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Date: DEC 07 2011
Refer To: EP2011-0402

Mr. Brian Snyder, Water Division Director
Acting Public Utilities Division Director
Sangre de Cristo Water Division
City of Santa Fe
801 West San Mateo
P.O. Box 909
Santa Fe, New Mexico 87504

Subject: Responses to Sangre de Cristo Water Division Questions Regarding Low-Level Tritium Results Reported by the Los Alamos National Laboratory Sitewide Monitoring Program for the City of Santa Fe Buckman Water Supply Wells

Dear Mr. Snyder:

This letter provides responses to Mr. Alex Puglisi questions (in bold), received by email on November 7, 2011, regarding the low-level tritium results discussed by the Los Alamos National Laboratory (the Laboratory) in its October 25, 2011, letter report. In this report, the Laboratory states that tritium results from the May 17, 2011, sampling event for City of Santa Fe Buckman Water Supply Wells Nos 1, 6, and 8 were all nondetects. However, two of the three water samples collected on March 14, 2011, from wells 1 and 6 resulted in tritium detects. The letter report further states that the Laboratory is working with American Radiation Services laboratory to reevaluate its calculation errors of the March 14, 2011, results.

What were these calculation errors?

The analytical laboratory found that rounding functions programmed into its controlled spreadsheet were incorrect. The laboratory also found input errors that were a direct result of manual data entry.

How were they determined to have occurred at this late point in time and why were they not discovered when the March 14th results were first reported?

The Laboratory identified the two tritium detects from the March 14, 2011, sampling event as elevated compared with previous results immediately after pulling the data from The Laboratory's database. The Laboratory requested that the analytical laboratory review the data packages to ensure the accuracy of the results; however, the review was not completed before the 120-day deadline for releasing the data to the public or posting it to the RACER database. The August 16, 2011, letter reporting the March 16, 2011, sampling event results did identify a

discrepancy between the March 14, 2011, sample results analyzed by ARS and previous results analyzed by the University of Miami Tritium Laboratory. The discrepancy was attributed to differences in each laboratory's minimum detectable activity and counting uncertainty. It has recently been determined that rounding functions and input errors are factors that resulted in the tritium detections in the March 14, 2011, samples.

Over the last 2 yr, the Laboratory has transitioned from using the University of Miami to ARS for low-level tritium analysis and has been working with ARS to match our data-quality requirements with capabilities and limitations inherent to the analytical method. This past summer, the Laboratory conducted an assessment of all tritium data received from ARS and identified a body of tritium results that appeared erroneous when assessed as part of a larger body of data. The Laboratory requested that ARS review its protocol, and it has just completed its assessment of potential issues associated with low-level tritium analysis.

For these Buckman well samples, revised calculation activities were significantly different from initially reported. When recalculated using the correct spreadsheet, the results previously reported as detections are now considered nondetects.

Were the March 14th results entered into the RACER database, and will the Laboratory make changes in that database?

Yes, the results were uploaded to RACER following the City of Santa Fe's review period. Once the results are reviewed and corrected by the analytical laboratory and the Laboratory's review of the changes is concluded, the updated results will be added to RACER. The superseded results will be retained in RACER but with new qualifiers that indicate the results are rejected.

If you have any further questions, please contact Steve Paris at (505) 606-0915 (smparis@lanl.gov) or Woody Woodworth at (505) 665-5820 (lance.woodworth@nnsa.doe.gov).

Sincerely,

Michael J. Graham, Associate Director
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Los Alamos National Laboratory

Sincerely,

George J. Rael, Assistant Manager
Environmental Projects Office
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