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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

April 7, 2009

David Gregory
Federal Project Director
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Los Alamos, NM 87544

David McInroy
Remediation Services Deputy Project Director
Los Alamos National Laboratory
P.O. Box 1663, MS M992
Los Alamos, NM 87545

**RE: NOTICE OF DISAPPROVAL
PERIODIC MONITORING REPORT FOR
PAJARITO WATERSHED; SEPTEMBER 8-SEPTEMBER 19, 2008
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515
HWB-LANL-09-004**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security L.L.C.'s (LANS) (collectively, the Permittees) *Periodic Monitoring Report for Pajarito Watershed, September 8 - September 19, 2008* (PMR), dated February 2009, and referenced by LA-UR-09-0685 and EP2009-0071.

Specific Comments:

1. Table 3.4-1 (Observations and Deviations) contains inaccurate information and also some incomplete information. The following table lists information from the PMR and summarizes the requirements of the 2008 Interim Facility-Wide Groundwater Monitoring Plan (2008 IFGMP) for affected monitoring locations:



Monitoring Point	PMR Listed Deviation	2008 IFGMP Requirement
03-B-9	The location could not be sampled on 09/18/08; only water level was measured per 2008 IFGMP.	2008 IFGMP only specifies quarterly water level measurements.
PCO-3	The location could not be sampled on 09/12/08; only water level was measured per 2008 IFGMP.	2008 IFGMP specifies quarterly sampling for TAL metals, VOCs+TICs, SVOCs+TICs, HEXP, GI, perchlorate and FD, continuous water level measurements and annual sampling for RAD, low level tritium and stable isotopes.
R-19, Screen 5; R-19, Screen 7	The locations were sampled on 09/15/08 for only TKN and ammonia (per 2008 IFGMP).	2008 IFGMP specifies quarterly sampling for sulfide, ammonia, total Kjeldahl nitrogen (TKN), FD and continuous water level measurements.
R-22, Screen 1; R-22, Screen 4	The locations were sampled on 09/17-18/2008 for only TKN and Ammonia (per 2008 IFGMP).	2008 IFGMP specifies quarterly sampling for sulfide, ammonia, TKN, VOCs+TICs, FD, low level tritium and continuous water level measurements.
R-22, Screen 5	The location was sampled on 09/16/08 for only TKN and ammonia (per 2008 IFGMP).	2008 IFGMP specifies quarterly sampling for sulfide, ammonia, TKN and FD and continuous water level measurements.
Notes: TAL - Target analyte list metals, see also footnote C, Table 8.4-1, 2008 IFGWP VOCs - TICs - Volatile organic compounds including tentatively identified compounds SVOCs + TICs - Semi-volatile organic compounds including tentatively identified compounds RAD - See footnote D, Table 8.4-1, 2008 IFGWP HEXP - See footnote F, Table 8.4-1, 2008 IFGWP GI - General Inorganics, see footnote E, Table 8.4-1, 2008 IFGWP FD - Field data, see footnote B, Table 8.4-1, 2008 IFGWP		

The Table 3.4-1 entry for wells PCAO-8 and PCAO-9 indicates the wells were sampled for an abbreviated analytical suite due to slow or limited well recharge conditions. However, no explanation is provided for the limited sampling performed at PCO-3, R-19-Screen 5, R-19-Screen 7, R-22-Screen 1, R-22-Screen 4 or R-22-Screen 5. The Permittees must comply with the sampling requirements outlined in the NMED-approved 2008 IFGMP or provide informative and justifiable explanation(s) for why a given requirement was not followed.

2. Two of the concentration versus time graphs presented on Figure 4.2-1 (1,4-dioxane at wells 03-B-10 and 03-B-13) apparently were not updated to include data from the September 2008 sampling event.
3. The field parameter results for well 03-B-10 presented in Appendix B of the PMR indicate sample specific conductance values ranging from 2.14 to 1,623 micro Siemens per centimeter ($\mu\text{S}/\text{cm}$) during five sampling events conducted between September 18, 2007 and September 18, 2008. Turbidity measurements from the same well during the period from September 18, 2007 to September 18, 2008 are reported

to have ranged from 8.03 to 78 nephelometric turbidity units (NTU). Oxidation reduction potential (ORP) values ranged from 14 to 390 millivolts (mV) at this well over the same timeframe. These wide ranges of field measurement values do not seem to be indicative of stabilized well sampling conditions. However, well purge volumes (ranging from one to five gallons) are only reported for three sampling events at this well making it impossible to determine the relationship(s) between purge volumes and the associated field measurements. Wide ranges for conductivity (2.18 – 1.850 $\mu\text{S}/\text{cm}$), turbidity (19.1 – 100 NTU) and ORP (-11 – 348 mV) measurements are also reported for well 03-B-13 during the period covered by the PMR. Purge volumes at this location ranged from one to 11 gallons during the last four monitoring events.

NMED noted other Pajarito Watershed sampling locations are also showing what may be significant variability in field measurement data. Examples include Homestead Spring (conductivity 26.9 – 324 $\mu\text{S}/\text{cm}$), PCAO-5 (ORP -227 – 96 mV), PCAO-8 (turbidity 62.1 – 264 NTU), Pajarito below confluences of South and North Anchor East Basin (turbidity 7.69 – 72 NTU) and R-22, Port 722, depth 1273.5 (turbidity 0.19 – 8.59).

Generally, the purpose of purging wells prior to collecting samples is to document that stabilized, representative samples are obtained from a given well. The Permittees must review the sample collection procedures outlined in Appendix C of the 2008 IFGMP and verify that field sampling personnel are following appropriate well purging and field data collection procedures. If the Permittees determine that current well purging and field data collection procedures do not reliably produce representative groundwater samples, the Permittees must revise applicable portions of Appendix C of the 2009 IFGMP.

4. NMED noted elevated 1,1-dichloroethylene, 1,1,1-trichloroethane and 1,4-dioxane concentrations at well 03-B-10 and elevated 1,1,1-trichloroethane, 1,1-dichloroethylene and 1,4-dioxane concentrations at well 03-B-13. The reported concentrations of these constituents greatly exceed applicable water quality standards. In the case of 1,4-dioxane at both wells, NMED noted that the constituent concentrations dropped significantly (i.e., to below or only slightly above applicable standards) during the subsequent December 18, 2008 sampling period as reported in the current RACER database. It is not clear what is causing concentration differences to vary by orders of magnitude between sampling events for these wells. The Permittees must carefully review well purging field records in relation to constituent concentration data at these wells when preparing future PMRs for the watershed.

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The Permittees must submit revised data tables that both highlight and footnote the variabilities in the purge data for each well cited in this NOD. The revised tables must be submitted as replacement pages (two paper copies) to NMED no later than May 8, 2009. In accordance with Section XI.A of the Order, the Permittees must include an electronic copy of the entire revised PMR, including a redline-strikeout version that includes all changes and edits to the PMR, with the response to the NOD. As part of the response letter, the Permittees must provide an explanation for omitting the analyses listed in the table included in this NOD.

Please contact Daniel Comeau at (505) 476-6043, if you have any questions.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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File: LANL 2009 - Pajarito Canyon PMR (Report of September 2008)