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OSDF 90% DESIGN APPROVAL WITHHELD

09/29/96

OEPA
20
COMMENTS

DOE-FN

OhioEPA
State of Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911
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377

George V. Voinovich
Governor

August 29, 1996

RE: DOE FEMP
MSL 531-0297
HAMILTON COUNTY:
OSDF 90% DESIGN
APPROVAL WITHHELD

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 Pre-Final Design Package (90 percent) for the On-Site Disposal Facility (OSDF). This design package includes a Design Criteria Package, a Specification Package, a Calculations Package, Design Drawings, a Leachate Conveyance Systems Package, a Support Plans Package, and Remedial Action Work Plan for the OSDF. The Ohio Department of Health, Bureau of Radiation, Contaminated Sites Unit has also reviewed some of these plans and the comments offered here have been prepared after consultation with the Contaminated Sites Unit.
We withhold approval of the entire package. If you have any questions, please contact Tom Ontko or me.

Sincerely,

Tom Quinlan For

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
Sharon McLellan, PRC
Dave Ward, GeoTrans
Manager, TPSS/DERR,CO

OSDFFIN.LTT

(Warner(r)
partial
action response
to doe-1064-96
(9824)

Ohio Environmental Agency Comments
Pre-Final Design Packages for the On-Site Disposal Facility
August 29, 1996

Support Plans

Permitting Plan and Substantive Requirements

1) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix A Pg #: A-8 Line #: OAC 3745-66-19(A) Code:
Original Comment #:
Comment: The first line contains a typographical error, "rot he" should read "to the".

2) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix A Pg #: A-15 Line #: OAC 3745-27-06(B)(6) Code:
Original Comment #:
Comment: The bullet "Direction of flow and points of concentration of all surface waters on the site..." refers to drawings that do not contain the information listed. Most of this information appears to be left up to the subcontractor to provide (e.g. Section 02270, Erosion and Sediment Control). However this information should be provided with the drawings.

3) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Appendix A Pg #: A-22 Line #: Code:
Original Comment #:
Comment: The citation to OAC 3745-27-06(C)(3) and the requirement to control and manage groundwater infiltration is listed as "not applicable". The reason for this is not clear considering that the OSDF is planned to be constructed in a location with areas of known perched water and that over-digging water-bearing sand seams is a design consideration,

4) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix A Pg #: A-28 Line #: OAC 3745-27-06(C)(10)
Original Comment #:
Comment: The cross-references listed for the bullet "jeopardize the continued existence of endangered or threatened species..." should include Appendix D of the Remedial Action Work Plan for the Soil Remediation Project Area 1, Phase I, July 1996.

5) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix A Pg #: A-23 Line #: OAC 3745-27-06(C)(3) Code:
Original Comment #:
Comment: The remarks under the bullet "Fires, dust, scavenging, vectors, erosion, blowing litter, and birds" states that these requirements are not applicable to the operation of the OSDF when measures and operations to manage and control erosion are applicable to the OSDF. Ohio EPA suggests adding a notation that except for erosion control these requirements are not

applicable. This is mentioned on pages B-10 and B-26 of Appendix B and elsewhere.

Borrow Area Management and Restoration Plan

Ohio EPA has no comments on the BAMR Plan.

Surface Water Management and Erosion Control Plan

6) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.4 Pg #: 2-3 Line #: 9 Code:
Original Comment #:
Comment: "OAC 3745-27-08(C)(6)(d)" should read "OAC 3745-27-08(C)(6)(b)".

7) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.5 Pg #: 2-3 Line #: 36 Code:
Original Comment #:
Comment: "ODNC" should read "ODNR".

8) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.3.3 Pg #: 6-3 Line #: 17 Code:
Original Comment #:
Comment: "basing" should read "basin".

9) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.3.4 Pg #: 6-3 Line #: 27 Code:
Original Comment #:
Comment: "on-half" should read "one-half".

10) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.4.1 Pg #: 6-3 Line #: 43 Code:
Original Comment #:
Comment: "A biotic barrier" should read "A barrier". A biotic barrier is a barrier made from or caused by living things rather than one to living things.

11) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.4.1 Pg #: 6-4 Line #: 1-3 Code:
Original Comment #:
Comment: "the biotic barrier" should read "the biointrusion barrier". See comment #6.

Cultural Resources Unexpected Discovery Plan

12) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: OSDF support plans, 4 Pg #: 3 Line #: 16-19 Code: C
Original Comment #:
Comment: Are there any contingency plans in place to ensure that any work stoppages which may be incurred due to the unearthing of Native American remains or funerary objects will not effect the overall construction of the OSDF or the remediation of the FEMP site?

Construction Quality Assurance Plan

General Comments

13) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Pg. #: Line #: Code: M
Original Comment #
Comment: In general, there are many discrepancies between the OSDF Specification Package and the CQAP. Most of these discrepancies are included as comments. However, it would be advisable to perform a thorough comparison of these two documents. As stated in the overview, the CQAP "assures that OSDF components are constructed in compliance with the approved project plans and specifications."

Specific Comments

14) Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc
Section #: 2.2.1.1 Pg #: 2-2 Line #: Code:
Original Comment #:
Comment: The liner specifications call for meeting requirements of OAC 3745-27-08(C)(1)(c), including soil particle size distributions. This section should be revised to reflect the test pad qualification program and the substitution of performance criteria for the particle size requirements.

15) Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc
Section #: 2.2.4.7 Pg #: 2-11 Line #: 3rd bullet Code:
Original Comment #:
Comment: The cap raises the same particle size distribution issues as the liner, since the same section of the Ohio Administrative Code specifies them both. This section should be revised to reflect the test pad qualification program and the substitution of performance criteria for the particle size requirements.

16) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 4.0 Pg. #:4.2 Line #: Code: C
Original Comment #

Comment: On figures 4-1 and 4-2, add a reference for input from the regulatory agencies. Additional locations where approval by the permitting agency is required are necessary throughout the text.

17) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 4.4.2 Pg. #:4-7 Line #:14 Code: C
Original Comment #
Comment: Please add a bullet to the CQC Consultants requirement list describing the requirements of the CQC Consultants laboratory. The qualifications should be the same as outlined on page 4-14, line 15-28.

18) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #:5.1.1 Pg. #:5-2 Line #: Code: C
Original Comment #
Comment: Please add an bullet for the equipment and personnel being worked in each unit process, including subcontractors, as outlined in EPA/600/R-93/182.

19) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.2 Soil Components Pg. #: 6-1 Line #: 18-20 Code: C
Original Comment #
Comment: The granular material for the leachate drainage corridor, which was specified at a 10 cm/sec hydraulic conductivity, has been omitted from this and further sections of this document.

20) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.5 Pg. #:6-3 Line #: 26 Code: C
Original Comment #
Comment: The text states that, "The CQC Consultant shall monitor proof rolling of areas that are cut to achieve grade." The method and frequency of monitoring the surface treatment is needed. Measurement methods may include penetrometer, visual classification, and compaction. The replacement of soil that does not meet the classification should be defined in the specifications.

21) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.5 Earthwork Pg. #: 6-3 Line #: 33 Code: E
Original Comment #
Comment: The word "results" has been misspelled.

22) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.6 Conformance Testing Pg. #: 6-5 Line #: 3-6 Code: C
Original Comment #
Comment: The document states "When necessary, the visual-manual procedure for the

description and identification of soils shall be conducted by the CQC Consultant with test method ASTM D 2488." The document needs to define clearly what "when necessary" means and how it will be determined.

23) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.6.1 Pg. #:6-5 Line #: 16 Code: C
Original Comment #
Comment: The text states that standard proctor shall be used for the determination of moisture density relationships. The standard proctor analysis should include modified and reduced proctor for every change of material encountered. In addition, testfill results are needed to ensure hydraulic conductivity of the compacted material is less than $1x10^{-7}$ cm/s.

24) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.7 Pg. #:6-6 Line #: 6-23 Code: C
Original Comment #
Comment: Lines 6-23 list the monitoring requirements of the earthwork activities. The criteria for each of these issues has not been defined. For example, please define what maximum clod size will be accepted or the thickness of lifts.

25) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.9.2 Test Frequency Pg. #: 6-7 Line #: 27-28 Code: C
Original Comment #
Comment: Who is responsible for observing and documenting the "variability of the materials."

26) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.12.2 Pg. #:6-10 Line #: 24 Code: C
Original Comment #
Comment: The text states that area's that fail shall be reworked to the satisfaction of the Construction Manager. These areas should be reworked to the requirements of the specifications.

27) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-1 Pg. #: 6-12 Line #: 7-12 Code: C
Original Comment #
Comment: The column for compacted fill testing frequencies on Table 6-1 indicates testing for Particle Size Analysis, Atterberg Limits, and Moisture Content will be conducted. However, no acceptable values for these parameters are given in this document or in Specification 02200 in the OSDF Prefinal Specifications Package. A table indicating acceptable values should be included.

28) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-1 Pg. #: 6-12 Line #: 7-12 Code: C

Original Comment #
Comment: The column for compacted clay liner testing frequencies on Table 6-1 indicates testing for Atterberg Limits and Moisture Content will be conducted. However, no acceptable values for these parameters are given in this document or in Specification 02225 in the OSDF Prefinal Specifications Package. A table indicating acceptable values should be included.

29) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-1 Pg. #: 6-12 Line #: 7 Code: C
Original Comment #
Comment: Test method for Particle Size Analysis for the LDS Drainage Layer and LCS Drainage Layer is given as ASTM D 422. In Specification 02710 in the OSDF Prefinal Specifications Package, test method ASTM C 136 is specified for the sieve analysis of the LDS Drainage Layer and LCS Drainage Layer. This discrepancy should be corrected.

30) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 11-12 Code: C
Original Comment #
Comment: The column for compacted clay cap testing frequencies on Table 6-2 indicates testing for Moisture Content will be conducted. However, no acceptable range of values for moisture content is given in this document or in Specification 02225 in the OSDF Prefinal Specifications Package. A table indicating acceptable values should be included.

31) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 7 Code: C
Original Comment #
Comment: Test method for Particle Size Analysis for the Cover Drainage Layer is given as ASTM D 422. In Specification 02710 in the OSDF Prefinal Specifications Package, test method ASTM C 136 is specified for the sieve analysis of the Cover Drainage Layer. This discrepancy should be corrected.

32) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 5-20 Code: C
Original Comment #
Comment: The primary biointrusion barrier has a gradation requirements given in Specification 02280 in the OSDF Prefinal Specifications Package. No conformance testing is required according to Table 6-2. This discrepancy should be corrected.

33) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 7-8 Code: C
Original Comment #
Comment: The column for compacted vegetative soil layer testing frequencies on Table 6-2

indicates Particle Size Analysis will be conducted. However, no acceptable range of values for gradation are given in this document or in Specification 02250 in the OSDF Prefinal Specifications Package. A table indicating acceptable values should be included.

34) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 13 Code: C
Original Comment #
Comment: The topsoil has Soil Classification requirements given in Specification 02920 in the OSDF Prefinal Specifications Package. No conformance testing for soil type is required according to Table 6-2. This discrepancy should be corrected.

35) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 7.5.4 Pg #: Line #: Code: c
Original Comment #:
Comment: Section 7.5.4, FML Conformance Test Failure, also Sections 8.4.4, GCL's and 9.4.4, Geotextiles. These sections are unclear. Specifically, if a roll fails while the rolls produced immediately before and after the failing roll both pass, are the two passing rolls still acceptable? Part of the problem with this paragraph is the sentence "All rolls which fail numerically between passing roll numbers shall be rejected...". Should that sentence read "which fall numerically"?

36) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.6 Pg. #:7-5 Line #: 8-9 Code: C
Original Comment #
Comment: The text describing the acceptability of the subgrade surface lacks details. The subgrade surface at a minimum should be constructed to the required grade with no ruts greater than one inch. Further, the subgrade should conform and perform to all criteria outlined in Tables 6-1 through 6-4.

37) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.7 Pg. #:7-5 Line #: 26-27 Code: C
Original Comment #
Comment: The in-situ testing of the backfill material for the anchorage trench will, at a minimum be at the same rate at outlined in Tables 6-1 through 6-4.

38) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.8.2 Pg. #:7-6 Line #: 33 Code: C
Original Comment #
Comment: The placement of a geomembrane during the inclement weather (ponded water, excessive winds, excessive moisture, or precipitation) will reduce the effectiveness of the geomembrane and in some cases, may result in catastrophic failure. The Construction Manager

should not have the authority to permit placement under adverse weather conditions.

39) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.9.9.2 Pg. #:7-15 Line #: 20 Code: E
Original Comment #
Comment: Please correct the reference to read, "Section 7.9.8."

40) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.10.3 Pg. #:7-19 Line #: 15-16 Code: C
Original Comment #
Comment: Please add "or as specified in Table 7.2," to the sentence, "Large caps may be of ... Construction Manager."

41) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.12.1 Pg. #:7-20 Line #: 8-24 Code:
Original Comment #
Comment: Please add a bullet to describe how the maximum backfill particle size should be less than 0.5 inches.

42) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 7-1 Pg. #:7-22 Line #: Code: C
Original Comment #
Comment: Please accurately describe how a lot of geomembrane will be determined.

43) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 7.1 Pg. #: 7-22 Line #: Code: C
Original Comment #
Comment: Several of the geomembrane properties required by Specification 2770 in the OSDF Prefinal Specifications Package are not included on Table 7.2. These properties include Melt Flow Index, Tear Resistance, Low Temperature Brittleness, Dimensional Stability, and Environmental Stress Crack. This discrepancy should be corrected.

44) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 7-2 Pg. #:7-23 Line #: 35 Code: E
Original Comment #
Comment: The reference to Appendix A is incorrect.

45) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 9.7 Pg #: 9-5 Line #: 1st bullet Code:
Original Comment #:
Comment: Specify the minimum overlap required for patches on slopes.

46) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: App B Pg. #:02770-17 Line #: Code: C
Original Comment #
Comment: According to EPA Technical Guidance Document QA/QC for Waste Containment Facilities (Page 157), the shear strength of a HDPE seam should be approximately 95% of the specified minimum yield strength. On page 02770-16, the minimum yield strength of 60 mil HDPE is 126 lb/in. On page 02770-17, the minimum shear strength of the seam should be 108 lb/in. This value is approximately 85% of the shear strength of the HDPE, not 95% as suggested in the guidance. Please explain.

Impacted Material Placement Plan

47) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 8.6 Pg #: Line #: Code: M
Original Comment #:
Comment: It is unacceptable to Ohio EPA to defer the decisions regarding the placement of Category 5 materials to either the OU3 ROD, the OU3 Implementation Plans or the OU3 Remedial Action Work Plan as stated in Section 8.6. It was Ohio EPAs understanding that the Impacted Materials Placement Plan was to serve as a central location for all WACs both physical and chemical. It was also our understanding that decisions on the physical WAC would be made internal to OU2 and that these decisions would be made on the basis of design needs such as constructability and the need to avoid differential settlement. In the case of category 5 materials, these design needs are inconsistent with the needs of the OU3 managers to move these materials. The independent decision making by the WAC overseers was an important consideration in Ohio EPAs initial entertainment of the placement of Category 5 materials.
The Ohio EPA suggests that DOE re-write the IMPP sections that address the placement of oversize materials and other special handling materials. The following issues should be addressed:

- Avoidance of odors from putrescible wastes.
- A definitive list of over size objects from Operable Unit 3 should be assembled. This list should be used as a basis to decide the disposal method for each object.
- Crush all concrete larger than 18 inches in any dimension to ASTM soil specifications.
- Treat all pieces of structural steel to steel shards that can be used to attenuate uranium by maintaining a reducing electrochemical potential.
- The IMPP should be detailed enough so that a manager from another Operable Unit can make an accurate and consistent determination of the performance criteria. There are many instances where ambiguities and inconsistencies exist.
- The material classifications are misleading. For example, Category 2 materials "can be transported, placed and compacted *in masse*."(Quoted from page 5-1). Yet on page A.3-2 of Appendix A steel beams smaller than 18 inches in only one dimension can be

classified as Category 2.

48) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2 Pg #: 2-1 Line #: Citation 2 Code:
Original Comment #:
Comment: DOE has incorrectly cited Ohio Administrative Code (OAC) 3745-17-08 as the governing regulations for the particulate emissions from paved roads, unpaved roads and material storage piles. OAC 3745-31-05(A)(3) (please see page A-53 of the OU2 ROD) requires that new sources employ the best available technology (BAT). The BAT determination is made on a case-by-case basis and this determination can be that in some cases BAT is the same as "reasonably available control measures" (RACM). This is not necessarily the case and it is not uncommon that BAT be more restrictive than RACM. Activities such as controlling fugitive dusts from paved and unpaved roads have time and again resulted in standards that are more stringent than RACM. Please see the following examples.

paved roadways	OAC 3745-17-12(F)(2)	1	minute exceedence in any 60-minute period
unpaved roadways	3745-17-12(F)(1)	3	" " " " " "
material storage piles	3745-17-12(C)(2)	1	" " " " " "

The Ohio EPA remains available to assist DOE in making the BAT determination.

49) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.3 Pg #: 3-3 Line #: 22 Code: c
Original Comment #:
Comment: This section gives the CM sole authority to choose the point at which waste waters are discharged to the on-site waste water system. To what extent are the managers of the AWWT system involved in this decision?

50) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3 Pg #: 4-3 Line #: 32 Code:
Original Comment #:
Comment: How will the maximum dimension of general building rubble be determined and what method will be used to verify this?

51) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3 Pg #: 4-3 Line #: 36 Code:
Original Comment #:
Comment: "Impacted materials brought to the OSDF should not be at such a high moisture content that impacted material placement activities should not be impeded." This is too vague and open to interpretation.

The Ohio EPA has no comments on the Systems Plan.

Groundwater Monitoring Plan

55) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 1.1 Pg #: 1-1 Line #: 14-16 Code: c
Original Comment #:
Comment: Lines 14 through 16 should be re-worded to highlight the system's limitations without erroneously implying that the system is not useful. It was agreed that monitoring the till would be difficult. Nevertheless, Ohio EPA has consistently maintained that a till monitoring system was a prerequisite to approval of a disposal facility over a sole-source aquifer. The ground water detection system in the Great Miami Aquifer is one way of compensating for the limitations of a till monitoring system.

56) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 4.4.1 Pg #: 4-8 Line #: Code: c
Original Comment #:
Comment: This section should also state that trend analysis was chosen due to difficulties distinguishing releases from the OSDF from existing ground water contamination.

57) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 4.4.2 Pg #: 4-8 Line #: 34-37 Code: c
Original Comment #:
Comment: This is not correct. Section 4.1 details the limitations of the till ground water monitoring system and section 1.1 states that it is possible for a release to migrate through the till without intercepting the till monitoring system. As a result, it is incorrect to state that if "till monitoring wells do not indicate leakage from the OSDF has occurred, then it will be assumed that the OSDF is not the source.". If this condition occurs, then it will be up to DOE, Ohio EPA, and USEPA to determine the source of the contamination.

58) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 4.5 Pg #: 4-9 Line #: 1-2 Code: c
Original Comment #:
Comment: Leakage cannot be totally assessed by the till wells as mentioned in sections 4.1 and 1.1. Though these wells are needed and useful, they will not detect all leaks. It is important that data from these wells be used within the till monitoring system's limitations.

59) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 8.4 Pg #: 2-1 Line #: Code: c
Original Comment #:
Comment: All data in the Site-Wide Environmental Database should be provided to Ohio EPA in

a compatible electronic format. Additionally, DOE must put data into the SED in a timely manner.

60) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 4.4.2 Pg #: 4-8 Line #: 22 Code: c
Original Comment #:
Comment: This section includes the statement that liquid could enter the leak detection system from the clay liner by capillary action. This seems unlikely. The coarse, high-conductivity granular material in the leachate collection beds is unlikely to exert much of a capillary effect.

61) Commenting Organization: Ohio EPA Commentor: DERR
Section #:5.3 Pg #: 5-1 Line #: Code:
Original Comment #:
Comment: The proposed list of analytes for ground water monitoring is much shorter than that of Appendix I, OAC 3745-27-10. The proposed list of analytes for ground water monitoring should be reviewed based on leachate analysis. If the leachate shows no other significant chemicals than those of the proposed list, then that list should be retained. However, if the leachate samples show a major component not on the list for ground water analysis, then the ground water list should be revised to include those extra components.
The list of analytes should be evaluated separately for each cell, because the waste streams feeding those cells will not be the same. Indeed, different operable units will be disposed of at different times and in different cells, so the character of the leachate can be expected to vary.

62) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: General Pg #: Line #: Code:
Original Comment #:
Comment: The Groundwater Detection Monitoring Program lacks a detailed technical description of predicted ground water flow and GMA monitoring well placement. Location of monitoring wells should be technically justified so that DOE can demonstrate adequate ground water monitoring of all OSDF units for all anticipated ground water flow conditions.

Post-Closure Care and Inspections Plan

63) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 9.3 Pg #: 9-5 Line #: 2 Code:
Original Comment #:
Comment: This section proposes that the action level for subsidence should be ponding of water to a depth of 1 foot. That is excessive. Subsidence at the surface may indicate subsidence and trough formation at the cap barrier layers. Such localized ponding could severely tax the barrier system, especially if any defects were present. The Ohio EPA proposes that any persistent ponding regardless of depth should warrant an investigation and corrective action.

64) Commenting Organization: Ohio EPA Commentor: ODH
Section #: 4.5 Pg #: Table 4-3 Line #: Code:
Original Comment #:
Comment: In the event ownership of any portion of the FEMP changes in the future, the draft notification in Table 4-3 should include ODH as ORC Section 3748.02 (A) designates ODH as the Ohio radiation control agency.

Specification Package

65) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 02225, Compacted Clay Liner and Cap Pg. #: 02225-3 Line #: 17 Code: c
Original Comment #
Comment: The specification for the material used to construct the compacted clay liner and cap has been changed to a 90% by weight on-site borrow and 10% by weight Wyoming bentonite mixture. This will significantly change the scope of this construction project and will require that a new test pad be constructed using the bentonite-on-site borrow mixture. The Drawings and Specifications should be expanded to include locations and procedures for preparing the bentonite-on site borrow mixture. Additions to the Drawings and Specifications should include the following:

- The proposed staging area for mixing located on the site layout map;
- The method to be used for mixing fill and bentonite described in the specifications;
- The equipment to be used for mixing described in the specifications;
- The location and method for storage of bentonite to prevent hydration before mixing;
- The method to be used for measurement of materials should be included to insure a proper mixture is prepared.

This information could be included as a specification for bentonite-on site borrow mixture.

66) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.03 & 3.01 C Pg #: 02270-3&4 Line #: 1-7 & 30+ Code: c
Original Comment #:
Comment: Use of straw bales is not recommended. Silt fence should be used for sheet flow applications following the specifications in *Rainwater and Land Development*, ODNR-DSWC, 1996. Rock check dams should be used in channel flow applications per *Rainwater and Land Development*,

67) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 02772 Pg #: 02772-11 Line #: Table 02772-1 Code:

52) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.4 Pg #: 4-4 Line #: 3rd bullet Code:
Original Comment #:
Comment: It is unclear what is excluded here.

53) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.3.2 Pg #: 5-2 Line #: 2nd bullet Code:
Original Comment #:
Comment: Medical wastes are mentioned here. Who will make the determination what special procedures will be necessary to safely handle medical wastes? Is the CM qualified to make this determination?

54) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: A.3.4 Pg #: A.3-1 and 2 Line #: Code:
Original Comment #:
Comment: For convenience, these comments will be broken down into the headings as they appear on this page.

Steel Sidings There may be a typo here that completely changes the meaning of the sentence. "Loose truck loads of miscellaneous demolition debris containing steel sidings that can be spread in lifts not higher than 18 in. (460 mm) will be classified as Category 3 materials." We believe that this was intended to read "Category 2 materials" because Category 3 materials are those requiring individual placement which is inconsistent with the phrase "Loose truck loads". Furthermore the 18 inch criteria is the definition of category 2. In either case, loose truck loads of steel sidings are inconsistent with both definitions. That is, a loose truck load of steel siding does not meet the requirement of individual placement. Ohio EPA also takes issue with the contention that loose truck loads containing steel sidings can be effectively compacted in 18 inch lifts. All steel siding should be banded in stacks in a similar fashion as transite panels and treated as Category 3 items.

Steel Beams This is completely unacceptable. These beams should at a minimum be cut to facilitate handling and preferably be reduced to the size of pellets.

Tanks There should be a maximum size limit on tanks. Also, please add a sentence that commits to filling the voids.

Pipes This is unacceptable. These pipes should be cut to facilitate handling.

Miscellaneous Equipment It is completely unacceptable to defer these decisions to an "Impacted Materials Monitor". As mentioned in the major comment for the Impacted Materials Placement Plan, the Ohio EPA expects a complete listing of all over-size equipment from OU3 so that these decisions can be made in consultation with the regulators.

Systems Plan

Original Comment #: The hydraulic conductivity of the GCL should be specified as maximum not minimum.

Design Criteria Package

68) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.5.2 A Pg #: 2-49 Line #: Code:
Original Comment #:
Comment: The contingency plan mentioned here should be added to the list of deliverables on page 1-13. A schedule for the development , review and approval of the contingency plan should be provided.

69) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.8.3 Pg #: 2-92 Line #: Temporary Channels Code:
Original Comment #:
Comment: Channels should be stabilized as soon as possible and not longer than 10 days after installation. Channel outlets should function with a minimum of erosion and dissipate runoff velocity prior to discharge. The Ohio EPA recommend adding channel grade-stabilization design information (see *Rainwater and Land Development*, 1996, page 152, and "Standard and Specification for Temporary Swale" attached).

70) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.8.3 Pg #: 2-96 Line #: Code:
Original Comment #:
Comment: Calculations are required for temporary erosion control, for example the maximum drainage area for silt fence use is based on the slope of the drainage area (*Rainwater and Land Development*, 1996, page 119), temporary diversion stabilization is based upon the slope and the drainage area (*Rainwater and Land Development*, 1996, page 152).

71) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.8.4 A Pg #: 2-96 Line #: 1st minor bullet Code:
Original Comment #:
Comment: This bullet states that "Runoff from the 2,000-year, 24-hour storm event should be allowed to sheet flow from the toe of the OSDF final cover." however the next bullet describes the design criteria of runoff from the toe of the OSDF final cover. It appears as though the intent of the first bullet is to describe the runoff flow to the toe and should therefor read "Runoff from the 2,000-year, 24-hour storm event should be allowed to sheet flow to the toe of the OSDF final cover."

72) Commenting Organization: Ohio EPA Commentor: DSW

Section #: 2.10.1 Pg #: 2-114 Line #: last bullet Code:
Original Comment #:
Comment: Erosion and sediment controls should be installed prior to excavation.

73) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.10.2.4 A Pg #: 2-119 Line #: Sediment basins Code:
Original Comment #:
Comment: These design criteria should follow the replacement for the cited reference (i.e. *Rainwater and Land Development*, ODNR, 1996). In this updated edition the sediment basin must be sized for the entire drainage area contributing to the basin, not only the disturbed area.

74) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.10.3 & 1.9 Pg #: 2-122 & 1-22 Line #: References Code:
Original Comment #:
Comment: Please include the new edition of *Water Management and Sediment Control for Urbanized Areas*, USDA-SCS, 1987 which is titled *Rainwater and Land Development*, ODNR-DSWC, 1996.

75) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2.8 Pg #: 3-16 Line #: Code:
Original Comment #:
Comment: The value engineering documentation should be added to the list of deliverables on page 1-13.

76) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2.9 Pg #: 3-16 Line #: Code:
Original Comment #:
Comment: The design documentation should also be added to the list of deliverables on page 1-13.

77) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix B Pg #: 6-5 Line #: 24 Code:
Original Comment #:
Comment: "Biotic barrier" should read "biointrusion barrier".

Calculations Package

78) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.1 Pg #: 21 of 22 Line #: Erosion and Sediment Control Code:

Original Comment #:
Comment: The calculations for the "Borrow Area Sediment Basin" are taken from an outdated edition of the Soil and Conservation Service, the new edition, *Rainwater and Land Development*, ODNR-DSWC, 1996 should be used. The basin must be sized for the entire drainage area, not just the disturbed area.

79) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 10.1 LTS Gravity Line Design, Executive Summary Pg. #: 2 of 2 Line #: Code:
Original Comment #
Comment: At the second bullet on this page it is stated that for the storm design flow rate "(flow should be regulated with valves in the LCS gravity line to obtain maximum storm design flow rate of 200 gpm)." There are two issues to be addressed here.

1. The design flow rate of the pumps at the permanent lift station is 200 gpm and they are to be operated one at a time. There should be some safety factor for flow at the lift station. The pumps should be able to remove water faster than it is delivered to the lift station, so the maximum flow to the lift station should be less than 200 gpm.
2. How will the proper valve adjustment be determined to insure a maximum flow rate of 200 gpm to the LCS gravity drain line? What steps will be taken to insure these valves are not readjusted? Is there a better device for regulating flow, such as an orifice plate?
3. Has the maximum allowable head behind this control valve that would generate 200 gpm of flow been calculated? Based on the hydrograph of flow from each cell during the design storm, would that head be exceeded at any time?

80) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 10.3 Temporary Lift Station and Manhole Design Pg. #: 2 of 12 Line #: Code:
Original Comment #
Comment: In the data verification for hydrostatic uplift of the manholes, the actual measured perched water table elevations were used. This is not consistent with the assumption made for the hydrostatic uplift of the liner system. Is there a reason these should not be consistent?

Design Drawings

81) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Various drawings Pg #: Borrow pit Line #: Code: c
Original Comment #:
Comment: The borrow pit has been changed from being subdivided into smaller units each with

its own sediment basin to one large basin. The sub-unit each with its own basin would have smaller areas of disturbed area earth exposed at any one time, those areas not in use could be stabilized. Please explain why this was changed.

82) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-X-00003 Sheet #: X-3 Section #: Code: c
Original Comment #
Comment: Existing ground elevation contours line type on the air photo do not match the line type for existing ground elevation contours shown in the legend.

83) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Drawing 90X-6000-G-00016 Pg #: Line #: Code:
Original Comment #:
Comment: An additional temporary sediment basin is located east of the sediment basin shown. This second sediment basin should also be shown.

84) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Drawing 90X-6000-G-00018 and others Pg #: Line #: Code:
Original Comment #:
Comment: This drawing indicates that the leachate will be piped to the Biodenitrification Surge Lagoon, as does the SWECP, page 1-1, lines 44-55, and the DCP on page 2-50, section 2.5.3 A. However in other parts of the package the leachate is said to be piped to the stormwater drainage control (SWECP, page 3-2, lines 28-29, page 3-3, lines 4-5, page 3-3, lines 10-12, and the DCP page 2-10) or the AWWT (Permitting Plan and Substantive Requirements, page 2-1, lines 19-23). As the leachate should have a higher contaminant level than the stormwater, the leachate should be pumped directly to the AWWT for treatment.

85) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Drawing 90X-6000-G-00020 Pg #: Line #: Code:
Original Comment #:
Comment: It appears from this drawing and the referenced detail #43 on G-31 that the stormwater management system and the leachate collection system are connected so that the stormwater will flow into the leachate collection system. This should be separate.

86) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-G-001707 Sheet #: G-40 Section #: Code:
Original Comment #
Comment: As stated in Note 4, the horizontal monitoring wells are not shown on the grading drawings G-5 to G-11. However, it is not apparent and is not stated that the horizontal monitoring wells are to be installed at each cell. Section E on sheet G-11 shows only one horizontal monitoring well. It would be appropriate to install monitoring wells at every cell.

Please include the locations of all horizontal monitoring wells on the appropriate sheets.

87) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-G-001707 Sheet #: G-40 Section #: Code:
Original Comment #
Comment: The bollard posts shown on Section 126 seem to be located in the access corridor. Will this create a problem for traffic on the access corridor?

88) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-M-00052 Sheet #: M-9 Section #: Code:
Original Comment #
Comment: What is the purpose of the 2" overflow pipe shown on section A? It appears that this pipe breaches the primary containment.

Leachate Conveyance System Package

89) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 92X-5900-N-00322 Sheet #: N-0002 Section #: Code:
Original Comment #
Comment: Note 5 states that a difference of 5% between the flow meters in the first and eleventh manholes will trigger an alarm condition. The difference will be 10% before the force main pumps are automatically shut off, as stated in Note 6. This is the only form of leak detection for this double contained leachate transmission system. It is possible that a leak in the primary containment pipe which is less that 5% of the total flow could fill and then breach the secondary containment without being detected. Placing liquid level indicators in each of the Clean Out Manholes could eliminate this potential problem. This modification is highly recommended, as it would bring the leachate conveyance system leak detection system up to par with the OSDF leachate gravity collection piping and gravity leak detection piping.

Remedial Action Work Plan

The Ohio EPA has no comments on the Remedial Action Work Plan.