

TA-73

State of New Mexico
ENVIRONMENT DEPARTMENT



BILL RICHARDSON
GOVERNOR

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us



RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

July 7, 2004

David Gregory, Program Manager
Office of Los Alamos Site Operations
Department of Energy
528 35th Street, Mail Stop A316
Los Alamos, NM 87544

G. Pete Nanos, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, NM 87545

**RE: NOTICE OF DISAPPROVAL OF PHASE II WORK PLAN FOR LOS
ALAMOS SITE OFFICE TA-73 AIRPORT LANDFILL
LOS ALAMOS NATIONAL LABORATORY NM0890010515
NMED TASK LANL-04-007**

Dear Messrs. Gregory and Nanos:

The New Mexico Environment Department (NMED) has reviewed the "Phase II Work Plan for Los Alamos Site Office SWMU-73 Airport Landfill" (Work Plan) dated April 2004 and referenced by NW-ID-2004-031. This letter constitutes a notice of disapproval for the above referenced work plan. The Regents of the University of California and the Department of Energy (collectively the "Permittees") must respond to this letter within 30 days of receipt.

1. The work plan indicates that the project extent will be limited to providing a landfill cover for Solid Waste Management Unit (SWMU) 73-001(a) and recontouring and reseeding SWMU 73-001(d). The Permittees must explain in detail any work that will be conducted at SWMUs 73-001 (b) and (c), and if there is no work planned provide justification. The Permittees must describe all historic investigation or remediation work that has been performed at SWMU 73-004(d).
2. Section 2.0 Detailed Engineering Design, page 3: The Work Plan calls for a RCRA Subtitle D municipal landfill cover as described by NMAC regulations. The Permittees incorrectly state that the selected remedy was prescribed by NMED. The prescribed



remedy outlined in the April 1, 2003 letter to LANL, explains that the final remedy for the Airport Landfill shall be equivalent to applicable RCRA Subtitle C requirements. The Permittees must provide the basis for the change in design.

3. The Permittees must submit all Land Fill Gas (LFG) monitoring results to the HWB. The proposed Work Plan states that "engineering calculations indicated that gas concentrations will not exceed 25 percent of the LEL for methane." The Permittees must provide any engineering calculations used to the project concentrations of LFG.
4. The Work Plan states that the collection of water samples was attempted at existing monitoring wells in 2001, but insufficient water was collected from the wells for analysis. The Permittees must indicate if the existing wells will continue to be monitored or if new wells will be installed in an attempt to detect landfill leachate. The Permittees must describe how they will monitor for leachate, including collection methods, frequency, and duration.
5. Appendix A, Hydraulic Calculations section, sheet 3 of 25 shows that the analysis using the TR 55 Model was based upon a two-year 24-hour storm event. 40 CFR Section 258.26(a)2 requires that the model be based on a 24-hour, 25-year storm. The Permittees must clarify the number of years upon which the hydraulic analysis was based and resubmit the analysis with the correct storm event information.
6. The Permittees must describe the measures that will be taken to insure the integrity of the landfill cover is not compromised through intrusion by animals, roots, and other biota.
7. Appendix A, page 02200-5, Paragraph C Earthwork Quality Control specifies that the landfill cover will have a final compaction of 98 percent. Discuss the rationale behind a final compaction rate of 98 percent.
8. Discuss the location of the borrow source for the landfill cover. Identify if the location is proximal to any SWMUs or AOCs and how it will be determined if the fill material is clean. The Permittees must identify where the low permeability soil for the landfill cover will be obtained.
9. Section 5.0 Demonstration of Cover Performance, page 14: This section must respond to the requirement of the NMED Conditional Approval of Voluntary Corrective Measures (VCM) Plan (Conditional Approval Letter dated April 1, 2003) that the Phase II Work Plan contain a demonstration of the cover performance for the life of the cover. Instead this section only references Appendix D (Post-closure Care and Monitoring Plan). The Permittees must revise the Work Plan to satisfy this requirement.
10. Appendix A, Drawing Nos. 2006, 2007 and 2008, page 5-3: These drawings show an

approximate location of the 1962 ground surface. The general notes on these drawings indicate that the 1962 surfaces depicted on this drawing should be considered for information only. It is not clear what information the 1962 ground surface provides, since waste was accepted at the Main Landfill before that date. The Permittees must revise these drawings to either explain the pertinent information that these surface lines provide or remove them from the drawings.

11. Appendix A, Hydraulic Calculations, sheet 1 of 25: Paragraph 4 states that each bench was designed as a 10-ft wide triangular channel with bed slope of 4%, and side slopes of 2.75% and 10% bench slope. The Permittees must clarify if the slopes indicated are the ratio of horizontal (H) to vertical (V) change and not percent slope. Drawing No. 2005 indicates that the side slope of each bench is 2.75 (i.e. 2.75H:1V). The Permittees must correct all references to H:V ratio as percent slope throughout the Work Plan.
12. Appendix A, Hydraulic Calculations, Drainage Structures Hydraulic Design, sheet 1 of 25: Paragraph 6 indicates that, at a minimum, R-6 rip rap is required for the trapezoidal downchute based on the shear stress level, resulting from the steep slope. However in the supporting documentation provided in Tables 6 and 9, and Figures 3 and 21, a R-5 rip rap is selected for the downchute. The Permittees must reconcile this discrepancy and revise the text, table, and figures, accordingly.
13. Appendix A, Hydraulic Calculations, Drainage Structures Hydraulic Design, sheet 7 of 25: For the inlet/outlet control check a design discharge of 5.2 cubic feet per second (cfs) is used. However, the hydraulic calculations conducted for pipe segments 1 and 2 resulted in a maximum discharge of 5.5 cfs in pipe segment 1. The Permittees must clarify why this discharge was not used as the design discharge for the inlet/outlet control check computations.
14. Appendix A, Hydraulic Calculations, Landfill Top Erosion Forces Estimate, sheet 1 of 8: It is indicated that to determine velocities and shear forces generated by the sheet flow atop of the landfill, sheet flow was examined for a 300-ft length of a 3% slope. Using the top of cap grading plan elevations and the scale provided on Drawing No. 2002, the slope atop the landfill appears to be in the range of 6% to 8%. The Permittees must reconcile this discrepancy and revise the calculations.
15. Appendix A, Settlement Evaluations, Differential Settlement Evaluation, sheet 2 of 8: The first paragraph states, settlement due to dewatering will also be negligible as no dewatering of the waste mass has been proposed. Furthermore, there is no evidence of a perched water table or leachate mound within the landfill. The Permittees must revise the Work Plan to provide data to support this contention or provide a reference for this determination.

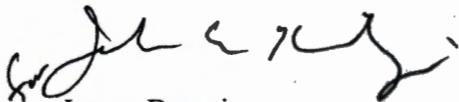
16. Appendix A, Settlement Evaluations, Differential Settlement Evaluation, sheet 4 of 8: In Table 1, at the bottom of this sheet, the interim cover thickness is given as one foot. The engineering drawings (e.g., Drawing No. 2005) indicate the interim cover thickness as a minimum of 6 inches. The Permittees must clarify if the thickness used in the settlement calculations is the maximum expected or the average thickness of the interim cover.
17. Appendix A, Settlement Evaluations, Differential Settlement Evaluation, sheet 5 of 8: It is indicated on this page that with respect to grid point B5, the existing ground surface elevation is 7132 feet and Figure 1 is referenced for this information. However, the closest elevation point that can be used to approximate the elevation at point B5 is given as 7143 feet on Figure 1. None of the drawings and figures provided clearly depict labeled contour elevations of the existing grade. The Permittees must revise the Work Plan to provide a drawing or a figure that clearly provides the existing ground surface.
18. Under Conclusions, sheet 8 of 8: It is stated that due to the anticipated rate of settlement of the landfill and consolidation of the relocated waste due to compaction by construction equipment, it is likely that the final grades shown on the project drawing will not be achieved. The Permittees must revise the Work Plan to provide acceptance criteria for what grades will be acceptable and procedures to follow in the event final grades shown on the drawings are not achieved, or provide in the final work plan submittal an achievable grading plan. The Permittees must provide clear instructions on compaction requirements and permeability specifications of the infiltration barrier layer to the construction contractor.
19. Appendix A, Slope Stability, Global Slope Stability, sheet 5 of 5: The last sentence on this page states that the stability of slopes during construction was addressed in a separate memo. The Permittees must clarify if the content of this memo is incorporated in this Work Plan (in one of the Plans); if so provide the memo.
20. Appendix A, Landfill Gas Assumptions, Section 3.2, Factors Affecting LFG Generation, page 2: In the equation used to estimate total tonnage of waste, the total waste is estimated as 429,400 cubic yards (cy) or 214,700 tons. However, in Section 2.0 (page 1), the estimated in-place tonnage of the waste is given as 268,400 tons. The maximum LFG calculated using this tonnage would be 102 standard cubic feet per minute (scfm) as compared to 82 scfm that is presented as the maximum LFG generation rate. The smaller waste tonnage (214,700 tons) was used throughout to determine LFG generation rates. The Permittees must reconcile these discrepancies and revise the discussions and conclusions presented as necessary. In addition, since gas venting is not incorporated in the cover design, the Permittees must revise the Work Plan to evaluate the effect of the impervious layer of the cover on the LFG generated during the 30-year post-closure period, and if perimeter monitoring will be necessary.

21. Appendix B, Construction Plan, Section 5.7.3, Install Topsoil, page 15: This section states, in most cases, topsoil delivery will involve the belly dump trucks driving on the previous cover soil and not the top soil. It is not clear how this would be possible when the infiltration layer has already been installed. The Permittees must clarify this statement and revise this section accordingly.
22. Appendix B, Construction Plan, Section 5.9.1, Debris Disposal Area (DDA), page 16: This section states that work areas within the DDA will be constructed as shown on design drawings. The Permittees must revise this section to identify and include these drawings.
23. Appendix B, Construction Plan, Section 9.6, Dust Control, page 19: The dust control procedures are deficient. The Permittees must revise the documents to indicate that no work will be conducted when dust obscures visibility by 25%. The Permittees must revise the specifications to indicate that dust will be continuously monitored (visually). The Permittees must indicate that all dust-creating operations will be stopped when visibility is obscured by 25% and that operations will not recommence until at least two hours have passed in which visibility has not been obscured by 25%. As is mentioned above, in the event that ash to be moved at the landfill is determined to contain hazardous levels of dioxins/furans or metals, enhanced dust control procedures will be required. Propose contingency dust control procedures in the work plan for the case that contaminated ash must be relocated during this project.
24. Appendix B, Construction Plan, Section 9.10, Housekeeping, page 21: The litter control procedures presented in the Work Plan are not present and are therefore deficient. Litter screens at least 20 feet high must be installed down wind of any waste excavation or placement operations. The entire site must be inspected at the end of every work shift, and as needed any litter present on site must be collected for proper disposal. The Permittees must revise the design to incorporate litter screens and site inspections to control litter. The Permittees must propose in the Work Plan a sustained wind velocity above which no operations involving exposed waste will take place.
25. Appendix C, Construction Quality Control Plan, Table 5.3.1-1, As-Delivered Testing Requirements for Infiltration Layer Material, page 11: The Permittees must add testing requirements for Atterberg Limits to the Work Plan. The Permittees must require that the soil have a Liquid Limit in excess of at least 25 and a Plasticity Index of at least 10. In addition, tests must be conducted at any significant visual change in the material.
26. Appendix C, Construction Quality Control Plan, Table 5.4.1-1, As-Delivered Testing Requirements for Topsoil, Page 12: Kjeldahl nitrogen is unavailable to plants. The Permittees should consider testing for nitrate and ammonia instead.

Messrs. Gregory and Nand
July 7, 2004
Page 6

Should you have any questions, please feel free to contact Nick Schiavo of my staff at (505) 428-2539.

Sincerely,



James Bearzi
Chief
Hazardous Waste Bureau

cc: D. Goering, NMED HWB
E. Hansen, NMED SWB
C. Voorhees, NMED DOE OB
S. Yanicak, NMED DOE OB, MS J993
L. King, EPA 6PD-N
J. Vozella, DOE LASO, MS A316
R. Enz, DOE LASO, MS A316
B. Ramsey, LANL RRES/DO, MS M591
N. Quintana, LANL E/ER, MS M992
D. McInroy, LANL E/ER, MS M992
file: Reading and LANL: TA-73 and Land Transfer