



BILL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT

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**

February 20, 2006

David Gregory
Federal Project Director
Los Alamos Site Office
Department of Energy
528 35th Street, Mail Stop A316
Los Alamos, NM 87544

David McInroy
Remediation Services Deputy Program Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, NM 87545

**RE: NOTICE OF DISAPPROVAL
INVESTIGATION REPORT FOR SOLID WASTE MANAGEMENT UNITS 03-0101(a) AND 03-001(c) AT TECHNICAL AREA 3
LOS ALAMOS NATIONAL LABORATORY, EPA ID #NM0890010515
HWB-LANL-06-002**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) is in receipt of the *Investigation Report for Solid Waste Management Units 03-010(a) and 03-001(e) at Technical Area 3*, dated August 2005 (Report). NMED has reviewed the Report and hereby issues this notice of disapproval. The University of California and the Department of Energy (collectively, the "Permittees") must respond to these comments within 30 days of receipt of this letter. All submittals must be in the form of two paper copies and one electronic copy in accordance with section XI.A of the Consent Order.

General Comment

1. When evaluating radionuclides samples from the fill material, the Permittees used



5807

background/fallout values for soil. As stated in section 4.3.1, the original ground surface at the location of building 03-0030 was reworked to accommodate the building foundation. Tuff was removed from the center part of the site and up to 14 feet of fill was added to the north and east parts of the area. The Report also states that "[t]his fill contains primarily reworked native materials, such as crushed tuff, that were excavated from the site." Based on this information, it is more appropriate to compare the fill samples to tuff background/fallout values. The Permittees must revise the Report accordingly.

Specific Comments:

1. Section 3.7 Waste Management, pg. 8:

NMED Comment: The Permittees must provide information on the waste management activities. Specifically, the Permittees must provide waste characterization results and final disposal location(s) for all media and the removed well casing.

2. Section 4.2.1 Soil and Rock Sampling, pg. 11:

NMED Comment: According to the boring logs provided in Appendix B, Unit 4 of the Tshirege Member of the Bandelier Tuff ranges from non-welded to (i.e., B-13) to densely-welded (i.e., B-10) and from unconsolidated (i.e., B-12) to competent (i.e., B-9). The Permittees must describe how samples were collected from competent tuff using EnCore® sampling devices. Appendix A (Field Methods) does not provide a description of how samples are collected using EnCore® samplers on either soil or competent rock.

3. Section 5.2 Groundwater Standards, pg. 23:

NMED Comment: It is not clear why the Permittees discuss the use of surrogate chemicals. In Appendix F (Risk Assessment), Table F-10.2.2, the Permittees identified contaminants in the groundwater that all have associated standards (except total petroleum hydrocarbons). The Permittees must clarify which constituents do not have associated toxicity information and, thus, which surrogate chemicals were used instead.

4. Section 6.2 Fill, Sediment and Rock Sampling Analytical Results at SWMU 03-010(a), pg. 27:

NMED Comment: The Permittees state that "[r]esults of the hydrogeologic samples and several analytical requests were not received by LANL SMO by the time of this report and are, therefore, not included in the data review." According to Table 6.2-1, there are percent moisture, percent porosity, bulk density, and hydroconductivity data pending for 18 samples (four locations); metals data pending for 6 samples (two locations); and metals, SVOCs, VOCs, radionuclide, and total petroleum hydrocarbon data pending for 4 samples (one location). The Permittees must provide these data in order for NMED to complete its review of the Report. The Permittees must

also convert tritium data units into pCi/mL using the percent moisture data. These data should then be compared to background/fallout values for tuff so that NMED can evaluate site contamination. The Permittees may also need to re-evaluate risk based on the results of the additional data.

5. Section 7.1.1 Nature and Extent of Contamination at SWMU 3-010(a), pg. 41:

NMED Comment: The Permittees state that NMED has concurred that “[c]haracterization of the sediments in the drainage channel south and west of the site will be completed and evaluated as part of the Two-mile canyon investigation, following the “Canyons Approach.” NMED agrees that “data from this SWMU will be used by the Canyons Focus Area as part of the Twomile Canyon and Upper Twomile Canyon investigation, in the planning of the investigation as well as in the interpretation of fate and transport of contaminants that is presented in the Pajarito Canyon surface aggregate report” (*Addendum to RFI Report for 03-010(a)*, pg. 13). However, the sediments in the drainage channel are within the boundary of SWMU 3-010(a) (see Figure 4.2-1) and the Pajarito Canyon Work Plan does not include characterization of this drainage. The Permittees must continue to investigate this drainage as part of the SWMU investigation following NMED-approved characterization methods implemented by the Canyons Focus Area.

6. Section 7.1.4 Results of Risk Screening Assessment for SWMU 03-001(e), pg. 46:

NMED Comment: The Permittees have agreed to voluntarily provide total radionuclide risk levels in addition to total radionuclide dose. The Permittees must provide total radionuclide risk levels for SWMU 3-001(e).

7. Section 8.2 Groundwater at SWMUs 03-010(a) and 03-001(e), pg. 53:

NMED Comment: The results of the 2005 investigation reveal that groundwater at these SWMUs is currently contaminated with VOCs and tritium. Although the source(s) of the groundwater has not been determined definitively, the Permittees have identified at least 2 reasons for the possible presence of groundwater at this location: dripping water from a cooling unit condensate line and surface run-off down the now-abandoned monitoring well MW-1. The groundwater seems to be confined to a small area beneath and surrounding the SWMUs. The sources of contamination have been identified (except for the tritium) and defined, and still remain a source of groundwater contamination. Because the screening assessment shows that several contaminants in the groundwater are above NM Water Quality Control Standards and/or EPA Maximum Contaminant Levels, NMED requires the Permittees to perform the following interim measure activities while conducting the proposed quarterly monitoring.

- The Permittees must redirect all surface run-off away from the SWMUs, including the condensate water. Alternately, the Permittees must sample the condensate water when the unit is in

operation and analyze the water for tritium, deuterium, and O-18 to prove the Permittees' claim that the elevated tritium in the water is derived from the condensate.

- Because the groundwater body is relatively small, the Permittees must pump all three of the monitoring wells dry and then monitor the water levels as they recharge. If the groundwater elevations return to previous levels within 30 days of pumping, the Permittees must continue to investigate other possible groundwater sources contiguous with quarterly sampling. The Permittees must perform these operations within 30 days from receipt of this letter. The Permittees must report the results of this activity within 15 days of completion.

8. Appendix A Field Methods:

NMED Comment: The Permittees must provide descriptions of their investigation, sampling, and analytical methods and procedures. The descriptions provided in Table A-1 do not provide sufficient detail to evaluate the quality of the data. In some cases, the methods and procedures used by the Permittees during this investigation are described throughout the text of the Report. In some cases, it is not clear the procedures were appropriate to this investigation (for example, SOP 4.04 Contract Geophysical Logging). However, the Permittees only provide brief descriptions of what is included in the procedures instead of what was carried out during the field work for the following procedures:

- SOP 1.04
- SOP 1.05
- SOP 1.06
- SOP 1.08
- SOP 1.12 (Waste Characterization)
- SOP 1.12 (Field Site Closeout Checklist)
- SOP 3.11
- SOP 4.04
- SOP 6.09
- SOP 9.10
- SOP 12.01

The Permittees must provide this information.

Messrs. Gregory and McInroy
February 20, 2006
Page 5

Should you have any questions, please feel free to contact Darlene Goering of my staff at (505) 428-2542.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:dxg

cc: D. Goering, NMED HWB
J. Volkerding, NMED DOE OB
S. Yanicak, NMED DOE OB, MS J993
L. King, EPA 6PD-N
J. Ordaz, DOE LASO, MS A316
K. Hargis, LANL RRES/DO, MS M591
N. Quintana, LANL RRES-RS, MS M992
file: Reading and LANL TA-3 '06