N.A. Water Systems

August 4, 2008

This Letter Delivered by Email Only

Ref. No. D02-56007749

Mr. Mark Purcell
Superfund Division (6SF-RL)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1220
Dallas, TX 75202

Mr. Myron Fliegel
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
#2 White Flint, Mail Stop T8F5
Rockville, MD 20852

Re: Notification that UNC's Groundwater Analytical Laboratory is Modifying the Reporting and Sampling Protocol for Radiologic Parameters
United Nuclear Corporation's Church Rock Tailings Site, Gallup, New Mexico
Administrative Order (Docket No. CERCLA 6-11-89)
Materials License No. SUA-1475

Dear Messrs. Purcell and Fliegel:

Electronically attached is a letter from Energy Laboratories that was recently sent to UNC. It explains that the lab is in the process of modifying some of their protocols for the reporting and sampling of radiologic parameters in groundwater. As the host of the main electronic database of the groundwater quality analytical results, N.A. Water Systems will develop methods to incorporate the new reporting and to relate past and future results for the radiologics.

UNC requests your review and concurrence with the lab's proposed changes.

Very truly yours,

Mark Jancin, P.G.
Project Manager

cc: Roy Blickwedel, GE
Larry Bush, UNC

Attachment

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As many of you have already seen, Energy Laboratories is in the middle of making some changes in the way we report our Radiochemistry samples. The reason for these changes is we have brought in a leading Radiochemistry consultant who has reviewed our practices and suggested we make these changes to implement best practices. We are sending this out to explain these changes, both the ones that you have already seen and some you will be seeing in the near and not too near future.

1. Negative results. Obviously, there cannot be a negative concentration of something. When radiochemical analysis is conducted two quality control samples are part of each batch. One is used to assure that there is no contamination introduced during the analysis (a method blank) and the other is used to set a "zero" point for the run (an instrument blank). Occasionally a sample will have fewer counts then the instrument blank used to set the "zero" point and this gives a negative result. Reporting negative results is consistent with Section 7.5 of The United States Nuclear Regulatory Commission's Regulatory Guide 4.14 which states: "The term 'not detected,' 'less than the lower limit of detection (LLD),' or similar terms should never be used. Each reported result should be a value and its associated error estimate, including values less than the lower limit of detection or less than zero." Including negative results also allow the client to see long-term trends in the data as well as assess if the results show real changes in their samples. This can only be achieved if the analytical result (positive, negative above or below the detection limit) is always reported. Long term trending of sample results from the same source that are truly free of contaminants will average zero. Long term trending of results that are other than zero will yield an average value with calculable uncertainties that will allow the client's assessment of individual sample results that may seem to be 'off-normal'. You will no longer see any "ND" values except on the QA/QC Summary Report. This notation is for the QA/QC report only and is something that we currently can't change in our reporting software and only happens when the Blank exactly equals zero.

2. MDCs. The MDC is the "Minimum Detectable Concentration" which is an estimate of the detection limit under the specific conditions of the sample analysis. The RL (reporting limit) will no longer show up on the Report for these parameters. MDCs are reported per sample and provide better and more accurate information. We are already reporting MDCs with Drinking Water Radiochemistry parameters, ^{210}Pb, and Radium Gross Alpha analysis and, in the future, will include a per-sample MDC with all Radiochemistry analytes wherever possible.

3. U Qualifiers. When the reported concentration is less than the MDC, the result will be given a "U" qualifier to indicate that the analyte was not detected at the minimum detectable concentration.

4. Increased Sample Volume Requirements. Increased volumes of samples for radiochemical analysis have been requested for several reasons. The first is to ensure that we have sufficient volume to meet the regulatory required detection limits. Using increased volume is one of the best ways to achieve low radiochemical detection limits. Second is to allow the laboratory the flexibility to use client samples for duplicate, matrix spike and matrix spike duplicate analysis. As you know each batch requires these quality control samples to be performed with the regular sample analysis. The same volume of sample is required for each of these QC samples thus more sample is required. Third, if any questions regarding sample results arise in data review, or if additional analyses are required after the initial sample shipment, having more sample in reserve allows the lab the flexibility to always meet the required detection limits for these new analyses. We can run a sample with lower volume but we may not be able to meet the MDC. If this is the case it will be noted in the Case Narrative. In certain cases we may have to use less volume then we normally would to avoid matrix interferences (i.e., the sample is really dirty). This will also be noted in the Case Narrative. The new requirements for sample volumes are listed below.

5. A Case Narrative and QA/QC Summary Report will be included in every report. In the past these were only included at the client's request. We feel this provides a more complete report and allows us to comment on and/or explain any anomalies associated with the analysis.

6. Method 900.1 will be getting a name change. What used to be reported as "Gross Alpha minus Rn & U" will now be called "Radium Gross Alpha Analysis". The method will be the same (900.1). We feel this will help avoid any possible confusion as to what analytes are actually being detected.

7. Sample Storage. We will be disposing of all samples 6 months after the collection date. This is due to our limited storage space and the fact that the maximum recommended hold time for metals samples that are acid-preserved is 6 months. The exceptions to this 6 month hold are:
    a. Samples for Rn222 analysis, which are out of hold after 3 days.
    b. Any samples that are composited under the requirements of the SDWA and those composites span a period of time longer than 6 months.

8. Po210 Preservative change. Samples to be analyzed for Po210 will now need a separate bottle that is preserved with Hydrochloric Acid (HCl). This is due to the tendency of Po210 to plate out in samples preserved with Nitric Acid (HNO_3).

VOLUME REQUIREMENTS

Analyte	Volume	Preservative
Ra-226 and/or Ra-228	2.0 L	HNO_3
Gross Alpha and/or Beta	500 mL	HNO_3
Radium Gross Alpha Analysis	500 mL	HNO_3
Isotopic Uranium	2.0 L	HNO_3
Thorium 230 or Isotopic Thorium	2.0 L	HNO_3
Lead- 210	2.0 L	HNO_3
Strontium- 90	500 mL	HNO_3
Polonium- 210	1.0 L	HCl
Radon-222	50 mL VOA vial	None
Gamma Isotopic	1.0 L	HNO_3