DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater 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 the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units [SWMU], Regulated Units [RU], and Areas of Concern [AOC])

   [X] 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 non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE"status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "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 "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

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).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

X If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The primary constituent of concern is trichloroethene (TCE). The latest groundwater sampling occurred in 2011 and 2012. The concentrations of TCE ranged between non detected and 20.2 µg/L. The concentrations of TCE at MW-2 (closest to the source of contamination) were 19.9 µg/L. MW-7S2 had the highest concentration of TCE at 20.2 µg/L. See figure attached.

References:

"Act 2 Remedial Investigation Report" submitted by ARCADIS, for Ingersoll Rand to PADEP, in June 2013.

"Risk Assessment Report" submitted by ARCADIS, for Ingersoll Rand to PADEP, in January 2014 revised June 2013.

[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 appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existingarea of groundwater contamination"[2]).

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

In the Risk Assessment Report (2013), presents the Groundwater Fate and Transport Calculations. The maximum extent of off-site migration of dissolved –phase TCE at the site was predicted using the New Quick Domenico Model (approved PADEP Act 2 model). The following assumptions were made: no depletion of source strength over time and equilibrium conditions, with a source concentration ten times the current maximum concentration in the source area near MW-2. The results indicated that TCE would exceed the media specific concentration of 5 µg/L for 530 ft downgradient of the source area. This occurs 140 ft beyond the property line, this is the maximum extent of the plume. Currently there is a Soil Vapor Extraction system on the site.

References:

"Act 2 Remedial Investigation Report" submitted by ARCADIS, for Ingersoll Rand to PADEP, in June 2013.

"Risk Assessment Report" submitted by ARCADIS, for Ingersoll Rand to PADEP, in January 2014 revised June 2013.

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_X_ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), 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, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the **Ingersoll-Rand Company** facility, EPA ID # **PAD003039518**, located at **101 Noth Main Street Athens PA 18810**

Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be reevaluated when the Agency becomes aware of significant changes at the facility.

____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

____ IN - More information is needed to make a determination.

Completed by	(signature)		Date ~~11/06/14~~ 11/12/14
	(print)	Catheryn Blankenbiller	
	(title)	RCRA RPM	
Supervisor	(signature)		Date ~~11/06/14~~ 11/12/14
	(print)	Paul Gotthold	
	(title)	Associate Director Office of Pennsylvania Remediation	
	(EPA Region or State)	EPA	

Locations where References may be found:

USEPA Region III
Waste and Chemical Mgmt. Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Contact telephone and e-mail numbers

(name)	**Catheryn Blankenbiller**
(phone#)	**215-814-3464**
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TYLER STREET
PENNSYLVANIA AVE
WILLOW STREET
WHEELOCK AVE
N. MAIN STREET
WILLOW STREET PARKING LOT
WHEELOCK AVE. PARKING LOT
POWDER COAT AREA
FORMER SLUDGE LAGOON (REMOVED 1982)
HEAT TREATMENT BASEMENT
QUENCH OIL TANKS
FORMER MANUFACTURING FLOOR
FRONT PARKING LOT
OFFICE AND LABORATORIES
HILL AREA
HILLYARD AREA
WASTE STORAGE AREA
SHED
GAS METER BUILDING
FORMER CHIP RECOVERY BASEMENTS
BOILER ROOM
OFFICES
FORMER FOUNDRY
FORMER POWER HOUSE YARD

MW-16
TMW-SB-31 (740.76)
TMW-SB-33
SB-32
SB-30
MW-15
MW-12S2 (SB16)
MW-12S1 (740.78)
SB-15
MW-35
MW-13 (740.55)
SB-18
MW-6D
MW-6S2
MW-6S1 (740.31)
SB-20
MW-9S1 (740.31)
MW-9S2
MW-5S1 (740.41)
MW-7S1 (740.48)
MW-7D
MW-7S2
MW-34
MW-2 (740.57)
TMW-SB-42
MW-10
MW-10 (740.53)
MW-3 (740.53)
SB-3
TMW-SB-2
MW-4 (740.52)
MW-1 (740.44)
TMW-SB-44
MW-11 (740.49)
MW-11
MW-29 (740.62)
MW-14
MW-5D
MW-5S2
MW-22S2
MW-22S1 (740.63)
SB-45
MW-17 (741.14)
SB-46
MW-23 (741.00)
MW-30 (741.00)
TMW-SB-6 (741.08)
MW-18 (741.14)
MW-24S2
MW-24S1 (741.01)
SB-4
TMW-SB-5 (741.07)
TMW-SB-13
MW-32
TMW-SB-7
MW-26
MW-28 (741.04)
MW-31
MW-33
MW-25 (740.62)
MW-8S2
MW-8S1 (740.69)
SB-48
SB-47
SB-36
SB-35
MW-21 (740.96)
MW-27 (740.88)
SB-49
MW-20 (740.77)
MW-19 (740.80)

740.70
740.80
740.90
741.00
741.10
740.60
740.50

LEGEND

- MONITORING WELL
- SOIL BORING
- TEMPORARY MONITORING WELL /SOIL BORING
- RAILROAD
- ROAD
- BUILDING
- SITE BOUNDARY
- GROUNDWATER ELEVATION CONTOUR
- SB-37 (760.15) WELL ID / WATER LEVEL ELEVATION (FT MSL)

0 150 300
SCALE IN FEET

NOTES:
1. 1995 HIGH RESOLUTION AERIAL IMAGERY PROVIDED BY PAMAP PROGRAM, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
2. SURVEYED WELL LOCATION DATA OBTAINED FROM SOUTHERN TIER SURVEYING, LLP. NOVEMBER 2011.
3. SITE BOUNDARY DIGITIZED FROM TAX MAP NO. 2014 OBTAINED FROM BRADFORD COUNTY ASSESSORS OFFICE
4. FT MSL = FEET ABOVE MEAN SEA LEVEL
5. NM = NOT MEASUREED
6. * = VALUE NOT USED IN CONTOURING
7. ** = ELEVATION FOR TOP OF CASING IS UNKNOWN

INGERSOLL RAND COMPANY
101 N. MAIN STREET, ATHENS PENNSYLVANIA

ACT 2 REMEDIAL INVESTIGATION REPORT

GROUNDWATER CONTOUR MAP SEPTEMBER 14, 2012

ARCADIS

FIGURE 9