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: Childers Products
Facility Address: 2061 Hartel Street, Levittown, PA 19057
Facility EPA ID #: PAD064361926

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).

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):

The information provided herein has been detailed in the Environmental Indicator (EI) Report, to which these checklists are an appendix. References to tables and figures provided in the discussion below refer to the tables and figures in the EI Report. Additionally, superscript numbers in the text herein apply to the reference documents presented in Appendix A of the EI Report. The former Childers Site (Site or Facility) has undergone investigation and groundwater remediation, with subsequent reporting and liability release per the Pennsylvania Department of Environmental Protection (PADEP) Land Recycling and Environmental Remediation Standards Act, Chapter 250, Administration of Land Recycling Program ('Act 2', June, 1997) (25 Pa. Code §§250.1 - 250.708), as revised November 24, 2001. The standards and requirements of Act 2 have been applied to the evaluation presented herein. Also, as documented in the EI Report and the EI Vapor Intrusion (VI) to Indoor Air Pathway checklist (also located in this Appendix), any current assessment of the VI pathway has been in accordance with the PADEP Land Recycling Program's "Section IV.A.4 – Vapor Intrusion into Buildings from Groundwater and Soil Under the Act 2 Statewide Health Standard" Technical Guidance Manual, effective January 24, 2004. The PADEP VI guidance is closely modeled after the USEPA VI Guidance.

In 1988, a tank tightness test indicated that a 4,000 gallon underground storage tank (UST) was leaking xylenes at a rate in excess of two gallons per hour. This 4,000 gallon UST was located inside the Site industrial building, beneath the concrete slab floor. Initial soil sampling was conducted by M&R Soil Investigations, Inc. of Hammonton, NJ, which indicated that xylene concentrations in the soil close to the UST were as high 8,100 mg/kg (**Table 2**). The PADEP was notified of the release and ERM-EnviroClean (ERM) was contracted to perform a Phase I hydrogeologic investigation to assess the nature and extent of soil and groundwater contamination, the results of which were documented in ERM's January 31, 1989, report(5). The investigation included completion of a soil vapor survey screen, subsurface soil sampling, the installation of seven groundwater monitoring wells (MW-1 through MW-7, locations shown on **Figure 3**), slug testing of the monitoring wells, and the performance of a 24-hour pump test.

Based on the results of the Phase I hydrogeologic investigation, ERM recommended remedial action to include in-place abandonment of the leaking xylene UST and installing a groundwater remediation system. Additionally, following review of the January 31, 1989, hydrogeologic investigation report, PADEP recommended that further field investigation activities be performed to better characterize the extent of the soil and groundwater contamination prior to deciding upon specific remedial action.

The Phase II hydrogeologic investigation, which was performed in October 1989, included the following tasks:

- Abandonment of the 4,000 gallon xylene UST;
- Evaluation of the groundwater for tidal effects from the tidally-influenced Delaware River;

[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).

- Removal of free product from any monitoring wells;
- Further delineation of soil contamination by conducting a follow-up soil gas survey and advancement of more soil borings; and,
- Further characterization of the groundwater contaminant plume through additional sampling of the existing wells and through the installation of two new monitoring wells (MW-8 and MW-9, as shown on **Figure 3**).
- Completion of a permit and regulatory review to determine the necessary requirements for remedial action.

The results of these two investigations and the subsequent groundwater remediation (which was conducted form 1993 to 1996) are discussed below.

Historical groundwater analytical results, collected from 1988 through 1998, are provided in **Table 3** and are screened against the Act 2 Non-Residential (NR) Used-Aquifer Statewide Health Standard (SHS) Medium-Specific Concentrations (MSCs) for groundwater. Based on the groundwater sampling, the wells most impacted by the release from the xylene UST were MW-3 and MW-5. Additionally, the results revealed the presence of 1,1,1-trichloroethane (TCA) and tetrachloroethene (PCE) in the two upgradient wells (MW-1 and MW-2).[5] Water levels obtained during the investigation indicated that groundwater was an average of seven feet below grade at the Site with flow was to the east-southeast at a gradient of 0.35 feet per 100 feet. The groundwater velocity was estimated at 1.1 feet per day. The results of the Phase II hydrogeologic investigation, as documented by ERM in their January 31, 1990, report, indicated that the groundwater contaminant plume had diluted and migrated off-site and now extended beneath the neighboring building to the southeast (Northeast Engraving).

The subsurface observations made during the hydrogeologic investigation indicated that the surficial soils at Site consist of an upper layer of poorly sorted silt, sand and boulders to an approximate depth of 15 feet below grade. Underlying the upper layer is a layer of medium grained, well sorted sand, with an approximate thickness of 20 feet. Underlying this sand at an approximate depth of 35 feet below grade is a stiff clay layer that serves to define the lower boundary of the surficial aquifer.[5]

A Remedial Action Plant (RAP), prepared by ERM and submitted in August 1992, and the Design Engineers Report included within the RAP report, addressed the scope of work required to remediate the groundwater contamination at the Site[8]. The chosen remediation system consisted of a groundwater recovery system with five recovery wells (RW-1, and VE-1 through VE-4), an air stripper, a post air stripper iron removal phase, soil vapor extraction using VE-1 through VE-4, a thermal oxidizer for destruction of vapor phase volatile organic compounds (VOCs), and an infiltration system consisting of four injection wells for reinjection of treated groundwater.[8]

Operation of the groundwater remediation system began in November 1993. The system ran for approximately three years, at which time Childers petitioned PADEP to shut down the remediation system.[11] ERM stated that a review of the groundwater influent and monitoring well analytical data during the system operation revealed that there was no consistent decrease in the concentration of VOCs in the air stripper influent and that there was no apparent decrease in the concentrations of VOCs in the monitoring wells (see **Table 3**). The groundwater extraction rates had declined from 10 gallons per minute (gpm) at startup in November 1993 to 1 gpm in July 1996, due to iron fouling that reduced reinjection capacity and increased remediation system maintenance. PADEP granted approval to Childers to shut down the system in August 1996, with the condition that the Facility continue to perform quarterly monitoring well sampling.[12]

The most recent groundwater analytical results are from April 22, 1998, which revealed the presence of several VOCs [1,1-dichloroethane (DCA), 1,1-dichloroethene (DCE), ethylbenzene, methylene chloride, PCE, toluene, 1,1,1-TCA, trichloroethene (TCE), and total xylenes] in excess of the Act 2 NR Used-Aquifer SHS MSCs for groundwater in one or more of the following wells: MW-2, MW-3, MW-5, MW-8, MW-9, PW-1, and RW-1.[13]

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):

On behalf of Childers, ERM submitted a Revised Act 2 Final Report to PADEP on November 11, 1998, providing the information necessary to obtain Site closure and liability protection using Site-Specific Standards (SSS) for compounds in soil and groundwater exceeding the SHS. The report included the following:

- A review of the previous investigations and reports conducted by ERM;
- A summary of the groundwater monitoring results;
- An Act 2 Human Health Risk Assessment (HHRA);
- An Act 2 Soil and Groundwater Evaluation;
- Identification of sensitive receptors;
- Evaluation of exposure pathways;
- Results of fate and transport (F&T) of Site compounds in groundwater; and,
- Development of Risk-Based Screening Levels (RBSLs) for comparison to the modeling results.(13)

ERM concluded the following[a]:

[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.

[a] Because groundwater on-site is an average of seven feet below grade, there is the potential for on-site or nearby off-site receptors to come in contact with impacted groundwater during excavation activities (for instance during future construction or utility work). Based on the materials reviewed by URS, there is no specific mention of deed amendment language to address this pathway (i.e. indication of where such impacts may occur and instruction for proper personal protective equipment (PPE) use when conducting subsurface activities in these areas at depths below the water table). Although exposure routes via this pathway are likely insignificant in comparison to, for instance, the ingestion route, it is recommended that such language be added to the deed, if appropriate. Furthermore, no known deed restriction was applied against groundwater use at the neighboring property to the southeast (formerly Northeast Engraving), under which the groundwater plume was also defined. Although groundwater was not used at this property at the time closure was granted, protection against future use should be implemented.

> "Institutional controls prohibiting on-site use of groundwater for potable purposes will be sufficiently protective of human health at the Site. Groundwater fate and transport modeling and risk assessment were used to demonstrate that no unacceptable impacts to human health would be posed to potential receptors downgradient of the Site, either through direct contact with groundwater or through inhalation of organics volatilized from groundwater into enclosed spaces. SSS were developed for benzene, 1,1-DCA, 1,1-DCE, 1,2-DCE, ethylbenzene, methylene chloride, PCE, toluene, 1,1,1-TCA, TCE, and total xylenes."[13]

In a letter dated December 10, 1998, PADEP granted Act 2 closure and approved the following SSS for the Childers facility, which represent the maximum detected concentrations of each of the VOCs detected in the on-site groundwater:[14]

SSS for Groundwater (ug/L)	
Benzene	36
1,1-DCA	2,900
1,1-DCE	1,000
1,2-DCE	110
Ethylbenzene	750,000
Methylene chloride	17,000
PCE	210
Toluene	21,000
1,1,1-TCA	9,300
TCE	340
Xylenes (Total)	4,600,000

Act 2 closure for a site is granted by PADEP when groundwater impacts, if any, have been adequately delineated and plume stability has been documented or predicted, using F&T modeling, to be within appropriate SHS or applicable SSS.

In accordance with Act 2, possible exposure pathways were considered in development of the PADEP-approved SSS, as discussed below. The possible exposure pathways to Site-impacted groundwater include the following:

- On-site direct contact (ingestion, dermal contact) by on-site non-residential receptors;
- Off-site direct contact (ingestion, dermal contact) by residents or nearby non-residential receptors;
- Diffuse discharge to the nearest surface water body (Delaware River, located 1-mile east of the Site), thereby reaching potential ecological or human receptors; and,
- Volatilization from groundwater to indoor air.

The majority of residents within a three-mile radius of the Site are served by public water. ERM requested a well search from the Pennsylvania Geological Survey on September 18, 1997, for a 0.5-mile radius of the Site to determine the number of residents relying on private wells for potable water. The well search indicated that four registered wells were located within the search radius, with one of the wells (Well X0180) positioned 2,000 feet hydrologically downgradient of the Site. According to the local municipal code for Bristol Township, it was a violation for the property owner not to be connected to the municipal water supply. The well was located at 1808 Grieb Avenue, which is a residential property and, at the time of the investigation, the well was in fact being utilized as a potable water well by the owner of the property in violation of the local code.[13]

Childers was required to complete two consecutive quarterly rounds of sampling of the well at 1808 Grieb Avenue, as a condition of the PADEP Act 2 closure letter, dated December 10, 1998. The first round of sampling was conducted on May 13, 1999, and revealed maximum concentrations of 68 ug/L of TCE and 120 ug/L of PCE. The second round of sampling was conducted on August 20, 1999, and revealed maximum concentrations of 84 ug/L of TCE and 140 ug/L of PCE.[15] The Act 2 Residential Used Aquifer MSCs for both of these compounds is 5 ug/L. Xylenes were not detected in the residential well. According to a Quick Domenico (PADEP-recommended) F&T modeling exercise completed by

ERM, the concentrations of TCE and PCE predicted at this well, based on concentrations of these compounds at the Site, was expected to be 0 ug/L. Therefore, it was summarized and accepted by the PADEP as unlikely that the compounds detected in this residential well originated from the Childers facility.

Based on the results of the F&T modeling conducted for the Grieb Avenue well, which was located 2,000 feet downgradient of the Site, the groundwater discharge-to-surface water pathway is incomplete (i.e. Site contaminants do not travel the one-mile downgradient distance to the Delaware River, which is the nearest downgradient surface water body).

As documented in Section 4.1.2 of the EI Report as well as on the accompanying Human Exposures and Vapor Intrusion (VI) to Indoor Air Checklists, there have been no exceedances of the default residential VI screening criteria in the Site's point-of-compliance (POC) wells (MW-7, MW-8, MW-9, and RW-1; see **Table 3**) and four exceedances of the default NR VI screening criteria for ethylbenzene in groundwater samples historically collected at the Site (**Table 3**). All detected concentrations of VOCs in groundwater samples collected between October 1996 and April 1998 (the last eight sampling quarters) were below the NR default screening criteria. Furthermore, due to natural attenuation processes having occurred in the last nine years since groundwater data has been collected, it is presumed that current concentrations of VOCs in groundwater, if present, are still below the default VI criteria, indicating an incomplete pathway to indoor air from volatilization of VOCs in Site groundwater.

Because all applicable exposure pathways to Site-related groundwater contamination have been adequately assessed using Act 2-recommended tools including screening, F&T modeling, risk assessment, and institutional controls, plume stability is considered to have been defined within the PADEP-approved SSS.

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

X	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):

As discussed previously under Question 3, based on the results of the F&T modeling conducted for the Grieb Avenue well, which was located 2,000 feet downgradient of the Site, the groundwater discharge-to-surface water pathway is incomplete (i.e. Site contaminants do not travel the one-mile downgradient distance to the Delaware River, which is the nearest downgradient surface water body).

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration [3] 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 concentration[3] 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 concentrations[3] 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):

No rationale warranted.

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

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 implemented[4])?

_____ 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-assessment[5] 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.

[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.

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."
X*	If no - enter "NO" status code in #8.
	If unknown – enter "IN" status code in #8.

Rationale and Reference(s):

As previously detailed in the response to Question 3, PADEP granted Act 2 liability protection to this Site on December 10, 1998, based on application of SSS for VOCs in soil and groundwater at concentrations in excess of the SHS. The SSS for groundwater were determined based on an evaluation of applicable exposure pathways to Site-related groundwater contamination using Act 2-recommended tools including screening, F&T modeling, risk assessment, and institutional controls. Therefore, plume stability and acceptable future groundwater conditions were considered to have been defined within the PADEP-approved SSS when the Act 2 closure was granted (1998) and further groundwater monitoring was proven to be unwarranted, nor was it requested by the PADEP.

Following its discovery in 1988, the leaking xylene UST was emptied, cleaned, and closed in place in 1989, thereby eliminating the potential for further releases to Site soils or groundwater. Additionally, the building cap likely reduces direct leaching of constituents from the underlying site soils into the groundwater (rather the natural variation in the water table is the likely mechanism by which soil contaminants are introduced to the groundwater). Due to the period of time that has elapsed since groundwater samples have been collected at the Site (nine years), it is presumed that natural attenuation and other transport processes (diffusion, dispersion, etc.) have further reduced concentrations in Site groundwater to levels below the previously-accepted SSS.

To enhance the institutional controls previously applied to the Site to be consistent with current application of Act 2 guidance, it is recommended, however, that the following additional deed amendments be applied:

- Instruction for proper PPE use when conducting subsurface activities at depths below the water table in areas where the SHS have been exceeded and the SSS apply, until such time that it is shown that the SHS have been achieved in this area; and,
- Restriction against groundwater use at the neighboring property to the southeast (formerly Northeast Engraving), under which the groundwater plume was also defined, until such time that it is shown that the SHS have been achieved in this area.

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.

_____ NO – Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN – More information is needed to make a determination.

Completed by: signed Date 6-18-10

Hon Lee

Project Manager – 3CL30

Supervisor: signed Date 6-18-10

Paul Gotthold

Associate Director, Office of PA Remediation (3CL30)

EPA Region III

Locations where References may be found:

A list of all reference documents is appended to the EI Report. Copies of the reference documents can be found at USEPA's Region III office in Philadelphia or PADEP's Southeast Regional office in Norristown, PA.

Contact telephone and e-mail numbers:

Hon Lee

Tel: 215-814-3419

e-mail: lee.hon@epa.gov

Facility Name: Childers Products
EPA ID #: PAD064361926
Location: 2061 Hartel Street, Bristol, PA 19057

MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750)