

Exhibit B Highland Mine - 2016 Aquifer Test Results Technical Memorandum

TECHNICAL MEMORANDUM

TO: EXXONMOBIL ENVIRONMENTAL SERVICES
FROM: WORTHINGTON MILLER ENVIRONMENTAL, LLC
SUBJECT: HIGHLAND MINE – 2016 AQUIFER TEST RESULTS
DATE: MARCH 29, 2017

1.0 Introduction

Hydraulic conductivity (K) and specific storage (S_s) values for sandstone units were determined for select monitoring wells at the Highland Site by performing short-term single well pumping and recovery well tests. This Technical Memorandum briefly describes the site stratigraphy, data collection methods and data analysis. The results of the pump and recovery tests were compared to historical data available for the major hydrologic units at the Site and the calibrated groundwater flow model values used in the 2007 pit lake modeling (Tetra Tech, 2007). Overall, the new test results are consistent with previous data values for horizontal hydraulic conductivity and consistent with the values used in the 2007 modeling.

2.0 Site Stratigraphy

The geology of the Site consists of the sedimentary deposits within the Powder River Basin of northeastern Wyoming. The units of significance to this study lay within the upper Fort Union Formation (Paleocene), and, to a lesser extent, the lower Wasatch Formation (Eocene). Regionally, the strata dip towards the west (Hunter, 1999), but in the study area, dip is approximately 0.5 degrees to the northwest.

The Highland Sandstone Unit (HSU) of the Fort Union Formation is the host rock of most of the uranium ore in the area. The unit is 120 to 150 feet thick and consists of sand channel and floodplain facies (Hunter, 1999). The unit is divisible into three sandstone members that are separated by intervals of claystone and siltstone. Informal nomenclature refers to the sandstones from stratigraphically highest to lowest as 50-Sand, 40-Sand, and 30-Sand, and the fine-grained intervals as 45-Shale and 35-Shale (Hunter, 1999). The sandstones have also been referred to as the upper, middle, and lower sandstone members (EPRC, 1983). All three members are laterally extensive throughout the study area and are generally composed of fine- to medium-grained, poorly lithified, arkosic sandstone that typically ranges from 20 to 50 feet in thickness. The fine-grained intervals are approximately 9 feet and 35 feet thick in the area of the Pit Lake, respectively, but, in some locations, are altogether absent, and the sandstones are in vertical contact (Hunter, 1999).

Overlying the HSU in the study area is the Tailings Dam Shale (TDSH), a laterally pervasive interval of siltstone and claystone that ranges from 20 feet to 50 feet in thickness. The TDSH is overlain by the Tailings Dam Sandstone (TDSS). The TDSS is composed of sand channel and floodplain facies similar to the sandstone members of the HSU and is typically 30 feet to 50 feet in thickness. Unlike the underlying deposits, the TDSS is not laterally extensive across the study area. This unit has a

well-defined northwest-trending western edge approximately 1 mile west of the Pit Lake (Hunter, 1999). Along this line, the TDSS grades laterally to finer-grained siltstone and claystone. Overlying the TDSS is a thick sequence of interbedded sandstone, siltstone, and claystone of the upper Fort Union Formation and the lower Wasatch Formation.

The undifferentiated Fort Union and Wasatch deposits are exposed at the surface over the majority of the area. Because the strata dip to the northwest and the topography slopes to the southeast, depths to the TDSS, TDSH, and HSU decrease from northwest to southeast until these units eventually crop out in the eastern portion of the Site.

3.0 Data Collection

Pumping tests were performed between July 19 and July 22, 2016 by pumping the wells using the dedicated sampling pumps equipped with check valves. Water head data was collected using vented In-Situ® Level TROLL 500 transducers with data loggers. Water levels were manually verified using an electronic sounding tape. The discharge during each test was measured with a totalizing flow meter and verified with a graduated bucket and a stopwatch.

Pumping and recovery tests were run on 17 wells on Site (Table 1). Three wells tested are completed in the 30-Sand aquifer unit. Four wells tested are completed in the 40-Sand aquifer unit. Five wells tested are completed in the 50-Sand aquifer unit. Three wells tested are completed in the backfill material of old Pits 1 and 2. Two wells tested are completed in the TDSS aquifer unit.

4.0 Data Analysis

Pumping test results were analyzed using the Cooper-Jacob Solution for pumping in a confined aquifer within the software AQTESOLV (HydroSOLVE Inc.). Recovery test results were analyzed using the Theis Recovery Test solution for confined aquifers within the same software package. Transmissivity (T) and specific storage values (Ss) were also calculated for both pumping and recovery phases of each test and are presented in Table 1. The AQTESOLV output figures are attached to this memorandum.

5.0 Data Summary

Results of the pumping and recovery data have been compared to transmissivity and specific storage values previously collected at the Highland Site (Table 2) and they were compared to the values used in the calibrated groundwater flow model values used in the Tetra Tech 2007 pit lake modeling (Tetra Tech, 2007) (Table 3).

The horizontal conductivity value for the TDSS in the 2007 pit lake model was 3.00 feet per day (Table 3). This falls within the observed horizontal conductivity values observed in 2016 and is very close to the average value observed of 2.44 feet per day (Table 4). The horizontal conductivity value for the OBSS sandstone units in the 2007 pit lake model was 1.5 feet per day (Table 3). This value falls within the range of values observed in 2016, although it is slightly lower than the average of 7.67 feet per day observed in 2016 (Table 4). The horizontal conductivity value for the Backfill material in the 2007 pit lake model was 1.00 foot per day (Table 3). This also falls within the range of values observed in 2016 (Table 4).

The specific storage value for the TDSS in the 2007 pit lake model was 4.80×10^{-4} (Table 3). This value is within the range of storage values observed in 2016, although it is on the low side of recorded values (Table 4). The storage value for the OBSS sandstone units in the 2007 pit lake model was 7.50×10^{-5} (Table 3). This value falls within the wide-ranging values observed in 2016 (Table 4). The storage value for the Backfill material in the 2007 pit lake model was 1.00×10^{-4} . This also falls within the range of observed values during the 2016 pump tests (Table 4).

6.0 Conclusions

The values that were used in the 2007 pit lake model for horizontal hydraulic conductivity and specific storage of the TDSS, OBSS, and Backfill material all fall within observed values for horizontal conductivity and specific storage measured during pump tests in 2016 at the Highland Site. These values are considered appropriate for the model.

7.0 References

- Exxon Production Research Company (EPRC). 1983. Surface Mine Reclamation Lake Study for Highland Uranium Operations. EPR.81ES.83. April.
- Hunter, J. 1999. Fluvial Architecture and Paleo-Groundwater Infiltration of the Fort Union Formation Near the Highland Uranium Mine, Southern Powder River Basin, Wyoming. In Coalbed Methane & Tertiary Geology, Powder River Basin, 50th Field Conference Guidebook, Wyoming Geological Association.
- Tetra Tech, Inc. (Tetra Tech). 2007. Long Term Geochemical Evolution of the Highland Pit Lake. Prepared for ExxonMobil (Fairfax, VA). May 17.

Table 1. 2016 Pump Test Results

Well	Screened Formation	Test Date	Test Type	Analysis	T (ft ² /d)	b (ft.)	K _h (ft./d)	S _s
1-30	30-sand	7/19/2016	Pumping	Cooper-Jacob	16.9	10	1.69	7.71 x 10 ⁻³
1-30	30-sand	7/19/2016	Recovery	Theis (Recovery)	10.7	10	1.07	4.39 x 10 ⁻⁵
2-30	30-sand	7/20/2016	Pumping	Cooper-Jacob	14.9	10	1.49	7.73 x 10 ⁻³
2-30	30-sand	7/20/2016	Recovery	Theis (Recovery)	40.5	10	4.05	6.04 x 10 ⁻⁵
MFG-3R	30-sand	7/21/2016	Pumping	Cooper-Jacob	86.4	10.4	8.31	1.39 x 10 ⁻³
MFG-3R	30-sand	7/21/2016	Recovery	Theis (Recovery)	74.4	10.4	7.16	5.87 x 10 ⁻⁸
2-40	40-sand	7/19/2016	Pumping	Cooper-Jacob	77.0	10	7.70	3.29 x 10 ⁻³
2-40	40-sand	7/19/2016	Recovery	Theis (Recovery)	69.8	10	6.98	8.08 x 10 ⁻⁷
4-40	40-sand	7/20/2016	Pumping	Cooper-Jacob	169	10	1.69	4.41 x 10 ⁻⁴
4-40	40-sand	7/20/2016	Recovery	Theis (Recovery)	1.67	10	1.67	1.31 x 10 ⁻¹²
5-40	40-sand	7/20/2016	Pumping	Cooper-Jacob	31.0	20	1.55	9.75 x 10 ⁻⁵
5-40	40-sand	7/20/2016	Recovery	Theis (Recovery)	89.9	20	4.50	2.30 x 10 ⁻⁴
MFG-2	40-sand	7/22/2016	Pumping	Cooper-Jacob	97.4	15.4	6.33	6.58 x 10 ⁻⁵
MFG-2	40-sand	7/22/2016	Recovery	NA	NA	15.4	NA	NA
1-50	50-sand	7/19/2016	Pumping	Cooper-Jacob	215	10	21.5	0.588
1-50	50-sand	7/19/2016	Recovery	NA	NA	10	NA	NA
2-50	50-sand	7/20/2016	Pumping	Cooper-Jacob	41.1	10	4.11	6.25 x 10 ⁻⁵
2-50	50-sand	7/20/2016	Recovery	Theis (Recovery)	54.2	10	5.42	8.34 x 10 ⁻⁷
5-50	50-sand	7/21/2016	Pumping	NA	NA	20	NA	NA
5-50	50-sand	7/21/2016	Recovery	NA	NA	20	NA	NA
6-50	50-sand	7/21/2016	Pumping	Cooper-Jacob	252	10	25.2	1.15 x 10 ⁻⁵
6-50	50-sand	7/21/2016	Recovery	NA	NA	10	NA	NA
7-50	50-sand	7/21/2016	Pumping	Cooper-Jacob	36.9	20	1.84	6.61 x 10 ⁻³
7-50	50-sand	7/21/2016	Recovery	Theis (Recovery)	66.9	20	3.35	2.26 x 10 ⁻⁶
170	Backfill	7/20/2016	Pumping	Cooper-Jacob	34.1	40	0.851	0.034
170	Backfill	7/20/2016	Recovery	Theis (Recovery)	38.8	40	0.971	2.12 x 10 ⁻⁶
173	Backfill	7/20/2016	Pumping	Cooper-Jacob	25.3	40	0.631	.0644

Table 1. 2016 Pump Test Results (Cont.)

Well	Screened Formation	Test Date	Test Type	Analysis	T (ft ² /d)	b (ft.)	Kh (ft./d)	Ss
173	Backfill	7/20/2016	Recovery	Theis (Recovery)	23.0	40	0.574	2.60 x 10 ⁻⁷
8-BP	Backfill	7/21/2016	Pumping	Cooper-Jacob	118	30	3.92	1.42 x 10 ⁻⁴
8-BP	Backfill	7/21/2016	Recovery	Theis (Recovery)	482	30	16.1	8.99 x 10 ⁻⁶
174	TDSS	7/22/2016	Pumping	Cooper-Jacob	177	40	4.43	1.44 x 10 ⁻⁴
174	TDSS	7/22/2016	Recovery	Theis (Recovery)	64.6	40	1.61	4.48 x 10 ⁻⁴
6-TDSS	TDSS	7/21/2016	Pumping	Cooper-Jacob	25.4	20	1.27	0.0774
6-TDSS	TDSS	7/21/2016	Recovery	NA	NA	20	NA	NA

Table 2. Previous Hydraulic Measurements

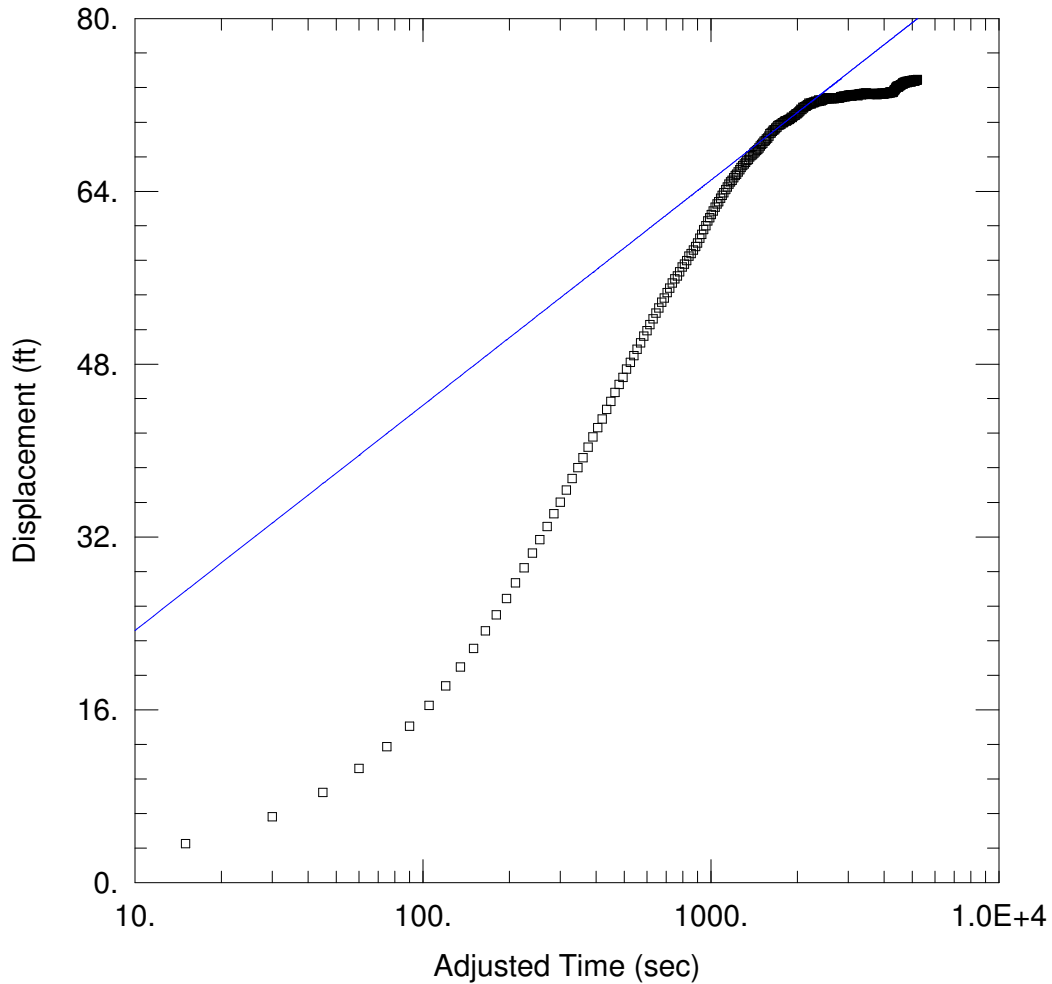
Parameter		Hydrologic Unit		
		Tailings Dam Sandstone (TDSS)	Highland Sandstone Unit (HSU)	Backfill Material
Horizontal Hydraulic Conductivity (K _h , ft./day)	Minimum	0.00240	1.80 x 10 ⁻²	31.0
	Maximum	23.0	19.0	6.00
	Log Mean	2.20	2.10	17.7
Specific Storage (S _s)	Minimum	4.80 x 10 ⁻⁴	1.20 x 10 ⁻⁵	2.76 x 10 ⁻⁷
	Maximum	4.80 x 10 ⁻⁴	2.50 x 10 ⁻⁴	1.94 x 10 ⁻⁶
	Log Mean	4.80 x 10 ⁻⁴	6.52 x 10 ⁻⁵	8.79 x 10 ⁻⁷

Table 3. Hydraulic Values Used in Tetra Tech, 2007

Parameter	Hydrologic Unit		
	Tailings Dam Sandstone (TDSS)	Highland Sandstone Unit (HSU)	Backfill Material
Horizontal Hydraulic Conductivity (K_h , ft./day)	3.00	1.50	1.00
Specific Storage (S_s)	4.80×10^{-4}	7.50×10^{-5}	1.00×10^{-4}

Table 4. Summary of 2016 Highland Pump Test Results

Parameter		Hydrologic Unit		
		Tailings Dam Sandstone (TDSS)	Highland Sandstone Unit (HSU)	Backfill Material
Horizontal Hydraulic Conductivity (K_h , ft./day)	Minimum	1.27	1.07	5.74×10^{-1}
	Maximum	4.43	25.2	16.1
	Log Mean	2.44	7.67	3.84
Specific Storage (S_s)	Minimum	1.44×10^{-4}	$1.31 \times 10^{1-12}$	2.60×10^{-7}
	Maximum	7.74×10^{-2}	5.88×10^{-1}	6.44×10^{-2}
	Log Mean	2.60×10^{-2}	3.42×10^{-2}	1.64×10^{-2}



PUMPING TEST

Data Set: C:\...\1-30_pumping.aqt
 Date: 09/19/16

Time: 15:27:02

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland Mine
 Test Well: 1-30
 Test Date: 7/19/16

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
1-30	0	0

Well Name	X (ft)	Y (ft)
□ 1-30	0	0

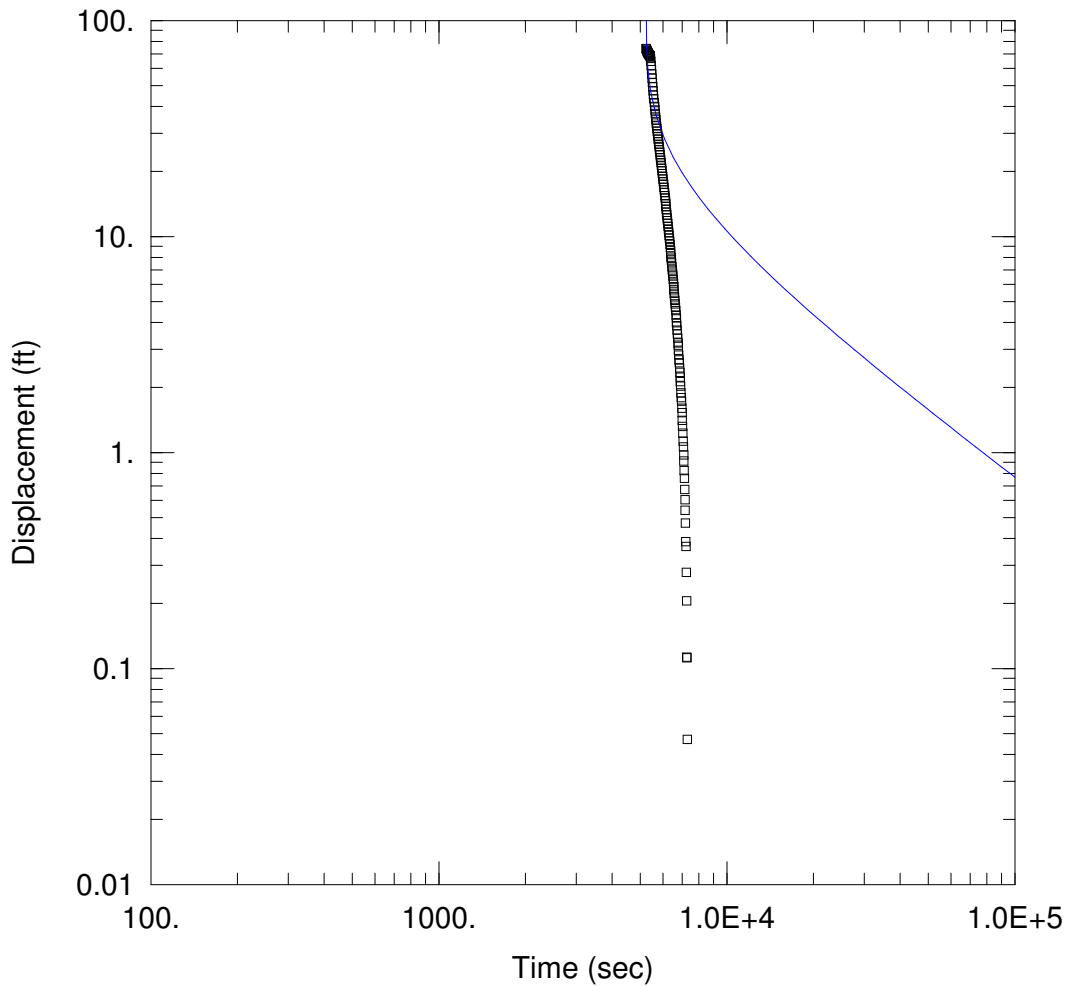
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 16.92 ft²/day

S = 0.007708



PUMPING TEST

Data Set: C:\...\1-30_recovery.aqt
 Date: 09/19/16

Time: 15:27:02

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 1-30
 Test Date: 7/19/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
1-30	0	0

Well Name	X (ft)	Y (ft)
□ 1-30	0	0

SOLUTION

Aquifer Model: Confined

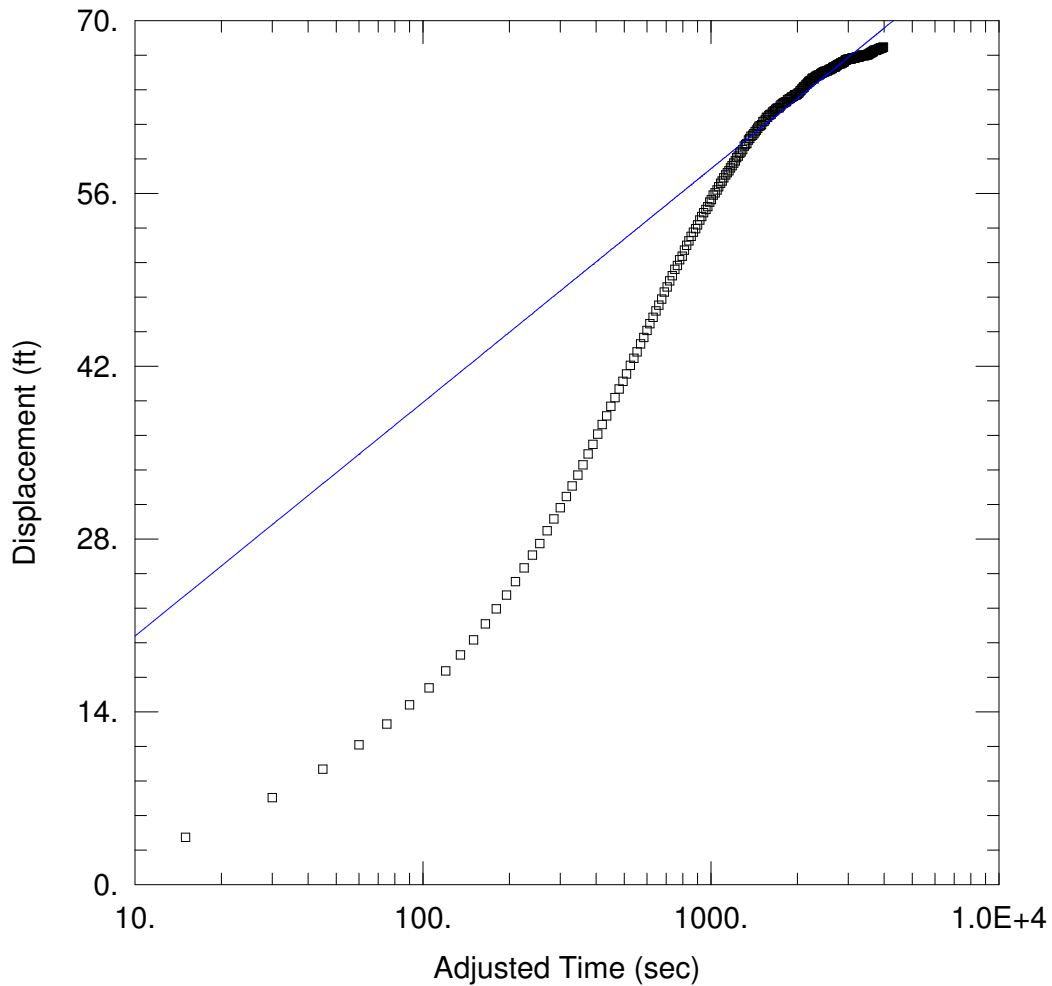
Solution Method: Theis

T = 10.72 ft²/day

S = 4.394E-5

Kz/Kr = 1.

b = 10. ft



WELL TEST ANALYSIS

Data Set: C:\...\2-30_pumping.aqt
 Date: 09/19/16

Time: 15:27:03

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 2-30
 Test Date: 7/20/16

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
2-30	0	0

Well Name	X (ft)	Y (ft)
□ 2-30	0	0

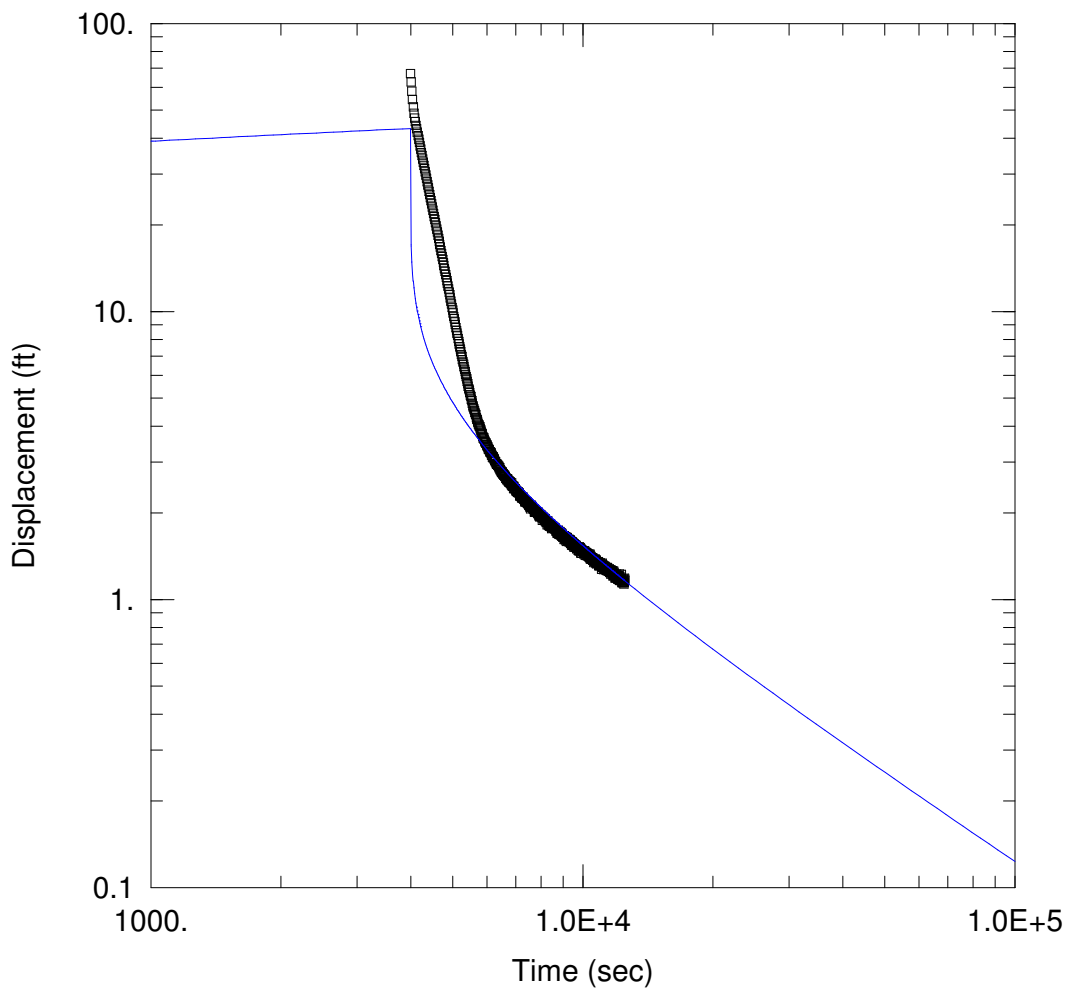
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 14.9 ft²/day

S = 0.007729



WELL TEST ANALYSIS

Data Set: C:\...\2-30_recovery.aqt
 Date: 09/19/16

Time: 15:27:04

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 2-30
 Test Date: 7/20/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
2-30	0	0

Well Name	X (ft)	Y (ft)
□ 2-30	0	0

SOLUTION

Aquifer Model: Confined

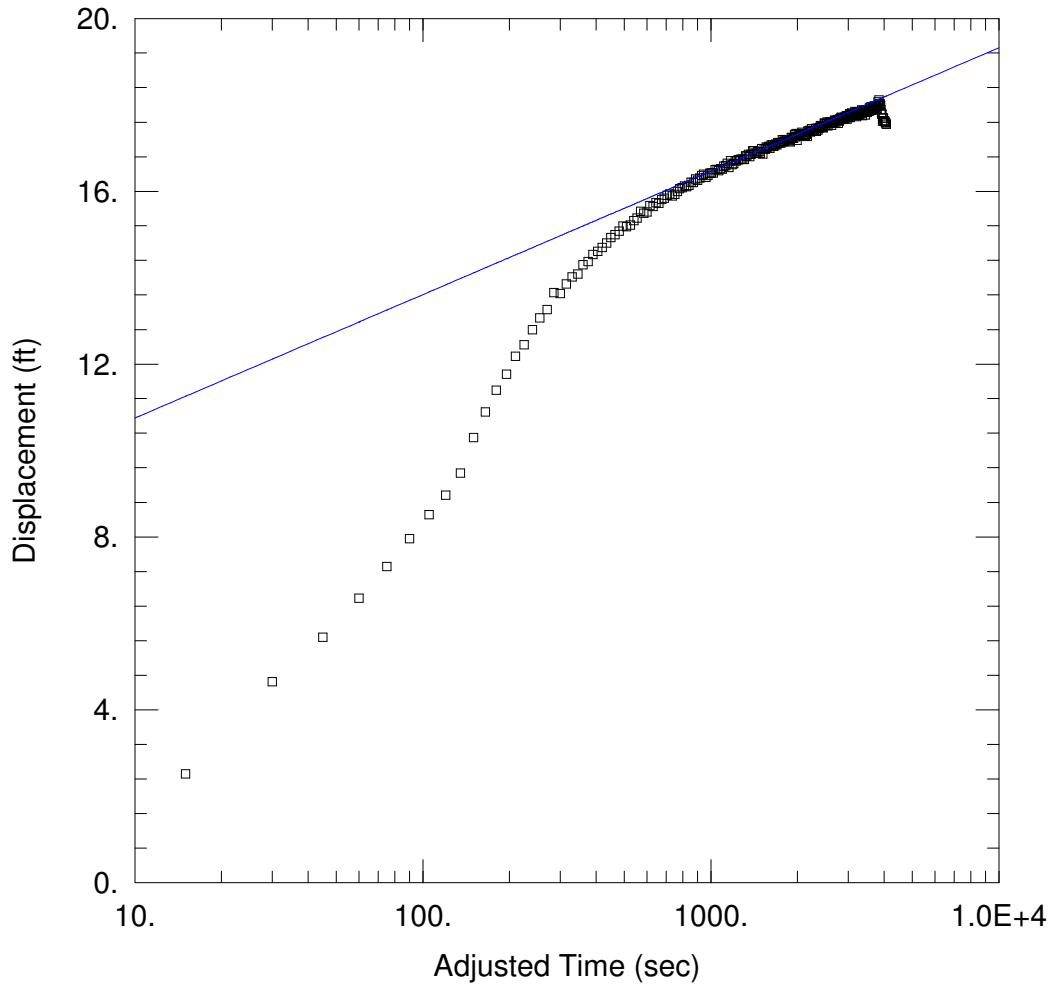
Solution Method: Theis

T = 40.53 ft²/day

S = 6.038E-5

Kz/Kr = 1.

b = 10. ft



WELL TEST ANALYSIS

Data Set: C:\...\MFG-3R_pumping.aqt
 Date: 09/19/16

Time: 15:29:52

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 2-30
 Test Date: 7/20/16

AQUIFER DATA

Saturated Thickness: 10.4 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MFG-3R	0	0

Well Name	X (ft)	Y (ft)
□ MFG-3R	0	0

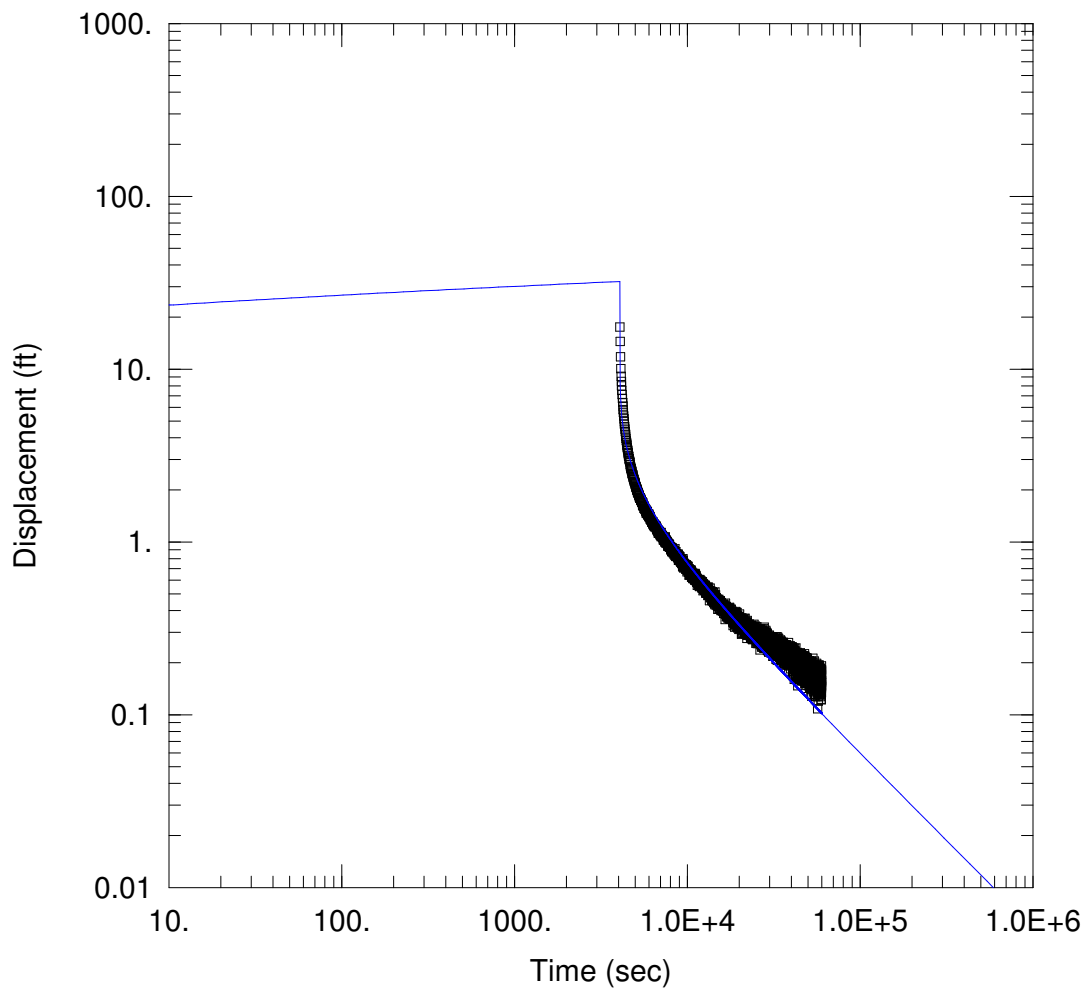
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 86.43 ft²/day

S = 0.0001387



WELL TEST ANALYSIS

Data Set: C:\...\MFG-3R_recovery.aqt
 Date: 09/19/16

Time: 15:29:54

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: MFG-3R
 Test Date: 7/21/16

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MFG-3R	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ MFG-3R	0	0

SOLUTION

Aquifer Model: Confined

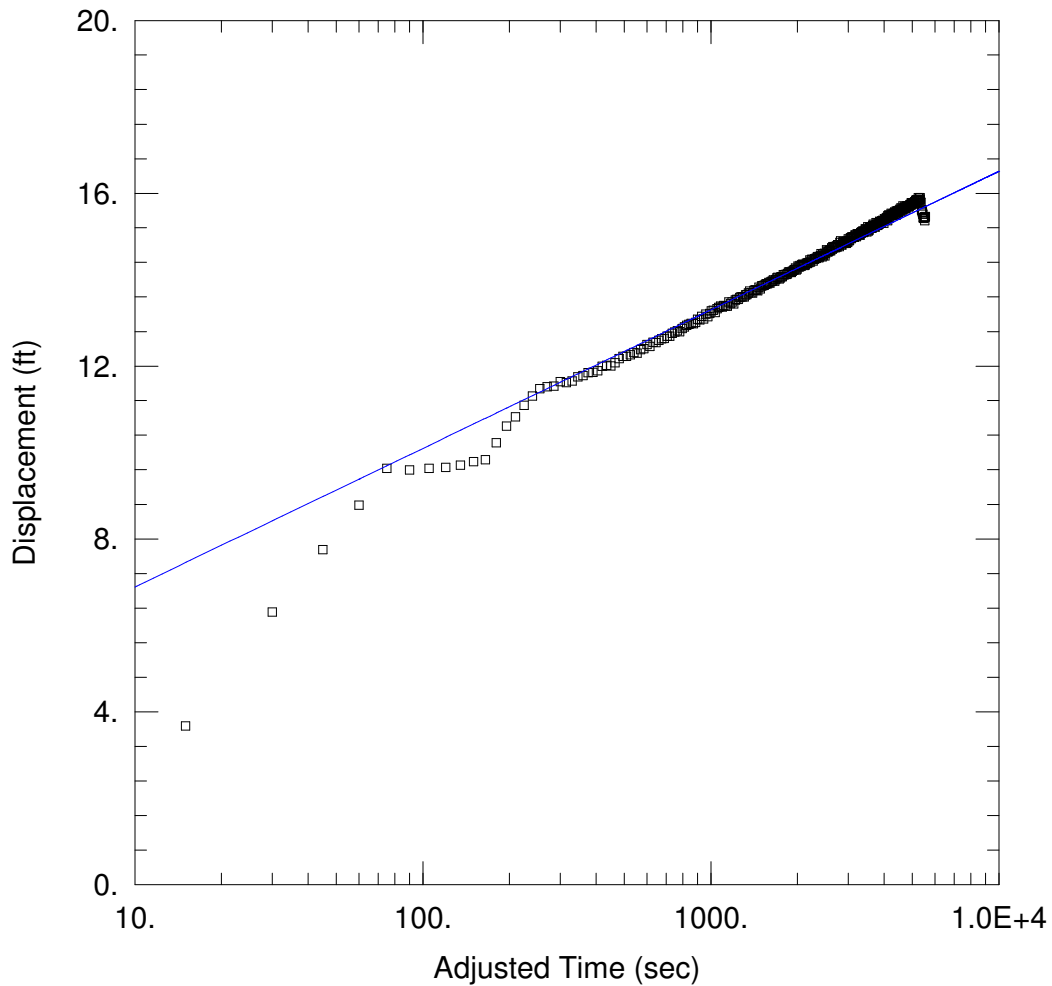
Solution Method: Theis

T = 74.42 ft²/day

S = 5.868E-8

Kz/Kr = 1.

b = 10.4 ft



WELL TEST ANALYSIS

Data Set: C:\...\2-40_pumping.aqt
 Date: 09/19/16

Time: 15:27:04

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 2-40
 Test Date: 7/19/16

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
2-40	0	0

Well Name	X (ft)	Y (ft)
□ 2-40	0	0

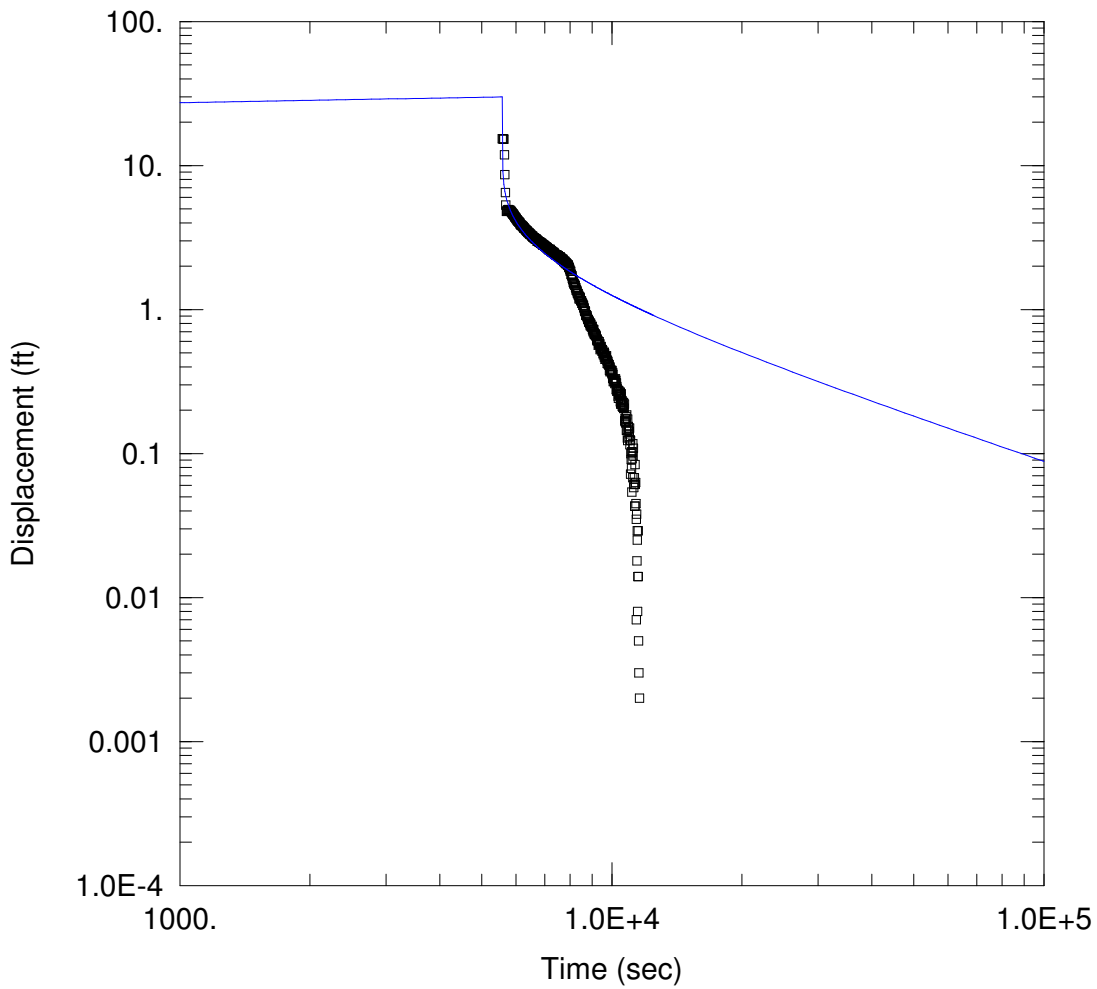
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 76.98 ft²/day

S = 0.003287



WELL TEST ANALYSIS

Data Set: C:\...\2-40_recovery.aqt
 Date: 09/19/16

Time: 15:27:04

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 2-40
 Test Date: 7/19/16

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
2-40	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ 2-40	0	0

SOLUTION

Aquifer Model: Confined

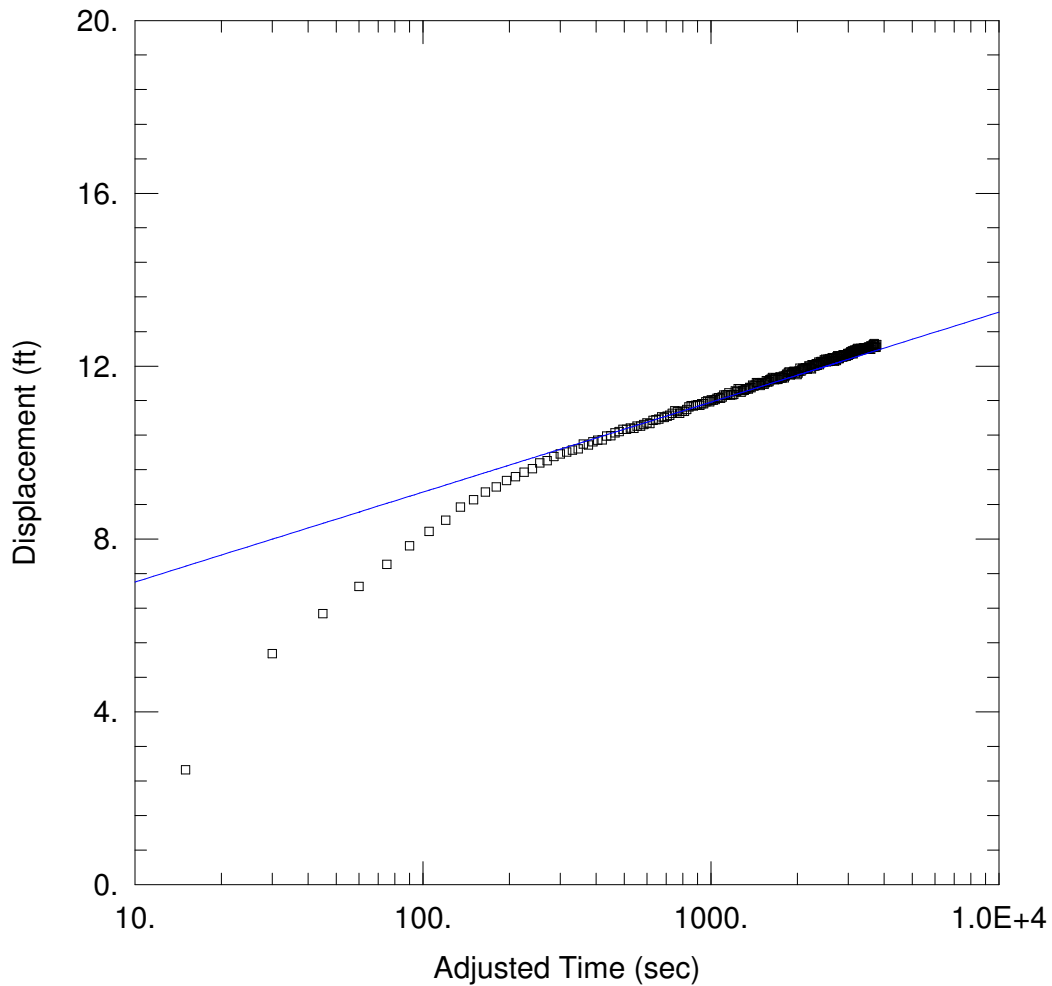
Solution Method: Theis

T = 69.81 ft²/day

S = 8.08E-7

Kz/Kr = 1.

b = 10. ft



WELL TEST ANALYSIS

Data Set: C:\...\4-40_pumping.aqt
 Date: 09/19/16

Time: 15:28:09

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 4-40
 Test Date: 7/20/16

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
4-40	0	0

Well Name	X (ft)	Y (ft)
□ 4-40	0	0

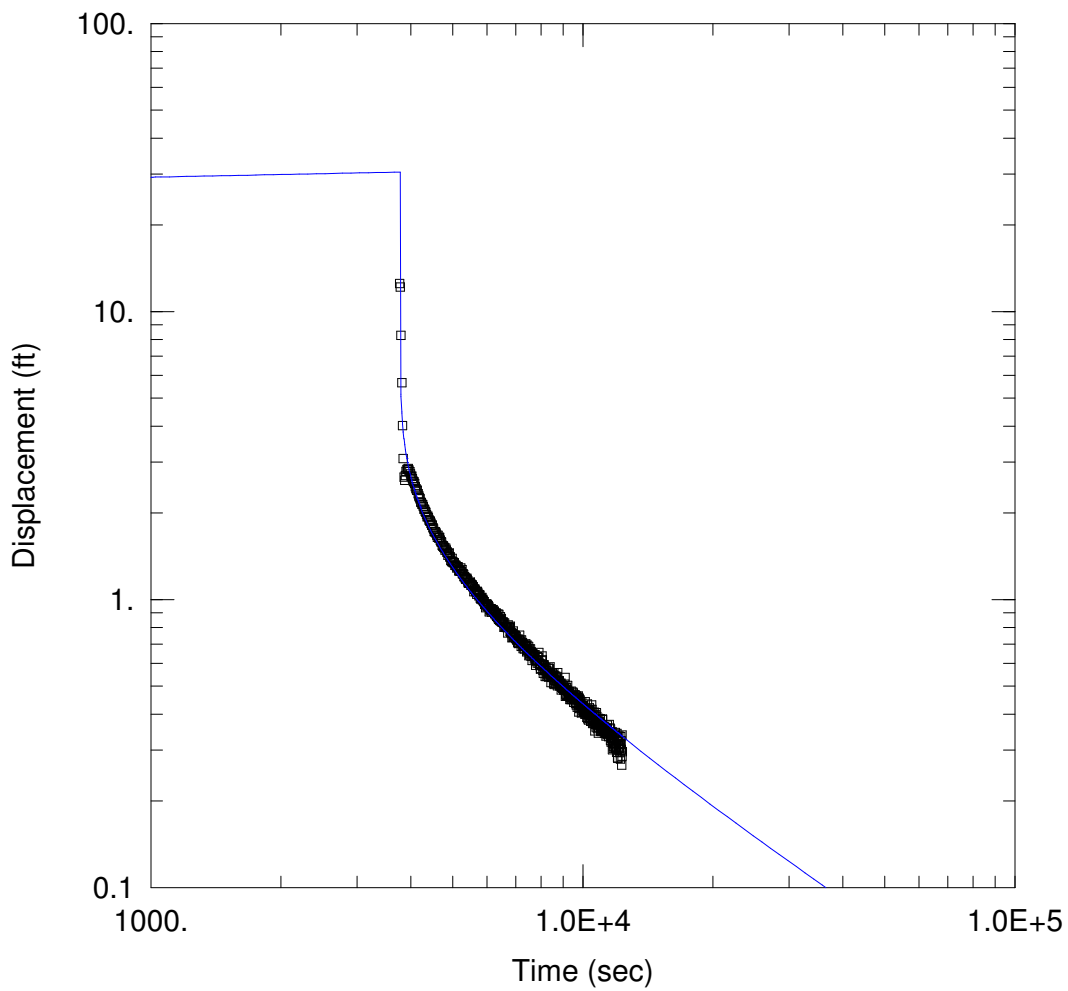
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 169.4 ft²/day

S = 0.0004405



WELL TEST ANALYSIS

Data Set: C:\...\4-40_recovery.aqt
 Date: 09/19/16

Time: 15:28:10

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: -40
 Test Date: 7/20/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
4-40	0	0

Well Name	X (ft)	Y (ft)
□ 4-40	0	0

SOLUTION

Aquifer Model: Confined

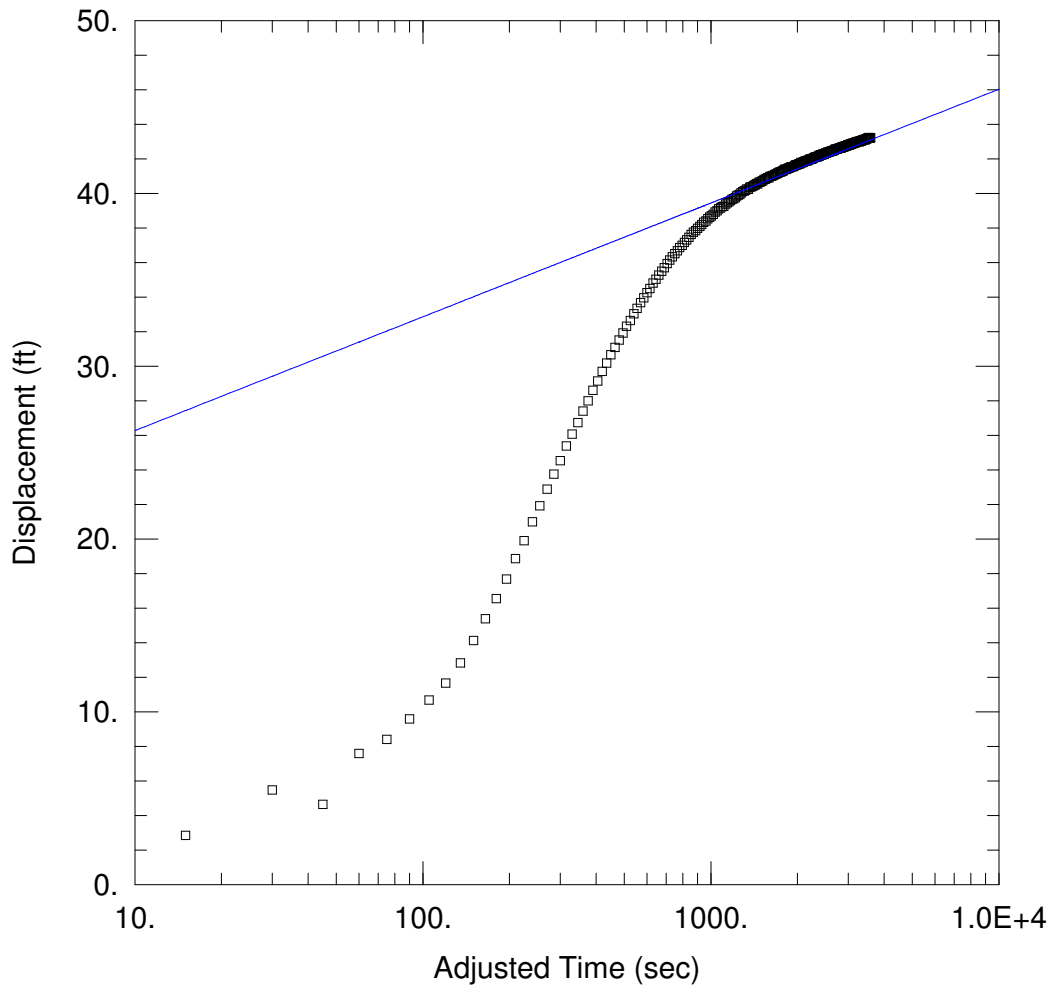
Solution Method: Theis

T = 167.3 ft²/day

S = 1.31E-12

Kz/Kr = 1.

b = 10. ft



WELL TEST ANALYSIS

Data Set: C:\...\5-40_pumping.aqt
 Date: 09/19/16

Time: 15:28:10

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland Mine
 Test Well: 5-40
 Test Date: 7/20/16

AQUIFER DATA

Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
5-40	0	0

Well Name	X (ft)	Y (ft)
□ 5-40	0	0

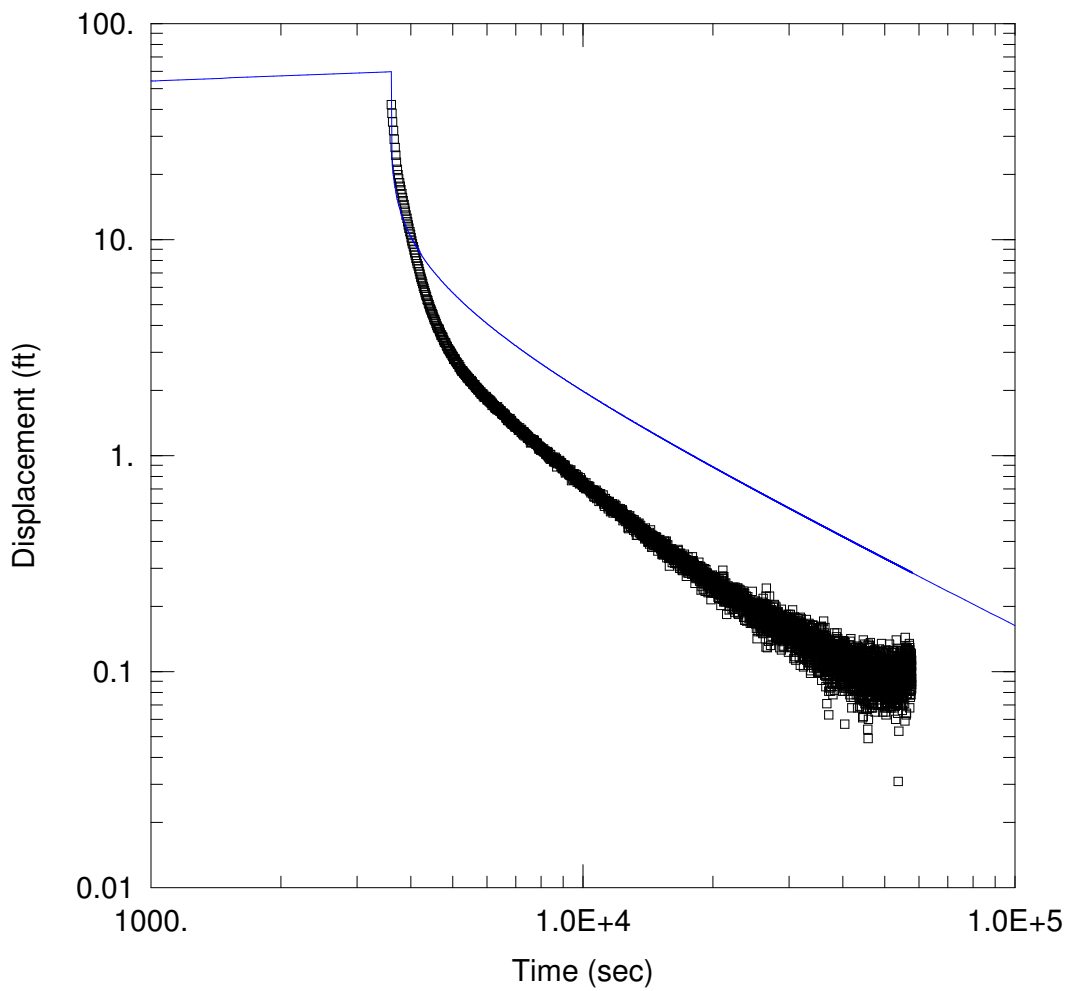
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 48.2 ft²/day

S = 2.966E-5



WELL TEST ANALYSIS

Data Set: C:\...\5-40_recovery.aqt
 Date: 09/19/16

Time: 15:28:12

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 5-40
 Test Date: 7/20/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
5-40	0	0

Well Name	X (ft)	Y (ft)
□ 5-40	0	0

SOLUTION

Aquifer Model: Confined

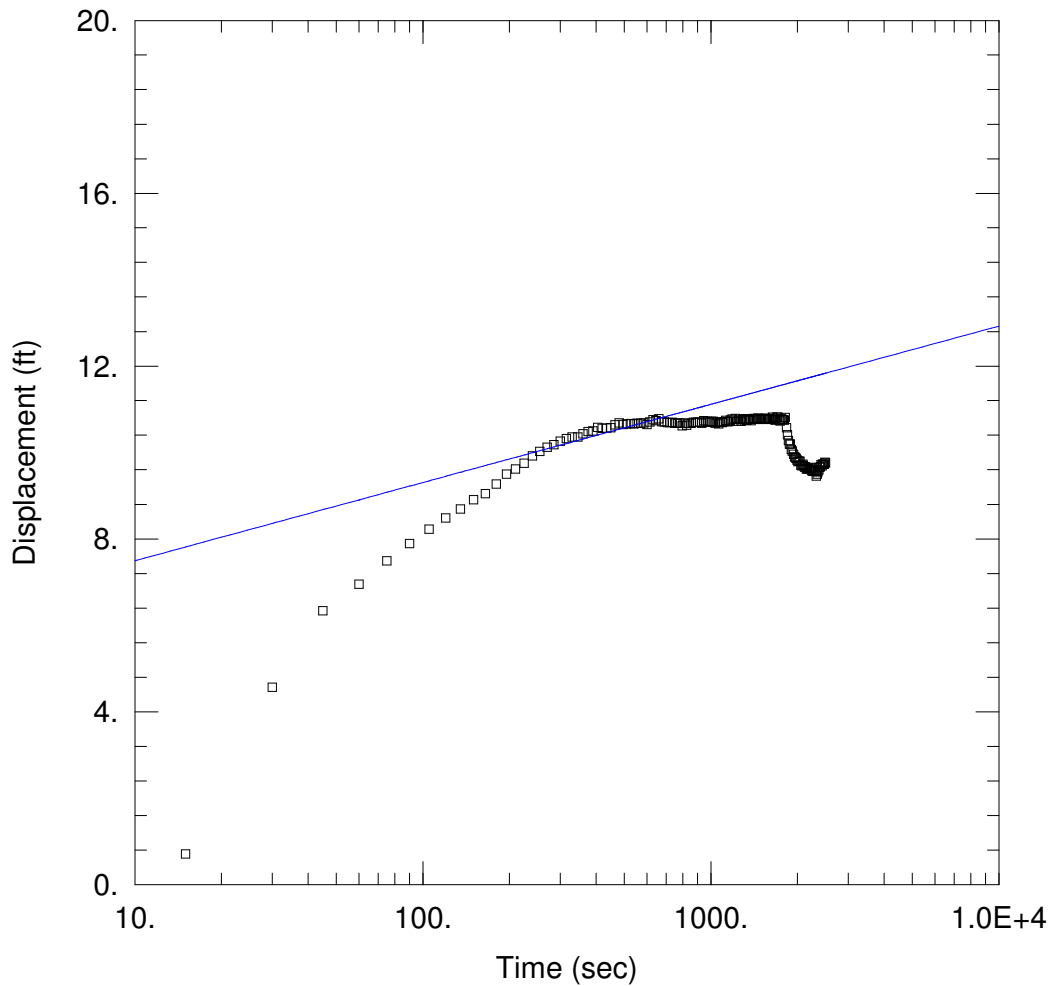
Solution Method: Theis

T = 30.96 ft²/day

S = 9.747E-5

Kz/Kr = 1.

b = 20. ft



WELL TEST ANALYSIS

Data Set: C:\...\MFG-2_pumping2.aqt
 Date: 09/19/16

Time: 15:37:57

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: MFG-2
 Test Date: 7/22/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MFG-2	0	0

Well Name	X (ft)	Y (ft)
□ MFG-2	0	0

SOLUTION

Aquifer Model: Confined

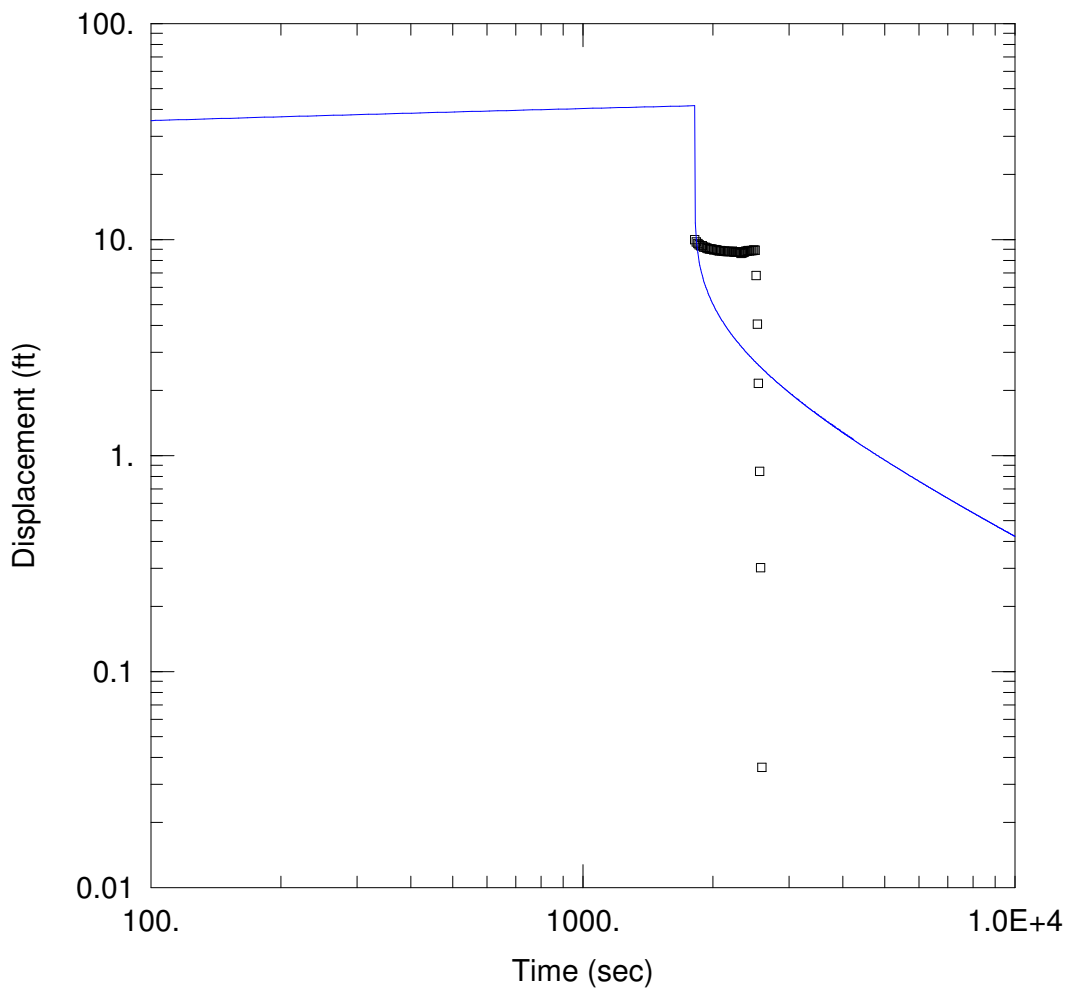
Solution Method: Theis

T = 97.42 ft²/day

S = 6.577E-5

Kz/Kr = 1.

b = 10. ft



WELL TEST ANALYSIS

Data Set: C:\...\MFG-2_recovery.aqt
 Date: 09/19/16

Time: 15:29:52

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: MFG-2
 Test Date: 7/22/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MFG-2	0	0

Well Name	X (ft)	Y (ft)
□ MFG-2	0	0

SOLUTION

Aquifer Model: Confined

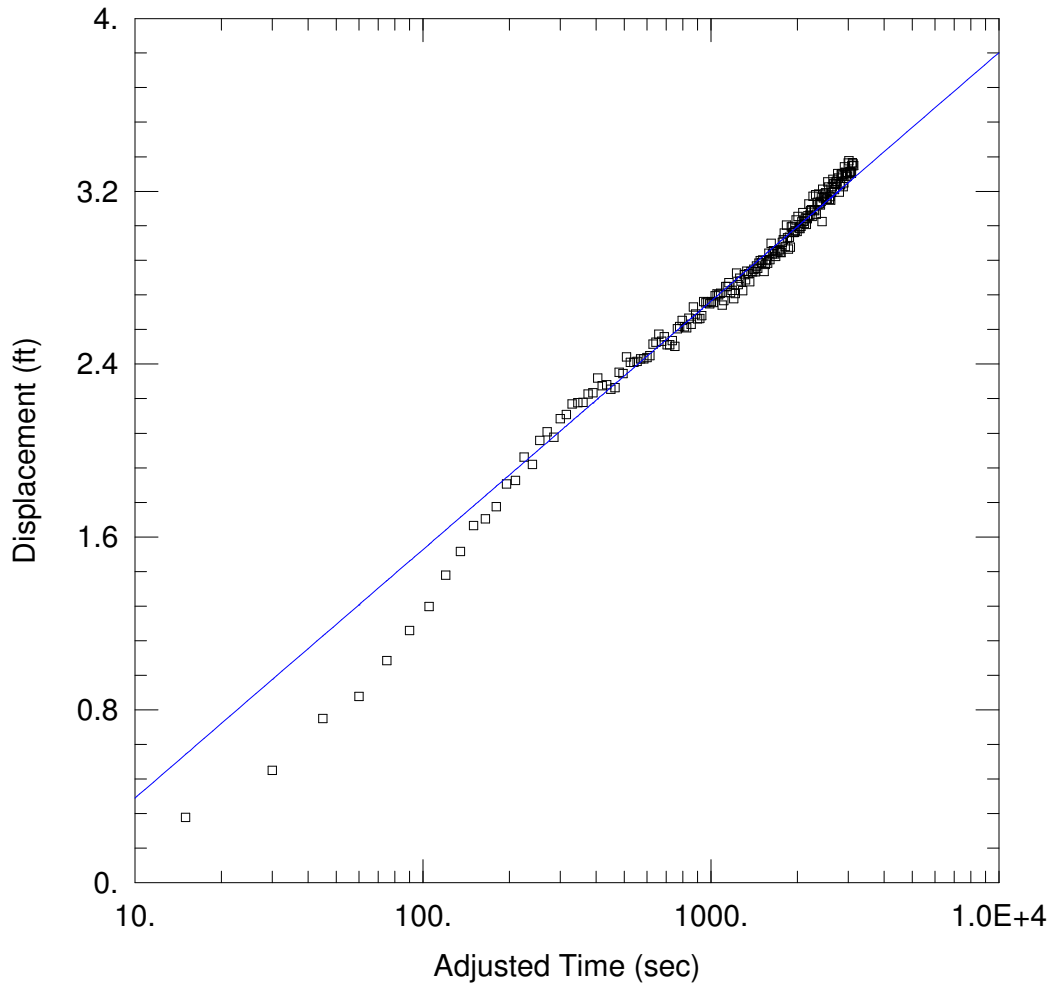
Solution Method: Theis

T = 36.31 ft²/day

S = 6.646E-7

Kz/Kr = 1.

b = 15.4 ft



WELL TEST ANALYSIS

Data Set: C:\...\1-50_pumping.aqt
 Date: 09/19/16

Time: 15:27:03

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 1-50
 Test Date: 7/19/16

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
1-50	0	0

Well Name	X (ft)	Y (ft)
□ 1-50	0	0

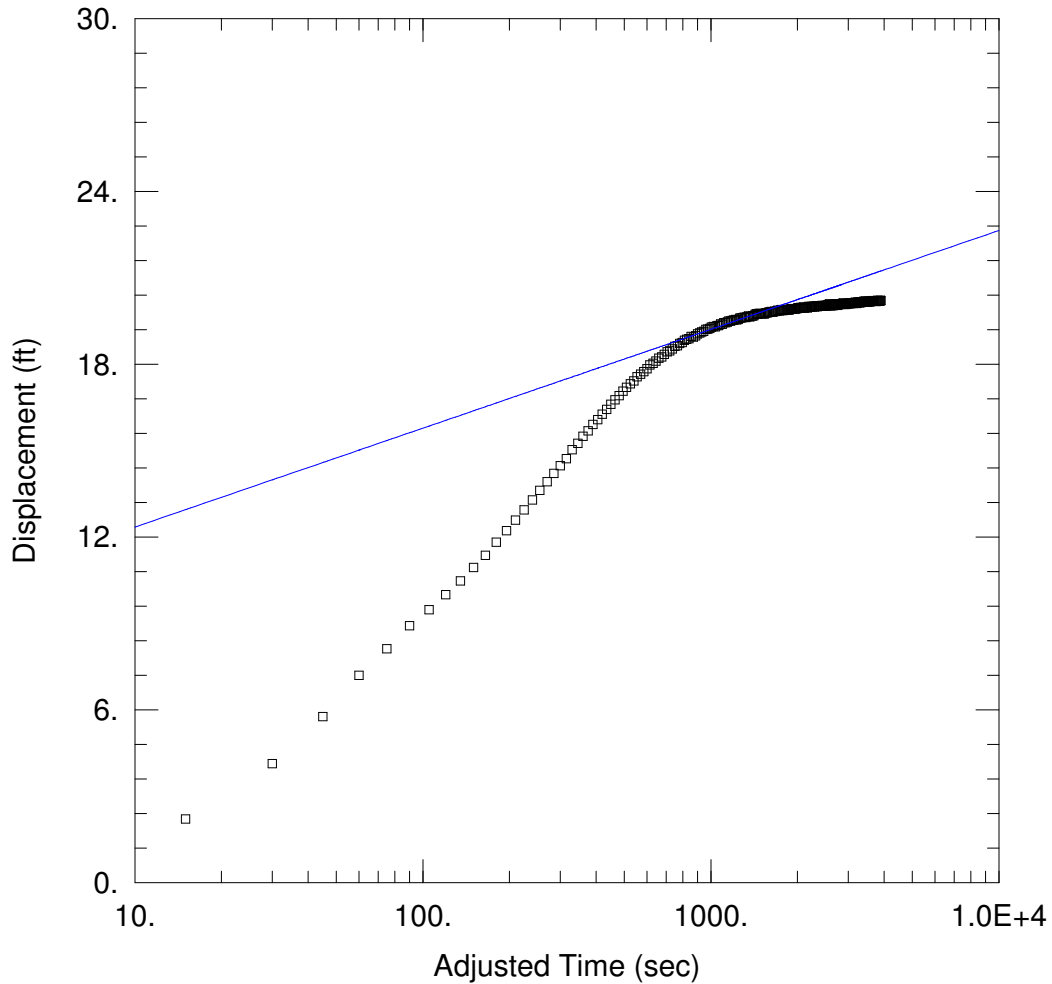
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 214.7 ft²/day

S = 0.5883



WELL TEST ANALYSIS

Data Set: C:\...\2-50_pumping.aqt
 Date: 09/19/16

Time: 15:27:05

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 2-50
 Test Date: 7/20/16

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
2-50	0	0

Well Name	X (ft)	Y (ft)
□ 2-50	0	0

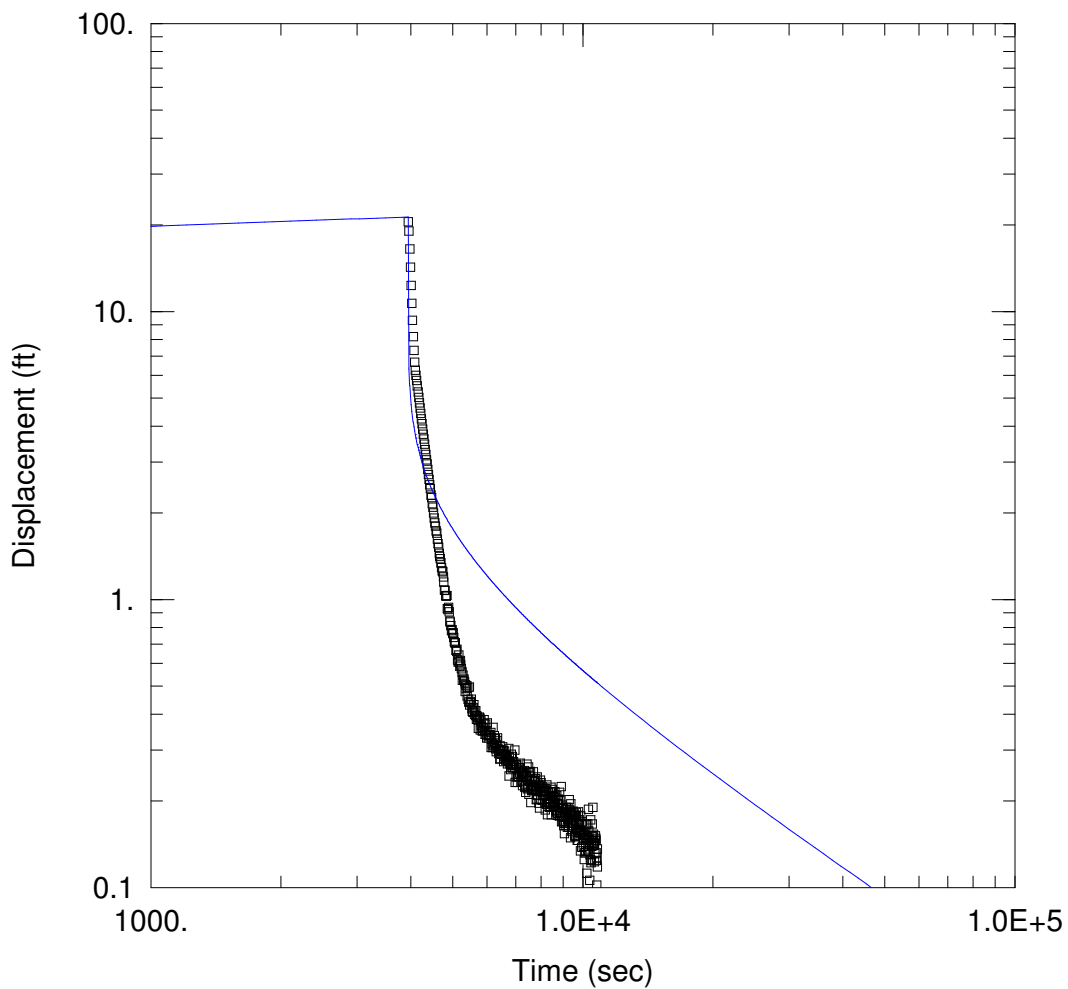
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 41.1 ft²/day

S = 6.252E-5



WELL TEST ANALYSIS

Data Set: C:\...\2-50_recovery.aqt
 Date: 09/19/16

Time: 15:46:01

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 2-50
 Test Date: 7/20/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
2-50	0	0

Well Name	X (ft)	Y (ft)
□ 2-50	0	0

SOLUTION

Aquifer Model: Confined

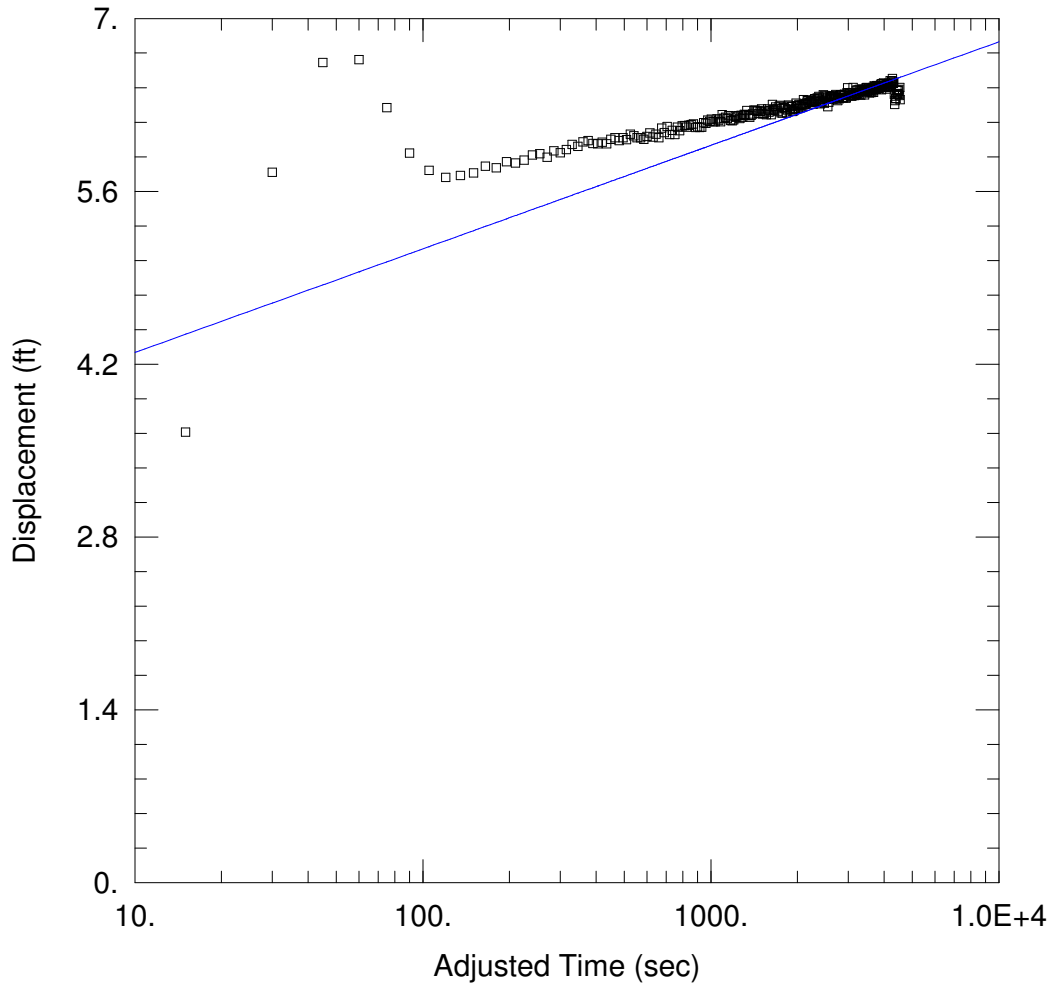
Solution Method: Theis

T = 54.24 ft²/day

S = 8.343E-7

Kz/Kr = 1.

b = 10. ft



WELL TEST ANALYSIS

Data Set: C:\...\6-50_pumping.aqt
 Date: 09/19/16

Time: 15:28:12

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 6-50
 Test Date: 7/21/16

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
6-50	0	0

Well Name	X (ft)	Y (ft)
□ 6-50	0	0

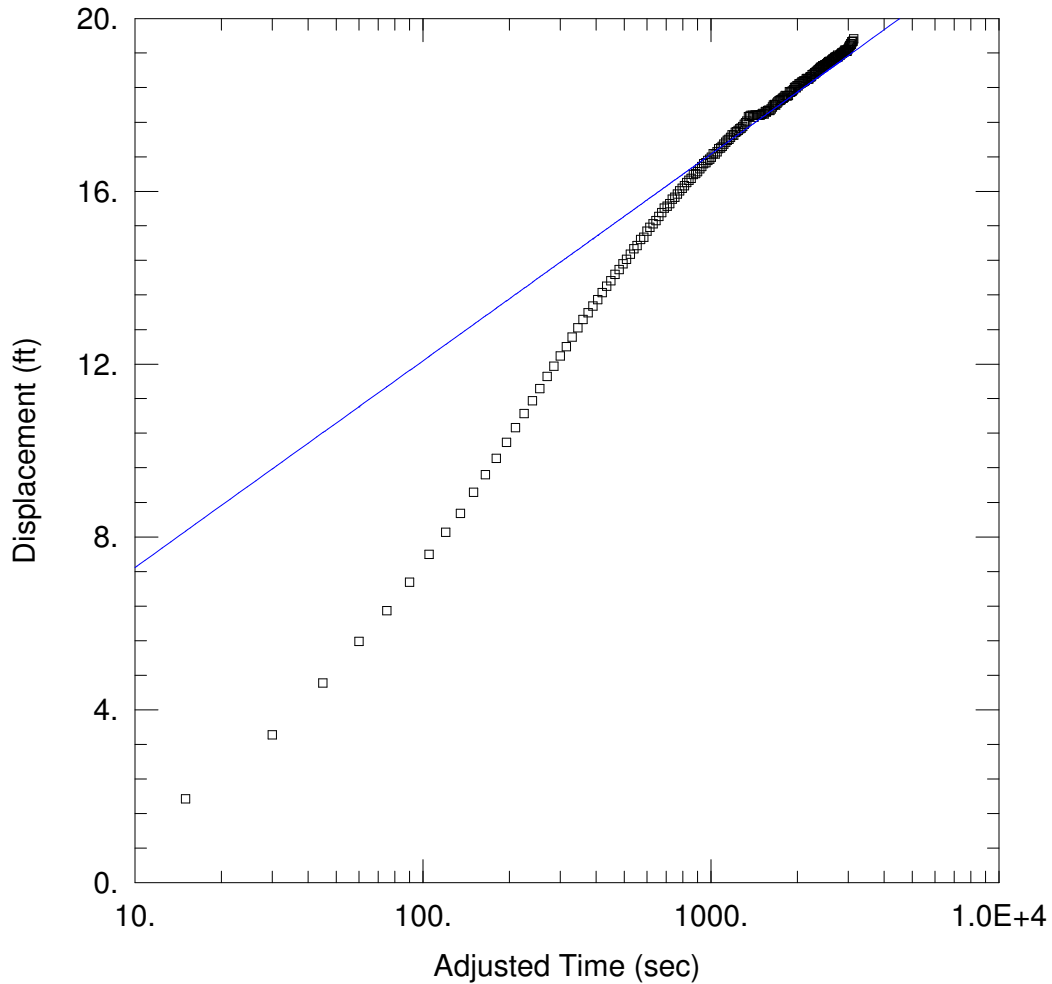
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 252.2 ft²/day

S = 1.151E-5



WELL TEST ANALYSIS

Data Set: C:\...\7-50_pumping.aqt
 Date: 09/19/16

Time: 15:29:02

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 7-50
 Test Date: 7/21/16

AQUIFER DATA

Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
7-50	0	0

Well Name	X (ft)	Y (ft)
□ 7-50	0	0

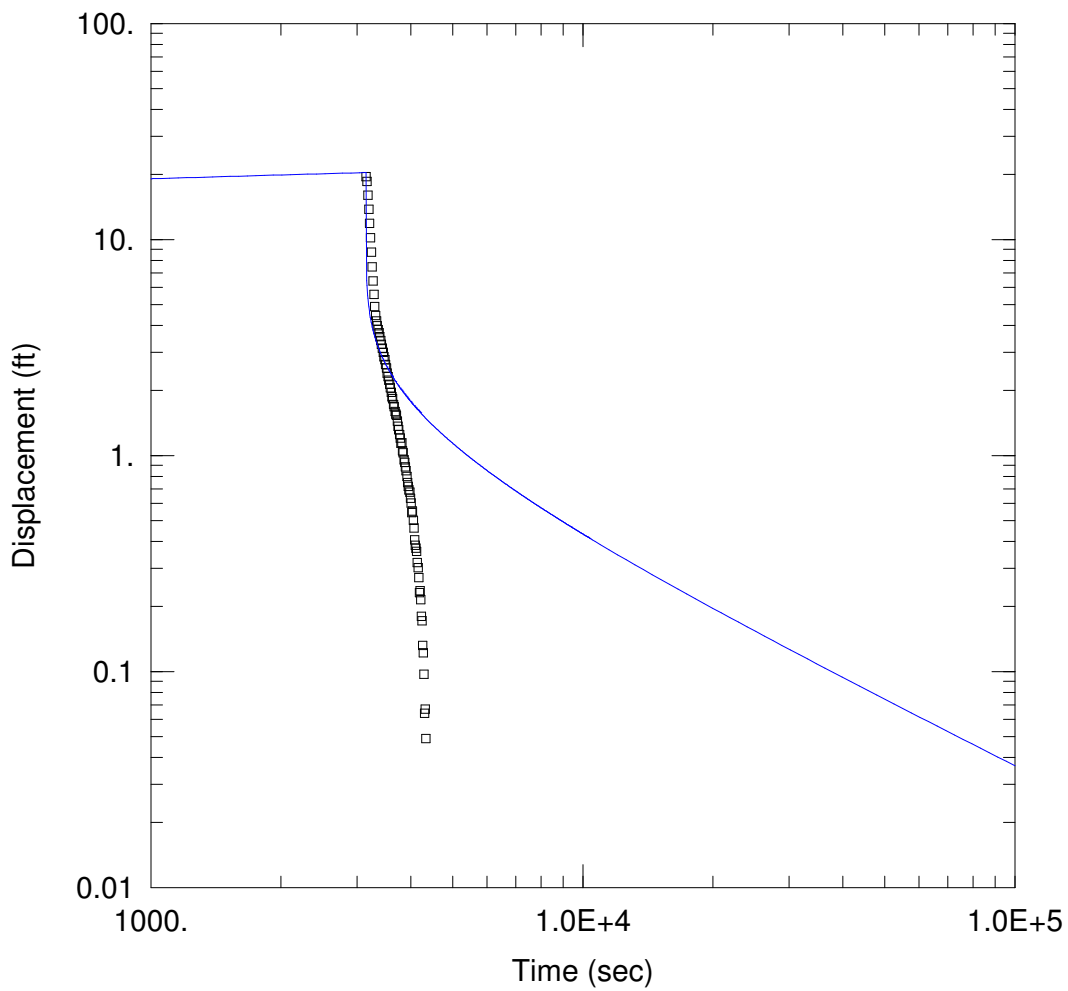
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 36.86 ft²/day

S = 0.006614



WELL TEST ANALYSIS

Data Set: C:\...\7-50_recovery.aqt
 Date: 09/19/16

Time: 15:29:03

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 7-50
 Test Date: 7/21/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
7-50	0	0

Well Name	X (ft)	Y (ft)
□ 7-50	0	0

SOLUTION

Aquifer Model: Confined

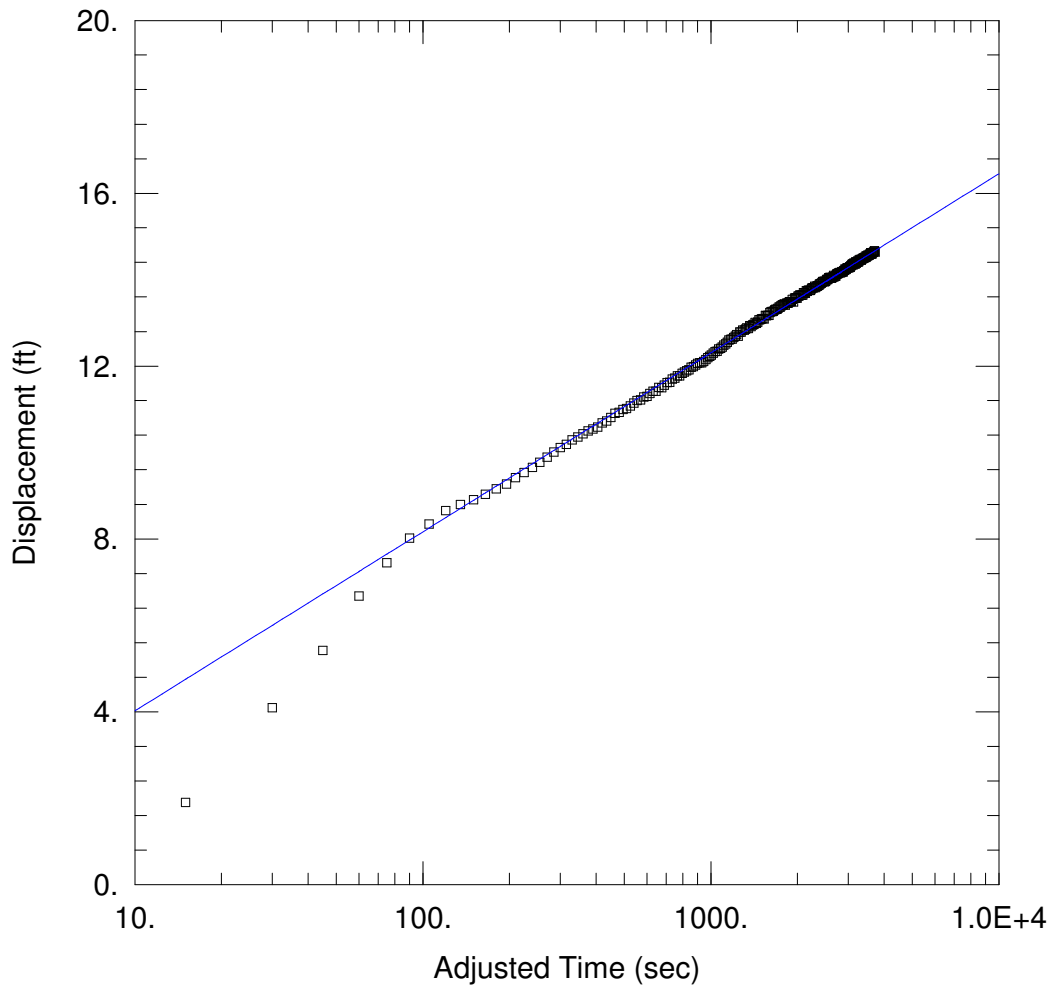
Solution Method: Theis

T = 66.9 ft²/day

S = 2.264E-6

Kz/Kr = 1.

b = 20. ft



WELL TEST ANALYSIS

Data Set: C:\...\170_pumping.aqt
 Date: 09/19/16

Time: 15:29:06

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 170
 Test Date: 7/20/16

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
170	0	0

Well Name	X (ft)	Y (ft)
□ 170	0	0

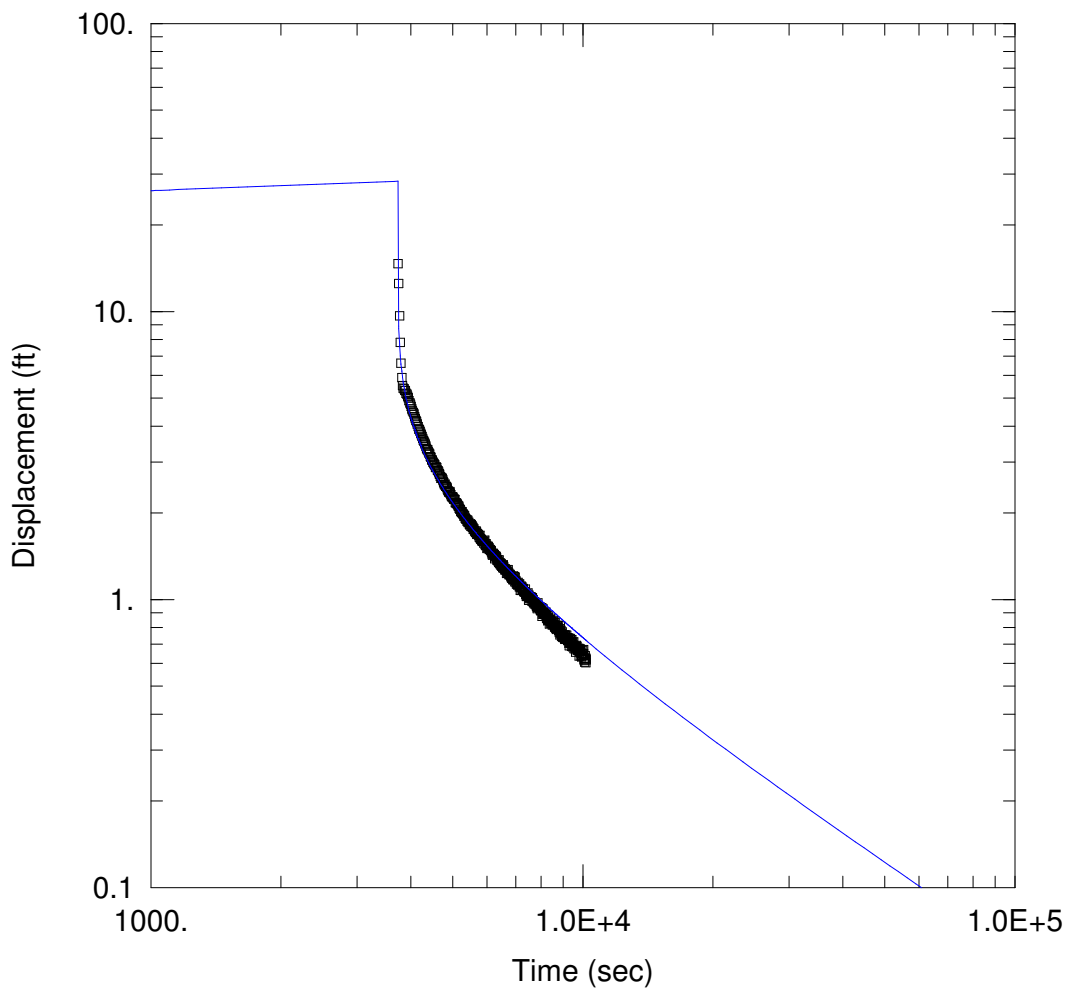
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 34.05 ft²/day

S = 0.03398



WELL TEST ANALYSIS

Data Set: C:\...\170_recovery.aqt
 Date: 09/19/16

Time: 15:29:06

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 170
 Test Date: 7/20/16

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
170	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ 170	0	0

SOLUTION

Aquifer Model: Confined

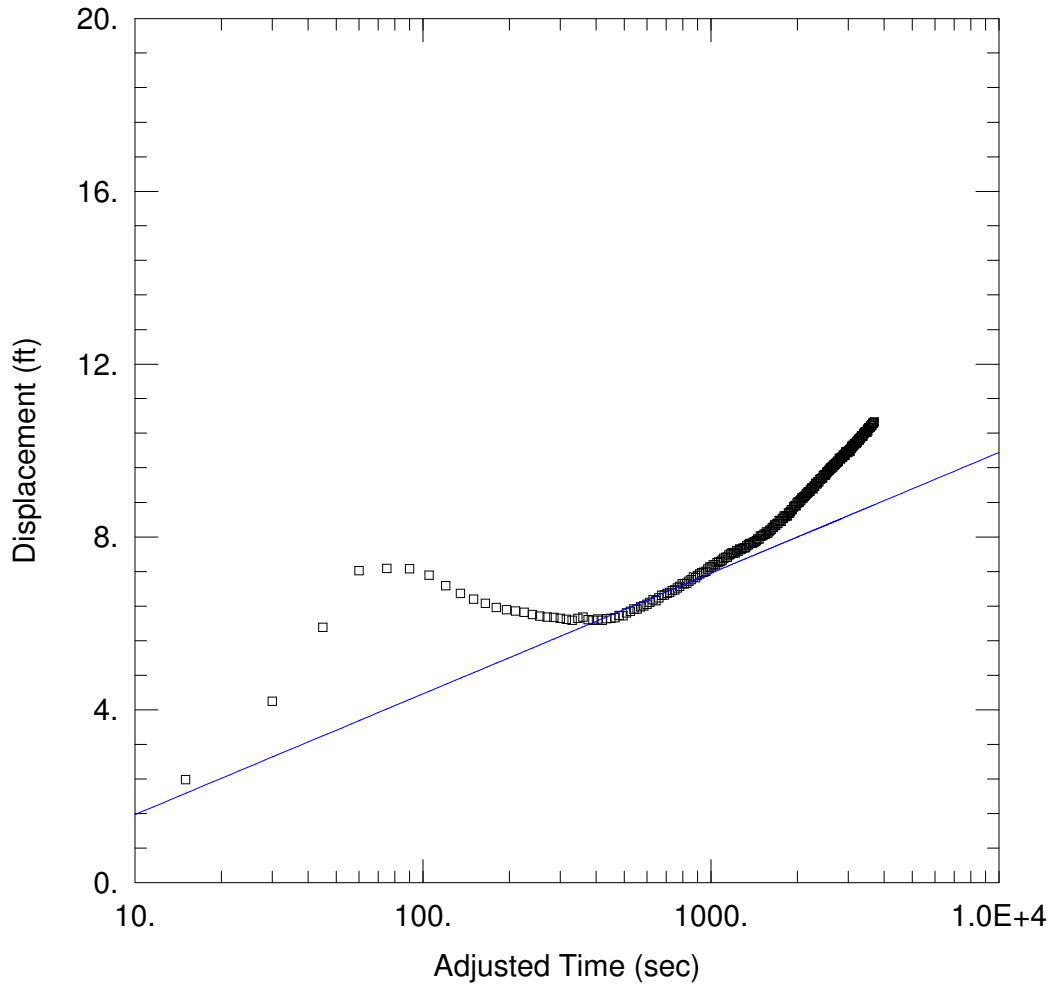
Solution Method: Theis

T = 38.84 ft²/day

S = 2.116E-6

Kz/Kr = 1.

b = 40. ft



WELL TEST ANALYSIS

Data Set: C:\...\173_pumping.aqt
 Date: 09/19/16

Time: 15:29:07

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Higland Mine
 Test Well: 173
 Test Date: 7/20/16

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
173	0	0

Well Name	X (ft)	Y (ft)
□ 173	0	0

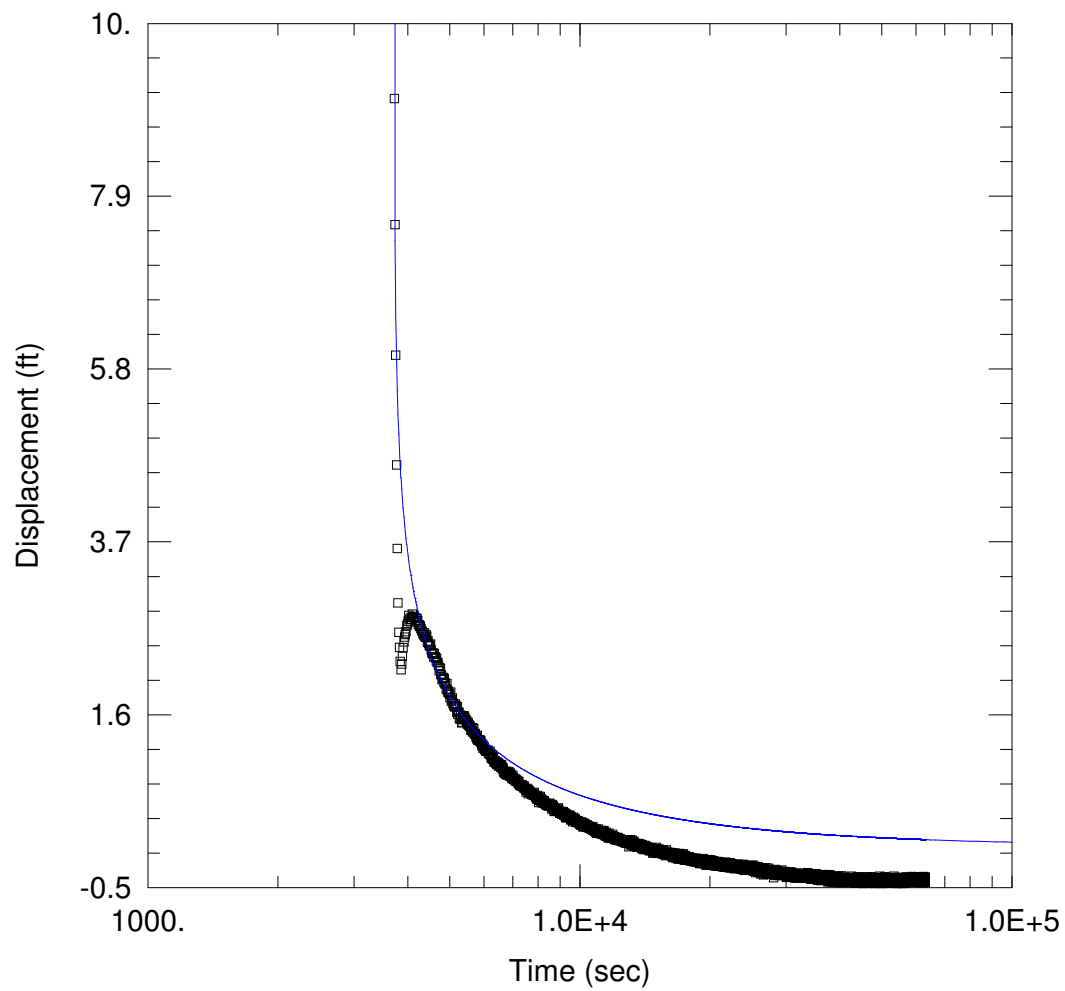
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 25.25 ft²/day

S = 0.06442



WELL TEST ANALYSIS

Data Set: C:\...\173_recovery.aqt
 Date: 09/19/16

Time: 15:29:09

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 173
 Test Date: 7/20/16

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
173	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ 173	0	0

SOLUTION

Aquifer Model: Confined

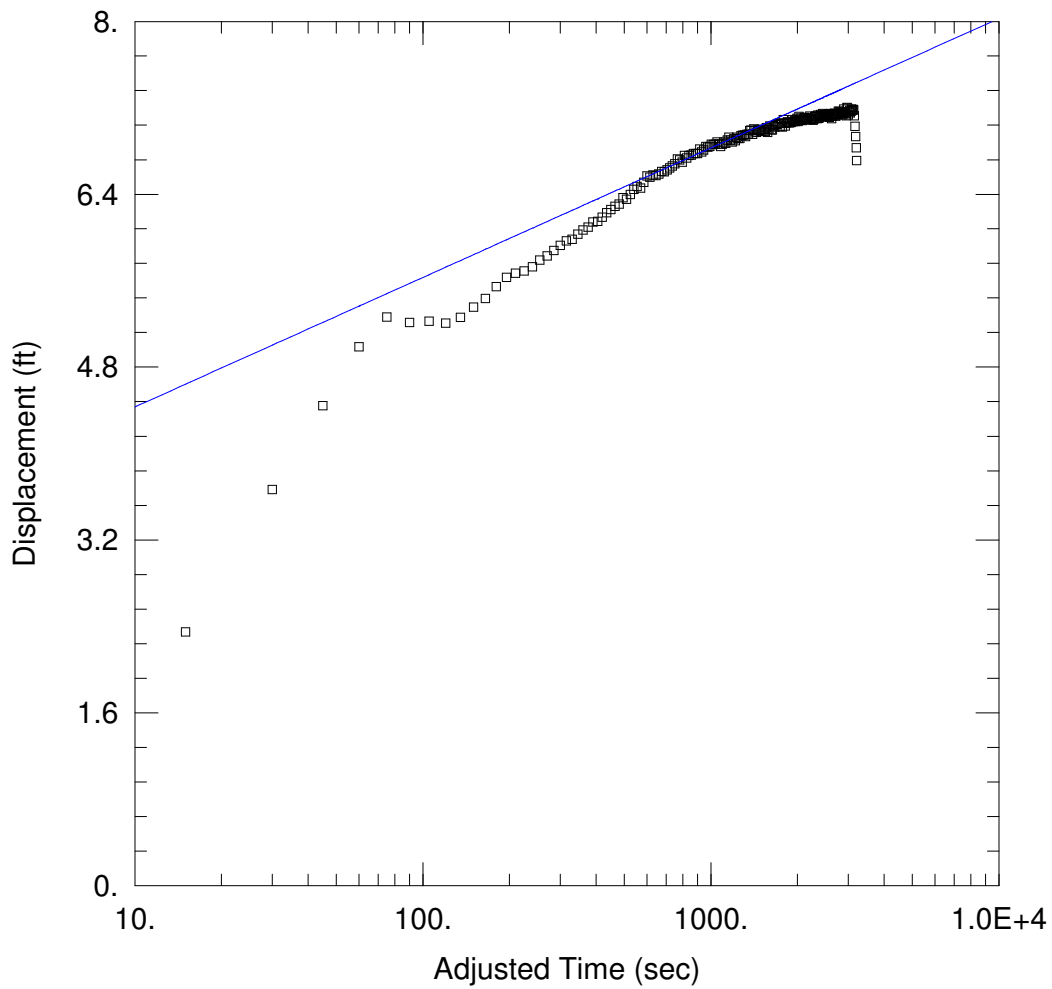
Solution Method: Theis

T = 22.96 ft²/day

S = 2.601E-7

Kz/Kr = 1.

b = 40. ft



WELL TEST ANALYSIS

Data Set: C:\...\8-BP_pumping.aqt
 Date: 09/19/16

Time: 15:29:03

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 8-BP
 Test Date: 7/21/16

AQUIFER DATA

Saturated Thickness: 30. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
8-BP	0	0

Well Name	X (ft)	Y (ft)
□ 8-BP	0	0

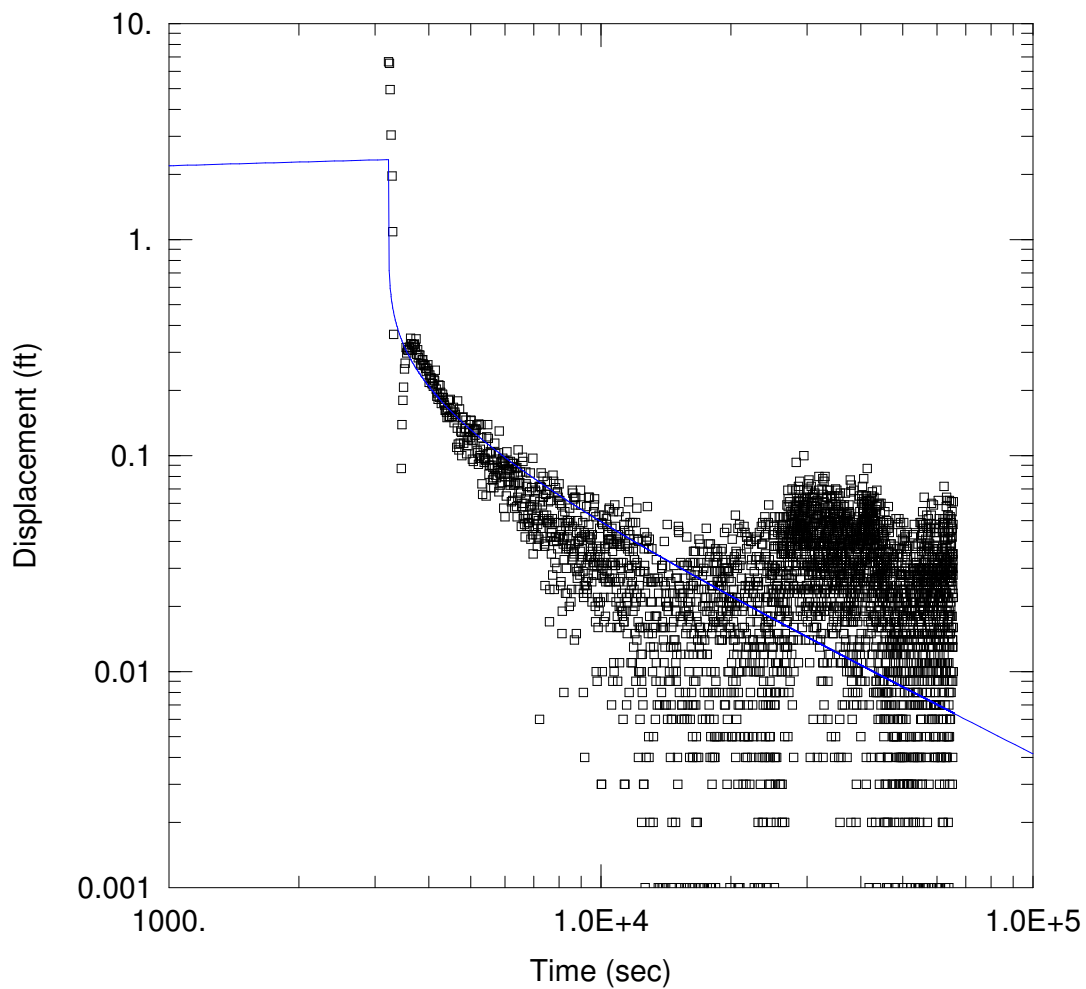
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 117.7 ft²/day

S = 0.0001422



WELL TEST ANALYSIS

Data Set: C:\...\8-BP_recovery.aqt
 Date: 09/19/16

Time: 15:29:06

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 8-BP
 Test Date: 7/21/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
8-BP	0	0

Well Name	X (ft)	Y (ft)
□ 8-BP	0	0

SOLUTION

Aquifer Model: Confined

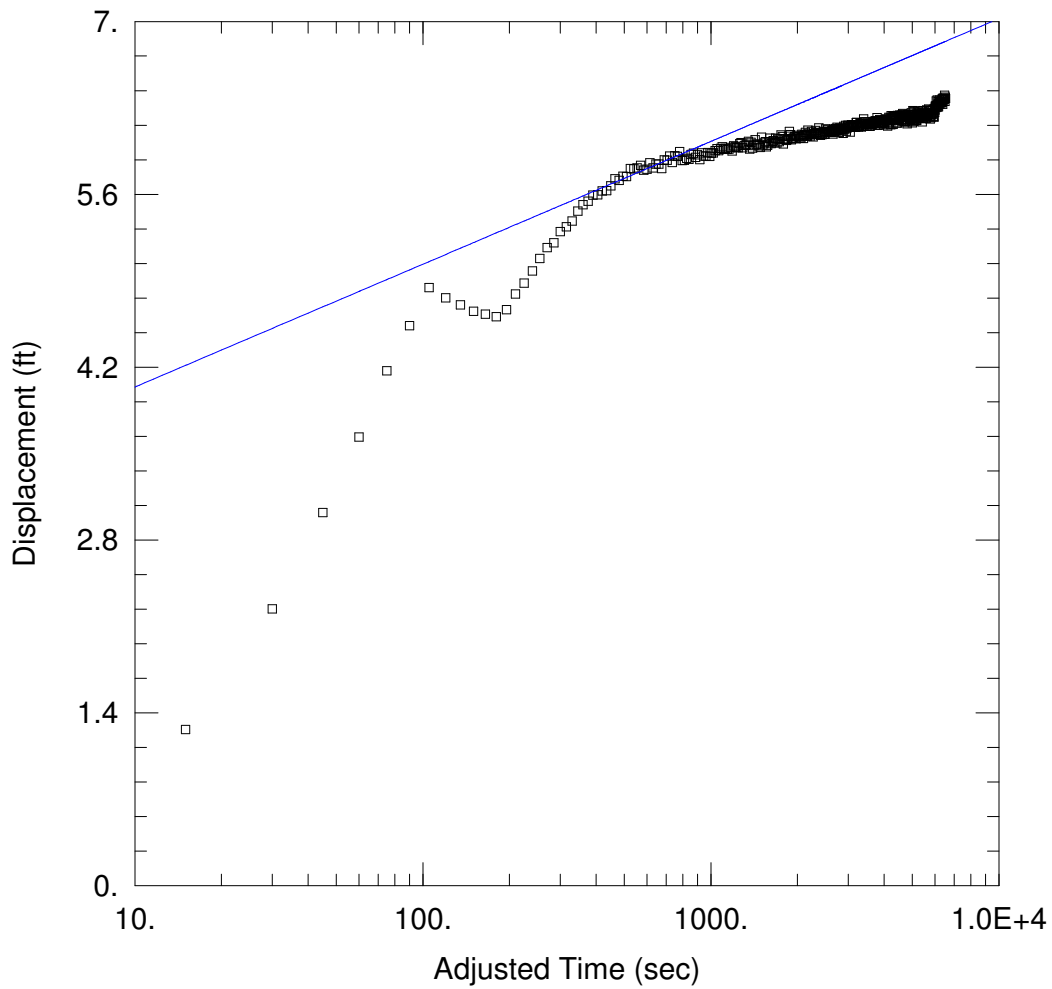
Solution Method: Theis

T = 482.4 ft²/day

S = 8.989E-6

Kz/Kr = 1.

b = 30. ft



WELL TEST ANALYSIS

Data Set: C:\...\174_pumping.aqt
 Date: 09/19/16

Time: 15:29:50

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 174
 Test Date: 7/22/16

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
174	0	0

Well Name	X (ft)	Y (ft)
□ 174	0	0

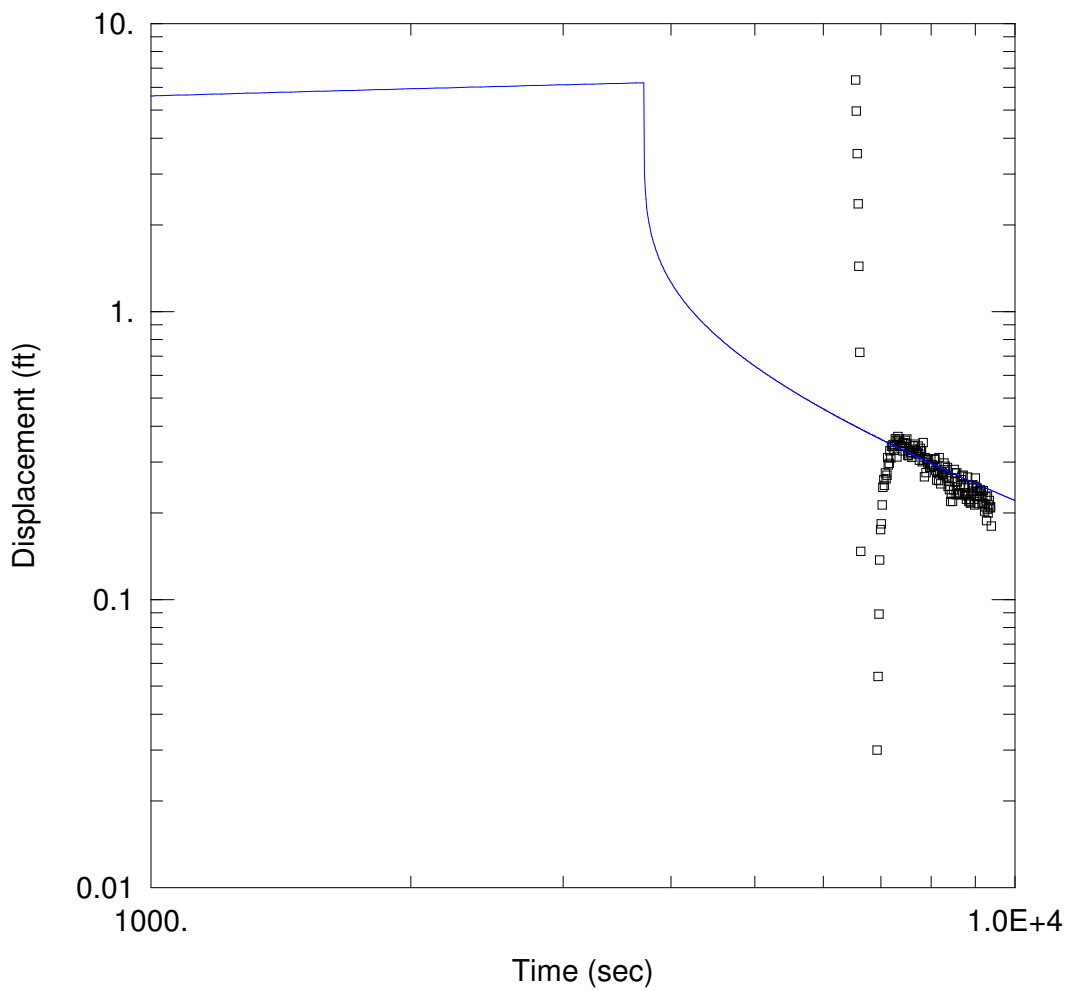
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 177.3 ft²/day

S = 0.0001443



WELL TEST ANALYSIS

Data Set: C:\...\174_recovery.aqt
 Date: 09/19/16

Time: 15:29:51

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 174
 Test Date: 7/22/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
174	0	0

Well Name	X (ft)	Y (ft)
□ 174	0	0

SOLUTION

Aquifer Model: Confined

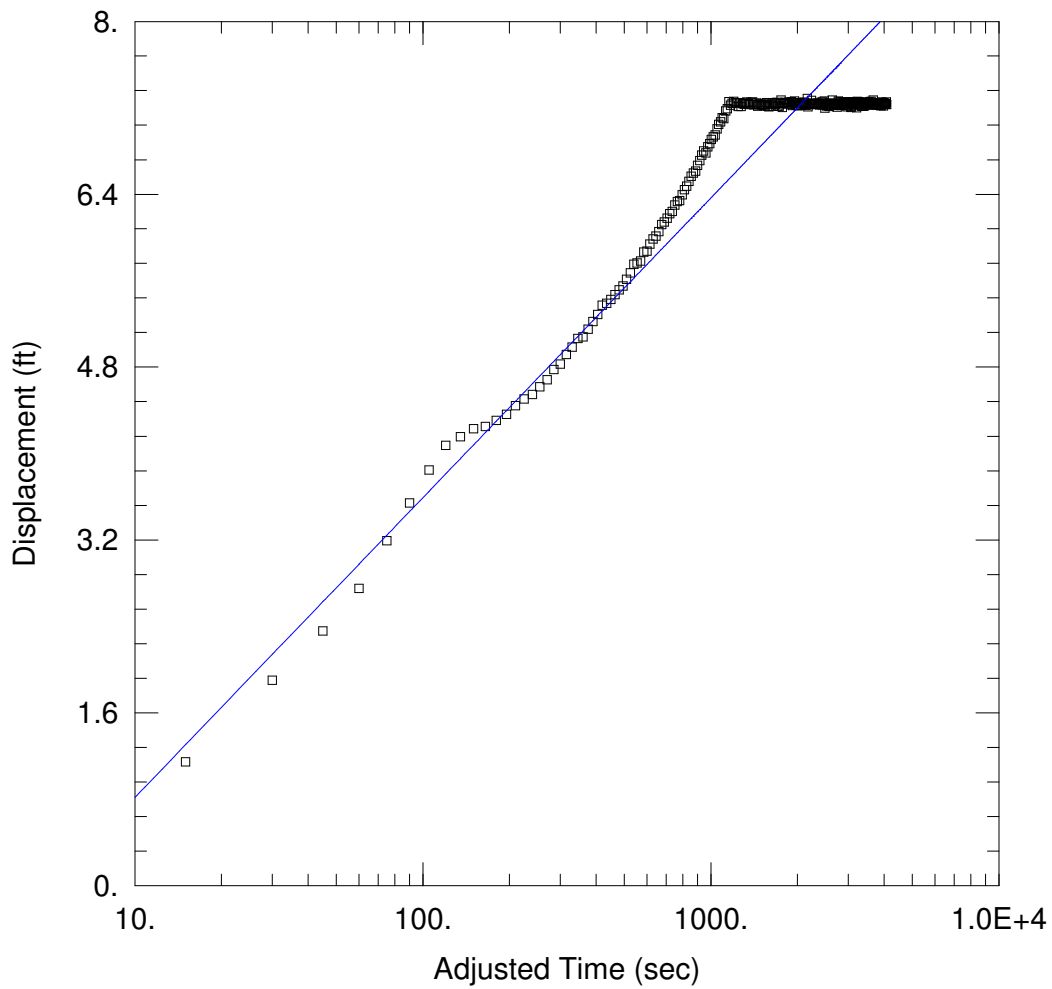
Solution Method: Theis

T = 64.56 ft²/day

S = 0.000448

Kz/Kr = 1.

b = 40. ft



WELL TEST ANALYSIS

Data Set: C:\...\6-TDSS_pumping.aqt
 Date: 09/19/16

Time: 15:28:13

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 6-TDSS
 Test Date: 7/21/16

AQUIFER DATA

Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
6-TDSS	0	0

Well Name	X (ft)	Y (ft)
□ 6-TDSS	0	0

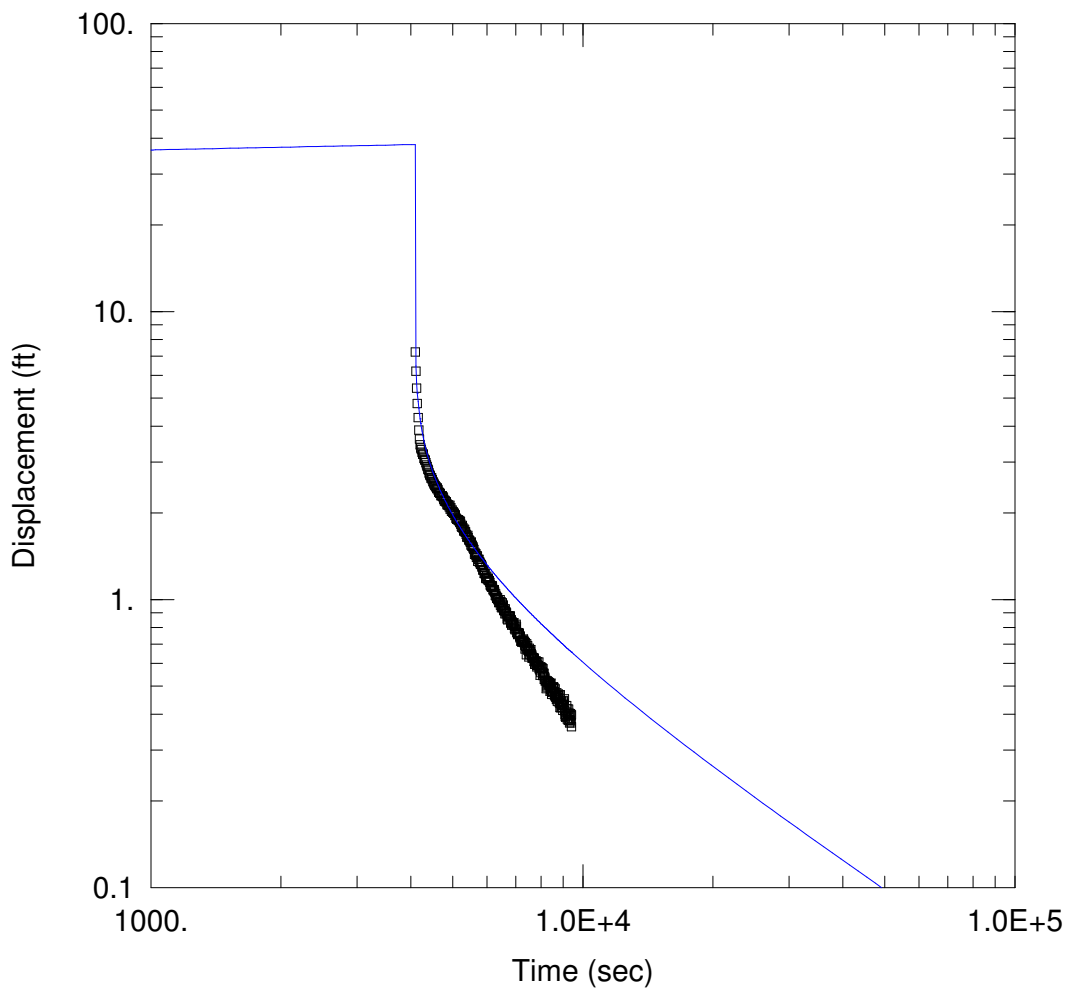
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 25.42 ft²/day

S = 0.07743



WELL TEST ANALYSIS

Data Set: C:\...\6-TDSS_recovery.aqt
 Date: 09/19/16

Time: 15:28:13

PROJECT INFORMATION

Company: AFW
 Client: ExxonMobil
 Location: Highland
 Test Well: 6-TDSS
 Test Date: 7/21/16

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
6-TDSS	0	0

Well Name	X (ft)	Y (ft)
□ 6-TDSS	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Theis

T = 26.65 ft²/day

S = 2.863E-13

Kz/Kr = 1.

b = 20. ft