

21



**Environmental Programs**  
P.O. Box 1663, MS M991  
Los Alamos, New Mexico 87545  
(505) 606-2337/FAX (505) 665-1812



**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: **MAY 08 2012**  
Refer To: EP2012-0117

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

**Subject: Revised Fact Sheet for Well-66**



Dear Mr. Kieling:

Enclosed please find two hard copies with electronic files of the Revised Fact Sheet for Well R-66. The fact sheet for regional aquifer well R-66 is being reissued to include some information not available at the time it was initially issued. The revised fact sheet includes the final surveying information, the total volume of water purged during development and cross-hole aquifer testing, the final depth to groundwater, and the final water-quality parameters. In addition, the depth at which AQF-2 foam was used has been corrected from the previously stated bottom depth of 575 ft below ground surface (bgs) to the depth of 696 ft bgs.

If you have any questions, please contact Ted Ball at (505) 665-3996 (tedball@lanl.gov) or Woody Woodworth at (505) 665-5820 (lance.woodworth@nnsa.doe.gov).

Sincerely,

*Ben G Schepell for MSG*  
Michael J. Graham, Associate Director  
Environmental Programs  
Los Alamos National Laboratory

Sincerely,

*Daniel S. Ball for*  
Peter Maggiore, Assistant Manager  
Environmental Projects Office  
Los Alamos Site Office



MG/PM/CD/TB:sm

Enclosures: Two hard copies with electronic files – Revised Fact Sheet for Well R-66  
(LA-UR-12-21045)

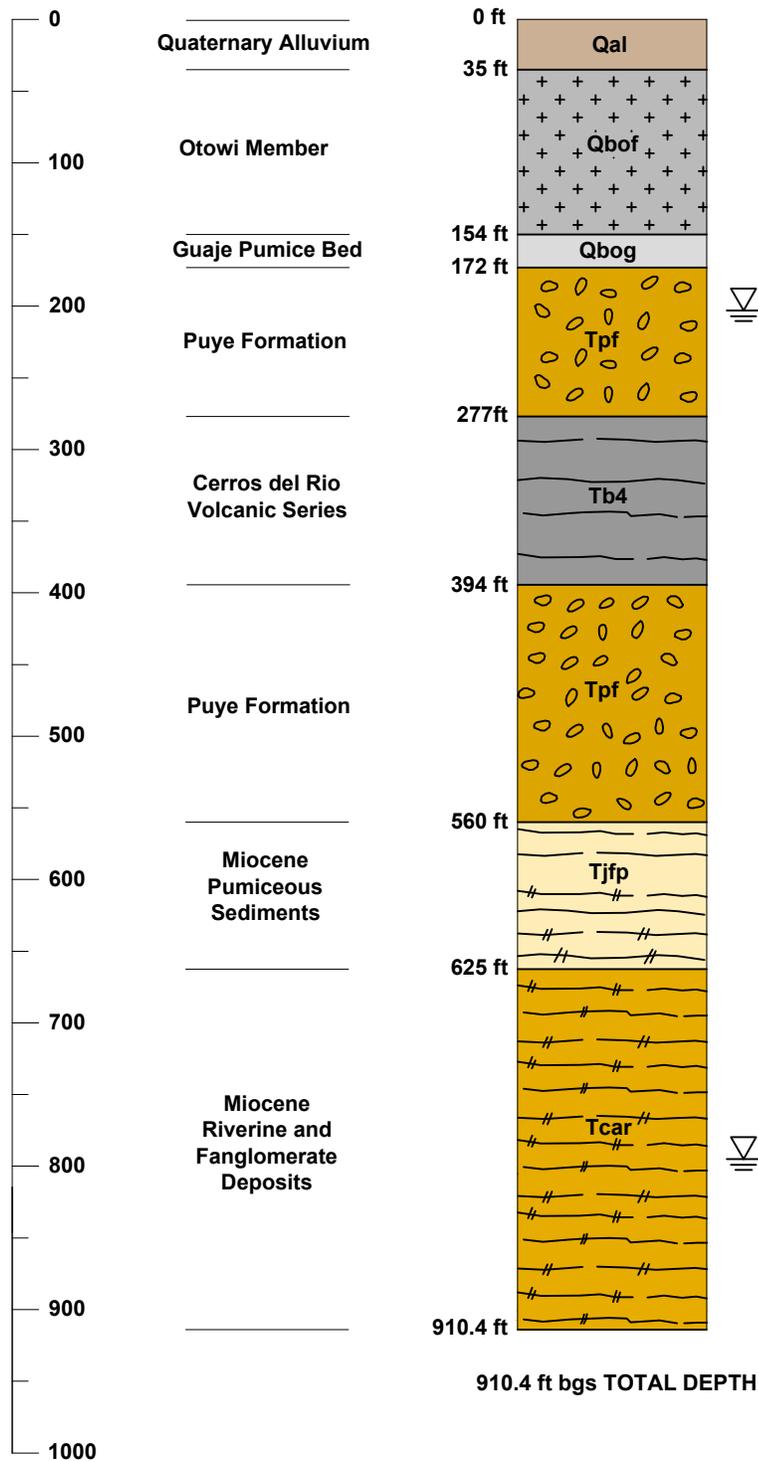
Cy: (w/enc.)  
Woody Woodworth, DOE-LASO, MS A316  
Ted Ball, MNGRFCT-DO, MS J590  
Public Reading Room, MS M992 (hard copy)  
RPF, MS M707 (electronic copy)

Cy: (Letter and CD and/or DVD)  
Laurie King, EPA Region 6, Dallas, TX  
Neil Weber, San Ildefonso Pueblo  
Joe Chavarria, Santa Clara Pueblo  
Steve Yanicak, NMED-DOE-OB, MS M894  
Richard Knapp, Eberline, Los Alamos, NM (w/ MS Word files on CD)  
William Alexander, EP-BPS, MS M992

Cy: (w/o enc.)  
Tom Skibitski, NMED-OB, Santa Fe, NM (date-stamped letter emailed)  
Annette Russell, DOE-LASO (date-stamped letter emailed)  
Craig Douglass, EP-CAP, MS M996 (date-stamped letter emailed)  
Michael J. Graham, ADEP, MS M991 (date-stamped letter emailed)

CAD FILE: G:\ENVIRON\120764-Eberline-LANL Wells\2.0 Tech Info\2.8 - Technical-CADD Figures\R-66\R-66\_4-23\ LAYOUT: Lithology

**DEPTH (FT BGS)**



**DRILLING INFORMATION**

**DRILLING COMPANY/PERSONNEL:**

YELLOW JACKET DRILLING  
 S. EDWARDS  
 Q. STEVENS  
 J. SALDANA  
 A. LAMON  
 M. PHILLIPS

PERCHED WATER DEPTH 203.6 ft DATE: 10/18/2011

**DRILL RIG:**

FOREMOST DR-24 HD

**DRILLING METHOD:**

- FLUID ASSISTED AIR ROTARY
- FLUID ASSISTED DUAL ROTARY

**DRILLING FLUID TYPE:**

- WATER
  - AIR
  - AQF-2 FOAM
  - EZ-MUD (POTABLE WATER)
- \_\_\_\_\_ ft bgs    910.4 ft bgs  
 \_\_\_\_\_ ft bgs    696 ft bgs  
 \_\_\_\_\_ ft bgs    696 ft bgs

**DRILLING START / FINISH:**

DATE: 10/15/11    TIME: 15:25  
 DATE: 11/05/11    TIME: 18:00

Groundwater Depth: 794.6 ft Date: 11/5/2011

**GEOLOGISTS:**

EBERLINE SERVICES  
 J. MARIN

**KLEINFELDER**

C. VALLEJO  
 D. KRUPICKA  
 D. NEIDIGH  
 L. FLEISCHHAUER

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ATTACHED IMAGES:  
 ATTACHED XREFS:  
 ALBUQUERQUE, NM

|             |                    |
|-------------|--------------------|
| PROJECT NO. | 120764             |
| DRAWN:      | 4/23/12            |
| DRAWN BY:   | PD                 |
| CHECKED BY: | BB                 |
| FILE NAME:  | 120764 R-66_03.dwg |

|   |                     |
|---|---------------------|
| <b>R-66 WELL SUMMARY DATA SHEET<br/>BOREHOLE STRATIGRAPHY</b>     |                     |
| TA-21<br>LOS ALAMOS NATIONAL LABORATORY<br>LOS ALAMOS, NEW MEXICO |                     |
| ORIGINATOR: C. VALLEJO  | DRAWING CATEGORY: 2 |
| APPROVED BY: B. EVERETT   |                     |

FIGURE  
**FACT SHEET**

CAD FILE: G:\ENVIRON\120764-Eberline-LANL Wells\2.0 Tech Info\2.8 - Technical-CADD Figures\R-66R-66\_4-231 LAYOUT: Well Schematic

**TOTAL LENGTH**  
CASING AND SCREEN (ft) 852.8

**DEPTH TO WATER**  
AFTER WELL DEVELOPMENT &  
AQUIFER TESTING (ft bgs) 792.8 (1/20/2012)

**DIAMETER OF BOREHOLE**

|                    |                   |                 |          |
|--------------------|-------------------|-----------------|----------|
| <u>20.75</u> (in.) | FROM <u>0</u>     | TO <u>53</u>    | (ft bgs) |
| <u>16.93</u> (in.) | FROM <u>53</u>    | TO <u>279.6</u> | (ft bgs) |
| <u>14.75</u> (in.) | FROM <u>279.6</u> | TO <u>429</u>   | (ft bgs) |
| <u>13.25</u> (in.) | FROM <u>429</u>   | TO <u>507</u>   | (ft bgs) |
| <u>13.41</u> (in.) | FROM <u>507</u>   | TO <u>673</u>   | (ft bgs) |
| <u>13.25</u> (in.) | FROM <u>673</u>   | TO <u>695</u>   | (ft bgs) |
| <u>11.63</u> (in.) | FROM <u>695</u>   | TO <u>715</u>   | (ft bgs) |
| <u>11.25</u> (in.) | FROM <u>715</u>   | TO <u>907.6</u> | (ft bgs) |
| <u>9.88</u> (in.)  | FROM <u>907.6</u> | TO <u>910.4</u> | (ft bgs) |

**SURFACE COMPLETION**  
PROTECTIVE CASING  
TYPE STEEL SIZE 16 (in) OD  
PAD AND PROTECTIVE POSTS INSTALLED 1/27/12 (pad) 2/6/12 (posts)

**SURFACE SEAL AND PAD**  
CHECK FOR SETTLEMENT 2/6/12  
PAD MATERIAL 4,000 psi CONCRETE  
REINFORCED WITH #4 rebar  
PAD DIMENSIONS (ft) 10 (L) 10 (W) 0.5 (H)

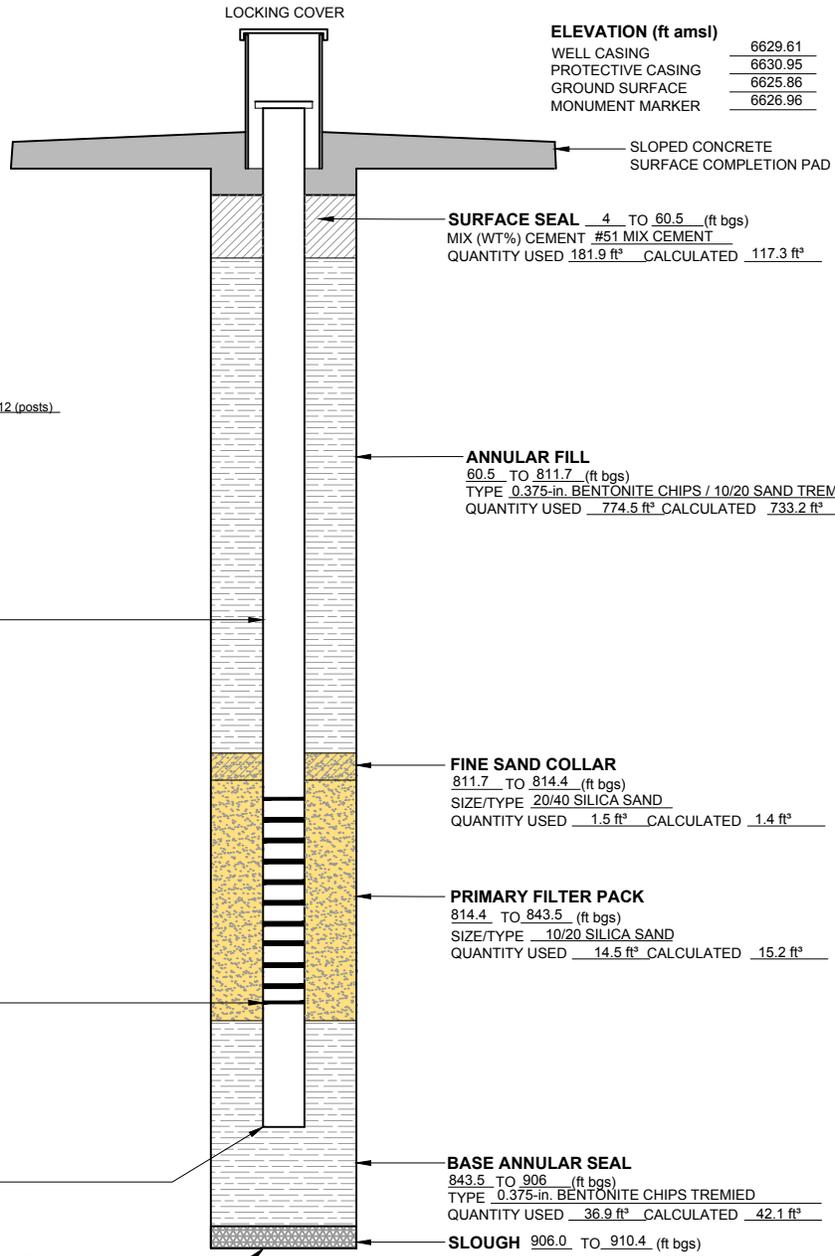
**STAINLESS STEEL CENTRALIZERS USED**  
 YES AT 816.3 (ft bgs) AND 841.5 (ft bgs)

**TYPE OF CASING**  
MATERIAL PASSIVATED A304 STAINLESS STEEL  
ID (in.) 5.11 OD (in.) 5.56  
JOINT TYPE THREADED / COUPLED (86.6 ft)  
JOINT TYPE WELDED (769.2 ft)

**SCREENED INTERVAL** 819.4 TO 839.7 (ft bgs)  
SCREEN TYPE A304 STAINLESS STEEL  
ID (in.) 5.11 OD (in.) 5.56  
SLOT SIZE 0.20  
JOINT TYPE WELDED

**BOTTOM OF WELL CASING** 849.8 (ft bgs)

**BOTTOM OF BORING** 910.4 (ft bgs)



**ELEVATION (ft amsl)**

|                   |                |
|-------------------|----------------|
| WELL CASING       | <u>6629.61</u> |
| PROTECTIVE CASING | <u>6630.95</u> |
| GROUND SURFACE    | <u>6625.86</u> |
| MONUMENT MARKER   | <u>6626.96</u> |

**SURFACE SEAL** 4 TO 60.5 (ft bgs)  
MIX (WT%) CEMENT #51 MIX CEMENT  
QUANTITY USED 181.9 ft<sup>3</sup> CALCULATED 117.3 ft<sup>3</sup>

**ANNULAR FILL**  
60.5 TO 811.7 (ft bgs)  
TYPE 0.375-in. BENTONITE CHIPS / 10/20 SAND TREMIED & FREEFALL  
QUANTITY USED 774.5 ft<sup>3</sup> CALCULATED 733.2 ft<sup>3</sup>

**FINE SAND COLLAR**  
811.7 TO 814.4 (ft bgs)  
SIZE/TYPE 20/40 SILICA SAND  
QUANTITY USED 1.5 ft<sup>3</sup> CALCULATED 1.4 ft<sup>3</sup>

**PRIMARY FILTER PACK**  
814.4 TO 843.5 (ft bgs)  
SIZE/TYPE 10/20 SILICA SAND  
QUANTITY USED 14.5 ft<sup>3</sup> CALCULATED 15.2 ft<sup>3</sup>

**BASE ANNULAR SEAL**  
843.5 TO 906 (ft bgs)  
TYPE 0.375-in. BENTONITE CHIPS TREMIED  
QUANTITY USED 36.9 ft<sup>3</sup> CALCULATED 42.1 ft<sup>3</sup>

**SLOUGH** 906.0 TO 910.4 (ft bgs)

**WELL COMPLETION BEGAN**  
DATE 11/8/2011 TIME 17:42

**WELL COMPLETION FINISHED**  
DATE 11/16/2011 TIME 11:00

**WELL DEVELOPMENT BEGAN**  
DATE 11/17/2011  
TIME 12:15

**WELL DEVELOPMENT FINISHED**  
DATE 12/18/2011  
TIME 15:00

**DEVELOPMENT METHOD**

SWABBING       BAILING

PUMPING

TOTAL PURGE VOLUME  
INCLUDING AQUIFER  
TESTING 88,018 gal.

**FINAL PARAMETERS**

pH 7.71

TEMPERATURE (°C) 22.05

SPECIFIC  
CONDUCTANCE (µS/cm) 30.7

TURBIDITY (NTU) 243

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DATA AS OF 4/20/2012

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|   |                     |
|---|---------------------|
| <b>R-66 WELL CONSTRUCTION DIAGRAM (AS BUILT)</b>                  |                     |
| TA-21<br>LOS ALAMOS NATIONAL LABORATORY<br>LOS ALAMOS, NEW MEXICO |                     |
| ORIGINATOR: C. VALLEJO  | DRAWING CATEGORY: 2 |
| APPROVED BY: B. EVERETT   |                     |

FIGURE

**FACT SHEET**