February 24, 2011

April Gil, Ph.D, Site Manager
US Department of Energy
Office of Legacy Management
2597 B ¾ Road
Grand Junction, CO 81503

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION STAFF REVIEW OF DEPARTMENT OF ENERGY REPORTS FOR THE RIVERTON WYOMING AND SHIPROCK NEW MEXICO URANIUM MILL TAILINGS RADIATION CONTROL ACT SITE

Dear Dr. Gil:

I am writing in response to several letters and reports sent to the U.S. Nuclear Regulatory Commission (NRC) staff regarding the Riverton, Wyoming and Shiprock New Mexico Uranium Mill Tailings Radiation Control Act (UMTRCA) site. Specifically, the documents consist of: the June 2010 Data Validation Package for the Riverton site, dated October 2010 [ML103280228]; the response to NRC comments on the 2009 Data Validation and Verification Monitoring reports for the Riverton site, dated December 7, 2010 [ML103510303]; and, the letter, outlining the results of your sample filtration analysis protocol re-evaluation for the Riverton WY and Shiprock NW sites, dated December 7, 2010 [ML110050062]. The NRC staff's comments on these letters and reports are summarized below.

Regarding the June 2010 Data Validation Package, after reviewing the document, we conclude that the Department of Energy (DOE) performed the sampling in accordance with the 2009 Long-term Management Plan for the Riverton Wyoming site. As noted in the report, the concentrations of several constituents exhibited an increase over the historic levels/trends. DOE attributed the elevated concentrations to the high flows in the Little Wind River. The elevated concentrations were observed at wells screened in the surficial aquifer in proximity to the Little Wind River. The groundwater elevations exhibited an increase as well, consistent with higher base levels in the nearby surface water. Therefore, we conclude that DOE's assessment, that the high flows in the river raised water levels in the water table, which re-saturated a portion of the vadose zone, and caused the increased levels, is reasonable. It is expected that similar increases in river water levels in the future will likely produce similar spikes in the groundwater constituent levels.

Regarding your response to NRC comments on the 2009 Data Validation and Verification Monitoring reports, we have reviewed the responses to comments 3 and 4 and have no further concerns. I look forward to reviewing your response to comments 1 and 2 in the next Verification Monitoring Report.

Finally, regarding the results of your sample filtration analysis protocol re-evaluation, your letter included several enclosures that refer to a review conducted by DOE of the sampling protocol for groundwater and surface water. These enclosures were a June 18, 2009, letter from DOE approving the revised sampling protocol; a June 15, 2009, letter from Stoller describing a 2007

revision to the sampling protocol, that referred to a spreadsheet that was not included in the enclosure; and, an undated paper describing the sampling that occurred at the Riverton site in 2002 and 2004.

Although the information provided in the enclosures to your letter did not appear to justify the use of filtered surface water samples (NRC staff acknowledges that significant disparity exists within the scientific community on whether or not to filter groundwater samples prior to analysis for contaminants), the revised DOE methodology appears to be adequate for a detection monitoring program. However, it would not be appropriate to use filtered samples in human-health or ecological studies, or if a drinking water well is being sampled, given the use of a low-flow sampling approach.

If you have any questions or comments regarding our review of these reports, please contact me at (301) 415-6749 or at Dominick.orlando@nrc.gov.

Sincerely,

/RA/

Dominick A. Orlando, Senior Project Manager
Special Projects Branch
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management and
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and Environmental Management Programs

cc: See next page

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