

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

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

Facility Name: Mayco Oil & Chemical Company
Facility Address: 475 Beaver Street, Bristol, PA 19007
Facility EPA ID #: PAD 004 961 579

- I. 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).

(ice skating rink), Grundy had several consultants investigate, evaluate, and report on the environmental condition of the property. Remedial efforts included razing the Mayco structures and removing identified contaminated soils. The remediation effort was coordinated with PADEP. The facility remediated one concrete pit containing dieldrin (a pesticide), contaminated sludge and two areas where black stained soils were visually identified during a December 13, 1996 PADEP Inspection. Each of these locations was sampled and analyzed for dieldrin, volatile organic compounds (VOCs), and metals as the chemicals of concern (COC). Dieldrin met the Residential Statewide Health Standard. Some VOCs and metals in a few soil samples slightly exceeded PADEP's non-residential Statewide Health Standards, but these exceedances do not statistically contribute to a significant risk to human health or the environment when evaluating the entire facility property. On November 18, 1997, the Bristol Borough Recreation Authority was given a release of liability in accordance with the PADEP Land Recycling and Environmental Remediation Standards (Act 2) for soil contaminated with dieldrin.

Groundwater

Four groundwater samples were collected from temporary well points labeled Well Point-1 (WP-1) through WP-4. Each well point was installed to 13 feet bgs with water encountered between four and six feet bgs. WP-1 was collected along the fence about ten feet from the pit which contained the dieldrin material. Samples for WP-2 and WP-3 were collected at soil locations C-1 and C-2, respectively. WP-4 was collected down gradient from WP-1. All of the WPs were analyzed for VOC, SVOCs, total cyanide, dieldrin, along with other targeted priority pollutant metals. WP-4 was analyzed for dieldrin only.

Groundwater, which is not used as a potable supply at the site, had a maximum concentration of 0.1 mg/L 1,1-dichloroethane, 0.036 mg/L arsenic, 0.09 mg/L chromium and 0.1 mg/L lead. There were no detections of dieldrin or SVOCs in the four groundwater samples collected.

The maximum concentration of dieldrin measured in any of the soil samples analyzed was 0.25 mg/kg. Six dieldrin soil samples measured below detection limits. Dieldrin was not detected in soil analyses or in any groundwater analyses.

Within ½ mile radius around the former Mayco facility, 100% of housing units reported they were served by a public water supply in the 1990 Census. The borough of Bristol is served by the Bristol Water and Sewer Department. According to the data from EPA's Safe Drinking Water Information System (SDWIS), the nearest public water supply to the former Mayco facility is located about 2200 feet southeast and this is a surface water intake on the Delaware River. The nearest groundwater well used as a public supply is located about 1.8 miles west southwest of the former Mayco facility. There are no completed pathways from the groundwater under the former Mayco facility to neighboring drinking water supplies.

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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):

No rationale warranted.

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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 implemented³)?

_____ 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-assessment⁴ 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 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):

No rationale warranted.

³ 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.

⁴ 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.

