

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: Universal Friction Products, Inc. (fka Raymark Industries, Inc.)
Facility Address: 123 East Stiegel Street, Manheim, PA 17545
Facility EPA ID #: PAD003015328

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?

 X 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 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 "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater 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 risk-based "levels" (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 (for any media) – skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Site Background

Historically, this site was part of the Raybestos-Manhattan Inc. plant operations that manufactured friction product material including automotive brake linings, clutch facings and other specialized friction products from 1908 until 1997.

There were seven Solid Waste Management Units (SWMUs) on the site determined to have possibly impacted the environment. These units include: two hazardous waste landfills, several drum storage areas, and several Asbestos/Lead Slurry Transfer stations. Additionally, there were numerous Areas of Concern scattered across the site, where industrial activities and plant operations may have impacted soils and/or groundwater.

Five of the seven SWMUs and all of the Areas of Concern on the site have been investigated for releases and impacts to the environment under the Pennsylvania Land Recycling Program (Act 2). The other two SWMUs, the Lower Mill Landfill and the Raymark Industries Landfill, were used for disposal of asbestos and lead wastes.

The investigation and continued monitoring of these disposal areas are being managed by the Hazardous Sites Cleanup Act (HSCA) and the Waste Management programs of PADEP, respectively.

Site-wide Groundwater

A network of seven groundwater monitoring wells installed across the Lower Mill Facility were sampled for eight consecutive quarters, from 2000-2002. The samples were analyzed for VOCs, PAHs, and heavy metals. Benzene and MTBE were detected at one well in 2000 at a level slightly above the drinking water quality standard. Another well had elevated levels of benzene in 2002, PCE in 2000 and 2001, and TCE in 2001 and 2002. In 2000, one well slightly exceeded standards for cadmium. Another well in 2002 showed an elevated lead level.

The surface water investigation, comparing upstream and downstream samples, showed that there is no contamination being released from the facility to either Doe Run Creek or Chiques Creek.

Raymark Industries Landfill (aka Upper Mill Landfill)

The RCRA-regulated landfill is an unlined earthen landfill with few engineering controls. It operated from 1972 until 1989 and received and estimated 9,663 tons of asbestos and lead wastes each year. Some stormwater run-off controls and a 1-inch asphalt cover over part of the disposal area were added after 1977 to help reduce the

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).

environmental impact of the landfill. Groundwater contamination, attributable to the landfill was found in 1983. Subsequently, the groundwater was monitored for lead, sulfate and bicarbonate - groundwater quality parameters that were used as indicators of the impact of the landfill on groundwater.

Through a Consent Order and Agreement, Phoenix Group (the-then new owner) implemented the post-closure plan for the landfill, with PADEP Waste Management Program oversight. The landfill was certified closed by PADEP on December 20, 2000. Subsequently, Phoenix group went into bankruptcy.

As there had been some subsidence of the cap, in 2016, EPA performed a geophysical investigation of the landfill to determine if bedrock conditions and subsurface features were impacting the subsidence issue. The investigation did not show sinkholes or other features to would be accountable for the subsidence, other than the already-known voids in the landfill material. This investigation also showed there were not preferential pathways for groundwater, and the monitoring well network was suitable for determining groundwater quality.

Currently, periodic groundwater monitoring continues under the oversight of PADEP's Waste Management Program. The groundwater monitoring well network, consisting of eight wells, has shown a few sporadic hits of lead in one well, slightly exceeding the drinking water quality standard.

The sulfate level at the Landfill has shown small but fairly consistent exceedances in four wells. Sulfate is used as an indicator parameter and does not have a health-based standard. EPA has developed a secondary standard, which is based on aesthetic criteria, such as taste and smell, rather than health risks. Therefore, the elevated sulfate levels are not a health concern.

Former Hazardous Waste Landfill (aka Lower Mill Landfill)

The Lower Mill Landfill consists of lagoons that received soil-like scrubber sludge from the mill dust collectors. The lagoon accepted lead and asbestos waste from 1962 to 1973. At various times the material that accumulated in the lagoons were excavated, loaded onto railroad cars and taken to lead smelters for recycling. It is estimated that 700,000 cubic feet of hazardous waste was disposed of in this landfill.

In 2000, a characterization of the landfill was performed using ground-penetrating radar and test pits, as well as groundwater and surface water sampling. The results of the investigation show that the landfill materials extended onto adjacent Norfolk-Southern property. In addition, the groundwater and surface water investigation showed that no significant contamination has migrated from the landfill. Only slightly elevated levels of lead were found at one of the three groundwater wells.

In 2002, it was decided that the PA Hazardous Sites Cleanup Act (HSCA) program would close the Lower Mill Landfill with a cap and stream erosion control. To date, excavation of the area of the landfill which extends into Norfolk Southern's railroad right-of-way has been completed. The material was placed on the existing landfill surface. The landfill has been capped with clay and contoured and covered with topsoil and seeding. The Doe Run Creek bank was stabilized in May 2005, to prevent erosion maintain integrity of the landfill cap. The three groundwater wells are sampled yearly to monitor water quality. The cap is periodically inspected and maintained.

References:

- Groundwater Monitoring Data for Raymark Landfill (Upper Mill) - PADEP Waste Management Program 1983-2004
- Remedial Investigation Final Report for Upper Mill Area - PADEP Act 2 Program (2003), prepared by RT Environmental Services, Inc.
- Remedial Investigation Final Report for Lower Mill Area - PADEP Act 2 Program (2003), prepared by RT Environmental Services, Inc.
- Raymark Industries Lower Mill Landfill Summary Report, July 2001, prepared by RT Environmental Services, Inc.
- Preliminary Assessment Report- Raymark Industries, Inc., July 15, 1987, prepared by GCA for EPA

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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)?

 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 "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):

Raymark Industries Landfill (aka Upper Mill Landfill)

Currently, periodic groundwater monitoring continues under the oversight of PADEP's Waste Management Program. The groundwater monitoring well network, consisting of eight wells, has shown a few sporadic hits of lead in one well, slightly exceeding the drinking water quality standard. The geophysical investigation has shown that the monitoring well network is appropriate for determining groundwater quality.

Former Hazardous Waste Landfill (aka Lower Mill Landfill)

The results of the HSCA groundwater and surface water investigation showed that no significant contamination has migrated from the landfill. Only slightly elevated levels of lead were found at one of the three groundwater wells. The three groundwater wells are sampled yearly to monitor water quality. The cap is periodically inspected and maintained.

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):

During the site-wide environmental investigation and the HSCA investigation in the early 2000's, the surface water investigation compared upstream and downstream samples, showing that there is no contamination being released from the facility to either Doe Run Creek or Chiques Creek.

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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 judgment/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 concentration 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 "level(s)," and if 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 cannot be shown to be "**currently acceptable**") – skip to #8 and enter a "NO" status, 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):

⁴ Note, 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.

⁵ The 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):

Both landfills have on-going groundwater monitoring programs implemented by the PADEP Waste Management Program and the HSCA Program, as detailed in Question 2, above.

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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 Universal Friction Products facility, EPA ID # PAD003015328, located at 123 East Stiegel Street, Manheim, PA 17545. 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 08/07/2020

(print) Linda Matyskiela

(title) Project Manager

Supervisor:

(signature) 

Date 8/10/2020

(print) Paul Gotthold, Associate Director

(title) Office of PA Remediation

(EPA Region or State) EPA Region III

Locations where References may be found:

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