

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: Adamson Company Inc
Facility Address: Route 49 and Tank Road Buffalo Junction, Va (Mecklenburg County)
Facility EPA ID #: VAD982573164

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 Former Adamson Company, Inc. Facility is located on 18.605 acres in Averett, (Mecklenburg County) Virginia. The property is located in a rural setting approximately 10 miles west of Clarksburg, Virginia along Virginia Route 49 (Figure 1). The majority of the property is undeveloped with a single structure located slightly to the western side of the property. Properties surrounding the site are sparsely developed residential areas. Adamson manufactured aboveground and underground storage tanks at the site. In addition, it is believed that during the manufacturing process xylene and methyl ethyl ketone was used for the cleaning of the spray equipment following the application of paint to the tanks.

The Development Company of America (DCA) acquired the Adamson property by way of a sale/leaseback arrangement in February 1978. DCA is a developer that provides office, commercial, industrial, and warehouse buildings for lease.

The Facility is located at latitude 36° 34' 36" North by 78° 39' 05" West.

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):

In 1990, the Department of Waste Management ("DWM"), predecessor to the Virginia Department of Environmental Quality (VDEQ), received a complaint against Adamson by one of Adamson's employees of possible burial of hazardous waste at the property. DWM investigated the complaint and noted the presence of a number of drums containing liquid but could not confirm whether any hazardous waste had been buried. At the time of the investigation, Adamson had not made a declaration as to whether the liquid in the drums was material or waste. In July 1990, Adamson hired a consultant to inventory the drums. The consultant stated that the materials were not ignitable, and that they combined to form a solid. DCA, as owner of the property, was not notified by Adamson of the complaint, or of the DWM investigation regarding the possible burial of hazardous waste at the Property in 1990, or at any time thereafter.

Adamson tested the solid mixture and determined that it was not a hazardous waste. The mixture was eventually disposed of as non-hazardous solid waste. On February 23, 1994, Adamson filed for bankruptcy. DCA, as a part of its due diligence studies in connection with the discussions with Adamson regarding the anticipated rejection of the Lease on the Property, had a Phase I Environmental Site Assessment Performed and in September, 1994. DCA, through its study, first became aware of the 1990 complaint received by DWM. DCA, through its Virginia counsel, contacted VDEQ regarding the 1990 complaint, and DCA then engaged the services of an environmental engineer to perform a Phase II environmental site investigation which began in early November, 1994. On November 8, 1994, DCA found 5 gallon paint cans and other material buried on the Property. DCA, immediately notified VDEQ of its findings on November 8, 1994. On November 10, 1994, representatives of DCA met with VDEQ to make an inspection of the site and to show VDEQ representative what DCA had discovered in the way of buried materials on site, as well as materials apparently disposed of aboveground on the site. In late March and early April 1995, VDEQ conducted further investigation of the Property to evaluate any potential environmental impacts. Site excavations unearthed buried paint containers, consisting mainly of 5 gallon paint cans.

In September, 1995 Adamson contracted for the removal of sandblast grit from the Property and engaged the services of a contractor for the cleanup of the Property under a partial bankruptcy settlement agreement with DCA; however, the funds Adamson was permitted to apply toward the cost of this cleanup were limited to \$50,000 by the Bankruptcy Court. Inasmuch as Adamson did not have adequate funds to complete the site investigation and cleanup, DCA voluntarily agreed to fund the contractor to complete the investigation and remediation of the Property undertaken on Adamson's behalf in order to meet VDEQ requirements and to return the Property to a useable condition. However, DCA made it clear at that time that DCA was taking this action only as a result of the lack of funds by Adamson to pay for completing this work. Moreover, DCA asserted that any violations of environmental law alleged in this Order were the result of acts or failures to act by Adamson. Following site evaluations, DCA paid for the removal of approximately 2500 empty one and five gallon paint cans, and approximately 75 empty fifty-five gallon drums from excavated soils.

None of the containers held any free liquids, although some contained solidified paint. DCA funded the disposal of approximately forty one cubic yard Wrangler Waste Boxes as hazardous waste D007 (Chromium) on May 10, 1996, May 13, 1996 and October 24, 1996. Wrangler Waste Boxes are approved for hazardous waste storage and transportation. The boxes were shipped to Laidlaw Environmental Services of South Carolina. Five piles of soil, Piles A-E were generated due to the excavation and separation of the paint cans and drums.

The contractor tested the excavated soils for TCLP metals and TCLP organics. Excavated soils initially had an elevated reading for TCLP chromium, but retesting produced no elevated levels in excavated soils. None of the other excavated soils had elevated levels of TCLP parameters. Soils were spread on site in the area of excavation and seeded with grass following VDEQ approval. Control measures were taken to minimize run-off inside the warehouse, Adamson stored a twenty-ton roll-off, which contained approximately twenty tons of solidified and semi-solidified urethane. The urethane solids in the roll-off were tested for waste characterization and determined to be non-regulated.

The solids were removed from the roll-off, placed in Wrangler Boxes, and disposed of at USA Waste (Chambers) in Amelia, Virginia. As of May, 1996, there were approximately 3000 empty 5 gallon paint cans and 50 empty fifty-five gallon drums still on site. All five gallon containers were crushed and the fifty-five gallon drums had the tops and bottoms removed and bodies crushed. All scrap metal was loaded into dump trailers and disposed of at USA Waste in Amelia, Virginia. All paint solids generated were collected in Wrangler boxes and disposed of on October 24, 1996 as a D007 hazardous waste. All outside concrete pads were scraped to remove flaking paint. All paint solids generated were containerized in the Wrangler boxes and disposed of as a D007 hazardous waste.

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):

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):

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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):

