

7270



Department of Energy  
Office of Legacy Management

December 30, 2010

Mr. Timothy Fischer  
U.S. Environmental Protection Agency  
Region V-SRF-6J  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590

Mr. Thomas Schneider, Project Manager  
Ohio Environmental Protection Agency  
Southwest District Office  
401 East Fifth Street  
Dayton, Ohio 45402-2911

Mr. David Devault  
United Fish and Wildlife Services  
Regional Office – Federal Building  
Fort Snelling, Minnesota 55111

Dear Mr. Fischer, Mr. Schneider, and Mr. Devault:

**Subject: Transmittal of Responses to Ohio Environmental Protection Agency Comments on Comprehensive Legacy Management and Institutional Controls Plan, Revision 4, Draft Change Pages**

References: Letter, T. Schneider to A. Kleinrath, "Re: Comments - Comprehensive Legacy Management and Institutional Controls Plan, Volumes I and II, 2010," dated December 2, 2010

This letter transmits the Responses to Ohio Environmental Protection Agency (OEPA) Comments on draft change pages to the Comprehensive Legacy Management and Institutional Controls Plan (LMICP), Revision 4 (Reference 1) to the United States Environmental Protection Agency (EPA) and OEPA.

Because there are no significant programmatic changes to the LMICP, the Department of Energy proposes, with your concurrence, to begin performing work in January 2011 under the LMICP

2597 B 3/4 Road, Grand Junction, CO 81503	<input type="checkbox"/>	99 Research Park Road, Morgantown, WV 26505
1000 Independence Ave., S.W., Washington, DC 20585	<input type="checkbox"/>	11025 Dover St., Suite 1000, Westminster, CO 80021
10995 Hamilton-Cleves Highway, Harrison, OH 45030	<input type="checkbox"/>	955 Mound Road, Miamisburg, OH 45342
232 Energy Way, N. Las Vegas, NV 89030	<input type="checkbox"/>	

REPLY TO: Harrison Office

Mr. Timothy Fischer  
Mr. Thomas Schneider  
Mr. Dave Devault  
Page 2

Revision 4 and the draft change pages until such time final approval of the LMICP change pages is obtained. Please email me your concurrence as soon as possible.

If you have any questions regarding this matter, please contact me at (513) 648-3166.

Sincerely,



Art Kleinrath  
Fernald Preserve Manager  
DOE-LM-20.1

Enclosure

cc w/enclosures:

M. Cullerton, Tetra Tech  
S. Helmer, ODH  
T. Schneider, OEPA (3 copies of enclosure)  
M. Shupe, HSI GeoTrans  
Project File (Thru W. Sumner)  
Administrative Records (Thru W. Sumner)

cc w/o enclosures:

J. Reising, DOE  
K. Broberg, Stoller  
D. Gail, Stoller  
B. Hertel, Stoller  
J. Homer, Stoller  
F. Johnston, Stoller  
G. Lupton, Stoller  
K. Voisard, Stoller  
S. Walpole, Stoller  
C. White, Stoller

**Response to Ohio Environmental Protection Agency Comments on the  
Draft Change Pages to the 2010 Comprehensive Legacy Management and  
Institutional Controls Plan, Revision 4**

**Volume II**

1. Commenting Organization: Ohio EPA

Section #: General Comment Pg #: na Line #: na

Comment: The consent decree and environmental covenants filed in Hamilton and Butler counties between DOE and Ohio EPA need to be included as part of the institutional controls. The consent decree and covenants specifically reference the LMICP and certain requirements as follows:

5. A. Land Activity and Use Limitations. Pursuant to the EPA Superfund Record of Decision: Feed Materials Production Center (USDOE), EPA ID: OH6890008976, OU5, Fernald, OH, dated January 31, 1996, the Property shall not be used for any residential or agricultural purposes, and shall only be used in a manner consistent with the Natural Resource Restoration Plan, Fernald Preserve, Fernald, Ohio, U.S. Department of energy, Fernald Area Office, 212E-PL- 003, dated June, 2008, Section 2.1.1 of Volume II of the Comprehensive Legacy Management and Institutional Controls Plan, Fernald Closure Project, Fernald, Ohio dated May 2008, and the EPA Superfund Record of Decision: Feed Materials Production Center (USDOE), EPA ID: 6890008976, OU5, Fernald, OH dated January 31, 1996.

5. B. Groundwater Activity and Use Limitations. Pursuant to the EPA Superfund Record of Decision: Feed Materials Production Center (USDOE), EPA ID: OH6890008976, OU5, Fernald, OH, dated January 31, 1996, the groundwater underlying all or any portion of the Property shall not be withdrawn or used as a drinking water supply.

*The forgoing documents shall be publically available in the Fernald Public Environmental Information Center. [emphasis added]*

**and**

9. Compliance Reporting. The Comprehensive Legacy Management and Institutional Controls Plan requires the Owner to submit to Ohio EPA on a quarterly basis a site inspection report, verifying that the activity and use limitations remain in place and are being complied with.

The consent decree clearly identifies the inclusion of the requirements of the environmental covenant as stated below:

Institutional controls for the site are outlined in a separate document, the Comprehensive Legacy Management and Institutional Control Plan (LMICP) Rev. 2 Final May 2008, and in an Environmental Covenant with OEPA.

### 3.1.9 Institutional Controls

Institutional controls are required under the OU5 Record of Decision and are further defined in the LMICP and in the Environmental Covenant.

Response: Institutional controls for the Fernald Preserve are defined in the Operable Unit (OU) 2 and OU 5 Records of Decision (ROD), and described in Volume II of the Legacy Management and Institutional Controls Plan (LMICP). The Consent Decree, which includes the Natural Resource Restoration Plan and the Environmental Covenant, does not specify any institutional controls that are not already identified in the OU5 ROD and the LMICP. The Consent Decree references the OU5 ROD and LMICP. Therefore, referencing the Consent Decree in Volume II of the LMICP adds no additional value to the document and doing so leads to a circular reference.

Action: None

### 2. Commenting Organization: Ohio EPA

Section #: 2.1.1

Pg #: 2-2

Line #: na

Comment: The last sentence in this section states that land use restrictions may be modified or terminated in consultation with USEPA and Ohio EPA. Major land use restrictions may be modified or terminated only with the approval of EPA and Ohio EPA. Please modify this last sentence to include that approval is necessary. Suggested text: "Land use changes that substantially alter the parameters of the Interim Residual Risk Assessment Report, Rev 1 (DOE 2007), the Environmental Covenants and/or the RODS need to be approved by USEPA and Ohio EPA."

Response: Agreed with a slight modification as described in the action below.

Action: The sentence "Land use restrictions may be modified or terminated in consultation with EPA and OEPA" will be replaced with "Land use restriction changes that substantially alter the Environmental Covenants and/or the RODS need to be approved by Ohio EPA and EPA respectively."

### 3. Commenting Organization: Ohio EPA

Section: 3.1.1

Pg#: 3-1

Line #: Red & blue strikeout on change pages

Comment: Ohio EPA was not formally informed of DOE's decision to change the inspection time frame on the active outfall line soil cover. DOE's choice to reduce inspections on the 30 inch soil cover from annually to every five years is not acceptable to Ohio EPA. In addition, this inspection point is located in a farmer's field which is continually cultivated and the active line is only covered with 30 inches of soil. The decision between DOE and the Agencies to inspect the outfall line's cover was made at the inception of the LMIC. Therefore, the soil cover must be inspected on an annual basis unless all parties agree to reduce the inspections.

Response: The inspections will continue on an annual basis per OEPA preference.

Action: As stated in the response. DOE will work with the agencies on any future changes in inspection frequency.

4. Commenting Organization: Ohio EPA

Section #: 5.2.3

Pg #: 5-5

Line #: na

Comment: Reinsert the deleted text until the hard copy Administrative Record (AR) issue is resolved. USEPA is requiring a written proposal from DOE before the paper AR is removed from the Fernald community. In an email from USEPA to DOE dated 10/13/10, Section 113(k) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is referenced. It is necessary that proper paper documentation be maintained in the Fernald community unless a written proposal is approved.

Additionally, an inspector general audit report released in September 2010 found that DOE has failed to ensure that its electronic records are properly stored and organized.

Response: Agreed.

Action: As stated in the comment.

**Attachment C: Groundwater Leak Detection/Leachate Monitoring Plan**

5. Commenting Organization: Ohio EPA

Section #: 3.2.1.2

Pg #: 3-4

Line #: na

Comment: Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (EPA 530-R-09-007), March 2009, "Unified Guidance" has a number of statistical methods and detection monitoring program design suggestions that may offer a better approach for evaluating the water quality measurements at Fernald. DOE, Ohio EPA, and USEPA need to consider alternate methods to evaluate water quality data due to the inconsistent measurements collected to date.

Response: Statistical methods currently being used are based on two earlier EPA guidance documents; 1) EPA Interim Final guidance (1989) and EPA Addendum to Interim Final Guidance (1992). The newly issued Unified Guidance (March 2009) now supercedes these two earlier guidance documents. DOE is already reviewing the new Unified Guidance document. Many of the statistical methods currently used for analysis of OSDF data (Dixon, Rossner, Shapiro-Wilk, Rank von Neumann, Mann Kendall) are still recommended in the new guidance document. DOE will work with EPA and Ohio EPA in the selection of any new statistical test methods.

Action: As stated in the response.

6. Commenting Organization: Ohio EPA

Section #: 3.2.1.3

Pg #: 3-5

Line #: na

Comment: Unified Guidance does not restrict parameters based on a fixed percent of non-detect data. Instead, it may be beneficial to use nonparametric methods to assess monitoring parameters with many non-detects.

Response: Comment acknowledged.

DOE will assess tests in the unified guidance and report findings to the EPA and OEPA as soon as they are available. As stated in response to OEPA Comment 5, DOE will work with EPA and Ohio EPA in the selection of any new statistical test methods for the analysis of OSDF data sets.

Action: As stated in the response.

7. Commenting Organization: Ohio EPA

Section #: 3.2.1.3

Pg #: 3-6

Line #: na

Comment: Some of the reasons for inconsistent water quality data are listed in the first paragraph of this page. DOE should consider modeling these assertions to see if they can be supported.

Response: The main assertion is supported with data from site specific leach tests; therefore, DOE does not consider additional modeling necessary. As reported in Section 2.4 of the GWLMP, OU5 leaching coefficients for contaminated soil have been used to calculate the range of expected groundwater uranium concentrations in below-FRL soil. Results are provided in Table 2-1 of the GWLMP.

Action: None

8. Commenting Organization: Ohio EPA

Section #: 3.2.1.3

Pg #: 3-7

Line #: na

Comment: The first sentence on this page change "2010" to "2011"

Response: Agree

Action: This change will be made in the final change pages for the LMICP following agency concurrence with comment responses.

9. Commenting Organization: Ohio EPA

Section #: 3.2.1.4

Pg #: 3-7

Line #: na

Comment: Since it appears that the water quality data is transient and difficult to predict thus far. Sampling frequency and statistical methods should be discussed with Ohio EPA and USEPA annually. The March 2009, Unified Guidance, may have a better approach to help in the understanding of the water quality data.

Response: This comment is similar to Comment 5. Please see response to Comment 5. The annual SER should provide the avenue for the annual discussions that OEPA recommends.

Action: As stated in response.

10. Commenting Organization: Ohio EPA

Section #: 3.2.2

Pg #: 3-8

Line #: na

Comment: The statistical screening process for alternate parameters should be reviewed and discussed with the regulators taking into consideration the March 2009, Unified Guidance.

Response: DOE is currently evaluating the new Unified Guidance document and will recommend adjusting the parameter selection process as warranted in consultation with EPA and OEPA.

Action: As stated in the response.

11. Commenting Organization: Ohio EPA

Section #: 4.3.2.1

Pg #: 4-6

Line #: na

Comment: Second sentence should read, "From there, the leachate collected is periodically; and, after each sampling event, pumped to the CAWWT back wash basin ..." [add underlined text above]

Response: Disagree. This section is referring to the collective volume of leachate from the entire OSDF that is pumped to the CAWWT backwash basin from the permanent lift station on the south end of the OSDF. It is pumped from the lift station a couple of times per week.

Action: None

12. Commenting Organization: Ohio EPA

Section #: 4.3.4.2

Pg #: 4-7

Line #: na

Comment: This section indicates that modeling was performed for post remediation conditions of groundwater flow. What direction is groundwater flow during remediation, i.e., now?

Response: Groundwater flow direction is determined quarterly and reported annually in the SER. Groundwater flow was roughly northeast to southwest during 2009.

Action: None

13. Commenting Organization: Ohio EPA

Section #: 4.5

Pg #: 4-17

Line #: na

Comment: Ohio EPA maintains that a leak may be detected without a corresponding action leak rate and that water quality data is the regulatory driver associated with leak detection in Ohio.

Response: Comment acknowledged. DOE understands that water quality is a consideration in assessing OSDF performance but using water quality data alone for determining a leak from the OSDF is problematic and could result in unfortunate and costly mistakes. Existing water quality and soil conditions beneath the OSDF complicate the interpretation of water quality data on a stand-a-lone basis. Engineered flow criteria within the facility (e.g., "action leakage rate" and the more conservative "initial response leakage rate") provide decision makers with additional information as to the probable connection between facility performance and water quality changes beneath the facility.

Action: None

14. Commenting Organization: Ohio EPA

Section #: 4.5

Pg #: 4-17

Line #: na

Comment: Ohio EPA recommends that DOE consider trilinear plots for assessing water quality. This suggestion is consistent with reporting requirements for landfills throughout Ohio and is a good tool for visualizing changes or lack of changes in water chemistry.

Response: Over the years, DOE has agreed to use a vast array of tools to visualize and document changes or lack of changes in water chemistry within and below the OSDF. DOE considers many of these tools to be above and beyond what is required by the OAC. There already exists redundancy in the array of tools used in the analysis of the OSDF program. DOE reminds OEPA that the data is available for OEPA to conduct any additional statistical methods they desire at their discretion.

As discussed in response to Comment 16, DOE will work with OEPA to see how the new EPA Unified Guidance document can be used to improve the water quality monitoring program.

Action: As stated in the response.

**Attachment C, Appendix B**

15. Commenting Organization: Ohio EPA

Section #: 2.0

Pg #: App B, pg. 3

Line #: na

Comment: Detection limits for each analyte needs to be reviewed. Detection limits set at the FRL may not be adequate for leak detection purposes.

Response: Detection limits are adequate for leak detection purposes. Most detection limits are well below the FRL, although some detection limits are only slightly below the FRL. Analytical methods are frequently reviewed to achieve lower detection limits.

Action: None

16. Commenting Organization: Ohio EPA

Section #: 2.1

Pg #: App B, pg. 3

Line #: na

Comment: The sampling strategy described in this section needs to be reviewed and updated using Universal Guidance as a guide. Ohio EPA looks forward to discussing a path forward for attempting to better evaluate water quality data.

Response: Comment acknowledged.

Action: DOE will work with EPA and OEPA to discuss a path forward for evaluating water quality data.

17. Commenting Organization: Ohio EPA

Section #: Table 1

Pg #: 4-5

Line #: na

Comment: What is the basis for the "Priority" for the analytes? A discussion of how the "priority" was determined is warranted.

Response: The prioritization has evolved over the last 13 years. It is currently based upon uranium being the most important analyte. After that volatility is, for the most part, what drives the priority. From the inception of the sampling at the OSDF, there have only been two occasions where the prioritization list has been needed: one HTW sampling event in April 2004 and one HTW sampling event in February 2008.

Action: The existing footnote on Table 1 will be revised to include, "The prioritization is based upon uranium being the most important analyte. After that the prioritization is based upon sample volatilization."

18. Commenting Organization: Ohio EPA

Section #: 2.4

Pg #: 12

Line #: na

Comment: Considering that a couple of the HTW are dry, is there another sampling technique that could be used so that 3 well volumes do not need to be purged? DOE may want to consider micropurge methods.

Response: The horizontal till wells are not conventional monitoring wells. The well screen of a horizontal till well is located horizontally to the east beneath the bottom of the secondary composite liner at the LCS and LDS penetration box location. The horizontal pipe joins the vertical pipe on the west side of the cell. During sampling events, the vertical portion of the well is pumped to evacuate stagnant water. The goal is to remove three well volumes; however, most HTWs do not yield three well volumes. A sample is collected within 24 hours of completion of purging. Wells are considered dry only if the water level at the time of purging is below the point where the horizontal pipe joins the vertical pipe. These wells yield no water.

The concept of micropurge sampling, which is used at Fernald for conventional monitoring wells, is based on the principle that water within the screened zone passes through continuously and does not mix with water above the screen. Micropurging requires purging within the well screen which is not feasible due to the location of the well screen in a horizontal well. Micropurging techniques would not yield representative samples in a horizontal till well.

Action: None

19. Commenting Organization: Ohio EPA

Section #: 2.5

Pg #: 12

Line #: na

Comment: Since monthly conference call updates are no longer occurring, notification should occur via e-mail either prior to or as soon as possible if filtering is conducted. E-mail contacts are tom.schneider@epa.state.oh.us and bill.lohner@epa.state.oh.us.

Response: DOE will communicate this information via e-mail as suggested by the commenter.

Action: The text will be revised to indicate that filtering is not routinely conducted. If a well sample is filtered, agencies will be notified through e-mail rather than through the monthly conference call. Use of filtering will also be reported in the annual SER.

20. Commenting Organization: Ohio EPA

Section #: 3.2

Pg #: 12

Line #: na

Comment: Since monthly conference call updates are no longer occurring, notification should occur via e-mail. E-mail contacts are tom.schneider@epa.state.oh.us and bill.lohner@epa.state.oh.us.

Response: DOE will request approval of significant changes via e-mail rather than the monthly conference call as suggested by the commenter

Action: As stated in the response.

**Attachment C, Appendix E**

21. Commenting Organization: Ohio EPA

Section #: Figure 2

Pg #: 12

Line #: na

Comment: This figure needs to be reviewed in conjunction with Ohio EPA being sure to take into consideration Unified Guidance.

Response: Comment acknowledged.

Action: DOE will work with EPA and OEPA to update Figure 2 if appropriate.

22. Commenting Organization: Ohio EPA

Section #: 4.1

Pg #: 14

Line #: na

Comment: Ohio EPA suggests that tritium be added, as an investigational parameter. Tritium may be useful as a "tracer". Exit signs were not specifically excluded per the WAC for the OSDF. The presence of tritium, which is readily mobile with water, in the waste may prove useful in determining leachate movement through the cell and potentially the environment.

Response: DOE believes the existing program is sufficiently robust and monitoring for additional parameters is not warranted.

Action: None

**Attachment D**

23. Commenting Organization: Ohio EPA

Section: 3.5

Pg#: 3-20

Line #: Last paragraph/2nd sentence

Comment: The second sentence in the last paragraph is clumsy. Suggest changing from "First-half yearly total uranium measurements" to "The first half of the year total uranium measurements."

Response: Agreed. The change will be made in the finalized change pages, once agency concurrence with comment responses has been received.

Action: As stated in the response.

24. Commenting Organization: Ohio EPA

Section #: 3.4.2.4

Pg #: 3-18

Line #: na

Comment: The text references a "Zone 0" on Figure 3-5. There is no "Zone 0" identified on Figure 3-5.

Response: The figure being referenced should be Figure 3-6 not Figure 3-5. Also, a note will be added to Figure 3-6 that describes Zone 0, like the note that is on Figure 3-4.

Action: Changes will be made in the final change pages for the LMICP, once agency concurrence with comment responses has been received.

7270

25. Commenting Organization: Ohio EPA

Section #: IEMP

Pg #: 3-46

Line #: na

Comment: DOE should provide the five year schedule for reporting the ground water transport modeling results, both here in the LMICP and in the SER.

Response: Residual assessments are on a five year schedule. The first assessment was reported in the 2005 SER. The next assessment will be reported in the 2010 SER.

Action: These schedules will be added to both the LMICP and SER as requested.