

TA 36



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JOHN R. D'ANTONIO, JR.
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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

September 4, 2002

Dr. John Browne, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

Mr. Mat Johansen, Groundwater Program Compliance Manager
DOE-OLASO
Mail Stop A316
Los Alamos, New Mexico 87544

**RE: REVIEW OF SAMPLING AND ANALYSIS PLAN (SAP) FOR THE DRILLING AND TESTING OF CHARACTERIZATION WELLS R-16, R-20, R-21, R-23, AND R-32 IN THE VICINITY OF TA-54
LOS ALAMOS NATIONAL LABORATORY NM0890010515**

Dear Dr. Browne and Mr. Johansen:

The New Mexico Environment Department (NMED) has reviewed the Los Alamos National Laboratory and the Department of Energy Sampling and Analysis Plan for the Drilling and Testing of Characterization Wells R-16, R-20, R-21, R-23, and R-32 in the Vicinity of TA-54 (June, 2002; ER 2002-0336; LA-UR-02-0334). Wells R-16, R-20, R-21, R-23, and R-32 are being installed according to the Hydrogeologic Workplan (LANL 1998, 59599). We have the following comments regarding the planned activities.

NMED is concerned about the potential migration of water and contaminants from MDAs G, H and L from the surface to groundwater. The SAP calls for geophysical and video logging to be performed prior to setting casing in the vadose zone and after the borehole reaches total depth to provide hydrologic information about the vadose zone. In areas where vapor phase contamination and transport is of concern, NMED requests that, during the downtime for logging purposes and prior to well construction, the borings should be monitored for the presence of vapor-phase contaminants. For minimal additional cost, at least one of the regional wells could easily be constructed such that it could accommodate vapor monitoring as well as the planned groundwater monitoring and sampling. The vapor samples could be used to correlate with or substantiate the data from the core collected in the vadose zone. Vapor monitoring may also be useful since the drilling operations completed to date have had some difficulty with recovery of core. An organic vapor plume is known to be present to a depth of at least 500 feet beneath MDA L in the Cerros del Rio basalts. Due to the proximal location of many of these boreholes to subsurface vapor plumes located at TA-54 and the downgradient location of many of the boreholes relative to current and historic high explosive, perchlorate,



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chlorinated solvent, and other contaminant releases, NMED requests a more thorough investigation of the vadose zone at the proposed well locations. R-21's proximity to MDA L makes it an excellent candidate for vapor monitoring. Additionally, the Pajarito Canyon Work Plan (LA-UR-98-2550) states that R-20 would monitor for vapor plume migration from MDA L (7.4.4.1.2). Samples of subsurface vapors should be collected at discrete zones, selected based on investigation and monitoring results. The additional vapor monitoring locations associated with the R-wells should be incorporated into the ongoing vapor monitoring program at TA-54.

LANL staff conducted two conference calls with NMED on May 20 and May 29, 2002, regarding data quality objectives and locations of boreholes/wells drilled under the Hydrogeologic Workplan. The wells proposed for completion by the end of the Fiscal Year 2002 were the five wells that are the subject of the above-referenced SAP (R-16, R-20, R-21, R-23, and R-32), as well as R-14. LANL staff dismissed NMED's requests for collection of pertinent vadose zone information from the boreholes as outside the scope of the Hydrogeologic Workplan. Budget and time constraints were also cited as issues. At this time, NMED does not agree with LANL's conclusion that all necessary subsurface characterization is complete and the contaminant vapor plumes are adequately delineated at TA-54. Additional vadose zone data collection that may be required in the future was deferred to the Material Disposal Area group. LANL agreed to collect core from the surface through the Bandelier Tuff to the upper 50 feet of the Cerros del Rio Basalt, but declined to comply with NMED requests for core collection in the higher permeability, perched groundwater bearing units and other important hydrostratigraphic intervals in the Cerros del Rio Basalt and the Puye Formation. LANL also declined NMED's request to use straddle packers to collect vapor samples from targeted discrete intervals to screen for the presence or absence of vapor phase contamination.

NMED also disagreed with the current location of R-16; instead, NMED wanted it closer to TA-54, west of State Route 4 and north of Cañada del Buey, so that it would be better suited for monitoring purposes. LANL's position is the current location of the well is of greater importance for monitoring hydraulic gradient near White Rock Canyon and the Rio Grande River.

NMED emphasizes the importance of accurately locating the top of the zone of regional saturation when drilling the HWP wells. This knowledge is necessary for proper well construction and for understanding the hydrogeologic system beneath the Pajarito Plateau. For monitoring and characterization purposes, NMED requires that a screen be placed such that it straddles the top of the regional zone of saturation in each well. NMED also reiterates that it advocates a variety of drilling methods for the HWP wells. The drilling method used should be selected to match the Data Quality Objectives for the specific well, without undue compromises in data collection and quality.

If you have any questions regarding these comments, please contact Ms. Carolyn Cooper of my staff at (505) 428-2539.

Sincerely,



John Young

LANL Corrective Action Project Leader
Permits Management Program

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File: LANL HSWA TA-36 (HWP, TA-54, Pajarito Canyon, Offsite)