward South 10th Street. A secondary groundwater flow system is generally south/southeast from the contaminant source area toward downgradient monitoring well MW-5 located near property boundary/Route 581. Groundwater results indicated PCE has been degrading and PCE concentrations have been decreasing. The last groundwater results showed that PCE was detected in onsite downgradient monitoring wells at concentration as high as 12 ug/l, slightly above the MCL, and TCE was detected in these wells at concentrations as high as 2 ug/l, below the MCL. As PCE continues to attenuate naturally, PCE is predicted to migrate off-site at very low concentrations along Route 581.

Indoor Air:
Onsite vapor intrusion pathway: TCE was detected in groundwater at the facility at concentrations as high as 8.8 ug/l, below the EPA non-residential indoor air groundwater screening level. PCE was detected in groundwater beneath the facility at concentrations as high as 110 ug/l. The predicted indoor air concentration associated with PCE concentration of 110 ug/l is 83 micrograms per cubic meter (ug/m^3), within EPA's allowable non-residential indoor air Regional Screening Level risk range of 47 to 47,000 ug/m^3 and below the non-residential non-carcinogenic screening level of 180 ug/m^3.
Offsite vapor intrusion pathway: PCE concentrations in MW-5 are evaluated. The average PCE concentrations in downgradient monitoring well MW-5 over the period from 3/8/1999 to 4/9/2001 was 53 ug/l. PCE was detected in MW-5 on 1/5/01 and 4/9/01 at concentrations of 11 ug/l and 12 ug/l, respectively. The predicted indoor air concentration associated with the average PCE concentration of 53 ug/l is 40 ug/m^3, within the EPA's allowable residential carcinogenic risk range (9.4 – 940 ug/m^3). The predicted indoor air concentration associated with the last 2 PCE concentrations is 9 ug/m^3, below the EPA's residential carcinogenic screening level.

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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	No	No	No	No	No	No	No
~~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):

Use of groundwater at the facility is restricted by Deed Restrictions. A field reconnaissance performed by PADEP in 2009 revealed that all areas located downgradient of the facility along the east/northeast main groundwater migration pathway and the south/southeast groundwater migration pathway are served by public water. Groundwater migration pathway is not complete.

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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 Former American National Can facility, EPA ID # PAD003024551, located at 221 South 10th Street, Lemoyne, PA 17043 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 9/22/2017
(print) Tran Tran
(title) Project Manager

Supervisor (signature) _____ Date 9-22-17
(print) Paul Gotthold
(title) Associate Director
(EPA Region or State)

Locations where References may be found:

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