

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)**

Migration of Contaminated Groundwater Under Control

Facility Name: Former AMP, Inc.
Facility Address: North Street, I-83 Loganville, PA 17342
Facility EPA ID #: PAD 041511874

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])

- 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 “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.

 X 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):

There are currently two independent businesses with two separate EPA ID #s operating at the former AMP Inc. (AMP) site. The EPA ID # PAD 041511874 was originally assigned to the entire AMP site, which consisted of mainly two manufacturing buildings; Buildings 52 and 143. Because the operations in Building 143 accumulated limited hazardous wastes, AMP obtained a separate EPA ID # PAR 000007369 in 1995 to designate the operations in Building 143 as a Conditionally Exempt Small Quantity Generator (CESQG) that generates 100 kilograms or less of hazardous wastes per month, or 1 kilogram or less of acutely hazardous waste per month. The original EPA ID # PAD 041511874 presently applies only to Building 52 and the property associated with this building.

In 1999, Tyco Electronics Corporation (TEC) acquired AMP. In 2001-2002, TEC subdivided the property in two parcels and sold each parcel separately. The portion of the property that consists of Building 52 was sold to Cox Media and Dominion Enterprises who transformed the former manufacturing building into its current status as a media printing facility. The facility prints magazines such as AutoTrader.

The other half of the former AMP site that consists of Building 143 was sold to Komax Corporation who manufactures machines that solders solar panels. Current operations at this facility consist mainly of machine building assembly and a small machine shop. (July 2012 Former AMP, Inc. EI Inspection Report)

Groundwater:

Three monitoring wells on Building 52’s property and two monitoring wells on Building 143’s property were installed by AMP as part of a baseline assessment. The five monitoring wells and the plant well were sampled periodically from 1995 to 2001 for volatile organic compounds (VOCs) and heavy metals. Levels of heavy metals detected in groundwater were below the maximum contaminant levels (MCLs). Occasionally levels of VOCs were detected slightly above MCLs in the downgradient wells and the former plant well. A summary of the groundwater results for the constituents of concern are tabulated below. The groundwater results are measured in ug/L. ND and NA are designated as “non-detect” and “not available”, respectively.

Well MW-1

Date	1,1,1-TCA	1,1,-DCE	TCE	PCE
3/3/95	ND	ND	ND	ND
9/29/95	ND	ND	ND	ND
12/13/96	ND	ND	ND	ND
12/9/97	NS	NS	NS	NS

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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MCLs	200	7	5	5
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Well MW-2

Date	1,1,1-TCA	1,1,-DCE	TCE	PCE
3/3/95	ND	ND	ND	ND
9/29/95	ND	ND	ND	ND
12/13/96	ND	ND	ND	ND
12/9/97	ND	ND	ND	ND
MCLs	200	7	5	5

Well MW-3

Date	1,1,1-TCA	1,1,-DCE	TCE	PCE
3/3/95	ND	ND	ND	ND
9/29/95	ND	ND	ND	ND
12/13/96	ND	ND	ND	ND
12/9/97	ND	ND	ND	ND
MCLs	200	7	5	5

Well MW-4

Date	1,1,1-TCA	1,1,-DCE	TCE	PCE
3/3/95	ND	ND	ND	ND
9/29/95	6.3	4.5	ND	5.2
2/20/96	5.4	4.8	ND	5.7
4/24/96	5.3	3.7	ND	5.9
8/26/96	5.8	5.8	ND	6.8
11/13/96	2.1	1.9	ND	2.4
12/9/97	3	ND	ND	6
12/13/01	ND	ND	ND	ND
MCLs	200	7	5	5

Well MW-5

Date	1,1,1-TCA	1,1,-DCE	TCE	PCE
3/3/95	ND	6	5	8

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9/29/95	20	19	2.8	16
12/9/97	ND	ND	ND	ND
12/13/01	ND	ND	ND	ND
MCLs	200	7	5	5

Plant Well

Date	1,1,1-TCA	1,1,-DCE	TCE	PCE
3/1/89	13	6.5	3.7	4.3
3/3/95	ND	6	5	8
9/29/95	20	19	2.8	16
12/12/96	NA	5	ND	5.8
12/9/97	13	12	2	17
MCLs	200	7	5	5

Monitoring Wells (MWs) 1 and 2 are located upgradient. These upgradient wells have never detected VOCs levels above MCLs. MWs-4 and 5 are located downgradient. Historically, low levels of PCE and 1,1-DCE were detected slightly above MCLs in the MWs 4, 5, and the former plant well. The levels of PCE detected in MWs 4 and 5 have been in the range from non-detects to 16 ug/L. 1,1-DCE was once detected at 19 ug/L in MW-5, which is above the MCL of 7 ug/L. Over the years the levels detected in MWs 4 and 5 have decreased. The most recent groundwater data indicate that VOC levels detected in all five monitoring wells are below the MCLs.

Given the slightly elevated levels of 1,1,-DCE and PCE in the plant well and the significant difference in well depths of the plant well and the downgradient wells, the detected constituents in the plant well may potentially pose a human health exposure concern for residential wells located downgradient of the Site. The plant well has not been sampled since 1997. It has since been abandoned and is no longer available for sampling. In July 2012, PADEP and EPA conducted a groundwater sampling of the available downgradient residential wells to determine if historic levels of 1,1,-DCE and PCE in the plant well may pose an environmental and human health concern. Only one residence consented to the groundwater sampling. The residence is located downgradient of the Site. Two sample locations, which included the groundwater well and the water spring, were procured from the property. The results of the offsite sampling were non-detects for VOCs. The results confirmed that past detections of slightly elevated 1,1-DCE and PCE concentrations in the plant well have not impacted the surrounding environment. It's been 15 years since the plant well was sampled. Given the fact that there is no contamination source that can contribute to the groundwater impact, the low levels of 1,1-DCE and PCE that were detected in the plant well have most likely decreased over the years through the process of natural attenuation. Remnants of 1,1-DCE and PCE that may still be present in the plant well do not adversely impact the environment as confirmed by the offsite sampling results. The Site no longer uses groundwater and is currently connected to public water. (July 2012 Former AMP, Inc. EI Inspection Report)

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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):

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):

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-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 “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):

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):

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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 AMP, Inc.** facility, EPA ID # **PAD 041511874**, located at **North Street, I-83, Loganville, PA 17342.**

NO - Unacceptable migration of contaminated groundwater is observed or expected.

IN - More information is needed to make a determination.

Completed by (signature)  Date 7/30/12
(print) KHAI M. DAO
(title) EPA PROJECT MANAGER

Supervisor (signature)  Date 7-30-12
(print) Paul Grothold
(title) Associate Director, LCD
(EPA Region or State) EPA Reg 3

Locations where References may be found:

USEPA Region III
Waste and Chemical Mgmt. Division
1650 Arch Street
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PADEP
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