



DEPARTMENT OF ENERGY
 Environmental Management Los Alamos Field Office (EM-LA)
 Los Alamos, New Mexico 87544



EMLA-2021-BF144-02-001

July 23, 2021

Mr. Ricardo Maestas
 Acting Bureau Chief
 Hazardous Waste Bureau
 New Mexico Environment Department
 2905 Rodeo Park Drive East, Building 1
 Santa Fe, NM 87505-6313

Subject: Response to Notice of Disapproval, Completion Report for Regional Aquifer Well R-70, Revision 1, and the Response to the New Mexico Environment Department's Draft Comments on the Completion Report for Regional Aquifer Well R-70

Dear Mr. Maestas:

The U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) is in receipt of the New Mexico Environment Department's (NMED's) letter, "Notice of Disapproval, Completion Report for Regional Aquifer Well R-70, Revision 1, and the Response to the New Mexico Environment Department's Draft Comments on the Completion Report for Regional Aquifer Well R-70," dated May 25, 2021. The purpose of this correspondence is to request an alternate path forward for resolution of outstanding issues with the R-70 well completion report. EM-LA would like to reach technical consensus with NMED and then provide a revision to the document that meets the expectations of both EM-LA and NMED.

With respect to specific comments in the notice of disapproval (NOD) letter, responses from DOE are enclosed.

With respect to the general comments in the NOD letter, DOE requests that these issues be discussed in a technical meeting focused solely on the R-70 aquifer testing issue. Note that previous DOE well completion report deliverables with technical approaches consistent with those of the present report were approved by NMED, including the well completion reports for monitoring wells R-68 and R-69 (July 2017, LA-UR-17-26063; October 2019, EM2019-0335). These data and parameter estimates provide important inputs to ongoing studies. DOE believes that NMED's objection to using the R-70 aquifer test information in future studies is not well founded because the R-70 tests can be analyzed using techniques and software that deal with the non-constant pumping rate. DOE would like to demonstrate this in a future meeting and a revision to this report. Given this fundamental disagreement, DOE requests that technical discussions be held, with the goal of achieving better alignment between NMED and DOE technical staff.

With respect to the U.S. Environmental Protection Agency (EPA) comments and recommendations referred to in the NOD letter, NMED has not provided DOE with (1) any of the information NMED provided to EPA to conduct this review or (2) EPA's review comments. DOE respectfully requests that these materials be provided and technical discussions be held, possibly with EPA's participation.

Once DOE has reviewed EPA's comments and recommendations, DOE would like to have a technical meeting with NMED to discuss outstanding comments (consistent with requirements in the Compliance Order on Consent). DOE will commit to delivering Revision 2 of the subject document 60 days after the comment resolution meeting is held and agreement is reached on the path forward.

If you have any questions, please contact Christian Maupin (505) 695-4281 (christian.maupin@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

M Lee
Bishop for

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Arturo Q. Duran
Compliance and Permitting Manager
Environmental Management
Los Alamos Field Office

Enclosure(s):

1. Two hard copies with electronic files – Responses to Specific Comments from the Notice of Disapproval, Completion Report for Regional Aquifer Well R-70, Revision 1, and the Response to the New Mexico Environment Department's Draft Comments on the Completion Report for Regional Aquifer Well R-70, Los Alamos National Laboratory, EPA ID#NM0890010515, HWB-LANL-19-080, Dated May 25, 2021 (EM2021-0355)

cc (letter and enclosure[s] emailed):

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Raymond Martinez, San Ildefonso Pueblo, NM
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PRS website

Responses to Specific Comments from the Notice of Disapproval, Completion Report for Regional Aquifer Well R-70, Revision 1, and the Response to the New Mexico Environment Department's Draft Comments on the Completion Report for Regional Aquifer Well R-70, Los Alamos National Laboratory, EPA ID#NM0890010515, HWB-LANL-19-080, Dated May 25, 2021

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. The U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office responses follow each NMED comment.

SPECIFIC COMMENTS

NMED Comment

1. *Explain why "Monitoring" was struck from the Report title considering R-70 is intended to serve as a monitoring well. Restore the original title to the Report in a second revision.*

DOE Response

1. DOE concurs with the comment, and will restore "Monitoring" to the title of the report for Revision 2.

NMED Comment

2. **Section 8.1 Well Development, page 10.**

DOE Statement: *Field parameter data are discussed in greater detail in Appendix B, and aquifer test data will be discussed in the assessment report for evaluation of conditions in the regional aquifer around well R-70, which is due to NMED no later than June 30, 2021.*

NMED Comment: *Use of the R-70 aquifer test data in the pending Assessment Report is not acceptable. NMED and DOE agreed during the Meeting to remove this information from the Report because the testing was not conducted properly in the field nor the data analyzed correctly (see general comment above). In NMED's August 4, 2020 email to DOE that approved a revised submittal date for the Assessment Report, NMED stated that if the R-70 aquifer testing results are to be used in the Assessment Report that the Comments must be resolved beforehand. Considering that the Comments have not been resolved and that it was mutually agreed to remove the testing from the Report, it should have been obvious to DOE that these data are also not valid for use in any other submittal. NMED requires DOE to submit another revision of the Report that does not include this statement and to not use and reference the R-70 aquifer tests in any manner in future reports.*

DOE Response

2. DOE agreed to remove the aquifer test data from Revision 1 of the well completion report but did not agree for the reason stated by NMED, i.e., "because the testing was not conducted properly in the field nor the data analyzed correctly." Rather, the information was removed to overcome an impasse preventing the finalization of the well completion report. DOE believes that the data are useable and the analysis is valid and would like to engage with NMED to discuss the issue further. DOE believes

that a technical meeting with NMED is necessary to reach a common understanding on the conduct of the test and the uses and limitations of the data.

DOE presented data from the R-70 aquifer tests in the “Assessment Report for the Evaluation of Conditions in the Regional Aquifer Around Well R-70,” delivered to NMED on June 30, 2021, but only for the limited purpose of providing qualitative information on the responses of pumping of the two screens at nearby wells. No quantitative analyses were performed. Therefore, the issue of non-constant-rate pumping had no bearing on the information presented in the assessment report.

NMED Comment

3. Section 8.1.1 Well Development Field Parameters, page 11.

***DOE Statement:** In screen 2 the final parameters at the end of well development were pH of 8.13, temperature of 21.4°C, specific conductance of 290.4 µS/cm, DO of 6.76 mg/L, ORP of 198.3 mV, and turbidity of 0.72 NTU. Table 8.1-2 shows field parameters measured during well development.*

***NMED Comment:** In specific comment no. 2, NMED requested clarification of the discrepancy between the final parameters listed on page 11 and in Table 8.1-2. In the August Response, DOE stated that the text on page 11 was in error and will revise the Report accordingly. However, the text remains unchanged in the November 2020 Revised Report. If the text on page 11 is in error, it should have been deleted from the Revised Report, but was not deleted in the red line version or from the Revised Report. Resolve this discrepancy and issue the correction in another revision of the Report including a separate red line version.*

DOE Response

3. DOE will make the required corrections to the text. For each screen, the final values in Table 8.1-2 at the end of the section titled “Screen 2 Trial Test during Development (packer inflated - screens isolated)” (and the similarly labeled section for screen 1) are cited in the text. The only corrections required are two minor edits to values in text for screen 1, related to rounding effects.

NMED Comment

4. Section 8.1.1, Well Development Field Parameters, page 11/Figure 8.3-1a – Installation and construction details for the R-70 sampling system, page 21.

- a. *Based on the most recent Well Completion Details, the following are missing and need to be included in the well completion details for R-70 (Figure 8.3-1a) In a second revision of the Report:*
 - i. Pad
 - ii. Transducer sleeves and description
 - iii. Borehole diameter and description
 - iv. Pump location and description
 - v. Check valve location
 - vi. Pump column and description
 - vii. Casing string shoe locations
- b. *Revise Figure 8.3-1a for to be similar to previous regional aquifer monitoring wells mentioned above. Figure 8.3-1a in the Revised Report lacks the graphical clarity and details and well completion information provided in other dual screen chromium monitoring wells (i.e., R-43*

through R-45, R-50, R-61) and in the most recent monitoring well (R-69), which provide far better understanding of the well construction, completion and Baski sampler set up. NMED would like to emphasize to DOE the importance of well construction as-built diagrams as technical references in future decision making and public review. For instance, in the current figure, the symbols for the surface seal and the bentonite appear in the background of the well casing area obscuring necessary details. Also, the transducer tubes and pump column for R-70 need to be drafted in a manner that is well-defined and clear like those of the other well completion details.

- c. *Revise Figure 3.2-1 Monitoring well R-70 as-built construction diagram and technical well completion details to include well development, final parameter and well survey information like Figure 7.2-1 for R-61.*
- d. *Correct the different pattern used for the top filter pack to be the same as the bottom filter pack, the legend and Figure 3.2-1, if both screens have the same 10/20 gradation filter pack. Likewise, correct the pattern for the transition sand to match with that shown in the legend and Figure 3.2-1.*
- e. *Correct "Filter Rack" to read "Filter Pack" in the diagram annotations and make the descriptions in the figure on page 21 match the descriptions provided in the text on page 11. Provide better quality assurance and quality control on this and all figures submitted to NMED.*
- f. *Label the features shown in the as-built well diagram within the lower filter pack below the "lower transducer screen" as requested. It is not clear what these features are and how they relate to the other dedicated well components. Please label these features and make the well completion details in the as-built diagram clearer and readily understandable as in the previous chromium group monitoring wells. Revise Figure 8.3-1b to include and explain these features.*
- g. *Indicate where the lower screen transducer tube port is in the well head plan view in the pending revision of this figure.*

DOE Response

4. DOE has made the required changes. See revised Figures 3.2-1, 8.3-1a, and 8.3-1b.

NMED Comment

5. Section 8.2 Aquifer Testing, page 11.

DOE Statement: *Applicable R-70 aquifer test results and analysis will be included in the assessment report for evaluation of conditions in the regional aquifer around well R-70, which is due to NMED no later than June 30, 2021.*

NMED Comment: *NMED requires DOE to remove this and all similar statements and subsection 8.2 from the second revision of the Report. See NMED's general comment and specific comment no. 1 above.*

DOE Response

5. The referenced statement and one other similar statement will be removed in Revision 2.

NMED Comment

6. Section 10.0 Acknowledgements, page 13.

DOE Statement: David C. Schafer designed, implemented, and analyzed the aquifer tests.

NMED Comment: *Remove the aquifer tests acknowledgement and all references to the aquifer tests from the second revision of the Report considering NMED and EPA have judged the tests to have been improperly conducted and the results to be unsuitable for hydraulic analyses.*

DOE Response

6. DOE will remove this sentence in the interest of reaching resolution on the comments. However, in doing so, DOE does not concur with the rationale provided by NMED.

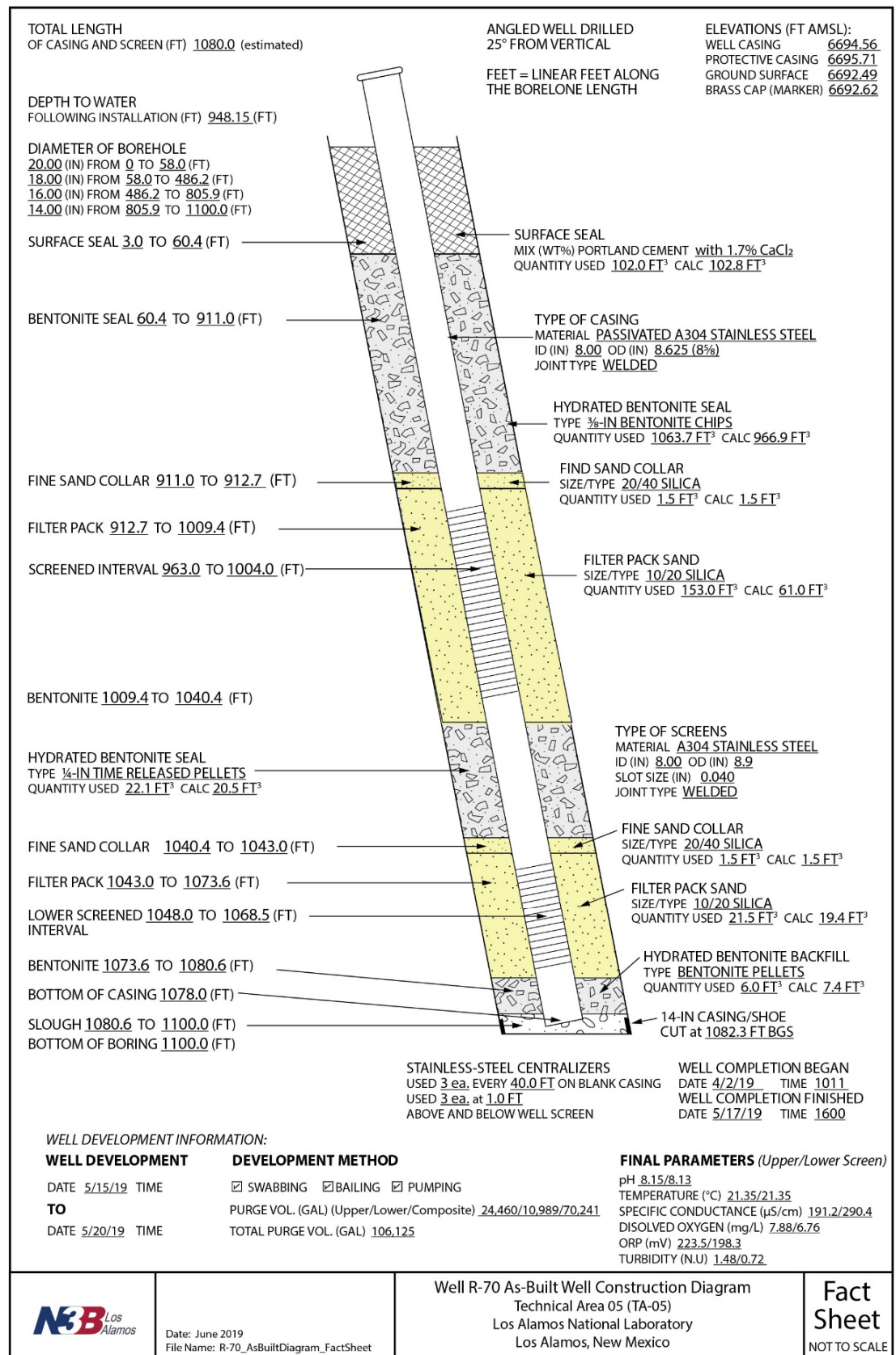


Figure 3.2-1 Monitoring well R-70 as-built construction diagram and technical well completion details

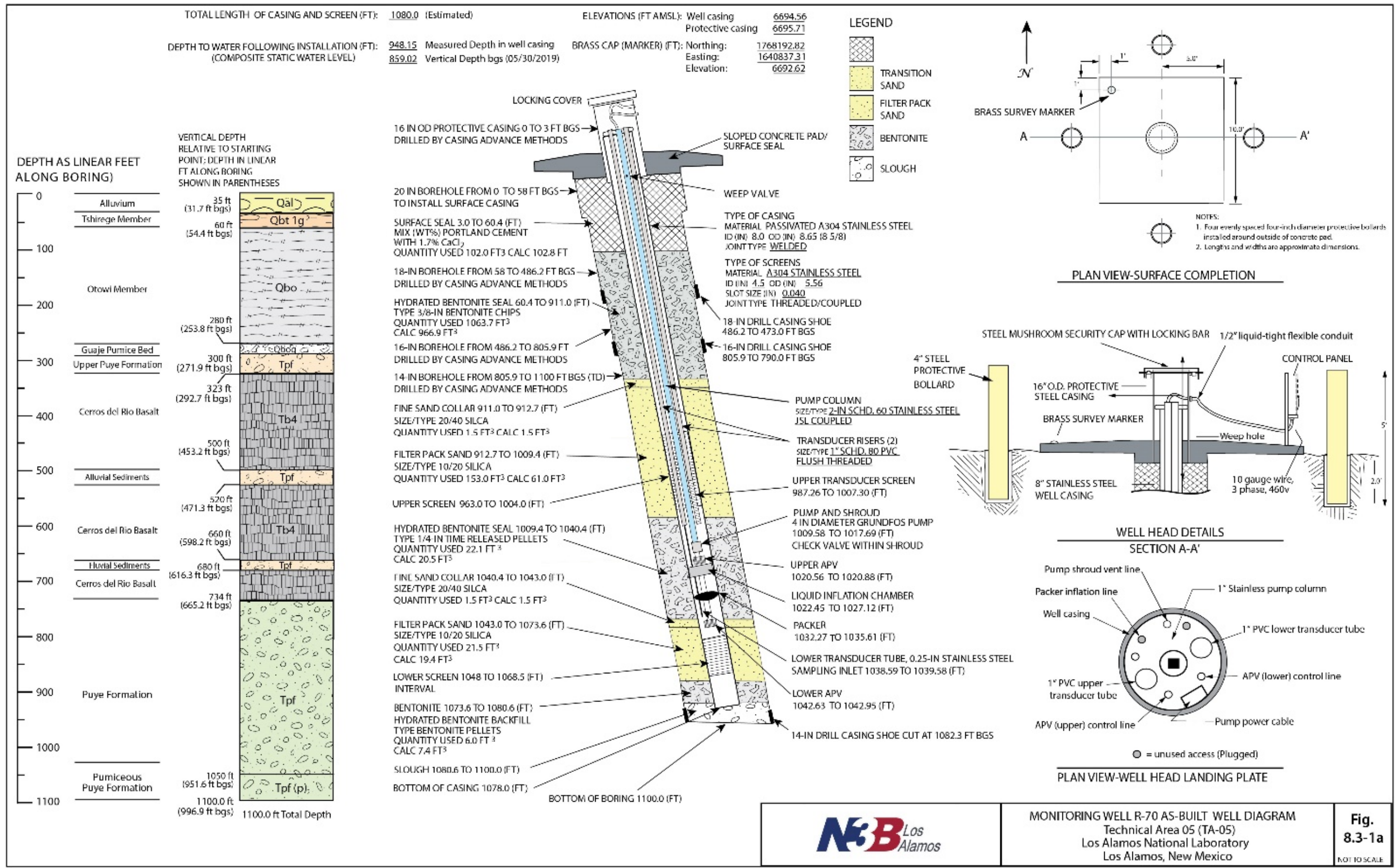


Figure 8.3.1a Installation and construction details for the R-70 sampling system

R-70 SAMPLING SYSTEM DESIGN PACKAGE TECHNICAL NOTES:

SURVEY INFORMATION

Brass Marker
 Northing: 1768192.82
 Easting: 1640837.31
 Elevation: 6692.62

Well Casing
 Northing: 1768186.69
 Easting: 1640838.04
 Elevation: 6694.56

SAMPLING SYSTEM MATERIALS AND PRODUCT LIST

Pump: Grundfos, OK-10550-930-70
 Pump motor: Franklin Electric, 2HP, 3-phase, 460V
 Motor cable: 10g, 3 lead with ground, double jacket

Discharge column: 2-inch, Johnson Spline Lock (JSL) coupled, schedule 60, non annealed A304 stainless steel

Check valve: Swagelok, 1-in. male X male, 316 stainless steel, mod. SS-CHM16-1, 5000 psi

Couplings: 2.375 NUE/Nitronic 60 and 2.375 JSL

Guage tubes: 1 inch PVC

Banding: 3/4-inch 201 stainless steel with 201 stainless steel buckles

Thread Compound: Jet Lube, V2

Sampling tree: A304 schedule 40 stainless steel
 1-inch nipples, elbows, cross, bushings, hose barbs

AQUIFER TESTING

Constant Rate Pumping Test (screen #1)
 Specific Capacity: 13.47 gpm/ft
 Performed on: 07/23-24/2019

Constant Rate Pumping Test (Screen #2)
 Specific Capacity: 7.5 gpm/ft
 Performed on: 05/26-27/2019

DEDICATED SAMPLING SYSTEM

Pump (shrouded)
 Make: Grundfos
 Model: OK-10550-930-70
 S/N: P11832 1001
 environmental retrofit
 Base of shroud at 1017.69 ft bgs

Motor
 Make: Franklin Electric
 Model: 23432786020
 S/N: 19A14-18-00699C

Pump Shroud
 A304 stainless steel, 4.25-in x0.0120-in, wall tube, Baski Inc. custom; at 1009.58-1017.69 ft bgs

Pump Column
 2-in. JSL coupled schedule 60 non annealed A304 stainless steel tubing

Upper Transducer Tube
 1-in. (I.D) flush threaded schedule 80 PVC pipe with 10-ft (long) 0.020-in. slotted screen at 987.26 to 1007.30 ft bgs

Lower Transducer Tube
 1-in. (I.D.) flush threaded schedule 80 PVC pipe to 1007.3 ft bgs. Lower transducer tube made of 0.25-in stainless steel tube that extends from a threaded end-cap at the bottom of the PVC tube through the isolation packer. Female bottom cap. Stainless steel screen at 1038.59 to 1039.58 ft bgs.

Upper Transducer
 In Situ LT500 (30 psi)
 S/N: 694581 (Manufactured 2019-10)

Lower Transducer
 In Situ LT500 (30 psi)
 S/N: 694573 (Manufactured 2019-10)

Note: BGS (below ground surface) in this figure refers to linear ft along slanted well casing.


		R-70 SAMPLING SYSTEM DESIGN PACKAGE TECHNICAL NOTES Technical Area 05 (TA-05) Los Alamos National Laboratory Los Alamos, New Mexico	Fig. 8.3-1b NOT TO SCALE
Drafted By: N3B Project Number: 86306	Date: October 10, 2019 Filename:		

Figure 8.3-1b Technical notes for the installation and construction of the R-70 sampling system

