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Date: **SEP 23 2013**  
 Refer To: EP2013-0206

John Kieling, Bureau Chief  
 Hazardous Waste Bureau  
 New Mexico Environment Department  
 2905 Rodeo Park Drive East, Building 1  
 Santa Fe, NM 87505-6303

**Subject: Response to Review of the Periodic Monitoring Report for Los Alamos and Pajarito Watershed General Surveillance Monitoring Group, July 8– July 29, 2011, Los Alamos National Laboratory**

Dear Mr. Kieling:

The New Mexico Environment Department (NMED) provided comments on May 17, 2013, on the Periodic Monitoring Report for Pajarito Watershed, July 8–July 29, 2011, submitted in February 2012 by the U.S. Department of Energy (DOE) and Los Alamos National Security, LLC (LANS) (collectively, the Permittees). To facilitate review of the Permittees's responses, NMED's comments are included verbatim, followed by the Permittees's responses. It should be noted that the document title is different from that listed in the subject line of NMED's correspondence.

**NMED Comment:**

*NMED noted that "several" of the pH results exceeded the required extraction or analysis holding time. The Permittees must address this discrepancy in future surface and groundwater monitoring reports.*

**LANL Response:**

Table C-2 in Appendix C, titled Pajarito Analytical Results and Results from the Four Previous Monitoring Events if Available, contains 172 pH measurements. These measurements were made at the analytical laboratory on samples shipped to them for analysis. Every measurement has an analytical laboratory qualifier of "H," indicating "The required extraction or analysis holding time for this result was exceeded."

The U.S. Geological Survey National Field Manual for the Collection of Water-Quality Data, Chapter A6, Field Measurements, provides the following guidance:

The pH of sample water is to be measured as soon as possible after removal of the sample from its environmental source. The pH of a water sample can change substantially within hours or even minutes after sample collection as a result of temperature change; degassing (loss of sample oxygen, carbon dioxide, hydrogen sulfide, ammonia); in-gassing (gain of sample oxygen, carbon dioxide, hydrogen sulfide, ammonia); mineral precipitation (formation of calcium carbonate, iron hydroxides); metabolic respiration by microorganisms; and other chemical, physical, and biological reactions.

The pH of a water sample may be altered during sample preservation activities (e.g., for metals) and following sample collection. Thus, the pH of a sample measured after it arrives at the analytical laboratory may not be representative of the groundwater sample. A pH measurement is made in the field when samples are collected. These results are representative of groundwater samples and presented in Appendix A of the periodic monitoring report.

**NMED Comment:**

*The NMED noted an increase in magnesium and iron concentrations at well R-55i; the Permittees must continue to monitor this well as part of the IFGWMP watch list since the representativeness of the water-quality is questionable.*

**LANL Response:**

Los Alamos National Laboratory will continue to monitor well R-55i under the Interim Facility-wide Groundwater Monitoring Plan and will retain this well on the watch list because of high iron and magnesium detections at the well.

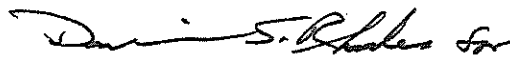
If you have any questions, please contact Steve Paris at (505) 606-0915 (smparis@lanl.gov) or Hai Shen at (505) 665-5046 (hai.shen@nnsa.doe.gov).

Sincerely,



Jeff Mousseau, Associate Director  
Environmental Programs  
Los Alamos National Laboratory

Sincerely,



Peter Maggiore, Assistant Manager  
Environmental Projects Office  
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JM/PM/CD/SM:sm

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