



**Associate Directorate for Environmental Management**

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**Environmental Management**

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Date: **DEC 04 2017**

Refer To: ADEM-17-0324

LAUR: 17-30800

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



**Subject: Fact Sheets for CrEX-4**

Dear Mr. Kieling:

Enclosed please find two hard copies with electronic files of the fact sheets for injection well CrEX-4. Injection well CrEX-4 was completed on November 10, 2017. CrEX-4 was installed under the September 2017 Drilling Work Plan for Groundwater Injection Well CrEX-4, which was approved by the New Mexico Environment Department (NMED) on September 15, 2017. The well completion report for injection well CrEX-4 will be submitted to NMED by April 10, 2018.

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,

Bruce Robinson, 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

BR/DR/SS:sm

Enclosures: Two hard copies with electronic files – Fact Sheets for CrEX-4 (EP2017-0159)

Cy: (w/enc.)  
Cheryl Rodriguez, DOE-EM-LA  
Stephani Swickley, ADEM ER Program

Cy: (w/electronic enc.)  
Laurie King, EPA Region 6, Dallas, TX  
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Steve White, ADEP ER Program (w/ MS Word files on CD)  
Danny Katzman, ADEP ER Program  
Public Reading Room (EPRR)  
ADESH Records  
PRS Database

Cy: (w/o enc./date-stamped letter emailed)  
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Bruce Robinson, ADEM ER Program  
Randy Erickson, ADEM  
Jocelyn Buckley, ADESH-EPC-CP  
John Bretzke, ADESH-EPC-DO  
Michael Brandt, ADESH  
William Mairson, PADOPS  
Craig Leasure, PADOPS

TOTAL LENGTH OF CASING AND SCREEN (FT) 1007.44  
 DEPTH TO WATER FOLLOWING INSTALLATION (FT BGS) 920.02 (11/14/17)

ELEVATIONS (FT AMSL)  
 WELL CASING TBD  
 PROTECTIVE CASING TBD  
 GROUND SURFACE TBD  
 BRASS CAP (MARKER) TBD

DIAMETER OF BOREHOLE  
 16.00 (IN) FROM 0 TO 76 (FT BGS)  
 15.00 (IN) FROM 76 TO 887 (FT BGS)  
 14.75 (IN) FROM 887 TO 1025 (FT BGS)

SURFACE COMPLETION (proposed)  
 SUBSURFACE CONCRETE VAULT  
 SURFACE SEAL AND VAULT  
 CHECK FOR SETTLEMENT YES  
 VAULT MATERIAL CONCRETE  
 REINFORCED REBAR  
 VAULT DIMENSIONS (FT) 10 (L) 6 (W) 4 (D)

SURFACE SEAL 9.2 TO 60.1 (FT BGS)

SURFACE SEAL  
 MIX (WT%) PORTLAND CEMENT 100  
 QUANTITY USED 69.5 FT<sup>3</sup> CALC 50.4 FT<sup>3</sup>

BENTONITE SEAL 60.1 TO 920.8 (FT BGS)

TYPE OF CASING  
 MATERIAL PASSIVATED A304 STAINLESS STEEL  
 ID (IN) 8.00 OD (IN) 8.625 (8%)  
 JOINT TYPE WELDED

HYDRATED BENTONITE SEAL  
 FORM 3/4-IN AND 3/8-IN BENTONITE CHIP  
 QUANTITY USED 776.3 FT<sup>3</sup> CALC 709.3 FT<sup>3</sup>

FINE SAND COLLAR 920.8 TO 924.4 (FT BGS)

FINE SAND COLLAR  
 SIZE/TYPE 20/40 SILICA  
 QUANTITY USED 4.0 FT<sup>3</sup> CALC 2.9 FT<sup>3</sup>

FILTER PACK 924.4 TO 967.6 (FT BGS)

FILTER PACK SAND  
 SIZE/TYPE 10/20 SILICA  
 QUANTITY USED 57.5 FT<sup>3</sup> CALC 35.5 FT<sup>3</sup>

SCREENED INTERVAL 929.9 TO 964.9 (FT BGS)

TYPE OF SCREEN(S)  
 MATERIAL A304 STAINLESS STEEL  
 ID (IN) 8.00 OD (IN) 8.625 (8%)  
 SLOT SIZE (IN) 0.040  
 JOINT TYPE WELDED

BENTONITE SEAL 967.6 TO 970.3 (FT BGS)

HYDRATED BENTONITE SEAL  
 FORM 3/8-IN BENTONITE PELLET  
 QUANTITY USED 2.7 FT<sup>3</sup> CALC 2.2 FT<sup>3</sup>

FILTER PACK 970.3 TO 999.3 (FT BGS)

FILTER PACK SAND  
 SIZE/TYPE 10/20 SILICA  
 QUANTITY USED 28.5 FT<sup>3</sup> CALC 23.8 FT<sup>3</sup>

SCREENED INTERVAL 974.9 TO 994.9 (FT BGS)

HYDRATED BENTONITE BACKFILL  
 MATERIAL 3/8-IN BENTONITE CHIP AND PELLET  
 QUANTITY USED 9.4 FT<sup>3</sup> CALC 10.3 FT<sup>3</sup>

BOTTOM OF CASING 1005.1 (FT BGS)

BACKFILL 999.3 TO 1011.9 (FT BGS)

SLOUGH 1011.9 TO 1025.0 (FT BGS)

BOTTOM OF BORING 1025.0 (FT BGS)

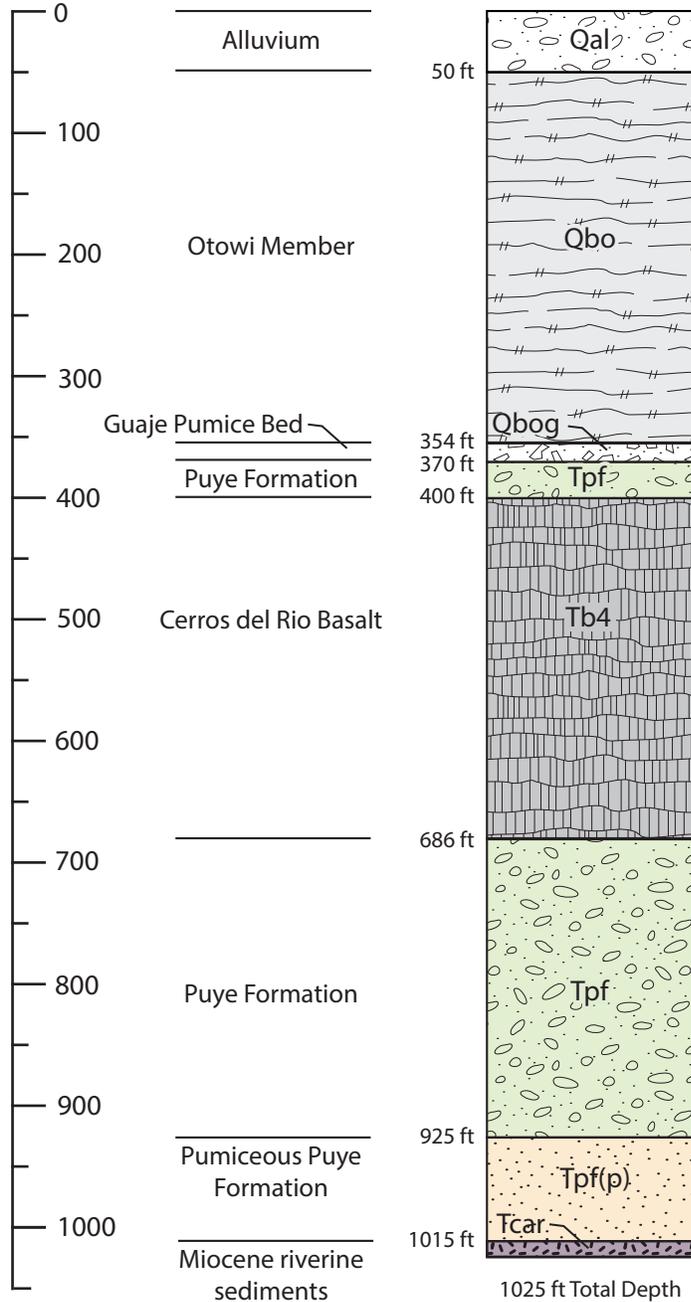
14-IN CSG/SHOE 1012.1 TO 1025.0 (FT BGS)

STAINLESS-STEEL CENTRALIZERS  
 USED YES 2.0 FT ABOVE AND BELOW  
 LOWER AND UPPER SCREENS

WELL COMPLETION BEGAN  
 DATE 10/24/17 TIME 1005h  
 WELL COMPLETION FINISHED  
 DATE 11/10/17 TIME 1115h

	<p>Date: November 17, 2017          File Name: CrEX4_AsBuiltDiagram_FactSheet</p>	<p>Well CrEX-4 As-Built Well Construction Diagram          Technical Area 05 (TA-05)          Los Alamos National Laboratory          Los Alamos, New Mexico</p>	<p>Fact Sheet          NOT TO SCALE</p>
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DEPTH (FT BGS)



**DRILLING INFORMATION**

**DRILLING COMPANY/PERSONNEL:**

Holt Services, Inc.  
M. McCoy, C. Perry, A. Soto

**DRILL RIG:**

Foremost DR-24HD

**DRILLING METHOD:**

☒ 0–1025 ft bgs: DUAL ROTARY WITH CASING  
ADVANCE USING AIR, WATER, AND FOAM

**DRILLING FLUID TYPE:**

0–1025 ft bgs  
AIR, WATER, AQF-2 FOAMING AGENT

**DRILLING START/FINISH:**

DATE: 10/02/2017  
DATE: 10/09/2017

▼ 920.46 ft bgs (10/10/17)  
(prior to well installation)



Date: November 14, 2017  
File Name: CrEX-4\_Lithology\_FactSheet

Borehole Summary Data Sheet  
CrEX-4 Borehole Stratigraphy  
Technical Area 05 (TA-05)  
Los Alamos National Laboratory  
Los Alamos, New Mexico

**Fact Sheet**  
NOT TO SCALE