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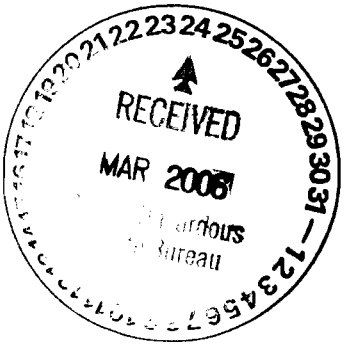
DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544

MAR 2 3 2006



James P. Bearzi, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Re: Response to NMED Notice of Disapproval
Investigation Report for Solid Waste Management Units 03-010(a) and 03-001(e) at Technical Area 3 Los Alamos National Laboratory, EPA ID #NM0890010515
HWB-LANL-06-002

Dear Mr. Bearzi:

The Department of Energy (DOE) is in receipt of your Notice of Disapproval for the *Investigation Report for Solid Waste Management Units 03-010(a) and 03-001(e) at Technical Area 3*, which was received on February 23, 2006. Our responses to your General Comment and Specific Comments are attached.

Sincerely,

David R. Gregory, P.E.
Federal Project Director
Office of Environmental Stewardship

ES: 2BE-013

Attachment

cc w/ attachment:
Darlene Goering, NMED HWB
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

cc list continued in page 2

cc w/attachment:
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N. Quintana, RRES-RS, LANL, MS-M992

Response to the Notice of Disapproval for the Investigation Report for Solid Waste Management Units 03-010(a) and 03-001(e) at Technical Area 03,

INTRODUCTION

This submittal is the response by the Department of Energy (DOE) to the "Notice of Disapproval for the Investigation Report for Solid Waste Management Unit (SWMU) 03-010(a) and 03-001(e), at Technical Area 03, issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau on February 20,2006. The Investigation Report for 03-010(a) and 03-001(e), at Technical Area 03, was submitted by DOE to NMED in August 2005.

To facilitate review of these responses, the NMED's comments are included verbatim. The comments are divided into general and specific categories as presented by NMED. DOE's responses follow each NMED comment.

General Comments

1. NMED Comment:

When evaluating radionuclide samples from the fill material, the Permittees used 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 "this 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.

1. DOE Response:

The excavated tuff was weathered material. This geochemically alters the tuff to a degree that tuff background/fallout values may not apply. Additionally, this weathered material would have been mixed with any soils present at the site during excavation. As noted in LANL 1998, 59730, p.38, samples collected to define background/fallout values were collected from unweathered outcrops. As suggested in that document, soil/fill background values for tuff were identified as the most appropriate media for comparison. As quoted from the document "The Bandelier background data are divided into three data groups: upper Bandelier Tuff, middle Bandelier Tuff, and lower Bandelier Tuff . All of the tuff samples were collected from unweathered sections, and it is likely that tuff samples collected from shallow, weathered sections will have chemical properties more similar to soil and canyon sediments."

Specific Comments:

1. **NMED Comment:**

Section 3.7 Waste Management, pg. 8:

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.

1. **DOE Response:**

DOE will provide the requested waste management information. Tables summarizing the analytical results of waste samples collected during the invesitgation, waste profile forms, copies of the chemical waste disposal requests, and manifests documenting the disposal site of waste will be provided, with the additional information NMED requested, by April 28, 2006.

2. **NMED Comment:**

Section 4.2.1 Soil and Rock Sampling, pg. 11

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.

2. **DOE Response:**

Encore® samplers are specifically designed with a stainless steel "T" handle to hold the sampling tube in place while applying pressure to obtain a small coring sample from the desired material. While the degree of welding did vary in the recovered cores, sufficient disaggregated material (due to drilling effects) was available to collect the required volume (2, 5-gram samplers) in the Encore® samplers at the targeted sampling intervals. No sample preparation (i.e. crushing) was required to fill the Encore® samplers.

3. **NMED Comment:**

Section 5.2 Groundwater Standards, pg. 23:

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.

3. **DOE Response:**

The chemical Trifluoroethane [1,1,2-] was the only chemical for which a surrogate chemical (Trichloroethane 1,2,2), was applied (shown in Appendix F Table-10.2.2). DOE will clarify the text and table and submit to NMED by April 28, 2006.

4. **NMED Comment:**

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

The Permittees state that results 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.

4. **DOE Response:**

Analytical results are pending and will be submitted to NMED, along with any revisions that may be required if the additional data changes the results of the risk assessment or any other sections of the report, on or before April 28, 2006.

5. **NMED Comment:**

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

The Permittees state that NMED has concurred that "characterization 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.

5. **DOE Response:**

DOE will clarify in the investigation report stating that the drainage is part of SWMU 03-010(a). The drainage on the west side of Building SM-30, that is considered part of SWMU 03-010(a), was characterized in December 17, 1999 and submitted to NMED on October 12, 2000, in the Addendum to

RFI Report for Field Unit, SWMU 03-010(a) dated October 2000 (ER2000-0553,p. 7, Addendum to LA-UR-95-1485, October 2000). This clarification will be submitted with additional information NMED requested on or before April 28, 2006.

6. NMED Comment:

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

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).

6. DOE Response:

DOE will submit the total radionuclide risk levels and radionuclide dose to NMED on or before April 28, 2006.

7. NMED Comment:

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

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.

7. **DOE Response:**

- In the summer of 2006, when the cooling system is in operation, the condensate will be sampled and analyzed for tritium, deuterium, and 0-18.
- Water level data collected this month indicates that the primary source of recharge into this perched aquifer is precipitation. Three monitor wells measured March 9, were re-measured March 13, 20, and 23 - following separate precipitation events at the site. Water levels increased as much as 10 feet. The table below summarizes water level data collected at this site during March 2006.

March Water-Level Data

Well ID	Date	Time Measuring	Depth to Water / BGS (ft)	Total Well Depth (ft)	Total Feet of Water
03-24548 (B-9)	3/9/2006	1350	31.30	31.80	0.50
03-24530 (B-10)	3/9/2006	1355	30.60	31.10	0.50
03-24529 (B-13)	3/9/2006	1400	29.00	32.00	3.00
03-24548 (B-9)	3/13/2006	1405	30.40	31.80	1.40
03-24530 (B-10)	3/13/2006	1410	22.45	31.10	8.65
03-24529 (B-13)	3/13/2006	1415	22.60	32.00	9.40
03-24548 (B-9)	3/20/2006	1405	29.85	31.80	1.95
03-24530 (B-10)	3/20/2006	1407	21.68	31.10	9.42
03-24529 (B-13)	3/20/2006	1415	21.82	32.00	10.18
03-24548 (B-9)	3/23/2006	1330	26.70	31.80	5.10
03-24530 (B-10)	3/23/2006	1335	20.55	31.10	10.55
03-24529 (B-13)	3/23/2006	1343	20.65	32.00	11.35

- DOE proposes to focus on identification of the actual recharge location(s) to determine if the source of recharge can be controlled or eliminated. More importantly DOE proposes to refine the investigation of the actual source of solvent contamination to determine if a remedy can be implemented effectively. Quarterly sampling, analysis and reporting is also recommended.

8. NMED Comment:

Appendix A Field Methods:

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.

8. DOE Response:

DOE will submit to NMED a more detailed description of the Field Methods implemented during the investigation on or before April 28, 2006.