

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Completed date 8/24/2014

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Ingersoll-Rand Company
Facility Address: 101 North Main Street, Athens, PA 18810
Facility EPA ID #: PAD 003 039 518

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 nonhuman (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Controls" 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	X			Impacted with TCE, PAHs, PCBs and metals (see rationale)
Air (indoors) ²	X			Due to TCE in Groundwater and Soil (see rationale)
Surface Soil (e.g., <2 ft)	X			Due to TCE contamination (see rationale)
Surface Water		X		The Chemung Rive is 1,400 feet from the site and Susquehanna River is 900 feet from the site.
Sediment		X		Same as Surface Water.
Subsurface Soil (e.g., >2 ft)	X			Due to TCE contamination (see rationale)
Air (outdoors)		X		The facility is currently not in operations

If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support documentation demonstrating that these "levels" are not exceeded.

X

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):

See the following pages for response to Question 2, Rationale and Reference(s).

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.

Question 2, Current Human Exposures Under Control Response to Rationale and Reference(s)

The building currently is not occupied and there is an environmental covenant for the site.

Groundwater

Starting in 2011, sampling began under PADEP Act 2 program. During the sampling the primary constituents of concern were detected at concentrations above the Non-residential Used Aquifer MCSs were:
(Highest concentration)

TCE (20.02 ug/L)

Most results above detection limits were around the drinking water MCL of 5 ug/l.. The highest concentration

Aluminum (631,000 mg/L)
Arsenic (95.8 mg/L)
Chromium (1,340 mg/L)
Cobalt (470 mg/L)
Iron (2,000,000 mg/L)
Lead (627 mg/L)
Manganese (74,900 mg/L)
Mercury (250 mg/L)

Separate Phase Liquid (SPL) have been observed approximately 20 to 30 feet below ground surface. The SPL appears to be diesel range petroleum organics.

The metals detected in groundwater were beneath the former manufacturing plant property, the former foundry property and at upgradient locations. Levels from upgradient wells are similar to those levels of metals located at downgradient wells. Since these metals in upgradient wells are present at similar concentrations to those detect at the source area and downgradient areas, concentrations above MSCs are not likely unrelated to historical Site operations.

The property currently does not use the groundwater, the township requires connection to the municipal supply. An environmental covenant will be placed on the property to restrict the use of the groundwater.

Air (indoors)

Due to the levels of TCE in soil and ground water three indoor air sampling events occurred. TCE was detected in 2011 at 24 and 25 ug/m³. This is above the PADEP residential Medium Specific Concentrations but below nonresidential MSC. The facility currently has a soil vapor extraction (SVE) system beneath part of the facility. Each SVE well was connected to piping that was routed to the ceiling and manhole to a treatment trailer and the influent soil vapor is treated using granular activated carbon (GAC) prior to discharge to the atmosphere. The SVE system was turned on in January 2012 and has run continuously since then.

Surface Soil (<2 ft.)

Lead was detected at concentrations above PADEP nonresidential direct contact. The highest concentration of lead was 14,600 mg/kg at MW-18. This area is a parking lot and is currently paved. TCE was detected above Act 2 soil to groundwater MSC at 26,000 µg/kg (highest concentration) but below Act 2 nonresidential direct contact soil MSC and Tetrachloroethene (PCE) was detected above Act 2 soil to groundwater MSC at 870 µg/kg (highest concentration) but below Act 2 non-residential direct contact soil.

Subsurface soil

PCE and TCE were detected in subsurface soil samples. PCE was detected at 575 µg/kg and TCE at 11,800 (J) µg/kg. Both of these concentrations are below the PADEP Act 2 non-residential direct contact soil MSC from 2-15 feet below ground surface.

References:

Risk Assessment Report Revised in June 2014 submitted by Ingersoll Rand to PADEP.

Act 2 Remedial Investigation Report done in June 2013 submitted by Ingersoll Rand to PADEP.

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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 Food³

Groundwater - No
Air (indoors) - No
Soil (surface, e.g., <2 ft) - No
Soil (subsurface e.g., >2 ft) - 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):

The facility is currently only partially used and is zoned as non-residential. The facility plans to place an Environmental Covenant on the facility in order to restrict use of groundwater and use of the land for residential purposes.

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Groundwater

There is no groundwater uses within the Ingersoll facility property. There is no know groundwater use within ½ mile of the property, nor is groundwater use permitted within the municipality.

Air (indoors)

A SVE system began operation in January 2012 and has run continuously since then. If SVE continues to operate, it is unlikely that indoor air concentrations would increase and the indoor pathway is incomplete. During the remedy selection process under the One Cleanup Program, EPA and PADEP will evaluate the need for ongoing SVE operation.

Surface Soil (<2 ft.)

MW-18 is were lead was detected above PADEP Act 2 non-residential direct contact soil. This area is currently a paved parking lot. This is protective of any workers who are in the area.

Subsurface Soil (>2 ft.)

PCE and TCE are below the PADEP Act 2 non-residential direct contact soil MSC for 2-15 feet below ground surface.

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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):

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 Ingersoll-Rand Company facility, EPA ID# PAD 003 039 518 located at 101 North Main Street, Athens, PA 18810 under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

X

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

IN - More information is needed to make a determination.

Completed by: (signature)  Date 9/26/2014

(print) Catheryn Blankenbiller

(title) RCRA RPM

Supervisor: (signature)  Date 9-26-14

(print) Paul Gotthold

(title) Associate Director
Office of Pennsylvania Remediation

EPA Region 3

Locations where References may be found

Contact telephone and e-mail numbers:

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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.

Facility Name: Ingersoll-Rand Company
EPA ID #: PAD 003 039 518
Location:: 101 North Main Street, Athens PA 18810

CURRENT HUMAN EXPOSURES UNDER CONTROL (CA 725)



