

**Addendum to the Feasibility Study Report for the North Sanitary Landfill,
a/k/a Valleycrest, Superfund Site, in North Dayton
Ohio EPA ID# OHD980611875**

Prepared by U.S. Environmental Protection Agency, Region 5

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I. Background

On April 22, 2011, pursuant to a 1995 Director's Final Findings and Orders, the Ohio Environmental Protection Agency (Ohio EPA) approved the March 2011 Feasibility Study Report (FS Report) that Conestoga-Rovers & Associates (CRA) submitted on behalf of the Valleycrest Landfill Site Group (VLSG). On September 2, 2011, Ohio EPA terminated the January 31, 1995 Director's Final Findings and Orders. The U.S. Environmental Protection Agency (EPA) is currently the lead agency for the North Sanitary Landfill, a/k/a Valleycrest, Superfund Site, in North Dayton, Ohio, EPA ID# OHD980611875 (the Site).

II. Purpose

This document, read in conjunction with the FS Report, provides the basis for EPA's proposed cleanup plan. As written, the FS Report does not provide a remedial alternative that fully complies with applicable or relevant and appropriate requirements of Federal and State laws (ARARs). None of the alternatives comply with requirements promulgated under the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA). The proposed cap design described in Alternatives 3A and 3B does not comply with Ohio solid waste landfill closure requirements.

This addendum corrects and clarifies the ARAR discussion in the FS Report and revises the description and analyses of Alternatives 2A and 2B to comply with applicable or relevant and appropriate RCRA and TSCA requirements.

III. Corrections and clarifications to RCRA and TSCA ARARs

a. RCRA Capping Requirements are ARARs for this Site

EPA's review of Site records indicates that the former operators of the landfill accepted waste contaminated with high levels of RCRA constituents before 1980 and RCRA characteristic

waste after 1980. RCRA was passed in 1980, therefore, waste generated before then cannot be considered "RCRA characteristic"; however can be identified as having RCRA constituents in it. There are no records indicating that any RCRA listed waste was disposed of at the Site.

In Section 2.4 of the FS Report (see page 25 of the FS Report), CRA states that both State and Federal RCRA requirements pertaining to hazardous waste landfills and hazardous waste facilities:

were reviewed, but were concluded to not be ARARs because it is anticipated that management of identified hazardous materials may include transportation off-site for treatment and/or disposal for the selected remedy.

In other words, Alternatives arrayed in the FS were described by CRA as anticipating the off-site treatment and/or disposal of RCRA characteristic wastes found on the Site. Contrary to the above quoted text from the FS Report, none of the remedial options in the FS Report provide for off-site treatment and/or disposal of all waste identified in the Remedial Investigation and FS Report as exhibiting the toxicity characteristic of RCRA hazardous waste. Toxicity characteristic is defined through a laboratory procedure called the Toxicity Characteristic Leaching Procedure (TCLP) (EPA Test Method 1311).

The Site includes five former disposal areas. Based on the nature of the waste and the time of disposal as it relates to RCRA requirements, EPA considers the Site as two separate Areas of Contamination (AOC): (1) AOC #1, the eastern two-thirds of the Site, consisting of former Disposal Areas 1, 2, and 5, which ceased accepting waste before 1980; and (2) AOC #2, the western third of the Site, consisting of former Disposal Areas 3 and 4, which continued accepting waste after 1980. Based on sampling data and site operational records, including the timing of the waste disposal, EPA finds that RCRA hazardous waste landfill closure requirements are: (1) **applicable** to remedial alternatives that leave RCRA waste in place in AOC # 2; and (2) **relevant and appropriate** to remedial alternatives that leave waste exhibiting the toxicity characteristics of RCRA waste in the landfill above the water table in AOC # 1. Remedial Investigation information indicates that there is no landfill waste below the water table in AOC #2.

Because EPA has authorized Ohio's RCRA program, the landfill closure and post-closure requirements set forth at OAC 3745-68-10 must be followed or waived for purposes of implementing remedial alternatives that leave RCRA characteristic waste (i.e., includes waste

disposed of after 1980), or waste exhibiting the characteristic of toxicity (i.e., includes waste disposed of before 1980) found above the water table, in place.

b. TSCA Disposal Requirements are ARARs for this Site

EPA finds that TSCA is applicable to each of the proposed remedies for this Site because all of the remedy alternatives in the FS report provide for the land disposal of waste contaminated with polychlorinated biphenyl (PCB) at levels of 50 parts per million (ppm) and above. Accordingly, the FS Report incorrectly omitted the TSCA risk-based disposal requirements set forth at 40 C.F.R. § 761.61(c); however, 40 C.F.R. § 761.61(c) is an ARAR here. Sections V and VI below describe the necessary revisions to Alternatives 2A and 2B for compliance with the TSCA risk-based disposal requirement.

IV. Contingencies for Series 2 Alternatives that comply with RCRA closure and post-closure requirements for waste-in-place remedial options:

Additional sampling to verify the presence of waste exhibiting the toxicity characteristic of RCRA hazardous waste and either (a) removal and/or treatment of that waste; or (b) installation of a cap that meets the landfill closure requirements of OAC 3745-68-10 is required for the Series 2 Alternatives.

a. **Areas 1, 2 and 5 (AOC #1).**

Sampling conducted during the Remedial Investigation identified 11 locations in AOC #1 with contamination exhibiting the toxicity characteristics of RCRA hazardous waste. These eleven locations are below the water table in native till beneath the Disposal Area 5 removal action area. The sample results exceeded the Toxicity Characteristic Leaching Procedure (TCLP) standard for trichloroethylene (TCE). Five additional sampling locations had TCE concentrations that may exceed the toxicity characteristic standards for RCRA hazardous waste, based on the application of the 20 times rule. These five locations, shown on Figure 1 of this Addendum, include FLUT-70, -99, -102, -106 and HSAVAS-22, all of which are within Disposal Area 1 and located above the water table. Sampling results are available in Appendix A of the Remedial Investigation Report.

Remedial alternatives that leave RCRA hazardous waste or waste contaminated with RCRA constituents that exhibit the toxicity characteristic of RCRA hazardous waste in place without a RCRA Subtitle C compliant cap, do not meet the ARARs identified for this Site. EPA

is clarifying here that under each alternative, TCLP sampling may be performed to verify if the results exceed the toxicity characteristic standards for RCRA hazardous waste. If verification sampling is not performed, EPA will assume the waste exceeds the TCLP standard and is a RCRA characteristic waste, based on available information. The locations of the data points identified above, along with the respective contaminant concentrations, are described in Figure 1 of this FS Addendum.

For areas with waste located below the water table and disposed of prior to 1980, RCRA Subtitle C closure requirements would be considered relevant but not appropriate. In these areas, all RCRA hazardous waste or TCLP characteristic waste above the water table will be excavated. However, the decreased permeability afforded by a RCRA Subtitle C cap would not improve conditions for waste already in contact with the groundwater. Attempting to remove contamination below the water table may mobilize groundwater contamination or result in additional risks to workers or the surrounding community. The dewatering required for excavation beneath the water table would also generate large quantities of waste water that would require treatment and disposal. Groundwater contamination associated with waste beneath the water table will be contained by the perimeter leachate collection system.

b. Areas 3 and 4 (AOC #2)

Sampling results at former Disposal Areas 3 and 4 indicate these areas may contain RCRA characteristic waste. The waste sampling locations for Areas 3 and 4 are shown on Figure 4.9 of the RI Report. The contaminant concentrations that were detected at these locations are provided in Appendix A of the RI Report. As stated in the ARAR discussion for the former Disposal Area 4 and Table 5.1 of the FS Report, the remedial action for Disposal Area 4:

Will meet the substantive requirements by including detailed procedures in the 95% Design document and RAWP for testing of materials generated during the remedial action. Management of identified hazardous materials may include transportation off site for treatment and/or disposal.

TCLP sampling may be performed in Area 3 to verify if the waste exceeds the toxicity characteristic standards for RCRA hazardous waste. If verification sampling is not performed, EPA will assume the waste exceeds the TCLP standard and is a RCRA characteristic waste, based on available information.

(1) Excavation and off-site disposal

In each of the five disposal areas described in Section IV above, soil will be excavated from above the water table. Each excavation is assumed to be approximately 100 feet by 100 feet by 2 feet deep. This is an estimate based on the 2 foot depth interval used for each sample location. All material that exceeds the TCLP threshold will be sent off-site to a RCRA landfill for disposal. Following excavation, confirmatory sampling will be conducted to demonstrate that removal criteria have been met.

For cost estimating purposes, EPA used actual unit remediation costs for excavation and off-site disposal of TSCA and RCRA waste from the OMC site in Waukegan, Illinois. Based on these estimates, EPA expects that excavation and offsite disposal of soil as TSCA or RCRA waste at Valleycrest to cost approximately \$150,000 at each area identified above. This is based on a total estimated volume for each area of 1,000 tons.

(2) Subtitle C cap

If EPA determines that complete excavation of the RCRA waste is not implementable or cost effective, RCRA waste in Area 3 or Area 4 may be left on-site and covered by a RCRA Subtitle C cap as part of the final remedy for the Site. Pursuant to Ohio EPA's policy "Final Covers For Hazardous Waste Surface Impoundments, Waste Piles And Landfills" (2000), Ohio's RCRA hazardous waste landfill cap should consist of: (1) a vegetated cover layer (typically 6 inches thick), (2) a cap protection layer (typically 12 inches thick), (3) soil drainage layer (12 inches minimum thickness with a maximum permeability of 1×10^{-2} cm/sec) or a geosynthetic drainage layer (requires 30 inch frost protection), (4) a flexible membrane liner (minimum 40 mil thickness, and (5) recompacted clay (24 inches with a maximum permeability of 1×10^{-7} cm/sec). Using the capital cost estimates from the Ohio EPA approved FS, adding the cost of the extra clay to comply with Subtitle C requirements, which is the only additional requirement, would increase the overall cap costs by approximately \$500,000. This increase is within the FS cost estimate range of +50/-30% for the FS proposed alternative. The cost estimate range serves as the basis for all FS cost estimates pursuant to EPA guidance. (See EPA/540/G-89/004OSWER Directive 9355.3-01 October 1988 Guidance to conducting Remedial Investigation and Feasibility Studies.)

V. TSCA Risk-based disposal

TSCA regulations set forth at 40 C.F.R. § 761.61(c) provide a process that can be used in Superfund cleanups to allow on-site disposal of PCB remediation wastes. This process is commonly referred to as risk-based disposal.

EPA Region 5's regional TSCA Delegation 12-5 provides the Director of the Superfund Division with the authority, subject to consultation with the Director of the Land and Chemical Division, to approve or deny applications for risk-based sampling, cleanup, storage, decontamination, or disposal of PCBs.

In the context of selecting a remedy for a Superfund site that includes the risk-based disposal of PCB contaminated material, the elements of a risk-based disposal application are typically found within the FS Report, the proposed plan, or stand alone in the risk-based disposal memo.

The requisite elements on which EPA can base its decision that on-site disposal of PCB material "will not pose an unreasonable risk of injury to health or the environment" (40 C.F.R. § 761.61(c) (2)) are found at 40 C.F.R. 761.61(a) (3) and include:

- (a) The nature of the contamination, including kinds of materials contaminated.
- (b) A summary, including sample collection and analysis dates, of the procedures used to sample contaminated and adjacent areas and a table or cleanup site map showing PCB concentrations measured in all pre-cleanup characterization samples.
- (c) The location and extent of the identified contaminated area, including topographic maps with sample collection sites cross referenced to the sample identification numbers in the data summary from paragraph (a)(3)(i)(B) of this section.
- (d) A cleanup plan for the site, including schedule, disposal technology, and approach—including, contingencies for unanticipated higher concentrations or wider distributions of PCB remediation waste.

Information pertinent to sub paragraphs (a) through (c) directly above is available in the Remedial Investigation Report and its appendices; see Section 4.1.6, 4.2, and Appendix A of the RI report.

VI. TSCA compliant waste in place remedial options

None of the remedy options provided in the FS Report could be approved for risk-based disposal under 40 C.F.R. §761.61(c). This section provides corrections and clarifications to remedy alternatives 2A and 2B to provide EPA the basis to approve on-site disposal of PCB remediation waste found at the Site.

RI sampling identified six locations where total PCBs exceeded 50 ppm, as shown on Figure 2 of this addendum. One sample (FLUT-72) contained PCB-1242 at a concentration of 950 ppm. Under all of the alternatives considered, except the No Action alternative, this sample location will be removed and disposed offsite in a TSCA landfill. Confirmation sampling will be completed after sample removal to demonstrate that residual PCB contamination is below 50 ppm. Sampling at the other 5 locations showed the following concentrations, which also exceed 50 ppm: (FLUT-70 (PCB-1248 at 69 ppm), FLUT-78 (PCB-1260 at 78 ppm), FLUT-96 (PCB-1254 at 190 ppm), FLUT-110 (PCB-1242 at 100 ppm) and FLUT-116 (PCB-1248 at 69 ppm). Samples at FLUT-70, FLUT-110 and FLUT-116 are located above the water table. The other two locations (FLUT-78 and FLUT-96) are located at depths near or below the water table.

EPA concludes that material contaminated with PCBs at levels of 50 ppm and greater, and found above the water table, must be excavated and disposed offsite at a TSCA landfill in order for a risk-based disposal to be approved for the Series 2 alternatives. Waste found below the water table that exceeds 50 ppm will not require excavation and disposal. A more impermeable cap will not improve conditions for PCB waste beneath the water table. Attempting to remove the contamination below the water table may mobilize groundwater contamination or result in additional risks to workers or the surrounding community. The dewatering required for excavation beneath the water table would also generate large quantities of waste water that would require treatment and disposal. Therefore, a Subtitle D landfill cap, combined with perimeter leachate extraction to contain groundwater contamination associated with waste beneath the water table, will not pose an unreasonable risk of injury to human health or the environment, and will satisfy the TSCA risk-based disposal requirements. This conclusion is

discussed in a memorandum from the Director of the Land and Chemicals Division that has been placed in the Site administrative record supporting this FS addendum and the proposed plan for the Site.

Attachments: Figure 1
Figure 2



