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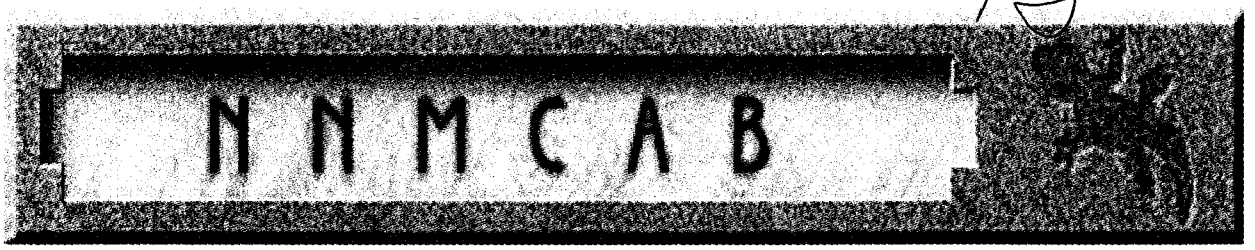

Northern New Mexico Citizens' Advisory Board
A U.S. Department of Energy Site-Specific Advisory Board
1660 Old Pecos Trail, Suite B, Santa Fe, NM 87505
Phone: (505) 989-1662 or 1-800-218-5942
Fax: (505) 989-1752 www.nnmcab.org

January 4, 2005

Rich Mayer
Hazardous Waste Management Division
US EPA Region VI
1445 Ross Ave Ste 1200
Dallas TX 75202

Dear Mr. Mayer:

The Environmental Monitoring, Surveillance, and Remediation Committee (EMSR) of the Northern New Mexico Citizens Advisory Board (NNMCAB) received a report from registered geologist Robert Gilkeson in June of 2004. His report questions the validity of samples being collected from wells specified in the Hydrogeologic Work Plan at Los Alamos National Laboratory (LANL). Mr. Gilkeson's report was shared with the Department of Energy (DOE) and LANL and they provided verbal and written responses. Their primary response was that the wells were installed in accordance with Environmental Protection Agency (EPA) guidance and with New Mexico Environment Department (NMED) approval.

After evaluating Mr. Gilkeson's report, the DOE and LANL responses and other associated information, all of which is included in this packet, the EMSR Committee feels that some allegations in the Gilkeson Report may have merit. For example, the RCRA Groundwater Monitoring: Draft Technical Report requires that waters sampled from monitoring wells are truly representative of the aquifer strata from which they are drawn. The LANL responses indicates that not all of the wells are fully recovered from the affects of the drilling fluids used during installation and that the wells are presently sampled for characterization purposes only but that some may be converted to monitoring wells.

Based upon the conflicting claims of the Gilkeson and LANL reports, the EMSR Committee is very concerned that much of the water quality data being collected and reported from the regional groundwater monitoring wells is not representative of actual conditions. Therefore, we are requesting that you engage your technical experts to review the enclosed materials with respect to the following issues and advise us on their best judgment and consensus.

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Issues and Questions:

Issue 1. We understand that, for all practical purposes, LANL wells cannot be drilled without using drilling fluids and bentonite clay. The drilling fluids alter the oxidation/reduction potentials of the groundwater surrounding the screens. This alteration can hinder or prevent some groundwater constituents from reaching the sampling apparatus. For example: metals may precipitate and perchlorate ions may be reduced, thus diminishing their concentration in the sampled water. Bentonite clay is a strong adsorbing agent and will scavenge metal cations, including certain radionuclides of interest, such as plutonium.

QUESTION: ***If LANL decides to convert characterization wells to monitoring wells, can wells drilled with commercial fluids, such as EZ-MUD, Quik-FOAM, TORKEASE, and LIQUI-TROL, ever be developed and cleaned up adequately to provide analytical data representative of the groundwater in the aquifer unit being sampled.***

QUESTION: ***Can wells drilled with bentonite clay ever be developed and cleaned up adequately to provide analytical data representative of the groundwater in the aquifer unit being sampled?***

Issue 2. The LANL reports imply that water samples from the wells are being used to characterize background concentrations of constituents in groundwater units. LANL analyzes for a wide variety of potential contaminants, including metals, volatile organic compounds, semi-volatile organic compounds, radionuclides, pesticides, herbicides, PCBs, high explosives and their degradation products, and now, perchlorate. Background concentrations of groundwater constituents are typically parts per billion or less.

QUESTION: ***Will the use of the above drilling fluids and bentonite clay preclude any contaminants from being accurately sampled even after well cleanup? If so, which ones?***

Issue 3. In reports to the public, LANL indicates that contamination from LANL operations has not reached certain groundwater regions. LANL bases such statements on analytical results, which show that certain fast-moving contaminants, such as tritium, that are not affected by drilling fluids or clays have not been detected in concentrations above background in samples drawn from the wells.

QUESTION: ***Is this argument valid for all contaminants that may possibly reach LANL groundwater?***

Issue 4. For many years LANL has sampled water from various sources, including water production wells, springs along the Rio Grande as much as 2000 feet below LANL surface, and USGS test wells installed in the 1950s. (These data from 1957-2004 are available on the LANL Water Quality Database website, http://wqdbworld.lanl.gov.)

QUESTION: ***Can LANL derive an independent estimate of background concentrations of potential contaminants from accumulated groundwater data without using analytical results from the wells associated with the Hydrogeologic Work Plan?***

QUESTION: ***Would such data constitute reliable criteria for judging when wells are suitable as monitoring wells?***

Groundwater quality is a major concern of citizens affected by LANL operations. The EMSR Committee feels that LANL monitoring wells are the most important aspect of the long-term environmental management program at LANL. We are concerned whether or not analytical data from the well samples can reliably be representative of the relevant aquifer strata over the wells 50-year life span. As you know, a principal focus of the NNMCAB is to insure that LANL provide the public with accurate information concerning hazardous environmental constituents at the lab and the locations of contamination. LANL has an obligation to notify the public should any data it provides be suspect.

We look forward to receiving the unbiased opinions of your EPA experts. The NNMCAB intends to use EPA expert technical analysis and advise on this issue to develop a recommendation to the DOE concerning the uses of monitoring well data.

Sincerely,

Timothy A. DeLong, Chair
Northern New Mexico Citizens Advisory Board

Attachments:

1. "Groundwater Contamination in the Regional Aquifer beneath the Los Alamos National Laboratory," by Robert H. Gilkeson, Registered Geologist.

2. "Response to Concerns about Selected Regional Aquifer Wells at Los Alamos National Laboratory." LANL, LA-UR-04-6777, September 2004.

3. Review of Robert Gilkeson Report. Pete Shanahan, RACER Project. June 25, 2004.

4. DOE Request: DOE OB [Oversight Bureau] Comments =96 Mr. Gilkeson=92s "Groundwater Contamination in the Regional Aquifer beneath the Los Alamos National Laboratory, July 13, 2004, section 5, Well R-7 (and other sections pertinent to R-7)." July 22, 2004.

5. Review Comments, Geochemistry Reports for Wells R-7, R-9, R-9I, R-15, and R-22. Christopher M. Timm, PE, Chairman, NNMCAB EMSR Committee.

6. Review Comments. Donivan Porterfield, Radiochemist, LANL, July 14, 2004, August 17, 2004.

7. Annotated Transcript of the Presentation by Robert H. Gilkeson to the June 9, 2004 Meeting of the NNMCAB EMSR Committee.

8. Final Minutes of the June 9, 2004 NNMCAB EMSR Committee Meeting.

9. Gilkeson's Reply to Comments of Mr. Porterfield.

10. Gilkeson's Reply to Comments of Mr. Dale and Mr. Yanicak.

11. Gilkeson's Reply to the Review by Mr. Shanahan of the Report, "Groundwater Contamination in the Regional Aquifer Beneath the Los Alamos National Laboratory."

NOTE:
Well Completion Reports and Geochemistry Reports for Characterization Well R-7, R-9 and -9i, R-15, R-22 are available as PDFs on the LANL Water Quality Database website, http://wqdbworld.lanl.gov.