



Department of Energy

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Fernald Closure Project
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AUG 18 2005

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United States Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0302-05

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

Mr. Bill Kurey
United States Fish & Wildlife Service, Suite H
6950 American Parkway
Reynoldsburg, OH 43068

Dear Mr. Saric, Mr. Schneider, and Mr. Kurey:

**TRANSMITTAL OF RESPONSES TO UNITED STATES AND OHIO
ENVIRONMENTAL PROTECTION AGENCIES COMMENTS ON THE DRAFT FINAL
COMPREHENSIVE LEGACY MANAGEMENT AND INSTITUTIONAL CONTROLS
PLAN, APRIL 2005**

- References:
- 1) Letter, J. Saric to W. Taylor, "U.S. EPA Comments on the Draft Comprehensive Legacy Management and Institutional Controls Plan," dated June 14, 2005
 - 2) Letter, T. Schneider to W. Taylor, "OEPA Comments on the Draft Comprehensive Legacy Management and Institutional Controls Plan," dated June 20 and 21, 2005
 - 3) Letter, W. Taylor to J. Saric and T. Schneider, "Request Extension on Submittal of U.S. EPA and OEPA Response to Comments Document on April 15, 2005 Comprehensive Legacy Management and Institutional Controls Plan," dated July 20, 2005

Mr. James A. Saric
Mr. Tom Schneider
Mr. Bill Kurey

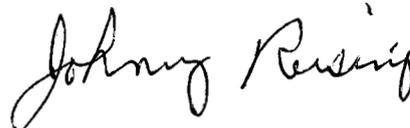
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DOE-0302-05

Enclosed for your review and subsequent transmittal are the responses to United States Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA) comments on the Draft Comprehensive Legacy Management and Institutional Controls Plan (LMICP). The revised plan will be submitted by September 28, 2005. The revised submittal will include the Legacy Management Plan (Volume I), the Institutional Controls Plan (Volume II), the Integrated Environmental Monitoring Plan (Attachment D), and the Community Involvement Plan (Attachment E). The remainder of the support documents, the Operations and Maintenance Master Plan for Aquifer Restoration and Wastewater Treatment (Attachment A), the Post-Closure Care and Inspection Plan (Attachment B), and the Groundwater/Leak Detection and Leachate Monitoring Plan (Attachment C), will be revised and submitted with the final submittal of the LMICP in January 2006.

If you have any questions or require any additional information, please contact Johnny Reising at (513) 648-3139.

Sincerely,



for William J. Taylor
Director

FCP:Reising

Mr. James A. Saric
Mr. Tom Schneider
Mr. Bill Kurey

Enclosure: As Stated

cc w/ enclosure:

- M. Downing, DOE-HQ
- B. Kain, DOE-EMCBC
- J. Reising, DOE-OH/FCP
- G. Stegner, DOE-OH/FCP
- J. Craig, DOE-LM
- C. Jacobson, Stoller
- M. Lutz, Stoller
- J. Powell, DOE-LM
- F. Bell, ATSDR
- D. Bidwell, FCAB
- G. Jablonowski, USEPA-V, SR-6J
- D. Sarno, FCAB
- M. Shupe, HSI GeoTrans
- R. Vandegrift, ODH
- AR Coordinator, Fluor Fernald, Inc./MS78

cc w/o enclosure:

- K. Alkema, Fluor Fernald, Inc., MS01
- H. Bilson, Fluor Fernald, Inc., MS01
- J. Chiou, Fluor Fernald, Inc., MS88
- B. Hertel, Fluor Fernald, Inc., MS12
- F. Johnston, Fluor Fernald, Inc., M12
- L. McHenry, Fluor Fernald, Inc., MS90
- D. Sizemore, Fluor Fernald, Inc., MS01
- M. Sucher, Fluor Fernald, Inc., MS99
- C. Tabor, Fluor Fernald, Inc., MS12
- S. Walpole, Fluor Fernald, Inc., MS76
- E. Woods, Fluor Fernald, Inc., MS90
- D. Powell, Fluor Fernald, Inc., MS64
- P. Spotts, Fluor Fernald, Inc., MS52-3
- C. Tabor, Fluor Fernald, Inc., MS12

**RESPONSES TO
U.S. EPA AND OEPA TECHNICAL REVIEW COMMENTS ON
THE REVISED COMPREHENSIVE LEGACY MANAGEMENT AND
INSTITUTIONAL CONTROLS PLAN
VOLUMES I AND II
DRAFT FINAL, APRIL 2005**

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**

AUGUST 2005

U.S. DEPARTMENT OF ENERGY

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of the LMICP, as it contains information necessary to review, before the LMICP can be approved. Although U.S. EPA has reviewed and approved previous versions of the IEMP, the document needs to be submitted with the LMICP.

Response: The Integrated Environmental Monitoring Plan (IEMP), Revision 4, which covers CY2005 and CY2006 monitoring/reporting, was provided to both U.S. EPA and OEPA on October 28, 2004. There is one comment that is currently being resolved with OEPA. The response was sent to both U.S. EPA and OEPA on June 15, 2005. It was intended that the IEMP, Revision 4, would be sent after comment resolution was complete, as indicated in the April 14, 2005 transmittal letter for the revised LMICP: "A tab or placeholder is included in the binder and the IEMP will be distributed for inclusion with the LMICP upon approval of the comment response."

Action: The IEMP, Revision 4, will be included in the September 2005 submittal of the LMICP.

59. Commenting Organization: OEPA Commentor: OFFO
 Section #: 1.1 Page #: 4 Line #: NA Code: C
 General Comment #: 32
 Comment: The section states that the IEMP is attached however no IEMP was included in the submittal provided to Ohio EPA. Inclusion of this attachment is essential to being able to provide a thorough review of the document.
 Response: Refer to Responses #27 and #49.
 Action: Refer to Action #27.
60. Commenting Organization: OEPA Commentor: DSW
 Section #: 1.1 Page #: 4 Line #: NA Code: E
 General Comment #: 33
 Comment: Revise the first "be" from the second to last sentence in this section to "being."
 Response: DOE agrees with the comment.
 Action: Text will be revised as suggested.
61. Commenting Organization: OEPA Commentor: OFFO
 Section #: 1.4 Page #: 6 Line #: NA Code: C
 General Comment #: 34
 Comment: This section on "Types of Institutional Controls" appears to be leaving out a couple different kinds of institutional controls that apply to Fernald and the OSDF. According to DOE's Draft Guide on the Use of Institutional Controls, the first bulleted item in this section should also include such controls as structural, nonstructural, active, and passive.
 Response: In the LMICP, institutional controls were categorized in a manner that would allow them to be discussed more easily in the document. The institutional controls at Fernald do include active controls (monitoring, sampling, inspections and maintenance), structural or engineered controls (OSDF, fences, gates), and passive (signs, postings, public records and archives, government ownership and regulations on land use).
 Action: No action required.
62. Commenting Organization: OEPA Commentor: OFFO
 Section #: 1.5 Page #: 6 Line #: NA Code: C
 General Comment #: 35
 Comment: In order to comply with the OU5 ROD and Ohio Revised Code 5301.80, et seq., Ohio EPA believes the development of an environmental covenant to address the site as a whole and the OSDF in particular is necessary. This covenant would be recognized by the officials responsible for the recordation of real property documents in Ohio and will be enforceable by DOE and the State of Ohio. The covenant would address land use restrictions required in the OU2 and OU5 RODs as well as the LMICP. Additionally, this covenant would address the property use restriction ARARs for the OSDF listed in Attachment B, Table 2-1.
 Response: A covenant is being proposed as part of the NRD settlement.
 Action: The issue will be revisited depending on the outcome of the settlement negotiations.
63. Commenting Organization: OEPA Commentor: DSW
 Section #: Tables 2-1 and 2-2 Page #: 7-8 Line #: NA Code: C
 General Comment #: 36
 Comment: Here and elsewhere in this document, the indefinite term "may" is used (e.g., "an MUEF may provide information," and "access may need to be limited"). In an enforceable CERCLA document, indefinite terms are inappropriate and should be replaced by definite terms (e.g., "there will be routine patrols").
 Response: Refer to Response #50.
 Action: Refer to Action #50.

Response: DOE agrees with the comment. However, wastewater treatment effluent is not currently being used as re-injection water. If it is decided that this water would be used for re-injection, then the OMMP would be updated to reflect that.

Action: No action required.

COMMENTS: COMPREHENSIVE LEGACY MANAGEMENT AND INSTITUTIONAL CONTROLS PLAN, VOLUME II, ATTACHMENT C – GROUNDWATER/LEAK DETECTION AND LEACHATE MONITORING PLAN, ON-SITE DISPOSAL FACILITY, APRIL 2005, 20100-PL-009, FINAL, REVISION 1

135. Commenting Organization: OEPA
Section #: 2.4
Original Comment #: 108

Page #: 2-6

Commentor: GeoTrans, Inc.
Line #: 24

Code: C

Comment: The perched groundwater contamination within and near the OSDF footprint is very low compared to the average total uranium leachate concentrations from the facility. Only two of the 22 perched monitoring wells sampled in the OSDF pre-design investigation tested above the FRL for total uranium. The area of concern appears to be restricted to the western third of Cells 7 and 8. The average total uranium concentration for the remaining 20 wells is 3.8 µg/L compared to a background mean of 0.54 µg/L. To date, the average total uranium concentration in Cells 1, 2, and 3 leachate is 62.6, 39.7, and 35.7, respectively. Given the 10-fold differential that exists between leachate and ambient perched total uranium concentrations, pre-existing contamination at the OSDF may only be truly significant in the interpretation of the leak detection data from Cells 7 and 8.

Response: Pre-existing contamination refers to concentrations above Fernald site background concentrations and is referenced with respect to other constituents in addition to total uranium. DOE agrees that uranium concentrations in the perched water during the pre-design study show above FRL exceedances (30 micrograms per liter [µg/L]) in the area of Cells 7 and 8. The following are some examples of some total uranium concentrations reported in the area of Cells 1 through 3 during the pre-design study:

- Lysimeter 11482 (Cell 1 area) had maximum total uranium concentrations around 20 µg/L (Table 2.5 of pre-design study)
- Perched water well 11493 (Cell 3 area) had maximum total uranium concentrations around 10 µg/L (Table 2.4 of pre-design study)

Action: No action required.

136. Commenting Organization: OEPA
Section #: 3.2.1.2
Original Comment #: 109

Page #: 3-4

Commentor: GeoTrans, Inc.
Line #: 26

Code: C

Comment: DOE states that the preferred method of evaluation for the OSDF groundwater/leak detection monitoring data is an inter-well trend analysis following the establishment of background (baseline) conditions. Intra-well trend testing without a comparison to a statistically based limit determined from background (baseline) concentrations is inconsistent with regulatory guidance.

Response: As stated in Section 3.2.1.2, an intra-well (within well) approach is the most viable approach for existing groundwater conditions. Ideally, an inter-well (between wells) approach such as an upgradient versus downgradient approach would be the preferred analysis method. But, as stated in the text, "Transient flow conditions within the aquifer, as well as the existence and anticipated fluctuation of contaminant concentrations at levels below the final remediation levels, discourage the use of a statistical comparison of upgradient and downgradient water quality as a reliable indicator of a release from the OSDF." The use of control charts is based on the attempt to establish a baseline concentration level on a well-by-well basis. It is impossible at this stage to obtain true background levels at a well since the wells were not in existence before the OSDF was built. In normal groundwater situations where there is a definite upgradient (flow prior to a potential contamination source) and a downgradient (flow after a potential contamination source)

identified in the monitoring wells. When the background concentrations fluctuate significantly, leak detection is compromised due to a high chance of a false-positive. In either case the constituent cannot be considered a reliable indicator for leak detection purposes.”

140. Commenting Organization: OEPA

Commentor: GeoTrans, Inc.

Section #: 4.4.3.2

Page #: 4-27

Line #: 13

Code: C

Original Comment #: 113

Comment: To support the statement that most of the Appendix I constituents have already been detected in perched groundwater (and therefore are pre-existing contamination that might compromise leak detection), a useful addition to this document would be a summary of Appendix I detections from the OSDF footprint that were recorded prior to waste placement. For example, a table showing the number of samples, number of detections, maximum detection, location of maximum, minimum concentration, and average concentration could be provided in an appendix. Such a table would be beneficial because the discussion regarding the potential addition of a parameter will ultimately begin with a determination of whether the parameter was ever detected in perched groundwater prior to waste placement, and, if so, where and at what concentration.

Response: The statement regarding Appendix I constituents being detected in the perched groundwater refers to the entire Fernald site area. Extensive Remedial Investigation/Feasibility Study (RI/FS) data and additionally pre-design OSDF data were collected and reported in the Operable Unit 5 (OU5) RI/FS and pre-design documents. As indicated in Response #141, OSDF LCS concentrations (Appendix I constituents) are compared to the Fernald site perched water concentrations as defined by the OU5 RI. Please refer to Table 4-45 of the OU5 RI.

The comment also indicates that, “addition of a parameter will ultimately begin with a determination of whether the parameter was ever detected in perched groundwater prior to waste placement.” The determination of adding a constituent should also involve whether the constituent being evaluated is/was tied to a Fernald source and whether the material from the source area were disposed of in the OSDF. As indicated on page 4-15 of the OSDF GWLMP, “It is important to point out that the chemical constituents listed in Appendix I of OAC 3745-27-10 are typical contaminants found in sanitary landfills. Appendix I does not include any radionuclides, which are the primary contaminants of concern at the Fernald site.” Fernald specifically tailored a monitoring list to include good indicators of potential leaks from the OSDF. Additionally, monitoring of Appendix I constituents is performed annually in each cell’s LCS.

Action: No action required.

141. Commenting Organization: OEPA

Commentor: GeoTrans, Inc.

Section #: 4.4.3.2

Page #: 4-27

Line #: 23

Code: C

Original Comment #: 114

Comment: DOE indicates that the addition of a new parameter to the indicator parameter list will occur if its OSDF LCS concentrations are considered “much higher” than the concentrations in perched groundwater or soil beneath the facility. The determination of what is “much higher” is a judgment call. DOE should propose a quantitative limit that would trigger the process for consideration of a parameter for addition the LCS indicator monitoring list.

Response: In the annual site environmental reports, it has been identified that OSDF LCS concentrations are compared to the Fernald site perched water concentrations as defined by the OU5 RI. As an example it was identified in the 2004 Site Environmental Report that the Annual LCS sampling for OAC 3745-27-10 Appendix I parameters indicated that only the iron concentration (101 milligrams per liter [mg/L]) was above range of Fernald site perched water concentrations as defined in the RI for Operable Unit 5 (DOE 1995). Note: Common ion monitoring was initiated in May 2005 per an OEPA request.

DOE will modify text of OSDF GWLMP to indicate that a constituent will be added to the site-specific leak detection indicator parameter list when concentrations observed in the annual LCS sample are higher than the OU5 RI perched water concentrations.

Action: Text will be modified as noted in the response.

142. Commenting Organization: OEPA
Section #: 4.4.3.2
Original Comment #: 115

Page #: 4-28

Commentor: GeoTrans, Inc.
Line #: 14

Code: C

Comment: The three confirmatory sample requirement implies that a LDS parameter will need to be detected in four straight annual samples before it will be considered for addition as a supplemental indicator parameter. Since the annual 16-parameter LDS indicator parameter list (Table 4-5) is already based on a careful assessment of what the likely parameters of concern are, if a new parameter from this list is detected in an annual sample, it should be added immediately to the quarterly LDS supplemental parameter list for the next three quarters. Decisions of whether to discontinue or continue quarterly monitoring for that parameter in the LDS or to expand quarterly monitoring for it to the next lower horizon would then be based on these additional three quarters for that parameter.

Response: The confirmatory sampling is conducted on a quarterly frequency. Text will be updated to: "If a constituent is detected in either the LCS or LDS, then confirmatory sampling for that constituent will consist of three quarterly consecutive sample events from the horizon in which it was detected... If the constituent is detected in the next lower horizon, then confirmatory sampling will again be conducted for three quarterly consecutive events."

Action: Text will be modified as noted in the response.

REFERENCES

Gilbert, Richard, O., 1987, "Statistical Methods for Environmental Pollution Monitoring," Van Nostrand Reinhold, New York.

U.S. Department of Energy (DOE), "Remedial Investigation Report for Operable Unit 5," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH, March.

U.S. Environmental Protection Agency (U.S. EPA), 1998, "Guidance for Data Quality Assessment, Practical Methods for Data Analysis, U.S. EPA QA/G-9, QA97 Version," EPA/600/R-96/084, Office of Research and Development, Washington, D.C., January.

U.S. Environmental Protection Agency (U.S. EPA), 1996, "Report on the 1995 Workshop on Geosynthetic Clay Liners," EPA/600/R-96/149, Washington, D.C., June.