



State of Ohio Environmental Protection Agency

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George V. Voinovich
Governor

April 10, 1997

RE: DOE FEMP
COMMENTS
OSDF GW MONITORING
PLAN

Mr. Johnny Reising
U.S. Department of Energy, Fernald Area Office
P.O. Box 538705
Cincinnati, OH 45253-8705

Dear Mr. Reising:

This letter provides as an attachment Ohio EPAs comments on the draft final Groundwater/Leak Detection and Leachate Monitoring Plan for the OSDF.

If you have any questions, please contact Mike Proffitt or me.

Sincerely,

Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

- cc: Jim Saric, U.S. EPA
- Terry Hagen, FERMCO
- Ruth Vandergrift, ODH
- Mike Proffitt, DD&GW
- Bob Geiger, PRC
- Manager, TPSS/DERR,CO
- Dave Ward, GeoTrans

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**INTEGRATED ENVIRONMENTAL MONITORING PLAN
COMMENTS ON DRAFT FINAL**

COMMENTS

- 1) Commenting Organization: OEPA Commentor: HSI GeoTrans
Section#: 3.0 Pg. #: Line #: Code: C
Comment: The use of geoprobe technology does not seem to have been considered in the development of the IEMP strategy. A discussion regarding the merits of this technology should be included. It is recommended that flexibility be incorporated into the monitoring program to allow for rapid deployment of geoprobe, specifically when erratic or unexplainable monitoring data results arise in the future.

- 2) Commenting Organization: OEPA Commentor: HSI GeoTrans
Section#: 3.4.1 Pg. #:3-10 Line #: 25-26 Code: C
Comment: An implicit expectation of model verification is, if significant discrepancies are encountered between observed data and model predictions, the adjusted model may be used to modify the remediation system and the accompanying monitoring program (as indicated in Section 3.7.1). This should be reflected in Design Considerations (Section #: 4.2) Further discussion on this topic should be referenced to other documents (possibly the Baseline Remedial Strategy Report) or included here.

- 3) Commenting Organization: OEPA Commentor: HSI GeoTrans
Section#: 3.4.2.1 Pg. #:3-14 Line #: 5-8 Code: C
Comment: Not all modules are independent and the statement that they will be "independently withdrawn from service" may not be entirely true. In particular, the operation of the South Plume Module and the Injection Demonstration Module are linked together, and the performance of the latter may significantly affect the efficiency of the former. This inter-dependence is clearly indicated on (Section#: 3.4.2.1; Pg. #: 3-15, Line #: 5-11) and should be applied to the design of IEMP groundwater monitoring plan (Section#: 3.5; Pg. #: 3-28, Line #: 25-27).

- 4) Commenting Organization: OEPA Commentor: HSI GeoTrans
Section#: 3.4.2.1 Pg. #:3-17 Figure #: 3-5 Code: C
Comment: The basis for selecting locations of injection wells is not provided. Although the groundwater flow field is generally converging towards the extraction well, the possibility of some constituents of concern escaping the capture zone of extraction wells should not be neglected. This is particularly important since mixing of off-property uranium plume and PRRS plume has been listed as a high priority (Section#: 3.5.1.1; Pg. #:3-29; Line #: 21-23). It should be specified how this contingency is accounted for in the design consideration.

- 5) Commenting Organization: OEPA Commentor: HSI GeoTrans
Section#: 3.4.2.2 Pg. #:3-20 Line #: 27-28 Code: C
Comment: The details of "step-wise" verification of completion of the remedy for each module should be provided.

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- 6) Commenting Organization: OEPA Commentor: HSI GeoTrans
Section #: 3.5.1.2 Page #: 3-40 Line #: 11-12 Code: C
Comment: In locating the new monitoring wells after excavation and other remedial activities have been completed, the locations and construction techniques of the old monitoring wells should be considered. It may be useful to "reconstruct" some of the old monitoring wells such that the historical analytical records from the old wells can be matched to the new wells. Historical records can be very useful in tracking groundwater restoration efforts.
- 7) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.5.1.2 Pg #: 3-40 Line #: 14 Code: c
Original Comment #:
Comment: The Ohio EPA agrees that it is preferable to have operational experience prior to determining the locations and numbers of South Field monitoring wells. This section does not commit to any time-frame for making this determination. Please tie the timing of this determination to an OU2 deliverable (the excavation close-out report, for instance) so that the this doesn't "fall thru the cracks".
- 8) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 3.5.1.4 Pg #: 3-44 Line #: Fig 3-13 Code: c
Original Comment #: 93
Comment: The proposed monitoring well frequency should be adequate to monitor the relatively long term effects of the OU1 waste pit clean-up activities. As stated in the response to comments, this will detect releases from the waste storage area before they can travel outside the capture zone of the Waste Storage Area Recovery System. However, DOE needs to consider the impact that this possible source loading could have on the overall ground water clean-up scheduling. Once this slug of contaminants has entered the aquifer matrix, the time required to "flush it out" may be substantial. The DOE should investigate the impacts that this may have as part of the work plan for the OU1 remediation.
- 9) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.5.2.2 Pg #: 3-53 Line #: 5 Code: c
Original Comment #:
Comment: The replacement of the Project-Specific Plan for the Routine Groundwater Monitoring Program Along the Downgradient Boundary of the FEMP, Revision 1 by the IEMP will require that the Director's Findings and Orders (DF&Os) be modified to remain consistent with the changes in the parameter list, monitoring frequency, and reporting schedule
- 10) Commenting Organization: OEPA Commentor: HSI GeoTrans
Section #: 3.5.2.2 Pg #: 3-55 Line #: 1-3 Code: C
Comment: The justification for quarterly sampling of the nine constituents categorized as >MP for

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RCRA property boundary monitoring is not obvious. The monitoring wells associated with the IEMP modules are located within the perimeter wells for RCRA monitoring, and are sampled quarterly. Based on absence of constituents of concern at the IEMP module monitoring wells, arguments can be made for a semi-annual or annual monitoring at the RCRA property boundary.

- 11) ~~Commenting Organization: Ohio-EPA~~ ~~Commentor: OFFO~~
 Section #: 3.7 Pg #: 3-78 Line #: 4 Code: c
 Original Comment #:
 Comment: Please quote an acceptable range of variation between modeled and measured groundwater levels.
- 12) Commenting Organization: ODH Commentor: ODH
 Section #: 4.2.2 Pg #: 4-3 Line #: Code:
 Original Comment #:
 Comment: ODH does not receive the quarterly FFCA sampling program result reports on radiological constituents and elsewhere in the text. ODH requests inclusion on the copy list.
- 13) Commenting Organization: ODH Commentor: ODH
 Section #: 4.5.2.1 Pg #: 4-40 Line #: Code:
 Original Comment #:
 Comment: Footnoted at the bottom of page 4-40 states radionuclides do not have standard methods of analysis. While no consensus yet exists, ASTM, U.S. EPA, and the Standard Methods Series contain methods which are considered as standards.
- 14) Commenting Organization: Ohio EPA Commentor: DSW
 Section #: 4.6.1 Pg #: 4-59 Line #: 7 Code: C
 Original Comment #:
 Comment: Due to the scope of the remedial activities at the site and the inherent limitations of the controls used, it is anticipated that some adverse effects to the quality of the surface waters will occur. It is therefore suggested that the question be modified to more accurately reflect this by asking "Has the uncontrolled runoff and implementation of site remedial activities caused an undue adverse impact to the surface water".
- 15) Commenting Organization: ODH Commentor: ODH
 Section #: 6.0 General Comment Pg #: Line #: Code:
 Original Comment #:
 Comment: As the IEMP is revised every two years, it may be advantageous to depict project-specific air monitors (if used) along with the regular particulate monitor network as the air pathway is the principal one for dose to the public. This would provide a better total view of the air monitoring effort and would

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show "integration".

- 16) Commenting Organization: ODH Commentor: ODH
Section #: 6.0 General Comment Pg #: Line #: Code:
Original Comment #:
Comment: ~~To continually demonstrate NESHAPS compliance, what are the contingencies if property owners revoke siting of Hi-Vols on their properties? Are the former locations near the fencelines maintained as an option for use?~~
- 17) Commenting Organization: Ohio EPA Commentor: DAPC
Section #: 6.0 General Comment Pg #: n/a Line #: n/a Code: C
Original Comment #:
Comment: All monitors, new and existing, should meet US EPA ambient monitoring site guidelines for Hi-vols.
- 18) Commenting Organization: Ohio EPA Commentor: DAPC
Section #: 6.0 General Comment Pg #: n/a Line #: n/a Code: C
Original Comment #:
Comment: There is only one radon monitor in the 60-120 degree sector and one in the 135-195 degree sector (centered on the vitrification plant). OEPA recommends increasing the radon monitoring in these areas.
- 19) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.1 Pg #: 6-1 Line #: 13-20 Code: C
Original Comment #:
Comment: Two additional regulatory drivers should be considered while developing the air monitoring program; namely, DOE Order 5400.5 Chapter II 2: The ALARA Process and 10 CFR 834 (Proposed) 834.102. The air monitoring program should be designed to fulfill the regulatory requirements for all applicable drivers.
- 20) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.1 Pg #: 6-2 Line #: 4-7 Code: C
Original Comment #:
Comment: The sentence beginning with "Monitoring at or near...." should be reworded to indicate that monitoring at or near potential receptor locations will provide a direct measure of the radionuclide concentrations present in the air at the sampling location and NOT a measure of the "environmental conditions" present.

This sentence should also be changed to reflect that a dose estimate will be conducted at the potential

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receptor location based on the direct measurement of radionuclide concentrations in air. It seems that the reliability and the accuracy of this dose assessment methodology remains to be seen.

- 21) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.1 Pg #: 6-2 Line #: 12 Code: C
Original Comment #:
Comment: What are the "established thresholds"?

- 22) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.2 Pg #: 6-2 Line #: 31-33 Code: C
Original Comment #:
Comment: The separation of IEMP responsibilities and project specific emissions control monitoring is inconsistent with the DOE Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance (1991). This document states that "All airborne emissions from DOE-controlled facilities should be evaluated.....The results of this evaluation...should be documented in the site Environmental Monitoring Plan."

Ohio EPA suggests that a central "entity" be established at the FEMP that will have overall responsibility for the monitoring of all airborne emissions. This "entity" will ensure that all monitoring is performed as stated in the IEMP, individual work plans, and evaluate the overall effectiveness of the air program. One entity at the FEMP should be able to answer any questions about air emissions and air monitoring.

The QA sampling requirements for the alpha track-etch cups are inadequately described in this section. Only sample spikes are indicated as a QA measure. Field blanks, blind duplicates, trip blanks, etc need to be included to assure quality radon data from alpha track-etch cups.

- 23) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.5.3.2 Pg #: 6-30 Line #: n/a Code: C
Original Comment #:
Comment: There is no mention of periodic source checks for the continuous radon monitors. The use of control charts and source checks are necessary when utilizing this type of equipment.
- 24) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.6.1 Pg #: 6-35 Line #: 20-21 Code: C
Original Comment #:
Comment: The data should also be evaluated to determine if releases of radiological contaminants to the atmosphere are complying with ALARA standards (e.g. are airborne concentrations higher than anticipated? What measures can be employed to keep the dose ALARA). There should also be action

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levels which would trigger appropriate actions to ensure that the Subpart H standard is not exceeded. This action level should be substantially less than the NESHAP standard.

APPENDIX C

- 25) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: C.2.3.1 Pg #: C14 Line #: 10-20 Code: C
Original Comment #:
Comment: The Thorium Series (e.g. Th-232 and daughters) is not discussed in this section. Provide explanation on how these isotopes will be incorporated into NESHAP reporting.

APPENDIX D

- 26) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Appendix D General Comment Pg #: Line #: Code: C
Original Comment #:
Comment: Obviously it is difficult to develop as well as review this natural resource monitoring plan prior to completing the Impact Assessment and the Restoration Plan documents. Ohio EPA believes it is appropriate to revisit this portion of the IEMP following completion of those documents.
- 27) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Appendix D General Comment Pg #: Line #: Code: C
Original Comment #:
Comment: I'm not sure if this document was provided to the other Natural Resource Trustees for review. If not, it is necessary for them to review the document prior to finalization.
- 28) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: D.4.1.1.1 Pg #: 8 Line #: 19-21 Code: C
Original Comment #:
Comment: Due to the problems associated with the Area 1 Phase 1 work plan and the lack of approval for that document, Ohio EPA recommends extraction of the Sloan's Crayfish Monitoring Plan from that document with incorporation into the IEMP. This is appropriate in that the need to monitor Sloan's Crayfish population is not just due to A1P activities.
- 29) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: D.4.1.3 Pg #: 9 Line #: 27-33 Code: C
Original Comment #:
Comment: Include a map of areas of concern for Running Buffalo Clover as well as a list of work plans

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which would include surveys in such areas.

- 30) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: D.4.4 Pg #: 11 Line #: 13-24 Code: C
Original Comment #:
Comment: Either this document or the NRRP must more clearly define how "ground truthing" of the Impact Assessment will be conducted. This is an essential step in ensuring natural resource damages are appropriately restored.
- 31) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Figure D-2 Pg #: Line #: Code: C
Original Comment #:
Comment: Revise legend to define outlined areas.

EDITORIAL COMMENTS

- 32) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2.2 Pg #: 3-4 Line #: 7 Code:
Original Comment #:
Comment: The word groundwater is hanging at the end of this sentence.
- 33) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.5.1.3 Pg #: 3-41 Line #: 33-35 Code:
Original Comment #:
Comment: The beginning sentences of this section are repeated on the next page 3-42. Delete one of them.
- 34) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.4.2.1 Pg #: 4-14 Line #: 4 Code: E
Original Comment #:
Comment: The text states that FRL and BTV exceedences are in Appendix C whereas, they are found in Appendix B.
- 35) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.4.2.3 Pg #: 4-17 Line #: 15 Code: E
Original Comment #:
Comment: The text states that FRL and BTV exceedences are in Appendix C whereas, they are found in Appendix B.

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- 36) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.5.4. Pg #: 5-15 Line #: 22 Code:
Original Comment #:
Comment: Change FERMCO to Fluor Daniel Fernald.
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- 37) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 8.2.1. Pg #: 8-5 Line #: 3 Code:
Original Comment #:
Comment: Delete wording. The AIP does not say that Ohio EPA has "limited" independent sampling abilities. It simply states that Ohio EPA *may also take additional samples*.