



**UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION III**

**FINAL DECISION  
AND  
RESPONSE TO COMMENTS**

**HERCULES, INC.  
111 HERCULES ROAD  
HOPEWELL, VIRGINIA**

**EPA ID NO. VAD 003 121 928**

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## FINAL DECISION AND RESPONSE TO COMMENTS

### PURPOSE

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (FDRTC) under the authority of 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.* to the Hercules facility located at 1111 Hercules Road in Hopewell, Virginia (Facility).

The 390-acre Facility is located in the eastern portion of the City of Hopewell, Virginia. Hopewell is located southwest of Richmond near the confluence of the James and Appomattox Rivers.

On May 29, 2015, EPA issued a Statement of Basis (SB) which described the information gathered during the environmental investigation at the Facility, and the Proposed Remedy for the Facility. The SB is hereby incorporated into this Final Decision by reference and made a part hereof as Attachment A.

### FINAL REMEDY

The selected remedy for the Facility consists of land and groundwater use restrictions to be implemented through institutional controls (ICs), groundwater monitoring, maintenance of the existing security fence and implementation of a Materials Management Plan.

The following land and groundwater use restrictions and access requirements are required to ensure the short- and long-term reliability of the selected remedy.

1. Groundwater at the Facility shall not be used for any purpose other than to conduct the operation, maintenance, and monitoring activities required by Virginia Department of Environmental Quality (VADEQ) and/or EPA, unless it is demonstrated to EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and EPA provides prior written approval for such use;
2. No new wells will be installed on Facility property unless it is demonstrated to EPA that such wells are necessary to implement the selected remedy and EPA provides prior written approval to install such wells.

3. The Facility property shall 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 or adversely affect or interfere with the selected remedy, and EPA provides prior written approval for such use;
4. All earth moving activities, including excavation, drilling and construction activities, in the areas at the Facility where any contaminants remain in groundwater above their MCLs or EPA Region III's Tap Water RSL, shall be prohibited unless it is demonstrated to EPA that such activity will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy, and EPA provides prior written approval for such use. In the event of such approval, a Materials Management Plan specifying protocols for soil, groundwater, and surface water within the plume areas will be created for all earth moving activities and submitted in writing to EPA for review and approval;
5. A vapor intrusion control system, the design of which shall be approved in advance by EPA, shall be installed in each new structure constructed above the contaminated groundwater plume or within 100-foot around the perimeter of the contaminated groundwater plume, unless it is demonstrated to EPA that vapor intrusion does not pose a threat to human health and EPA provides prior written approval that no vapor intrusion control system is needed;
6. The existing soil cover over SWMU 5 (old Landfill and Landfill #156) shall be maintained to prevent exposure and provide a substrate for vegetation to grow
7. The Property will not be used in a way that will adversely affect or interfere with the integrity and protectiveness of the selected remedy selected by EPA in this FDRTC;
8. EPA, VADEQ, and/or their authorized agents and representatives, shall have access to the Property to inspect and evaluate the continued effectiveness of the selected remedy and if necessary, to conduct additional remediation to ensure the protection of the public health and safety and the environment based upon the selected remedy selected in the FDRTC.

The selected remedy also requires the development and implementation of a Materials Management Plan to be submitted for review and approval by EPA before any earth moving activities, including construction and drilling, can be conducted in groundwater known to contain COCs. The Materials Management Plan will detail how soil and groundwater will be managed during any future subsurface activities conducted at the Facility. The Materials Management Plan will also detail how all excavated soils will be handled and disposed.

## RESPONSE TO COMMENTS

On May 29, 2015, EPA provided a 30-day public comment period on the proposed remedy for the Facility as described in the Statement of Basis. The 30-day public comment period ended on June 30, 2015. EPA received comments on the proposed remedy from Ashland, Inc., owner of the Facility. No request for a public meeting was received. Based on the public comments received, EPA has determined that it is not necessary to make any modifications to the proposed remedy.

The following is a summary of the comments received and EPA's responses to those comments:

### Comments from Ashland, Inc.

In its June 19, 2015 letter, Ashland provided comments on 4 specific sections of the SB as follows:

#### Comment 1:

“Section 5.0: Corrective Action Objectives: Using Regional Screening Levels (RSLs) identified as the Corrective Action Objectives (CAOs) for soil and Maximum Contaminant Levels (MCLs) and RSLs (for tap water) as CAOs for groundwater is inappropriate.

EPA's own guidance states that RSLs are typically not to be considered clean-up objectives or goals. For example, USEPA's Soil Screening Guidance: User's Guide; Publication 9355.4-23 July 1996, specifically recommends this approach for developing remediation goals: 1. Identify screening levels at scoping; 2. modify them as needed at the end of the RI or during the FS based on site-specific information from the baseline risk assessment; and 3. ultimately select remediation levels in the ROD. Although this project is under the RCRA program rather than CERCLA, the application of RSLs and the approach to selection of remediation target goals in the two programs is essentially the same.

USEPA has already approved a site-specific human health risk assessment (HHRA) for the site. The results from the HHRA should be used as the basis for establishing the site-specific CAOs. The HHRA determined that concentrations of site-specific constituents of concern (COCs) were acceptable for the defined receptors. Identifying CAOs that are more stringent than the concentrations already determined to be acceptable in the HHRA is overly conservative. Hercules requests that the approved risk assessment, as well as site-specific realities such as institutional controls, be used as the basis for the selection of final remedial goals for the site.”

#### EPA Response:

As a basis for its proposed remedy for the Facility, EPA did consider EPA-approved risk assessments and site-specific conditions. Therefore, no changes to the proposed remedy are appropriate.

Specifically, in Section 5.0 of the Statement of Basis, EPA addressed the Corrective Action Objectives for both Soils and Groundwater. For soils, EPA acknowledged that the Facility has been used for industrial purposes for more than 90 years and that the anticipated future use of the Facility would remain industrial. In addition, Hercules provided an industrial use designation for future use in Section 2.3 of the Phase III Site Investigation Summary Report (2007). Therefore, the Corrective Action Objective in the Statement of Basis for soils was to use the RSLs for industrial soils. EPA, in Section 6, "Proposed Remedy" of the SB, goes on to state that "Facility soils have attained applicable RSLs for industrial use". Therefore, EPA determined that there is no need to establish risk assessment remedial goals for soil given that EPA already determined that Facility soils meet the Corrective Action Objective.

For groundwater, EPA expects final remedies to return usable groundwater to its maximum beneficial use, which for the Facility both EPA and Virginia DEQ have determined would be as a potential source of drinking water. Therefore, the Corrective Action Objectives for drinking water are Maximum Contaminant Levels (MCLs) and, RSLs (for tap water) if there are no applicable MCLs, throughout the contaminated plume. In Section 6 of the SB, EPA's Proposed Remedy for groundwater calls for monitored natural attenuation until MCLs or RSLs, as applicable, are met. Accordingly, the remedy requires a groundwater monitoring plan to address the long-term monitoring of the natural attenuation processes and the implementation of groundwater use restrictions until MCLs or RSLs, as applicable, are attained.

Comment 2:

"Section 6.2: Proposed Remedy – Groundwater: Hercules requests that long-term monitoring be the only necessary current and future action for groundwater at the site. Hercules has demonstrated that natural attenuation is occurring at the site and proposes focused groundwater monitoring to confirm stable or downward trends at or below the conditions evaluated in the HHRA as the appropriate and protective remedy for groundwater. As stated above, the use of RSLs as cleanup levels is inappropriate given the results of the HHRA and use of institutional controls that prohibit the use of groundwater for potable purposes. Additionally, Hercules recognizes that in the unlikely event that groundwater migration beyond the site boundary occurs or if trends would increase significantly, additional evaluation might be necessary. Hercules proposes that the frequency, locations and period of monitoring be negotiated during the preparation of a groundwater monitoring plan for the site."

EPA Response:

The groundwater remedy proposed in the Statement of Basis requires long-term monitoring of the natural attenuation processes and the implementation of groundwater use restrictions until MCLs or RSLs, as applicable, are attained. See EPA Response to Question 1 concerning Groundwater.

Comment 3:

“Section 6.3.4: Proposed Remedy – Institutional Controls: This criterion restricts the use of “All earth moving activities, including excavation, drilling and construction activities in areas at the Facility where any contaminants remain in soils above EPA Region III’s Screening Levels or in groundwater above their MCLs or EPA Region III’s Tap Water RSLs...” without EPA approval.

For soils, paragraph 6.1 of the SB indicates that “Facility soils have attained applicable RSLs for industrial use.” and “...that there are no unacceptable risks to human health and the environment via the soil direct contact or inhalation exposure pathway for the present and anticipated industrial use of the Facility property.” Similarly for groundwater, Section 4.1 of the SB concludes from the HHRA that “...potential hazards and risks associated with anticipated exposures do not pose risk to humans who may live nearby or work at the Facility.”

The approved risk assessment demonstrates that the non-cancer hazards and potential risks for a construction scenario including excavation work are acceptable and that no restrictions on current or future earth moving activities at the site are necessary.

Therefore, since the soils have attained the RSLs for industrial use and institutional controls will be placed on the facility to restrict the use of the facility to industrial purposes, the placement of such broad restrictions on the facility and a requirement for USEPA approval for intrusive on-site activities are unnecessary. Hercules requests that these unnecessary restrictions be removed from the Statement of Basis. “

EPA Response:

Based on the soil results collected during the RCRA Facility Investigation, there were no contaminants in Facility soils above applicable RSLs for Industrial Soils. The proposed remedy restricted earth moving activities where any contaminants remain in in soils above RSLs for Industrial Soils or in groundwater above MCLs or RSLs. Given that there were no contaminants in Facility soils above applicable RSLs for Industrial Soils, a Materials Management Plan would have to be submitted for earth moving activities that will impact or encounter the contaminated groundwater plume underlying the Facility. EPA has modified the final remedy for clarification.

Comment 4:

“Sections 6.3.5: Proposed Remedy – Institutional Controls: As stated above, the HHRA evaluated vapor intrusion for the Indoor Industrial Worker receptor and found potential risks to be acceptable. Therefore, the requirement for installation of vapor intrusion control systems in structures above or within 100 feet of the groundwater contaminant plume is inappropriate and unnecessary. As long as concentration trends in groundwater continue to remain stable or decline, additional controls on vapor intrusion are unnecessary. Hercules requests the requirement for installation of vapor intrusion control systems be removed from the Statement of Basis. “

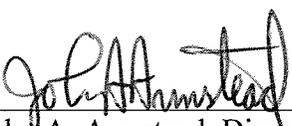
EPA Response:

EPA disagrees with Hercules' request to remove the requirement for installation of vapor intrusion control systems. The selected remedy includes the provision for vapor control to ensure that any new building over or within 100 feet of an existing groundwater plume be designed to prevent vapor intrusion. The HHRA evaluated a construction worker exposed to contaminated soil, which is a different exposure scenario than a worker inside a building. EPA in the selected remedy also does not require that a vapor system be installed in new buildings if it is demonstrated that there is no threat to human health.

DECLARATION:

Based on the Administrative Record compiled for the Corrective Action at the Facility, EPA has determined that the Final Remedy selected in this Final Decision and Response to Comments is protective of human health and the environment.

Date: 7.22.15

  
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