
**Groundwater Data Acquisition
in Far West Texas**

Prepared for:

**Far West Texas Water Planning Group
and
Texas Water Development Board**

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1.0 Executive Summary

Far West Texas contains three Texas Water Development Board (TWDB)-designated major aquifers and six minor aquifers. In addition, there are a number of areas within the Region that have no aquifer designation but in which groundwater is the primary source of supply. The purpose of this project is the establishment of additional aquifer characterization data upon which to base further groundwater availability analyses. The acquisition of additional aquifer characterization data will benefit the Far West Texas Water Planning Group in better defining available water supplies in the region, and will also support groundwater conservation districts in their responsibility of managing supplies and evaluating future desired conditions.

New hydrologic data in the form of static water level and well yields is tabulated from driller's reports on wells that have been drilled in recent years in Brewster, Culberson, Jeff Davis, and Presidio Counties. Where possible, as in Jeff Davis and Presidio Counties, well identification is coordinated between groundwater conservation district tracking numbers and Texas Department of Licensing and Regulation tracking numbers. A limited number of new wells and updated existing well data in eastern Hudspeth County was field measured and observed.

Water samples were collected from 22 wells and springs using recognized standard procedures and the samples were analyzed for basic inorganic constituents. All analyses indicate excellent quality water with total dissolved solids ranging from 87 to 545 milligrams per liter (mg/l). Four aquifer pumping tests were conducted during this project with transmissivities ranging from 190 to 198,570 (gpd/ft) and an additional four pumping tests are included that have been performed in the area but are not noted in the TWDB groundwater files.



2.0 Introduction

Far West Texas contains three TWDB-designated major aquifers and six minor aquifers. In addition, there are a number of areas within the Region that have no aquifer designation but in which groundwater is the primary source of supply. There is currently a deficiency of hydrologic data on file to support groundwater supply availability analysis for much of the more rural portions of both the designated and non-designated aquifer areas. Due to the overwhelming reliance on groundwater, the Far West Texas Water Planning Group strongly feels that it is imperative that aquifer availability analyses be significantly improved such that they can have more confidence in strategy recommendations involving groundwater resources.

The purpose of this project is the establishment of an additional amount and distribution of aquifer characterization data upon which to base further groundwater availability analyses. The acquisition of additional aquifer characterization data will benefit the Far West Texas Water Planning Group in better defining available water supplies in the region, and will also support groundwater conservation districts in their responsibility of managing supplies and evaluating future desired conditions.

The preliminary task in this project was to review the existing distribution of well data in the TWDB groundwater database and determine areas that are deficient in well data coverage, with emphasis in areas of current or future groundwater availability modeling efforts. In pursuing this task, no additional data was identified in the Rustler Aquifer as only a small part of this aquifer lies within this Region. Likewise, no additional data of significance was identified in the West Texas Bolsons Aquifer that would result in improvements to the recently completed West Texas Bolsons Aquifer Groundwater Availability Model.

While the interest of this data acquisition project centered on the rural counties of Far West Texas, the desire to not overlap coexisting and impending projects allowed the focus to be narrowed to more specific rural areas. TWDB staff were contemporaneously collecting field data from wells completed in the Capitan Reef Aquifer in Culberson and Hudspeth Counties. By verbal coordination with TWDB field staff, we did not attempt to gather data for this aquifer other than recent driller's reports. We did offer to conduct pumping tests on Capitan Reef wells if the TWDB staff identified appropriate wells to test; however, no wells were identified. The Marathon Aquifer in Brewster County and the Edwards-Trinity (Plateau) Aquifer in Terrell



County are slated for more detailed attention in 2009 during the next round of regional water planning; therefore, these areas were not considered for pumping tests.

Based on the results of the preliminary task of identifying areas of well data distribution needs, we recommended to the Planning Group that we concentrate our efforts on areas of significant pumpage as these are the areas that are of the greatest importance in groundwater modeling exercises. The Planning Group agreed and we proceeded to complete the data acquisition and pumping tests. New water wells reported by water well drillers were surveyed, positioned on maps, and data filed in tables in Brewster, Culberson, Jeff Davis, and Presidio Counties. Aquifers that were covered in this survey included the Igneous, Edwards-Trinity (Plateau), Capitan, Rustler, West Texas Bolsons, and other undocumented aquifers. Water quality samples were collected and analyzed, and pumping test were performed on Igneous Aquifer wells in Brewster, Jeff Davis, and Presidio Counties.

Activities involved in this project were coordinated with Sul Ross State University and groundwater conservation district managers. Sul Ross State University is a member of the Texas State University System, which is currently participating in the US Department of Agriculture's "Sustainable Agricultural Water Conservation in the Rio Grande Basin" research project. Specifically, Sul Ross staff participated in this project by assisting in the selection of pumping test sites, providing measuring equipment, and assisting with the actual testing process in the field. Groundwater conservation district managers in Brewster, Culberson, Jeff Davis and Presidio Counties participated in the project by sharing well records and assisting with gaining landowner permission to conduct pumping tests and collect water samples. The Jeff Davis UWCD is the only district with data not on file with the state (see Table A.3).



3.0 Groundwater Data Acquisition

3.1 Well Data

A significant number of wells are currently documented in the TWDB groundwater database (Figure 3.1). New hydrologic data not in the TWDB database in the form of static water levels and well yields are tabulated from driller's reports on wells that have been drilled in recent years in Brewster, Culberson, Jeff Davis, and Presidio Counties. Locations of these new wells are shown in Figures 3.2 through 3.5 and tables listing the wells are provided in Appendix A (Tables A.1 – A.5). Where possible, as in Jeff Davis and Presidio Counties, well identification is coordinated between groundwater conservation district identification numbers and Texas Department of Licensing and Regulation tracking numbers. It should be noted that these wells have not been field surveyed and, therefore, latitude and longitude coordinates as provided by the reporting driller may be subject to error. A limited number of new wells and updated well data in eastern Hudspeth County was field measured and observed (Appendix A: Table A.5).

3.2 Water Quality

The TWDB maintains numerous water quality analyses in its groundwater database. Figure 3.6 shows the distribution of wells from which these water quality analyses were derived. For this project, water samples were collected from 22 wells and springs (Figure 3.7) using recognized standard collection procedures. The samples were sent to a reputable laboratory to be analyzed for basic inorganic constituents. A summary of these analyses is listed in Table 3.1. All analyses indicate excellent quality water with total dissolved solids ranging from 87 to 545 mg/l.



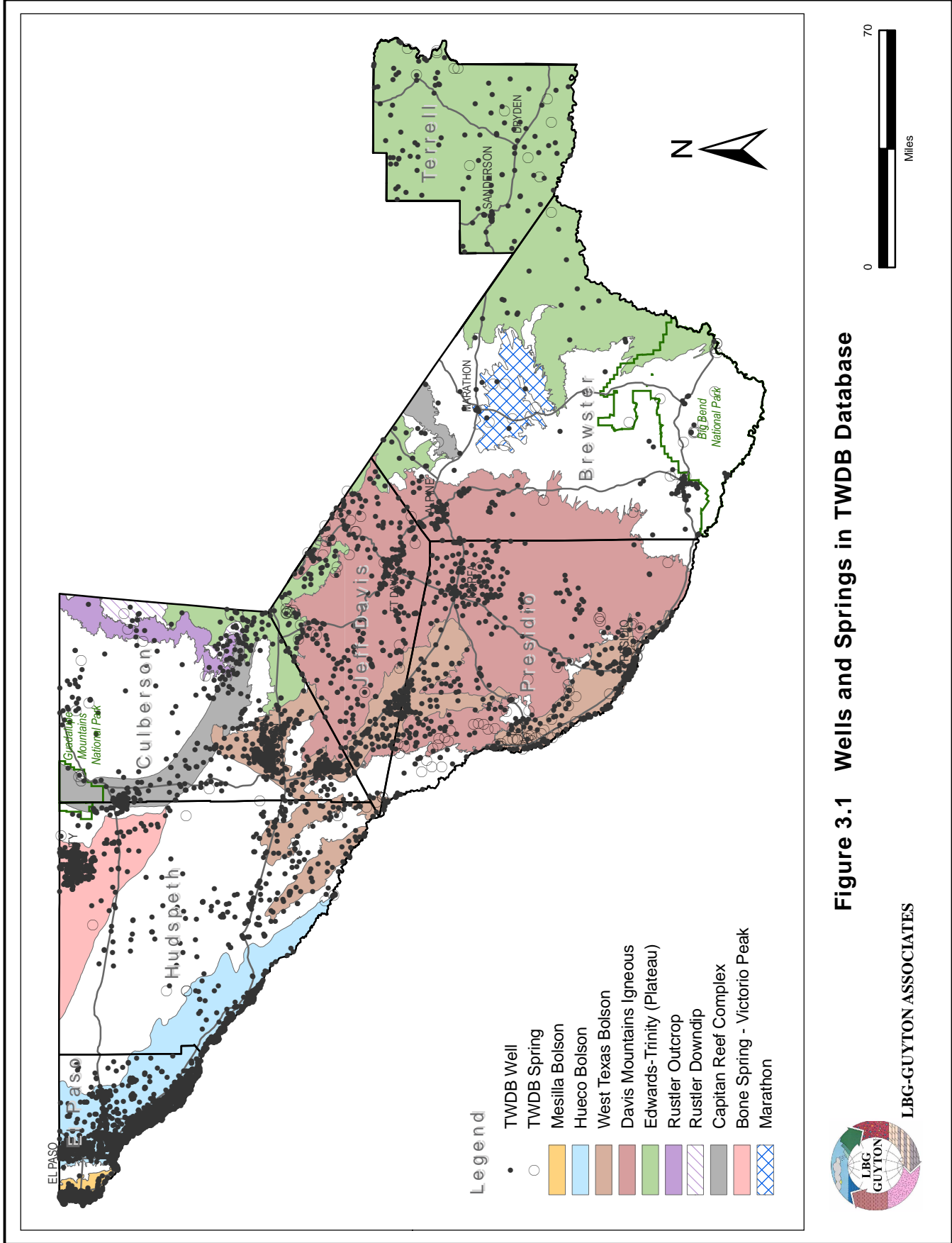


Figure 3.1 Wells and Springs in TWDB Database



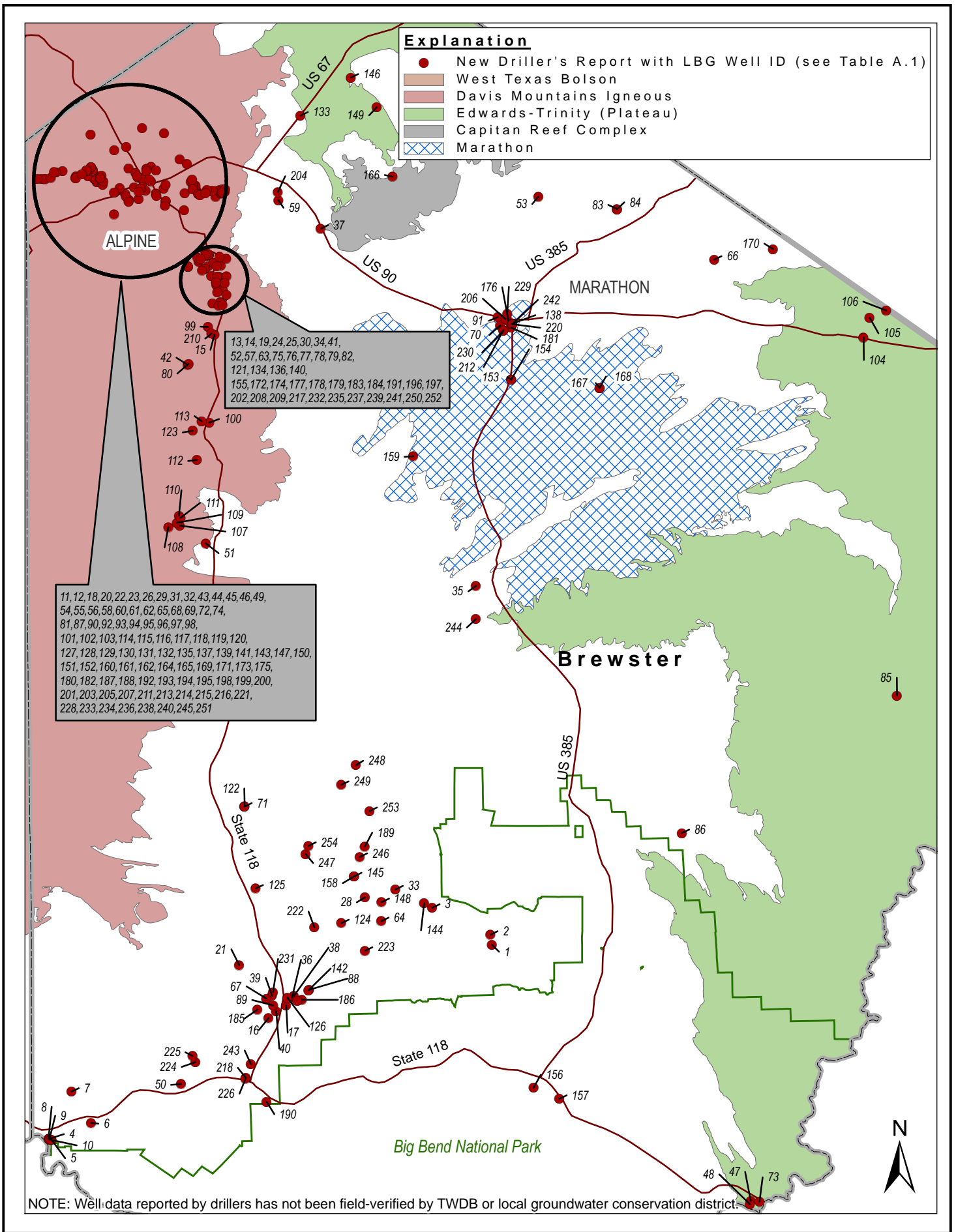


Figure 3.2 Brewster County New Wells Reported by Water Well Drillers



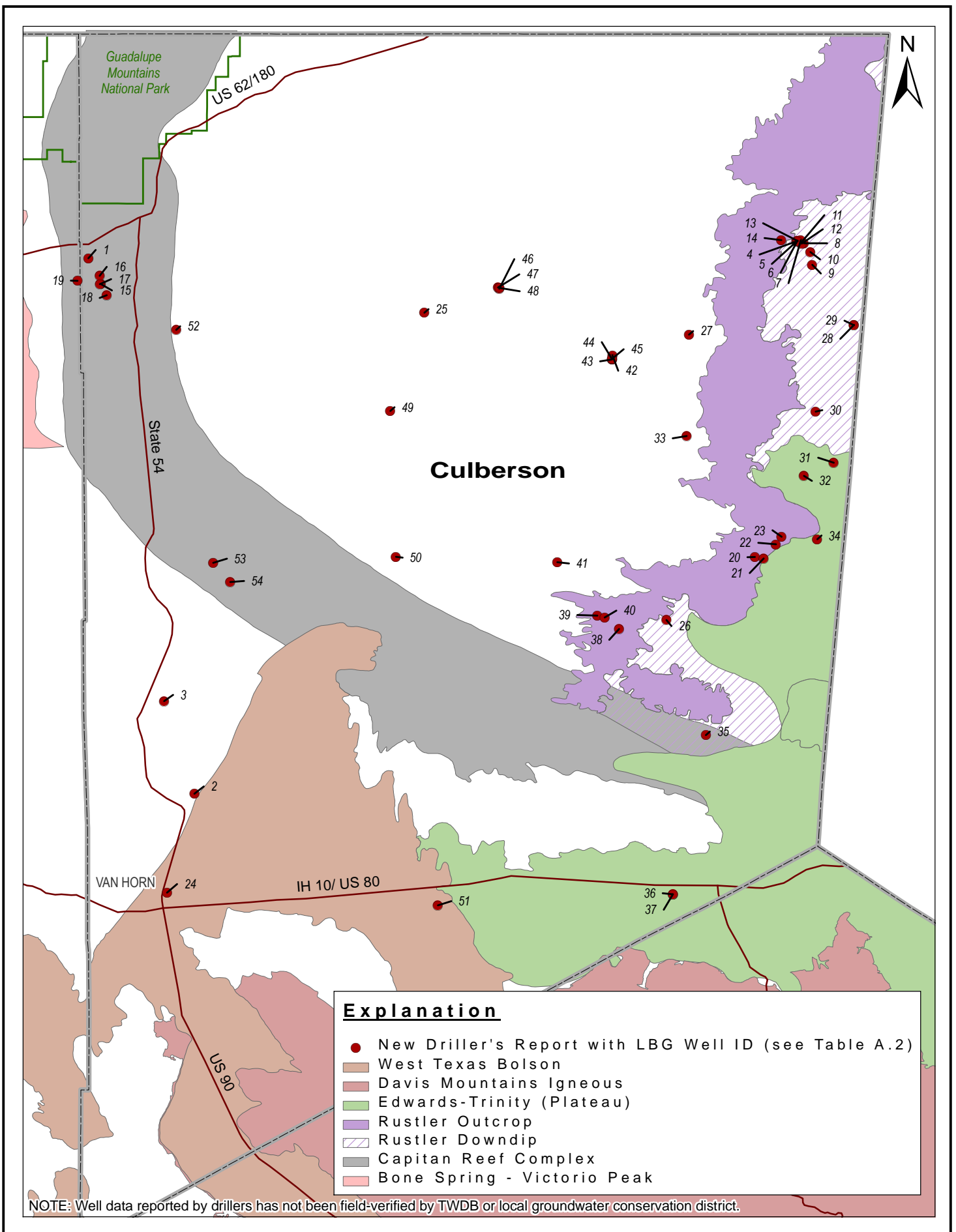


Figure 3.3 Culberson County New Wells Reported by Water Well Drillers



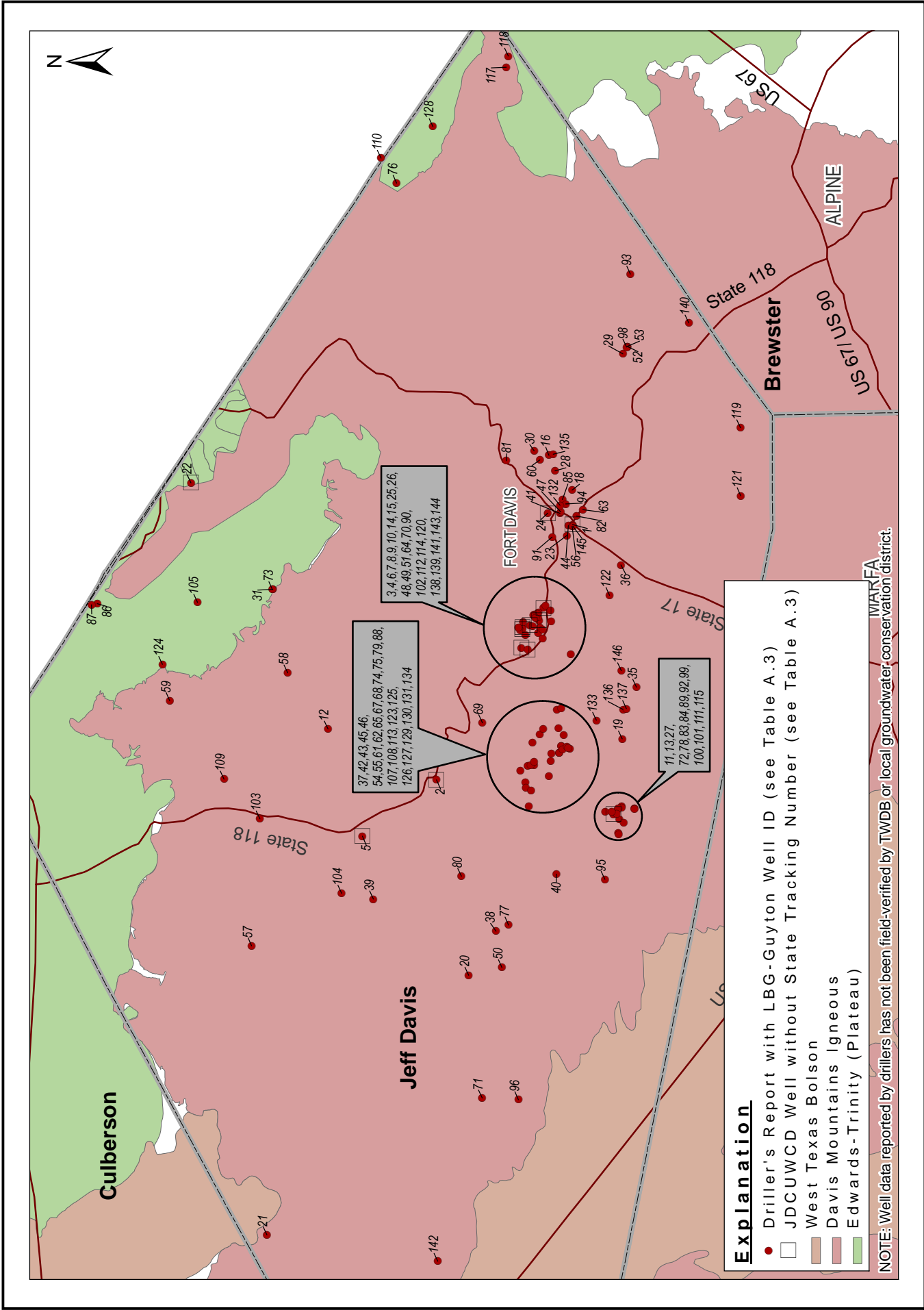


Figure 3.4 Jeff Davis County New Wells Reported by Water Well Drillers



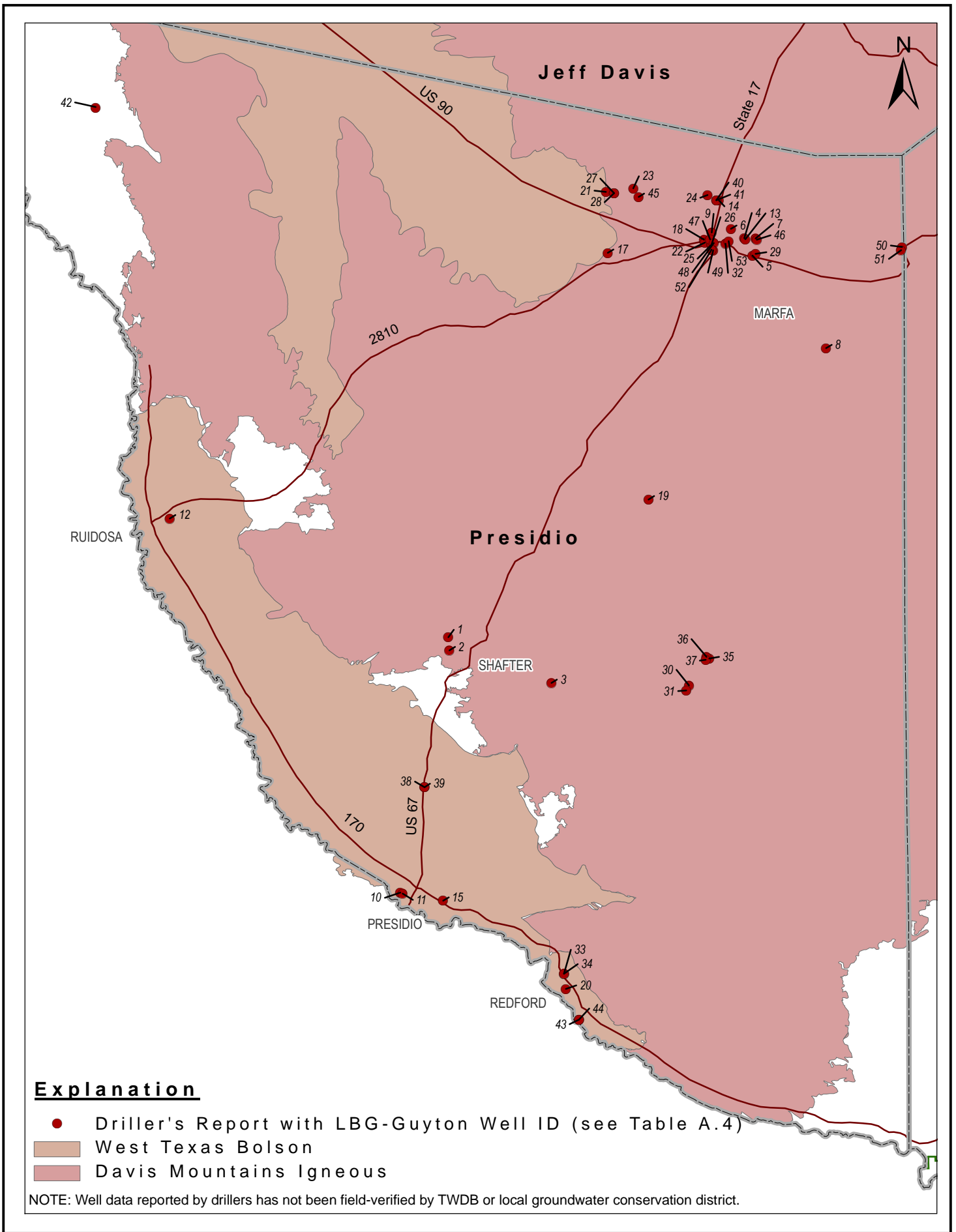


Figure 3.5 Presidio County New Wells Reported by Water Well Drillers



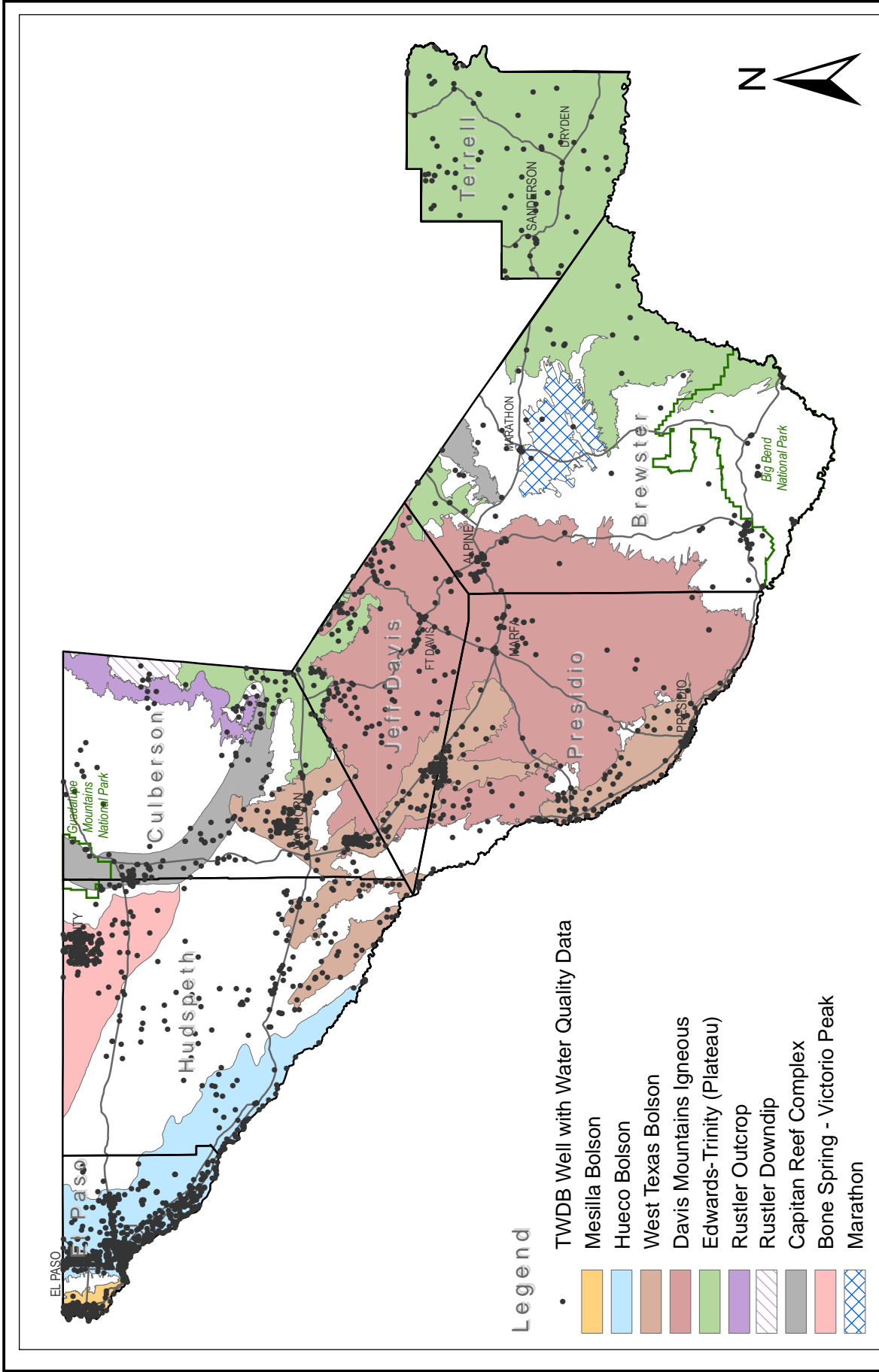
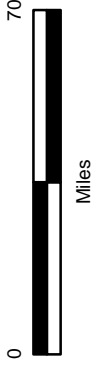


Figure 3.6 Wells with Water Quality Data in TWDB Database



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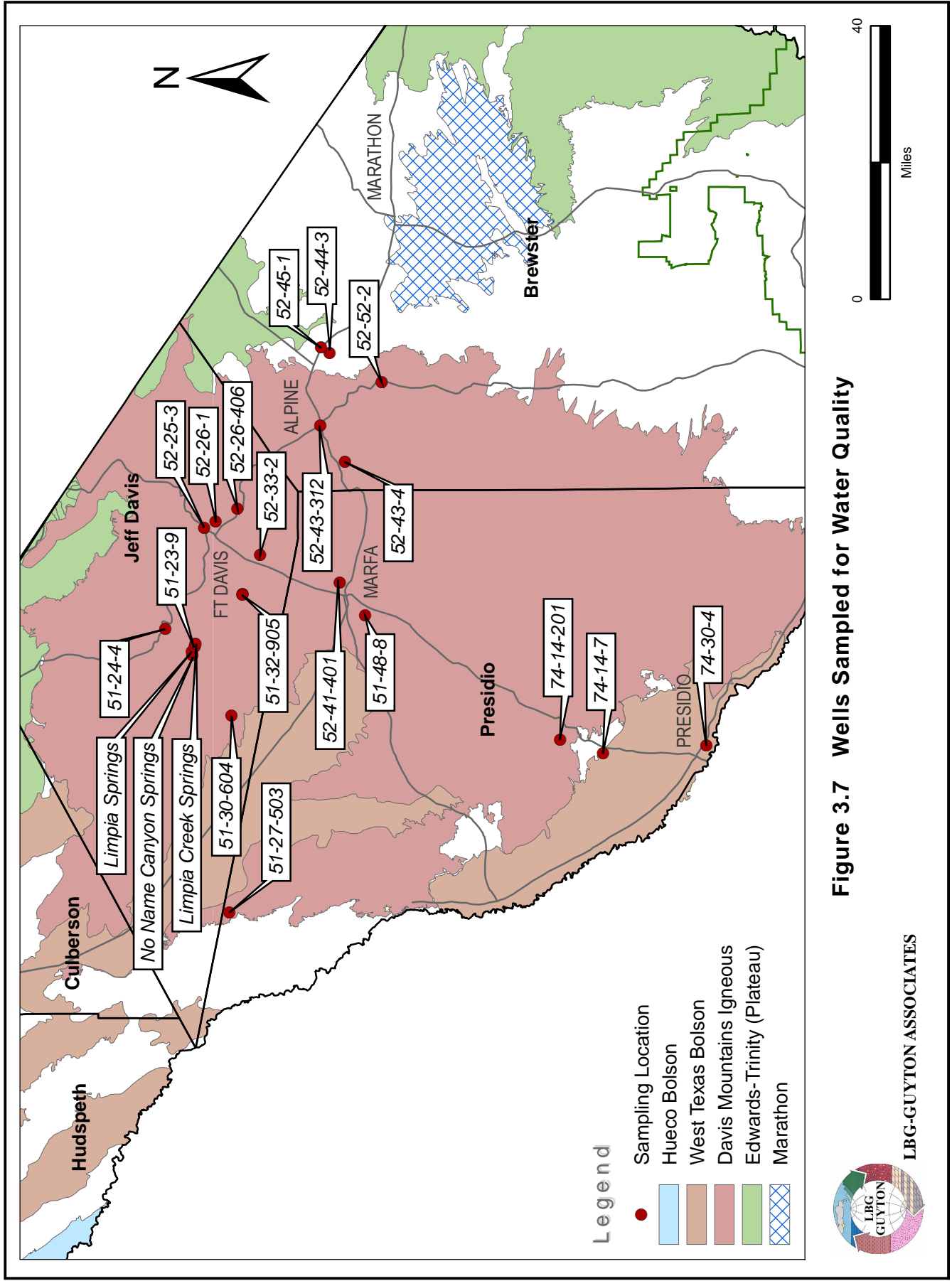


Figure 3.7 Wells Sampled for Water Quality



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Table 3.1
Water Quality Analyses

(all units in mg/L)

State Well ID or Grid Number	Collection Date	Alkalinity, Bicarbonate (As CaCO ₃)	Calcium	Chloride	Fluoride	Magnesium	Nitrogen, Nitrate & Nitrite	Potassium	Silica, Dissolved (as SiO ₂)	Sodium	Sulfate	Total Dissolved Solids
51-23-9	11/6/2008	150	45.0	3.88	1.07	7.53	0.24	1.37	50.9	16.4	7.58	211
51-23-9*	11/6/2008	72	25.5	3.52	0.26	5.22	ND	2.06	38.1	7.16	17.0	141
51-23-9*	11/6/2008	174	47.7	4.37	0.56	10.3	ND	2.17	42.4	14.2	12.7	237
51-23-9*	11/6/2008	41	13.0	2.88	0.37	2.64	0.03	1.81	35.9	6.71	9.26	87
51-24-4	11/4/2008	176	45.0	7.96	1.74	7.52	0.55	1.68	57.1	31.4	9.76	252
51-27-503	11/4/2008	262	57.7	5.90	1.40	5.87	1.35	2.11	61.7	66.3	19.1	361
51-30-604	11/8/2008	204	36.9	12.1	3.29	13.3	1.62	2.81	50.1	50.1	19.9	291
51-32-905	11/7/2008	152	44.2	11.4	2.48	10.1	1.33	4.40	50.8	22.7	14.7	241
51-48-8	11/5/2008	154	37.7	16.8	2.18	3.78	5.41	8.60	83.7	56.2	25.5	328
52-25-3	11/8/2008	97	28.8	4.80	1.23	3.70	ND	2.70	39.7	12.1	10.4	159
52-26-1	11/5/2008	181	50.7	14.8	1.86	10.6	1.56	4.31	50.5	28.4	19.4	281
52-26-406	11/3/2008	179	45.1	11.1	2.28	9.53	0.76	4.05	52.8	31.1	14.3	239
52-33-2	11/4/2008	166	37.3	13.7	3.36	10.5	1.29	4.59	50.0	34.4	17.6	259
52-41-401	11/5/2008	150	27.2	21.2	3.24	3.13	2.17	5.89	67.2	73.8	47.0	327
52-43-312	11/7/2008	284	83.9	40.6	0.98	20.1	6.19	2.10	63.8	59.4	58.9	512
52-43-4	11/7/2008	176	58.8	11.2	1.62	4.91	1.11	2.58	57.9	25.1	11.3	277
52-44-3	11/7/2008	261	113	6.19	0.53	19.9	ND	2.10	14.9	8.70	90.3	431
52-45-1	11/7/2008	328	8.69	10.8	4.56	5.67	ND	1.62	14.2	151	ND	403
52-52-2	11/7/2008	368	1.03	11.6	2.64	ND	ND	0.615	28.0	211	21.9	545
74-14-201	11/5/2008	182	57.4	7.16	0.90	7.08	1.59	3.43	47.2	20.3	15.9	278
74-14-7	11/8/2008	173	44.8	24.2	0.86	14.7	1.00	2.94	21.0	37.4	39.3	296
74-30-4	11/5/2008	167	14.1	24.2	1.36	2.20	2.16	3.71	86.6	97.4	47.7	356

* - Spring Sample
ND - Not Detected

4.0 Aquifer Pumping Tests

When a well is pumped and water is withdrawn from an aquifer, water levels in the vicinity are drawn down to form an inverted cone with its apex located at the pumping well. This is referred to as a cone of depression. Groundwater flows from higher water levels to lower water levels and, therefore, in the case of a pumping well, toward the well or the center of the cone of depression. The shape and size of the cone is directly related to the aquifer's hydraulic parameters. Pumping tests are the accepted standard for evaluating this cone of depression, and thus determining an aquifer's capacity to produce water.

Areas of specific interest in conducting pumping tests were those in which the aquifer was undergoing the most pumping stress. Municipal well fields and irrigation projects were most characteristic of this condition. The technical selection of wells to be tested was based on the following requirements:

- A working pump in the pumping well.
- A method to discharge water away from the immediate vicinity of the well.
- A method of estimating the rate of discharge.
- An available entry port for access of measuring equipment.
- Agreement by the land/well owner to allow the continuous pumping to occur for a designated minimum time period.
- Agreement by the land/well owner that test results would be made publically available.
- And also important to the validity of the results of the test, that a separate observation well be available in which to monitor water level change at a specified distance from the pumping well.

As discussed in the Introduction section of this report, certain areas were not considered for testing because of the desire to not overlap existing or impending project areas. Thus the Capitan Reef, Marathon, and Edwards-Trinity (Terrell County) Aquifers were not considered for this round of testing.

Figure 4.1 shows wells contained in TWDB and TCEQ databases that provide various forms of well production characterization. In some cases the data may represent transmissivity



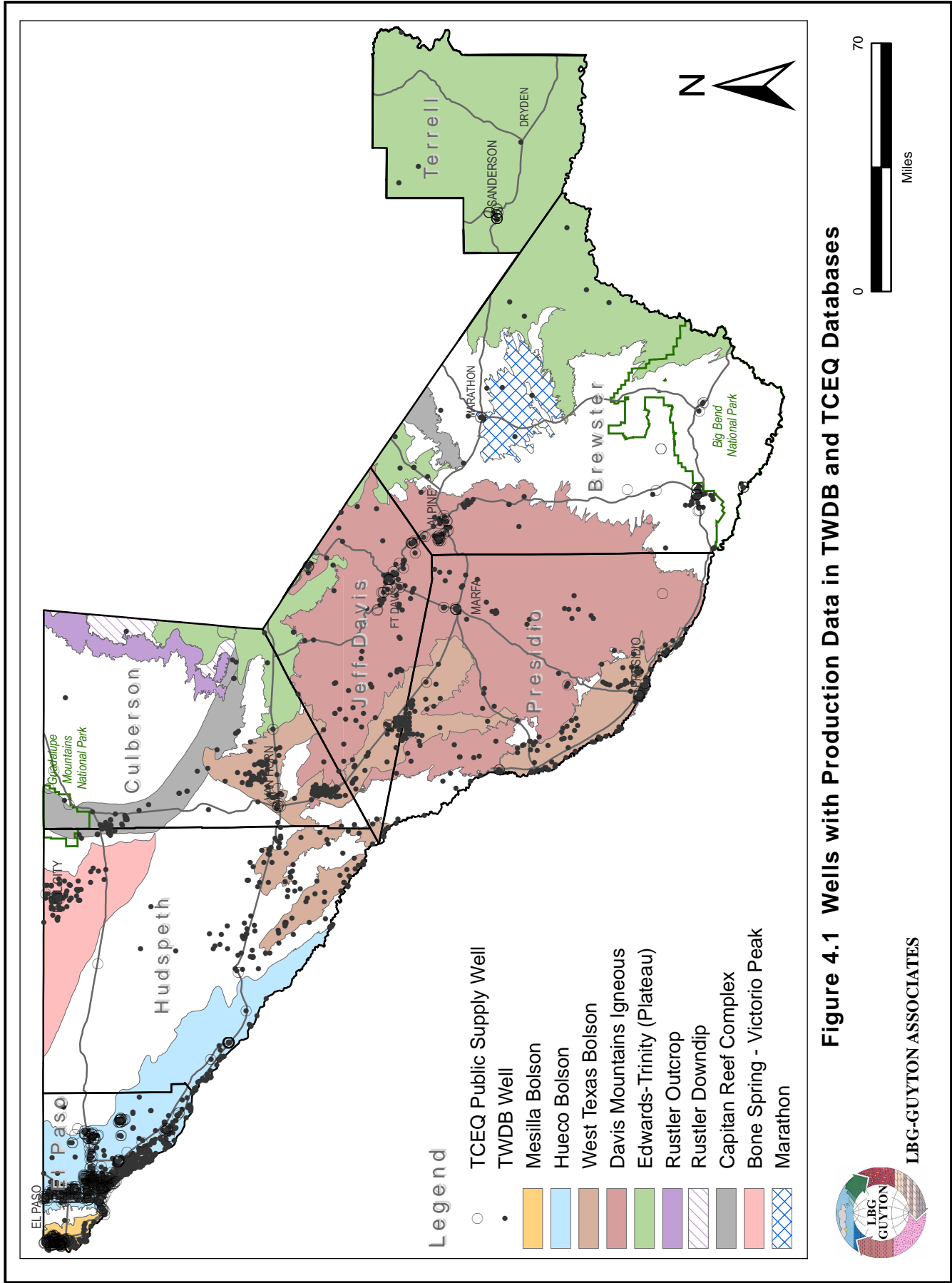
calculations from a complete pumping test, while others may contain simple well yield (gallons per minute) estimates by the water well driller or well yield and total water-level drawdown (specific capacity).

Figure 4.2 provides the location of wells in which current pumping tests were performed for this project, along with the location of other pumping tests that are not available in the TWDB groundwater database. Table 4.1 provides a list of wells used in both the current and previous pumping tests. Results of these pumping tests are provided in Appendix B and C.

Individuals that provided significant assistance in performing the pumping tests include:

- Ms. Janet Adams - Manager of the Jeff Davis County and Presidio County Underground Water Conservation Districts
- Dr. Kevin Urbanczyk - Sul Ross State University
- Ms. Cindy Hollander - Utility Department Manager, City of Alpine





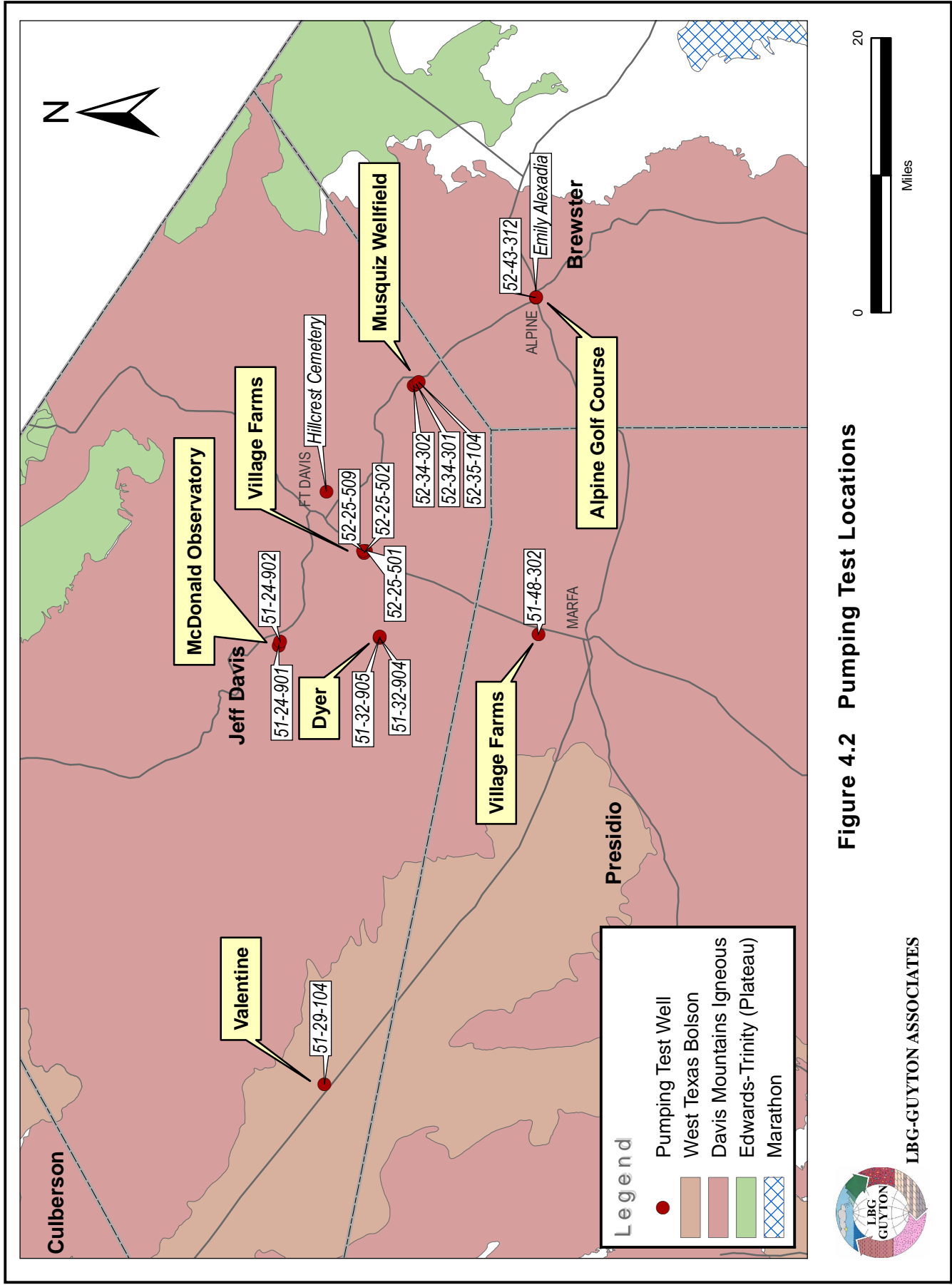


Figure 4.2 Pumping Test Locations

Table 4.1 Wells Used in Pumping Tests

	Well	State Well Number	Well Status	Start date	Latitude	Longitude	Pumping Well Transmissivity (gpd/ft)	Observation Well Transmissivity (gpd/ft)
Current Pumping Tests	City of Alpine Golf Course							
	Golf Course	52-43-312	Pumping	10/15/2008	30.3652	-103.6607	5,170 - 10,435	
	Emily Alexadia		Observation	10/15/2008	30.3649	-103.6600		12,020
	Hillcrest Cemetery							
	Hillcrest Cemetery		Pumping	11/4/2008	30.5868	-103.8653	21,320	
	Dyer Ranch							
	Dyer (West- Big)	51-32-904	Pumping	11/6/2008	30.5304	-104.0203	63,190	
	Dyer (East - Stock)	51-32-905	Observation	11/6/2008	30.5303	-104.0186		59,400
	City of Alpine Musquiz Well Field							
	Musquiz 10	52-34-302	Pumping	11/12/2008	30.4946	-103.7534	173,750	
Musquiz 7	52-34-301	Observation	11/12/2008	30.4918	-103.7519		115,830	
Musquiz 6	52-35-104	Observation	11/12/2008	30.4892	-103.7499		198,570	
Valentine								
		51-29-104	Pumping	4/14/2004	30.5889	-104.4911	708	
McDonald Observatory #1								
		51-24-901	Pumping	3/31/1999	30.5889	-104.4911	1,930 - 2,280	
McDonald Observatory #2								
		51-24-902	Pumping	3/30/1999	30.6372	-104.0278	190 - 950	
Village Farms Ft Davis Production 2								
		52-25-502	Pumping	12/21/1995	30.5450	-103.9278	2,689 - 2,535	
Village Farms Ft Davis Production 3								
		52-25-501	Pumping	12/18/1995	30.5469	-103.9300	2,264 - 2,748	
Village Farms Ft Davis Production 4								
		52-25-509	Pumping	12/19/1995	30.5478	-103.9281	3,406	
Village Farms Marfa								
		51-48-302	Pumping	3/26/1997	30.3625	-104.0161	2,857	
Previous Pumping Tests								

5.0 Conclusions and Recommendations

The Texas Legislature, through the Texas Water Development Board, has designated 16 groundwater management areas (GMA), each of which incorporates all or significant portions of the major and minor aquifer systems in the state. The rural counties of Far West Texas are located within GMA 3, 4 and 7. Groundwater conservation districts (GCD) in each GMA are charged with developing the "desired future conditions" (DFC) of their respective aquifers. Based on these DFCs, the TWDB will develop "managed groundwater availability" (MGA) volumes for each aquifer, which each GCD must use in their water management permitting procedures. Regional Water Planning Groups will also be required to use these aquifer MGA volumes when assessing water supply management strategies in future plans.

A key factor in establishing the preliminary DFCs and the ultimate MGAs is knowing how much groundwater is being pumped from each aquifer and for what purpose. To estimate this quantity, it is essential to know the number and use of wells in each county. At the present time, the groundwater conservation districts in this Region are at different stages of developing an inventory of all wells in their respective districts. Although the water well driller's data included in this report is unconfirmed, it still provides a significant step forward in starting or continuing groundwater conservation district water well inventories.

To support the goal of securing better hydrogeologic characterization of the numerous aquifers in the Region, the Far West Texas Water Planning Group, with the assistance of the Texas Water Development Board, has continued a program of basic water well data acquisition. The goal of the current project was to produce information pertaining to: (1) the number and location of new wells that have been drilled in the past 10 years; (2) additional water quality analysis of samples of wells and springs that had not been previously sampled; and (3) pumping tests of several, mostly high-capacity wells. This project produced water well drillers data on more than 500 wells, water quality analyses from 22 wells and springs, and aquifer characterization information determined from eight pumping test centers.

The next step in the Far West Texas program of aquifer characterization is currently underway as pumping tests and well data inventories are being conducted in the Marathon Aquifer in Brewster County and the Edwards-Trinity (Plateau) Aquifer in Terrell County.



APPENDIX A
New Water Well Data by County



Table A.1
Brewster County New Wells

LBG WELL ID	TDLR TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
1	514	73-38-3	29.48528	-103.26056	2/8/2001	3541	210			Crass	D
2	515	73-38-3	29.49694	-103.26222	2/16/2001	3830	267			Crass	D
3	516	73-30-8	29.52805	-103.32944	2/22/2001	3090	170			Crass	D
4	2076	73-42-9	29.26083	-103.77278	7/15/2001	2330	1040	165	450	Geoprojects	Ir
5	2077	73-42-9	29.25972	-103.76944	7/30/2001	2345	984	167	450	Geoprojects	Ir
6	2078	73-43-7	29.27944	-103.72389	7/15/2001	2540	660	72	300	Geoprojects	In
7	2079	73-43-4	29.31556	-103.74667	7/15/2001	2780	800			Geoprojects	In
8	2114	73-42-9	29.26139	-103.77305	8/11/2001	2330	1040	67	400	Geoprojects	Ir
9	4099	73-42-9	29.26028	-103.77222	11/30/2001	2330	1160	165	250	Geoprojects	PS
10	4101	73-42-9	29.26000	-103.77083	11/30/2001	2340	983	165.6	250	Geoprojects	PS
11	8642	52-35-8	30.38194	-103.68055	6/21/2002	4470	300'	85'	8	Armadillo	D
12	8654	52-42-3	30.37000	-103.77722	6/25/2002	4880	280'	95'	20	Armadillo	D
13	8750	52-44-8	30.26944	-103.57417	6/27/2002	5310	200'	116'	80+	Armadillo	D
14	12277	52-44-7	30.26917	-103.58889	9/18/2002	5241	400'	85	8	Armadillo	D
15	12333	52-52-5	30.19000	-103.58139	9/23/2002	5003	300'	202'	12	Armadillo	D
16	12572	73-36-9	29.40056	-103.51861	10/2/2002	3000	600'	127'	80+	Armadillo	D
17	12888	73-37-7	29.41500	-103.49833	10/11/2002	3170	160'	103'	2-3	Armadillo	D
18	14011	52-43-2	30.35250	-103.68472	11/6/2002	4537	200'	63'	30+	Armadillo	D
19	14084	52-52-2	30.24083	-103.57139	11/11/2002	5322	600'	89'	5	Armadillo	D
20	14402	52-35-9	30.38361	-103.65472	11/14/2002	4387	300'	36'	8	Armadillo	D
21	15233	73-36-2	29.46167	-103.55278	10/29/2002	3205	1400'	1114'	30	Armadillo	D
22	15858	52-35-8	30.40667	-103.68333	1/13/2003	4407	1010'	231'	2	Armadillo	D
23	16199	52-35-8	30.40278	-103.69722	11/21/2003	4467	680'	302'	100+	Armadillo	D
24	16406	52-44-7	30.27833	-103.59972	1/27/2003	5202	400'	73'	12	Armadillo	D
25	16417	52-44-7	30.28111	-103.59000	1/28/2003	5180	144'	52'	60	Armadillo	D
26	16624	52-43-2	30.34556	-103.68000	1/30/2003	4555	320'	52'	100+	Armadillo	D
27	16697	52-25-1	30.61889	-103.99250	2/5/2003	5330	565'	309'	90-100	Armadillo	D
28	16912	73-29-9	29.54028	-103.40722	3/10/2003	3430	600'	297'	1	Armadillo	D
29	17700	52-43-2	30.35944	-103.69083	2/28/2003	4565	260'	88'	100+	Armadillo	D
30	17702	52-44-7	30.28583	-103.59194	3/25/2003	5125	230'	22'	50	Armadillo	In
31	18597	52-43-3	30.35944	-103.66583	3/21/2003	4478	240'	132'	60	Armadillo	D
32	20924	52-43-1	30.37000	-103.72028	5/22/2003	4675	600'	231'	25	Armadillo	D
33	22575	73-30-4	29.54917	-103.37194	6/23/2003	3162	580'	202'	30	Armadillo	Ir
34	22578	52-44-8	30.25083	-103.57972	7/2/2003	5320	360'	195'	15	Armadillo	D
35	23897	73-06-9	29.89972	-103.27917	6/30/2003	3222	150'	84'	10	Armadillo	Ir
36	24376	73-37-4	29.42417	-103.49167	8/11/2003	3310	200'	119'	6	Armadillo	D
37	24891	52-45-4	30.31222	-103.45833	6/29/2003	4650	820'	680'	7	Geoprojects	D
38	25059	73-37-4	29.42611	-103.48944	8/24/2003	3365	1300'	328'	1	Armadillo	D
39	25062	73-36-6	29.42639	-103.51472	8/27/2003	3205	380'	118'	35	Armadillo	D
40	25063	73-36-9	29.40833	-103.51000	8/28/2003	3077	360'	80'	30-35	Armadillo	D
41	28905	52-44-7	30.26611	-103.59250	11/20/2003	5258	100	51	30-35	Armadillo	D
42	32706	52-52-7	30.15500	-103.61222	12/10/2003	4790	506	50	25	Skinner	Ir
43	32842	52-35-9	30.37944	-103.64889	2/20/2004	4561	320	181	50	Armadillo	D
44	32863	52-34-9	30.37889	-103.75694	2/19/2004	4770	220	77	20	Armadillo	D
45	33115	52-43-3	30.36667	-103.65472	2/26/2004	4505	300	44	10	Armadillo	Ir

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46	34719	52-43-2	30.36000	-103.67417	3/21/2004	4495	200	43	25	Armadillo	D
47	34744	72-49-4	29.18944	-102.96111	3/3/2004	1858	300.0	Dry		White	T
48	34747	72-49-4	29.18556	-102.96222	3/4/2004	1850	85.0	26.34	55.0	White	T
49	35734	52-43-3	30.37083	-103.66500	4/8/2004	4445	210	27	90	Armadillo	Ir
50	36492	73-44-4	29.32444	-103.62000	3/14/2004	3000	1151			Geoprojects	PS
51	36703	73-04-4	29.94861	-103.59139	4/26/2004	4121	1505	903	3	Armadillo	S
52	37435	52-44-8	30.27750	-103.56778	5/13/2004	5310	300	154	20	Armadillo	D
53	37729	52-47-2	30.34917	-103.20667	5/12/2004	4658	288	180	30	Geoprojects	D
54	39365	52-43-1	30.36750	-103.71778	6/18/2004	4658	500	223	30	Armadillo	D
55	40139	52-43-1	30.37278	-103.74139	6/30/2004	4769	400	219	30	Armadillo	D
56	40466	52-43-3	30.35889	-103.64028	7/9/2004	4495	240	120	100+	Armadillo	D
57	41696	52-44-8	30.25667	-103.57667	6/9/2004	5322	225	50	15	Skinner	D
58	41857	52-43-1	30.37250	-103.71500	6/5/2004	4614	905	440	5	Skinner	D
59	42643	52-44-3	30.34500	-103.50722	4/12/2004	4761	1775	1410	30	Skinner	D
60	42706	52-44-1	30.36639	-103.60861	6/10/2004	4610	205	144	60	Skinner	D
61	43360	52-43-1	30.37250	-103.72722	6/19/2004	4880	865	440	20	Skinner	D
62	43365	52-42-3	30.36972	-103.78139	6/23/2004	4880	245	80	40	Skinner	D
63	43537	52-44-7	30.26389	-103.59556	8/20/2004	5325	240	102	90	Armadillo	D
64	43674	73-29-9	29.51250	-103.38833	8/23/2004	3355	750	n/a		Armadillo	T
65	43887	52-43-2	30.34944	-103.68361	8/25/2004	4550	110	52	35	Armadillo	D
66	44015	52-48-9	30.27639	-103.00333	8/27/2004	4471	402	78	7	Armadillo	S
67	44929	73-36-6	29.42305	-103.52139	9/15/2004	3145	440	117	80-90	Armadillo	D
68	46488	52-43-3	30.35306	-103.64917	10/11/2004	4521	300	62	50	Armadillo	D
69	46490	52-42-3	30.36944	-103.77722	10/12/2004	4873	340	81'	15	Armadillo	D
70	47422	52-54-6	30.20056	-103.25083	10/27/2004	4045	515	75	30	Skinner	D
71	48494	73-20-8	29.64472	-103.54667	11/8/2004	3495	1365	1208	10+	Armadillo	D
72	49066	52-44-1	30.35667	-103.60194	11/20/2004	4727	500	153	7	Armadillo	D
73	50547	72-49-5	29.18889	-102.95111	12/8/2004	1900	798.0	41.2	6.5	White	T
74	50588	52-43-5	30.32889	-103.69750	10/15/2003	4717	505	75	5	Skinner	D
75	50595	52-44-7	30.27417	-103.59972	12/27/2004	5280	200	65	12	Armadillo	D
76	50596	52-44-7	30.26861	-103.61194	10/16/2003	5285	225	85	30	Skinner	D
77	50596	52-44-7	30.26861	-103.61194	10/16/2003	5285	225	85	30	Skinner	D
78	50602	52-44-7	30.26861	-103.61194	10/20/2003	5285	225	80	75	Skinner	D
79	50605	52-44-8	30.25056	-103.57805	10/21/2003	5317	205	97	10	Skinner	D
80	50610	52-52-7	30.15611	-103.61139	10/24/2003	4790	845	85	5	Skinner	D
81	51531	52-44-2	30.35806	-103.57028	11/17/2004	5090	505	245	5	Skinner	D
82	51812	52-44-7	30.27639	-103.59917	1/20/2005	5258	400	44	10	Armadillo	D
83	52032	52-48-1	30.33500	-103.11611	12/6/2004	4321	200	84	30	Armadillo	S
84	52036	52-48-1	30.33472	-103.11583	1/26/2005	4319	200	86	30	Armadillo	D
85	52156	72-10-8	29.77305	-102.79194	11/29/2004	2879	1735	1240	22	Skinner	S
86	52533	73-32-3	29.61417	-103.04083	1/28/2005	2557	240			Armadillo	D
87	53047	52-43-1	30.36583	-103.71722	12/15/2004	4660	505	105	7	Skinner	D
88	54798	73-37-4	29.43305	-103.47194	3/2/2005	3757	220	122	7	Armadillo	D
89	54805	73-36-9	29.41500	-103.51333	3/4/2005	3158	200	114	35-40	Armadillo	D
90	56557	52-43-2	30.37139	-103.67000	4/8/2005	4458	525	85	100+	Armadillo	D

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91	57378	52-54-3	30.21028	-103.23361	3/26/2005	4062	229	84	15	Skinner	D
92	58884	52-35-4	30.42083	-103.72472	5/6/2005	4549	675	88	100-140	Armadillo	Ir
93	59063	52-43-3	30.36889	-103.66472	5/17/2005	4453	100	20	75+	Armadillo	D
94	59293	52-43-3	30.34389	-103.63778	3/30/2005	4641	575	90	13	Skinner	D
95	59673	52-36-7	30.39222	-103.62139	5/19/2005	4380	405	330	20	Skinner	D
96	59707	52-44-1	30.33389	-103.61667	4/14/2005	4610	275	20	500+	Skinner	Ir
97	59726	52-43-2	30.35417	-103.69750	5/27/2005	4603	125	82	15	Armadillo	D
98	59735	52-43-2	30.34361	-103.68055	4/4/2005	4565	204	65	100+	Skinner	D
99	59740	52-52-4	30.19889	-103.58889	5/26/2005	5085	265	120	12	Skinner	D
100	60816	52-60-1	30.08833	-103.58750	1/17/2004	4450	505	20	25	Skinner	D
101	60832	52-44-2	30.35333	-103.57694	6/14/2005	4965	220	151	40	Armadillo	D
102	61148	52-43-1	30.36917	-103.71861	6/17/2005	4658	380	154	20	Bynum	D
103	61155	52-43-3	30.35611	-103.66111	6/20/2005	4495	80	24	100+	Armadillo	D
104	63126	53-50-5	30.18667	-102.83055	7/11/2005	4075	400	245	30	Armadillo	D
105	63127	53-50-2	30.20944	-102.82361	7/14/2005	4520	600	203	12	Armadillo	S
106	63128	53-50-2	30.21778	-102.80444	7/20/2005	4305	300	240	1/2	Armadillo	S
107	64401	73-04-1	29.96917	-103.62139	8/8/2005	4861	600	214	1 1/2	Armadillo	S
108	64649	73-03-3	29.96750	-103.63472	8/11/2005	4825	400	214	1 1/2	Armadillo	S
109	65081	73-04-1	29.97250	-103.62472	8/12/2005	4839	200			Armadillo	S
110	65808	73-04-1	29.98083	-103.62250	8/18/2005	4785	200			Armadillo	S
111	65810	73-04-1	29.97833	-103.62055	8/19/2005	4805	200			Bynum	S
112	65814	52-60-4	30.04528	-103.60167	8/24/2005	4405	102	17	30 - 40	Armadillo	S
113	65814	52-60-1	30.08972	-103.59611	8/25/2005	4480	181	29	20	Armadillo	S
114	66028	52-43-3	30.36861	-103.66389	8/29/2005	4452	200	17	35	Armadillo	S
115	66577	52-43-1	30.37083	-103.74194	6/4/2003	4782	725	275	50	Skinner	D
116	67721	52-43-2	30.34667	-103.66889	9/27/2005	4525	75	28	12	Armadillo	D
117	68123	52-43-3	30.36917	-103.65667	9/29/2005	4481	615	203	2	Armadillo	D
118	68126	52-35-7	30.37972	-103.72194	10/3/2005	4610	300	105	60	Armadillo	D
119	68126	52-35-7	30.37972	-103.72194	10/3/2005	4610	300	105	60	Armadillo	D
120	68664	52-43-1	30.37056	-103.74167	10/6/2005	4783	360	255	30	Armadillo	D
121	72603	52-44-7	30.28194	-103.58778	12/19/2005	5202	460	100	15	Armadillo	D
122	72610	73-20-8	29.64528	-103.54639	2/22/2005	3498	1345	1207	35	Armadillo	D
123	72893	52-60-4	30.07889	-103.60639	8/8/2006	4563	200	107	9	Armadillo	S
124	72967	73-29-8	29.51028	-103.43444	5/16/2006	3610	305	65	25	Skinner	D
125	72974	73-29-6	29.55028	-103.53361	12/5/2005	3440	880	N/A	DRY	Skinner	D
126	72980	73-37-4	29.42389	-103.49694	12/9/2005	3282	205	65	2+	Skinner	D
127	74982	52-35-7	30.37861	-103.72806	1/27/2006	4655	400	107	20	Armadillo	D
128	74982	52-35-7	30.37861	-103.72806	1/27/2006	4655	400	107	20	Armadillo	D
129	76093	52-35-7	30.38306	-103.72417	2/6/2006	4611	650	111	200+	Armadillo	Ir
130	76093	52-35-7	30.38306	-103.72417	2/6/2006	4612	650	111	200+	Armadillo	Ir
131	76094	52-43-1	30.36611	-103.71083	2/10/2006	4612	285	108	15	Armadillo	D
132	77267	52-36-7	30.38722	-103.61333	2/21/2006	4395	440	339	35-40	Armadillo	D
133	79037	52-37-4	30.44306	-103.48167	3/20/2006	4087	1275	876	60	Armadillo	R
134	79040	52-44-8	30.27250	-103.58139	3/22/2006	5170	120	37	20-25	Armadillo	D
135	81792	52-42-3	30.37000	-103.78611	5/1/2006	4910	220	97	55-60	Armadillo	D

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136	81986	52-52-2	30.23556	-103.56750	5/3/2006	5220	360	269	20	Armadillo	D
137	82524	52-43-1	30.37333	-103.71222	3/11/2006	4590	165	108	50	Skinner	D
138	82527	52-55-4	30.20222	-103.23778	3/21/2006	4072	185	110	200	Skinner	D
139	82667	52-43-3	30.34417	-103.63750	4/3/2006	4640	525	105	8	Skinner	D
140	82671	52-44-8	30.25639	-103.57611	4/19/2006	5340	205	80	3	Skinner	D
141	82676	52-44-1	30.35556	-103.58694	4/27/2006	4920	205	147	50	Skinner	D
142	82700	73-37-4	29.43278	-103.47250	5/11/2006	3730	380	166	6	Armadillo	D
143	83109	52-43-1	30.36500	-103.71083	4/26/2006	4616	600	81	10	Skinner	D
144	83907	73-30-7	29.53333	-103.33889	5/16/2006	3180	440	N/A	DRY	Armadillo	D
145	83910	73-29-5	29.56417	-103.41972	5/17/2006	3317	200	59	25-30	Armadillo	D
146	83913	52-37-2	30.48667	-103.42361	5/26/2006	3980	1200	389	ND	Armadillo	R
147	83918	52-44-2	30.34917	-103.58028	4/30/2006	4960	305	177	30	Skinner	D
148	84623	73-29-9	29.53444	-103.38806	6/3/2006	3285	360	N/A	DRY	Skinner	D
149	85455	52-37-6	30.45250	-103.39361	6/20/2006	4088	1325	855	ND	Armadillo	R
150	85571	52-25-7	30.37944	-103.72917	6/21/2006	4652	320	145	75	Armadillo	D
151	85571	52-35-7	30.37944	-103.72917	6/21/2006	4652	320	145	75	Armadillo	D
152	85986	52-35-6	30.42250	-103.63972	6/23/2006	4279	420	296	30	Armadillo	D
153	86593	52-55-7	30.13778	-103.23806	6/28/2006	3975	120	16	35	Armadillo	D
154	86593	52-55-7	30.13778	-103.23806	6/28/2006	3945	120	16	35	Armadillo	D
155	86595	52-44-7	30.28194	-103.58778	6/30/2006	5202	280	112	15	Armadillo	D
156	89467	73-37-4	29.32000	-103.21222	7/11/2006	3882	620	162	8	Armadillo	PS
157	89471	73-47-5	29.30722	-103.18250	7/17/2006	3500	340	99	20	Armadillo	PS
158	89472	73-29-5	29.56417	-103.41972	7/24/2006	3317	200	59	30	Armadillo	D
159	89757	52-62-4	30.04944	-103.35139	8/8/2006	3667	240	33	4-7	Armadillo	S
160	91639	52-44-1	30.36194	-103.60306	8/5/2006	4650	225	155	50	Skinner	D
161	92646	52-44-2	30.35778	-103.57250	8/8/2006	5061	300	N/A	DRY	Skinner	D
162	92648	52-44-2	30.35694	-103.57611	8/11/2006	5010	385	216	<1	Skinner	D
163	92671	52-44-2	30.35639	-103.57750	9/1/2006	4990	305	180	15	Skinner	D
164	92674	52-44-2	30.35667	-103.57278	9/6/2006	5060	325	276	20	Skinner	D
165	92675	52-44-2	30.35472	-103.56944	9/4/2006	5102	325	219	50	Skinner	D
166	94439	52-45-3	30.37222	-103.37528	10/3/2006	4572	240	80	30	Armadillo	D
167	94818	52-55-9	30.12833	-103.13583	9/14/2006	4030	125	45	10	Skinner	S
168	94818	52-55-9	30.12833	-103.13583	9/14/2006	4070	125	45	10	Skinner	D
169	95195	52-43-1	30.36333	-103.71056	10/6/2006	4610	280	88	35-40	Armadillo	D
170	95286	53-41-8	30.28861	-102.93528	9/21/2006	4410	245	180	40	Skinner	S
171	96139	52-44-1	30.35611	-103.58361	9/12/2006	4924	405	N/A	PLUGGED	Skinner	D
172	96144	52-44-7	30.27917	-103.60111	9/30/2006	5201	305	35	15	Skinner	D
173	96313	52-44-1	30.35722	-103.59000	10/19/2006	4922	323	260	15	Skinner	D
174	96639	52-44-7	30.28278	-103.58833	10/28/2006	5170	265	34	6	Skinner	D
175	97263	52-43-3	30.36056	-103.66472	10/16/2005	4470	250	15	15	Skinner	D
176	97965	52-55-4	30.20556	-103.24111	11/15/2006	4057	225	100	40-50	Armadillo	D
177	99902	52-52-2	30.22722	-103.57472	11/20/2006	5155	500	N/A	PLUGGED	Skinner	D
178	99914	52-52-2	30.22667	-103.57472	12/11/2006	5165	465	180	60	Skinner	D
179	100512	52-44-8	30.25444	-103.57806	12/19/2006	5330	230	153	30	Armadillo	D
180	100787	52-42-3	30.37083	-103.77056	12/20/2006	4802	300	49	12	Armadillo	D

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181	100881	52-55-4	30.19806	-103.23833	12/13/2006	4078	205	120	30	Skinner	S
182	100893	52-44-1	30.35361	-103.61556	12/15/2006	4565	173	50	20	Skinner	D
183	100908	52-52-2	30.24694	-103.57889	12/19/2006	5278	672	130	100+	Skinner	D
184	101543	52-44-7	30.28167	-103.59167	1/3/2007	5163	200	49	15	Armadillo	D
185	101544	73-36-9	29.41028	-103.53167	1/5/2007	3045	260	97	80+	Armadillo	D
186	101988	73-37-4	29.42167	-103.48000	1/11/2007	3360	440	112	2-3	Armadillo	D
187	104320	52-35-9	30.38139	-103.66000	5/26/2004	4408	443	45	500+	Skinner	D
188	105040	52-43-3	30.33917	-103.63861	2/23/2007	4600	240	44	70	Armadillo	D
189	105201	73-29-3	29.59861	-103.40750	2/5/2007	3250	225	87	20	Skinner	S
190	105962	73-44-6	29.30389	-103.52111	3/6/2007	2520	1500	160	40	Armadillo	T
191	106069	52-52-1	30.22583	-103.58361	3/8/2007	5157	320	51	30	Armadillo	D
192	106331	52-44-1	30.35250	-103.60028	8/16/2003	4715	305	150	25	Skinner	D
193	106533	52-44-1	30.36361	-103.60639	8/20/2003	4620	365	170	50	Skinner	D
194	106671	52-44-1	30.35806	-103.60639	8/22/2003	4600	145	80	30	Skinner	D
195	106673	52-44-1	30.36889	-103.60722	8/25/2003	4600	225	85	25	Skinner	D
196	107514	52-52-2	30.22333	-103.57667	1/30/2007	5305	385	226	4	Skinner	D
197	108670	52-52-2	30.22417	-103.57194	3/28/2007	5230	620	231	17	Armadillo	D
198	109722	52-43-2	30.35861	-103.66667	4/14/2007	4482	600	26	15	Armadillo	D
199	113088	52-43-3	30.35000	-103.64833	5/11/2007	4540	230	28	150	Skinner	D
200	113298	52-44-2	30.35778	-103.56917	5/16/2007	5082	325	N/A	PLUGGED	Skinner	D
201	114349	52-35-8	30.37667	-103.67250	6/1/2007	4449	220	67	60+	Armadillo	D
202	115848	52-44-8	30.25389	-103.57889	6/29/2007	5327	220	124	75	Armadillo	D
203	117321	52-34-9	30.37722	-103.76444	7/18/2007	4792	220	63	100+	Armadillo	D
204	117580	52-44-3	30.35444	-103.50806	7/19/2007	4620	180	32	80+	Armadillo	D
205	119219	52-43-2	30.37250	-103.67083	6/20/2007	4460	205	20	20	Skinner	D
206	121334	52-55-4	30.20778	-103.24472	8/17/2007	4068	320	105	200+	Skinner	Ir
207	121353	52-35-6	30.42833	-103.66500	8/24/2007	4300	545	320	100+	Skinner	S
208	121857	52-44-8	30.27278	-103.58250	9/5/2007	5162	245	14	100+	Armadillo	D
209	121865	52-44-8	30.25722	-103.56750	9/10/2007	5380	525	164	20	Armadillo	D
210	122067	52-52-4	30.19111	-103.58472	8/29/2007	5020	185	48	30	Skinner	D
211	122455	52-43-1	30.36667	-103.70972	9/13/2007	4606	245	103	30	Armadillo	D
212	122697	52-55-4	30.19500	-103.24694	8/23/2007	4083	195	130	25	Skinner	D
213	130015	52-34-9	30.37750	-103.76694	10/24/2007	4798	650	560	20	Skinner	D
214	130019	52-43-1	30.37056	-103.71389	10/30/2007	4615	590	130	20	Skinner	D
215	130434	52-44-2	30.35306	-103.57361	11/7/2007	5015	555	N/A	PLUGGED	Skinner	D
216	130439	52-44-2	30.35333	-103.57278	11/30/2007	5011	570	495	PLUGGED	Skinner	D
217	132748	52-44-7	30.25750	-103.58500	1/9/2008	5297	143	80	50	Skinner	D
218	133088	73-44-5	29.33139	-103.54500	1/29/2008	2570	302	37	200+	Skinner	D
219	133530	73-37-4	29.42056	-103.48528	2/4/2008	3350	322	241	10-15	Armadillo	D
220	136132	52-55-4	30.20194	-103.23694	2/29/2008	4076	300	126	ND	White	RS
221	136878	52-44-2	30.35389	-103.57222	1/25/2008	5038	225	136	18	Skinner	D
222	136881	73-29-7	29.50528	-103.46583	12/1/2005	3715	128	67	5	Skinner	S
223	136883	73-37-3	29.47833	-103.40722	2/13/2008	3677	302	150	0.5	Skinner	D
224	136987	73-44-1	29.34972	-103.60333	2/16/2008	2670	300	N/A	PLUGGED	Skinner	D
225	136994	73-44-1	29.35694	-103.60667	2/21/2008	2698	70	N/A	PLUGGED	Skinner	D

Table A.1
Brewster County New Wells

LBG WELL ID	TDLR TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
226	137002	73-44-5	29.33028	-103.54556	1/28/2008	2560	186	35	100+	Skinner	D
227	137100	52-29-6	30.57389	-103.37528	2/4/2008	3635	638	455	100+	Skinner	S
228	137149	52-35-9	30.37861	-103.66000	3/17/2008	4408	205	40	100+	Skinner	D
229	138028	52-55-1	30.21417	-103.24278	3/27/2008	4110	300	149	40	Armadillo	D
230	138971	52-55-4	30.19444	-103.24694	4/18/2008	4084	203	134	50	Skinner	D
231	139061	73-36-6	29.43056	-103.51361	4/2/2008	3255	525	154	20	Skinner	S
232	139626	52-44-8	30.25694	-103.57833	4/16/2008	5322	200	126	40	Armadillo	D
233	141847	52-44-1	30.35250	-103.60000	5/12/2008	4717	260	165	75	Armadillo	D
234	141851	52-44-1	30.35139	-103.59833	5/14/2008	4721	565	423	2-3	Armadillo	D
235	142515	52-44-7	30.27694	-103.59694	3/29/2008	5255	505	60	3	Skinner	D
236	142618	52-43-1	30.37083	-103.71333	4/9/2008	4611	205	100	30	Skinner	D
237	142620	52-52-2	30.24944	-103.56944	4/12/2008	5350	305	46	15	Skinner	D
238	142622	52-44-1	30.35361	-103.59194	5/2/2008	4925	345	260	5	Skinner	D
239	145541	52-52-2	30.23861	-103.57806	6/30/2008	5220	300	55	15-20	Armadillo	D
240	146173	52-35-7	30.37528	-103.73472	7/7/2008	4705	440	305	20-25	Armadillo	D
241	146175	52-44-8	30.28000	-103.57556	7/8/2008	5118	180	32	60	Armadillo	D
242	146362	52-55-4	30.20194	-103.23694	6/27/2008	4076	440	126	ND	White	RS
243	147554	73-44-3	29.34722	-103.53917	7/21/2008	2640	575	N/A	DRY	Armadillo	D
244	152194	73-14-3	29.86139	-103.27917	9/3/2008	3125	220	51	80	Armadillo	S
245	153024	52-43-2	30.35528	-103.66889	9/2/2008	4490	305	82	30	Skinner	In
246	153061	73-29-3	29.58667	-103.41333	8/13/2008	3197	705	N/A	CAPPED	Skinner	D
247	153297	73-29-1	29.58972	-103.47583	8/15/2008	3265	585	295	50	Skinner	S
248	153307	73-21-5	29.69278	-103.41778	8/20/2008	3825	505	495	1	Skinner	S
249	153357	73-21-5	29.67000	-103.43472	7/15/2008	4020	545	300	3	Skinner	S
250	154053	52-44-8	30.26889	-103.57861	9/19/2008	5240	400	68	10	Armadillo	D
251	157474	52-43-3	30.36333	-103.63778	10/24/2008	4477	120	42	70	Armadillo	D
252	159217	52-44-8	30.25000	-103.57917	9/15/2007	5318	263	18	30	Skinner	D
253	159231	73-21-9	29.63972	-103.40194	9/17/2008	3765	545	27	10	Skinner	S
254	159242	73-29-1	29.59944	-103.47250	9/19/2008	3310	605	N/A	CAPPED	Skinner	S

1) Surface elevations estimated from topographic maps.

2) Well Use Codes:

- D – Domestic
- In – Industrial
- Ir – Irrigation
- PS – Public Supply
- RS – Rig Supply
- S – Stock
- T – Test

Table A.2
Culberson County New Wells

LBC WELL ID	TDLR TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
1	12819	47-09-9	31.75278	-104.90806	9/10/2002	3815	360	225		Keith Conner	Ir
2	17975	47-50-9	31.16250	-104.79111	3/13/2003	4028	605	506	15-20	David B. Bynum	D
3	19455	47-42-8	31.26444	-104.82444	4/17/2003	4001	925	480	20	David B. Bynum	D
4	21170	47-15-9	31.77194	-104.12528	4/28/2003	3282	39			R. Darrell Crass	In
5	21171	47-15-9	31.77139	-104.12611	4/28/2003	3284	58			R. Darrell Crass	In
6	21166	47-15-9	31.77222	-104.12528	4/28/2003	3282	39			R. Darrell Crass	In
7	21173	47-16-7	31.77278	-104.12167	4/28/2003	3280	150			R. Darrell Crass	In
8	21175	47-16-7	31.76944	-104.11805	4/29/2003	3250	77			R. Darrell Crass	In
9	21177	47-24-1	31.74556	-104.10889	4/21/2003	3239	190			R. Darrell Crass	In
10	21178	47-16-7	31.75972	-104.11111	4/21/2003	3265	230			R. Darrell Crass	In
11	21179	47-16-7	31.76972	-104.12139	4/28/2003	3260	58			R. Darrell Crass	In
12	21180	47-16-7	31.76917	-104.12055	4/29/2003	3257	77			R. Darrell Crass	In
13	21181	47-15-9	31.77194	-104.12500	4/18/2003	3282	200			R. Darrell Crass	D
14	21182	47-15-9	31.77278	-104.14306	4/18/2003	3320	250			R. Darrell Crass	D
15	31906	47-17-3	31.72472	-104.89444	8/7/2002	3792	600			Ernesto Mendoza	Ir
16	31908	47-17-3	31.73361	-104.89556	8/13/2002	3825	600			Ernesto Mendoza	Ir
17	31910	47-17-3	31.72444	-104.89528	8/19/2002	3790	554			Ernesto Mendoza	Ir
18	31911	47-17-3	31.71222	-104.88778	1/14/2003	3850	575			Ernesto Mendoza	Ir
19	49915	47-17-2	31.72805	-104.92000	8/12/2003	3727	800			H.C. Bates	Ir
20	55436	47-39-5	31.42333	-104.17222	2/22/2005	3546	240			R. Darrell Crass	D
21	55437	47-39-6	31.42194	-104.16250	2/23/2005	3508	240			R. Darrell Crass	D
22	55439	47-39-6	31.43750	-104.14889	2/24/2005	3428	105			R. Darrell Crass	D
23	59026	47-39-6	31.44583	-104.14278	4/21/2005	3412	276			Dubose	RS
24	60815	47-58-5	31.05361	-104.82111	1/19/2004	4040	625	173	125	Skinner	D
25	63012	47-20-6	31.69278	-104.53722	6/30/2005	4320	1000	518	2	Dubose	RS
26	63072	47-46-3	31.35417	-104.27000	7/7/2005	3818	500	60	33	Dubose	RS
27	77485	47-23-4	31.66861	-104.06278	2/27/2006	3580	140	336	100	Dubose	RS
28	100791	47-24-5	31.67944	-104.06278	11/30/2006	3281	600	46	30	Armadio	S
29	100793	47-24-5	31.67917	-104.06278	12/11/2006	3282	550	ND	ND	Armadio	RS
30	85147	47-32-1	31.58361	-104.10528	5/22/2006	3413	165	79	10	Skinner	S
31	85195	47-32-7	31.52750	-104.08528	5/24/2006	3290	480	30	2	Skinner	S
32	123333	47-32-7	31.51306	-104.11806	9/6/2007	3242	130	50	25	Marks WW	D
33	123334	47-31-4	31.55694	-104.24750	9/7/2007	3770	150	10	2	Marks WW	D
34	154556	47-40-4	31.44306	-104.10333	9/9/2008	3323	372	58	ND	White	RS
35	91486	47-55-1	31.22722	-104.22639	8/10/2006	3625	465	300	250	Skinner	RS
36	123335	47-62-6	31.05167	-104.26278	9/10/2007	4590	150	10	25	Marks WW	D
37	123336	47-62-6	31.05167	-104.26278	9/10/2007	4590	150	10	25	Marks WW	D
38	75993	47-46-2	31.34417	-104.32222	12/15/2005	4057	281	ND	100	Dubose	RS
39	91428	47-46-1	31.35889	-104.34611	6/30/2006	4185	545	ND	ND	Skinner	S
40	91430	47-46-1	31.35694	-104.33806	7/5/2006	4150	305	ND	30	Skinner	S
41	72322	47-37-6	31.41778	-104.39028	12/13/2005	4095	810	ND	40-50	Armadio	RS
42	66573	47-22-8	31.64583	-104.32944	9/1/2005	3735	300	64	17	Armadio	RS
43	66586	47-22-8	31.64139	-104.33000	9/6/2005	3735	220	23	9-10	Armadio	RS
44	66590	47-22-8	31.64167	-104.33000	9/7/2005	3730	140	25	25	Armadio	RS
45	66589	47-22-8	31.64194	-104.33000	9/6/2005	3725	140	26	15-18	Armadio	RS
46	104493	47-21-2	31.71944	-104.45444	2/12/2007	4275	600	295	5	Armadio	RS

Table A.2
Culberson County New Wells

LBC WELL ID	TDLR TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
47	104494	47-21-2	31.72083	-104.45583	2/16/2007	4265	500	ND	ND	Armadillo	RS
48	100789	47-21-2	31.72028	-104.45417	11/21/2006	4272	415	ND	ND	Armadillo	RS
49	146408	47-28-2	31.58444	-104.57472	6/16/2008	4775	1660	920	ND	White	RS
50	96422	47-36-5	31.42361	-104.56861	10/24/2006	4900	400	ND	ND	Virdell	D
51	122798	47-60-9	31.03944	-104.52222	9/19/2007	4115	680	610	5	Marks WW	S
52	71952	47-18-5	31.67389	-104.81111	12/5/2005	4110	905	527	150+	Armadillo	RS
53	94810	47-34-6	31.41694	-104.77028	9/12/2006	3700	800	200	ND	KCCI	D
54	95264	47-34-9	31.39611	-104.75139	8/16/2006	3695	400	140	ND	KCCI	D

1) Surface elevations estimated from topographic maps.

2) Well Use Codes:

- D - Domestic
- In - Industrial
- Ir - Irrigation
- RS - Rig Supply
- S - Stock

TABLE A.3
Jeff Davis County New Wells

LBG WELL ID	TDLR TRACKING NUMBER	JDCUWCD TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
1		97-002		30.58861	-103.89694	3/14/1997		80		25	Baker	
2		98-001		30.70861	-104.12139	2/6/1998		805	690	6	Skinner	
3		98-002		30.61806	-103.98139	1/11/1998		325	260		Skinner	
4		98-018		30.63361	-104.00556	7/6/1998		525	420	30	Skinner	
5		98-020		30.77389	-104.17111	7/1/1998		805	520	15	Skinner	
6		98-022		30.63250	-103.98722	7/13/1998		500	255	10	Skinner	
7		98-023		30.62806	-104.00694	8/1/1998		465	300	80	Skinner	
8		98-031		30.61417	-103.97028	10/26/1998		425	280	20	Skinner	
9		99-002		30.63278	-103.98889	1/25/1999		383	280	30	Skinner	
10		99-005	51-24-9	30.63028	-103.99417	2/6/1999		340	233	25	Skinner	
11		99-007	51-31-6	30.54833	-104.16833	7/22/1999		505	310	20	Skinner	
12		99-012	51-16-5	30.80417	-104.07694	6/18/1999		700	340	42	Skinner	
13		99-016	52-25-7	30.54806	-104.16917	7/13/1999		305	180	150	Skinner	
14		00-005		30.62611	-103.98556	6/27/2000		325	278	25	Skinner	
15		00-023		30.62361	-103.98611	1/11/2001		360	248	10	Skinner	
16		01-001		30.60944	-103.83611	1/19/2001		185	45		Skinner	
17		01-002	52-26-1	30.60194	-104.69861	2/5/2001		505	185	0.5	Skinner	
18		01-003	51-22-6	30.58889	-103.86667	2/20/2001		225	90	12	Skinner	
19		01-004	52-26-1	30.54472	-104.08556	2/24/2001		405		1	Skinner	
20		01-013	51-32-5	30.68028	-104.29333	9/17/2001		382		20	Espy Howard	
21		02-001	51-05-7	30.85806	-104.52167	2/6/2002		225	80	100	Skinner	
22		02-011		30.92500	-103.86028	7/2/2002		500		0	Armadillo	
23		02-114	52-25-3	30.59361	-103.90667	10/16/2002		275	43	16	Skinner	
24		02-023		30.61028	-103.88694	12/19/2002		165	40	9	Skinner	
25		03-004	52-17-7	30.63472	-103.99000	4/3/2003		525	250	45	Skinner	
26		03-005	52-17-7	30.63639	-103.98778	3/28/2003		485	290	25	Skinner	
27		03-006		30.55250	-104.15194	3/13/2003		145		5-8	Espy Howard	
28		03-015	52-26-1	30.60389	-103.84972	8/7/2003		240	75	70	Skinner	
29		03-016	52-27-7	30.54417	-103.74694	7/14/2003		450	350	150	Skinner	
30		03-017	52-26-1	30.62222	-103.83222	8/11/2003		205	20	25	Skinner	
31		05-006	52-09-2	30.85278	-103.95389	9/12/2005		225	85	5	Skinner	DRL
32		05-013	51-48-3	30.36667	-104.02556	10/27/2005		240	154	50	Skinner	DRL
33		06-017	53-09-6	30.80139	-102.91167	9/29/2006	5327	800	431	20-25	Armadillo	DRL
34		06-018	53-09-6	30.53222	-104.04000	5/30/2006	4967	370	74	20-25	Armadillo	L
35	8012	02-010	51-32-9	30.80139	-104.04000	6/19/2006	5750	800	74	under 1	Armadillo	D
36	8433	02-008	52-25-5	30.54583	-103.93250	9/29/2006	5750	370	144	500+	Armadillo	Ir
37	9121	02-015	51-32-2	30.60111	-104.07611	7/10/2006	5750	800	390	4-5	Armadillo	D
38	9187	02-016	51-22-9	30.65611	-104.25472	7/16/2006	5570	141	41	45	Armadillo	D
39	9397	02-012	51-15-7	30.76417	-104.22639	7/19/2006	5681	300	122	16	Armadillo	D
40	9398	02-017	51-31-2	30.60278	-104.20444	7/22/2006	5793	262	68	95	Armadillo	D
41	11993	02-019	52-25-3	30.59944	-103.88722	8/28/2006	4870	145	33	140	Armadillo	Ir
42	11994	02-018	51-32-1	30.60028	-104.09778	8/30/2006	5755	402	150	8	Armadillo	D
43	11995	02-018	51-32-1	30.60028	-104.09778	8/30/2006	4930	145	150	8	Armadillo	D
44	14403	02-022	52-25-3	30.59222	-103.89806	11/18/2006	4930	145	56	60+	Armadillo	D
45	14825	02-024	51-24-7	30.63028	-104.12361	12/5/2006	5925	240	39	3	Armadillo	D
46	15237	02-025	51-32-2	30.60250	-104.05972	12/16/2006	5560	302	63	3-4	Armadillo	D
47	15600	02-026	52-25-3	30.59889	-103.88583	1/2/2007	4667	440	301	30-35	Armadillo	D
48	16583	03-003	52-25-1	30.61250	-103.96833	2/3/2007	5115	560	291	14	Armadillo	D
49	16697	03-002	52-25-1	30.61889	-103.99250	2/6/2007	5335	565	309	90-100	Armadillo	D
50	18605	03-007	51-22-9	30.65083	-104.28667	3/31/2007	5370	600	70	2	Armadillo	D
51	19756	03-009	52-25-1	30.61861	-103.97444	4/29/2007	5240	340	222	30	Armadillo	D
52	22093	03-010	52-27-7	30.54028	-103.74028	5/19/2007	4596	300	180	10	ECO Drilling	Ir
53	22094	03-011	52-27-7	30.54028	-103.74028	5/26/2007	4596	395	180	0	ECO Drilling	Ir
54	22658	03-013	51-32-1	30.59861	-104.09194	7/9/2007	5787	405	194	7	Armadillo	D
55	22659	03-013	51-32-1	30.59861	-104.09194	7/9/2007	5787	405	194	7	Armadillo	D

TABLE A.3
Jeff Davis County New Wells

LBG WELL ID	TDLR TRACKING NUMBER	JDCUWCD TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
56	25547	03-019	52-25-3	30.58889	-103.89861	9/9/2003	4915	140	66	40-50	Armadillo	D
57	26351	03-020	51-14-3	30.87139	-104.26750	9/27/2003	5273	1000	782		Armadillo	S
58	34000	03-012	51-16-5	30.83972	-104.02750	6/14/2003	5520	1200	651	2	Skinner	D
59	34002	03-014	51-08-6	30.94361	-104.05194	6/20/2003	4540	104	70	15	Skinner	D
60	34722	04-002	52-32-1	30.61722	-103.84000	3/25/2004		220	20	65	Armadillo	D
61	35011	04-001	51-32-2	30.59861	-104.05861	3/30/2004	5580	370	209	3	Armadillo	D
62	41619	04-003	51-32-2	30.59639	-104.08222	7/22/2004	5690	300	28	1	Armadillo	D
63	43119	04-004	52-25-6	30.57944	-103.88389	8/12/2004	5952	240	134	90	Armadillo	D
64	45350	04-004	52-17-7	30.63222	-103.98278	8/2/2004	5285	655	315	100	Armadillo	D
65	45519	04-010	51-24-7	30.62722	-104.14472	9/24/2004	5820	260	55	20	Armadillo	D
66	45582	04-006	47-64-1	31.08972	-104.12000	8/18/2004	3978	825	496	270	Skinner	In
67	49250	04-007	51-32-1	30.59750	-104.09472	11/30/2004	5845	380	340	100	Armadillo	D
68	50602	03-018	51-24-7	30.63444	-104.11333	10/20/2003	5280	225	80	75	Skinner	D
69	51918	04-011	51-24-5	30.66806	-104.07139	1/13/2005	6198	1205	840	20	Skinner	D
70	53008	05-001	52-25-1	30.61472	-103.99694	2/9/2005	5205	405	85	100	Skinner	D
71	53414	05-004	51-21-6	30.66833	-104.40139	3/22/2005	4787	380	97	30-35	Armadillo	S
72	57375	05-002	51-31-9	30.53417	-104.14694	3/11/2005	5918	620	455	5	Skinner	D
73	59704	05-003	53-09-2	30.85306	-103.95417	4/21/2005	5730	269	90	1	Skinner	DRL
74	59841	05-005	51-32-1	30.60722	-104.09861	5/27/2005	5990	400	130	3-4	Armadillo	D
75	69867	05-012	51-32-1	30.60944	-104.11861	11/1/2005	3767	300	169	5	Armadillo	D
76	70361	05-007	52-20-1	30.74361	-103.59667	9/4/2005	5702	125	8	30	Skinner	D
77	70387	05-009	51-23-7	30.64500	-104.24917	9/17/2005	5702	265	30	15	Skinner	S
78	70407	05-010	51-31-6	30.55972	-104.14944	9/21/2005	5985	945	705	15	Skinner	D
79	72876	05-011	51-24-7	30.62806	-104.10917	11/12/2005	5815	225	155	35	Skinner	D
80	72883	05-014	51-23-5	30.68667	-104.20639	11/10/2005	6050	885	125	>1	Skinner	D
81	72926	05-015	52-18-7	30.64694	-103.84083	11/23/2005	4677	405	344	30	Skinner	D
82	72986	05-017	52-25-3	30.58500	-103.88944	12/22/2005	5882	125	22	45	Armadillo	D
83	74509	06-001	51-31-6	30.54528	-104.14472	1/20/2006	5815	240	101	15-20	Armadillo	D
84	74714	05-016	51-31-6	30.54528	-104.14583	1/23/2006	5830	300	1431	12	Armadillo	D
85	77919	06-003	52-25-3	30.59750	-103.87500	3/7/2006	4845	125	82	45	Armadillo	D
86	79909		46-57-7	31.00750	-103.96639	3/29/2006	3827	1100	ND	1	Armadillo	RS
87	80007	06-004	46-57-7	31.01250	-103.96750	4/5/2006	3815	100	29	100+	Armadillo	RS
88	81388	06-008	51-32-1	30.59361	-104.09222	4/19/2006	5795	300	189	1/2-3/4	Armadillo	D
89	81389	06-006	51-31-6	30.54944	-104.14833	4/24/2006	5960	340	235	12	Armadillo	D
90	81390	06-006	52-25-1	30.62222	-103.97611	4/25/2006	5285	440	323	35	Armadillo	D
91	81635	06-009	52-25-3	30.60639	-103.90806	4/27/2006	4945	300	117	6	Armadillo	D
92	82715	06-002	51-31-6	30.54722	-104.15667	3/27/2006	5980	525	180	10	Skinner	D
93	82716	06-005	52-27-8	30.53750	-103.67667	4/8/2006	4235	325	120	300	Skinner	S
94	85988	06-007	52-25-3	30.59444	-103.87889	6/26/2006	4845	140	77	35-40	Armadillo	D
95	91413	06-014	51-31-4	30.56000	-104.20917	7/1/2006	5755	128	25	20	Skinner	S
96	91715	06-010	51-21-9	30.63611	-104.40278	7/4/2006	4800	285	135	20	Skinner	S
97	92019	06-013	51-31-6	31.54667	-104.14778	9/5/2006	5880	425	186	3-4	Armadillo	D
98	92086	06-015	52-27-7	30.54083	-103.74083	8/5/2006	4598	447	100	200	Skinner	S
99	92561	06-021	51-31-6	30.54361	-104.15917	9/9/2006	6080	505	374	40	Skinner	D
100	92747	06-011	51-31-9	30.53417	-104.14750	9/10/2006	5930	640	528	1/2	Armadillo	D
101	92748	06-020	51-31-6	30.54833	-104.14694	9/12/2006	5880	400	166	100+	Armadillo	PS
102	92751	06-012	52-25-1	30.61889	-103.97861	9/14/2006	5235	400	247	30	Armadillo	D
103	93149	06-019	51-16-03	30.86417	-104.15583	9/19/2006	5070	140	73	30	Armadillo	S
104	93703	06-019	51-15-4	30.79222	-104.22139	9/22/2006	5465	1000	849	20-25	Armadillo	S
105	96566	06-025	52-01-4	30.91917	-103.96528	9/3/2006	4041	1025	350	220	Skinner	RS
106	97235	06-023	51-31-6	30.55500	-104.14917	10/3/2006	5955	603	300	5	Skinner	D
107	97609	06-22	51-32-1	30.60778	-104.10500	9/19/2006	5825	355	180	5	Skinner	D
108	106341	07-002	51-32-1	30.62389	-104.08889	3/12/2007	5715	180	137	60	Armadillo	D
109	110096	07-004	51-08-7	30.89583	-104.12083	3/26/2007	4991	605	465	30	Skinner	S
110	112383	07-005	52-12-8	30.75750	-103.57472	4/10/2007	3840	905	650	25	Skinner	S

TABLE A.3
Jeff Davis County New Wells

LBG WELL ID	TDLR TRACKING NUMBER	JDCUWCD TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
111	112680	07-010	51-31-6	30.54972	-104.15111	5/4/2007	5970	455	305	5	Skinner	D
112	112698	07-009	52-25-1	30.60750	-103.98222	4/28/2007	5215	303	175	20	Skinner	D
113	114369	07-012	51-32-1	30.59083	-104.09417	6/3/2007	5820	400			Armadillo	D
114	114570	07-014	51-32-3	30.59000	-104.01083	6/5/2007	5827	440			Armadillo	D
115	115272	07-013	51-31-6	30.55417	-104.14944	6/7/2007	5950	340	218	45	Armadillo	D
116	115843	07-008	52-25-1	30.61889	-102.98917	6/27/2007	5242	440	234	60	Armadillo	D
117	117319	07-011	52-21-7	30.64694	-103.49472	7/8/2007	4060	840			Armadillo	S
118	117320		52-21-7	30.64528	-103.48500	7/16/2007	3925	625	417	12-15	Armadillo	S
119	117966	07-016	52-34-5	30.44056	-103.81167	7/24/2007	4867	260	164	100+	Armadillo	S
120	118002	07-019	52-25-1	30.60806	-103.97222	7/25/2007	5180	380	204	35-40	Armadillo	D
121	118559		52-34-4	30.44028	-103.87167	8/1/2007	5055	200	85	30	Armadillo	RS
122	122408	07-018	52-25-4	30.55583	-103.95917	7/19/2007	5078	305	150	16	Skinner	D
123	122631	07-020	51-23-9	30.62972	-104.12861	8/15/2007	6020	205	80	100+	Skinner	D
124	122651	07-017	51-08-6	30.95000	-104.02000	8/8/2007	4585	805	650	30	Skinner	D
125	125505	07-021	51-32-1	30.62250	-104.10861	10/5/2007	5830	385	90	20	Skinner	D
126	125507	07-023	51-32-1	30.62556	-104.10889	10/8/2007	5842	185	115	15	Skinner	D
127	126176	07-024	51-32-1	30.62250	-104.10556	10/11/2007	5735	105	37	10	Skinner	D
128	128682		52-20-2	30.71167	-103.54694	11/13/2007	3762	920	408	ND	White	RS
129	129052	07-007	51-23-9	30.62528	-104.13111	10/31/2007	6250	565	315	12	Skinner	D
130	129058	07-025	51-32-2	30.61750	-104.08167	12/4/2007	5695	345	150	10	Skinner	D
131	129271	07-028	51-32-2	30.61444	-104.07694	12/8/2007	5680	385	210	20	Skinner	D
132	131257		52-25-3	30.59944	-103.88000	10/27/2007	4870	140	ND	3	Espy Howard	S
133	132742		51-32-5	30.56750	-104.06917	1/25/2008	5620	200	N/A	DRY	Armadillo	D
134	132823	07-022	51-32-1	30.59250	-104.09389	12/19/2007	5850	610	320	1.5	Skinner	D
135	132828	07-027	52-26-1	30.60556	-103.83500	12/22/2007	4800	265	65	30	Skinner	D
136	133155		51-32-5	30.54389	-104.05972	1/30/2008	5430	300	N/A	DRY	Armadillo	D
137	133277		51-32-8	30.54111	-104.05889	1/31/2008	5440	300	167	10-12	Armadillo	D
138	138777		52-25-1	30.61944	-103.97583	4/7/2008	5270	400	274	60+	Armadillo	D
139	138779		52-25-1	30.61722	-103.98750	4/8/2008	5210	360	215	40	Armadillo	D
140	148443		52-35-1	30.48611	-103.71972	7/12/2008	4370	405	265	40	Skinner	S
141	148858		52-25-1	30.61500	-103.98944	8/4/2008	5190	360	200	30-40	Armadillo	D
142	149457		51-20-5	30.70750	-104.54500	8/11/2008	4562	715	605	2	Armadillo	S
143	152215		52-25-1	30.62306	-103.97694	8/8/2008	5278	505	307	50	Skinner	D
144	152445		52-25-1	30.62139	-103.97944	8/11/2008	5240	425	260	15	Skinner	D
145	155116		52-25-3	30.58806	-103.89861	10/1/2008	4910	140	59	25	Armadillo	D
146	158878		51-32-6	30.54556	-104.02556	11/7/2008	5465	670	294	4	Armadillo	D

1) Surface elevations estimated from topographic maps.

2) Well Use Codes:

- D - Domestic
- DRL -
- In - Industrial
- Ir - Irrigation
- L -
- PS - Public Supply
- RS - Rig Supply
- S - Stock

Table A.4
Presidio County New Wells

LBG WELL ID	TDLR TRACKING NUMBER	PCUWCD TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
1	795		74-14-2	29.85583	-104.32556	2/28/2001	3995	220	18	278	Dubose	Ir
2	796		74-14-2	29.84083	-104.32417	2/28/2001	3995	600	76	200+	Dubose	Ir
3	797		74-15-5	29.80306	-104.20611	2/28/2001	4035	600	ND	80-100	Dubose	Ir
4	12371		52-41-4	30.31667	-103.98306	9/24/2002	4779	400	242	30	Armadillo	D
5	38995	04-004	52-41-4	30.29667	-103.97361	6/10/2004	4821	485	299	35+	Armadillo	D
6	42045	04-007	52-41-4	30.32750	-103.99861	7/29/2004	4750	400	228	45	Armadillo	D
7	47086	04-009	52-41-4	30.31639	-103.97000	10/21/2004	4846	380	286	30	Armadillo	D
8	50592	03-002	52-49-6	30.18972	-103.88861	10/14/2003	4729	265	50	45	Skinner	D
9	52165	04-008	51-48-6	30.32333	-104.02083	12/2/2004	2582	365	250	60	Skinner	D
10	52840	04-010	74-29-6	29.56111	-104.38083	2/5/2005	4753	77	24	80	Armadillo	Ir
11	53072	05-002	74-29-6	29.56000	-104.37833	2/10/2005	2581	80	24	90	Armadillo	Ir
12	53406		74-03-3	29.99306	-104.64750	1/10/2004	3070	300	80	30	WTWW	PS
13	54810	05-003	52-41-4	30.31556	-103.98194	3/7/2005	4795	400	252	40-50	Armadillo	D
14	56035	05-005	51-45-3	30.36056	-104.01250	3/31/2005	4814	600	260	300+	Armadillo	Ir
15	57222	05-004	74-30-5	29.55167	-104.33139	4/18/2005	2583	68	45	15	Armadillo	D
16	57223	05-006	74-46-1	28.33361	-104.34750	3/19/2005	2558	80	44	15-20	Armadillo	D
17	60799	03-003	51-47-6	30.29972	-104.14083	1/23/2004	4805	755	543	42	Skinner	D
18	61378	05-008	51-48-6	30.31500	-104.02972	6/23/2005	4728	300	197	40	Armadillo	D
19	64053		51-64-7	30.01500	-104.09389	8/2/2005	4575	440	305	75-100	Armadillo	Ir
20	64859	05-009	74-39-5	29.44972	-104.18944	8/8/2005	2900	67	18	8	Geoprojects	Ir
21	68121	05-010	51-48-1	30.37028	-104.14306	9/19/2005	5137	915	380	8	Armadillo	D
22	68127	05-011	51-48-6	30.31167	-104.02861	10/4/2005	4725	320	206	25	Armadillo	D
23	68665		51-48-1	30.37444	-104.11139	10/10/2005	5060	280	194	20	Armadillo	D
24	69578		51-48-3	30.36667	-104.02556	10/27/2005	4816	240	154	50	Armadillo	D
25	80134	05-012	51-48-6	30.30917	-104.02111	4/6/2006	4642	260	169	40	Armadillo	D
26	80134		51-48-6	30.30917	-104.02111	4/6/2006	4690	260	169	40	Armadillo	D
27	89473	06-001	51-47-3	30.36889	-104.13361	8/2/2006	4981	460	312	20	Armadillo	D
28	89473		51-47-3	30.36889	-104.13361	8/2/2006	4982	460	312	20	Armadillo	D
29	89474	06-003	52-41-4	30.29861	-103.97000	8/3/2006	4817	400	289	40-50	Armadillo	Ir
30	91236	06-005	74-16-5	29.80028	-104.04694	8/24/2006	3641	425	78	30	Armadillo	D
31	91497	06-004	74-16-5	29.79444	-104.05028	8/29/2006	3640	362	0	40	Armadillo	Ir
32	92677	06-006	51-48-6	30.31056	-104.00472	8/17/2006	4704	405	145	50	Skinner	D
33	97769	06-008	74-39-2	29.46722	-104.19167	10/6/2006	2640	300	113.5	17	WTWW	PS
34	97769		74-39-2	29.46722	-104.19167	10/6/2006	2642	300	114	17	WTWW	PS
35	102322		74-16-6	29.83139	-104.02361	12/21/2006	3680	80	46	10	Skinner	S
36	102333		74-16-3	29.83333	-104.02667	12/22/2006	3705	150	76	4	Skinner	S
37	102343		74-16-6	29.83000	-104.02778	12/22/2006	3681	100	36	2	Skinner	S
38	106750	07-002	74-22-4	29.68278	-104.35306	3/1/2007	3165	1110	Dry Hole		WTWW	T
39	106750		74-22-4	29.68278	-104.35306	3/1/2007	3190	1110	ND	ND	WTWW	T
40	107486	07-003	51-48-3	30.36056	-104.01556	3/21/2007	4804	550	238	300+	Armadillo	Ir
41	107486		51-48-3	30.36056	-104.01556	3/21/2007	4805	550	238	300+	Armadillo	Ir
42	111226		51-35-1	30.46722	-104.73333	4/27/2007	4170	550	354	105	Armadillo	RS
43	121323	07-006	74-39-8	29.41417	-104.17417	8/30/2007	2540	205	81	100+	Armadillo	Ir
44	121323		74-39-8	29.41417	-104.17417	8/30/2007	2560	205	81	100+	Armadillo	Ir
45	130162		51-48-1	30.36444	-104.10528	12/21/2007	4970	545	369	15	Armadillo	D
46	131429		52-41-4	30.31500	-103.96861	1/8/2008	4859	400	301	35	Armadillo	D
47	134390		51-48-6	30.31556	-104.02278	11/28/2007	4705	420	ND	ND	Espy Howard	D
48	138412		51-48-6	30.31111	-104.01833	4/3/2008	4685	300	166	40+	Armadillo	D
49	138416		51-48-6	30.30278	-104.01917	3/28/2008	4670	305	156	50+	Skinner	D

Table A.4
Presidio County New Wells

LBG WELL ID	TDLR TRACKING NUMBER	PCUWCD TRACKING NUMBER	STATE GRID NUMBER	LATITUDE	LONGITUDE	DATE COMPLETED	SURFACE ELEVATION (FT MSL) ¹	WELL DEPTH (FT)	STATIC LEVEL (FT BGL)	WELL YIELD (GPM)	DRILLER	USE ²
50	150175		52-42-5	30.30639	-103.80056	6/20/2008	4955	605	25	1	Skinner	D
51	150293		52-42-5	30.30306	-103.80167	7/30/2008	5120	850	218	2	Skinner	D
52	154048		51-48-6	30.30333	-104.02111	9/17/2008	4668	245	151	60	Armadillo	D
53	157849		51-48-6	30.31333	-104.00111	10/30/2008	4719	322	189	60	Armadillo	S

1) Surface elevations estimated from topographic maps.

2) Well Use Codes:

- D - Domestic
- Ir - Irrigation
- PS - Public Supply
- RS - Rig Supply
- S - Stock
- T - Test

Table A.5
Hudspeth County Wells

NEW WELLS

Well Name	State Well Number	Latitude	Longitude	Year Drilled	Surface Elevation	Well Depth	Type Lift	Static Water Level (Ft BLS)	Water Level Date	Specific Conductance	SC Date	Remarks
New Graham House Well	48-24-2	31o 43.638'	105o 03.759'		3670	200	Submersible			2,480	5/23/2003	Replacement for Graham well.
New Morrison Well	48-24-6	31o 40.557'	105o 01.885'		3670	200	Submersible 1.5 hp	58.13	5/23/2003	3,170	5/23/2003	Replaces "Old Morrison" well. Pumping 16 gpm with no drawdown after 1 hour. Originally tested at 200 gpm. Caverns reported at 60 and 100 feet.
Irrigation Well	48-24-6	31o 41.157'	105o 01.959'	2003	3629	608	Turbin			3,880	5/23/2003	Pumping 950 gpm, pumping water level 59.9 ft. after 25 hours.
Solar Well	47-17-2	31o 43.411'	104o 57.075'		3635	90	Submersible	46.59 (Pumping)	5/23/2003	4,410	5/23/2003	Solar powered. Water piped to James well tank. Pumping 3 gpm, tested at 20 gpm.

ADDITIONAL DATA FOR EXISTING WELLS

Well Name	State Well Number	Latitude	Longitude	Year Drilled	Surface Elevation	Well Depth	Type Lift	Static Water Level (Ft BLS)	Water Level Date	Specific Conductance	SC Date	Remarks
Black Mountain	48-23-901											Abandoned. Low capacity, quality ok for cattle.
Cottonwood	48-24-201											Abandoned. Former spring used by stage line. Very salty.
Graham	48-24-202											Abandoned. Unreliable supply.
Cavender	48-24-401											Abandoned. Low capacity, quality ok for cattle.
Jim Hill	48-24-501											Abandoned.
Bill Crane	48-24-502									3,910	5/23/2003	
Old Morrison	48-24-601											Went dry when expanded irrigation began at Diablo Farms.
Pumpjack	48-24-901											Abandoned. Poor quality and little supply.
Flat Top	48-24-903											Abandoned. Poor quality and little supply.
Westley West	48-24-904							77.93	5/23/2003	4,160	5/23/2003	Sample taken from concrete tank.
James	47-17-101											Abandoned. Pure Oil Co. Grable #1.
Soda	47-17-217											Unused, dry well.
Little Babb	48-32-301											Abandoned.
Old Babb	48-32-601											Abandoned.
New Babb	48-32-602							135.96	5/23/2003	17,400	5/23/2003	Reported yield 32 gpm. Water reported encountered at 300 feet.
Wimberley	47-26-101											Reported good quality. Never pumps off.

APPENDIX B
Current Pumping Tests



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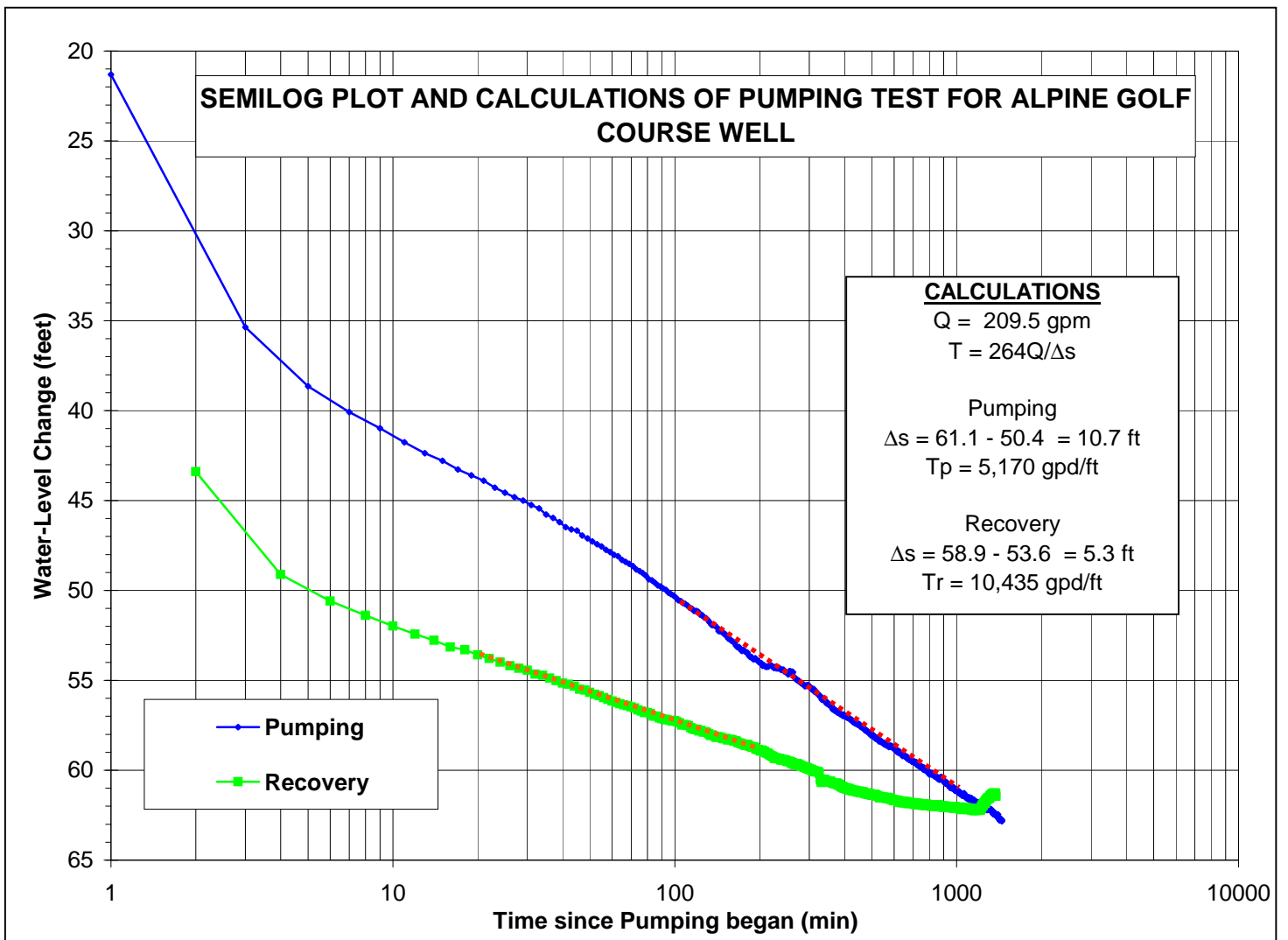
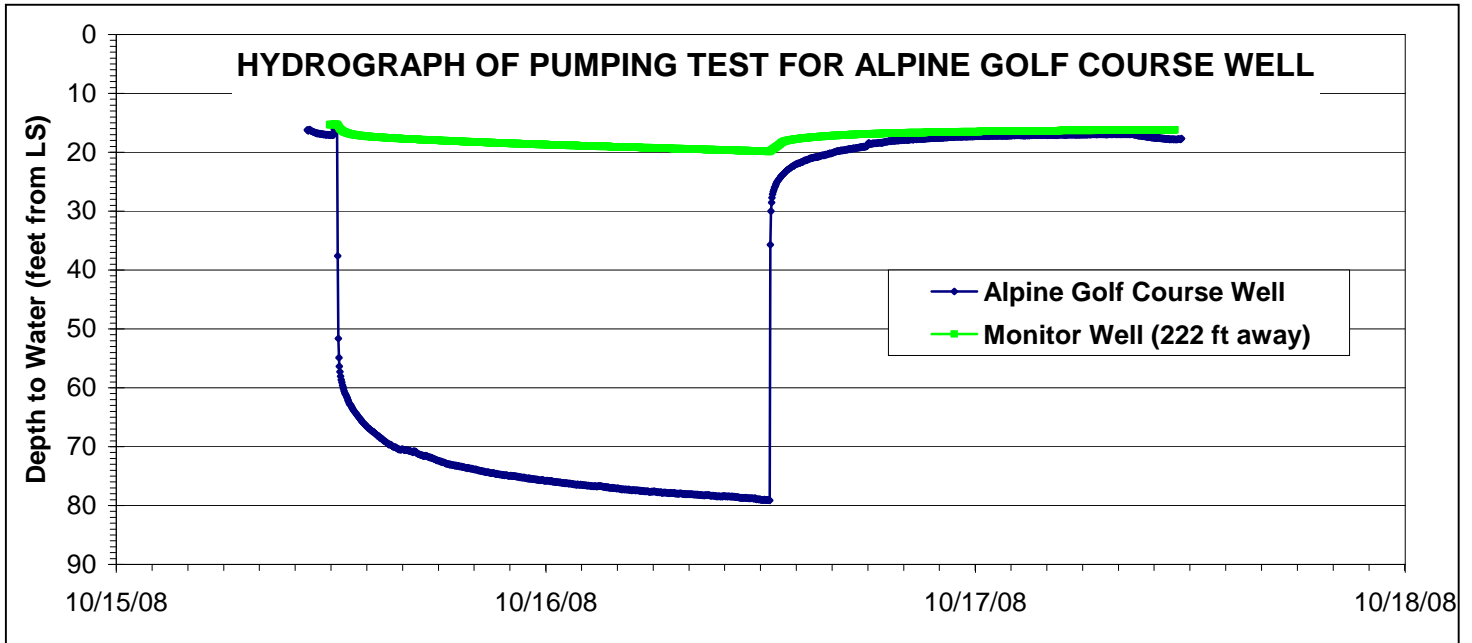


Figure B.1 Alpine Golf Course Pumping Test





Alpine Golf Course Well (52-43-312)



**Domestic Observation Well
located 222 feet to southeast**

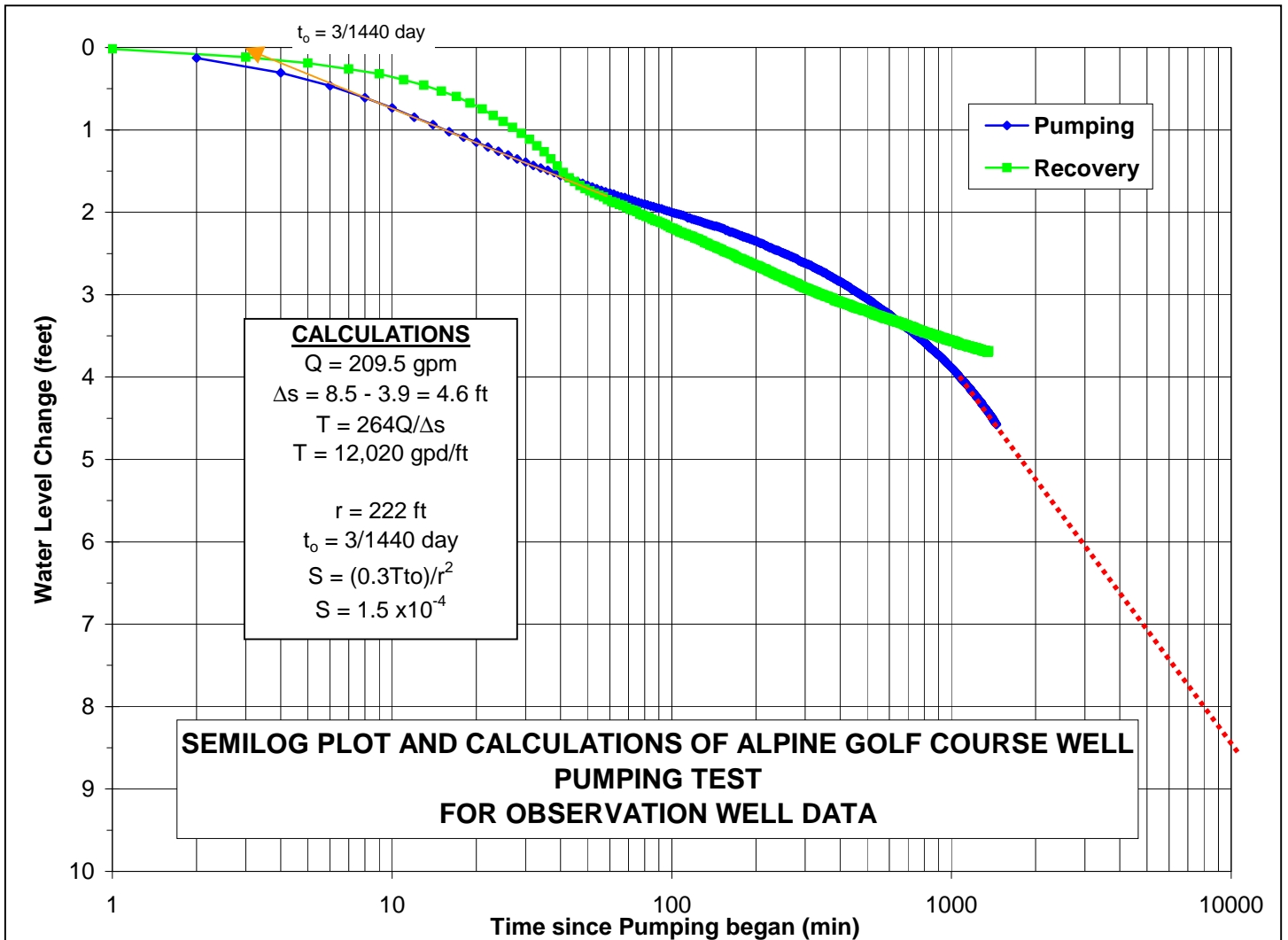


Figure B.1 continued



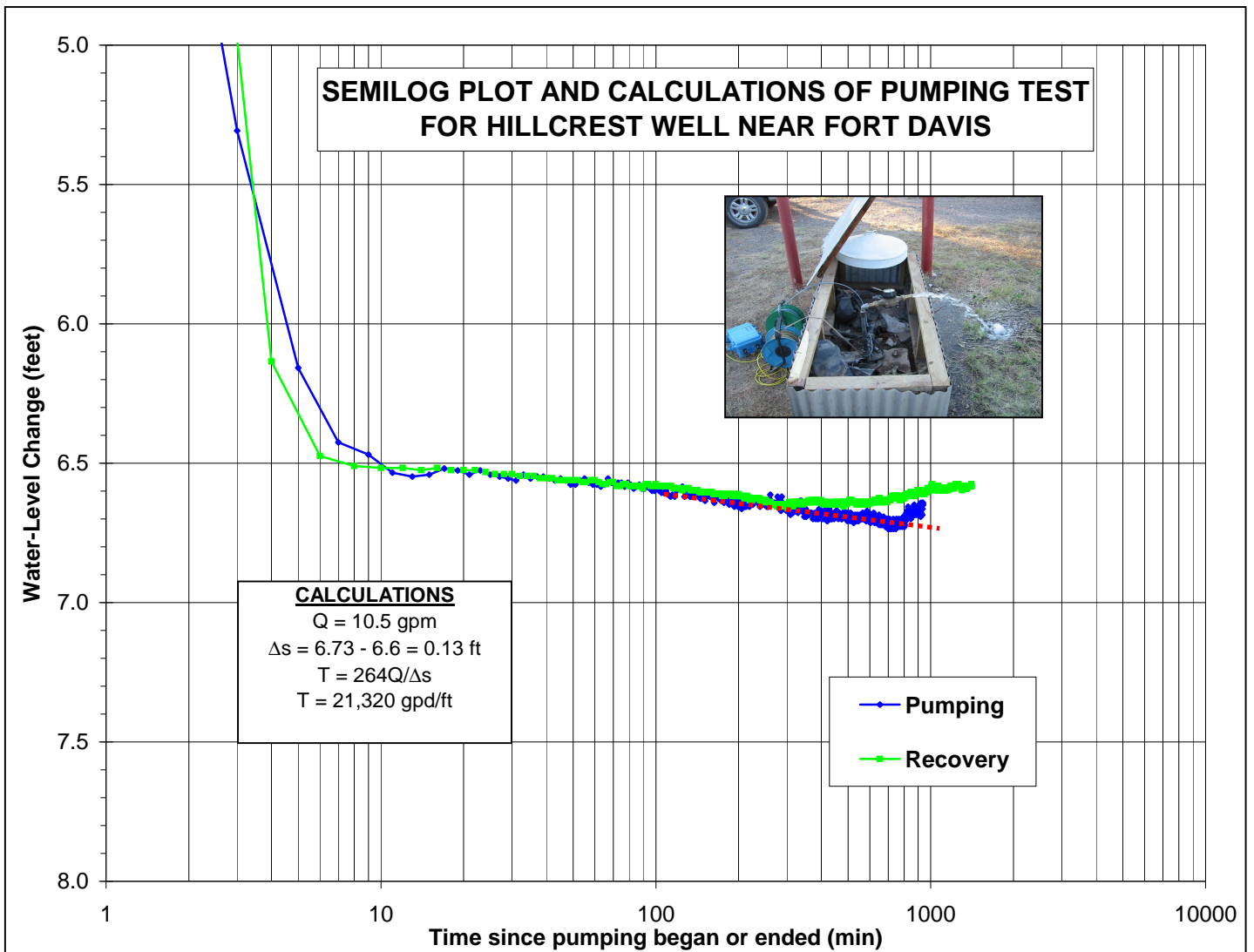
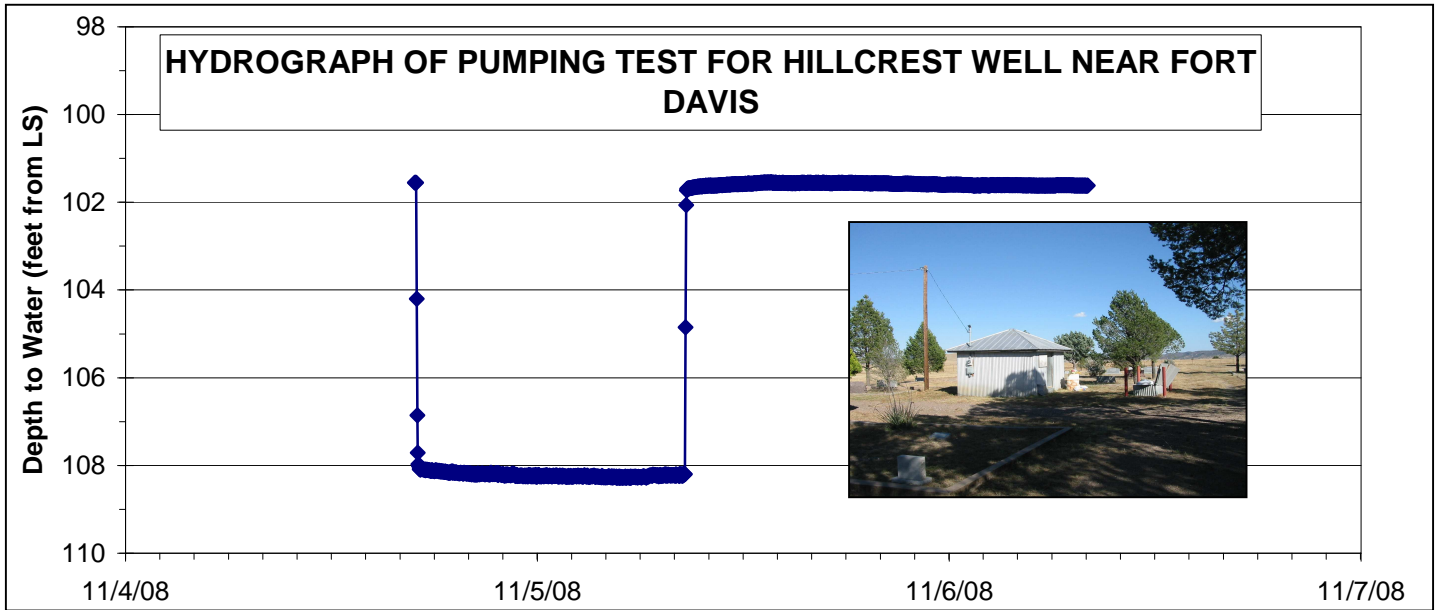


Figure B.2 Hillcrest Pumping Test



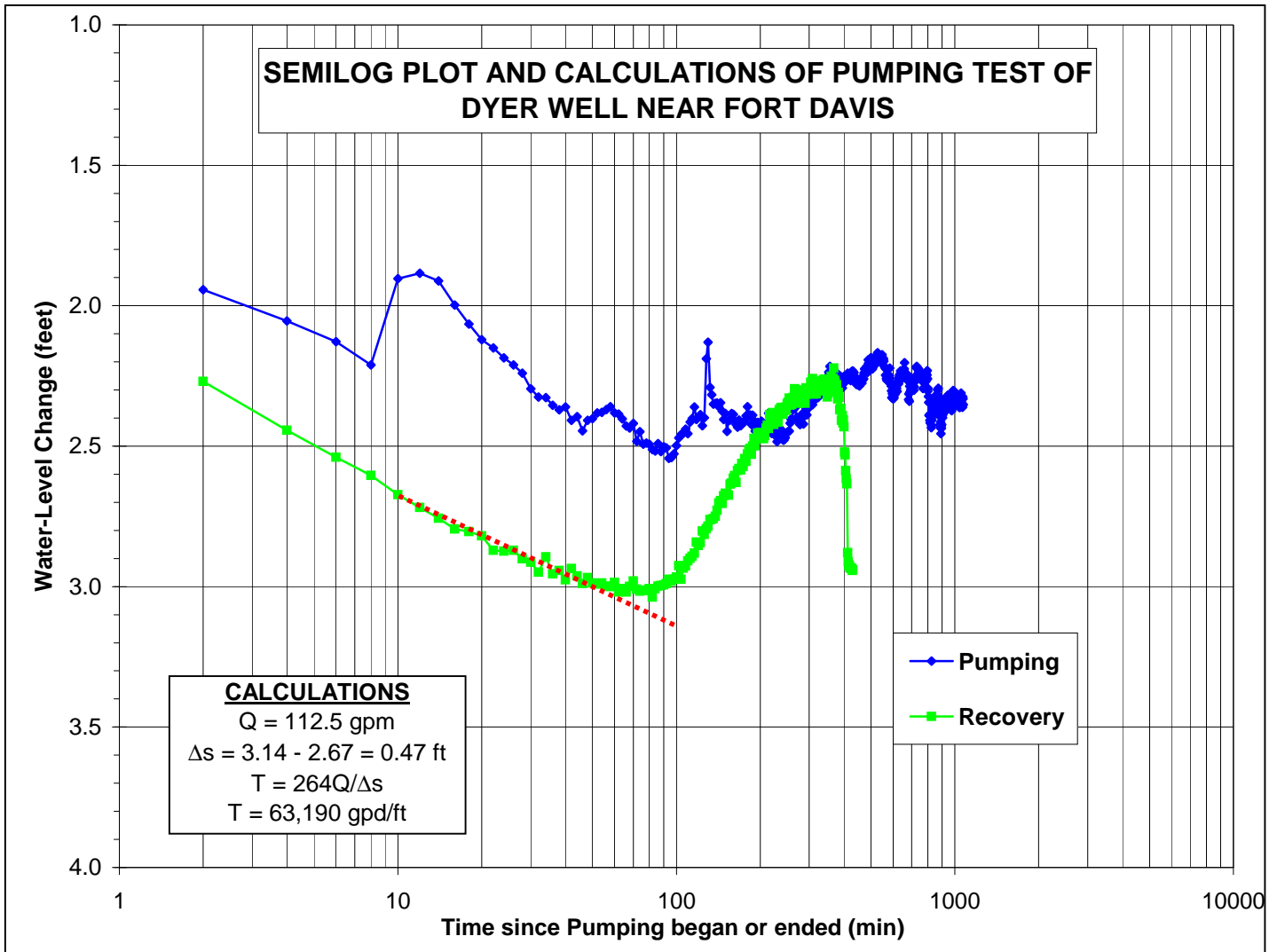
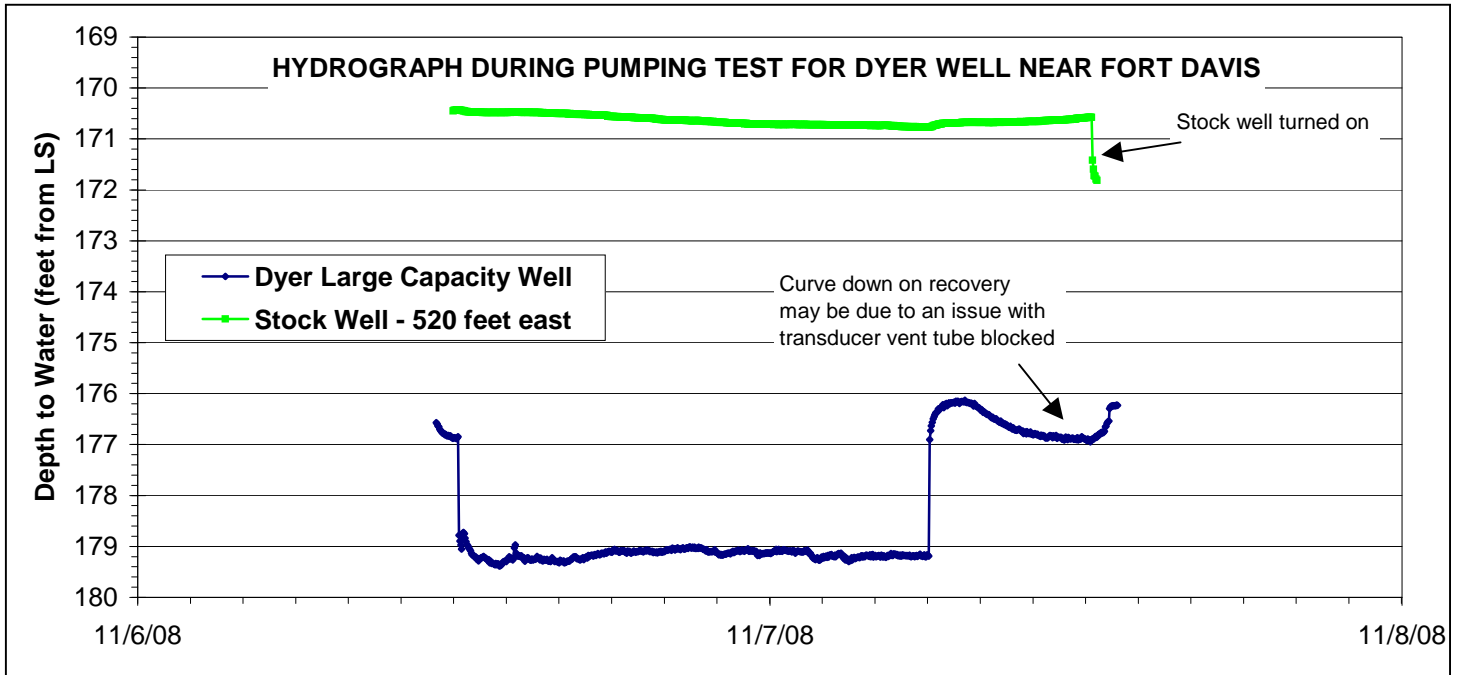


Figure B.3 Dyer Pumping Test





Dyer - Big West (51-32-904)



Dyer - Stock (51-32-905)

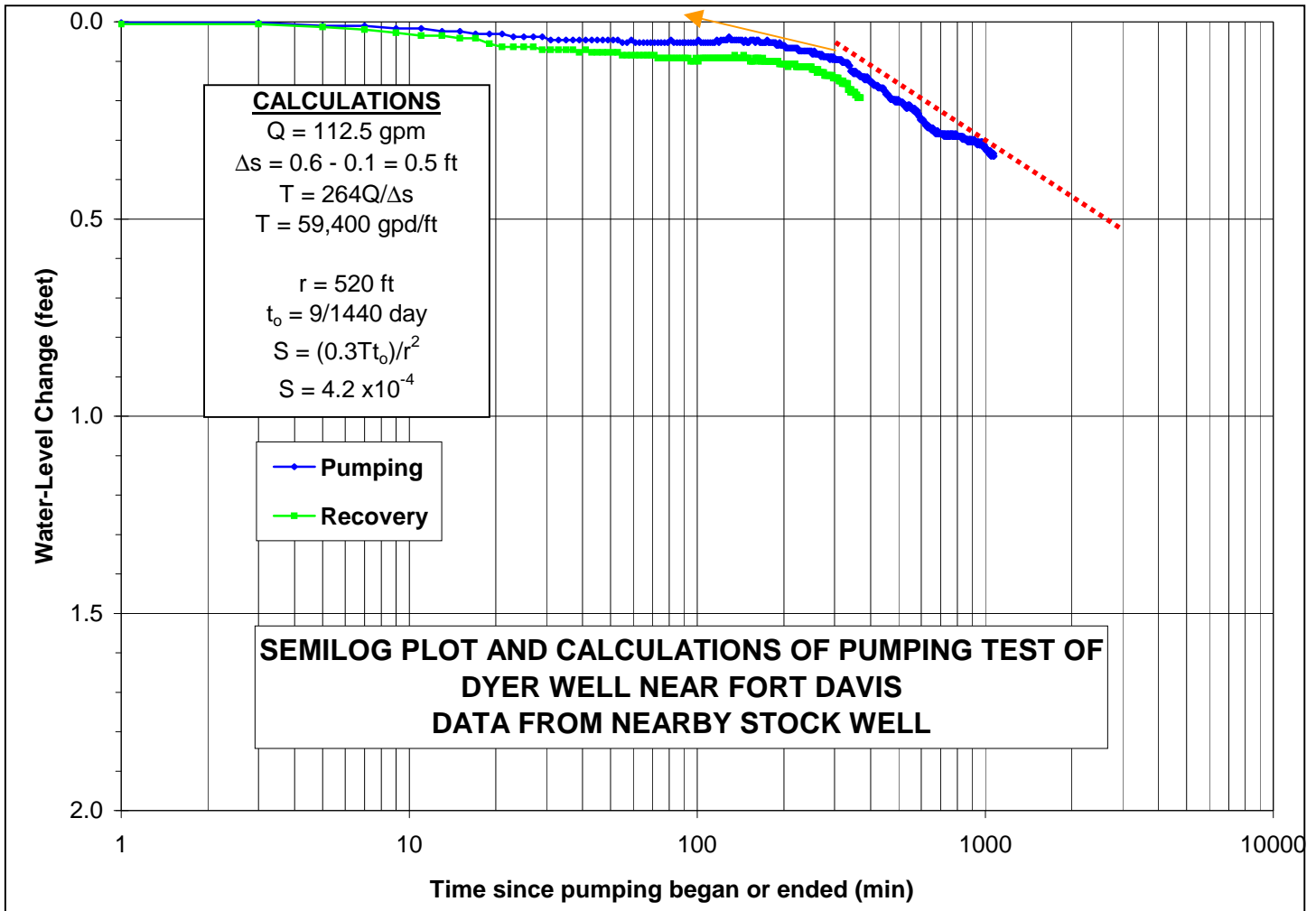


Figure B.3 continued



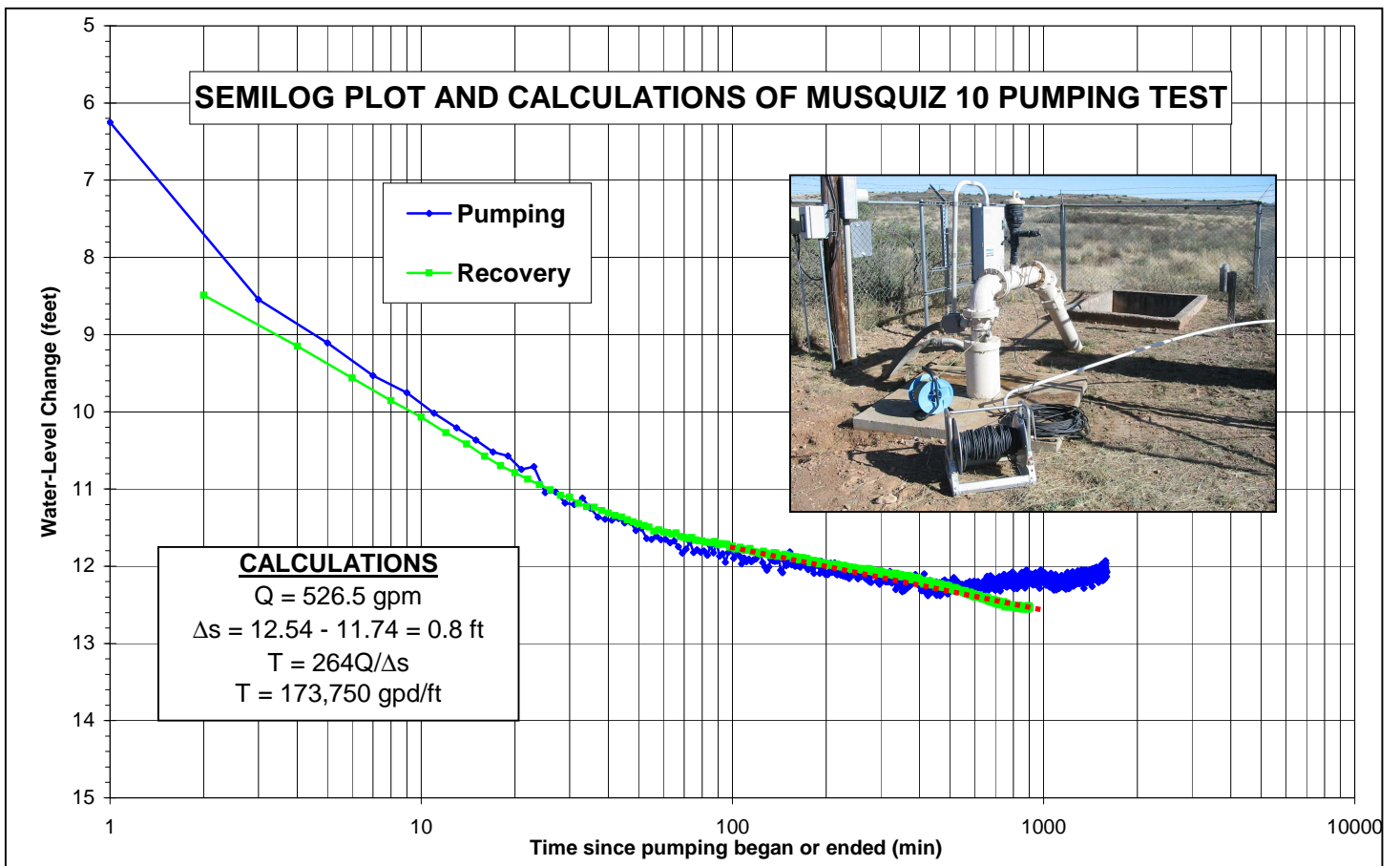
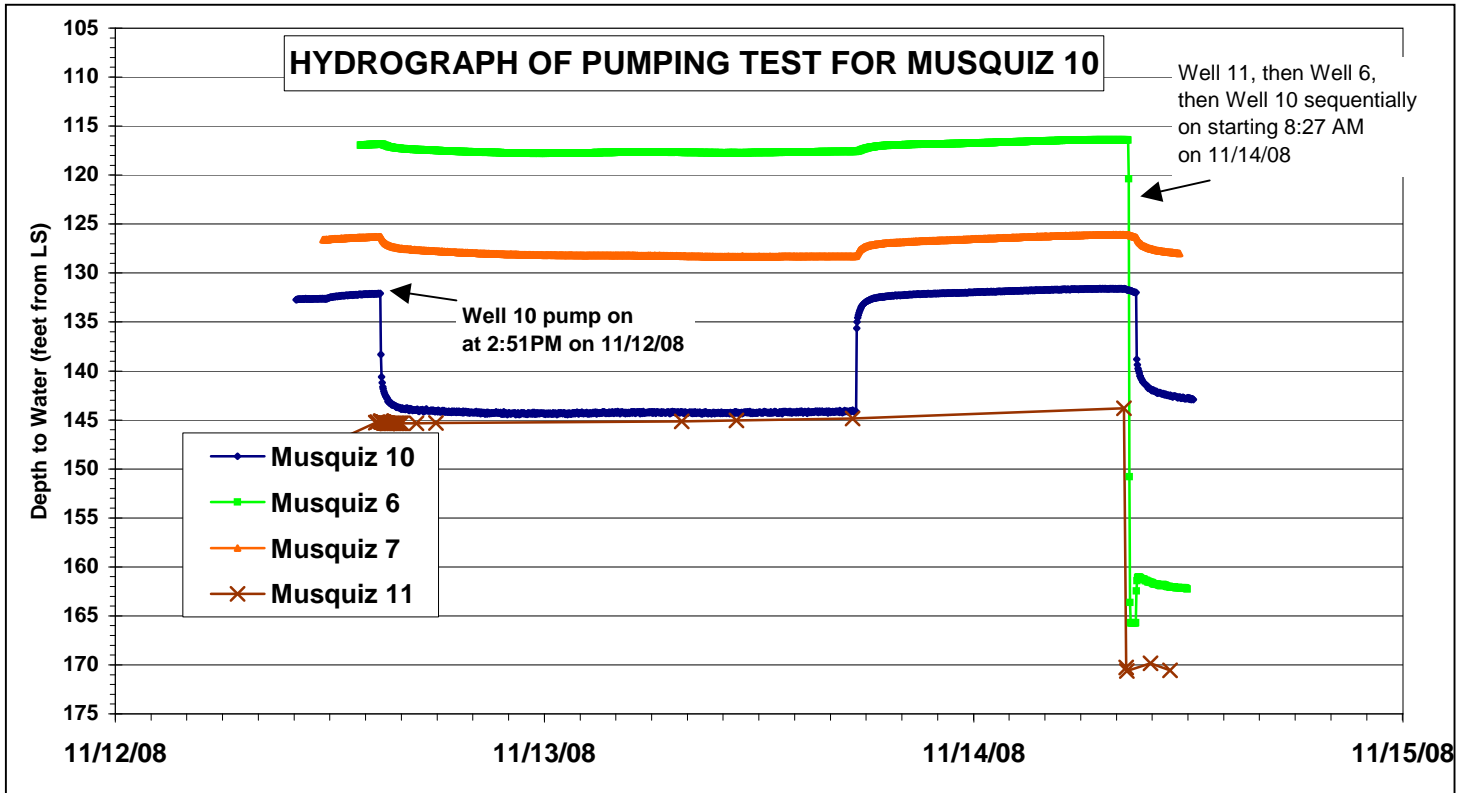


Figure B.4 Musquiz Pumping Test



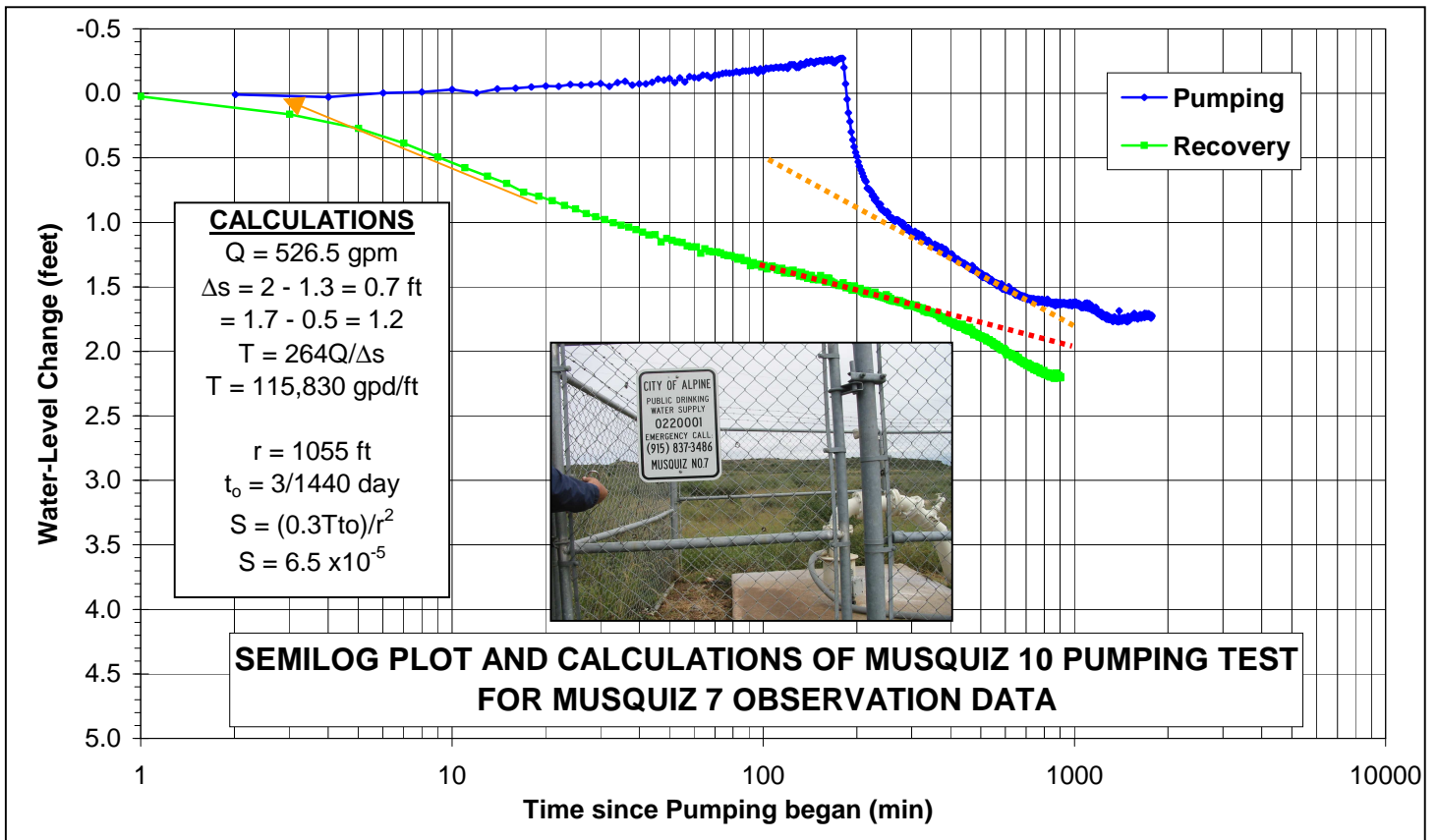
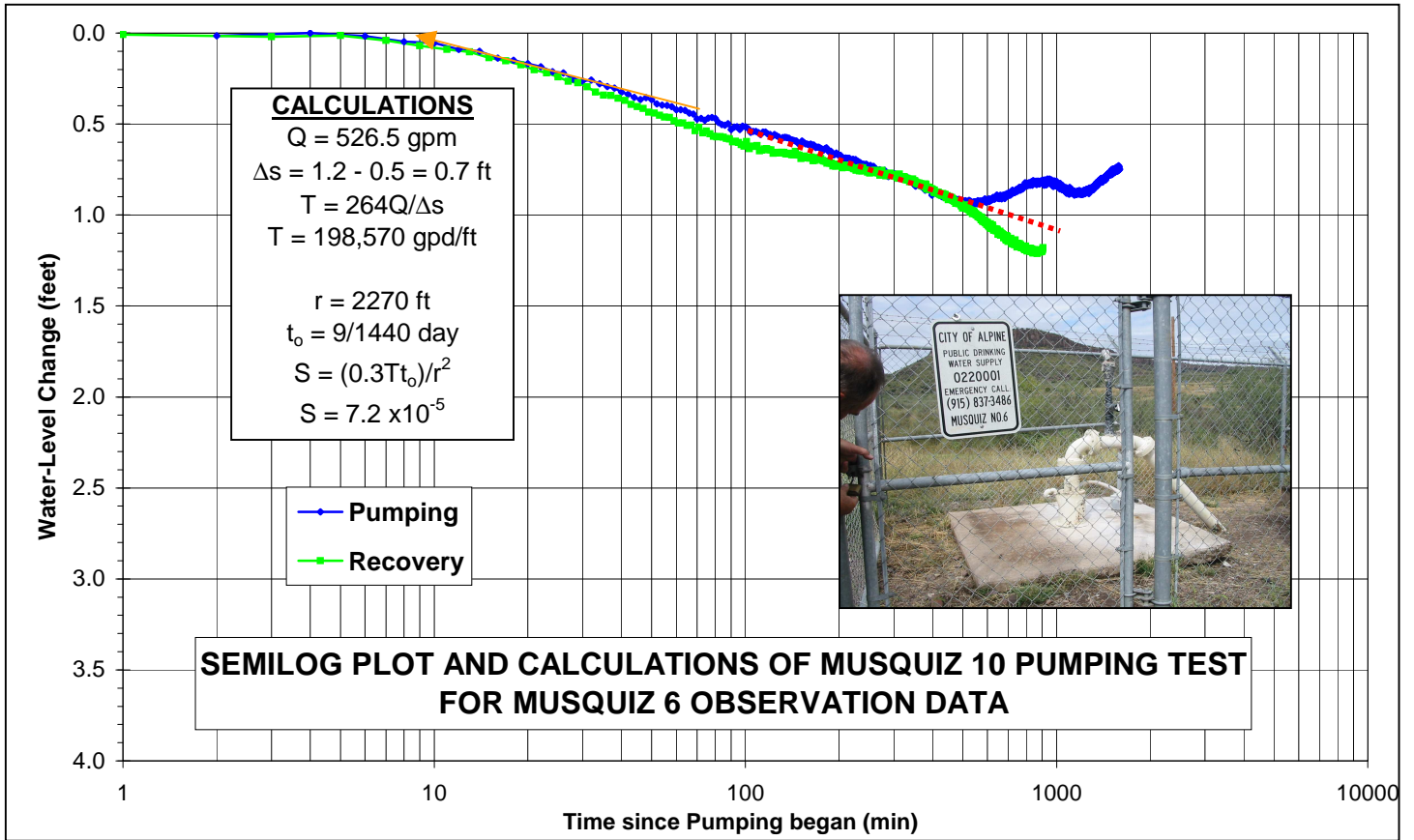


Figure B.4 continued



APPENDIX C
Previous Pumping Tests



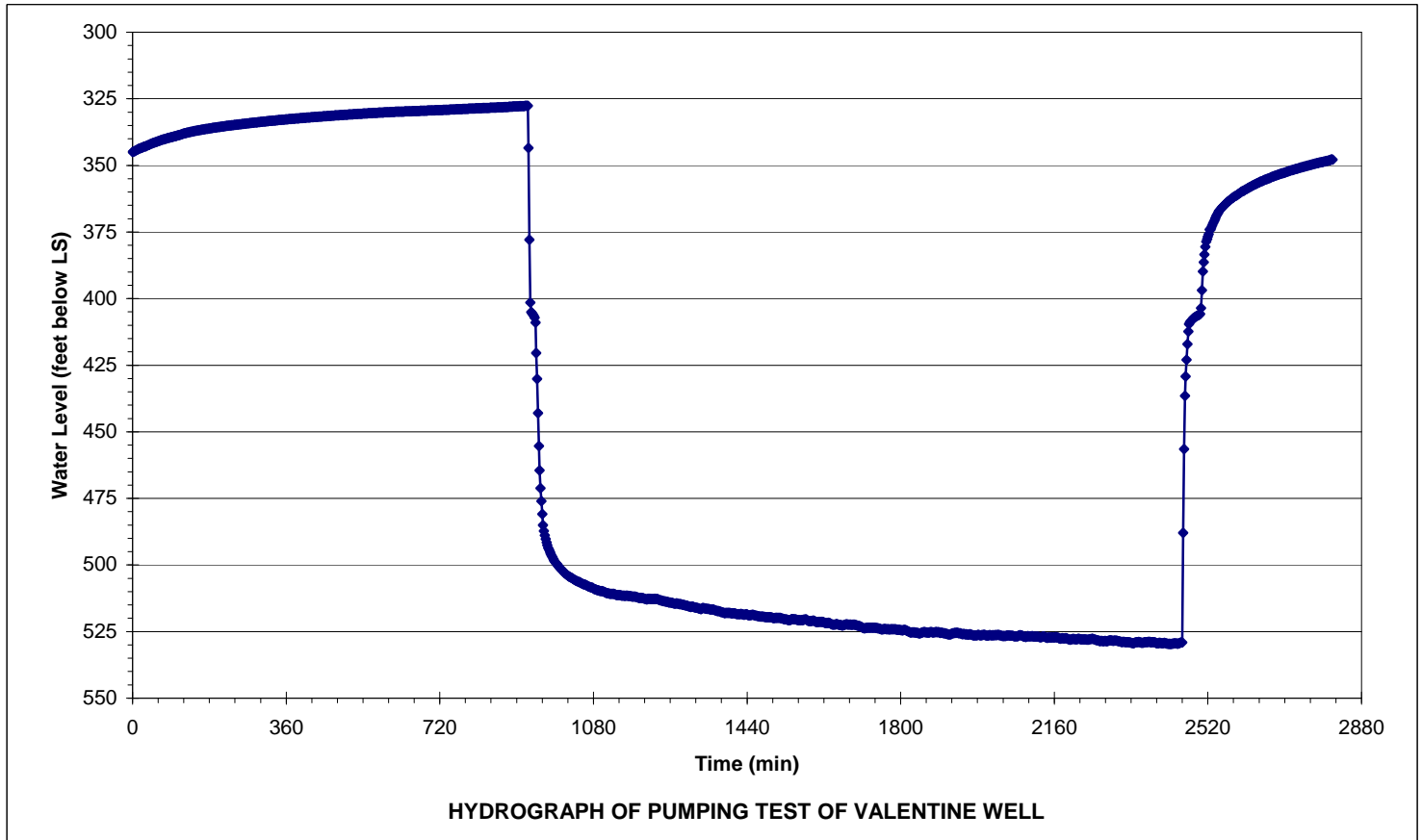
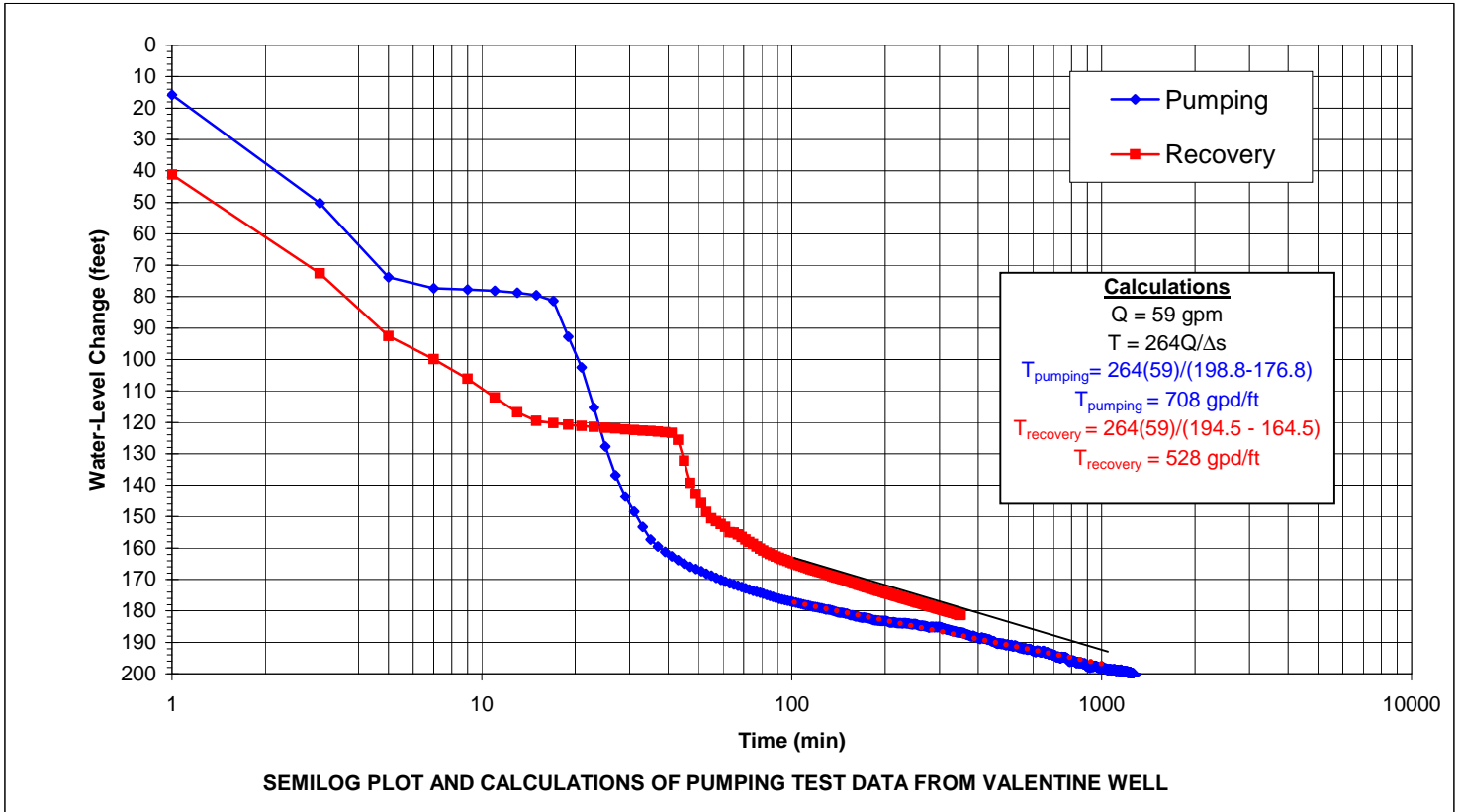


Figure C.1 Valentine Pumping Test



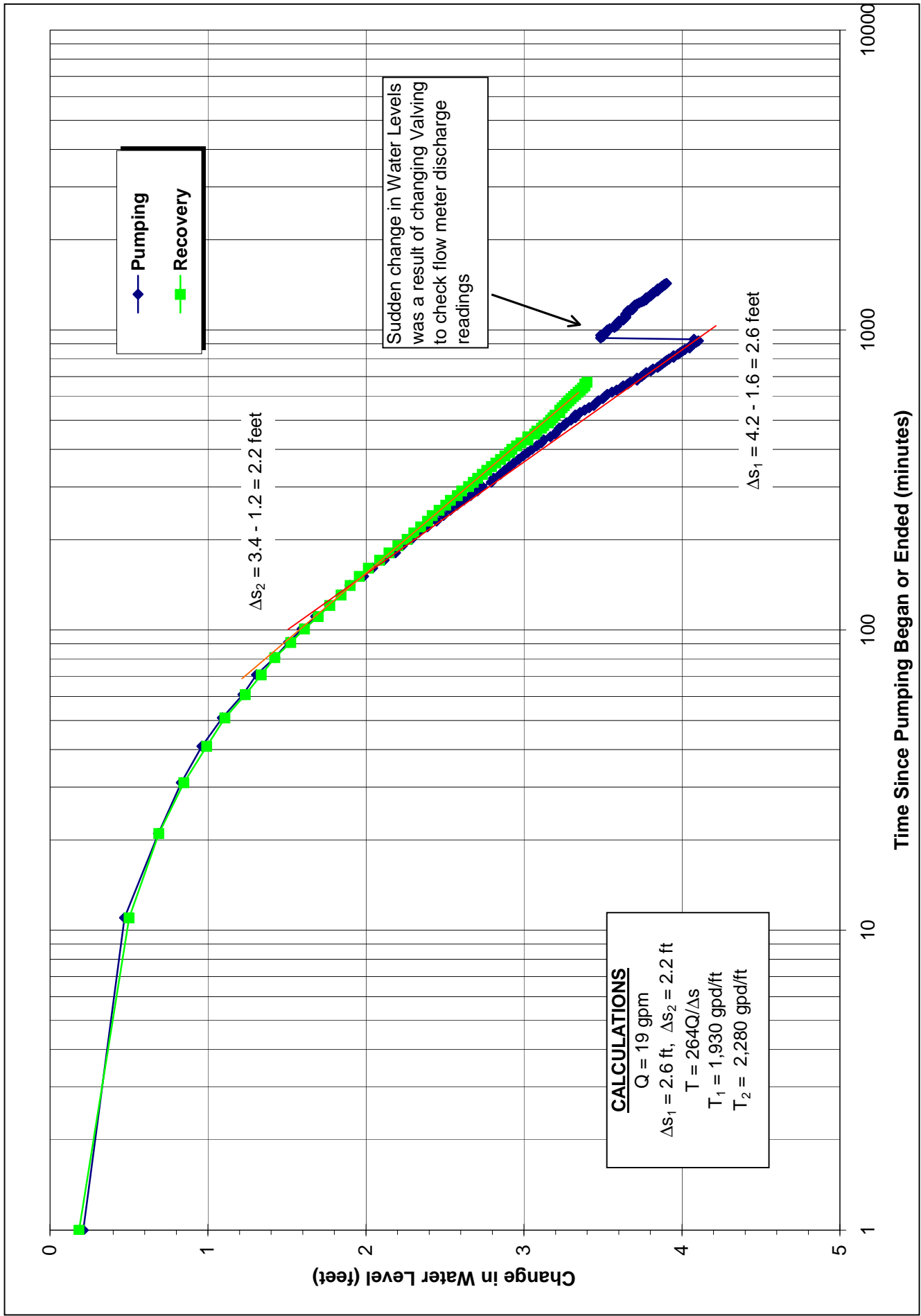


Figure C.2 McDonald Observatory Well No. 1 Pumping Test



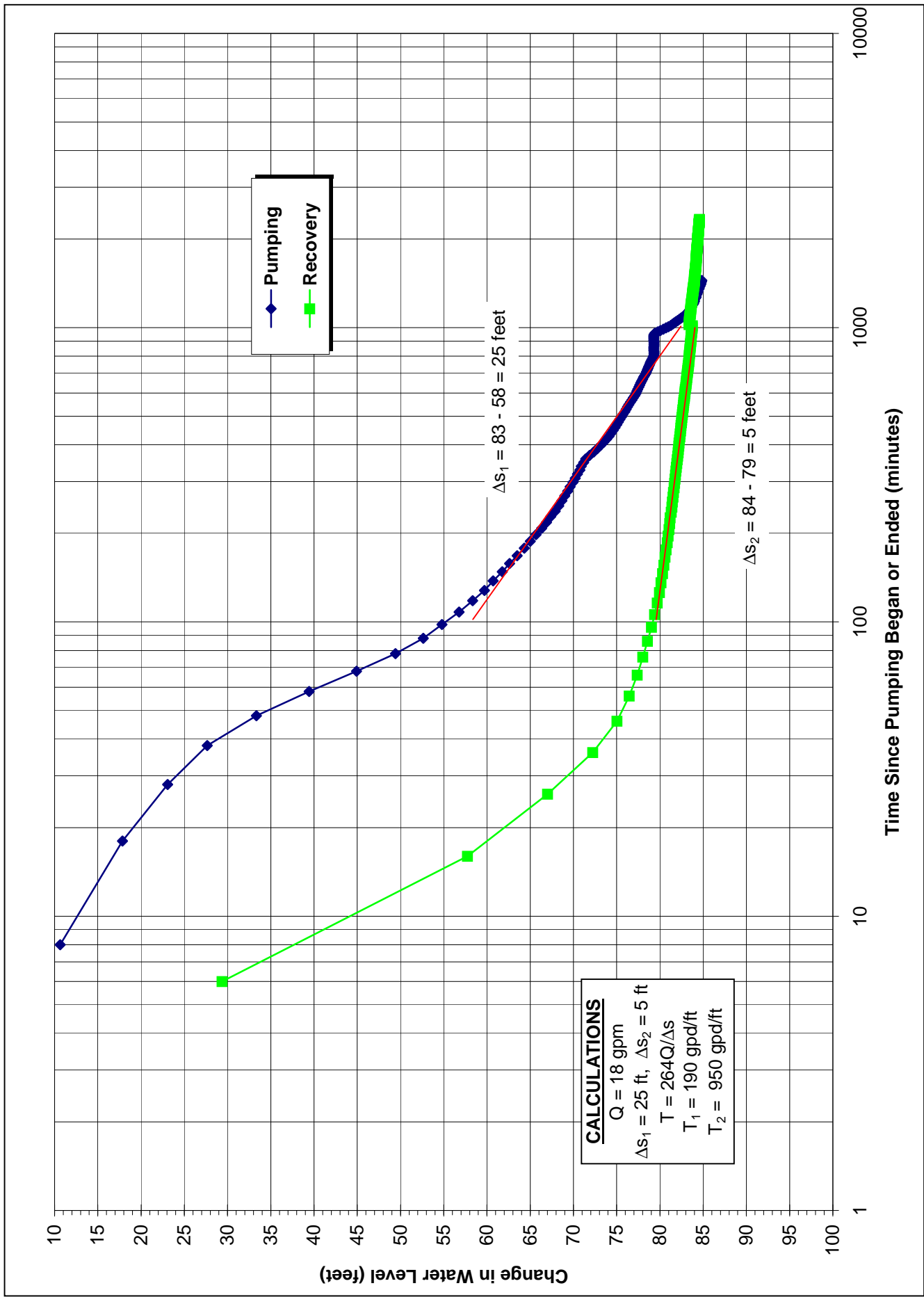


Figure C.3 McDonald Observatory Well No. 2 Pumping Test



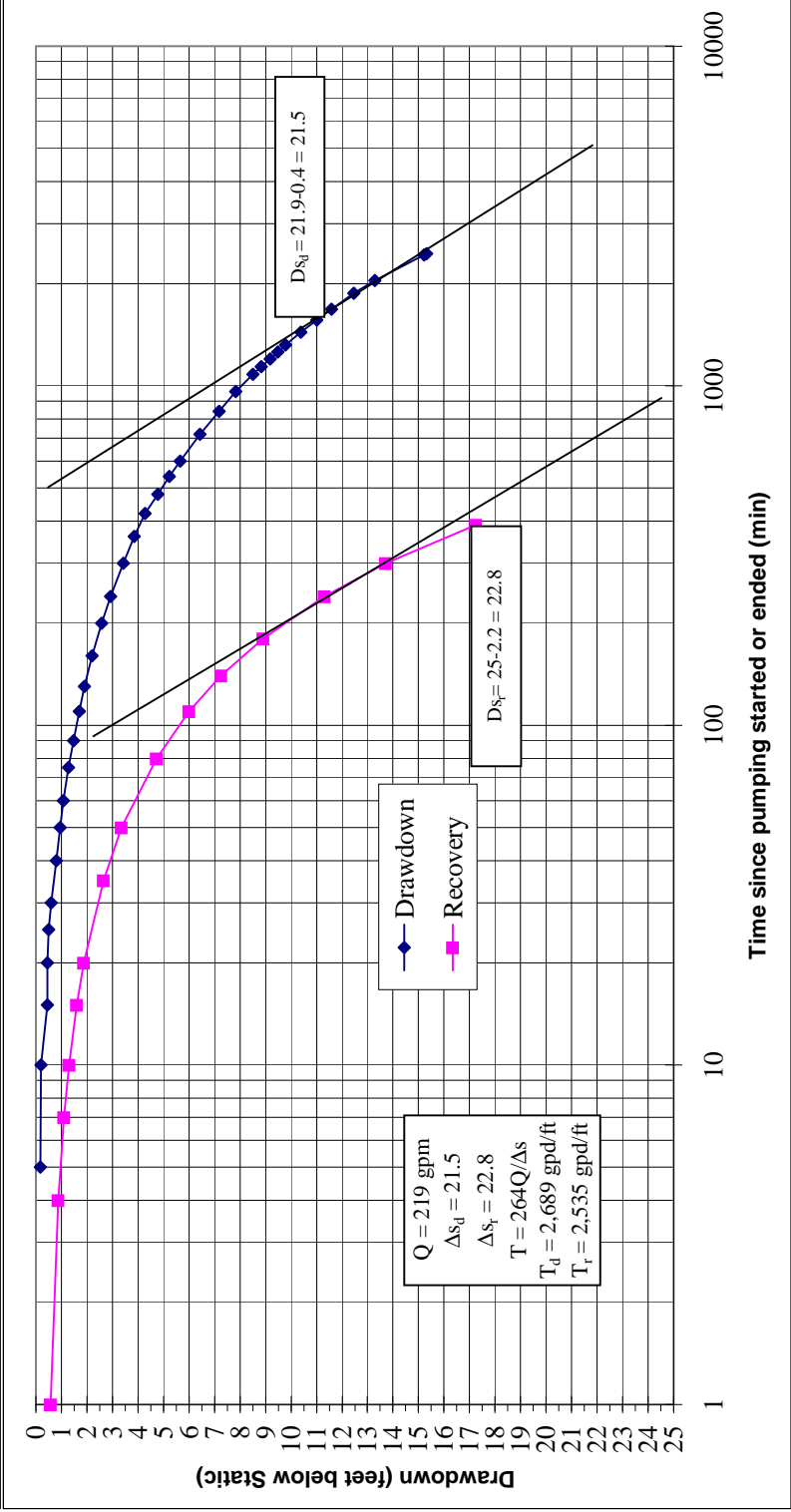
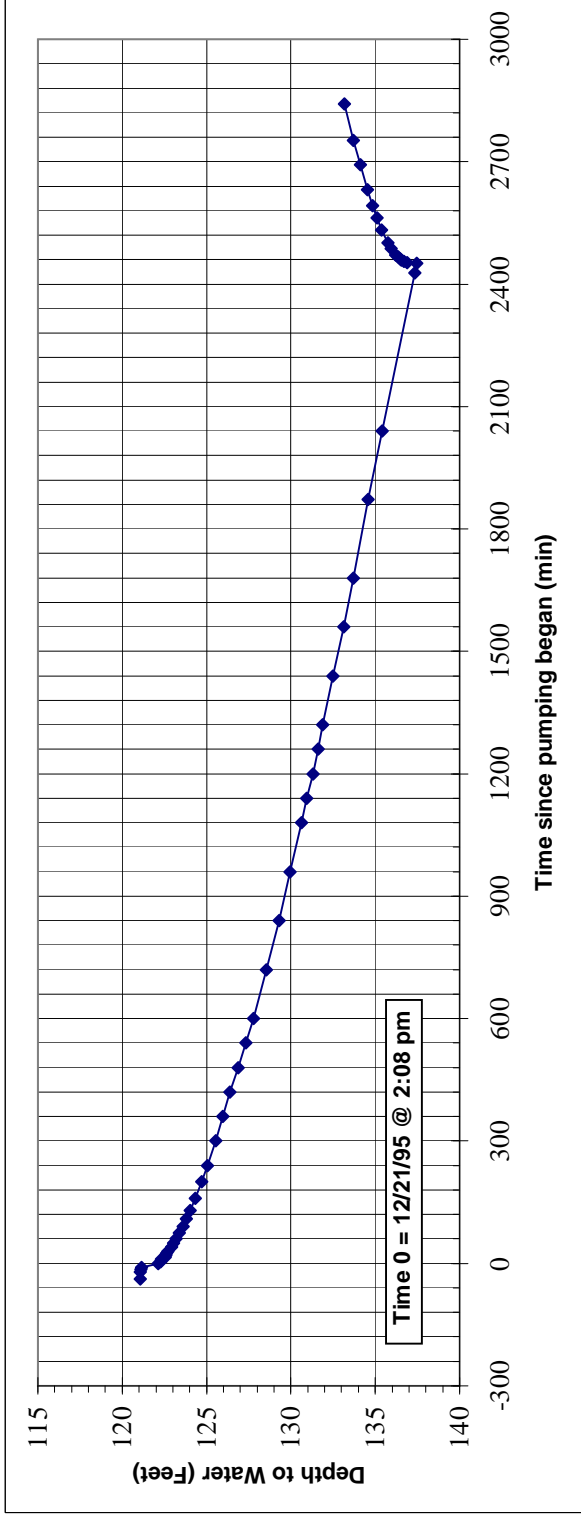


Figure C.4 Fort Davis Village Farms Well No. 2 Pumping Test



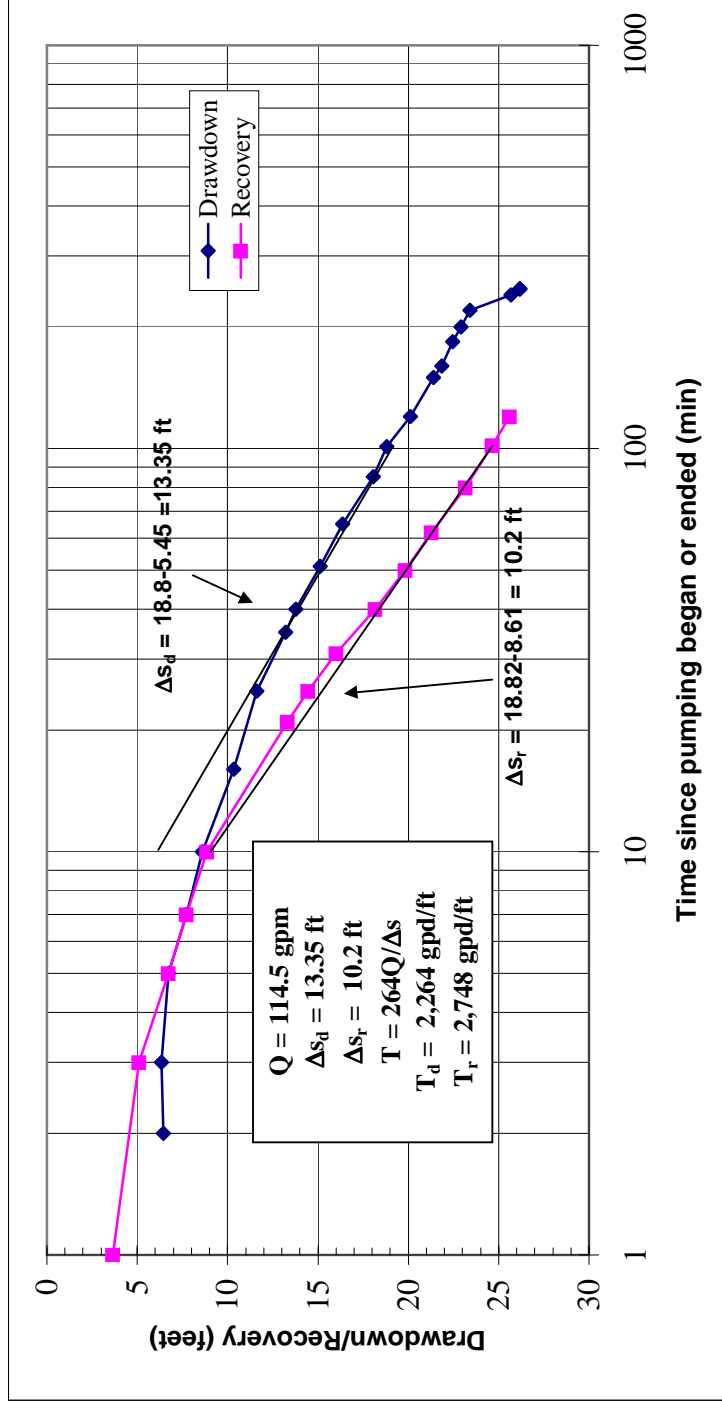
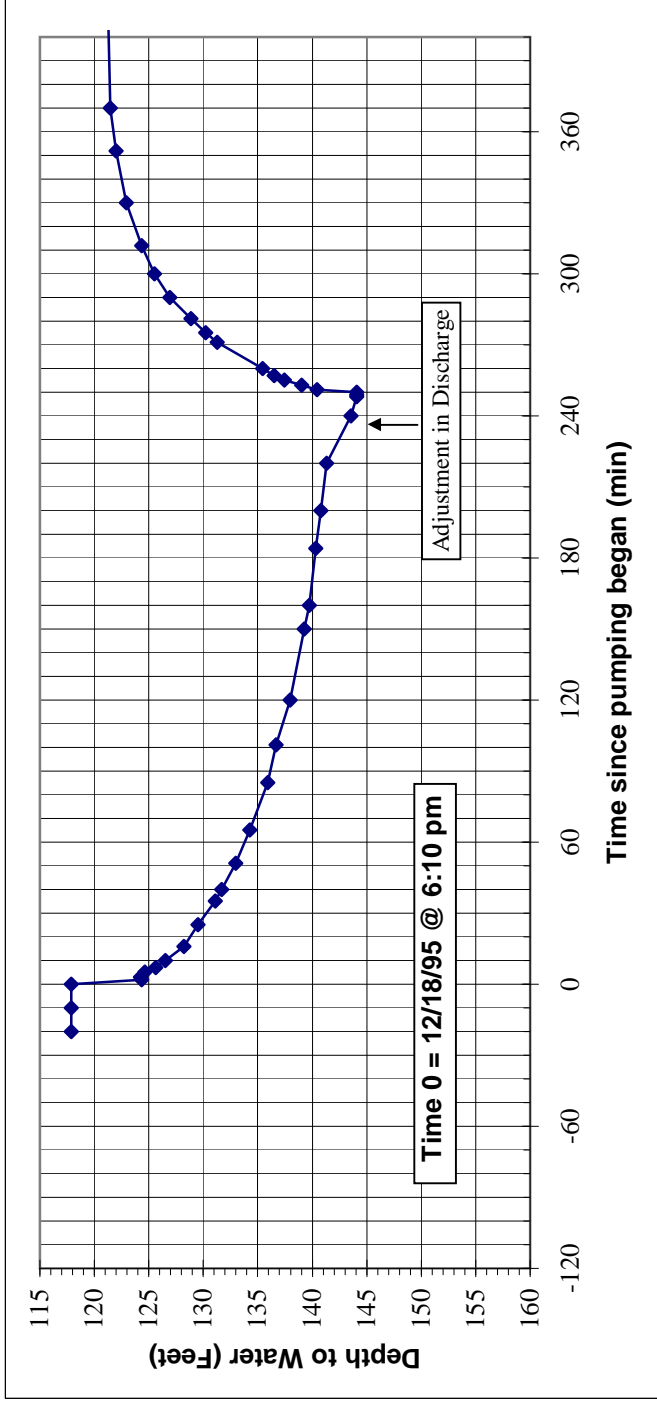


Figure C.5 Fort Davis Village Farms Well No. 3 Pumping Test



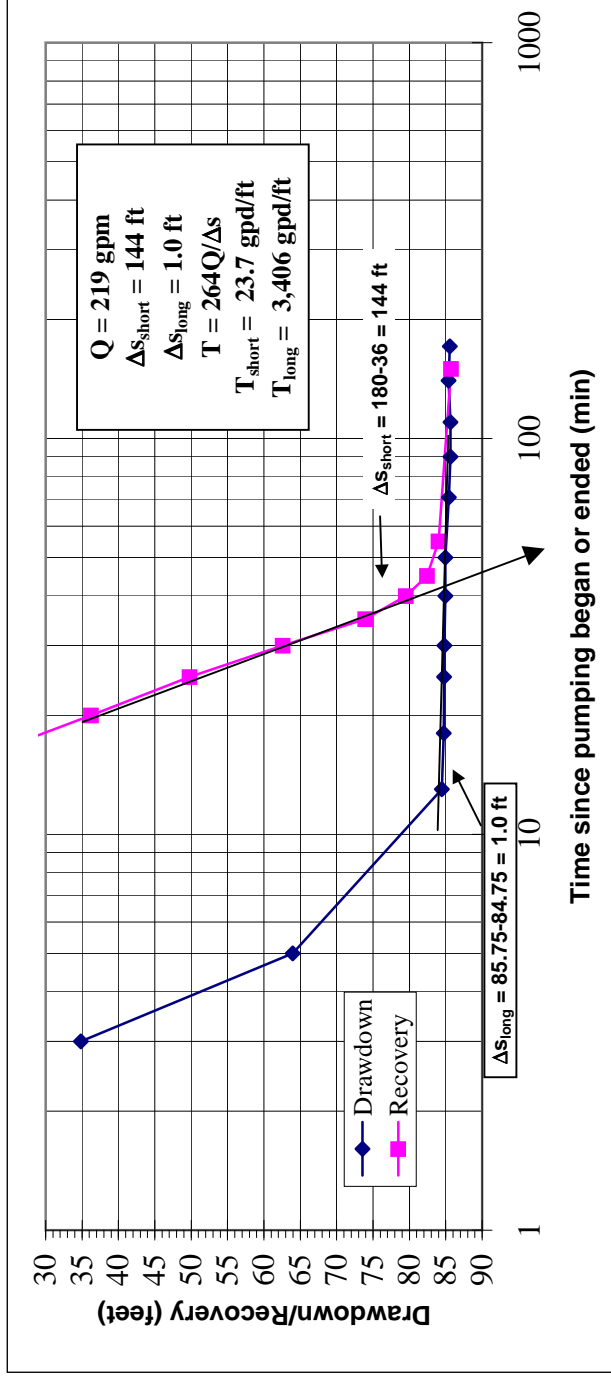
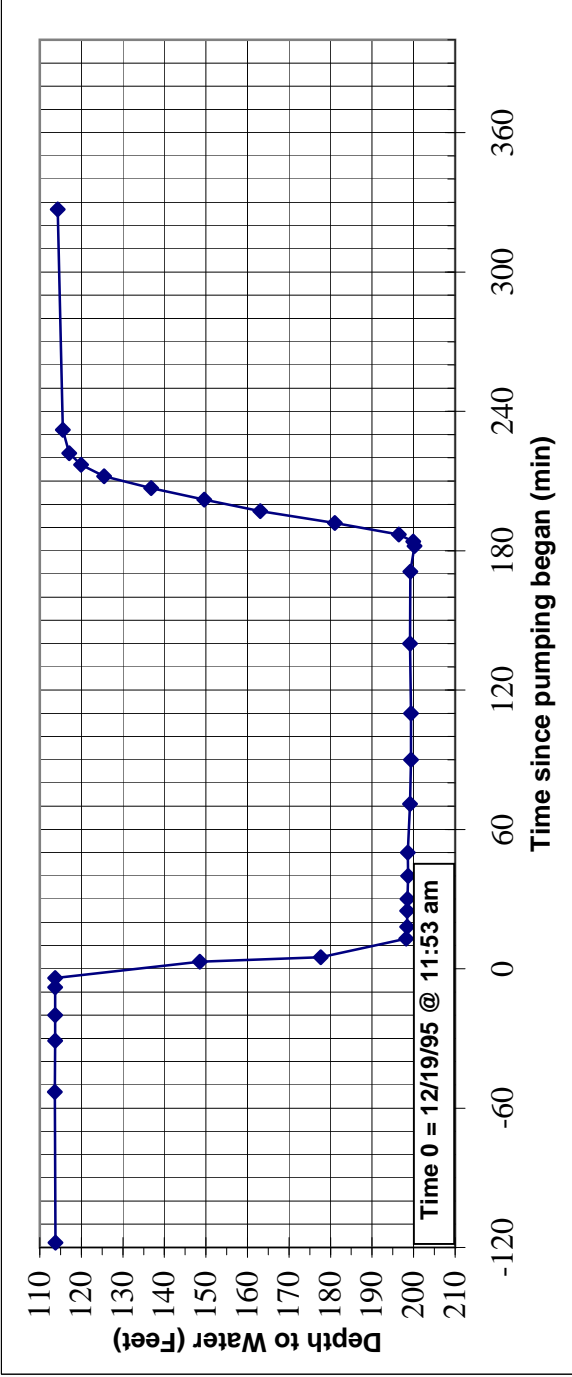


Figure C.6 Fort Davis Village Farms Well No. 4 Pumping Test

LBG-GUYTON ASSOCIATES



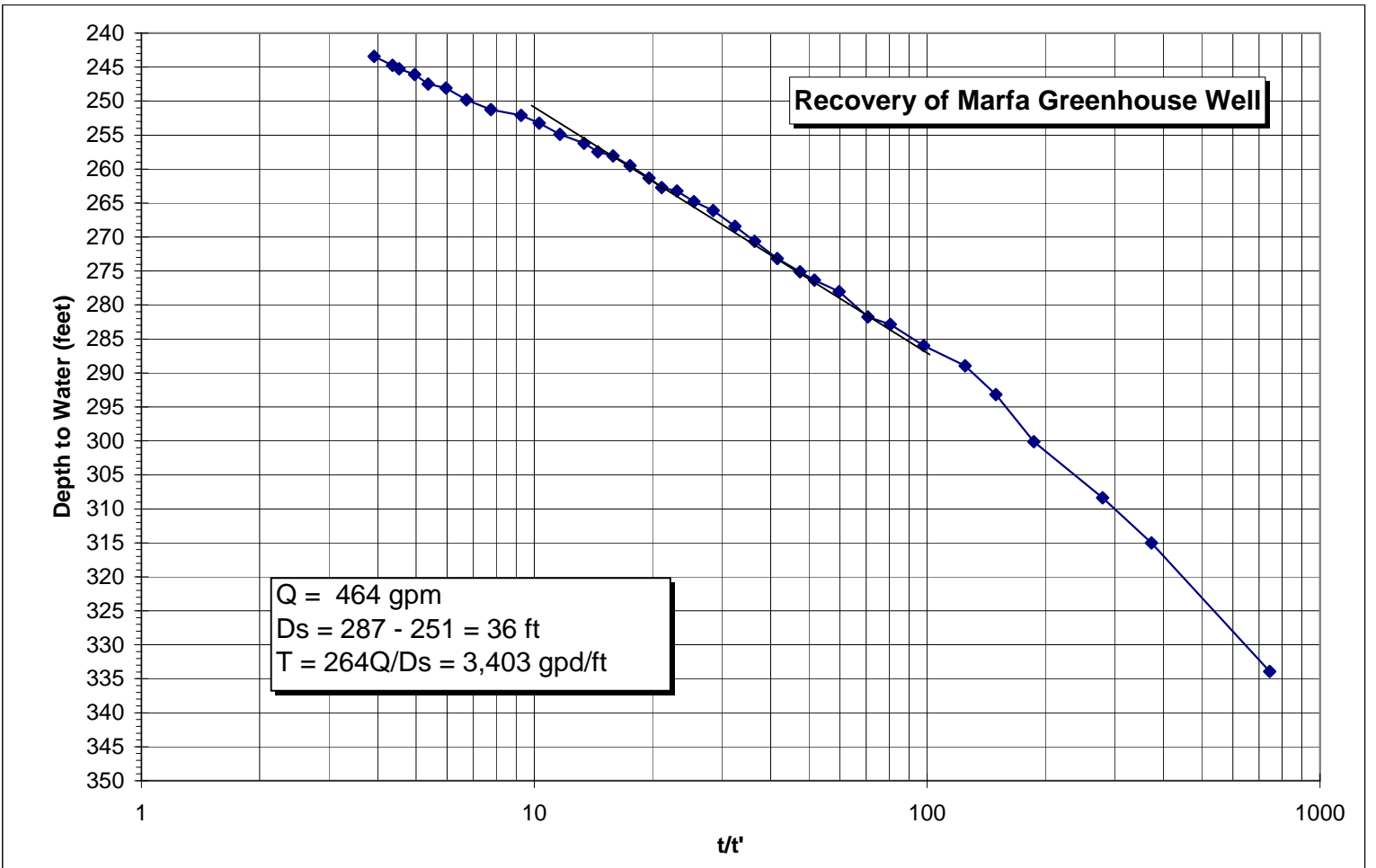
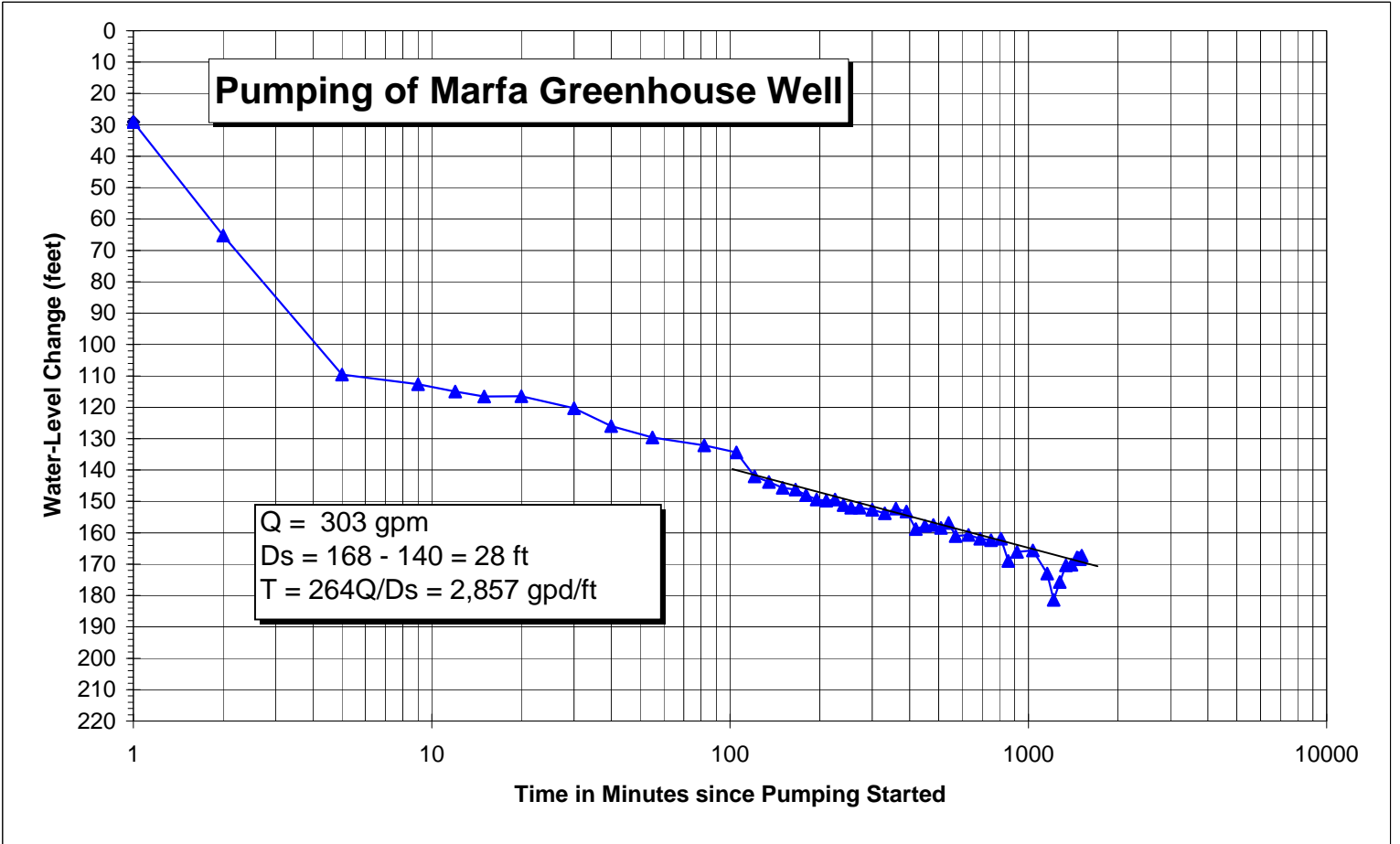


Figure C.7 Marfa Village Farms Pumping Test



APPENDIX D
Response to TWDB Comments



APPENDIX D-1
TWDB Contract No. 0704830690

TWDB Comments on Draft Final Phase 1 Special Studies Reports

Far West Texas (E) Region-Specific Studies

Study #1: Groundwater Data Acquisition/Compilation, & Aquifer Well Testing

General: Please submit all data and maps in an appropriate electronic format along with the final reports as stated in the contract between the Texas Water Development Board (TWDB) and Region E.

Response: All data and maps are prepared in an appropriate electronic format. Final report includes responses to TWDB comments.

1. All Report Figures: In the final report, please consider reviewing all figure formatting and changing, where appropriate, so that all details will be distinguishable in a Black & White format. (especially Figures 3.1–3.7 and 4.1–4.2)

Response: Well symbol designations are changed in Figures 3.1, 3.4 and 4.1 to distinguish well classifications. Background aquifer color is left as is to coincide with TWDB aquifer color scheme.

2. Please consider listing and identifying contents of appendices in the report's table of contents.

Response: Appendices are listed in the Table of Contents.

3. Contract Scope of Work (SOW) Deliverables: Please include in the final report a Conclusions/ Recommendations section to bring together the reasons for performing this study, the study's goals, and how the goals were achieved or not achieved, and summary discussion of recommendations for the next step(s) the Regional Water Planning Group should pursue in this process.

Response: Conclusions and Recommendations section is added to the report.

4. Contract SOW item 1 (and Deliverables methodology section): For a better comparison in the report figures and tables that show where data-deficient areas have been filled, where appropriate:

- a. Please only include TCEQ wells that have "usable" data available; and add detail to map figures to distinguish between TCEQ wells that have "usable" water levels and TCEQ wells that have "usable" water quality measurements.

[Please note that for this study "usable" data are defined as an individual TCEQ public water supply (PWS) well with measurements or an individual TCEQ PWS well where this study has obtained data samples before the groundwater is mixed or treated. Usable

types of data include well location (including latitude/longitude), well depth, aquifer identification, field collection techniques, water level, and dissolved inorganic/trace metal constituents. See appropriate format at

<http://www.twdb.state.tx.us/GwRD/HEMON/gwdatasub.asp>; and, TWDB Data Dictionary (UM-50) & Sampling Manual (UM-51) at <http://www.twdb.state.tx.us/publications/manuals/Manuals.asp> .]

- b. Please add detail to individual county map figures to distinguish between “new” wells from the GCDs and wells that have submitted drillers’ reports available. [Please note that data from the drillers' report database are questionable and are not “usable” by TWDB staff until actually visited & physically inventoried]

Response: 4a – TCEQ wells with production data is only shown in Figure 4.1 as a point of data availability reference. Usable new data is provided electronically to the TWDB in the appropriate TWDB format. Also see responses to comments 8, 10 and 13.

Response 4b – Figure 3.4 of Jeff Davis County is the only figure that distinguishes between new wells with state tracking numbers and wells identified by the GCD.

5. Contract SOW items 1b & 2b state that coordination would occur with Sul Ross State University and the TSU System to identify wells that have been tested or will be tested under their "Sustainable Agricultural Water Conservation in the Rio Grande Basin" (SAWCRGB) research project. Please document and discuss the results of these coordination efforts in the final report.

Response: Coordination discussion is provided in the fourth paragraph of Section 2.0.

6. Contract SOW items 1c & 2c state that coordination with groundwater conservation districts would occur. Please document and discuss the results of these coordination efforts and how they relate to the data presented in Tables A.1 - A.5 in the final report.

Response: Coordination discussion is provided in the fourth paragraph of Section 2.0 and in Section 3.1.

7. Contract SOW items 1d & 2d state that additional sources of well data & wells to be tested would be identified. In the final report, please document how this was accomplished and specify the types and sources of new data that are used in this study. Also, please document and discuss the results of this work, including maps where appropriate.

Response: The principal source of new well data is presented as driller's reports of wells drilled during the previous 10 years. Locations of these data are provided in Figures 3.2 through 3.5 along with a note on each figure stating that the data has not been field verified by the TWDB or GCDs. GCD managers assisted in the identifying new wells for sampling and testing. Locations of these wells are included in Figures 3.7 and 4.2.

8. Contract SOW item 1e states selected data would be prepared for inclusion in the TWDB Groundwater Database, including accurate well locations and aquifer designations. Please revise tables A.1 – A.5 in the appropriate format in the final report and in the appropriate electronic data format for inclusion in the database.

Response: Tables A.1 through A.5 are provided in the report in a format for ease of viewing by the lay reader of this report. Usable new data is provided electronically to the TWDB in the appropriate TWDB format.

9. Contract SOW items 1f & 2a state that TWDB staff would assist in the identification of wells for sampling, analysis, and modeling. Please document and discuss the results of this coordination and the methodology used to select the sites. In particular, please clarify the choice to cluster the sites within a relatively small area of the Davis Mountain Igneous Aquifer even though the SOW specifies that the study emphasis will be on the Rustler, Capitan Reef, and West Texas Bolsons aquifers.

Response: Coordination with TWDB staff and selection of testing locations is discussed in paragraph 3 of Section 2.0 and paragraph 3 of Section 4.0.

10. Contract SOW item 1f: Some of the sites with water quality analyses will require the assignment of TWDB state well identification numbers. To accomplish this task, please provide a table with types of data specified in comment #4 above. Also, please use the attached spreadsheet for appropriate water quality data entry for the 22 sites specified in this report and identify the lab that performed the analyses.

Response: Usable new data is provided electronically to the TWDB in the appropriate TWDB format.

11. Contract SOW item 1g notes the relationship that exists between the amount of groundwater available in a region and the establishment of desired future conditions by the groundwater management area. Please include a discussion of this item in the report.

Response: Groundwater availability in relationship to desired future conditions is discussed in Section 5.

12. Contract SOW item 2e: Please provide digital pdf files of the aquifer well-testing plots, along with enough record of the well information to assign state well numbers for the two sites currently lacking them (Emily Alexadia [sic] and Hillcrest Cemetary [sic]). Please include the scanned image files for the 8 additional pump tests in the submittal of the final report. Also, please make note as to whether or not any of these sites are available as observation wells for the future.

Response: PDF files of all test plots are provided. Well data for the two non-SWN wells is also provided to the TWDB in the appropriate format. The City of Alpine wells may be the most easily accessible for further monitoring. TWDB staff has measured water levels in some of these wells in the past. Monitoring of other private wells must be at the discretion of the landowners.

13. Contract SOW item 2f states transmissivity or storage coefficient will be calculated and provided in the appropriate format for the TWDB groundwater database. Please provide this data electronically in the appropriate format for inclusion in the groundwater database.

Response: Usable new data is provided electronically to the TWDB in the appropriate TWDB format.

APPENDIX D-2
TWDB Contract No. 0704830690

Subsequent TWDB Comments on Draft Final Phase 1 Special Studies Reports

Far West Texas (E) Region-Specific Studies

Study #1: Groundwater Data Acquisition/Compilation, & Aquifer Well Testing

Subsequent TWDB comment on response: Missing data files were received separately 9-9-09; please include this digital data on the new CD to be submitted.

Response: All data is included in final CD as requested.

9. Subsequent TWDB comment on response: Response inadequate; report did not address aquifers explicitly named in SOW and performed work on an aquifer not mentioned in SOW. Also, did not obtain RWPG or TWDB approval for these deviations. Please resubmit report with text discussing basis for not studying specified aquifers and changing study focus.

Response: Comment issues are addressed in a revised Introduction Section. The report is reprinted, resubmitted to Planning Group for approval, and resubmitted to the TWDB. \$10,447.70 was unused and is returned to the TWDB.

