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*Date:* MAR 22 2018

*Refer To:* ADEM-18-0022

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

**Subject: Completion of Chromium Extraction Well CrEX-4 Installation, Testing, and Integration into the Chromium Plume Control Interim Measure Extraction, Treatment, and Injection System**

Dear Mr. Kieling:

The chromium extraction well CrEX-4 was installed to provide additional water for distribution to injection wells, and to provide additional plume-center characterization data. The well was drilled and constructed in accordance with the New Mexico Environment Department's (NMED's) approval of the "Drilling Work Plan for Groundwater Extraction Well CrEX-4." This letter report is submitted to NMED to fulfill the 2016 Compliance Order on Consent (Consent Order) requirement under the Chromium Interim Measure (IM) and Characterization Campaign as identified in Appendix B Milestones and Targets, Milestone #3, "Letter Report to NMED-HWB documenting integrated operation of Chromium Extraction Well 4 (CrEX-4) into the existing IM system."

The CrEX-4 borehole was drilled using dual-rotary air-drilling methods to a total depth of 1025 ft below ground surface (bgs). Fluid additives used included potable water and foam. Foam-assisted drilling was used to total depth. The following geologic formations were encountered at CrEX-4: alluvium, Otowi Member of the Bandelier Tuff, Guaje Pumice Bed of the Otowi Member, the Cerros del Rio basalt, the Puye Formation, pumiceous Puye Formation, and Miocene riverine sediments.

Well CrEX-4 was constructed as a dual-screen well within the regional aquifer and was completed on November 10, 2017. The screened intervals are set between 929.9 and 964.9 (upper) and 974.9 and 994.9 (lower) ft bgs within Puye Formation sediments. The static depth to water after well installation was measured at 920.0 ft bgs. Additional details of the drilling and well installation are provided in a separate CrEX-4 well completion report.

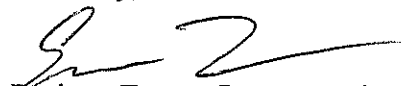
The well was completed in accordance with an NMED-approved well design. The well was developed and the regional aquifer groundwater met target water-quality parameters. Aquifer

testing indicates that the well will perform effectively in meeting the planned objectives. A dedicated pumping system and transducer installation was completed on December 9, 2017.

Operational testing of extraction well CrEX-4 began on February 21, 2018, culminating with a 72-hour acceptance test of the CrEX-4 extraction well, successfully completed on March 8, 2018. The 72-hour test included the operation of extraction wells CrEX-1, CrEX-2, CrEX-3, and CrEX-4 at a total average flow rate of approximately 235 gpm, treatment of the extracted water, and injection into wells CrIN-1, CrIN-2, CrIN-3, CrIN-4, and CrIN-5 for the first 6 hours of the test, and into CrIN-3, CrIN-4, and CrIN-5 for the remaining 66 hours. All system components functioned as designed. Mechanical integrity testing documentation of the CrEX-4 piping and instrumentation is provided in a separate submittal to NMED (EPC-DO: 18-090).

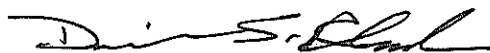
If you have any questions, please contact Stephani Swickley at (505) 606-1628 (sfuller@lanl.gov) or Cheryl Rodriguez at (505) 665-5330 (cheryl.rodriguez@em.doe.gov).

Sincerely,



Enrique Torres, Program Director  
Environmental Remediation Program  
Los Alamos National Laboratory

Sincerely,



David S. Rhodes, Director  
Office of Quality and Regulatory Compliance  
Environmental Management  
Los Alamos Field Office

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