

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: Tate Access Floors
Facility Address: 52 Springvale Road, Red Lion, PA 17356
Facility EPA ID #: PAD000800508

- I. 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 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	X			TCE – groundwater investigation, as documented in RI/RA report
Air (indoors) ²		X		RI/RA report
Surface Soil (e.g., <2 ft)		X		RI/RA report
Surface Water		X		RI/RA report
Sediment		X		RI/RA report
Subsurf. Soil (e.g., >2 ft)		X		RI/RA report
Air (outdoors)		X		RI/RA report

- 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: Tate’s Remedial Investigation and Risk Assessment (RI/RA) report includes information collected since site characterization activities began in 1995. Site characterization activities conducted include a soil assessment, surface water sampling, and onsite and offsite groundwater assessments. The soil assessment included a soil vapor survey, installation and screening of 47 soil borings, and the collection of 36 soil samples. Surface water samples were collected on three occasions from Pine Run, which is located approximately 1,500 feet downgradient of the Site. The onsite groundwater assessment included the installation of 12 monitoring wells and 11 rounds of groundwater sampling. The offsite groundwater assessment included the initial sampling of 19 downgradient private water wells and springs and quarterly sampling of selected private wells and springs.

Soil - Analyses of soil samples collected at the Site did not detect volatile organic compounds (VOCs) above the Act 2 Statewide Health Standard Medium Specific Concentrations (MSCs).

Groundwater - Onsite - Onsite monitoring wells have been sampled and analyzed since 1995 through 2010. Review of the results of sampling Site wells for VOCs has indicated that the trend of data in each well is decreasing with time. During the most recent round of sampling in 2010, only TCE was detected at concentrations exceeding its MSC and only in samples from well MW-4 (41-46 ppb). On three occasions since 2003, onsite groundwater samples were analyzed for dissolved metals and analyses did not detect of the metals at a concentration exceeding their respective Act 2 MSC.

Groundwater - Offsite - Offsite groundwater sampling was initiated in 1997 at nearby properties. A total of 16 residential water supplies, two unused private wells, and two spring outfalls have been sampled. Three wells and two springs have detected TCE in the groundwater, including some that exceeded drinking water standards (Maximum Contaminant Level (MCL)). However, since 2011, all of the wells with the exception of 1 (which is currently hovering slightly above or at the MCL), have been below the MCL for TCE and concentrations continue to decrease.

Surface Water - No VOCs were detected in any of the surface water samples collected at Pine Run.

Indoor Air - Although chlorinated and/or petroleum-related VOCs were detected in soil samples collected at the facility, none were detected above their respective direct contact or soil-to-groundwater, used aquifer, residential MSCs, nor were any seen above the PADEP residential volatilization to indoor air screening values. If there is a source of contaminated soil beneath or within 100 feet of the facility building, it has not been identified through the substantial amount of sampling conducted. The available soil data indicates that migration of vapors from site soils to the indoor air of both on-site and off-site buildings is not a significant pathway. Furthermore, available groundwater data coupled with site-specific subsurface data indicates that the migration of vapors from groundwater to the indoor air of both on-site and off-site buildings is not a significant pathway.

Reference: RI/RA report for Tate Access Floors Site (November 13, 2012)
EPA Memo to File Re: Tate Access Floors Vapor Intrusions Weight of Evidence Evaluation (June 17, 2011)

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	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: Water used at the Site is supplied by the local municipality, however, some downgradient residences use groundwater for potable purposes. For the offsite private water supplies that have detected TCE in the groundwater, each has been outfitted with a Granular Activated Carbon (GAC) system (with the exception of one well which is located at a Bible Church, but is not in use) and has been monitored routinely (either quarterly or annually) since TCE was detected. Since installation of the GAC units, VOCs have not been detected in samples collected from the outflow of the GAC systems during routine monitoring events.

Reference: RI/RA report for Tate Access Floors Site (November 13, 2012)

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:

Reference:

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 (insert facility and EPA ID #), located at (insert address) 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) Stacie Pratt Date: 11/17/2015
(print) Stacie Pratt
(title) Env. Engineer

Supervisor (signature) Paul Bottel Date 11-18-2015
(print) Paul Bottel
(title) associate director, LCD
(EPA Region or State) EPA 13

Locations where References may be found:

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

Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
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