

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)
Migration of Contaminated Groundwater Under Control**

Facility Name: Former Gryphin Coatings, Inc.
Facility Address: 3501 Richmond St, Philadelphia, PA 19134
Facility EPA ID #: PAD002269090

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)), 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

The property is 1.89 acres located in Richmond Street in Philadelphia, Pennsylvania with a history of been used by various paint manufacturing companies since 1920s to 2008. Most of the property is concrete-paved and asphalt with no current structures due to the facility ceasing operations in 2008 and the buildings demolished between 2010 and 2012. In addition, raw materials were also removed during the demolition. Contaminated soil and USTs were removed in December 2017 and October 2019. Currently, the property is unoccupied.

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).

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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?

- 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):

Nine monitoring wells were installed in April 2019 (designated MW-3 to MW-11) shown in Figure 2 of the report. Groundwater concentrations are below or slightly above the GWRSHS, less than 10 times the screening levels with the exception below:

Maximum Groundwater Contaminant Concentrations: March 2019, June 2019, and October 2019. All concentrations are in ug/l:

	MW-2	MW-5	MW-10	Act 2 Groundwater RSHS
Benzene			369	5
Toluene	16,000		98,900	1,000
Xylene		32,100	17,200	1,000
1,2,4 Dimethylbenzene	466	1,050	1,620	15

Monitoring wells MW-2, MW-5, MW-10 and to a lesser degree MW-6 demonstrated a trend of having volatile organic (VO) compounds slightly above the screening level. The concentrations have demonstrated a steady decrease in every quarterly sampling. This concentration may be due to the proximity to the three solvent USTs that used to be in this area before being extracted.

Due to the presence of free product in MW-5 a groundwater removal was conducted. A vacuum truck extracted 60 gallons of water in October 2019 as well as 500 gallons from the drums.

Reference(s):

1. Initial Site Characterization Report, Former Gryphin Coatings, Inc. Property, Prepared by Bison Environmental, LLC, dated January 2020

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 appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

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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)?
- 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 “existing area 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):

Three rounds of groundwater sampling results showed that the contaminations are stable or slightly decreasing. USTs and contaminated soil were removed in December 2017 and October 2019 thus continuing releases to the soils are less likely. BNA was detected in several wells at the first round of groundwater sampling but by the third round only one well showed BNA slightly above GWRSHS. Antimony was detected in MW-11 but it is believed that is an outlier and the concentrations were below GWRSHS. PCB was never detected. Interior monitoring wells MW-2, MW-5, MW-6 and MW-10 are the most contaminated but currently stable. Groundwater removal of free product was conducted in MW-5, as stated in previous question. For more information please read Section 3.2 and 3.4 in report.

Reference(s):

1. Initial Site Characterization Report, Former Gryphin Coatings, Inc. Property, Prepared by Bison Environmental, LLC, dated January 2020

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.

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4. Does “contaminated” groundwater **discharge** into **surface water** bodies?
- If yes - continue after identifying potentially affected surface water bodies.
 - 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):

Groundwater flow have a Southeast direction towards the Delaware River, located 0.5 miles from property. Section 3.4.4 states that during the three sampling dates, groundwater elevation data was obtained and can be found in Table 10 and a groundwater elevation contour map are in Figures 10, 11 and 12. Concentration at the down gradient wells are MW-1 and MW-11 and does not contain contamination above screening level.

Reference(s):

1. Initial Site Characterization Report, Former Gryphin Coatings, Inc. Property, Prepared by Bison Environmental, LLC, dated January 2020

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5. Is the **discharge** of “contaminated” groundwater into surface water likely to be “**insignificant**” (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater “level,” and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

- If yes - skip to #7 (and enter “YE” status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.
- If no - (the discharge of “contaminated” groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater “levels,” the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.
- If unknown - enter “IN” status code in #8.

Rationale and Reference(s):

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

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6. Can the **discharge** of “contaminated” groundwater into surface water be shown to be “**currently acceptable**” (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?
- If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site’s surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment⁵, appropriate to the potential for impact that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment “levels,” as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.
 - If no - (the discharge of “contaminated” groundwater can not be shown to be “**currently acceptable**”) - skip to #8 and enter “NO” status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.
 - If unknown - skip to 8 and enter “IN” status code.

Rationale and Reference(s):

⁴Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

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7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the “existing area of contaminated groundwater?”

If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the “existing area of groundwater contamination.”

If no - enter “NO” status code in #8.

If unknown - enter “IN” status code in #8.

Rationale and Reference(s):

Groundwater monitoring will continue for five more quarters (January, April, July, October 2020 and January 2021) for VO compounds, BNA compounds and metals. If PCB is not detected in the fourth round a petition to PADEP will be made to remove it from the required parameters. MW-5 events will continue to be conducted quarterly until the product is no longer present and the absorbent rock will be changed monthly. More soil sampling and analysis will be conducted to delineate the impacted soil to groundwater and/or direct contact MSC that were detected. To confirm that there are no sensitive ecological populations in the property, the Pennsylvania Natural Diversity Inventory will conduct a search. Lastly, by June 30, 2020 a Remedial Action Workplan (RAWP) will be submitted.


Reference(s):


1. Initial Site Characterization Report, Former Gryphin Coatings, Inc. Property, Prepared by Bison Environmental, LLC, dated January 2020

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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).

- 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 Former Gryphin Coatings, Inc. Property, EPA ID# PAD002269090, located at Richmond & Tioga Sts. Philadelphia, PA 19134. 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 re-evaluated 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 4/21/2020
(print) Priscilla Ortiz Carrero
(title) Physical Scientist

Supervisor (signature)  4/21/2020 Date _____
(print) Paul Gotthold
(title)
(EPA Region or State)

Locations where References may be found:

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