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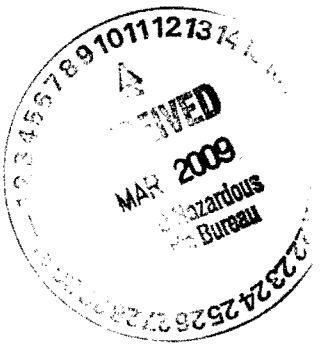

ENTERED

National Nuclear Security Administration
Los Alamos Site Office, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-4255/FAX (505) 606-2132

Date: March 9, 2009
Refer To: EP2009-0135

James P. Bearzi, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Submittal of TW-8 Pumping Test Work Plan

Dear Mr. Bearzi:

Enclosed please find two hard copies with electronic files of the TW-8 Pumping Test Work Plan. This work plan addresses a request from your staff to prepare a plan for an aquifer test at TW-8 prior to the plugging and abandonment that will take place in Spring 2009. The pumping test work plan also replaces the requirement in the New Mexico Environment Department's specific comment 6b of the November 12, 2008, Notice of Approval with Modifications letter on the 2008 Interim Facility-Wide Groundwater Monitoring Plan to conduct a cross-hole tracer test between TW-8 and R-1.

If you have any questions, please contact Danny Katzman at (505) 667-6333 (katzman@lanl.gov) or Suzy Schulman at (505) 606-1962 (sschulman@doeal.gov).

Sincerely,

Michael J. Graham, Associate Director
Environmental Programs
Los Alamos National Laboratory

Sincerely,

David R. Gregory, Project Director
Environmental Operations
Los Alamos Site Office

31281

MG/DG/PH/ME:sm

Enclosures: 1) Two hard copies with electronic files - TW-8 Pumping Test Work Plan (LA-UR-09-1342)

Cy: (w/enc.)
Neil Weber, San Ildefonso Pueblo
Mark Everett, EP-LWSP, MS M992
Suzy Schulman, DOE-LASO, MS A316
RPF, MS M707 (with two CDs)
Public Reading Room, MS M992

Cy: (Letter and CD only)
Laurie King, EPA Region 6, Dallas, TX
Mr. William C. Olson, NMED-GWQB, Santa Fe, NM
Steve Yanicak, NMED-OB, White Rock, NM
Monty Vesselinov, EES-16, MS T003
Kristine Smeltz, EP-WES, MS M992
EP-LWSP File, MS M992

Cy: (w/o enc.)
Tom Skibitski, NMED-OB, Santa Fe, NM
Keyana DeAguero, DOE-LASO (date-stamped letter emailed)
Michael J. Graham, ADEP, MS M991
Alison M. Dorries, EP-WES, MS M992
Paul Huber, EP-LWSP, MS M992
IRM-RMMSO, MS A150 (date-stamped letter emailed)

TW-8 Pumping Test Work Plan

Purpose	The goal of the pumping test at Test Well (TW) 8 is to collect data that will help estimate the hydrogeological properties of the regional aquifer around TW-8 in Mortandad Canyon and to provide a comparison between field data and the range of hydrologic properties used in numerical models of the regional aquifer in this area. The test will be conducted by Los Alamos National Laboratory prior to the plugging and abandonment of TW-8 in spring 2009, following the New Mexico Environment Department- (NMED-) approved "Work Plan to Plug and Abandon Mortandad Canyon Wells Test Well 8 and MCOBT-4.4."
Background	TW-8 is located in Mortandad Canyon approximately 500 m upcanyon of the confluence with Ten Site Canyon. The TW-8 screen is located from 5809 to 5921 ft above mean sea level (amsl). The regional water level measured in TW-8 is 5874 ft amsl (within TW-8 screen). As a result, the saturated thickness within the well is about 65 ft. Monitoring well R-1 is located 240 ft to the west of TW-8. Both TW-8 and R-1 are screened in the same hydrostratigraphic unit (Puye Formation). Because of the close proximity of TW-8 and R-1, well R-1 is a good observation well to monitor the influence of TW-8 pumping. The R-1 screen is located from 5824 to 5850 ft amsl. The regional water level observed at R-1 is at 5878 ft amsl (above the R-1 screen). The well-development data show that pumping R-1 at 6.78 gallons per minute (gpm) resulted in a drawdown of about 7 ft (Kleinfelder 2005, 090045, Appendix E). Permeability of the aquifer is estimated to range from 2.8 to 4.5 ft/d. Water-level response at TW-8 was not monitored during drilling and development of R-1. However, existing information indicates that pumping R-1 could have produced a measurable response at TW-8 of less than 1 ft.
Aquifer Test Method	Based on the current best estimate of aquifer properties (transmissivity = 400 ft^2/d and storativity = 0.0005), a 24-h pumping test will be conducted in TW-8 at a rate of 10 to 20 gpm. (The pumping rate will be selected based on the drawdown observed at TW-8 during the test.) This pumping test is expected to produce a measurable drawdown response at R-1 of about 1 ft. The drawdown at the pumping well is expected to be on the order of 10 ft based on the data from the pumping test conducted at TW-8 in 1960. In that test, the specific capacity of the well was determined to be 2 gpm/ft, and transmissivity was estimated to be 321 ft^2/d. Therefore, pumping at a rate of 10 to 20 gpm is expected to produce a drawdown on the order of 10 to 20 ft within TW-8. This pumping test and observations at nearby R-1 will provide a good estimate of the key hydrologic properties (such as hydraulic conductivity) of Puye Formation in the area near TW-8. This information may also be applicable for other portions of the regional aquifer where the groundwater flow occurs through similar strata within the Puye Formation. The test results are also expected to provide information about the spatial heterogeneity over the same scale.
Waste Management	The water pumped from the well will be managed in accordance with the NMED-approved Notice of Intent Decision Tree for the Land Application of Drilling, Development, Rehabilitation and Sampling Purge Water (November 2006). It will be land-applied through an irrigation sprinkler system, a water truck fitted with sprinkler heads, or both. An aboveground storage tank will be used to temporarily store the water during the land-application process.

REFERENCE

The following list includes all documents cited in this plan. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

Kleinfelder, February 3, 2005. "Revision 1, Well R-1 Completion Report," report prepared for Los Alamos National Laboratory, Project No. 37151/17.12, Albuquerque, New Mexico. (Kleinfelder 2005, 090045)