Work Plan to Reconfigure Well CdV-R-15-3

Primary Purpose	This work plan summarizes the methods Los Alamos National Laboratory (LANL) proposes to use for reconfiguring CdV-R-15-3 from a six-screen well into a single-screen well equipped for purging before it is sampled. The objective of this well conversion is consistent with LANL's Technical Area 16 Well Network Evaluation and Recommendations (LANL 2012, 213573) as approved with modifications by the New Mexico Environment Department (NMED) in its letter of June 20, 2012 (NMED 2012, 520747). In its report, LANL proposed to reconfigure the well and sampling system from a Westbay to a single-screen configuration and to retain screen 4, the uppermost screen in the regional aquifer.
Background	Well CdV-R-15-3 is located on the mesa above Cañon de Valle in Technical Area 15 (TA-15). The well was installed to evaluate transport pathways, including the deep perched and regional saturated zones that potentially carry contamination from Consolidated Unit 16-021(c)-99 (also known as the 260 Outfall) at TA-16. The borehole was drilled using standard air-rotary drilling methods to a total depth of 1722 ft below ground surface (bgs). Pertinent well information is as follows: • 4.5-in.–inside diameter stainless-steel casing • Screen 1, 617.7–624.5 ft bgs (pipe-based wire-wrapped screen, dry) • Screen 2, 800.8–807.8 ft bgs (pipe-based wire-wrapped screen, dry) • Screen 3, 964.8–980.9 ft bgs (pipe-based wire-wrapped screen, dry) • Screen 4, 1235.1–1278.9 ft bgs (pipe-based wire-wrapped screen) • Screen 5, 1348.4–1355.3 ft bgs (pipe-based wire-wrapped screen) • Screen 6, 1637.9–1644.8 ft bgs (pipe-based wire-wrapped screen) • Depth to water for screen 4 is 1240 ft bgs, standing approximately 5 ft below the top of the screen Testing of screen 4 indicates the screen is capable of producing 3 gallons per minute (gpm) at 0.3 ft of drawdown for a specific capacity of 10.8 gpm/ft (LANL 2011, 205233).
Reconfiguration Methods	Only screen 4, the uppermost screen in the regional aquifer, will be retained for sampling at this well. To accomplish this, the packers currently inflated between screens 4 and 5 and between screens 5 and 6 will be removed. Coarse sand (10/20) will be placed from the bottom of the sump up to 1450 ft bgs, which is above the lowest screen (screen 6). A 15-ft interval of finer sand (20/40) will then be emplaced to inhibit migration of the overlying cement toward the lowest screen. Fifty feet of cement will then be emplaced and allowed to cure for a minimum of 24 h. Additional 10/20 sand will then be brought up through screen 5 into the interval between screens 4 and 5. Five feet of 20/40 sand will be emplaced, followed by 5 ft of gravel. Ten feet of cement will then be emplaced and allowed to cure for a minimum of 24 h. An interval of 10/20 sand will be emplaced on top of the cement, leaving sufficient space for a K-Packer and a 20-ft sump below screen 4. All materials will be emplaced through a tremie pipe or with a dump bailer. The K-Packer will both prevent upward agitation of the sand and create a solid base for the retained screen's sump. To allow for cooling of the pump during pumping, a Grundfos model 10S50-48DS (or equivalent) environmentally retrofitted pump will be shrouded with an intake at 1290 ft bgs. This pump is designed to produce a maximum of 5.5 gpm from a water level of 1250 ft bgs. Screens 1, 2, and 3 have all been historically dry and therefore will not be isolated from screen 4. A transducer tube (not shown in figure) will be installed to measure water levels in screen 4. Attachment 1, on DVD, was filmed after the Westbay sampling system was removed on April 2, 2011, and documents the dry conditions in screens 1, 2, and 3. Figure 1 shows schematics of the existing well construction and the proposed reconfiguration.

Waste Disposal	A waste characterization strategy form will be prepared to guide disposal of any wastes generated during reconfiguration (e.g., personal protective equipment).	
Summary Report	A brief report will be prepared detailing the reconfiguration methods and the quantities of backfill materials used.	
Proposed Schedule	**Activity**	**Completion Date**
	Reconfigure well CdV-R-15-3	June 30, 2013
	Submit summary report	August 31, 2013

REFERENCES

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.

LANL (Los Alamos National Laboratory), August 2011. "Reliability Assessment of Multiscreened Westbay Wells," Los Alamos National Laboratory document LA-UR-11-4445, Los Alamos, New Mexico. (LANL 2011, 205233)

LANL (Los Alamos National Laboratory), March 2012. "Technical Area 16 Well Network Evaluation and Recommendations," Los Alamos National Laboratory document LA-UR-12-1082, Los Alamos, New Mexico. (LANL 2012, 213573)

NMED (New Mexico Environment Department), June 20, 2012. "Approval with Modifications, Technical Area 16 Well Network Evaluation and Recommendations," New Mexico Environment Department letter to P. Maggiore (DOE-LASO) and M.J. Graham (LANL) from J.E. Kieling (NMED-HWB), Santa Fe, New Mexico. (NMED 2012, 520747)

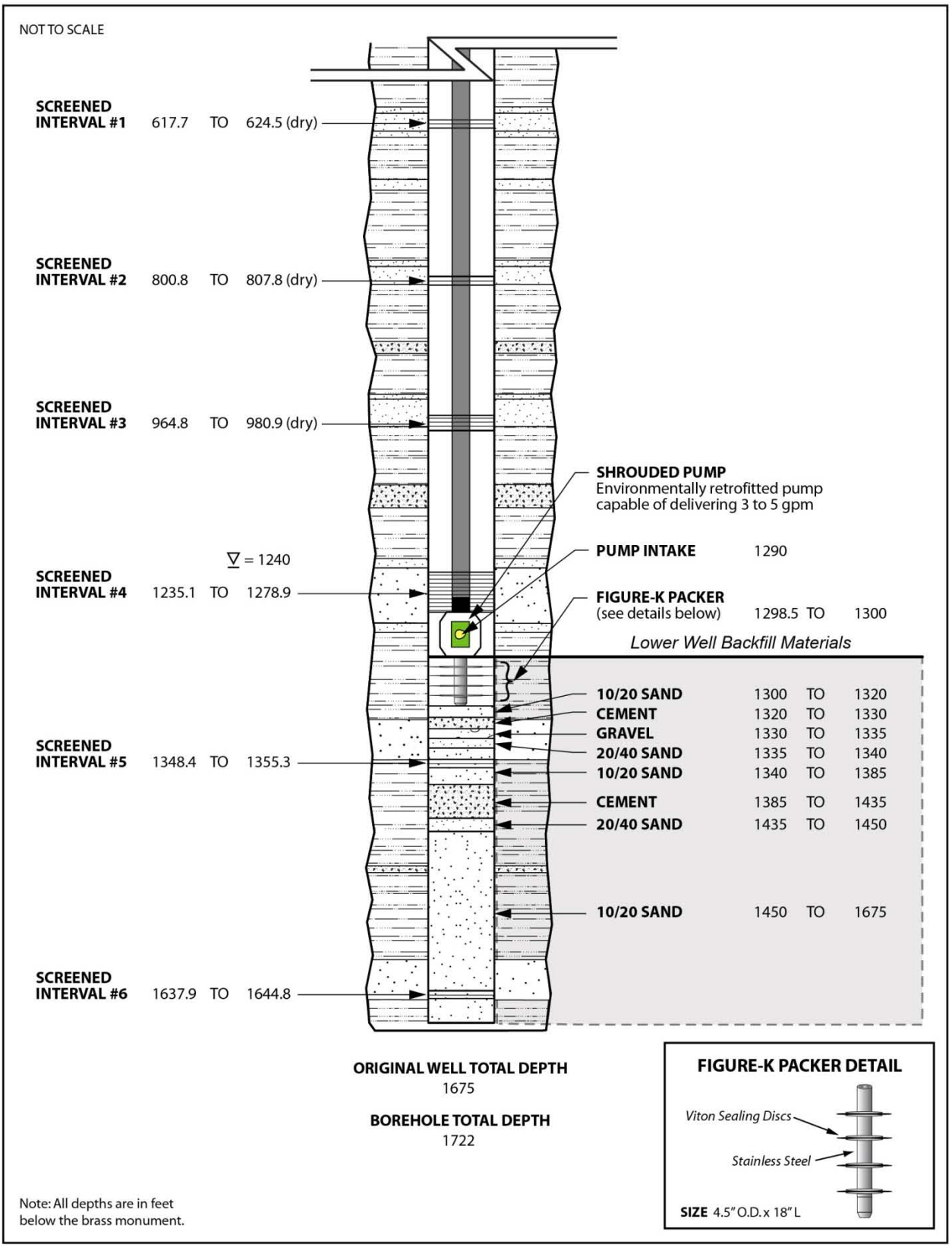

Figure 1 Schematics of the existing well construction and the proposed reconfiguration

Attachment 1

Video Log
(on DVD included with this document)