



UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
STATEMENT OF BASIS

**Ashland, Inc.**  
**EPA ID No. VAD 062 373 600**  
**2410 Patterson Ave., S.W.**  
**Roanoke, VA 24016**

TABLE OF CONTENTS

SECTION	PAGE
I. Introduction.....	2
II. Facility Background.....	3
III. Summary of the Environmental Investigation.....	4
IV. Environmental Investigations for SWMU – .....	7
V. Summary of Human Health Assessment .....	8
VI. Summary of Proposed Remedy.....	8
VII. Evaluation of EPA’s Proposed Decision .....	9
VIII. Environmental Indicators.....	10
IX. Financial Assurance.....	10
X. Public Participation.....	11

## **I. Introduction**

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) under the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (RCRA), 42 U.S.C. §§ 6901 to 6992k, to explain its proposed remedy for the Ashland, Inc. facility (hereinafter referred to as the Facility). The approximate 1.6 acre Facility is located at 2410 Patterson Avenue S.W. in Roanoke, Virginia, approximately 2.5 miles west of downtown Roanoke.

The Facility is subject to the Corrective Action program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. The Corrective Action program is designed to ensure that certain facilities subject to RCRA have investigated and addressed any releases of hazardous waste and hazardous constituents that have occurred at or from their property. In addition, information on the Corrective Action program as well as a fact sheet for the Facility can be found at <http://www.epa.gov/reg3wcmd/correctiveaction.htm>.

This SB explains EPA's proposed decision that no further actions to remediate soil and groundwater are necessary to protect human health and the environment. EPA's proposed remedy is to require the Facility to develop and maintain property restrictions known as Institutional Controls (ICs), and to develop, and implement if necessary, a Materials Management Plan.

The proposed ICs are detailed in Section VI below. The proposed ICs will assure that there will be no human exposure to on-site contaminants and no interference with the proposed remedy.

As described more fully in Section X below, EPA is providing a 30-day public comment period on this SB. EPA may modify its proposed remedy based on comments received during this period. EPA will announce its selection of a final remedy for the Facility in a document entitled Final Decision and Response to Comments (Final Decision or FDRTC) after the public comment period has ended.

Before EPA makes a final decision on its proposed remedy for the Facility, the public may participate in the remedy selection process by reviewing this SB and documents contained in the Administrative Record (AR) for the Facility. The AR contains the complete set of reports that document Facility conditions, including a map of the Facility, in support of EPA's proposed decision. EPA encourages anyone interested in this matter to review the AR. The AR is available at the EPA Region III office, the address of which is provided in Section X, below.

EPA will address all significant comments received during the public comment period. If EPA determines that new information or public comments warrant a modification to the proposed decision, EPA will modify the proposed decision or select other alternatives based on such new information and/or public comments and subsequently set forth its final decision in the FDRTC.

## II. Facility Background

The Facility is located at 2410 Patterson Avenue, S.W. in Roanoke, Virginia, approximately 2.5 miles west of downtown Roanoke. Ashland, Inc. was formerly a chemical and plastics distribution facility. The Facility began operations sometime between the late 1960s and early 1970s. During this time, chemicals and plastics were received by truck, stored in bulk in containers, and then distributed to customers. On-site storage of chemicals and plastics materials was limited to less than ten (10) days. Transportation to its customers occurred in Facility-owned and operated vehicles which were maintained off-site. The blending of paint thinners was performed at the Facility, but no chemical manufacturing occurred at the Facility.

The Facility maintained 18 above ground storage tanks (ASTs) for product storage. The storage tanks held MEK, acetone, and other solvent type materials. Ashland, Inc.'s Product Tank Farm is surrounded by a concrete dike which ranges in height from 24" to 48", with an approximate capacity of 13,600 gallons. In 1980, Ashland, Inc. submitted a Notification of Regulated Hazardous Waste Management Activity for the Facility along with a RCRA Part A Permit Application to EPA and the Commonwealth of Virginia Department of Environmental Quality (VADEQ).

The Facility's initial Hazardous Waste Management Permit for Storage of Hazardous Waste (in Containers) (hereafter Container Storage Permit) was issued on February 4, 1986, with an expiration date of February 4, 1996. This permit was administratively continued until its reissuance in 1997, as Ashland, Inc. submitted a permit application in accordance with the Virginia Hazardous Waste Management Regulations (VHWMR) and the governing RCRA Regulations.

On July 29, 1997, the Container Storage Permit was subsequently reissued by the VADEQ, with an effective date of August 30, 1997. On October 22, 1997, the Facility notified the VADEQ of its intention to close the permitted hazardous waste storage facility by correspondence dated October 22, 1997. The Facility anticipated beginning closure activities by December 6, 1997.

VADEQ modified the Container Storage Permit on February 27, 1998, to facilitate closure in a more effective manner than was specified in the reissued 1997 Permit. In addition, VADEQ, on April 30, 1998, modified the Facility's permit to allow a risk-based closure in accordance with the applicable VHWMR regulations.

A Closure Report for the Hazardous Waste Container Storage Area, dated June 19, 1998, and revised May 14, 1999, and closure certifications, were submitted to the VADEQ for the Facility's permitted hazardous waste management unit (HWMU) (SWMU No. 1, Former Hazardous Waste Container Storage Area). The VADEQ documented the "clean closure" of the hazardous waste container storage area (SWMU No. 1) by approval of the Closure Report and closure certifications by correspondence dated July 25, 2000.

### **III. Summary of Environmental Investigations**

Below is a summary of the investigations conducted of the Solid Waste Management Units (SWMUs) at the Facility. (see map attached hereto as figure 1)

#### **SWMU No. 1 – Former Hazardous Waste Drum Storage Area**

The former Hazardous Waste Drum Storage Area (SWMU No. 1) was an open sided steel structure with a steel roof and 6-inch thick concrete floor and curbing that had been constructed in 1998. The storage pad is curbed on three sides and sloped away from an entrance ramp. It was divided into five bays by four internal concrete curbs. Each storage bay was capable of storing a maximum of 2,200 gallons of hazardous waste (forty 55-gallon drums).

On February 4, 1986, a Hazardous Waste Management Permit for Storage of Hazardous Waste was issued to Ashland, Inc. by the VADEQ for the management of hazardous waste at the SWMU No. 1 area. This Permit was reissued by the VADEQ on July 29, 1997.

A Closure Report dated June 19, 1998, and revised on May 14, 1999, and closure certifications, were submitted by the Facility to the VADEQ in connection with SWMU No. 1. Subsequent closure information was provided to the VADEQ by the Facility's consultant by correspondence dated April 28, 2000, and May 19, 2000.

Closure activities included the cleaning of the SWMU No. 1's secondary containment area with a high-pressure washer and non-phosphate soap. The concrete was core-drilled and soil samples were taken and tested to assess potential releases from the secondary containment unit. Based on analytical results from the soil samples, the secondary containment pad and sub-soils were deemed clean in accordance with applicable risk-based closure requirements and no further action was deemed necessary. The VADEQ approved the clean closure of SWMU No. 1 on July 25, 2000 by letter to Ashland, Inc.

#### **SWMU No. 2 – Former Old Waste Storage Areas**

The four container storage areas listed under this SWMU No. 2 were utilized by the Facility on an interim or temporary basis for the storage of hazardous waste in containers while the Facility awaited final permit approval from VADEQ. According to a 1989 Closure Certification Report, four of five container storage areas located in and around the Facility warehouse that had been previously used by the Facility were closed, namely:

- Warm Warehouse Area
- Inside of Rear Warehouse Area
- Loading Dock (South of Building)
- Outside Southwest Corner of Building Area

These four areas were pressure-washed by the Facility and subsequently deemed to be clean closed by an October 2, 1996 VADEQ correspondence to the Facility. The fifth storage area, SWMU No. 5, did not receive such approval by VADEQ and is discussed below.

### **SWMU No. 3 – Former Elementary Neutralization Tank**

The Former Elementary Neutralization Tank (SWMU No. 3) was removed in May 1997 because drums were no longer washed at the Facility. According to VADEQ, SWMU No. 3 met the definition of a tank, was an elementary neutralization unit and met the elementary neutralization unit exemption of RCRA under 40 CFR 264.1(g)(6). Therefore, SWMU No. 3 was exempt from RCRA Permitting requirements. No evidence of a spill nor release was found during the October 2007 VADEQ/EPA site visit or was any evidence of spills or releases discovered during a 2007 review of VADEQ and EPA files.

### **SWMU No. 4 – Former Neutralization Pit (Old Neutralization Pit)**

In 1985, a Former Neutralization Pit was dismantled and removed during the construction of SWMU No. 3. No evidence of a spill or release was found during an October 2007 Facility visit conducted by EPA and VADEQ or in the files reviewed by EPA at the VADEQ or USEPA Region III offices. Facility representatives are unaware of any spills or releases from the Former Neutralization Pit and had no information regarding any spills or releases in the Facility files.

### **SWMU No. 5 – Former Hazardous Waste Container Storage Area (Southeast Area)**

The Former Hazardous Waste Container Storage Area located at the southeastern corner of the warehouse, SWMU No. 5, did not receive approval for clean closure as did the four areas that comprised SWMU No. 2. Closure reports issued by the Facility indicated that soil screening results revealed the presence of volatile organic compounds. Therefore, additional soil sampling was recommended to better define the extent and concentration of soil contamination in this area. No further investigation was conducted by EPA at that time.

SWMU No. 5 is currently an asphalt covered area located outside at the southeastern corner of the warehouse. Nothing is presently stored at this location.

### **SWMU No. 6**

SWMU No. 6 is located adjacent to the property line on the southwest corner of the Facility. The area is mid-way between two buildings, namely the warehouse and a one-story office building located on a neighboring property. Information in EPA files indicated that in 1973, the Facility may have buried four to five 55-gallon drums containing aqueous sulfuric acid and sludge in this area. Ashland Inc. further investigated this area and concluded that there were no signs of drum disposal or related soil contamination.

Further, during a 2007 EPA Site Inspection, no evidence of a spill or release was found. Facility representatives are unaware of any spills or releases from this unit and had no information regarding any spills or releases in facility files.

### **SWMU No. 7 – Former Paint Spray Booth**

While it was operational, the Former Paint Spray Booth was equipped with fans and filters for paint capture. During a 2007 EPA Site Inspection, no evidence of a spill or release was found nor was any evidence of a spill or release found in the files reviewed at the VADEQ or EPA Region III offices. Facility representatives are unaware of any spills or releases from this unit and had no information regarding any spills or releases in the Facility's files.

### **SWMU No. 8 – 10 Days or Less Accumulation Area**

SWMU No. 8 is an approximately 15 feet by 20 feet area located inside the warehouse which has a forty (40) 55- gallon drum capacity. There are no floor drains in the vicinity of SWMU No. 8 and spill equipment was readily available. According to Facility representatives SWMU No. 8 had been active for 3 to 4 years. No evidence of a spill or release was found during the 2007 EPA/VADEQ Facility visit or in the files reviewed at the VADEQ or USEPA Region III offices. Facility representatives are unaware of any spills or releases from this unit and had no information regarding any spills or releases in Facility files.

### **SWMU No. 9 – Former Fuel Oil Underground Storage Tank**

The former fuel oil underground storage tank that contained No.2 fuel oil was located underground on the north side of the Facility office building. Facility personnel estimate that the tank was removed in the early 1990s. No evidence of a spill or release was found during the 2007 EPA/VADEQ Facility visit or in the files reviewed at the VADEQ or USEPA Region III offices. Facility representatives are unaware of any spills or releases from this unit and had no information regarding any spills or releases in Facility files.

### **SWMU No. 10 – Dumpster**

The Facility maintains one dumpster for plant refuse consisting of cardboard and office refuse. No evidence of a spill or release was found during the 2007 Facility visit or in the files reviewed at the VADEQ or USEPA Region III offices. Facility representatives are unaware of any spills or releases from this SWMU and had no information regarding any spills or releases in Facility files.

### **SWMU 11 – Satellite Accumulation Area**

The Facility operated one Satellite Accumulation Area in the Product Tank Farm outside of the warehouse. This area is contained within the Facility dike, and is paved with concrete. No evidence of a spill or release was found during the 2007 Facility visit or in the files reviewed at the VADEQ or USEPA Region III offices. Facility representatives are unaware of any spills or releases from this SWMU and had no information regarding any spills or releases in Facility files.

## Summary

In summary, EPA evaluated all solid waste management units at the Facility, and with the exception of SWMU No. 5, had concluded that no further action was necessary at these SWMUs to protect human health and the environment. SWMU No. 5 is a former hazardous waste container storage area located to the southeast of the existing warehouse. In 1988 and 1989, the Facility conducted an investigation of SWMU No. 5 simultaneously with the investigation and closure activities conducted at SWMU No. 2. The results of the investigation of SWMU No. 5 are discussed below.

### IV. Environmental Investigations for SWMU No. 5

During the 1989 Facility investigation of SWMU No. 5, four soil borings were drilled and sampled to a maximum depth of four feet. These soil borings were located in the center of the unit and on three sides (north, east, and south sides). Borings were not drilled on the west side of SWMU No. 5 as that area abuts the warehouse and loading dock and is not accessible. Results of the investigation indicated that shallow soils were impacted with volatile organic compounds (VOCs) including tetrachloroethylene (PCE), trichloroethylene (TCE), benzene, 1,1,1-trichloroethane, trans-1,2-dichloroethene, toluene and a few other compounds. However, of the positive results only PCE and TCE were identified above their respective Risk Based Concentrations for industrial soils. PCE was identified above Risk-Based Concentrations (RBC) in eight out of twenty samples and TCE was identified above RBCs in two of the twenty samples collected. In order to complete the environmental assessment for the property, EPA requested that Ashland, Inc. conduct additional soil sampling at the SWMU No. 5 location. Ashland, Inc. accepted EPA's offer to complete the work under Region III's Facility Lead Program. The investigation was conducted in December 2009 in accordance with the Sampling and Analyses plan approved by EPA in November 2009. Sampling activities consisted of installing five soil borings in the area of SWMU No. 5 and one soil boring at a background location. Direct-push (Geoprobe<sup>®</sup>) soil sampling techniques were used to collect soil samples from these locations. The samples were analyzed for VOCs, semi volatile organic compounds (SVOC), metals, pH, formaldehyde, isopropyl alcohol and methanol.

Only PCE and trichloroethylene TCE were found in excess of the industrial RBCs during the 1989 sampling event. The maximum detections of both constituents were found in one sample at a depth of one foot, at concentrations of 120 mg/kg and 61 mg/kg, respectively. The results of the 2009 sampling event identified only one contaminant, PCE, in excess of its industrial RBC. PCE (6.8 mg/kg), in one sample at a depth of 12-13 feet, was found slightly in excess of the industrial RBC of 2.7 mg/kg. Additionally, detections of arsenic were above the industrial RBC, but were determined to be reflective of background concentrations and therefore, not considered further.

By comparing PCE concentrations in a soil sample taken at a three to four foot depth during the 2009 Facility investigation versus the four soil borings taken during the 1989 Facility investigation it appears that PCE concentrations in the Facility soils are naturally attenuating.



A sample collected from a depth of approximately three feet during the 1989 sampling event revealed PCE at a concentration of 2.90 mg/kg, slightly above the industrial RBC of 2.7 mg/kg for this compound; however, the concentration of PCE detected in a sample at an approximately three foot depth during the 2009 sampling event was only .15 mg/kg, well below the RBC. This may be indicative of the occurrence of natural attenuation of VOCs, which would be expected given the volatile nature of the compounds and the length of time between sampling events.

## **V. Summary of Human Health Assessment**

On April 16, 2010, a human health risk assessment conducted by EPA showed that, in fact, none of the complete pathways evaluated was found to have either individual or cumulative carcinogenic or noncarcinogenic risks in excess of those considered protective by EPA. Therefore, the data should be considered adequate to support closure of SWMU No. 5 under an industrial land use scenario at the Facility.

It should also be noted that the analytical results for the organic compounds found in the soils from the 2009 sampling event revealed concentrations that were considerably less than the concentrations for the same compounds found in the soils from the 1989 sampling event. This decrease in contaminant concentrations would indicate that the contamination is naturally attenuating with time.

## **VI. Summary of Proposed Remedy**

EPA's proposed remedy for the Facility consists of the following components:

### **1. Implementation of Institutional Controls**

Under this proposed remedy, some concentrations of contaminants will remain in the soil at the Facility above levels appropriate for residential uses. As a result, the proposed remedy will require the Facility to implement ICs in order to restrict use of the Facility property to prevent human exposure to contaminants while such contaminants remain in place. ICs are non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination and/or protect the integrity of a remedy.

The proposed ICs will be instituted through an enforceable mechanism such as a permit, order, or an Environmental Covenant, pursuant to the Virginia Uniform Environmental Covenants Act, Title 10.1, Chapter 12.2, §§ 10.1-1238-10.1-1250 of the Code of Virginia ("Environmental Covenant"), which will be recorded with the Clerk's Office of the Circuit Court of Roanoke. If the mechanism is to be an Environmental Covenant, Ashland, Inc. will be required to provide a coordinate survey, as well as a *metes and bounds survey* of the closed solid waste management units and the Facility boundary. Mapping the extent of the land use restrictions will allow for presentation in a publicly accessible mapping program such as Google Earth or Google Maps. A clerk-stamped copy of the Environmental Covenant will be sent to EPA and VADEQ within sixty (60) calendar days of recordation.

The Environmental Covenant, permit or order would provide the following restrictions:

- i. a restriction that all excavation and disturbances to the subsurface soils, including construction and drilling, be conducted in accordance with an EPA approved Materials Management Plan that is prepared by an appropriately qualified person familiar with the environmental conditions at the Facility;
- ii. a restriction that Facility property not be used for residential purposes unless it is demonstrated to EPA that such use will not pose a threat to human health or the environment and EPA provides prior written approval for such use;

Compliance with the institutional controls shall be evaluated by the Facility on an annual basis. A report documenting the findings of the evaluation shall be provided to EPA and VADEQ.

If the Facility fails to meet its obligations under the enforceable mechanism proposed, EPA, in its sole discretion, may deem that additional ICs are necessary to protect human health or the environment, EPA has the authority to require such institutional controls.

## **2. Development and Implementation of a Materials Management Plan**

EPA's proposed remedy requires the development and implementation of a Materials Management Plan to be approved by EPA before any excavation and disturbances to the subsurface soils, including construction and drilling, can be done at the Facility. The Materials Management Plan will detail how all excavated soils will be handled and disposed.

Soil remediation cleanup standards will be determined by EPA using EPA Region III's RBCs for industrial screening levels. In addition, all soils that are stockpiled will be sampled using the Toxicity Characteristic Leaching Procedure (TCLP) and will be disposed off-site. In addition, the Materials Management Plan will include soil stabilization requirements to minimize contact between storm water runoff and the parcel soils. Soil stabilization measures may include the construction of berms to prevent storm water from flowing onto certain areas as well as the construction of sumps with pumps to remove ponded water from low lying areas.

The Materials Management Plan will include a Health and Safety Plan, Sampling and Analysis Plan and Quality Assurance Project Plan. The Health and Safety Plan will among other things identify the locations at the Facility where contaminants remain in soils and detail how future on-site workers and contractors will be notified about such locations.

## **VII. Evaluation of EPA's Proposed Remedy**

This section provides a description of the criteria EPA uses to evaluate proposed remedies under the Corrective Action Program. The criteria are applied in two phases. In the first phase, EPA evaluates three criteria, known as Threshold Criteria. In the second phase, EPA uses seven balancing criteria to select among alternative solutions, if more than one solution is proposed. The Facility has demonstrated that the current conditions meet the threshold criteria established by EPA

and because EPA is not selecting among alternatives, an evaluation of the balancing criteria is not necessary.

The following is a summary of EPA's evaluation of the Threshold Criteria:

**1. Protect Human Health and the Environment** – EPA's proposed remedy protects human health and the environment from exposure to contamination based on current and anticipated land use.

**2. Achieve Media Cleanup Objectives** -EPA's proposed remedy meets the appropriate cleanup objectives based on assumptions regarding current and reasonably anticipated land and water resource uses. The anticipated future land use for this Facility is industrial. Environmental sampling activities conducted in 1989 and 2009 have revealed levels of contamination that are within acceptable limits for the protection of human health and the environment for the proposed future use of this property.

**3. Remediating the Source of Releases** –In all remedy decisions EPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. Since this Facility is no longer operating there are no continuing activities to generate new contaminant sources. Based on the analytical results of samples collected during the 1989 and 2009 sampling events the concentrations of contaminants in subsurface soils appear to be decreasing through natural attenuation.

## **VIII. Environmental Indicators**

EPA sets national goals to measure progress toward meeting the nation's major environmental goals. For Corrective Action, EPA evaluates two key environmental indicators for each facility: (1) current human exposures under control and (2) migration of contaminated groundwater under control. EPA has determined that the Facility met these indicators on September 15, 2010.

## **IX. Financial Assurance**

EPA has evaluated whether financial assurance for corrective action is necessary to implement EPA's proposed decision at the Facility. Given that EPA's proposed decision does not require any further engineering actions to remediate any environmental media at this time and given that the costs of implementing institutional controls at the Facility will be de minimis, EPA is proposing that no financial assurance be required. .

## **X. Public Participation**

Before EPA makes a final decision on its proposal for the Facility, the public may participate in the remedy selection process by reviewing this SB and documents contained in the Administrative Record (AR) for the Facility. The AR contains all information considered by EPA in reaching this proposed decision. The Administrative Record is available at the following locations:

U.S. EPA Region III  
1650 Arch Street  
Philadelphia, PA 19103  
Contact: Leonard E. Hotham  
Phone: (215) 814-3184  
Fax: (215) 814-3113  
Email: [Wentworth.William@epa.gov](mailto:Wentworth.William@epa.gov)

Roanoke Public Library	
Raleigh Court Branch	Hours
2112 Grandin Road SW	Sunday & Monday Closed
Roanoke, VA 24015-3528	Tuesday 10:00 a.m. - 8:00 p.m.
Phone: (540) 853-2240	Wednesday & Thursday 10:00 a.m. - 6:00 p.m.
Fax: (540) 853-1783	Friday & Saturday 10:00 a.m. - 5:00 p.m.
<a href="mailto:Raleigh.Library@roanokeva.gov">Raleigh.Library@roanokeva.gov</a>	
Branch Manager – Dianne McGuire	

Interested parties are encouraged to review the AR and comment on EPA's proposed decision. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. You may submit comments by mail, fax, or e-mail to William Wentworth. EPA will hold a public meeting to discuss this proposed decision upon request. Requests for a public meeting should be made to William Wentworth.

EPA will respond to all relevant comments received during the comment period. If EPA determines that new information warrant a modification to the proposed decision, EPA will modify the proposed decision or select other alternatives based on such new information and/or public comments. EPA will announce its final decision and explain the rationale for any changes in a document entitled the Final Decision and Response to Comments (FDRTC). All persons who comment on this proposed decision will receive a copy of the FDRTC. Others may obtain a copy by contacting William Wentworth at the address listed above.

Date: \_\_\_\_\_

Abraham Ferdas, Director  
Land and Chemicals Division  
US EPA, Region III

Figure 1: Map of Facility

