



Department of Energy

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AUG 10 1999

Mr. James A. Saric, Remedial Project Manager
U.S. Environmental Protection Agency
Region V, SRF-5J
77 West Jackson Boulevard
Chicago, IL 60604-3590

DOE-1019-99

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, OH 45402-2911

Dear Mr. Saric and Mr. Schneider:

**TRANSMITTAL OF RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY AND
OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE DRAFT
INTEGRATED REMEDIAL DESIGN PACKAGE FOR THE AREA 3 LIME SLUDGE PONDS**

Enclosed for your review and approval are responses to the U.S. Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA) comments on the draft Integrated Remedial Design Package (IRDP) for the Area 3 Lime Sludge Ponds transmitted in April 1999. The IRDP will be revised and finalized upon regulatory approval of these responses and actions.

If you have any questions or concerns regarding these responses, please contact Robert Janke at (513) 648-3124.

Sincerely,

Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:R.J. Janke

Enclosure

AUG 10 1999

Mr. James A. Saric
Mr. Tom Schneider

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cc w/enclosure:

G. Jablonowski, USEPA-V, SRF-5J
T. Schneider, OEPA-Dayton (three copies of enclosure)
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M. Schupe, HSI GeoTrans
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cc w/o enclosure:

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**RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL REVIEW COMMENTS ON THE
DRAFT INTEGRATED REMEDIAL DESIGN PACKAGE
FOR THE AREA 3 LIME SLUDGE PONDS,
(REVISION B)**

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

SPECIFIC COMMENTS ON THE DESIGN CRITERIA PACKAGE

- 1) Commenting Organization: U.S. EPA Commentor: Saric
 Section #: 1.2.1.1 Page #: 1-3 Line #: 9 and 13
 Original Specific Comment #: 1
 Comment: Line 9 states that all material with a total concentration exceeding 82 milligrams per kilogram (mg/kg) will be removed, and Line 13 states that a concentration of 50 mg/kg to total uranium will be used to define the excavation limit. The disposition of material containing total uranium concentrations between 50 and 82 mg/kg should be discussed.
- Response: The Final Remediation Level (FRL) for uranium in the Lime Sludge Pond (LSP) area is 82 mg/kg. Based on the ALARA principle, in areas where excavation is necessary to reach FRLs, the excavation depths will be extended by design to reach a concentration of 50 mg/kg. However, all materials that are between the range of 50 and 82 mg/kg may not be excavated, and certification will be performed to meet the uranium FRL criteria. Additionally, areas below the FRL concentration and outside of the FRL-excavation footprint will not be excavated to the 50 mg/kg ALARA limit.
- Action: The above discussion will be incorporated into the revised IRDP, including the Design Criteria Package (DCP) and Implementation Plan.
- 2) Commenting Organization: U.S. EPA Commentor: Saric
 Section #: 1.4 Page #: 1-9 Line #: 18, 20, and 27
 Original Specific Comment #: 2
 Comment: Line 18 includes the acronym AWAO, Line 20 includes AAWWT Facility, and Line 27 includes ASWU Contractor. None of these acronyms is included in the list on pages ii and iii. The list should be revised to include all acronyms used in the design criteria package.
- Response: Noted.
- Action: The list of acronyms will be revised to include all acronyms used throughout the DCP.

SPECIFIC COMMENTS ON THE IMPLEMENTATION PLAN

- 3) Commenting Organization: U.S. EPA
 Section #: 1.4 Page #: 1-6 Commentor: Saric
 Line #: 24 through 28
 Original Specific Comment #: 3
 Comment: The text of this bullet discusses excavation of impacted material. However, the objective is described as both the As low as reasonably achievable (ALARA) level of 50 mg/kg of total uranium and the final remediation level (FRL) of 82 mg/kg of total uranium. The objective should be clarified before excavation begins. If the final objective is the ALARA level rather than the FRL, this approach should be discussed further in Section 2.3 of the implementation plan.
- Response: See response to U.S. EPA Comment No. 1.
- Action: See action for U.S. EPA Comment No. 1.
- 4) Commenting Organization: U.S. EPA
 Table #: 2-2 Page #: 2-11 Commentor: Saric
 Line #: Not applicable (NA)
 Original Specific Comment #: 4
 Comment: This table presents concentration of various contaminants detected in the perched groundwater near the lime sludge ponds. Some of these concentrations, especially those for total uranium, exceed the FRLs for the Great Miami Aquifer (GMA), which underlies the perched groundwater. The implementation plan should include a figure showing the locations of all the wells listed in the table. The text should be revised to (1) provide further discussion of the concentrations exceeding the GMA FRLs and (2) include either a discussion of means of eliminating the contamination source, a reference to a document that provides such a discussion, or a justification for postponing discussion of perched groundwater remediation to a future document.
- Response: Well numbers 1039, 1041, and 1042 are shown on Figure 2-2; well numbers 1934, 1937, and 1940 are shown on Figure 2-4. Wells 1134 and 1210 were located east of the road that runs along the eastern side of the LSPs, an area that does not appear in the figures of Section 2 of the Implementation Plan. These wells are shown in the Remedial Investigative (RI) Report for Operable Unit 2.
- Contaminant concentrations in the perched groundwater are not indicative of contaminant concentrations within the Great Miami Aquifer, and the FRLs applied to the GMA do not apply to the perched groundwater. The Record of Decision for Operable Unit 5 addressed the issue of remediation of perched groundwater, where it was agreed that perched groundwater would be remediated with the surrounding soils during soil excavation and remediation; the source for the groundwater contamination will not be removed until the excavation of Area 4B. Until that time, the contaminated perched groundwater will be collected by the perimeter drain system and transported to the SWRB for subsequent treatment through Phase I AWWT.
- Action: Text will be added to Table 2-2 indicating that wells 1134 and 1210 are not shown on the figures and reference the RI Report for OU2 for their location.

- 5) Commenting Organization: U.S. EPA
 Section #: 3.1.2.3
 Original Specific Comment #: 5
 Comment: The text state that following All excavations will be subject to visual observation by both the contractor and Fluor Daniel Fernald personnel for changes in media and the presence of special materials. Contractor personnel will receive field instruction and assistance in identifying special materials. However, the text does not mention how the coarse grained unit (CGU), which could provide a conduit for contaminated water to enter the GMA, will be identified. The text should be revised to specify the field instructions for identifying the CGU during excavation as well as methods for preventing contaminated water from entering the GMA.
- Response: Similar to the excavation in the Southern Waste Units, the change between lime sludge to soil to the coarse-grain unit (CGU) will be readily visible in the field. FDF personnel will assist in field instructions for the contractor and other field personnel in the identification of the changing media during excavation. When a change in material is encountered, FDF will assess the situation, using design cross-sections as a reference for whether or not the CGU material has been encountered.
- The perched groundwater that is in the vicinity of the LSPs presently flows through the CGU. Based on the cross sections included with the construction drawings for the LSPs, the top of the GMA is approximately ten feet below the bottom of the CGU, and no direct conduit between the CGU and the GMA has been established in the vicinity of the LSPs. Therefore, no additional protective measures are necessary in the design.
- No contamination has been identified in the GMA under the LSP footprint, and this will not be changed by the excavation and remediation of the LSPs.
- Action: The Implementation Plan will be revised to further clarify the visual identification of the CGU during excavation by FDF and contractor personnel.

- 6) Commenting Organization: U.S. EPA
 Section #: 3.1
 Original Specific Comment #: 6
 Comment: The text states that the waste management facility (WMF) will handle both storm water and groundwater potentially contaminated with volatile organic compounds generated from remediation activities in the former production area. The criteria (based on sampling results) that will be used to determine the portion of the water in the WMF that will be subjected to Phase II advanced wastewater treatment instead of Phase I treatment should be provided in the text.
- Response: The Water Management Facility (WMF) will be handling water from the former production area (FPA) excavation during its remediation. The sampling and characterization of that water will be addressed at a later date under the Area 3A/4A IRDP, and therefore is not included in the LSP IRDP.

Any water collected within the WMF prior to the start of remediation activities within Area 3A/4A (i.e., rain water) will be transferred to the SWRB and treated with normal storm water through Phase I AWWT.

Action: No action.

- 7) Commenting Organization: U.S. EPA
Section #: 3.2.2
Original Specific Comment #: 7
- Page #: 11
Line #: 7
- Commentor: Saric
Line #: 7
- Comment: The text states that due to the liners expected service life of approximately 5 years, UV [ultraviolet] degradation should not be a problem. UV degradation of the high-density polyethylene geomembrane liner can occur if the liner is exposed to sunlight for 2 to 4 weeks. Provisions should be made to cover the geomembrane liner with water and to avoid exposing the liner to sunlight for extended periods.
- Response: The liner material specified incorporates the need for UV protection by the inclusion of carbon black in the material. The material will be similar to the geomembrane liner material used in the Southern Waste Units Retention Basins and the site's Stormwater Retention Basins. There is no need for additional provisions to be built into the requirements.
- Action: No action.

RESPONSES TO OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS
ON THE DRAFT INTEGRATED REMEDIAL DESIGN PACKAGE
FOR AREA 3 LIME SLUDGE PONDS
(REVISION B)

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

GENERAL COMMENTS

1) Commenting Organization: OEPA Commentor: OFFO
Section #: Page #: Line #: Code: C
Original Comment #: 1

Comment: The plan should be revised to remove the above WAC area south of the K-65 trench from the construction area. Currently the construction area encompasses this area. All activity should be excluded from this area to prevent the contractor from disturbing above-WAC soils.

Response: This area is designated as a laydown area for the contractor during the excavation. There are no other feasible alternatives to this area that would provide adequate support to the contractor. In order to prevent the disturbance of any above-WAC material present in the soil, a geotextile will be placed on the ground and covered with 6 inches of gravel. This will allow the contractor access to the area and provide a laydown area without the spread of the above-WAC contamination. The gravel and geotextile will be removed at a later date, after completion of Water Management Facility (WMF) operations as part of the final remediation of the area. The geotextile and gravel will be radiologically monitored upon their removal and dispositioned appropriately.

Action: The placement and removal of geotextile and gravel in the contractor support area south of the K-65 trench will be incorporated into the Integrated Remedial Design Package (IRDP).

2) Commenting Organization: OEPA Commentor: OFFO
Section #: Page #: Line #: Code: C
Original Comment #: 2

Comment: The plan should be revised to include additional detail regarding any preliminary dewatering activities. Such activities are mentioned but no details are provided. Early efforts to dewater the sludge would seem beneficial for both excavation and placement activities.

Response: Test pits will be excavated from the Lime Sludge Ponds (LSP) in an effort to determine the effectiveness for dewatering the sludge material. If these pits indicate that trenches may be effective in dewatering the sludge, then a trench will be excavated running west to east along the northern edge of the North LSP and then south along the eastern edge of the two ponds. This phased approach is currently being developed into an advanced work package that will be implemented prior to the excavation contractor performing the actual remediation of the LSPs. See additional details in response to OEPA Comment Nos. 3 and 10.

Action: The scope of the advanced package work, including the excavation of test pits and trench for dewatering purposes, will be incorporated into the IRDP.

3) Commenting Organization: OEPA Commentor: OFFO
 Section #: Page #: Line #: Code: C
 Original Comment #: 3

Comment: This document does not address the issue of how slumping and/or infiltration in the coarse-grained material will be handled or prevented during excavation. Additional detail regarding options that may be employed should be discussed. DOE may want to consider dewatering in the perched zone to a level below the planned excavation limits prior to starting excavation.

Response: As discussed in the response to Comment No. 2, the advanced package work includes the excavation of test pits. These pits will provide information regarding the excavation of the sludge, such as the issue of slumping and infiltration of the coarse-grained unit material during excavation. Based on the dewatering capabilities exhibited by the test pits, a trench may be excavated to connect the test pits and intercept the inflow of perched groundwater from the northeast side of the LSPs in an effort to dewater the sludge prior to excavation. Water collected in the pits and trench will be pumped to the storm sewer system. The lessons learned from this advanced work will be incorporated into the final LSP IRDP and passed along to the excavation contractor.

Action: No action at this time.

SPECIFIC COMMENTS

4) Commenting Organization: OEPA Commentor: OFFO
 Section #: 3.1.1.4 Page #: 3-3 Line #: 5-10 Code: C
 Original Comment #: 4

Comment: DOE should make all reasonable efforts to exclude the chipped material from the lime sludge. Placing unnecessary quantities of Category 4 material in the OSDF is undesirable and should be avoided.

Response: It is DOE's intent to not mix any chipped material with the lime sludge. As the Implementation Plan states, the trees and brush in the area will be cut and radiologically monitored; if the scanning indicates that the trees are not contaminated, they will be removed, hauled to an area outside of the LSPs, and chipped into a non-impacted wood chip stockpile. The only reason that the chipped material would be mixed is if the scanning results indicate that the trees are contaminated and therefore must be disposed of in the On-Site Disposal Facility (OSDF).

Action: No action.

- 5) Commenting Organization: OEPA Commentor: OFFO
 Section #: 3.1.2 Page #: 3-6 Line #: 12-13 Code: C
 Original Comment #: 5
 Comment: The sentence references certification sampling affecting actual excavation depth. It is unclear if the sentence is referencing post WMF operations since certification sampling is not proposed prior to construction of the WMF. Please clarify.
 Response: The subsequent certification sampling and analysis referred to in the text will occur post WMF operation. The LSPs will be excavated to the design depth, then the WMF will be constructed. Upon the removal of the WMF, sampling for the precertification and certification activities will take place. Any additional contamination will be identified and remediated following the operation of the WMF.
 Action: The text will be revised accordingly for clarification.
- 6) Commenting Organization: OEPA Commentor: OFFO
 Section #: 3.2.2 & 3.2.3 Page #: 3-11 Line #: 5-6 & 12-13 Code: C
 Original Comment #: 6
 Comment: There appears to be confusion in these two sentences regarding the discharge point for the perimeter drain lift station. The document should be revised to clarify if the perimeter drain lift station does directly to the storm drain system or to the WMF lift station.
 Response: The discharge from the perimeter drain lift station will be directed to the site storm drain system [the Stormwater Retention Basin (SWRB)].
 Action: The text in Section 3.2.3 will be revised to clarify that the perimeter drain lift station will convey flow to the storm drain system for discharge to the SWRB.
- 7) Commenting Organization: OEPA Commentor: OFFO
 Section #: 3.2.4 Page #: 3-11 Line #: 17-18 Code: C
 Original Comment #: 7
 Comment: The Implementation Plan and other documentation fail to clarify why the WMF would only be used during the construction season. It would seem appropriate to continue to pump water from the excavation areas even if construction was not on-going. This would limit infiltration, contaminant migration, and improve working conditions upon startup. Specifically excluding winter operation appears to be too limiting. DOE should reconsider designing the system to handle winter operation.
 Response: The WMF is intended to be an alternate destination for water from the former production area excavations (Area 3A/4A) if additional capacity is required. Any water collected within the former production area excavations can be pumped to either the storm sewer system or the Bio-Surge Lagoon without the utilization of the WMF, including during winter months. The use of these two existing systems without operating the WMF during winter operations will prevent the necessity for heat tracing or wrapping of the lines associated with the WMF, which is a substantial cost savings.

The only portion of the WMF which will remain in operation throughout the year will be the perimeter drain system collecting the perched groundwater flowing under the WMF. The perched groundwater collected in the perimeter drain will be directed to the SWRB through the site storm sewer system.

Action: No action.

- 8) Commenting Organization: OEPA Commentor: OFFO
 Section #: 4.2.5 Page #: 4-4 Line #: 5 Code: E
 Original Comment #: 8
 Comment: The sentence appears to be a typo. Please revise.

Response: Noted; the referenced sentence should be included in the discussion of Section 4.3.

Action: The referenced sentence will be removed from Section 4.2.5 and incorporated into Section 4.3.

- 9) Commenting Organization: OEPA Commentor: OFFO
 Section #: 4.4 Page #: 4-5 Line #: Code: C
 Original Comment #: 9
 Comment: Considering the WMF will only have a single liner and may contain a number of contaminants not currently present in the area, additional project specific monitoring of the perched groundwater zone should be conducted to ensure any impact from the WMF can be detected. The document should be revised to include on-going project specific monitoring of the perched ground water in the vicinity of the WMF.

Response: Project specific monitoring of the perched groundwater beneath the LSP is not necessary. As stated in Section 4.4 of the Implementation Plan, sitewide monitoring of groundwater will be performed by the ongoing monitoring program under the Integrated Environmental Monitoring (IEMP). There are two monitoring wells south of the LSPs, well numbers 1042 and 2042, which will remain and be protected during the excavation of the LSPs and construction and operation of the WMF. These wells will be utilized to monitor any impact the remediation activities may have on the perched groundwater in the area.

Action: No action.

- 10) Commenting Organization: OEPA Commentor: OFFO
 Section #: Table 6-1 Page #: Line #: Code: C
 Original Comment #: 10
 Comment: In accordance with the IMPP, a category 5 material specific placement plan will need to be developed for disposal of the lime sludge into the OSDF. The placement plan should be submitted with the revised IRDP.

Response: Efforts are currently underway to examine the possibility of reclassifying the sludge as something other than a category 5 material under the IMPP. Different soil-to-sludge

mixing ratios will be tested by GeoSyntec, as well as other dewatering and/or drying methods, in an effort to allow the placement of the LSP material as a category 1 material.

If a reclassification is determined to not be feasible, then a placement plan will be developed and submitted to the agencies prior to excavation of the LSPs. Material from the test pits and drainage ditch will be excavated and spread within the area until excavation of the LSPs.

Action: No action at this time.

11) Commenting Organization: OEPA Commentor: OFFO
Section #: Table 6-1 Page #: Line #: Code: C
Original Comment #: 11

Comment: Again, Ohio EPA recommends DOE take measures to assure the 300 yd³ of Cat 4 material is not generated for OSDF disposal.

Response: See response for OEPA Comment No. 4. The table indicates the SWU non-impacted wood chip stockpile as the disposition site.

Action: No action.

Design Criteria Package

12) Commenting Organization: OEPA Commentor: OFFO
Section #: 1.2.2.3 Page #: 1-6 Line #: 17-18 Code: C
Original Comment #: 12

Comment: This sentence states that the water will be classified based upon the origin of excavation at the time. Additional detail should be provided on how the water will be sampled and the decision will be made as to what classification the water is.

Response: See response to U.S. EPA Comment No. 6.

Action: No action.

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