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Department of Energy
Office of Legacy Management

December 17, 2009

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 2010 Comprehensive Legacy Management and Institutional Controls Plan, Revision 4, Draft

References: 1) Letter, T. Schneider to J. Powell, "Re: Comments - 2010 Comprehensive Legacy Management and Institutional Controls Plan, Revision 4, Draft (September 2009)," dated November 25, 2009

2) Email, T. Fischer to J. Powell, "CLMIC Plan Revision 4," dated December 10, 2009

This letter transmits the Responses to Ohio Environmental Protection Agency (OEPA) Comments on 2010 Comprehensive Legacy Management and Institutional Controls Plan (LMICP), Revision 4, Draft (Reference 1) to the United States Environmental Protection Agency (EPA) and OEPA.

Given when agency comments were received, it will be unlikely that the LMICP will be finalized by January 1, 2010. Because the only significant programmatic change to this revision of the LMICP is the discontinuation of boundary air monitoring, the Department of Energy proposes,

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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		

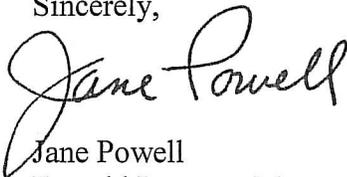
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with your concurrence, to begin performing work in January under the draft LMICP until final approval of the LMICP. Please email me your concurrence as soon as possible.

The LMICP will be reviewed in the fall of 2010. If there are any technical changes to the LMICP, then those affected pages will be distributed for your review and concurrence. Otherwise, a complete revision of the LMICP will not occur until 2011 following the CERCLA 5-year review.

If you have any questions regarding this matter, please contact me at (513) 648-3148.

Sincerely,



Jane Powell
Fernald Preserve Manager
DOE-LM-20.1

Enclosure

cc w/enclosures:

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:

T. Pauling, DOE-LM
K. Broberg, Stoller
D. Gail, Stoller
G. Griffiths, 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
2010 Comprehensive Legacy Management and Institutional Controls Plan,
Revision 4, Draft**

GENERAL COMMENTS:

1. Commenting Organization: Ohio EPA

Section #: na Pg #: na

Comment: Volume I continually refers to the FRLs. A list of the FRLs for the primary COCs on-site should be included in a table or as an attachment.

Response: The reader is referred to the Sitewide Excavation Plan, the OU2 ROD, and the OU5 ROD for media specific cleanup levels (i.e. FRLs). It is unnecessary to repeat specific FRLs in this document

Action: None

2. Commenting Organization: Ohio EPA

Section #: General Pg #: Line #: na

Comment: Past experience with the Significant Changes Summary Sheet has always included more information on technical issues than with more recent Changes Summary. Some changes lack necessary details. Many significant changes are not included in the summary.

Response: Comment acknowledged. The term "significant" is subjective. DOE has identified those changes that DOE believes to be significant. Not all changes that are identified in tracked changes of the LMICP are discussed in the summary of significant changes. DOE believes that many of the tracked changes in the document are self explanatory and do not require further detail in the summary of significant changes. That is why DOE provides the LMICP with tracked changes highlighted.

Action: None

3. Commenting Organization: Ohio EPA

Section #: General Pg #: Line #: na

Comment: The track changes need to be consistent. Not all "strike out" text was handled the same way. The different authors of the different sections should use a common method which allows the reviewer to easily recognize changes to the document.

Response: Comment acknowledged. The identification of changes (i.e. tracked changes) within the document are not a requirement. They are provided to the agencies as a courtesy in order to facilitate review of the document.

Action: None.

Summary Changes

4. Commenting Organization: Ohio EPA

Section: Attachment B - PCCIP/Section 4 Pg#: 2 Line#:

Comment: The description of the change and the specific change cannot be found in this document. Please correct.

Response: Subsequent discussions with OEPA have resulted in the removal of this comment.

Action: None

5. Commenting Organization: OEPA

Section #: Attachment B/Appendix B - PSP for OSDf Pg #: 2 Line #: Section4

Comment: The correction/updated information noted on the Summary Changes are not in the document. In checking two places in the document, one was Volume II/Appendix B and the other was Attachment B/Appendix B the correction was not found. Please clarify in the Summary Changes and in the text where this updated information is located.

Response: Subsequent discussions with OEPA have resulted in the removal of this comment.

Action: None

Volume I

6. Commenting Organization: Ohio EPA

Section #: 1.1 Pg #: 1-2 Line #: na

Comment: An entire paragraph was omitted without notification or 'strike through' editing. This and all changes to the LMICP should be notified with either blue strikethrough or red addition editing marks. The paragraph should remain as written in 2008 LMICP. The categorization of LM activities at Fernald is an important topic that should remain in this section.

Response: The paragraph was not omitted. The paragraph was moved to Section 3.0 Scope of Legacy Management at the Fernald Preserve. Section 3.0 is a more appropriate place for this paragraph.

The identification of changes (i.e. tracked changes) within the document is not a requirement. They are provided to the agencies as a courtesy in order to facilitate review of the document.

Action: None

7. Commenting Organization: Ohio EPA

Section #: 2.2.3 Pg #: 2-3

Comment: Reword the second sentence of the first paragraph. The wording implies that all contaminated soils were excavated and that the excavated soils were certified. Ohio EPA recommends the following wording: "Contaminated soil detected above FRLs has been excavated and appropriately disposed. Remaining soils have been certified to meet final remediation levels (with the exception of certain areas associated with utility corridors and groundwater infrastructure)."

Response: Agree

Action: The second sentence of Section 2.2.3 will be updated with the suggested text.

8. Commenting Organization: Ohio EPA

Section #: 2.3.1 Pg #: 2-4

Comment: A few additional sentences describing the remediation of OU 4 are recommended. For example, stating that Silos 1 & 2 were treated and containerized in specially designed canisters, sent to interim storage in Texas, and finally buried in fall 2009. Additional clarification on the treatment and disposal of Silo 3 waste should also be included.

Response: Agree.

Action: The text of Section 2.3.1 of Volume I and Section 1.0 of Volume II will be updated to include additional information concerning the remediation of OU4.

9. Commenting Organization: Ohio EPA

Section #: 2.3.1 Pg #: 2-4

Comment: The last paragraph on this page and throughout the entire CLMICP, includes a sentence that states, "Soil certification processes were performed to ensure that excavation has removed all impacted material..." The certification process does not ensure that all impacted material has been removed. The certification process ensures that the average residual contamination in a certification meets FRLs. Please revise the text.

Response: Agree.

Action: The sentence "Soil certification processes were performed to ensure that excavation has removed all impacted material, as outlined in the SEP." will be removed from the text.

10. Commenting Organization: Ohio EPA

Section #: 2.3.1 Pg #: 2-4 Line #: na

Comment: In this section and throughout the entire CLMICP, remove the phrase, "removed all impacted material". This is simply not true. Use a phrase that indicates soils detected above FRLs have been removed.

Response: Agree.

Action: The phrase will be removed from the document.

11. Commenting Organization: Ohio EPA

Section #: 2.4.4 Pg #: 2-11 Line #: na

Comment: Reinsert the words "...at this time" at the end of the paragraph about soil certification of subgrade utility corridors. Again these words were omitted without redline.

Response: Agree

Action: Text will be reinserted.

12. Commenting Organization: Ohio EPA

Section: 2.4.4/Figure 2-3 Pg#: 2-10 & 2-11 Line#:

Comment: The text discusses uncertified areas at the Fernald site, including soils within the footprints of the facilities left on site. Not all infrastructure discussed in the text are included on the Figure. Please include all facilities on Figure 2-3.

Response: Agree.

Action: South Field Valve House, 60-inch Main Drainage Corridor culvert, and the 18-inch culvert discussed in the text will be added to Figure 2-3.

13. Commenting Organization: Ohio EPA

Section #: 2.4.5 Pg #: 2-11 Line #: na

Comment: Reinsert the sentence, "The center serves to maintain awareness of site history and conditions, and help prevent unsafe disturbances and uses of the site." Again this sentence was deleted without appropriate redline strikeout to indicate a change.

Response: Disagree. The text of Section 2.4.5 provides sufficient information for the Visitors Center discussion.

The identification of changes (i.e. tracked changes) within the document is not a requirement. They are provided to the agencies as a courtesy in order to facilitate review of the document.

Action: None.

14. Commenting Organization: Ohio EPA

Section #: 3.0 Pg #: 3-1 Line #: na

Comment: Reinsert the sentence, "The IC Plan is included as Volume II of this LMICP." Again text was deleted and added without the appropriate strikethrough or highlighting. Please indicate where all changes (major and minor) were made throughout the document through a consistent strikethrough/redline editing process.

Response: Disagree. The fact that the IC Plan is Volume II of the LMICP is discussed in Section 1.1 of Volume I. This fact does not need to be repeated throughout the document.

The identification of changes (i.e. tracked changes) within the document is not a requirement. They are provided to the agencies as a courtesy in order to facilitate review of the document.

Action: None.

15. Commenting Organization: Ohio EPA

Section #: 3.0 Pg #: 3-1

Comment: A brief summary of the requirements for DOE as a result of the NRDA settlement with the state of Ohio should also be discussed in this section.

Response: Agree.

Action: Add text in Section 3.0 that summarizes DOE requirements resulting from the NRD settlement.

Volume II

16. Commenting Organization: Ohio EPA

Section #: General Pg #: na

Comment: Each attachment and section provides redundant descriptions of the site and the OSDF. Consider putting these descriptions at the beginning of the volume and referencing the description in subsequent sections of the document.

Response: Comment acknowledged.

Action: None.

17. Commenting Organization: Ohio EPA

Section #: 1.0 Pg #: 1-1

Comment: The "bullet" for OU4 needs to be updated stating waste placement at WCS in fall 2009.

Response: Agree

Action: See comment 8 action.

18. Commenting Organization: Ohio EPA

Section #: 1.0 Pg #: 1-2 Line #: na

Comment: In the second last paragraph of section 1.0, revise the last sentence to read, "These include the Visitors Center (former silos warehouse), CAWWT..." The Visitors Center is referred to as the warehouse in all authorizing documents for its continued existence; the reference to warehouse should be maintained.

Response: Agree.

Action: The text will be revised to include "(former Silos Warehouse)."

19. Commenting Organization: Ohio EPA

Section: Table 1-1, Table 3.1 & Section 3.1.1 Pg#: Table 1-1Item 3Line#: Frequency

Comment: Item 3 on Table 1-1, Table 3.1, and Section 3.1.1 describes routine site inspections as being conducted "Annually". Clarification is needed to explain the inspections are done on a quarterly basis, but the entire site is inspected once a year through the quarterly inspections. In reading the text, the information leads the reviewer to think that the site is inspected just once a year. Please clarify the text in Table 1-1.

Response: The OU2 ROD and OU5 ROD require the establishment of institutional controls for the site, but do not specify inspection frequencies. Volume II, Section 2.1.3.3 provides the details of how the entire site will be inspected annually.

Action: None.

20. Commenting Organization: Ohio EPA

Section #: Tables 1-1 & 1-2 Pg #: 1-8, 9

Comment: In the "Government Controls" row it should be noted that a result of the NRDA settlement with the State of Ohio an environmental covenant was filed and is a control on the disturbance and use of the Fernald Preserve and OSDF.

Response: Comment acknowledged. DOE is aware of the environmental covenant and acknowledges the requirements therein. However, this section is focused on the institutional controls as stipulated in the cited RODs.

Action: None

21. Commenting Organization: Ohio EPA

Section #: 2.1.1 Pg #: 2-2

Comment: The last sentence/paragraph in this section states that land use restrictions may be modified or terminated in consultation with EPA and OEPA. Land use restrictions may be modified or terminated only with the approval of USEPA and Ohio EPA.

Response: Comment acknowledged. Any proposed changes to the current land use restrictions will be discussed with both EPA and OEPA. Once the proposed changes are deemed appropriate, DOE will determine how to reconcile the legally enforceable documents (e.g. LMICP, RODs, environmental covenant).

Action: None

22. Commenting Organization: Ohio EPA

Section #: 3.1.2 Pg #: 3-3

Comment: It should be noted that as long as there is a discharge regardless of whether it is the GMR or other surface water, an NPDES permit will be needed.

Response: Comment acknowledged.

Action: None

23. Commenting Organization: Ohio EPA

Section #: 3.2.1 Pg #: 3-8 Line #: na

Comment: Was vegetative cover data collected for cell cap 8? Or will this monitoring take place in 2010?

Response: Cell cap 8 will be sampled in 2010.

Action: Text will be revised to clarify schedule.

24. Commenting Organization: Ohio EPA

Section #: 5.2.2 Pg #: 5-4 Line #:

Comment: This document states in several places that LM will meet at least annually for public meetings. At the October 2009 LM public meeting, citizens requested a public meeting in the spring. LM and Stoller should accommodate citizen's requests.

Elsewhere in the document the important historical contribution of citizen's involvement is noted. Community involvement is an important element of long-term stewardship and will ultimately impact the effectiveness of the cleanup remedy at Fernald.

LM and Stoller's primary responsibility at Fernald is to continue protecting and maintaining the remedy. This includes informing the public of maintenance progress, inspection results and any other issues affecting the remedy. If money and staff time are a concern, in regards to meeting preparation, LM should be able to provide a meeting with a scaled down format that would still provide the information the public is wanting.

Response: Disagree. DOE currently provides many forums to ensure the public has access to information related to site operations and continued remedy implementation (e.g., monthly letters to stakeholders, annual environmental reports, web based access to documents and environmental data). The Visitors Center is open four days per week allowing members of the public access to people and information to address any questions they may have. Other appointments can be made at any time. Over 10,000 members of the public have visited the Fernald Preserve Visitor Center and requests for formal public meetings have not been forthcoming.

The current plan for 2010 is to have a nature focused event for the public in the spring and a full discussion of site operations and remedy implementation/status in the fall.

Action: None.

Attachment A - Operations and Maintenance Master Plan for Aquifer Restoration and Wastewater Treatment

25. Commenting Organization: Ohio EPA

Section #: 5.1 Pg #: 5-1

Comment: The Fernald Preserve is not operating the CAWWT ALARA. CAWWT is operated minimally to meet discharge limits. Revise the text. The first sentence of section 5.3.1 is a more accurate description of how the CAWWT is operated.

Response: DOE believes that the CAWWT is being operated consistent with the principles of ALARA. It would be unreasonable to operate the plant more than what is necessary to meet discharge limits.

Action: The following text will be added to the second sentence in Section 5.1: "as necessary to meet discharge limits." The 3rd sentence in Section 5.1 will be deleted.

26. Commenting Organization: Ohio EPA

Section #: 6.3.2 Pg #: 6-14

Comment: The fact that the CAWWT is only operated approximately 5% of the time should be mentioned in this paragraph because there should only be minimal maintenance outages since the CAWWT is not operating often.

Response: As of the fall of 2009, less than 5% of the water pumped required treatment so that the monthly average uranium discharge limit would not be exceeded.

Action: The following text will be added after the third sentence in Section 6.3.2: "However most scheduled maintenance will be completed when the CAWWT is not needed to meet uranium discharge limits. As of the fall of 2009 the plant was being operated approximately 1 week per month."

Attachment B - Post-Closure Care and Inspection Plan

27. Commenting Organization: OEPA

Section #: Table 8-1/Footnotes Pg #: 8-2 Line #: Second footnote

Comment: The second footnote refers to Section 10.0. It is somewhat unclear as to the exact Section 10.0. If the reference is referring to Section 10.0 of the PCCIP, please indicate as such.

Response: The footnote should refer to Section 9.0 of the PCCIP.

Action: The table will be revised accordingly.

28. Commenting Organization: Ohio EPA

Section #: 3.5 Pg #: 3-7

Comment: The last paragraph on this page (continuing on the next page) gives a description of how photographs are to be taken during OSDF inspections. As an active participant during these inspections, GPS is not routinely used by all inspectors when taking photographs. The paragraph should be revised to reflect this fact.

Response: Location of photographs is conducted by both GPS and field reference points. When needed, coordinates for photographs are obtained via GPS.

Action: None.

29. Commenting Organization: Ohio EPA

Section #: 6.2.1.2 Pg #: 6-2

Comment: The second paragraph states the requirements for inspectors of the OSDF. This information should be provided in the subsequent inspection reports, stating who the chief inspector is and his/her credentials. The same should apply to assistant inspectors.

Response: Information regarding individual inspectors is too much detail for quarterly inspection reports. Reports can clarify that this information is available upon request.

Action: None.

30. Commenting Organization: Ohio EPA

Section #: 6.2.1.4 Pg #: 6-2

Comment: A GPS should be included in the list of inspection equipment.

Response: Agree.

Action: The text will be revised accordingly.

31. Commenting Organization: Ohio EPA

Section #: Table 7-1 Pg #: 7-2

Comment: Large trees and/or shrubs are not permitted to be on the cover of the OSDF, radiological analysis is not appropriate. Simply state that large trees and shrubs should not establish themselves; and, if present, will be removed.

Response: Agree.

Action: Table 7-1 will be revised accordingly.

32. Commenting Organization: Ohio EPA

Section #: Table 8-3 Pg #: 8-4

Comment: The row "Grade control structures", "Conditions" should have the bullet "Clogging by sediment or debris" reworded to read "Clogging by sediment, debris, or vegetation."

Response: A review of the impact of herbaceous vegetation within OSDF drainages is in process. Any change in the current approach of limiting vegetation removal to woody plants and noxious weeds will be reflected in the next LMICP revision.

Action: None.

33. Commenting Organization: Ohio EPA

Section #: 8.3.2 Pg #: 8-4

Comment: The first partial paragraph states that mowing will not occur if it will have an adverse effect on the vegetation. Optimally, mowing should also not occur if it will adversely affect the nesting of grassland birds. Revise text accordingly.

Response: Agree.

Action: Text will be revised accordingly.

Attachment C - Groundwater/Leak Detection and Leachate Monitoring Plan

General Response to OEPA comments on Attachment C

The DOE continues to take exception with OEPAs premise for leak detection and does not agree that it is possible to have a leak from the OSDF without corresponding hydraulic head. Because the OSDF is an engineered disposal facility DOE continues to believe that monitoring for a potential leak from the facility is primarily accomplished using fluid flow measurements from the leak detection system (LDS).

The OSDF was designed to comply with all regulatory requirements associated with groundwater detection monitoring and leachate monitoring for disposal facilities. The sources of these regulatory requirements are the ARARs listed in the RODs for OU2, OU3, and OU5. The Ohio Solid Waste and Ohio Hazardous Waste regulations are considered to be the most prescriptive of the ARARs considered. The OSDF is not a sanitary waste land fill. It has been designed and constructed with a multilayer composite liner system for the leachate collection system and the leak detection system and a multilayer composite cover placed over each of the individual eight cells. The Ohio sanitary waste landfill regulations were written when the state of the art landfill design was for unlined or single liner facilities – without an LDS layer where leakage through the primary liner could be monitored. The EPA and OEPA approved design features of the OSDF should be utilized for their intended purpose.

DOE's understanding is that the Director of OEPA is not the sole authority relative to OSDF operation and evaluation of performance. The OSDF has been designed, constructed, and operated under the OU2 and OU5 RODs issued under the Consent Agreement as Amended. DOE does not believe it appropriate that OEPA use only their rules as the primary tool for leak detection due to the regulatory status of the OSDF as well as in consideration of the unique engineered features of the OSDF and the technical issues involved that ultimately limit their utility.

DOE recognizes OEPA's important oversight role to ensure the OSDF performs as expected and required. In recognition of this role, DOE has performed additional studies and have implemented other evaluation criteria at OEPA's request.

34. Commenting Organization: OEPA

Section #: N/A Pg #: iii Line #: N/A

Comment: A definition of the acronym "RLCS" should be added to this list.

Response: RLCS is the acronym for Redundant Leachate Collection System.

Action: A definition for the RLCS will be added to the acronym list.

35. Commenting Organization: Ohio EPA

Section #: 1.0 Pg #: 1-1

Comment: The 4th paragraph states, "A water quality change in either an HTW or GMA well can only be attributed to a potential leak from a cell in the OSDF if it is accompanied by a corresponding action flow rate in the LDS of that cell." Ohio EPA uses water quality parameters as the primary tool for leak detection in landfills. Reword the sentence indicate that it is unlikely that a leak would occur without a corresponding action flow rate, but significant changes in either water quality or flow rates will be investigated.

Response: See the general response to comment on this attachment. DOE will investigate significant changes in either water quality and/or flow rates.

Action: The fourth paragraph on page 1-1 will be revised to read as follows: "It is unlikely that a leak would occur without a corresponding action flow rate, but significant changes in either water quality and/or flow rates will be investigated."

36. Commenting Organization: OEPA

Section #: 1.1 Pg #: 1-1

Comment: Since it is possible to have a leak without an accompanying action flow rate in the LDS, revise the sentence that reads "A water quality change in either an HTW or GMA well can only be attributed to a potential leak from a cell in the OSDF if it is accompanied by a corresponding action flow rate in the LDS of that cell." to "Assuming that no short circuiting is occurring (i.e., presence of a fully penetrating breach in the liner system up-stream of the leachate collection point), a water quality change in either an HTW or GMA well can only be attributed to a potential leak from a cell in the OSDF if it is accompanied by a corresponding action flow rate in the LDS of that cell."

Response: The subject sentence was used several times throughout the plan. The intent was to illustrate that there is a way to detect for a possible leak from the OSDF, because the OSDF is an engineered disposal cell and criteria exist within the design for determining if the facility is not functioning properly. The text changes that will be made in response to OEPA comment 35 will also address this comment.

Action: See action for comment 35.

37. Commenting Organization: Ohio EPA

Section #: 1.1 Pg #: 1-3

Comment: The 4th paragraph describes the action leakage rate that is necessary to provide enough head pressure to produce a leak. This design specification requires that the OSDF is performing as designed, i.e. LCS and LDS are working properly and there are no construction design flaws other than a breach of the primary liner.

Response: There is no indication that the OSDF is not performing as designed. OEPA had a role in the review of the design as well as the review of the Construction Quality Assurance reports that documented as-built conditions.

As stated in OEPA comment 35, it is unlikely that a leak would occur without a corresponding action flow rate.

Action: None.

38. Commenting Organization: Ohio EPA

Section #: 1.2 Pg #: 1-5

Comment: Last paragraph, 2nd bullet, states that water quality change must be accompanied by a corresponding action leakage rate. Ohio EPA rules use water quality measurements as the primary tool for leak detection. Revise text accordingly

Response: See the general response to comment on this attachment. Any significant change in water quality beneath the facility will be investigated. The OSDF is an engineered disposal facility that is being regulated using rules written for a common sanitary landfill. The landfill rules rely primarily on water quality beneath the facility for leak detection because that is all that is available for the assessment. Incorporated into the design of the OSDF are engineered features that are used to check for conditions conducive to a potential leak (i.e., action leakage rate). Water quality data beneath the OSDF needs to be examined in context with the operational data obtained from the engineered features (LCS and LDS) incorporated into the OSDF to verify the presence of a leak.

Action: The following sentence will be removed from the second bullet on page 1-5; "A water quality change beneath the facility needs to be accompanied by a corresponding action leakage rate in the LDS in order for the change to be attributed to a potential leak from the facility." The last sentence of the second bullet on page 1-5 will be changed as described in the action to OEPA comment 35.

39. Commenting Organization: Ohio EPA

Section #: 2.4 Pg #: 2-6

Comment: In the 4th and 5th lines underneath Table 2-1 change the sentence to read, "...it is ~~not unexpected~~ expected that contaminant-concentrations in perched groundwater would ~~increase~~ change."

Response: Agree

Action: Subject sentence will be changed as indicated above.

40. Commenting Organization: OEPA

Section #: 3 Pg #: 1-3 Line #: 31

Comment: Since it is possible to have a leak without an accompanying increase in hydraulic head in the facility, revise the phrase that reads "in order to have conditions needed" to "in order to have one set of conditions needed."

Response: This comment was difficult to find given the commenter identified it as a Section 3 comment when it is really a Section 1 comment. The intent of the sentence is to define the action leakage rate. As defined in 40 CFR 264.302 (a) "the action leakage rate is the maximum design flow rate that the leak detection system LDS can remove without the fluid head on the bottom liner exceeding 1 foot."

Action: Text will be revised to reflect the definition presented in the response.

41. Commenting Organization: OEPA

Section #: 3 Pg #: 1-5 Line #: 37

Comment: Since it is possible to have a leak without an accompanying action leakage rate, revise "A water quality change beneath the facility needs to be accompanied by a corresponding action leakage rate in the LDS in order for the change to be attributed to a potential leak from the facility. Unless a water quality change in an HTW or GMA well is accompanied by a corresponding action leakage rate in the LDS, the change will not be attributed to a potential leak from the facility." to "A water quality change beneath the facility may be accompanied by a corresponding action leakage rate in the LDS. Review of flow volume data will therefore accompany the review of water quality data."

Response: This comment was difficult to find given the commenter identified it as a Section 3 comment when it is really a Section 1 comment. This comment is similar to OEPA comments 35 and 38.

Action: See action for OEPA comments 35 and 38.

42. Commenting Organization: OEPA

Section #: 3 Pg #: 3-4 Line #: 33

Comment: Since cell hydraulic conditions do not intrinsically circumvent any consideration of cell groundwater quality data, revise the third bullet to read "Fluid volume is a key monitoring parameter to indicate the potential for leachate migration, and will be used to aid the evaluation of water quality data

Response: The subject sentence is a conclusion presented in the common-ion study. It does not imply that a change in water quality will not be investigated; it merely offers insight into the usefulness of indicator ions for leak detection monitoring.

Action: None.

43. Commenting Organization: Ohio EPA

Section #: 3.2.1.4 Pg #: 3-7

Comment: Regarding the last sentence on this page, the Ohio EPA requested quarterly sampling and it should not be terminated at the end of 2010. Ohio EPA suggests that quarterly sampling and other parameter frequencies be reevaluated annually.

Response: The sentence does not state that quarterly sampling will be terminated in 2010. To avoid confusion the following sentence will be added: Sampling frequencies will be reevaluated at the end of 2010 and annually thereafter.

Action: As noted in the response.

44. Commenting Organization: Ohio EPA

Section #: 3.2.2 Pg #: 3-8

Comment: From this and subsequent sections, delete the sentence "DOE considers this additional sampling for Appendix I and PCB parameters as exceeding the requirements of Ohio Solid Waste regulations because an alternate parameter list had been approved for the facility." The Director of the Ohio EPA has the ultimate authority for determining the appropriateness of an alternate parameter list, and; as previously stated, the concentrations in the horizons of OSDF can be expected to change, and so should the parameter list.

Response: See the general response to comments on this attachment above.

Action: None.

45. Commenting Organization: OEPA

Section #: 4 Pg #: 4-1 Line #: 29

Comment: Since it is possible to have a leak without an accompanying increase in hydraulic head in the facility, revise the sentence that reads "The key to a plausible potential leak determination is the presence of adequate hydraulic head within a cell of the OSDF (i.e., action leakage rate in the leak detection system [LDS])" to read "One indicator of a possible leak is the presence of adequate hydraulic head within a cell of the OSDF (i.e., action leakage rate in the leak detection system [LDS])."

Response: Given the engineered features of the OSDF and the protectiveness of the underlying geology the "one indicator" that OEPA refers to is probably the only credible indicator available for actually linking a water quality change beneath the facility to a leak from the facility. The most plausible potential pathway for a leak from the facility has been identified, engineered to, and is being monitored, but any significant water quality change beneath the facility will be investigated in order to detect the unexpected.

DOE does not agree that it is possible to have a leak from the OSDF without an accompanying increase in hydraulic head, at least a leak capable of impacting the health and safety of the public and the environment. Without adequate hydraulic head to drive leachate through a liner breach, leachate would follow the pathway of least resistance, which would be across the top of the liner through gravel in the LDS drainage corridor. The gravel has a much higher hydraulic conductivity relative to the underlying three feet of compacted clay in the liner, or the gray clay that exists beneath the base of the compacted clay. The leachate will travel along the pathway of least resistance, and the gravel in the LDS drainage corridor is the pathway of least resistance.

The fifth paragraph on page 4-1 will be removed. The following sentence will be added to the start of the next paragraph: "In leak detection assessments, water quality data will be evaluated in context with preexisting contamination data and LDS flow data."

Action: As stated in the response.

46. Commenting Organization: OEPA

Section #: 4 Pg #: 4-1 Line #: 31

Comment: Since it is possible to have a leak without an accompanying action leakage rate; revise "However, due to preexisting background contaminant complications discussed in Section 2, the water quality of the monitored horizon is a secondary criterion that has merit if sufficient head exists to drive leachate through the liner. Unless a water quality change in an HTW or GMA well is accompanied by a corresponding action leakage flow rate in the LDS, the change will not be attributed to a potential leak from a cell in the OSDF." to "In leak detection assessments, water quality data will be evaluated in concert with preexisting contamination data and LDS flow data."

Response: This comment is similar to OEPA comment 45.

Action: See response to OEPA comment 45.

47. Commenting Organization: OEPA

Section #: 4 Pg #: 4-4 Line #: 40

Comment: Add the following text at the end of Paragraph 5 on this page. "If the breach fully compromised the liner system, leachate could readily migrate downward if a pathway (such as fractures in the till or a seam of coarse grained material) was present especially since such contamination would migrate under gravity and capillary forces since the base of the OSDF is above the perched water table in the till.

Response: It is unlikely that a breach could fully compromise the liner system, and it is also unlikely that such a breach could have a hydraulic conductivity higher than the gravel that is present in the drainage corridor of the LDS. Flow in the unsaturated zone is slower and more complicated than the saturated zone because unsaturated hydraulic conductivity and moisture potential change as the volumetric water content changes. Unsaturated flow involves many changes in volumetric moisture content as waves of infiltrated water pass. The pathway of least resistance would be the gravel in the LDS drainage corridor.

Action: None.

48. Commenting Organization: OEPA

Section #: 4 Pg #: 4-5 Line #: 7

Comment: For clarification, revise "it is the flow rate that corresponds to a hydraulic head within the facility capable of driving fluid through a liner breach." to "it is the flow rate that corresponds to a hydraulic head within the facility capable of driving fluid through a liner breach, if the breach occurs at the penetration box."

Response: Agree

Action: The sentence will be revised as suggested in the comment.

49. Commenting Organization: Ohio EPA

Section #: 4.4.2.1 Pg #: 4-13

Comment: The last sentence in the 3rd paragraph states that Ohio EPA receives monthly reports of LCS/LDS flow rates. This is not currently happening. Begin sending monthly reports.

Response: Ongoing LCS and LDS flow data are being provided via the Fernald Preserve web page (<http://www.lm.doe.gov/Fernald/Downloads.aspx>), which OEPA has access to. The updated LCS and LDS data are also provided and discussed when a conference call is held.

Action: Revise the sentence as follows: "Flow data are available to EPA and OEPA on the Fernald Preserve website (<http://www.lm.doe.gov/Fernald/Downloads.aspx>) and are reported annually in the Site Environmental Report".

50. Commenting Organization: OEPA

Section #: 4 Pg #: 4-13 Line #: 8 and subsequent lines

Comment: Since it is possible to have a leak without an accompanying increase in hydraulic head in the facility, revise the sentence that reads "The key to a plausible potential leak determination is the presence of adequate hydraulic head within a cell of the OSDF (i.e., action leakage rate in the LDS)" to read "One indicator of a possible leak is the presence of adequate hydraulic head within a cell of the OSDF (i.e., action leakage rate in the LDS)."

Response: This comment is similar to OEPA comment 45.

Action: See action for comment 45

51. Commenting Organization: Ohio EPA

Section #: 4.5 Pg #: 4-15

Comment: The last sentence in the last paragraph needs to be revised to reflect that water quality and leakage rates will be evaluated independently to determine if a leak may have occurred.

Response: Significant changes in either water quality and/or flow rates will be investigated. As DOE has previously stated - with OEPA concurrence, the water quality and LDS flow data need to be evaluated together.

Action: The last two sentences in the last paragraph on page 4-15 will be revised to the following: "In leak detection assessments, water quality data will be evaluated in context with preexisting contamination data and LDS flow data. Significant changes in either water quality and/or flow rates will be investigated."

52. Commenting Organization: Ohio EPA

Section #: 5.1 Pg #: 5-2

Comment: Any changes to the leachate treatment system on site will have to be approved by both USEPA and OEPA.

Response: Comment acknowledged.

Action: None.

53. Commenting Organization: OEPA

Section #: 6 Pg #: 6-1 Line #: 15

Comment: Revise this bullet to read "Identify any new detects in the LCS and provide the results of the statistical analysis following the process described in Appendix E, Section 4.0."

Response: The statistical analysis following the process described in Appendix E, Section 4.0 will be conducted for Cells 4 and 5 in the 2009 SER, Cell 6 in the 2010 SER, and Cells 7 and 8 in the 2011 SER.

Action: Bullet will be revised as suggested in the comment.

54. Commenting Organization: Ohio EPA

Section #: 6.1 Pg #: 6-1

Comment: Previous sections in the LMICP indicate that leachate collection volumes will be reported monthly. Revise text to reflect monthly reporting.

Response: This comment is similar to comment 49. See response to comment 49

Action: See the Action for Comment 49.

55. Commenting Organization: Ohio EPA

Section #: 6.1 Pg #: 6-1

Comment: Water quality data should also be evaluated to prepare tri-linear diagrams (Piper & Stiff) to better understand water quality data.

Response: The current data evaluation strategy is sufficient, exhaustive, and has been developed in conjunction with OEPA. The data are available to construct the tri-linear diagrams should the Commentor desire to do so.

Action: None.

Attachment C/Appendix B - Project Specific Plan for the OSDF Monitoring Program

56. Commenting Organization: OEPA

Section #: App. B Pg #: 6 Line #: NA

Comment: Revise Table 2 title to "2010 Quarterly LCS, LDS, HTW, and GMA Monitoring List Requirements for Cells 1 through 8."

Response: Agree

Action: The title of Table 2 will be revised.

57. Commenting Organization: Ohio EPA

Section #: 2.3 Pg #: 11

Comment: The LCS and LDS tanks in the valve house should be pumped out after sample collection. This will make the next sample representative of water quality in the LCS/LDS each quarter.

Response: Agree.

Action: Sampling personnel will notify Operations Manager when quarterly sampling is complete and the tanks will be pumped down to low level. The following text will be added to the end of Section 2.3: "If the sample is collected from the LCS or LDS tank, the tank will be pumped down to a low level after the sample is collected to help ensure the next quarterly sample is representative."

58. Commenting Organization: Ohio EPA

Section #: 2.3 Pg #: 11

Comment: Isn't the current procedure to leave the sample ports open continuously to drain into the LCS/LDS tanks? If true, revise text accordingly.

Response: Normal operating mode is for the valves on the piping from the LCS and LDS layers to be opened such that the LCS and LDS layers drain continually to the tanks. Sample ports are normally kept closed so the water coming from the LCS and LDS does not drain to the floor.

Action: None.

59. Commenting Organization: Ohio EPA

Section #: 2.4 Pg #: 11

Comment: Explain why purging three well volumes are necessary. It may be more important to collect a sample than to remove all sample water through purging.

Response: As stated in the Fernald Preserve Quality Assurance Project Plan, purging three well volumes to remove stagnant water is standard protocol for sampling monitoring wells. A well is generally considered dry if it does not yield a complete sample within 24 hours. Experience indicates that if the well can be purged dry, it yields enough water to collect a sample after recharging overnight. Only those HTWs where water levels are below the horizontal intake (i.e., no water is present in the horizontal pipe) prior to purging are considered dry.

Action: None

Attachment C/Appendix C - Fernald Preserve DQOs Monitoring Program for the OSDF

60. Commenting Organization: Ohio EPA

Section #: 5.0 Pg #:4

Comment: Ohio EPA disagrees with this decision rule. Ohio regulations rely primarily on water quality data to determine if a cell may be leaking. Water quality and/or LDS flow rates should both be evaluated to determine if a cell is leaking.

Response: The OSDF was designed to comply with all regulatory requirements associated with groundwater detection monitoring and leachate monitoring for disposal facilities. The sources of these regulatory requirements are the ARARs listed in the RODs for OU2, OU3, and OU5. The Ohio Solid Waste and Ohio Hazardous Waste regulations are considered to be the most prescriptive of the ARARs considered. The Ohio water quality regulations were written when the state of the art landfill design was for unlined or single liner facilities – without an LDS layer where leakage through the primary liner could be monitored. The EPA and OEPA approved design features of the OSDF should be utilized for their intended purpose.

Action: Request that OEPA review their regulations re: sanitary landfills and determine if they can be updated to acknowledge current engineered disposal facility design features as incorporated into the Fernald OSDF.

Attachment D - Integrated Environmental Monitoring Plan

61. Commenting Organization: OEPA

Section #: General/IEMP Pg #: Line #:

Comment: Sediment sampling is mentioned in several places throughout Attachment D - IEMP. However DOE does not mention anything about the location change, G4 to G10, or the reasoning behind why the point needed to be moved. In addition, text should be added to the document regarding DOE's decision and the basis of the decision, of why the sediment sampling frequency was changed to once every 5 years. This information needs to be included in the LMICP.

Response: The location change for sediment sampling was discussed in the LMICP, revision 3, Variance/Field Change Notice LMS-FER-S03496-3.0-04, which was approved by OEPA on September 30, 2009. Therefore, a repeat of this discussion is not warranted in the current revision of the LMICP.

The 5-year sampling frequency was changed at the suggestion of OEPA per DOE/EH 0173T, *Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance* (January 1991). This reference will be cited in Table 4-3 of Section 4 of the Integrated Environmental Monitoring Plan (i.e. Attachment D).

Action: As indicated in the response.

62. Commenting Organization: Ohio EPA

Section #: 1.2 Pg #: 1-2

Comment: Clean-up activities are essentially completed. Revise the introductory paragraph accordingly. Clean-up of CWWAT and utility corridors will be conducted under a separate work plan that may include additional environmental monitoring.

Response: Disagree. The sentence as written is accurate given the ongoing groundwater remediation.

Action: None.

63. Commenting Organization: OEPA

Section #: Figure 3-2 & 3.4.2.1 Pg #: 3-8 - 3-9 Line #: Second paragraph

Comment: Appears to be a typo either in the text or on Figure 3-2. The text states that the uranium plume on Figure 3-2 illustrates groundwater conditions from 2007. However, the title on Figure 3-2 states the plume is from 2008. Please make the appropriate correction.

Response: Agree. The text is incorrect.

Action: Text will be changed to 2008.

64. Commenting Organization: Ohio EPA

Section #: Figure 3-6 Pg #: 3-28

Comment: This figure indicates that GMA wells for the OSDF will be sampled semiannually. Per agreement with Ohio EPA, OSDF/GMA wells are to be sampled for total uranium quarterly.

Response: OSDF monitoring is prescribed in the GWLMP (i.e. Attachment C).

Action: None.

65. Commenting Organization: OEPA

Section #: 3 Pg #: 3-46 Line #: 31

Comment: DOE should provide a schedule for reporting the groundwater transport modeling results.

Response: As presented in the 2005 SER, the assessment will be conducted every 5 years. The next assessment will be presented in the 2010 SER.

Action: None.

66. Commenting Organization: OEPA

Section #: 4.3.2.1/Table 4-2 Pg #: 4-4 - 4-7 Line #: First paragraph pg 4-7

Comment: This paragraph discusses sediment locations and their analysis on Table 4-2. However, there does not appear to be data that relates to sediment on Table 4-2. Please make the appropriate corrections to Table 4-2.

Response: Paragraph 4.2.3.1 and Table 4-2 discuss surface water only. Such an evaluation for sediment is not needed.

Action: None.

67. Commenting Organization: Ohio EPA

Section #: 5.0 Pg #: 5-1

Comment: In October 2009 Ohio EPA requested a statistical report justifying the cessation of air monitoring. Receipt of this report is important in closing out air monitoring at the Fernald Preserve

Response: Comment acknowledged.

Action: The requested report has been provided to OEPA

68. Commenting Organization: Ohio EPA

Section #: 5.2 Pg #: 5-1

Comment: It is inappropriate to use prior year's air monitoring data to calculate an air dose. Ohio EPA is awaiting the report from DOE that should indicate that radionuclide air concentrations at the Fernald Preserve are indistinguishable from background and/or less than 1 mrem. DOE should report the dose as such in future years and reference the report.

Response: Agree.

Action: The text will be reworded to more accurately reflect the path that will be taken to calculate the dose. The text will be changed as follows:

"Beginning in 2010, dose assessments for DOE Order 5400.5 will use the air dose from 2009 (as reported in the 2009 SER), annual direct radiation measurements, and annual surface-water results for radionuclides to calculate the total dose to the public. Two years of post-remediation (soil remediation was completed in 2006) air monitoring have shown that the air inhalation dose at the Fernald Preserve boundary is orders of magnitude lower than the NESHAP limit of 10 mrem/yr (the value was 0.0019 mrem/yr in 2008; see Appendix D of 2008 SER). Additionally, the measured post-remediation values are well below 1 mrem/yr, which is the NESHAP threshold for the monitoring requirement. That is, NESHAP monitoring is no longer required because the dose is less than 1 mrem/yr. As DOE Order 5400.5 follows NESHAP requirements for air inhalation, there is no significant dose to the public from the air inhalation pathway when the values are less than 1 mrem/yr."

69. Commenting Organization: Ohio EPA

Section #: 5.3.3 Pg #: 5-2

Comment: First bullet, see previous comments about air dose.

Response: The second sentence in the fourth paragraph of Section 5.3.3 (i.e., "This will be demonstrated using air monitoring data obtained between 2007 and 2009.") will be revised to state that the air monitoring data reported in the 2009 SER will be used.

Action: As indicated in the response.

70. Commenting Organization: Ohio EPA

Section #: 5.4.1 Pg #: 5-5

Comment: First bullet, see previous comments about air dose.

Response: The first bullet in Section 5.4.1 will be revised to "The 2009 air-monitoring results are as low as reasonably achievable (ALARA) and will be used to assess the inhalation dose."

Action: As indicated in the response.

71. Commenting Organization: Ohio EPA

Section #: 5.4.2 Pg #: 5-6

Comment: Ohio EPA continues to maintain that the perimeter of the OSDF should be monitored for external radiation dose. It houses the highest concentration of contaminated soils on the site.

Response: The measurement of external dose is focused on members of the public. OSL monitors have been placed at locations where the public may access (trails and the visitor center). The public does not access the OSDF but the OSL devices are being maintained along the property fence line. The locations depicted in Figure 5-1 will provide adequate information on dose to the public.

Action: None

72. Commenting Organization: Ohio EPA

Section #: 5.6 Pg #: 5-9

Comment: 3rd bullet: Presenting monitoring results is the annual SER may not meet community concerns. Discussion with stakeholders during meetings in addition to the SER may be a better way to assure that community concerns are being met.

Response: See response to comment 24

Action: None

73. Commenting Organization: Ohio EPA

Section #: 5.8.1 Pg #: 5-10

Comment: Since trail locations with the highest residual radionuclide concentrations are used as monitoring locations for OSL dosimeters. The perimeter of the OSDF should also be monitored for external radiation since it has the highest residual radionuclide concentrations.

Response: See response to comment 71

Action: See action for comment 71

74. Commenting Organization: Ohio EPA

Section #: 5.9.2 Pg #: 5-2 Line #: na

Comment: This section will not be necessary if the report requested by Ohio EPA shows that air concentrations are indistinguishable from background and/or less than 1 mrem.

Response: Agree.

Action: Section 5.9.2 will be removed.

75. Commenting Organization: Ohio EPA

Section #: 6.2 Pg #: 6-1 Line #: na

Comment: See previous comments about using historical data to estimate current dose.

Response: The text regarding the Dose Section will be revised from "The air monitoring data collected between 2007 and 2009..." to "The air monitoring data collected in 2009..."

Action: As indicated in the response.

Attachment D/Appendix A - Natural Resource Monitoring Plan

76. Commenting Organization: Ohio EPA

Section #: General Pg #: na

Comment: Additional appendices need to be considered for the inclusion of the Restored Area Maintenance Plan and the Wetland Mitigation Monitoring Plan.

Response: Both the Wetland Mitigation Monitoring Plan and the Restored Area Maintenance Plan are not planned to be updated annually. It is sufficient to only reference these documents in the Natural Resource Monitoring Plan.

Action: None.

77. Commenting Organization: Ohio EPA

Section #: 2.4 Pg #: 3

Comment: Add text to indicate that the US Department of Interior is represented by the US Fish and Wildlife Service as trustee of the Fernald Preserve.

Response: Agree.

Action: Text will be revised accordingly.

78. Commenting Organization: Ohio EPA

Section #: 4.1.4 Pg #: 9

Comment: Reword the last sentence of the first paragraph to read, "Although surveys conducted in 1994 and 1995 indicated that no individuals were present found...."

Response: Agree.

Action: Text will be revised accordingly.

Attachment E - Community Involvement Plan

79. Commenting Organization: Ohio EPA

Section #: 3.0 Pg #: 3-1 Line #: na

Comment: Write out "Federal Facilities Compliance Agreement" in the second paragraph. At the first instance of using the "FFCA" acronym in this section, it needs to be written out in full.

Response: Agree.

Action: Text will be revised accordingly.

80. Commenting Organization: Ohio EPA

Section #: 5.1.1 Pg #: 5-1 Line #: na

Comment: Write out "long-term surveillance and maintenance". At this first instance of using the "LTS&M" acronym in this section, it needs to be written out in full.

Response: Disagree. The acronym is defined previously in the document.

Action: None.

81. Commenting Organization: Ohio EPA

Section #: 5.1.1 Pg #: 5-1

Comment: Ohio recommends, as a minimum, semiannual public meetings. This is a great opportunity for all stakeholders to get together and share their comments in an inclusive environment, allowing for feedback between all parties.

Response: See response to comment 24.

Action: None

Attachment E/Appendix A - Information Contacts

82. Commenting Organization: Ohio EPA

Section #: na Pg #: 1 Line #: na

Comment: Ohio EPA's web page has recently changed to www.epa.ohio.gov.

Response: The table will be updated to reflect OEPA's new web address.

Action: As indicated in the response.