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January 24, 1995

LANL
 VXT

Mr. David Neleigh, Chief (6H-PN)
 New Mexico Federal Facilities Section
 Hazardous Waste Management Division
 U.S. Environmental Protection Agency
 1445 Ross Avenue, Suite 1200
 Dallas, Texas 75202-2733

RE: Fiscal Year 1995 RCRA Work Grant Program Element #10: Los Alamos National Laboratory (LANL) Site-Wide Hydrogeologic Evaluation - Progress Report

Dear Mr. Neleigh:

The Canyons Operable Unit (OU) RFI Workplans, which are currently being developed at LANL, do not appear to address essential site-wide hydrogeologic requirements adequately. Fundamental environmental setting questions remain at LANL which need to be answered prior to design of ground-water monitoring systems. Basic geology, hydrogeology, and pathways for contaminant transport have not been adequately addressed to date.

Sampling plans for phase I assessment of release determination from SWMUs have been developed prior to an adequate environmental setting characterization. The New Mexico Environment Department (NMED) is not recommending an excessive, but rather a reasonably focused investigation to forego submission of future inadequate hydrogeologic information and data. Sufficient knowledge of the site-wide geological complexity including pathways, the potential areal extent of releases, the nature of constituents of concern, and the variability of subsurface materials are essential to ensure that site-specific environmental concerns are being addressed adequately.

The Canyon OUs are the place to address most of the hydrogeologic questions/requirements in the ¹HSWA Permit if the requirements are acknowledged by the regulators and the facility. The NMED is concerned at this time that the alluvial and perched aquifer systems will not be adequately addressed to meet the requirements of the HSWA Permit, and that the basic hydrogeologic questions remaining will not be addressed if the site-wide requirements under

¹Module VIII of RCRA Operating Permit, LANL May 23, 1990 Hazardous Waste Permit (Section P, Task III: Facility Investigation, A. Environmental Setting, 1. Hydrogeology).



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HSWA are not considered, understood, and integrated into site-specific ER Program workplans. Integrating the objectives of a site-wide characterization, such as the need to delineate aquifer extent, determine directions of ground-water flow, and aquifer characteristics, with the site-specific investigations is essential to gain a better understanding of and environmental framework for specific sites.

At present, the following fundamental hydrogeologic issues/questions remain unresolved at LANL:

- o Individual zones of saturation beneath LANL have not been adequately delineated, and the "hydraulic interconnection" between these is not understood. A facility-wide description of the hydrogeologic characteristics affecting ground-water flow beneath the facility can not be made without adequate delineation of the perched-intermediate aquifer(s) beneath LANL.
- o The recharge area(s) for the main and perched-intermediate aquifers have not been identified. It is unknown at this time if any significant quantity of water is recharging the main aquifer through the fracture-fault zones which occur on the Pajarito Plateau. Characterization of these site-wide fault zones as potential pathways for aqueous migration is not complete. It is unknown what effect, if any, these zones may have on the direction of ground-water flow and hydraulic gradient of the main and perched-intermediate aquifers.
- o The ground-water flow direction(s) of the main aquifer and perched-intermediate aquifer(s), as influenced by pumping of production wells are unknown.
- o Aquifer characteristics can not be determined without additional monitoring wells installed within specific intervals of the various aquifers beneath the facility. Locations of wells designed for aquifer testing cannot be addressed adequately without the first bullet being answered.

DOE Order 5400.1, General Environmental Protection Program, (Chapter IV, Section 5.b, p.9) requires that a groundwater monitoring plan shall be developed as a specific element of the Environmental Monitoring Plan and the Groundwater Protection Management Program (GWMP). The GWMP (Chapter III, Section 4.a, p.2) states that LANL may use in whole or in part those technical documents, plans, and permits associated with compliance with SDWA, RCRA, and CERCLA to satisfy this requirement. *Problems associated with using DOE 5400.1 as a driver for a site-wide hydrogeologic characterization of this facility include:* 1) lack of discernible funding, 2) lack of a compliance schedule, and 3) current non-compliance with HSWA hydrogeologic requirements with no foreseeable plan as to how the HSWA requirements will be met.

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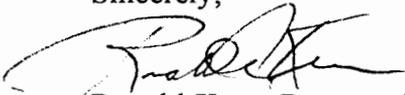
The HSWA requirements are not adequately addressed in the most current Ground Water Business Plan, a plan developed through the GWPMP. *LANL's 1993 GWPMP plan and 1994 Ground Water Business Plan lack fundamental data quality objectives and performance standards (e.g. criteria for well locations).* In the past LANL has stated that the HSWA requirements are being met by ongoing programs. NMED does not consider that these individual programs are adequately addressing these requirements. Currently, no comprehensive program has been developed to address the HSWA requirements.

At the August 24, 1994 meeting between NMED and DOE/LANL, DOE/LANL stated that the criteria for monitoring well locations are based on the need to: 1) have a spatial distribution of wells across the facility, and 2) be sited downgradient from regulatory units. *The above criteria, however, do not consider the hydrogeologic system.* It is also unclear how monitoring well locations can be adequately sited prior to adequate consideration of available data. It appears that insufficient time is being spent on the rationale for these well locations. The phased approach is necessary to identify data needs and gaps. LANL's approach is the reverse of that required for a logical progression.

NMED recommends that a HSWA driven Site-Wide Hydrogeologic Workplan be developed in the immediate future to address the Permit requirements and fundamental hydrogeologic questions remaining at LANL. *These are issues that EPA and NMED need to discuss and reach an immediate accord.* Once a site-wide hydrogeologic characterization workplan has been completed, then the Canyons OU RFIs can incorporate the work needed. For those Canyon RFIs already developed, an addendum to the Workplans could be submitted at that time. This approach should assure that site-wide concerns have been integrated into the individual RFI workplans.

Thank you for your attention in this matter. Should you have any questions please contact Ms. Teri Davis of staff at (505) 827-4308.

Sincerely,



Ronald Kern, Program Manager
RCRA Technical Compliance Program

cc: Benito Garcia, HRMB Chief
Barbara Hoditschek, HRMB Program Manager
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