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Department of Energy
Office of Legacy Management

November 5, 2008

Mr. Tim Fischer, Remedial Project Manager
United States Environmental Protection Agency
Region V-SR-6J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

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

Dear Mr. Fischer and Mr. Schneider:

Subject: **Transmittal of Responses to United States Environmental Protection Agency (EPA) Comments and Ohio Environmental Protection Agency (OEPA) Comments on the 2007 Site Environmental Report**

Reference: 1) Letter, T. Fischer to J. Powell, "Re: 2007 Fernald Site Environmental Report," dated July 10, 2008

2) Letter, T. Schneider to J. Powell, "Re: 2007 Site Environmental Report," dated August 6, 2008

Enclosed for your review are responses to EPA and OEPA comments on the 2007 Fernald Site Environmental Report (Reference 1 and 2). Consistent with past practice, the 2007 Site Environmental Report and appendices will not be revised. Comments will be considered during preparation of the 2008 Site Environmental Report.

If you have any questions or require any additional information, please call me at (513) 648-3148.

Sincerely,

Jane Powell

Jane Powell
Fernald Preserve Site Manager
DOE-LM-20.1

Enclosure

cc w/enclosure:
M. Cullerton, Tetra Tech.
M. Murphy, USEPA-V, A-18J
T. Pauling, DOE (electronic)
T. Schneider, OEPA (three copies of enclosure)
M. Shupe, HSI GeoTrans
Project Record File (thru W. Sumner)
Administrative Records (thru W. Sumner)

cc w/o enclosure:

K. Broberg, Stoller
B. Hertel, Stoller
J. Homer, Stoller
F. Johnston, Stoller
G. Lupton, Stoller
M. Sizemore, Stoller
C. White, Stoller

RESPONSE TO EPA'S TECHNICAL REVIEW COMMENTS ON THE 2007 FERNALD PRESERVE SITE ENVIRONMENTAL REPORT

GENERAL COMMENT

Commenting Organization: U.S. EPA Commentor: Fischer
Section #: Not Applicable (NA) Page #: NA Line #: NA
Original General Comment #: 1
Comment: In some cases, statements are made without providing specific information. For example, in Section 3.2 (Page 3-4) and Section 3.3.1.4 (Page 3-17), the text discusses total uranium final remediation level (FRL) exceedances without identifying the particular locations where the exceedances occurred. The text should be revised to provide this information, as appropriate.

Response: Specific information concerning statements made in the Section 3 of the SER is provided in Appendix A. This is stated throughout Section 3 text. The locations of the total uranium FRL exceedance locations mentioned in the comment are provided in Attachment A.2 of Appendix A.

Action: No change to the SER required.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commentor: Fischer
Section #: 3.3.1.6 Page #: 3-19 Line #: NA
Original Specific Comment #: 1
Comment: Table 3-2 presents non-uranium results above FRLs. Table 3-2 indicates that zinc was detected above its FRL in one well; however, the 2007 range is reported as "NA" for data inside the waste storage area and outside the waste storage area. The actual zinc result that exceeded the FRL should be provided in the table.

Response: There was a FRL exceedance for zinc in 2007 at Monitoring Well 2900 (see Table A.4-1 in the Appendices to the 2007 SER). Since the monitoring well is located inside the Waste Storage Area (Phase II) Remediation Footprint, a range of data should have been included in the applicable cell in the table. The range is 0.025 mg/L to 0.0727 mg/L.

Action: A corrected table is attached to this comment response document.

Commenting Organization: U.S. EPA Commentor: Fischer
Section #: 3.4 Page #: 3-21 Line #: NA
Original Specific Comment #: 2
Comment: The last paragraph on this page refers to two non-uranium constituents that had FRL exceedances in three "GMA" wells. As stated in the general comment, the document should be revised to specify the three wells where the exceedances occurred.

Response: As reported in Figure A.4-1 and Table A.4-3, the manganese and antimony exceedances were recorded at Monitoring Wells 3424, 3426, and 22204.

Action: In the SER 2008, additional references will be made as appropriate for clarity.

Commenting Organization: U.S. EPA Commentor: Fischer
Section #: 4.2 Page #: 4-13 Line #: NA
Original Specific Comment #: 3
Comment: The maintenance activity that was performed near the waste pit 3 area is discussed in this section. The text should be revised to describe any monitoring that was conducted to evaluate the effectiveness of the maintenance activity or state that the effectiveness will be evaluated in 2008.

Response: Surface water in the waste pit 3 area is sampled weekly (assuming water is present). Uranium concentrations in the surface water are still elevated. Monitoring continues and will be summarized in the 2008 SER.

Action: As indicated in the response.

Table 3-2. Non-Uranium Constituents with Results Above Final Remediation Levels During 2007

Constituent	Number of Wells Exceeding the FRL	Number of Wells Exceeding the FRL Outside the Waste Storage Area (Phase II) Remediation Footprint	Groundwater FRL	Range of 2007 Data Inside the Waste Storage Area (Phase II) Remediation Footprint[a]	Range of 2007 Data Outside the Waste Storage Area (Phase II) Remediation Footprint[a]
General Chemistry			(mg/L)	(mg/L)	(mg/L)
Nitrate/Nitrite	6	0	11[b]	0.005 to 116	NA[a]
Inorganics					
Antimony	10	6	0.006	0.00025 to 0.008	0.00025 to 0.0082
Manganese	7	1	0.90	0.158 to 11.4	1.37 to 1.81
Molybdenum	1	0	0.10	0.464	NA
Zinc	1	0	0.021	**0.0025 to 0.0727**	NA
Volatile Organics			(µg/L)	(µg/L)	(µg/L)
Trichloroethene	2	0	5.0	8.91 to 39.7	NA
Radionuclides			(pCi/L)	(pCi/L)	(pCi/L)
Technetium-99	4	0	94	0.059 to 1210	NA

[a]NA = not applicable
[b]FRL based on nitrate, from Operable Unit 5 Record of Decision, Table 9-4; however, the sampling results are for nitrate/nitrite.

OHIO EPA'S COMMENTS ON THE 2007
SITE ENVIRONMENTAL REPORT

General Comments on the SER:

1. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Pg #: na Line #: na Code: C
Comment: The phrase, "...the soil has been certified to contain contaminant levels at or near background values," is used persistently throughout the text of the report. Contaminant levels have NOT been certified at background levels; they have been certified to meet the FRLs published is the OU5 ROD.

Response: The wording is a bit ambiguous. Future reports will clarify that the soil is certified to be below the OU 5 FRLs, and the certification results show that the concentrations are at or near background values.

The following sections are examples of the language in question.

Section 5.1: "In 2007, the Fernald Preserve was formed and the only remaining emission source is soil that contains contaminants at levels near background values." No statement about certification to background values, simply noting that concentrations are near background.

Section 5.1: "The only emission source active during 2007 was the site soil that has been certified as meeting the final remediation levels for all contaminants." Statement notes certification to FRLs.

Section 6.2: "Remaining surface sources for radiation are soil, which contains radium, thorium and uranium isotopes at activities that are near background values, and small pieces of debris that are exposed by soil erosion." No statement about certification to background values, simply noting that concentrations are near background.

Appendix C.1 contains this statement as the last sentence: "This conclusion is consistent with the results of the soil certification process, which show that the uranium concentration in the site soil has been returned to background, or very near background, across the site." No statement about certification to background values, simply noting that concentrations are near background.

Appendix C.5, 2nd paragraph: "As the soil has been certified to contain contaminant levels at or near background values, there is no remaining source to deliver a statistically significant dose to the public." This is the problem statement, which appears once.

Appendix D, Section D.1.2: "The primary radioactive airborne contaminants at the Fernald Preserve consist of radium, thorium and uranium isotopes that are present in soil at concentrations near background values." No statement about certification to background values, simply noting that concentrations are near background.

Action: As indicated in the response.

2. Commenting Organization: Ohio EPA Commentor: DSW
Section #: na Pg #: na Line #: na Code: C

Comment: The document no longer reads as an unbiased report, but has more of a marketing feel, or spin to it. Previous years reported data and activity, whereas the "report" now has more editorial and qualitative comment. These differences are subtle, yet objectionable. Examples include, but are not limited to, phrases like the following:
"...the soil has been certified to contain contaminant levels at or near background values" where an unbiased and accurate statement could be "...the soil has been certified to meet the FRLs" Likewise in Section 4.2, the explanation for the maintenance action in the swale by waste pit 3 is worded, "In late 2006, during the course of routine sampling of several surface water locations, Ohio EPA produced results which were above the surface water FRL for uranium. DOE generally confirmed these sampling results in early 2007" and "Even though the area in question underwent a rigorous soil certification process, and all certification samples from this area were well below the soil certification FRL, DOE proposed a study to investigate the leachability of the residual uranium present in the surface soils in the area to gain a better understanding of the reason for the persistently elevated concentrations of uranium in the ponded surface waters. The results of this study indicated that uranium in the area is more leachable than other areas of the Fernald Preserve" and "Although certification had been achieved, compliance with the Operable Unit 5 Record of Decision was established, and the area of elevated uranium concentrations posed no off-site impacts, as a good faith effort to address OEPA concerns, DOE implemented a maintenance action". If OEPA took the same tact as DOE, it would read "In late 2006, frustrated by DOEs lack of a coherent post-closure sampling plan, OEPA sampled various standing surface water on site. During the course of this sampling effort, OEPAs results showed areas exceeding the surface water FRL. Eventually DOE sampled the same areas to demonstrate the areas did indeed meet FRLs but instead confirmed the results of OEPA" and "DOEs results demonstrated persistent exceedence of surface water FRLs in this location. OEPA held the certification of this area until DOE could adequately demonstrate the cause of these exceedences and propose a remedy. The results of this study indicated that uranium in the area is more leachable than other areas of the Fernald Preserve" and "Based on the study of the cause of surface water FRLs in this area and OEPAs concern for public safety, DOE removed the soils to a drier part of the site". Preferable to either of the above two approaches would be, "In late 2006, during the course of routine sampling of several surface water locations, a localized area near the former waste pits was found to exceed the surface water FRL. Confirmatory sampling in 2007 demonstrate this area to persistently exceed the FRL" and "Although soils were properly certified, additional testing was done to determine the source of the FRL exceedence. Based on this testing, this area was found to have uranium leachability higher than anticipated from results sitewide, but lower than the most leachable soils found in the production area. Based on these results and in cooperation with the regulatory agencies, DOE removed the soils from this location to an area where leachability would not be an issue."

Response: Realizing the issue was of concern to Ohio EPA, DOE submitted the text in question to Ohio EPA for review on April 22, 2008 prior to publication. No comments from Ohio EPA were received and the text was published as proposed.

The SER is fundamentally a DOE document. While DOE was, is, and will remain committed to present a fair and balanced presentation of the information to the community, DOE reserves the right to prepare the SER in a style and format acceptable to DOE.

Action: None

Specific Comments on the SER:

Section 1.0

3. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.3.5 Pg #: 1-11/1-16 Line #: na Code: C
Comment: As stated in prior reports in this section:

"Meteorological data are gathered at the Fernald site and used to evaluate site-specific climatic conditions. The environmental monitoring program uses atmospheric models to determine how airborne effluents are mixed and dispersed. These models are then used to assess the impact of operations on the surrounding environment, in accordance with DOE requirements. Airborne pollutants are subject to weather conditions. Wind speed and direction, precipitation, and atmospheric stability play a key role in predicting how pollutants are distributed in the environment and in interpreting environmental data."

It is noted that this wording has been changed to address only particulates in the atmosphere and highlights the lack of on site meteorological data collection:

"Meteorological data are used in atmospheric models to evaluate how airborne particulate is mixed and dispersed. The amount of particulate predicted to be present in the atmosphere is used to assess the impact of operations on the surrounding environment, in accordance with DOE requirements. The Fernald Preserve no longer maintains a meteorological station, and 2007 data for temperature, precipitation, and wind velocity were obtained from two available sources."

Considering the above, a wind rose for 2007 should be included. In all prior years a wind rose for the year under review was included in the report. For 2007 there is only a summary from 2002-2006. Since "2007 data for…wind velocity (was) obtained…" the absence of a wind rose for 2007 is puzzling. The site should consider installation of a small meteorological station at the visitor's center which would include recording wind speed and direction so future reports could include site specific wind data.

Response: DOE has no plans for the installation of a meteorological station and will continue to depend on local available sources.

Action: None.

Section 2.0

4. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 2.1/Figure 2-1 Pg #: 2-3 Line #: na Code: C
Comment: Figure 2-1 designates the areas at Fernald where soil is uncertified. However, the soil underneath the utility lines should be included on this figure as well, since that soil is also uncertified.

Response: It is the surface soils that would be of importance in this context.

Action: None

5. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2.1 Pg #: 2-5 Line #: na Code: C

Comment: The phrase, "OEPA had yet to act on this certification at the end of 2007," is inappropriate. Ohio EPA may not have made a decision, but to state that Ohio EPA has not "acted" on the report is misleading.

Response: The statement is accurate as written

Action: None.

Section 4.0

6. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.1 Pg #: 4-1 Line #: na Code: C
Comment: This section states that:

"With the completion of remediation activities under Operable Units 1, 2, 3, and 4 as well as the completion of the vast majority of soil remediation under Operable Unit 5, (with the exception of soils associated with the groundwater treatment infrastructure) in October 2006, treated effluent is composed of only treated and untreated groundwater and leachate from the on-site disposal facility."

It was my understanding that precipitation that falls on and in the immediate vicinity of the CAWWT is captured and treated as well (see Section B.1.3, page B.1-8). If this is true, wouldn't the treated effluent also be composed of this rain water? Is the precipitation that falls on and in the immediate vicinity of the CAWWT being captured and treated? This statement should be modified to reflect any treated storm water.

Response: The storm water collected on controlled pads is incidental to the focus and operation of the plant.

Action: None.

7. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.2 Pg #: 4-3 Line #: na Code: C
Comment: There is no mention of whether DOE will conduct future monitoring in regards to the "series of small puddles and drainage ditches" west of Waste Pit 3. Even though efforts were made to address this area of contamination, DOE should discuss future monitoring and path forward if surface water concentrations continue to exceed the FRL.

Response: Acknowledged. The 2008 SER will discuss monitoring results and overall status of this area.

Action: As indicated in the response.

8. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.3 Pg #: 4-4 Line #: na Code: C
Comment: The focus of the monitoring program continues as it did during remediation. Monitoring activities post closure will have elements significantly different than those during cleanup. The surface water and sediment monitoring programs should reflect this change in focus.

Response: The SER is not the forum for this discussion. The IEMP, Attachment D in the LMICP, contains the approved monitoring program for surface water. The SER reports against this approved program.

Action: None.

9. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.3.1 Pg #: 4-8 Line #: na Code: C
Comment: This section states that surveillance monitoring at SWP-03 and PF 4001 are important because "they represent locations where direct exposure to the public is possible". This was true when access to the site was restricted. However as we move farther from the "contract closure" date in 2006, more and more public access has occurred. Consequently this view is no longer supported and direct exposure to the public is increasingly likely across the site. As a result, the surveillance monitoring focus should reflect this change.

Response: See response to Comment 8

Action: See Comment 8

Section 7.0

10. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 7.1 Pg #: 7-2 Line #: na Code: C
Comment: This section states that "Pursuant to the Natural Resource Restoration Plan, functional monitoring efforts were completed in 2005, so no additional monitoring was conducted in 2007." As indicated in Section E.1.4 additional monitoring may be needed so it may not be prudent to indicate that functional monitoring has been completed.

Response: Section E.1.4 is in reference to the continuation of implementation-phase monitoring into 2008, not functional monitoring.

Action: None

11. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 7.4 Pg #: 7-5 Line #: na Code: C
Comment: As the Fernald Preserve becomes more important as a refuge for local fauna and flora with increasing local development, continuing to list species of significance, in this section only, increases in importance. Considering this, including the Cave Salamander with the species described in the sidebar is advised. It may be useful to include the description of the Cobblestone Tiger Beetle as well. Both of these species are found in the vicinity of the Fernald Preserve and as the site becomes an importance resource for studying rare species knowing that these are close and perhaps moving on to the site will become more important. The site has already gained some recognition with regard to the bird species visiting it.

Response: Agree. A review of threatened and endangered species of concern at the Fernald Preserve is warranted.

Action: Revise Section 7.4 as needed for the 2008 SER submittal.

General Comments on the Appendices/Attachments: Appendix C

12. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Pg #: na Line #: na Code: C
Comment: Throughout Appendix C, there is reference to the 95% confidence level of the mean. What data distribution was used to calculate the confidence level and make the subsequent statements about the comparability of background and site boundary concentrations?

Response: A normal distribution was assumed for the calculations. Based on the above comment, the distribution assumption was tested using the Shapiro-Wilks test, and data from the monitoring locations were found to follow a normal or lognormal distribution. The mean and 95% confidence level for the lognormal data were recalculated using the transformed numbers, and new plots were generated. As the values for the 95% confidence level increased for the log-transformed data, there is less certainty of a difference between the background and site boundary mean values. Therefore, conclusions reached in Appendix C remain valid.

Action: If statistical calculations are used in the 2008 SER, the Shapiro-Wilks test will be used to evaluate the data distribution.

Specific Comments on the Appendices/Attachments: Attachment A.1

13. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.1 Pg #: A.1-7 Line #: 17 Code: C
Comment: The statements regarding the completeness of the remedy are inaccurate and misleading. EPA's methods for assessment of remedy completeness consider all wells. The text omits any indication that the trended concentration data in the site monitoring wells also must meet remediation goals. Also omitted from the statement is any discussion of the effects of concentration rebound as a result of unsaturated zone desorption and kinetic desorption processes, which will likely significantly impact the trend-based or VAM model-based cleanup estimates noted in the text. Clearly, any declaration of completeness (such as "the remedy is 66 percent complete") needs to include a discussion of the factors that are unaccounted for in the estimate.

Response: DOE agrees that changes in the way this information is being presented will be made in future SERs.

The objective is to compare the estimate for the pounds of uranium to be removed from the aquifer based on actual field data to the estimate made using the groundwater model. The uncertainty in the estimates is bracketed by estimating the pounds of uranium to be removed from the aquifer based on an estimate using the upper 95% UCL data. The text though needs to be consistent in defining and referring to the statement "percent complete." Although the text defines that the "estimated percent complete" is "based on lbs. of uranium to be removed" the text also refers to "percent complete" for the aquifer remedy.

In future SERs this will be corrected by referring to the steps of the Certification Plan and presenting this data in the context of completing Step 1 which is Pump and Treat Operations. As suggested, the percent complete statement will be qualified with reminders that rebound, unsaturated zone desorption, and kinetic desorption processes add uncertainty to the estimates and that is why an estimate based on the upper 95% UCL of the data is also presented.

Action: As stated in the response.

14. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.1 Pg #: A.1-7 Line #: 17 Code: C
Comment: DOE should define what is meant by aquifer remedy completion. Does it mean that the aquifer is certified to be cleaned up in accordance with the Fernald Groundwater Certification Plan? Is it assumed that the minimum anticipated timeframes given in the plan will be required for stages II and III (four months and three years respectively)? If so, is that realistic given the existing evidence that rebound is likely?

Response: As explained in response to Comment 13, in the case of estimated pounds of uranium to be removed, reference should be to Step 1 of the Certification Plan which is Pump and Treat Operations rather than "aquifer remedy completion". This delineation will be made in future SERs.

Action: See action to comment 13.

Attachment A.2

15. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.2 Pg #: A.2-5 Line #: 25 Code: C
Comment: Is surface water infiltration significant in the immediate vicinity of Monitoring Well 83341?

Response: Historically yes, but currently no. As noted in the text in this section (A.2.1.1), the reason the well was installed there was because there was potential for significant infiltration just up gradient from the well through the low point in former Waste Pit 3. Currently though, surface water infiltration is no longer significant in the immediate vicinity of Monitoring Well 83341. Surface water in this area is now conveyed to the southwest, toward the area of the former Clear Well where it has access to infiltrate the aquifer.

Action: No action required.

16. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.2 Pg #: A.2-6 Line #: 14 Code: C
Comment: The referenced discussion is in Section B.1.1.2, not Section 4.

Response: The reference discussion is contained in Section 4, in subsection 4.2 titled "Remediation Activities affecting the Surface Water Pathway".

Action: No action required.

17. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.2 Pg #: A.2-9 Line #: 28 Code: C
Comment: How was the steel lined shaft abandoned?

Response: The shaft was pulled from the ground, and the remaining hole was plugged using bentonite pellets.

Action: No action required.

18. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.2 Pg #: A.2-16 Line #: 5 Code: C

Comment: Is there any data to suggest that significant coarse grained material lenses in the till may contribute significant unmeasured flow to the SSOD?

Response: No. During walk downs over the years, visual inspection of the banks of the SSOD has revealed that there are no significant seeps feeding the ditch.

Action: No action required.

Attachment A.5

19. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5 Pg #: A.5-8 Line #: 40 Code: C
Comment: DOE should continue to collect annual leachate samples from OSDF Cells 1, 2, and 3 for analysis of OAC 3745-27-10 (Appendix I and PCBs). DOE and Ohio EPA have agreed to a procedure that uses the LCS annual data (LMICP, Volume II, Attachment C, Appendix E, Figures 3-2 and 3-3 and associated discussion on Page E-16) to verify that the monitoring list for each cell includes all appropriate constituents. The only way to ensure that the parameter list for a cell is complete is to test an annual leachate sample for Appendix I and PCB constituents and to conduct the agreed-to evaluation procedure provided in the LMICP, Volume II, Attachment C.

Response: DOE would like to discontinue the procedure mentioned in the comment and stop sampling for Appendix I and PCB parameters at all cells. Instead, DOE will sample all horizons of all cells annually for a list of constituents consisting of the site approved alternate monitoring parameter list identified in 2009 LMICP, Attachment C (GWLMP), Appendix E; useful common ions identified in the Common Ion Report; and the 6 LCS constituents identified for Cells 1-3 in the 2007 SER.

As reported in the 2007 SER, six LCS monitoring constituents passed the agreed to evaluation procedure mentioned in the comment for Cells 1-3. These six constituents are: arsenic, cobalt, nickel, selenium, TDS, and zinc. Similar to the way the five refined baseline constituents ended up being applied to each cell, it appears that the same six additionally potentially useful monitoring constituents will also end up being applied to each cell. Rather than prolong the selection of additional monitoring constituents for Cells 4-8 by completing 8 rounds of sampling and conducting the analysis for each cell, DOE intends to begin routine sampling of the six constituents indentified for Cells 1-3 in the 2007 SER immediately in the LCS, LDS, HTW, and GMA of all cells. The sampling would begin in 2009.

Action: DOE and OEPA need to come to an agreement on how to proceed with annual LCS monitoring. DOE recommends that beginning in 2009 monitoring should focus on the site specific alternate monitoring list supplemented by the constituents identified in the common ion report and the constituents identified as being potentially useful constituents for Cells 1, 2, and 3 from the 2007 SER.

20. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5 Pg #: A.5-9 Line #: 1 Code: C
Comment: Annual leachate sampling is required in the post-closure care phase for a landfill in Ohio. OAC 3745-27-14 A. states that following completion of final closure activities in accordance with rule OAC 3745-27-11, the owner of a landfill facility shall conduct post-closure care activities at the landfill for a minimum of thirty years. These activities include the submittal of an annual report to Ohio EPA. As stated in OAC 3745-27-14 A. (6) (b), if a leachate collection system exists, the report must include the

results of analytical testing of an annual grab sample of leachate for Appendix I and PCBs.

Response: It is not DOE's intent to discontinue annual LCS monitoring/sampling. Instead, it is DOE's intent to discontinue monitoring for the full list of Appendix I and PCB parameters and replace it with the site specific alternate list of Appendix I parameters that has been approved for the OSDF. In addition, this alternate list would be supplemented with the constituents identified in the common ion report and the constituents identified as being potentially useful constituents for Cells 1, 2, and 3 from the 2007 SER.

Ohio Solid Waste Regulations recognize that sampling for a leak from a facility using the full list of Appendix I and PCB parameters may not always be appropriate. OAC 3745-10(D) (2) therefore allows for the use of an alternate monitoring parameter list. The regulation states that "The owner or operator of a sanitary landfill facility may propose, in writing, to delete any of the Appendix I monitoring parameters to be used to meet the requirements of paragraphs (D)(5) to (D)(8) of this rule. The director may approve the alternative list of Appendix I monitoring parameters if the removed parameters are not reasonably expected to be in or derived from the waste contained or deposited in the sanitary landfill facility. Upon approval by the director or his authorized representative, the owner or operator may use the alternative list."

As described in Appendix E of the GWLMP, an alternate sampling constituent list was approved for the OSDF because it was shown that the removed parameters were not reasonably expected to be in or derived from the waste contained or deposited in the OSDF. This alternate list is the "Initial Baseline Constituent List" and it constitutes the "alternate list of Appendix I and PCB parameters" at the OSDF.

In addition to annual sampling of the LCS for the Initial Baseline Constituents, DOE also agreed to annual sampling for Appendix I and PCB parameters not contained in the Initial Baseline Constituent List until the Common Ion Study had been completed and at least 8 rounds of Appendix I and PCB constituent data had been collected. The Appendix I and PCB constituents detected at least 25% of the time, were to be evaluated to determine if they might also be useful leak indicator parameters. The agreed to method for the further evaluation is the process outlined in Figures A.5-4A and A.5-4B of the 2007 SER.

As stated in Appendix E of the GWLMP, there are several good reasons why an alternative monitoring parameter list was approved for the OSDF. Appendix I does not include any radionuclides, which are the primary constituents of concern for the OSDF. Chemical constituents listed in Appendix I of OAC 3745-27-10 are typical contaminants found in sanitary landfills. However, the OSDF is not a sanitary landfill; it is an engineered disposal cell. Because it is an engineered disposal cell records of what was placed in the cell exist. Placement of waste into the OSDF was directed by Waste Acceptance Criteria (WACs). The WACs were developed for site specific constituents of concern (COCs) and were also developed to be protective of the groundwater in the underlying Great Miami Aquifer. The alternative monitoring parameters were derived from the site specific COCs. Therefore many of the constituents in the list of Appendix I and PCB parameters are not reasonably expected to be in or derived from the waste contained or deposited in the OSDF.

Eight rounds of Appendix I and PCB sampling have been completed at Cells 1, 2, and 3. Constituents detected at least 25% of the time were further statistically evaluated as agreed. The constituents that could potentially enhance the early detection capability of the cell have been identified. As discussed in response to Comment 19, monitoring should continue for the alternate monitoring parameter list constituents supplemented with useful common ion

constituents, and the six potentially useful LCS constituents identified in the 2007 SER. Additional sampling of the LCS for the full list of Appendix I and PCB constituents should stop.

Action: DOE and OEPA need to come to agreement on when sampling will end for the full list of Appendix I and PCB parameters listed in OAC 3745-27-19 (M) (5) considering that eight rounds of sampling have been completed and sampling is also taking place for agreed to alternative sampling constituents (initial baseline constituents).

21. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.1 Pg #: A.5.1-3 Line #: 37 Code: C
Comment: The text should more fully summarize the results of the Cell 1 Appendix I and PCB analyses in terms of analyte type. The detection frequencies for VOCs, SVOCs, radionuclides, metals, pesticides, and PCBs should be noted in this summary.

Response: This comment is similar to 24, 35, 40, 42, 44, 46, and 49. LCS sampling summaries are provided in each subsection in table format. For Cell 1 refer to Table A.5.1-3. Data is presented in Table A.5.1-3 in alphabetical order by the parameter. For the 2008 SER, the table will be re-formatted to present the summary by analyte type, then alphabetically by parameter.

Action: As stated in the response.

22. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.1 Pg #: A.5.1-3 Line #: 37 Code: C
Comment: Of the 12 common ions that have been sampled at least eight times and have been detected 25 percent of the time, DOE should select the ions that best differentiate between the three monitoring horizons (LCS, LDS, and HTW). The selection of these common ions should be based on Cell 1 bivariate ion plots and Cell 1 concentration versus time plots. The ions thus selected may not necessary correspond to the Cell 1 ions selected from the Common Ion Study (boron and manganese). The final list of common ions should be sampled along with the refined list constituents for this cell.

Response: This comment is similar to comments 25, 36, 41, 43, 45, 47, and 50. DOE has selected the ions that best differentiate between the three monitoring horizons. These are identified in the Common Ion Report.

Action: No action required.

23. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.1 Pg #: A.5.1-5 Line #: 5 Code: C
Comment: Arsenic, cobalt, nickel, selenium, TDS, and zinc should be sampled along with the refined list of constituents for Cell 1. Data collection is the only viable approach to determining whether or not these constituents will significantly enhance the early detection capability of the monitoring program.

Response: Agree

Action: As reflected in the 2009 LMICP, Attachment C (Groundwater/Leak Detection and Leachate Monitoring Plan), to be effective January 1, 2009, arsenic, cobalt, nickel, selenium, TDS, and zinc will be sampled routinely at every horizon in all eight cells.

24. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5.2-3 Line #: 37 Code: C
Comment: For the Cell 2 leachate sample, the text should more fully summarize the results of the Appendix I and PCB analyses in terms of analyte type. For the current sampling round, the detection frequencies for VOCs, SVOCs, radionuclides, metals, pesticides, and PCBs should be noted in this summary.

Response: This comment is similar to Comment 21.

Action: Please see Comment 21 action.

25. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5.2-3 Line #: 37 Code: C
Comment: Of the 12 common ions that have been sampled at least eight times and have been detected 25 percent of the time in Cell 2, DOE should select the ions that best differentiate between the three monitoring horizons. The selection of these common ions should be based on Cell 2 bivariate ion plots and Cell 2 concentration versus time plots. The ions thus selected may not necessary correspond to the Cell 2 ions selected from the Common Ion Study (sulfate, manganese, and iron). The final list of common ions should be sampled along with the refined list constituents for this cell.

Response: This comment is similar to Comment 22.

Action: Please see Comment 22 action.

26. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5.2-5 Line #: 7 Code: C
Comment: Arsenic, cobalt, nickel, selenium, TDS, and zinc should be sampled along with the refined list of constituents for Cell 2. Data collection is the only viable approach to determining whether or not these constituents will significantly enhance the early detection capability of the monitoring program.

Response: This comment is the same as Comment 23.

Action: Please see Comment 23 action.

27. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5-9 Line #: 2 Code: C
Comment: The OSDF contains 2.96 million cubic yards of contaminated debris and soil. The analyses conducted to develop the WAC were necessary to achieve the goal that, <u>to the extent possible</u>, debris and soil with concentrations corresponding to risks above an acceptable threshold level were not disposed of onsite in the OSDF but were disposed of offsite in a facility designed to handle such materials. The WAC were the best available approach to achieve this goal. However, given the shear volume of material placed in the OSDF, it is inappropriate to use the WAC calculations as a substitute for measured concentrations in leachate.

Response: DOE is not proposing to use WAC calculations as a substitute for measured concentrations in leachate.

Action: No action required.

28. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5-9 Line #: 2 Code: C
Comment: As is true for the WAC, perched groundwater data are no substitute for measured concentrations in leachate, given the size of the OSDF. Annual leachate samples, therefore, should continue to be collected and tested for Appendix I and PCBs.

Response: This comment is similar to Comment 19.

Action: Please see Comment 19 action.

29. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5-9 Line #: 14 Code: C
Comment: Until the leachate data are collected, the LMICP Volume II Attachment C evaluation run, and the monitoring systems sampled for the identified constituents, it is pure conjecture as to whether or not the constituents identified will, in fact, perform well as leachate detection constituents at the OSDF.

Response: Comment acknowledged. DOE has no intention of determining whether or not a constituent identified will in fact perform well until the LMICP Volume II Attachment C evaluation has been run.

Action: No action required.

30. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5-9 Line #: 30 Code: C
Comment: The stated goal of the Common Ion Study is to conduct ion monitoring for the purpose ascertaining when steady state conditions have been reached and statistically valid control charts can be constructed. In none of the discussions or planning documents pertaining to the Common Ion Study was it stated that the objective of the study was to generate a list of common ions for use as substitutions for the original list of monitoring parameters at the OSDF.

Response: The Common Ion Study did determine those constituents that have reached steady state and passed the agreed to statistical screening for control charting. It went one step further and also identified useful monitoring parameters based on the results of the statistical screening.

Action: No action required.

31. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5-10 Line #: 17 Code: C
Comment: Since it is based on arbitrary assumptions regarding leakage rates and data quality, the x4 screening factor indiscriminately rejects data that may otherwise be useful for leak detection monitoring. The x4 screening factor should, therefore, be abandoned.

Response: DOE disagrees. The x4 factor is not arbitrary. It is based on recognized EPA laboratory performance error.

Action: No action required.

32. Commenting Organization: OEPA Commenter: GeoTrans, Inc.

Section #: Attach. A.5.2 Pg #: A.5-10 Line #: 19 Code: C
Comment: The parameter list in the text is incomplete for use in leak detection monitoring because it is not based on the full list of potential leachate constituents as defined by Appendix I and PCBs list.

Response: This comment is similar to Comment 19.

Action: Please see Comment 19 action.

33. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5-13 Line #: 38 Code: C
Comment: It is agreed that the list of monitoring constituents for Cell 8 can be reduced to the five constituents (total uranium, boron, total organic carbon, total organic halogens, and sulfate) monitored on a quarterly basis for Cells 1 through 7.

Response: Comment acknowledged.

Action: No action required.

34. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.2 Pg #: A.5-13 Line #: 38 Code: C
Original Comment#
Comment: DOE should continue to collect annual leachate samples from OSDF Cells 1, 2, and 3 for analysis Appendix I and PCBs. The only way to ensure that the parameter list for a cell is complete is to test an annual leachate sample for Appendix I and PCB constituents and to conduct the agreed-to evaluation procedure provided in the LMICP, Volume II, Attachment C.

Response: This comment is similar to Comment 19.

Action: Please see Comment 19 action.

35. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.3 Pg #: A.5.3-3 Line #: 37 Code: C
Comment: For the Cell 3 leachate sample, the text should more fully summarize the results of the Appendix I and PCB analyses in terms of analyte type. For the current sampling round, the detection frequencies for VOCs, SVOCs, radionuclides, metals, pesticides, and PCBs should be noted in this summary.

Response: This comment is similar to Comment 21.

Action: Please see Comment 21 action.

36. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.3 Pg #: A.5.3-3 Line #: 37 Code: C
Comment: Of the 11 common ions that have been sampled at least eight times and have been detected 25 percent of the time in Cell 3, DOE should select the ions that best differentiate between the three monitoring horizons. The selection of these common ions should be based on Cell 3 bivariate ion plots and Cell 3 concentration versus time plots. The ions thus selected may not necessary correspond to the Cell 3 ions selected from the Common Ion Study (manganese and sodium). The final list of common ions should be sampled along with the refined list constituents for this cell.

Response: This comment is similar to Comment 22.

Action: Please see Comment 22 action.

37. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.3 Pg #: A.5.3-5 Line #: 8 Code: C
Comment: Cobalt, nickel, selenium, TDS, and zinc should be sampled along with the refined list of constituents for Cell 3. Data collection is the only viable approach to determining whether or not these constituents will significantly enhance the early detection capability of the monitoring program.

Response: This comment is similar to Comment 23.

Action: Please see Comment 23 action.

38. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.3 Pg #: A.5.3-5 Line #: 29 Code: C
Comment: It is agreed that the statistical analyses results shown in Table A.5.3-4 support the discontinuation of sampling for 1, 1-dichloroethane in accordance with the proposed action outlined in the text.

Response: Comment acknowledged.

Action: No action required.

39. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.3 Pg #: A.5.3-9 Line #: 38 Code: C
Comment: DOE should confirm that the units for the 1, 1-dichloroethane concentrations shown in Table A.5.3-4 are in ug/L not mg/L as noted in the table.

Response: Concentration for 1,1-dichloroethane reported in Table A.5.3-4 is ug/L not mg/L.

Action: The table will be corrected in future versions of the SER.

40. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.4 Pg #: A.5.4-3 Line #: 37 Code: C
Comment: For the Cell 4 leachate sample, the text should more fully summarize the results of the Appendix I and PCB analyses in terms of analyte type. For the current sampling round, the detection frequencies for VOCs, SVOCs, radionuclides, metals, pesticides, and PCBs should be noted in this summary.

Response: This comment is similar to Comment 21.

Action: Please see Comment 21 action.

41. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.4 Pg #: A.5.4-3 Line #: 37 Code: C
Comment: Of the 11 common ions that have been sampled at least eight times and have been detected 25 percent of the time in Cell 4, DOE should select the ions that best differentiate between the three monitoring horizons. The selection of these common ions should be based on Cell 4 bivariate ion plots and Cell 4 concentration

versus time plots. The ions thus selected may not necessary correspond to the Cell 4 ions selected from the Common Ion Study (sodium). The final list of common ions should be sampled along with the refined list of constituents for this cell.

Response: This comment is similar to Comment 22.

Action: Please see Comment 22 action.

42. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.5 Pg #: A.5.5-3 Line #: 37 Code: C
Comment: For the Cell 5 leachate sample, the text should more fully summarize the results of the Appendix I and PCB analyses in terms of analyte type. For the current sampling round, the detection frequencies for VOCs, SVOCs, radionuclides, metals, pesticides, and PCBs should be noted in this summary.

Response: This comment is similar to Comment 21.

Action: Please see Comment 21 action.

43. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.5 Pg #: A.5.5-3 Line #: 37 Code: C
Comment: Of the 11 common ions that have been sampled at least eight times and have been detected 25 percent of the time in Cell 5, DOE should select the ions that best differentiate between the three monitoring horizons. The selection of these common ions should be based on Cell 5 bivariate ion plots and Cell 5 concentration versus time plots. The ions thus selected may not necessary correspond to the Cell 5 ions selected from the Common Ion Study (manganese). The final list of common ions should be sampled along with the refined list constituents for this cell.

Response: This comment is similar to Comment 22.

Action: Please see Comment 22 action.

44. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.6 Pg #: A.5.6-3 Line #: 37 Code: C
Comment: For the Cell 6 leachate sample, the text should more fully summarize the results of the Appendix I and PCB analyses in terms of analyte type. For the current sampling round, the detection frequencies for VOCs, SVOCs, radionuclides, metals, pesticides, and PCBs should be noted in this summary.

Response: This comment is similar to Comment 21.

Action: Please see Comment 21 action.

45. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.6 Pg #: A.5.6-3 Line #: 37 Code: C
Comment: Of the 11 common ions that have been sampled at least eight times and have been detected 25 percent of the time in Cell 6, DOE should select the ions that best differentiate between the three monitoring horizons. The selection of these common ions should be based on Cell 6 bivariate ion plots and Cell 6 concentration versus time plots. The ions thus selected may not necessary correspond to the Cell 6 ions selected from the Common Ion Study (manganese and sodium). The final list of

common ions should be sampled along with the refined list constituents for this cell.

Response: This comment is similar to Comment 22

Action: Please see Comment 22 action.

46. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.7 Pg #: A.5.7-3 Line #: 37 Code: C
Comment: For the Cell 7 leachate sample, the text should more fully summarize the results of the Appendix I and PCB analyses in terms of analyte type. For the current sampling round, the detection frequencies for VOCs, SVOCs, radionuclides, metals, pesticides, and PCBs should be noted in this summary.

Response: This comment is similar to Comment 21.

Action: Please see Comment 21 action.

47. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.7 Pg #: A.5.7-3 Line #: 37 Code: C
Comment: Of the 12 common ions that have been sampled at least eight times and have been detected 25 percent of the time in Cell 7, DOE should select the ions that best differentiate between the three monitoring horizons. The selection of these common ions should be based on Cell 7 bivariate ion plots and Cell 7 concentration versus time plots. The ions thus selected may not necessary correspond to the Cell 7 ions selected from the Common Ion Study (manganese). The final list of common ions should be sampled along with the refined list constituents for this cell.

Response: This comment is similar to Comment 22.

Action: Please see Comment 22 action.

48. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.8 Pg #: A.5.8-3 Line #: 27 Code: C
Comment: It is agreed that monitoring for Cell 8 can transition from the baseline list to the refined list of parameters sampled in Cells 1 through 7. This list includes five constituents (total uranium, boron, total organic carbon, total organic halogens, and sulfate) monitored on a quarterly.

Response: Comment acknowledged.

Action: No action required.

49. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.8 Pg #: A.5.8-3 Line #: 37 Code: C
Comment: For the Cell 8 leachate sample, the text should more fully summarize the results of the Appendix I and PCB analyses in terms of analyte type. For the current sampling round, the detection frequencies for VOCs, SVOCs, radionuclides, metals, pesticides, and PCBs should be noted in this summary.

Response: This comment is similar to Comment 21.

Action: Please see Comment 21 action.

50. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. A.5.8 Pg #: A.5.8-3 Line #: 37 Code: C
Comment: Of the 10 common ions that have been sampled at least eight times and have been detected 25 percent of the time in Cell 8, DOE should select the ions that best differentiate between the three monitoring horizons. The selection of these common ions should be based on Cell 8 bivariate ion plots and Cell 8 concentration versus time plots. The ions thus selected may not necessary correspond to the Cell 8 ions selected from the Common Ion Study. The final list of common ions should be sampled along with the refined list constituents for this cell.

Response: This comment is similar to Comment 22.

Action: Please see Comment 22 action.

51. Commenting Organization: OEPA Commenter: GeoTrans, Inc.
Section #: Attach. B.1 Pg #: B.1-7 Line #: 12 Code: C
Comment: Has the source of the elevated uranium concentrations at SWD-05 been determined? The source (contaminated soil?) for the elevated uranium in surface water should be identified and remediated before the contamination is allowed to enter the aquifer.

Response: As reported in the 2007 SER, Section 4.2, page 4-3, soil was removed and the area was regraded in the fall of 2007. As indicated in the text, that is the subject of this comment, the area in question is within the capture zone of the Waste Storage Area extraction wells so if there is any contamination entering the aquifer in this area it will be drawn to the extraction wells. As an additional precaution, ongoing monitoring of the surface water at SWD-05 continues, as agreed to.

Action: Continue monitoring SWD-05.

52. Commenting Organization: Ohio EPA Commentor: DSW
Section #: B.1.1 Pg #: B.1-3 Line #: na Code: C
Comment: This states that surveillance monitoring is conducted "...to determine effects of remediation activities on the surface water pathway." As noted elsewhere, this is still written as though remediation continues and there are project specific monitoring requirements for remedial activities. Monitoring activities post closure will have elements significantly different than those during cleanup. This should be rewritten to reflect this change in focus. Emphasis should be placed on monitoring to verify FRLs are not being exceeded sitewide.

Response: See response to Comment 8

Action: Please see Comment 8 action.

53. Commenting Organization: Ohio EPA Commentor: DSW
Section #: B.1.1.1 Pg #: B.1-4 Line #: na Code: E
Comment: "...one-half acre in aerial extent..." should read "...one-half acre in areal extent..."

Response: Agreed

Action: The misspelling shall be corrected in the 2008 SER Appendix.

54. Commenting Organization: Ohio EPA Commentor: DSW
Section #: Table B.1-1 Pg #: B.1-9 Line #: na Code: C
Comment: Although this table shows FRL exceedences for SWD-05, with no trend analysis, the text mentions the several exceedences of the surface water FRL at locations in the swale but they are not included in Table B.1-1. They should be shown as well as any trend analysis associated with them.

Response: The SER reports against monitoring points established in the IEMP. Other than SWD-05, the samples collected from the swale are not from officially established monitoring points. However, a summary of the data from the swale is included in Section 4.3.1.

Action: None.

Appendix E

55. Commenting Organization: Ohio EPA Commentor: DSW
Section#: E.1.2 Pg #: E-20 Line #: na Code: C
Comment: Several factors are listed as causes of low herbaceous cover in recently restored areas. Among the listings are compaction and low soil amendment volume. We have recommended till depth and organic soil content amounts previously to increase the likelihood of success for herbaceous cover in restored areas. It was clear that these recommendations were not followed in the most barren areas. We disagree that in these areas that these issues "will repair themselves over time." Although we agree that in some areas the prudent course of action was patience to allow the native herbaceous cover to establish itself; those areas had more organic content and less soil compaction. We believe that intervention will be needed to achieve success in many of the areas that were restored prior to closure and that remain relatively barren now

Response: Paragraph four on page E-20 acknowledges that some additional fieldwork may be necessary to achieve the goals and objectives of ecologically restored areas. It is anticipated that agreement will be reached among the Natural Resource Trustees with respect to which areas require additional work.

Action: Evaluate historic data, current conditions and updated goals and objectives with the Natural Resource Trustees to determine additional monitoring requirements and success criteria.

56. Commenting Organization: Ohio EPA Commentor: DSW
Section #: Table E-1 Pg #: E-21 Line #: na Code: C
Comment: A pH greater than 9 exceeds the water quality standards. Is there any reason that you have results this high? Likewise dissolved oxygen less than 5 ppm is not conducive to aquatic life. You have results ranging from very high (near 20 ppm) that I would assume to be caused by algae if taken on a very sunny day, to very low. Any explanations for these disparate results

Response: It is difficult to attribute a cause to these findings given the limited sampling that has taken place. In addition, the current monitoring approach may be revised following discussions with the Natural Resource Trustees. As with the prairie restoration areas discussed in the response to Comment No. 55, it is anticipated that the Natural Resource Trustees will reach agreement with a path forward for wetland mitigation areas.

Action: Evaluate historic data, current conditions and updated goals and objectives with the Natural Resource Trustees to determine additional monitoring requirements and success criteria.