LANL RED FILE

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FAX MEMO
PAGES 4 DATE 8/5/96 FAX # 665-9344
TO Ken Zamora
FROM Terri Dunn
CO. NMED HRMB
PH # 827-1558 FAX #

Mr. G. Thomas Todd
Area Manager
Los Alamos Area Office
Los Alamos, New Mexico 87544

Dear Mr. Todd:

SUBJECT: Concerns Regarding the Proposed Los Alamos National Laboratory (LANL) Groundwater Protection Strategy, the Data Quality Objectives and the Decision Flow Processes

A draft of the *Los Alamos Ground Water Protection Strategy* (Strategy) dated June 3, 1996, the Data Quality Objectives (DQO) and the Decision Flow processes were presented to representatives of the Surface Water Quality, Ground Water Quality, and Hazardous and Radioactive Materials Bureaus of the New Mexico Environment Department (NMED) on June 6 and July 2. In response to these documents and the ensuing discussions, the various Bureaus within NMED provide the following comments:

o In the *Strategy* document dated June 3, 1996, LANL proposes several definitions for various hydrologic terms. LANL uses these definitions as the basis for the *Strategy*. NMED is concerned that LANL's use of the term vadose zone minimizes the significance of bodies of water (e.g., springs, seeps, intermediate and shallow, local aquifers) above the regional aquifer. These waters may be important as future water supplies and as contaminant pathways to the regional aquifer and surface waters. LANL's use of the term vadose zone may inadvertently lead to the omission of monitoring and characterization of these resources/pathways in the RCRA Hydrogeologic Workplan (Workplan).

  LANL should adopt the appropriate definitions of ground water, subsurface water, vadose zone, aquifer, and uppermost aquifer dependent upon the intended application. RCRA/HSWA, WQCC, and other regulations provide specific definitions for these hydrologic terms. The adoption of the applicable regulatory definitions would be appropriate to ensure clear communication of ideas.

o The *Strategy* document uses a decision criteria of at least 50 gallons/day of yield to define ground water. Since yield from a well may vary with the seasons and with well design, and since the regulations of 20 NMAC are not yield dependant, specific yield should not used to define ground water or to determine whether or not the water producing zone should be protected.

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- NMED is concerned with LANL's proposal to replace intermediate perched aquifer monitoring wells with regional aquifer monitoring wells. During the drilling of the regional aquifer monitoring wells, LANL proposes to collect discrete ground water samples from intermediate perched zones of ground water as they are encountered. Based on the analysis of these discrete samples, LANL proposes to determine if these zones of saturation require further monitoring.

  NMED questions this approach to characterizing the intermediate perched ground water based on the following: 1) How representative is a ground water sample obtained from a drill hole? 2) If no constituents of concern are identified in that one discreet ground water sample, what are the next steps, if any, in the investigation of that zone of saturation? 3) How will the yield of specific zones of saturation be determined? 4) What alternative provisions are there for an early detection monitoring system at LANL if intermediate perched ground water is not monitored? 5) How does LANL propose to monitor parameters of interest over time? 6) How will the requirements (e.g., delineation of perched aquifer systems, etc.) of RCRA be met?

- The opportunity and frequency of regulatory input within both the DQO process and the Decision Flow is unclear.

- The Decision Flow document restricts its investigation of potential impacts to ground water to sources of "sufficient magnitude." However, LANL does not provide the qualifications/quantifications for "sufficient magnitude."

- The DQO process and Decision Flow document should explicitly state which HSWA Permit conditions are being addressed at each step.

- The Decision Flow does not address historical pulse releases of contaminants. For example, a discrete sample obtained from an intermediate perched zone of saturation may indicate no contamination; however, historical analyses or other information may suggest that contaminants have been released and may reside elsewhere within the same perched zone of saturation. A good example of this scenario is evident within Los Alamos Canyon. Tritium was detected at levels above 750,000 pCi/l during the 1970's and more recently at levels above regulatory standards, EPA maximum contaminant levels (MCLs), within the shallow perched "alluvial" ground water within Los Alamos Canyon. Tritium has also been detected within intermediate perched ground water at above 5,000 pCi/l during recent drilling within Los Alamos Canyon. Currently, additional monitoring wells do not exist to determine the impact and extent of these tritium releases to the intermediate perched ground water near Los Alamos Canyon.

  NMED's understands that an intermediate perched ground water monitoring well has

been partially completed within Los Alamos Canyon to investigate the extent of the known historical tritium releases. NMED also understands that due to budget cuts the well did not receive funding for completion within the near term. Given the potential severity of the impacts to ground water by these historical releases and the potential for off-site migration, NMED requests the intermediate monitoring well within Los Alamos Canyon be completed in an expedited manner to meet RCRA HSWA Module VIII regulatory requirements. Details of well completion and sample collection should be as approved within the Los Alamos/Pueblo Canyon RCRA RFI Workplan.

Additionally, the LANL Decision Flow diagram asks the question, "Are contaminant concentrations within sediment or ground water above regulatory standards or risk levels?". The decision flow should include additional decision points which determine if other relevant available data and issues have been considered (e.g. watershed data, subsurface data, and the need for detection monitoring of PRSs) before recommending "No-Further Action".

NMED looks forward to LANL's delivery of the Workplan in September 1996. Ongoing communications will facilitate the regulatory review process for the Workplan. If you should have any questions or comments regarding this matter, please contact myself, Ms. Teri Davis for RCRA issues, Mr. John Rogers for ground water WQCC issues, Mr. Glenn Saums for surface water WQCC issues, or Mr. Michael Dale for DOE OB issues at (505) 827-1558, (505) 827-2754, (505) 827-2827, and (505) 672-0449 respectively.

Sincerely,

Ed Kelley

Ed Kelley Ph. D., Director
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EK:kth

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