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Date: JAN 2 8 2011
Refer To: EP2011-0050

Pete Padilla
Environmental Compliance Officer
Department of Public Utilities
County of Los Alamos
P.O. Drawer 1030
Los Alamos, NM 87544

Subject: Los Alamos National Laboratory Sitewide Monitoring Program Drinking Water Results for the Los Alamos County Water Supply Wells

Dear Mr. Padilla:

This report, prepared by Los Alamos National Laboratory (the Laboratory), provides the analytical results from the September 14, 2010, sampling and analysis of Los Alamos County (the County) water supply wells O-1, O-4, PM-1, and PM-3. Water supply wells PM-2, PM-4, and PM-5 were out of service at the time of sampling. In addition, tritium results from the May 19, 2010, sampling of water supply wells O-1, O-4, PM-1, PM-2, PM-3, PM-4, and PM-5 have been included in this report. All results were below the U.S. Environmental Protection Agency (EPA) primary and secondary drinking water standards.

Quarterly monitoring of the County's water supply wells is conducted in accordance with the March 23, 2010, sampling and analysis plan. Under this plan, all County water supply wells will be sampled annually for full-suite analysis (radionuclides, general inorganics, metals, and organics). In addition, select wells are sampled quarterly for specific contaminants of concern: chromium, perchlorate, diesel range organics (DROs), tritium, volatile organic compounds (VOCs), nitrate+nitrite, molybdenum, and high explosives. Below is a detailed discussion of the analytical results from the third quarter 2010 sampling event.

The attached CD also contains the following items: (1) General Engineering Laboratories, Inc. (GEL) and American Radiation Services (ARSL) data package; and (2) an Excel file of the analytical results with a glossary of laboratory qualification codes, secondary validation codes, and secondary validation reason codes. The analytical results are as follows.

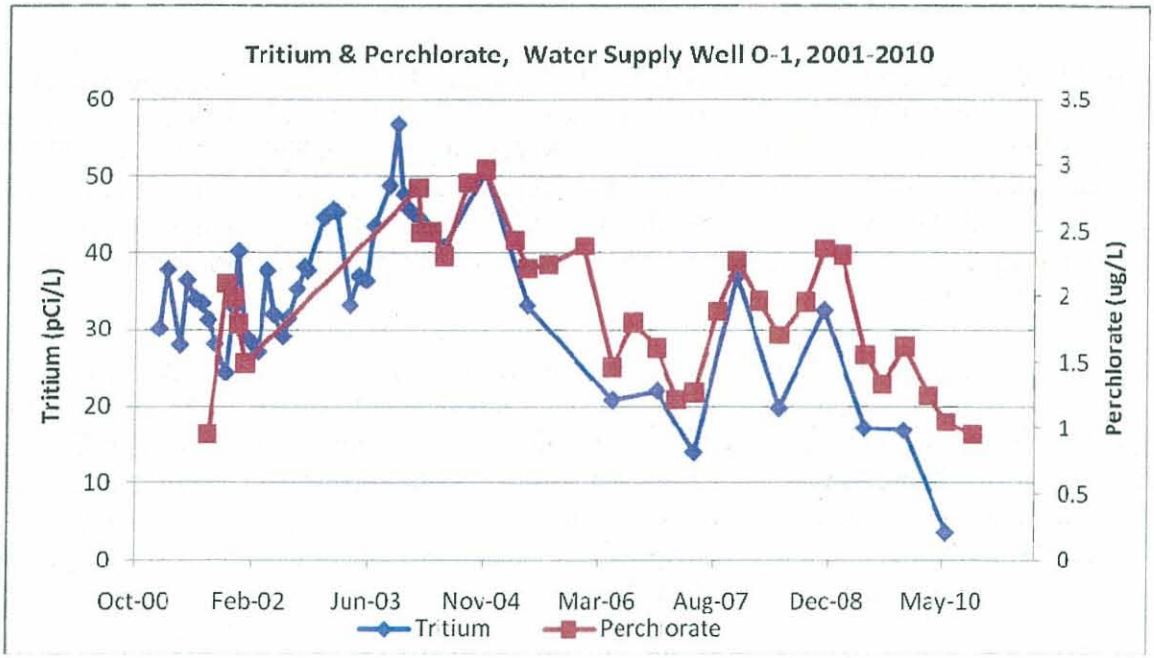
Tritium: Samples from water supply wells O-1, O-4, PM-1, PM-2, PM-3, PM-4, and PM-5 were submitted to ARSL for low-level tritium analysis. Historically, all low-level tritium samples were submitted to the University of Miami Tritium Laboratory (UMTL) for analysis. Beginning in early 2010, however, the Laboratory's contract with UMTL expired and a new contract was awarded to ARSL. Accordingly, results from ARSL may not be directly comparable to those from UMTL

because of differences in each laboratory's minimum detectable activity (MDA) and counting uncertainty. Analytical results are presented in Table 1.0, and the results are discussed below.

- May 19, 2010. Tritium activities at O-1, O-4, PM-1, PM-2, PM-3, PM-4, and PM-5 were nondetect (U flag), with the exception of water supply well O-1 (3.58 pCi/L). As shown in the figure below, this value is the lowest reported tritium activity at O-1 over the past 10 yr. The EPA maximum contaminant level (MCL) for tritium in drinking water is 20,000 pCi/L.
- September 14, 2010. The reported tritium activity at O-4, 6.74 pCi/L, is not consistent with previous results. Tritium values from eight sampling events between September 2008 and May 2010 were all nondetect (U flag). Water supply well O-4 will be sampled again for tritium in February 2011.

General Inorganics: Analytical results from the sampling of water supply wells O-1, O-4, PM-1, and PM-3 for general inorganics are summarized in Table 2.0. Field parameters collected at the time of sampling are also presented in Table 2.0.

- **Perchlorate:** Perchlorate concentrations at water supply wells O-1 and O-4 were 0.96 µg/L and 0.42 µg/L, respectively. As show in the figure below, the perchlorate concentration at O-1 is the lowest value detected at this location since August 2001.



Currently, neither the federal government nor the State of New Mexico has established a drinking water standard for perchlorate. On January 8, 2009, EPA issued an interim health advisory of 15 µg/L for perchlorate in drinking water, replacing the existing preliminary remediation goal of 24.5 µg/L.

Metals: The analytical results from sampling at water supply wells O-4, PM-1, and PM-3 for metals are summarized in Table 2.0.

- **Molybdenum:** The unfiltered molybdenum concentration at O-4 was 1.06 µg/L; there is no EPA MCL for molybdenum in drinking water. The New Mexico groundwater standard for molybdenum is 1000 µg/L (20.6.2.3103 New Mexico Administrative Code [NMAC]).

- **Chromium:** Filtered chromium concentrations at O-4, PM-1, and PM-3 were 5.39 µg/L, 6.47 µg/L, and 6.90 µg/L, respectively. These results are well below the EPA MCL of 100 µg/L and the New Mexico groundwater standard of 50 µg/L (20.6.2.3103 NMAC).

In summary, all results presented in this report are below EPA MCLs and New Mexico groundwater standards.

If you would like additional information regarding this report, please contact Bob Beers at (505) 667-7969 (bbeers@lanl.gov).

Sincerely,

Michael J. Graham, Associate Director
Environmental Programs
Los Alamos National Laboratory

MG/CD/SP/RB:sm

Attachment: CD with the following items:
(1) GEL and ARSL data packages
(2) Excel file of Tables 1.0–2.0 and glossary of laboratory qualification codes, secondary validation codes, and secondary validation reason codes (LA-UR-10-8345)

Cy: (w/att.)
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Gene Turner, DOE-LASO, MS A316
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