

2021 Annual Report of Water Level Monitoring Lost Pines Groundwater Conservation District

Prepared for
Lost Pines Groundwater Conservation District



Prepared by



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Certification



A handwritten signature in black ink, appearing to read "Andrew C. A. Donnelly", written over a horizontal line.

August 26, 2022

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Executive Summary

The Lost Pines Groundwater Conservation District (GCD or the District) has established a water level monitoring network to assess water levels in each of the aquifers managed by the District. This network includes wells historically monitored by the Texas Water Development Board (TWDB), for which the District has assumed the responsibility of measuring water. The District has expanded this initial network of wells to include additional wells in all aquifers managed by the District.

Static water levels are measured by District staff every spring and fall. Additional water level measurements are made by staff upon request by a well owner, or when monitoring areas of significant water level change. Water levels are also measured when evaluating a new well for inclusion in the monitoring well network. Water levels measured by District staff are combined with historical water level data to create a complete record of water level changes through time for each well.

Water levels in the aquifers managed by the District show varying amounts of change over time. Water levels in the Sparta, Queen City, Calvert Bluff, and Hooper aquifers do not show consistent changes over time. Water level changes in the Carrizo Aquifer vary significantly across the District. In some areas, water levels in the Carrizo are fairly static, while in other areas, significant declines have occurred. This is especially evident in northern Lee County, where many wells have experienced significant impact from the Vista Ridge project in Burleson County. Water level changes in the Simsboro Aquifer are also variable across the District. In some areas, especially in and near the outcrop, water levels in the Simsboro are fairly stable. In downdip areas, water-level declines have occurred in many Simsboro Aquifer monitoring wells.

This is the first of what will be an annual water level report prepared by the District. Water level changes through time and assessments of the District's compliance with approved desired future conditions (DFCs) will be summarized in a separate annual report.

1. Introduction

The Lost Pines Groundwater Conservation District (GCD) (the District) has established a water level monitoring network to assess water levels in each of the aquifers managed by the District. This network includes wells historically monitored by the Texas Water Development Board (TWDB), for which the District has assumed the responsibility of measuring water. The District has expanded this initial network of wells to include additional wells in all aquifers managed by the District.

This is the first of what will be an annual water level report prepared by the District; this report describes the observed water levels and aquifer conditions for 2021. Water level changes through time and assessments of the District's compliance with approved desired future conditions (DFCs) will be summarized in a separate annual report.

This report serves as the annual report on District's water level data collection efforts. This report provides the following:

- A brief description of each aquifer, including a general description of the pumping that occurs from the aquifer
- A map of the monitoring wells currently present in each aquifer
- Report year and historical water level data collected by the District and, prior to 2015, by the TWDB
- Hydrographs of all wells included in the monitoring well network
- A summary of water level changes in each aquifer

A summary of all available water level data and hydrographs is provided in the appendices. It should be noted that for wells that have an automated recorder collecting water levels, every value is not included in the appendices because the measurements are too numerous; a complete file of this data may be obtained by request from District staff.

A summary of annual water levels and water level changes starting in 2011 is provided in a table for each aquifer. Each table includes the change from the prior water level, as well as the change from the initial water level identified for each well. The initial water level is either the water level at the beginning of 2011 or the earliest water level measured in each well after the beginning of 2011. The change from the prior water level measurement is intended to show the

variability of water levels from year to year. In many wells, water levels may increase or decrease by up to 10 feet from year to year despite the lack of a long-term trend in water levels. This observation illustrates that year-to-year changes in water levels cannot be relied upon to project long-term trends, especially for wells in and near the aquifer outcrop. The change in water level relative to the initial water level is a better method to evaluate the long-term trend in water levels because this calculation tends to smooth out the potential year to year fluctuations described above, especially over long periods of time. Also included in each table is the average annual change from the initial water level for each well, which indicates the long-term rate of water level changes in each well.

Over time, the wells included in the District's monitoring well network will change. Wells may be removed from the network for a variety of reasons, including landowner request, well failure, or well access issues. In addition, District staff intend to review the wells included in the network for each aquifer on an annual basis, and remove wells from the network that are redundant or otherwise not needed.

2. Methodology

Water levels within the District are currently measured by District staff every spring and fall. These time frames bracket the summer season when groundwater use is greatest. Additional water level measurements are made by staff upon request by a well owner, or when monitoring areas of significant water level change. In addition, water levels are measured by staff when evaluating a new well for inclusion in the monitoring well network. As the monitoring network expands and as more projects come on line that result in specific areas of drawdown that need to be monitored, the collection of water-level measurements will become more of a year-round activity for District staff.

Water levels measured by District staff are combined with historical water level data to create a complete record of water level changes through time for each well. Several wells in each aquifer previously monitored by the TWDB have water level data that go back as far as 50 years. These datasets provide an excellent long-term record of water level changes that have occurred. In addition, reports have been reviewed to retrieve historical water level data, and Texas Department of Licensing and Regulation (TDLR) submitted driller's reports were reviewed to obtain available water level data.

It is important to measure a static water level in the well. A static water level is one where the well is not pumping when the water level is taken, and it is preferable that the well has been off for a sufficient period of time that the water level has been allowed to recover to its natural level without a residual effect from recent pumping. If the water level is measured during pumping, or is potentially influenced by prior pumping, this condition is recorded in the field notebook and included in the subsequent notes associated with that measurement. In addition, several District water level monitoring wells are close to large public water supply wells. For these wells, a note is also made in the field book regarding whether the nearby public supply well is pumping. This approach allows the identification of water level measurements that might be lower than would be expected due to active groundwater pumping at, or in the vicinity of the monitoring well.

Water levels are measured by District staff using one of three methods:

- *Steel tape:* A 300-foot steel surveying tape is chalked and lowered into the well. The tape is lowered until the chalked end is in the water, after which the tape is retrieved and the water level shown in the chalk at the end of the tape is measured to determine the depth to water in the well. This method has been used by hydrogeologists for decades to measure water levels in wells.
- *E-line:* An electric water level probe, commonly called an e-line, consists of a dual conductor wire with a probe attached to the end. When the probe contacts the water in the well, the circuit closes and a light and/or an audible buzzer indicates that the probe has reached water, allowing for the depth to water to be determined.
- *Sonic water level meter:* The District has purchased an Eno Scientific Well Sounder 2010 PRO water level meter. This device uses sound waves to measure the distance from the sounder to the water level in the well. This saves significant time and eliminates the need to put anything into the well.

Each of these methods has advantages and disadvantages, and multiple methods may be used when measuring a water level to check for consistency between methods. Once the water level data are collected, the values are recorded with associated notes and the hydrograph (graph of water level data through time) is updated for each well. The collected water level data are also submitted to the TWDB for inclusion in the TWDB's groundwater database.

In addition to the above three methods for measuring water levels, several different methods may be used by the District to record water level data automatically. A pressure transducer is a

device that is lowered beneath the water level in a well that records the pressure at the transducer head. The transducer converts the pressure created by the column of water above it into a thickness of water, which is recorded and saved internally within the transducer. The information is then retrieved at specified intervals by District staff. Another automated device currently in use by the District is a sound-based sensor made by WellIntel. This system measures water levels in a similar manner to the sonic water level meter described above, and automatically records this data and uploads it to the cloud through remote connection.

3. Aquifer Summaries

Summaries of each aquifer managed by the District and the associated monitoring well network are provided in the following subsections.

3.1 Sparta Aquifer

The Sparta Aquifer is defined as a minor aquifer by the state of Texas. It is located stratigraphically above the Queen City Aquifer, between the Weches and Cook Mountain formations. The majority of use in the Sparta Aquifer is by exempt wells, but both Lee County Fresh Water Supply District and Lee County Water Supply Corporation have public water supply wells that produce from the Sparta.

The Sparta Formation is primarily a loosely cemented, sand-rich unit, with some interbedded silt and clay. The Sparta Aquifer is present in the eastern half of the district as shown in Figure 1. The Sparta crops out in a band 1 to 10 miles wide from southern Bastrop County to northeastern Lee County, and then dips to the southeast toward the Gulf of Mexico (Figure 1). From the outcrop, the Sparta dips at a rate of approximately 100 feet per mile, with the top of the formation found at approximately 1,500 feet in southern Lee County. Most Sparta wells are located in or near the outcrop and are less than approximately 500 feet deep, although a few deeper wells are producing from this aquifer. Also included in Figure 1 are the 10 Sparta wells currently included in the District monitoring well network. Table 1 summarizes the wells in the Sparta monitoring well network at the end of 2021.

All water level data for each of the Sparta Aquifer monitoring wells are provided in Appendix A. Hydrographs of each of these wells are provided in Appendix B. Table 2 summarizes the annual water levels and changes in water levels in each of the monitoring wells starting in 2011. Because some of the Sparta Aquifer monitoring wells were added in 2021, they have few data

points. The wells with limited data points are included in the appendices, but are not included in Table 2 due to the limited time period that they represent. Of the 10 Sparta wells, 9 had sufficient data to be included in Table 2.

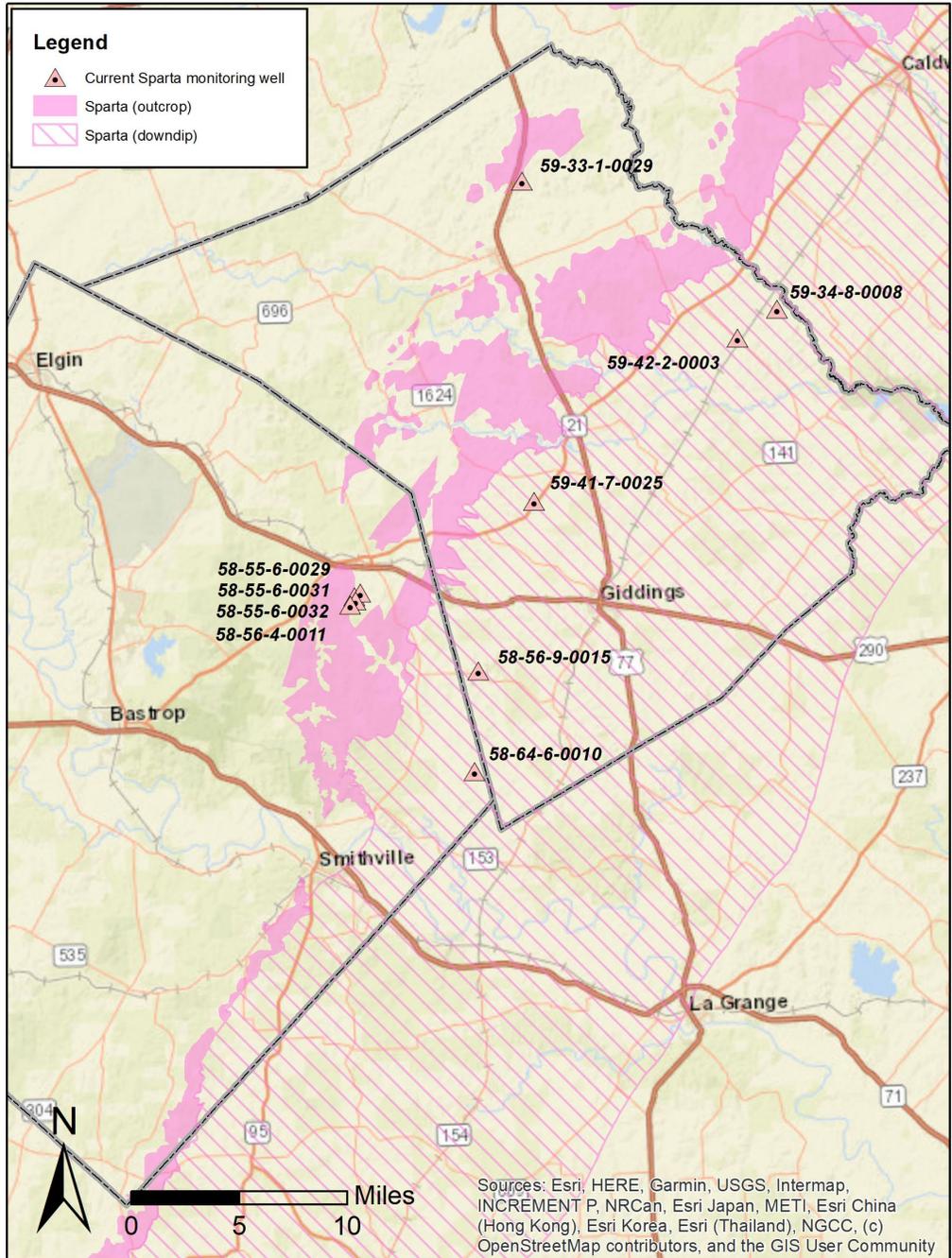


Figure 1. Sparta Aquifer monitoring wells in the Lost Pines GCD

Table 1. Summary of Sparta Monitoring Wells

Well No.	Well/Owner Name	Well Type	Notes
58-55-6-0029	Marberger #1	Rig supply well	
58-55-6-0031	Marberger #4	Rig supply well	
58-55-6-0032	Marberger #5	Rig supply well	
58-56-4-0011	Marberger #2	Rig supply well	
58-56-9-0015	Lorenz	Domestic well	
58-64-6-0010	Wenke	Livestock well	Unable to measure
59-33-1-0029	Gary Brown	Rig supply well	
59-34-8-0008		Domestic well	
59-41-7-0025	Schneider	Domestic well	
59-42-2-0003	Lee County FWSD	Public supply well	

Table 2. Water Levels and Changes from the Previous Measurement and Initial Water Level for Sparta Monitoring Wells

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-55-6-0029 (Marberger #1)				
2019*	84.92			
2020	85.19	-0.27	-0.27	-0.27
2021	85.20	-0.01	-0.28	-0.14
2022	85.30	-0.10	-0.38	-0.13
58-55-6-0031 (Marberger #4)				
2019*	76.62			
2020	76.48	0.14	0.14	0.14
2021	76.60	-0.12	0.02	0.01
2022	76.50	0.10	0.12	0.04
58-55-6-0032 (Marberger #5)				
2019*	56.05			
2020	56.12	-0.07	-0.07	-0.07
2021	56.50	-0.38	-0.45	-0.23
2022	56.70	-0.20	-0.65	-0.22
58-56-4-0011 (Marberger #2)				
2019*	87.92			
2020	88.02	-0.10	-0.10	-0.10
2021	88.00	0.02	-0.08	-0.04
2022	88.00	0.00	-0.08	-0.03

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Table 2. Water Levels and Changes for Sparta Monitoring Wells (cont.)

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-56-9-0015 (Lorenz)				
2011*	135.75			
2012	143.46	-7.71	-7.71	-7.71
2019	134.50	8.96	1.25	0.16
2020	135.74	-1.24	0.01	0.00
2021	134.38	1.36	1.37	0.14
2022	134.40	-0.02	1.35	0.12
59-34-8-0008 (Dime Box)				
2011*	31.48			
2013	40.66	-9.18	-9.18	-4.59
2014	34.36	6.30	-2.88	-0.96
2015	32.10	2.26	-0.62	-0.16
2018	30.97	1.13	0.51	0.07
2019	31.36	-0.39	0.12	0.02
2020	33.17	-1.81	-1.69	-0.19
59-41-7-0025 (Schneider)				
2011*	60.00			
2012	68.99	-8.99	-8.99	-8.99
2013	62.02	6.97	-2.02	-1.01
2014	64.63	-2.61	-4.63	-1.54
2015	67.59	-2.96	-7.59	-1.90
2018	58.14	9.45	1.86	0.27
2019	71.04	-12.90	-11.04	-1.38
2020	62.17	8.87	-2.17	-0.24
2021	60.33	1.84	-0.33	-0.03
2022	59.23	1.10	0.77	0.07
59-42-2-0003 (Lee County FWSD)				
2011*	84.59			
2015	80.86	3.73	3.73	0.93
2019	85.45	-4.59	-0.86	-0.11
2020	79.29	6.16	5.30	0.59
2021	85.33	-6.04	-0.74	-0.07
2022	80.20	5.13	4.39	0.40

Table 2. Water Levels and Changes for Sparta Monitoring Wells (cont.)

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-64-6-0010 (Wenke)				
2011*	69.45			
2012	70.12	-0.67	-0.67	-0.67
2014	73.41	-3.29	-3.96	-1.32
2015	71.55	1.86	-2.1	-0.52

* Year of initial water level measurement

The water levels and changes in water levels presented in Table 2 reflect the static nature of water levels in the Sparta Aquifer since the beginning of 2011. Although water levels rise and fall from well to well and year to year, the data indicate no consistent trend in changes in water levels in any of the Sparta monitoring wells. This is consistent with the hydrographs presented in Appendix B, which show that water levels in the Sparta Aquifer are not changing significantly over time.

3.2 Queen City Aquifer

The Queen City Aquifer is defined as a minor aquifer by the state of Texas. It is located stratigraphically below the Sparta Aquifer and above the Carrizo-Wilcox Aquifer, between the Reklaw and Weches formations. The Queen City Aquifer is tapped by a large number of exempt wells within the District, and for municipal purposes by the cities of Lincoln and Giddings and the Lee County Water Supply Corporation.

The Queen City Formation consists of a massive to thin-bedded, fine- to medium-grained sandstone with some silt, clay, shale, and lignite. It crops out in a band 2 to 4 miles wide across both Bastrop and Lee counties (Figure 2). From the outcrop, the Queen City Formation dips at a rate of 70 to 140 feet per mile, with the top of the formation found at approximately 2,000 feet in southern Lee County. However, most Queen City Aquifer wells are located in or near the outcrop area, with most less than 1,400 feet deep. The Queen City Aquifer is generally between 200 and 600 feet thick within the District. Also included in Figure 2 are the Queen City wells currently included in the District monitoring well network, and Figure 3 shows the Queen City wells in the Lexington area. A total of 20 Queen City wells were in the District monitoring well network at the end of 2021. The majority of these wells are located in northern Lee County, and were added to the monitoring network during the investigation into the declining water levels

occurring in the Carrizo Aquifer in the area that started in 2020. Table 3 summarizes the wells in the Queen City Aquifer monitoring well network at the end of 2021.

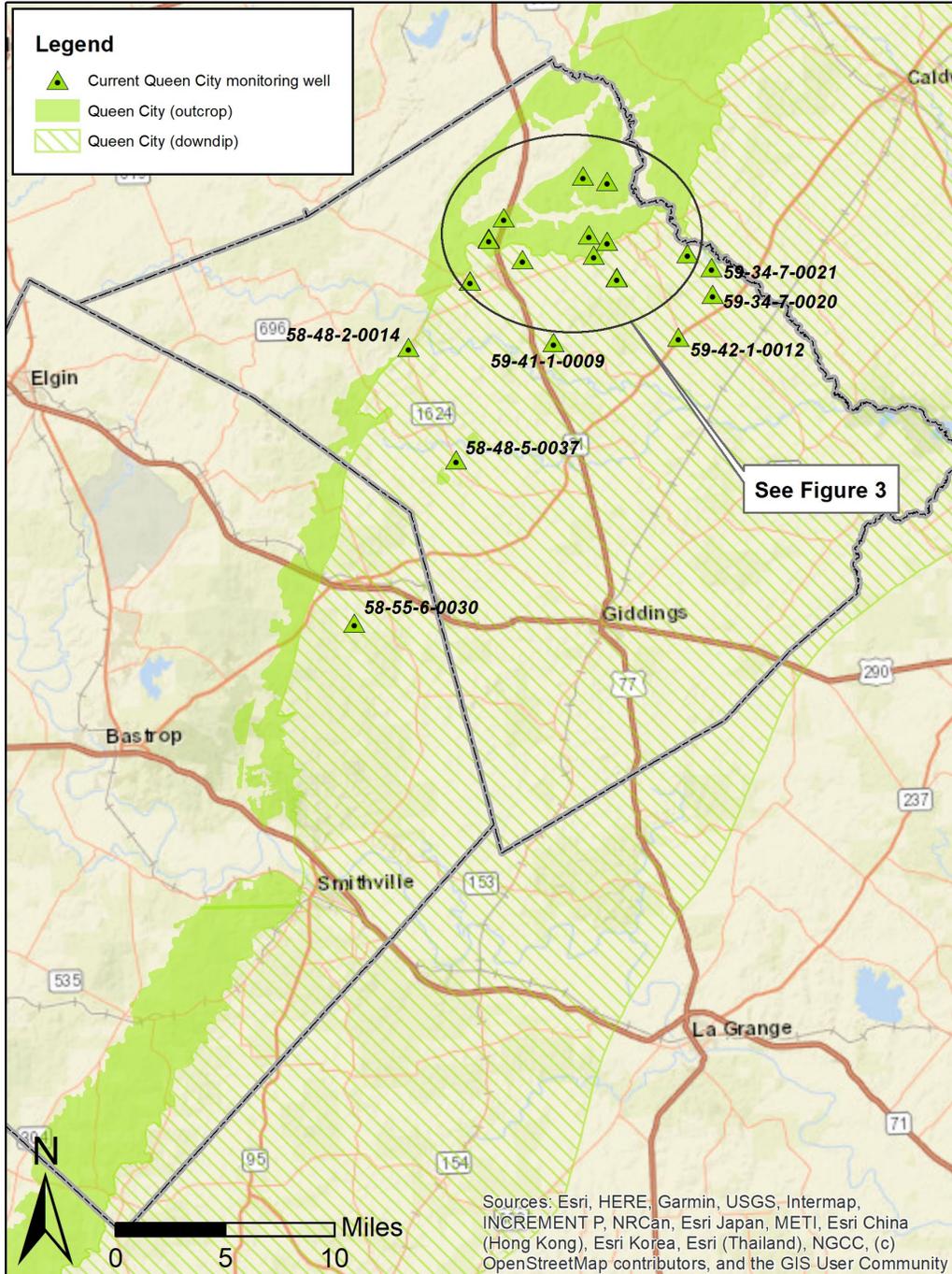


Figure 2. Queen City Aquifer monitoring wells in the Lost Pines GCD

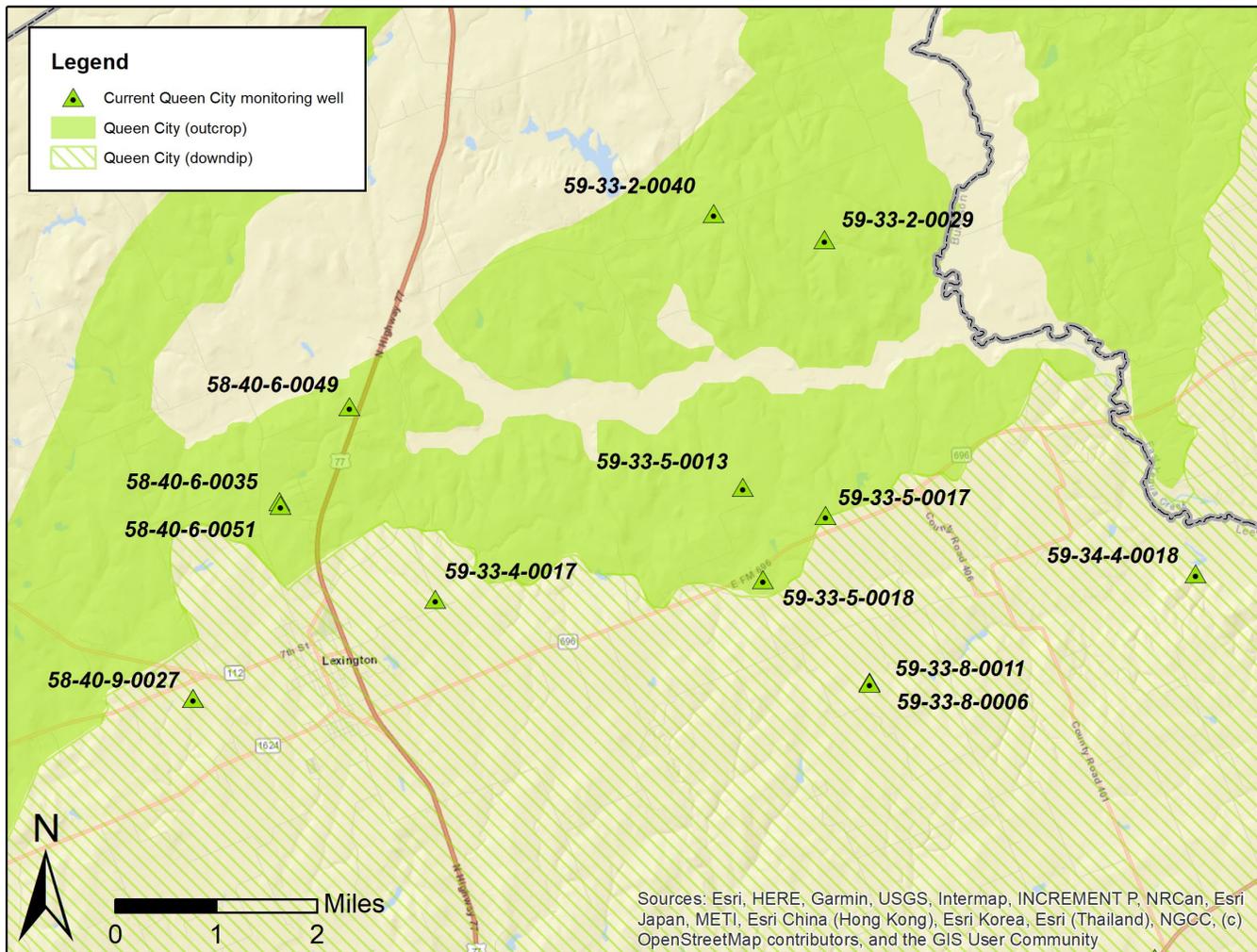


Figure 3. Queen City Aquifer monitoring wells in the Lexington Area

Table 3. Summary of Queen City Aquifer Monitoring Wells

Well No.	Well/Owner Name	Well Type	Notes
58-40-6-0035	Faske	Irrigation	
58-40-6-0049	Yurk	Domestic	Queen City or Carrizo
58-40-6-0051	Faske	Domestic	
58-40-9-0027	Drosche	Domestic	Well may be compromised
59-41-1-0009	Marek	Domestic	
59-42-1-0012	Whitsel	Domestic	
58-42-2-0014	Jazzlau	Domestic	
58-45-5-0037	Wilson	Domestic	
58-55-6-0030	Marberger #3	Rig Supply	
59-33-2-0029	Estabrook	Domestic	
59-33-2-0040	Rhodes	Unused	
59-33-4-0017	Forestar	Rig Supply	
59-33-5-0013	Raines	Domestic	
59-33-5-0017	Wayne Iselt	Domestic	
59-33-5-0018	Iselt	Domestic	
59-33-8-0006	Nance #1	Domestic	
59-33-8-0011	Nance #2	Domestic	
59-34-4-0018	Pharis	Domestic	
59-34-7-0020	Diamond A House Well	Domestic	
59-34-7-0021	Diamond A Stock Well	Livestock	

All water level data for each of the Queen City Aquifer monitoring wells are provided in Appendix C. Hydrographs of each of these wells are provided in Appendix D. Table 4 summarizes the annual water levels in these monitoring wells starting in 2011. Because many of the Queen City Aquifer monitoring wells were added in 2021, they have few data points. The wells with limited data points are included in the appendices, but are not included in Table 4 due to the limited time period that they represent. Only 7 of the 20 Queen City wells had sufficient data to be included in Table 4.

The water levels and changes in water levels presented in Table 4 reflect the static nature of water levels in the Queen City Aquifer since the beginning of 2011. Although water levels rise and fall from well to well and year to year, there is no consistent water level trend in any of the monitoring wells. This behavior is also illustrated by the hydrographs presented in Appendix D, which show consistent water levels through time.

Table 4. Water Levels and Changes from the Previous Measurement and Initial Water Level for Queen City Aquifer Monitoring Wells

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-40-6-0035 (Faske Irrigation)				
2014*	53.20			
2021	49.30	3.90	3.90	0.56
2022	56.90	-7.60	-3.70	-0.46
58-40-6-0049 (Yurk)				
2016*	51.63			
2021	59.93	-8.30	-8.30	-1.66
2022	64.33	-4.40	-12.70	-2.12
58-40-9-0027 (Drosche)				
2011*	82.85			
2012	85.02	-2.17	-2.17	-2.17
2013	84.60	0.42	-1.75	-0.88
2014	85.25	-0.65	-2.40	-0.80
2015	85.90	-0.65	-3.05	-0.76
2018	83.59	2.31	-0.74	-0.11
2019	43.55	40.04	39.30	4.91
2020	69.09	-25.54	13.76	1.53
2021	77.17	-8.08	5.68	0.57
2022	77.10	0.07	5.75	0.52
59-42-1-0012 (Whitsel)				
2011*	82.29			
2012	78.76	3.53	3.53	3.53
2013	77.89	0.87	4.40	2.20
2014	83.88	-5.99	-1.59	-0.53
2015	76.65	7.23	5.64	1.41
2018	77.43	-0.78	4.86	0.69
2019	77.62	-0.19	4.67	0.58
2020	77.67	-0.05	4.62	0.51
2021	78.86	-1.19	3.43	0.34
2022	77.90	0.96	4.39	0.40
58-48-2-0014 (Jazzlau)				
2011*	53.16			
2012	51.74	1.42	1.42	1.42
2013	52.00	-0.26	1.16	0.58
2014	52.45	-0.45	0.71	0.24
2015	52.88	-0.43	0.28	0.07
2018	54.20	-1.32	-1.04	-0.15

Table 3. Water Levels and Changes for Queen City Monitoring Wells (cont.)

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-48-2-0014 (Jazzlau) (cont.)				
2019	50.66	3.54	2.50	0.31
2020	50.31	0.35	2.85	0.32
2021	51.00	-0.69	2.16	0.22
2022	51.17	-0.17	1.99	0.18
58-48-5-0037 (Wilson)				
2011*	82.71			
2012	82.83	-0.12	-0.12	-0.12
2013	82.36	0.47	0.35	0.17
2014	83.87	-1.51	-1.16	-0.39
2018	79.85	4.02	2.86	0.41
2019	80.58	-0.73	2.13	0.27
2020	77.71	2.87	5.00	0.56
2021	81.04	-3.33	1.67	0.17
2022	80.92	0.12	1.79	0.16
58-55-6-0030 (Marberger #3)				
2019*	85.42			
2020	86.14	-0.72	-0.72	-0.72
2021	85.90	0.24	-0.48	-0.24
2022	86.40	-0.50	-0.98	-0.33

* Year of initial water level measurement

3.3 Carrizo Aquifer

Although the Carrizo-Wilcox Aquifer is defined as a single major aquifer by the state of Texas, within the District this aquifer typically contains four distinct aquifer units. These units are the Carrizo Aquifer and three units within the Wilcox Group, which are the Calvert Bluff Aquifer, the Simsboro Aquifer, and the Hooper Aquifer. The thicknesses and water-bearing properties of these four units are very different; therefore, the District (and adjacent districts where these unique aquifer units are also present) manages them separately.

The uppermost aquifer within the Carrizo-Wilcox Aquifer is the Carrizo Aquifer. The Carrizo is a very productive aquifer, and wells completed within the Carrizo Formation can produce over 1,500 gallons per minute (gpm). The Carrizo is used by numerous exempt wells in and near the outcrop, as well as for irrigation by several non-exempt wells and for municipal purposes by

Aqua Water Supply Corporation, Lee County Water Supply Corporation, the cities of Giddings, Lexington, and Smithville, and several smaller permits. Several large water export projects produce or will produce water from the Carrizo Aquifer just outside of the District boundaries, including the Vista Ridge project in Burleson County and the GBRA and Alliance Regional projects in Caldwell and Gonzales counties.

The Carrizo Formation is predominantly a fine to coarse-grained massive sand. It crops out in a band 1 to 2 miles wide through Bastrop and Lee counties (Figure 4). From the outcrop, the Carrizo dips at a rate of about 125 to 175 feet per mile when not affected by faulting, with the top of the Carrizo found at more than 2,500 feet in southern Lee County. The Carrizo can be up to 600 feet thick within the District, but is generally between 300 and 500 feet thick. Figures 4 through 6 show the water level monitoring wells included in the District monitoring well network. Figure 4 is a District-wide view, while Figures 5 and 6 focus on northern Lee County, where a large number of wells have been monitored in response to the water level declines associated with the Vista Ridge project. A total of 47 Carrizo Aquifer wells were in the District monitoring well network at the end of 2021, many of which were added in 2020 to 2021 while the district was investigating the pumping effects of the Vista Ridge project. Table 5 summarizes the wells in the Carrizo Aquifer monitoring network at the end of 2021.

Figures 4 through 6 include all of the wells that have had any water level measurements taken by the District, including every well added during the Vista Ridge investigation. Over the next year or two, the number of Carrizo wells in northern Lee County that are routinely measured will be reduced, and wells that are removed from regular monitoring will not be included in future editions of this annual report.

All water level data for each of the Carrizo Aquifer monitoring wells are provided in Appendix E. Hydrographs of each of these wells are provided in Appendix F. Because many of the Carrizo Aquifer monitoring wells were added in 2021, they have few data points. The wells with limited data points are included in the appendices, but are not included in Table 6 due to the limited time period that they represent. Only 10 of the 47 Carrizo wells had sufficient data to be included in Table 6. This is in large part due to the large number of wells recently added to the network to monitor changing conditions in northern Lee County.

The water levels and changes in water levels presented in Table 6 reflect the variable nature of water level changes in the Carrizo Aquifer. Water levels are fairly static in some parts of the District, but significant declines have occurred in other parts of the District, particularly in

northern Lee County in the vicinity of the Vista Ridge project. These observations are consistent with the hydrographs presented in Appendix F.

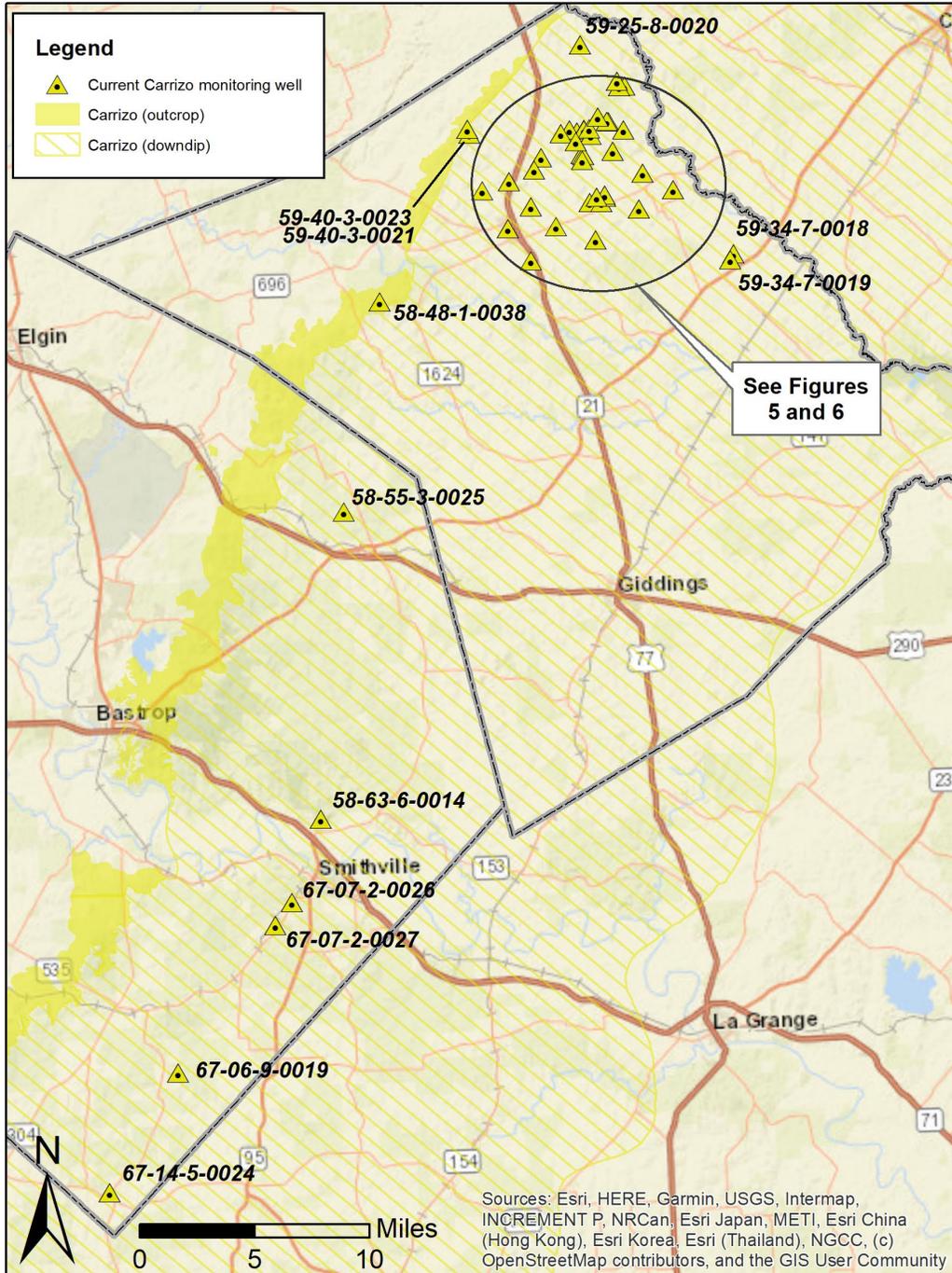


Figure 4. Carrizo Aquifer monitoring wells in the Lost Pines GCD

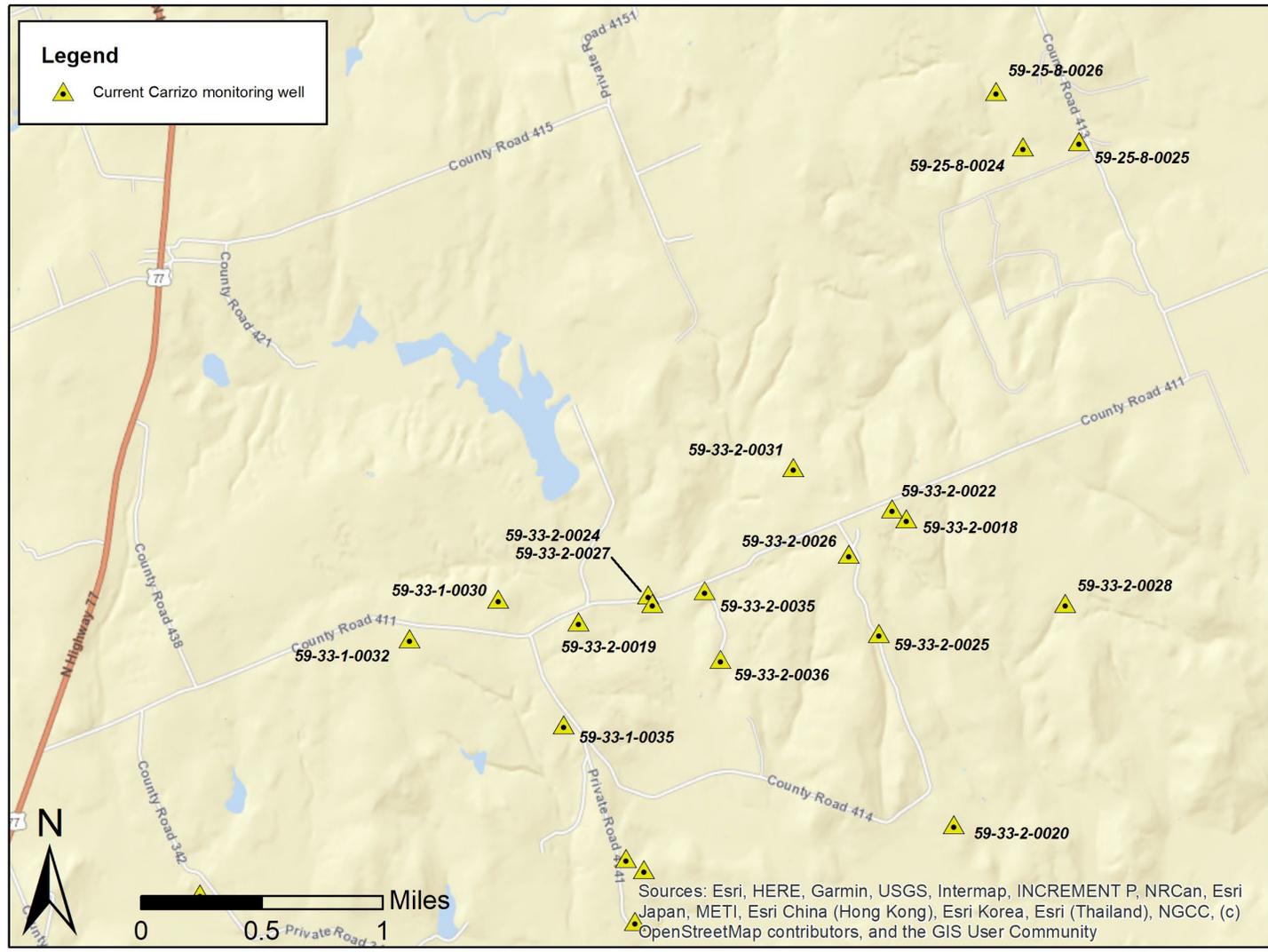


Figure 5. Carrizo Aquifer monitoring wells in the CR411 area

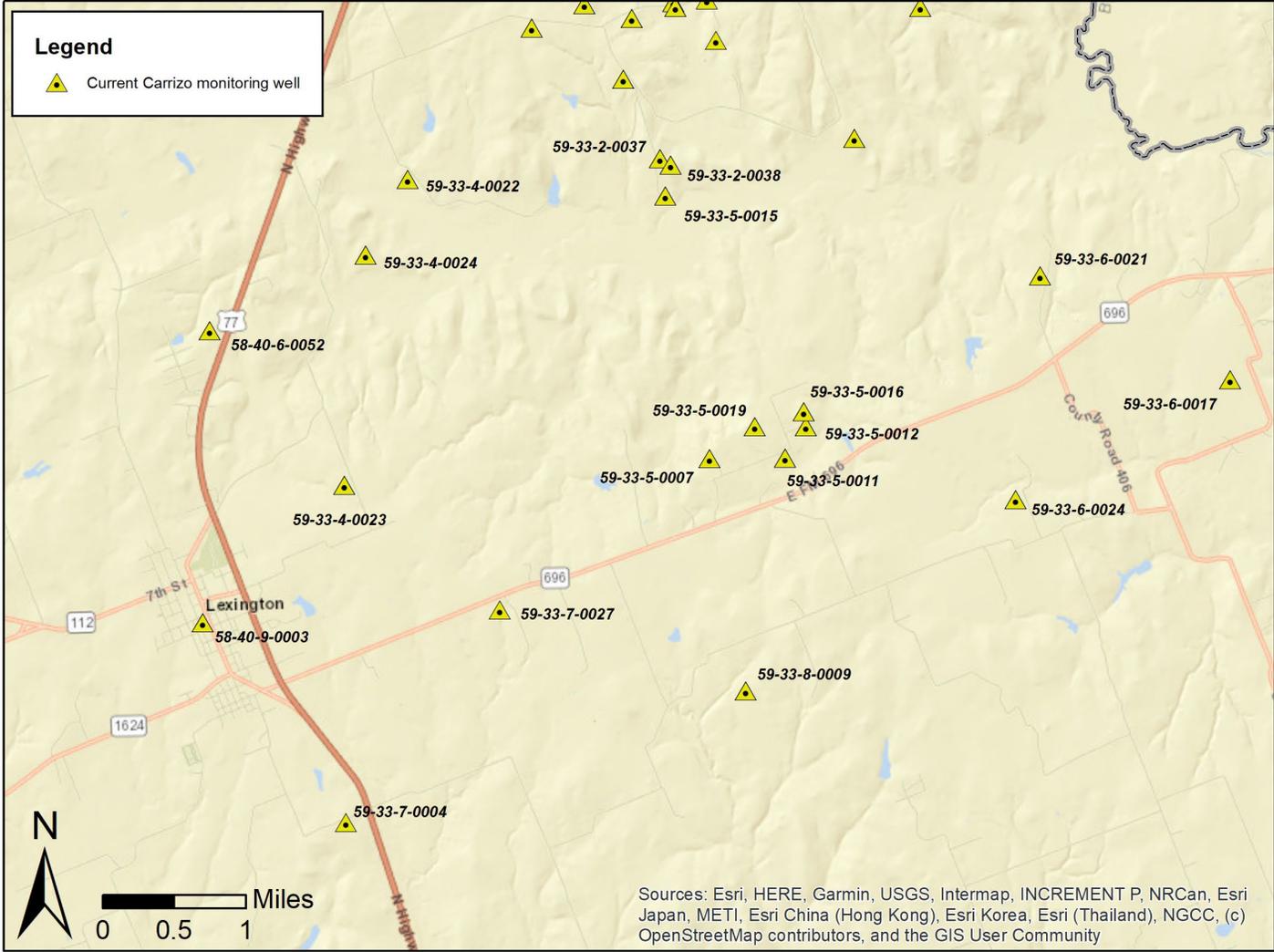


Figure 6. Carrizo Aquifer monitoring wells in the FM696 area

Table 5. Summary of Carrizo Aquifer Monitoring Wells

LPGCD Well No.	Well/Owner Name	Well Type	Notes
58-40-3-0021	Poston New	Domestic	
58-40-3-0023	Poston Old	Domestic	
58-40-6-0052	DeMit	Domestic	
58-40-6-0053	Strong	Domestic	
58-40-9-0003	Lexington Well #2	Unused Municipal	
58-48-1-0038	Stanley	Domestic	
58-55-3-0025	Heaton	Irrigation	
58-63-6-0014	Buescher Park	Domestic	
59-25-8-0020	Hiebert	Irrigation	
59-25-8-0024	Stork "Barn" Well	Livestock	
59-25-8-0025	Stork "Pond" Well	Domestic	
59-25-8-0026	Weldon	Domestic	
59-33-1-0030	Lewis	Domestic	
59-33-1-0032	Don Brown CR411	Domestic	
59-33-1-0035	Darrell Brown	Domestic	
59-33-2-0018	Orosco #2	Irrigation	
59-33-2-0019	McKee	Domestic	
59-33-2-0020	Heller	Domestic	
59-33-2-0022	Orosco #1	Domestic	
59-33-2-0024	Lenox	Domestic	
59-33-2-0027	Wilson	Domestic	
59-33-2-0028	Estabrook	Domestic	
59-33-2-0031	Rhodes	Domestic	
59-33-2-0035	Richardson Front Well	Domestic	
59-33-2-0036	Richardson Back Well	Domestic	
59-33-2-0037	Johnson	Domestic	
59-33-2-0038	Kenneth Brown	Domestic	
59-33-4-0022	Gary Brown	Livestock	
59-33-4-0023	Don Brown CR410	Domestic	
59-33-4-0024	Leutz	Domestic	
59-33-5-0007	Faske	Domestic	
59-33-5-0011	Dennis Boettcher	Domestic	
59-33-5-0012	Laukhuf	Domestic	
59-33-5-0015	Welch	Domestic	
59-33-5-0016	Rudy Boettcher	Domestic	
59-33-5-0019	Patschke	Domestic	
59-33-6-0017	Herring	Domestic	

Table 5. Summary of Carrizo Aquifer Monitoring Wells (cont.)

LPGCD Well No.	Well/Owner Name	Well Type	Notes
59-33-6-0021	Martin	Domestic	
59-33-6-0024	Dean	Domestic	
59-33-7-0004	LCWSC Lexington Well	Municipal	
59-33-7-0027	Walch	Domestic	
59-33-8-0009	Craig Boettcher	Domestic	
59-34-7-0018	Diamond A "Fence" Well	Rig Supply	
59-34-7-0019	Diamond A "High" Well	Rig Supply	
67-06-9-0019	Aqua Tiner	Test	
67-07-2-0026	Steinbach	Domestic	
67-07-2-0027	Swank	Domestic	
67-14-5-0024	Aqua Foster	Test	

Table 6. Water Levels and Changes from the Previous Measurement and Initial Water Level for Carrizo Monitoring Wells

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-40-9-0003 (Lexington #2)				
2011*	131.80			
2021	175.00	-43.20	-43.20	-3.93
2022	196.60	-21.60	-64.80	-5.40
58-63-6-0014 (Buescher SP)				
2011*	58.22			
2013	59.65	-1.43	-1.43	-0.72
2018	60.25	-0.60	-2.03	-0.29
2019	59.09	1.16	-0.87	-0.11
2020	58.46	0.63	-0.24	-0.03
2021	64.75	-6.29	-6.53	-0.65
2022	64.20	0.55	-5.98	-0.54
59-33-2-0019 (McKee)				
2019*	95.43			
2021	138.83	-43.40	-43.40	-21.70
2022	172.63	-33.80	-77.20	-25.73
59-33-5-0007 (Faske)				
2014*	146.00			
2021	216.30	-70.30	-70.30	-10.04
2022	237.60	-21.30	-91.60	-11.45

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Table 6. Water Levels and Changes for Carrizo Monitoring Wells (cont.)

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
59-34-7-0018 (Diamond A "Fence" Well)				
2018*	111.00			
2021	255.25	-144.25	-144.25	-48.08
2022	295.20	-39.95	-184.20	-46.05
59-34-7-0019 (Diamond A "High" Well)				
2018*	100.00			
2021	251.00	-151.00	-151.00	-50.33
2022	301.95	-50.95	-201.95	-50.49
67-06-9-0019 (Aqua Tiner)				
2011*	87.56			
2022	91.19	-3.63	-3.63	-0.33
67-07-2-0027 (Swank)				
2011*	95.00			
2012	99.68	-4.68	-4.68	-4.68
2013	98.35	1.33	-3.35	-1.68
2015	94.49	3.86	0.51	0.13
2019	91.58	2.91	3.42	0.43
2020	91.74	-0.16	3.26	0.36
2021	95.28	-3.54	-0.28	-0.03
2022	90.49	4.79	4.51	0.41
67-07-2-0026 (Steinbach)				
2011*	54.86			
2012	58.9	-4.04	-4.04	-4.04
2013	55.89	3.01	-1.03	-0.52
2014	57.41	-1.52	-2.55	-0.85
2015	57.68	-0.27	-2.82	-0.71
2018	56.07	1.61	-1.21	-0.17
2019	54.58	1.49	0.28	0.04
2020	54.50	0.08	0.36	0.04
2021	58.00	-3.50	-3.14	-0.31
2022	59.30	-1.30	-4.44	-0.40
67-14-5-0024 (Aqua Foster)				
2011*	126.00			
2022	128.90	-2.90	-2.90	-0.26

* Year of initial water level measurement

3.4 Calvert Bluff Aquifer

The uppermost aquifer within the Wilcox Group portion of the Carrizo-Wilcox Aquifer is the Calvert Bluff Formation. The Calvert Bluff Aquifer is less productive than the overlying Carrizo Aquifer and the underlying Simsboro Aquifer, and wells completed within the Calvert Bluff Formation typically produce only a few hundred gpm at most. The Calvert Bluff Aquifer is used by numerous exempt wells in and near the outcrop, as well as for irrigation by several non-exempt wells and for municipal purposes by Aqua Water Supply Corporation and Bastrop County Water Control Improvement District Nos. 1 and 2.

The Calvert Bluff Formation is over 1,000 feet thick in the District consists mainly of low-permeability silts and clays and lignite deposits that serve as confining layers that limit the vertical movement of groundwater. The formation also contains sandstone units that can yield moderate quantities of water. The Calvert Bluff Formation crops out in a band 6 to 8 miles wide in Bastrop and Lee counties, and from the outcrop the Calvert Bluff dips at a rate of 125 to 200 feet per mile (Figure 7). The top of the Calvert Bluff Formation is more than 3,000 feet deep in southern Lee County, although wells completed in the Calvert Bluff within the District are generally less than 1,000 feet deep. A total of 17 Calvert Bluff Aquifer wells were in the District monitoring well network at the end of 2021 (Figure 7). Table 7 summarizes the wells in the Calvert Bluff Aquifer monitoring well network at the end of 2021.

All water level data for each of the Calvert Bluff Aquifer monitoring wells are provided in Appendix G. Hydrographs of each of these wells are provided in Appendix H. Table 8 summarizes the annual water levels in these monitoring wells starting in 2011. Because many of the Calvert Bluff Aquifer monitoring wells were added in 2021, they have few data points. The wells with limited data points are included in the appendices, but are not included in Table 8 due to the limited time period that they represent. Only 4 of the 17 Calvert Bluff wells had sufficient data to include in the Table 8.

The water levels and changes in water levels presented in Table 8 reflect the static nature of water levels in the Calvert Bluff Aquifer since the beginning of 2011. Although water levels rise and fall from well to well and year to year, the observed data indicate no consistent trend in water levels in any of the Calvert Bluff monitoring wells. This is consistent with the hydrographs presented in Appendix H, which show that water levels are fairly static or slightly increasing or decreasing over time.

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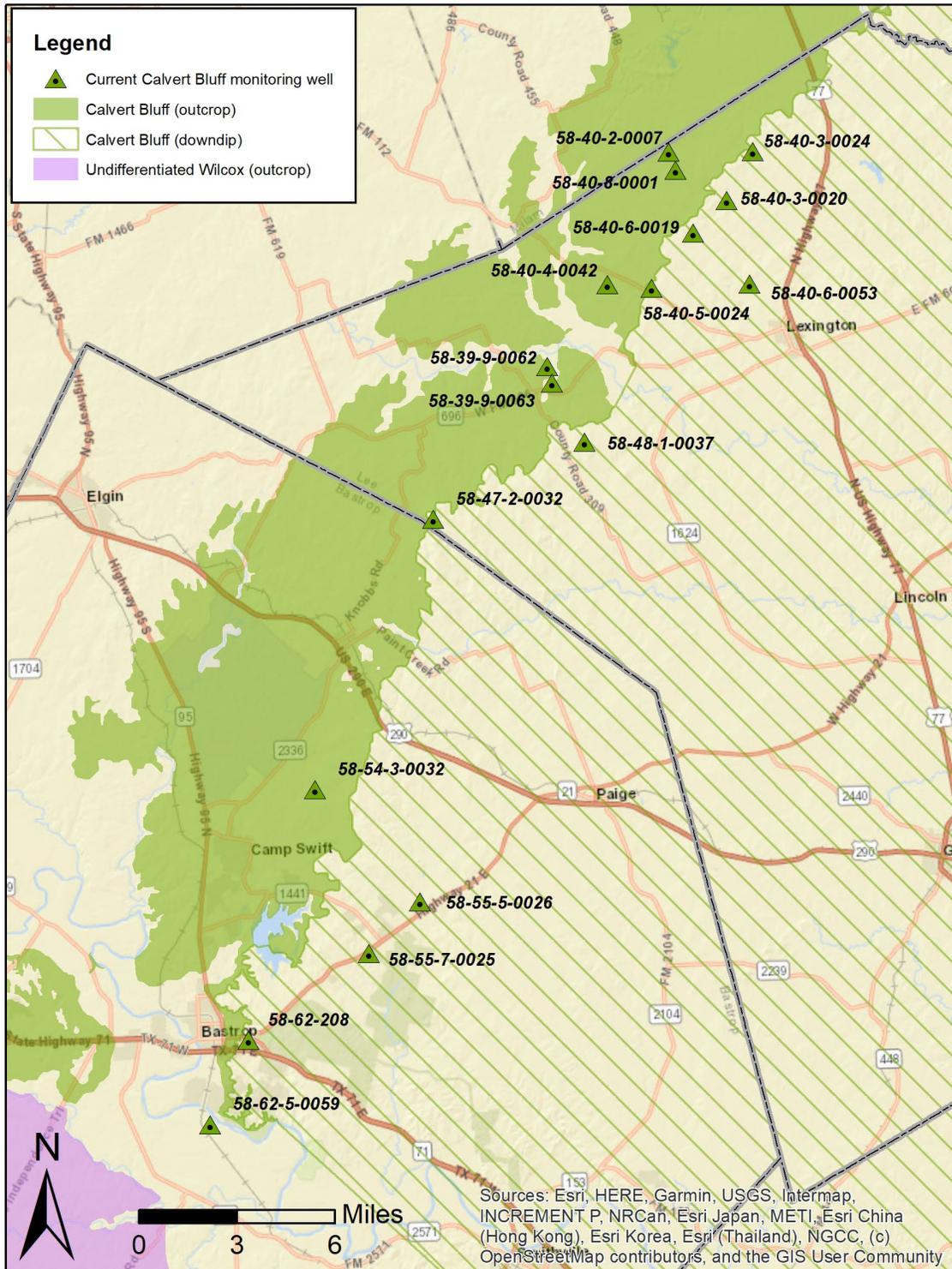


Figure 7. Calvert Bluff Aquifer monitoring wells in the Lost Pines GCD

Table 7. Summary of Calvert Bluff Aquifer Monitoring Wells

Well No.	Well/Owner Name	Well Type	Notes
58-62-208	TWDB	Recorder Well	
58-39-9-0062	Kuehne	Domestic	
58-39-9-0063	Adams	Domestic	
58-40-2-0007	Merino	Domestic	
58-40-3-0020	Degomez	Domestic	
58-40-3-0024	Cook	Domestic	
58-40-4-0042	Fritsche	Domestic	
58-40-5-0024	Goodnight Ranch	Domestic	Well reported to be sanded in
58-40-6-0019	Stowe	Domestic	
58-40-6-0053	Strong	Domestic	
58-40-8-0001	Gervais	Domestic	
58-47-2-0032	Glass	Domestic	
58-48-1-0037	Chenault	Domestic	
58-54-3-0032	Hernandez	Domestic	
58-55-5-0026	Sharpe	Domestic	
58-55-7-0025	Egger	Domestic	
58-62-5-0059	Trigg	Livestock	

Table 8. Water Levels and Changes from the Previous Measurement and Initial Water Level for Calvert Bluff Aquifer Monitoring Wells

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-40-3-0020 (Degomez)				
2012*	65.75			
2013	66.75	-1.00	-1.00	-1.00
2014	66.75	0.00	-1.00	-0.50
2015	68.05	-1.30	-2.30	-0.77
2022	62.35	5.70	3.40	0.34
58-55-7-0025 (Egger)				
2011*	73.24			
2013	68.83	4.41	4.41	2.21
2014	68.15	0.68	5.09	1.70
2015	70.76	-2.61	2.48	0.62
2019	62.90	7.86	10.34	1.29
2020	61.24	1.66	12.00	1.33

Table 8. Water Levels and Changes for Calvert Bluff Monitoring Wells (cont.)

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-55-7-0025 (Egger) (cont.)				
2021	61.75	-0.51	11.49	1.15
2022	61.71	0.04	11.53	1.05
58-62-5-0059 (Trigg)				
2011*	53.80			
2012	51.46	2.34	2.34	2.34
2019	47.24	4.22	6.56	0.82
2021	52.98	-5.74	0.82	0.08
2022	51.35	1.63	2.45	0.22
58-62-208 (TWDB Recorder Well)				
2011*	213.97			
2012	214.45	-0.48	-0.48	-0.48
2013	206.29	8.16	7.68	3.84
2014	208.61	-2.32	5.36	1.79
2015	207.74	0.87	6.23	1.56
2016	204.86	2.88	9.11	1.82
2017	201.01	3.85	12.96	2.16
2018	204.92	-3.91	9.05	1.29
2019	206.49	-1.57	7.48	0.93
2020	215.74	-9.25	-1.77	-0.20
2021	212.26	3.48	1.71	0.17
2022	211.49	0.77	2.48	0.23

* Year of initial water level measurement

3.5 Simsboro Aquifer

The middle unit within the Wilcox Group is the highly productive Simsboro Formation. This formation is identifiable only from the middle of Bastrop County eastward, including all of Lee County. The Simsboro Aquifer is used by numerous exempt wells and by the City of Elgin, Aqua Water Supply Corporation, and Manville Water Supply Corporation for municipal supplies. Alcoa pumped Simsboro Aquifer water as part of its mining operations, although the mine has since been closed. Several permitted irrigation wells produce from the Simsboro, and the LCRA produces groundwater from Simsboro Aquifer wells at its Lake Bastrop power plant. Several groundwater export projects have permits in the Simsboro Aquifer within the Lost Pines GCD; however, as of 2022, none are in production. There are also several smaller permits for

Simsboro production in the District, and there is significant Simsboro Aquifer use in the adjacent Post Oak Savannah GCD. Significant production from the Simsboro began in 2020 from the Vista Ridge project in Burleson County, and a new Simsboro Aquifer production project will begin operation in the next few years in Milam County on former Alcoa property.

The Simsboro Formation is primarily composed of a massive, fine to coarse-grained sand, with relatively small amounts of silt, clay, and mudstone. The Simsboro crops out in a band 2 to 3 miles wide across Bastrop and far northwestern Lee counties (Figure 8). From the outcrop, the Simsboro dips at a rate of 125 to 200 feet per mile, with the top of the Simsboro reaching a maximum depth of nearly 4,500 feet in southern Lee County. Wells completed in the Simsboro Aquifer in the District are generally less than 1,000 feet deep, although wells of more than 2,300 feet have been completed. The Simsboro Formation is up to 800 feet thick within the District, but it is generally less than 600 feet thick. Also included in Figure 8 are the Simsboro wells currently included in the District monitoring well network. A total of 17 Simsboro wells were in the District monitoring network at the end of 2021. Table 9 summarizes the wells in the Simsboro Aquifer monitoring well network at the end of 2021.

All water level data for each of the Simsboro monitoring wells are provided in Appendix I. Hydrographs of each of these wells are provided in Appendix J. Table 10 summarizes the annual water levels in these monitoring wells starting in 2011. Because some of the Simsboro Aquifer monitoring wells were added in 2021, they have few data points. The wells with limited data points are included in the appendices, but are not included in Table 10 due to the limited time period that they represent. Of the 17 Simsboro monitoring wells, 11 had sufficient data to include in Table 10.

The water levels and changes in water levels presented in Table 10 reflect the variable nature of water levels in the Simsboro Aquifer. In some areas, especially in and near the outcrop, water levels are fairly stable. In down-dip areas, water-level declines in many Simsboro Aquifer monitoring wells have occurred. This is consistent with the hydrographs presented in Appendix J, which show a varying change in water levels in the Simsboro Aquifer across the District.

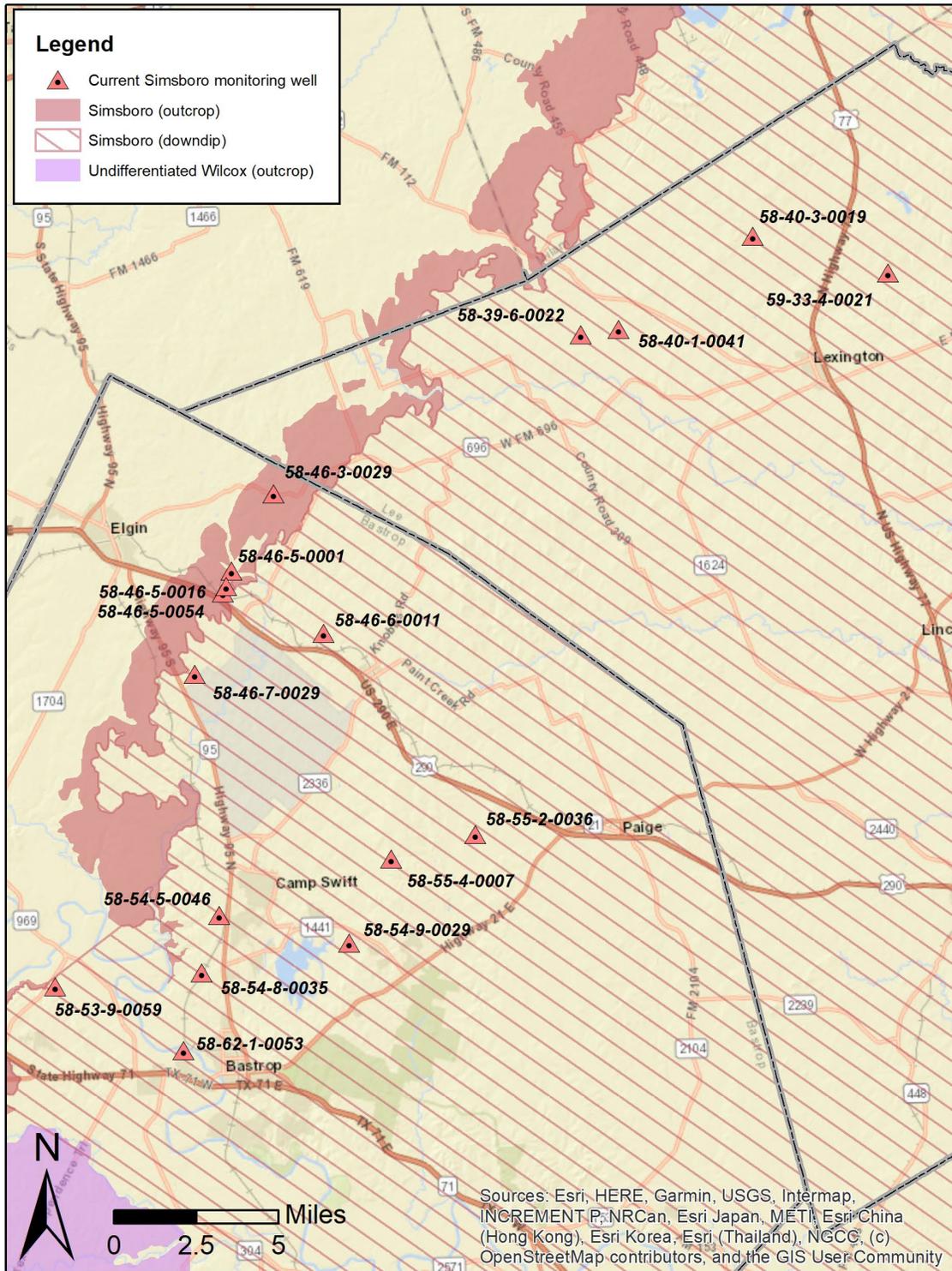


Figure 8. Simsboro Aquifer monitoring wells in the Lost Pines GCD

Table 9. Summary of Simsboro Aquifer monitoring Wells

Well No.	Well/Owner Name	Well Type	Notes
58-39-6-0022	HoT #2	Test	
58-40-1-0041	Heart of Texas	Test	
58-40-3-0019	Degomez	Domestic	
58-46-3-0029	Cavanaugh	Livestock	
58-46-5-0001	Elgin #6	Unused Municipal	
58-46-5-0016	Elgin #10	Unused Municipal	
58-46-5-0054	McDonald	Domestic	
58-46-6-0011	Elgin #11	Unused Municipal	
58-46-7-0029	Cole	Domestic	
58-53-9-0059	Ambrose	Domestic	
58-54-5-0046	XS #2	Test	
58-54-8-0035	XS #1	Test	
58-54-9-0029	Weir	Domestic	
58-55-2-0036	Barespot	Test	
58-55-4-0007	GLR	Test	
58-62-1-0053	Bastrop	Unused Municipal	
59-33-4-0021	LP	Test	

Table 10. Water Levels and Changes from the Previous Measurement and Initial Water Level for Simsboro Aquifer Monitoring Wells

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-40-3-0019 (Degomez)				
2012*	162.50			
2014	166.10	-3.60	-3.60	-1.20
2015	165.00	1.10	-2.50	-0.63
2022	185.90	-20.90	-23.40	-2.13
58-40-4-0041 (Heart of Texas)				
2011*	130.58			
2012	152.67	-22.09	-22.09	-22.09
2013	152.02	0.65	-21.44	-10.72
2014	141.64	10.38	-11.06	-3.69
2015	100.23	41.41	30.35	7.59
2020	137.92	-37.69	-7.34	-0.82
2021	154.95	-17.03	-24.37	-2.44
2022	196.80	-41.85	-66.22	-6.02

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Table 10. Water Levels and Changes for Simsboro Monitoring Wells (cont.)

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-46-3-0029 (Cavanaugh)				
2011*	51.99			
2012	53.19	-1.20	-1.20	-1.20
2013	53.75	-0.56	-1.76	-0.88
2014	54.80	-1.05	-2.81	-0.94
2015	55.72	-0.92	-3.73	-0.93
2018	54.40	1.32	-2.41	-0.34
2019	52.21	2.19	-0.22	-0.03
2020	50.57	1.64	1.42	0.16
2021	50.95	-0.38	1.04	0.10
2022	53.51	-2.56	-1.52	-0.14
58-46-5-0054 (McDonald)				
2011*	42.67			
2012	43.11	-0.44	-0.44	-0.44
2013	40.69	2.42	1.98	0.99
2018	38.01	2.68	4.66	0.67
2019	37.01	1.00	5.66	0.71
2020	35.51	1.50	7.16	0.80
2021	37.10	-1.59	5.57	0.56
2022	37.13	-0.03	5.54	0.50
58-46-6-0011 (Elgin #11)				
2019*	201.71			
2021	200.94	0.77	0.77	0.39
2022	204.90	-3.96	-3.19	-1.06
58-54-5-0046 (XS Ranch #2)				
2015*	195.90			
2021	215.03	-19.13	-19.13	-3.19
2022				
58-54-8-0035 (XS Ranch #1)				
2018*	158.00			
2021	155.90	2.10	2.10	0.70
2022	157.86	-1.96	0.14	0.03
58-55-2-0036 (Barespot)				
2011*	202.63			
2012	208.85	-6.22	-6.22	-6.22
2014	209.33	-0.48	-6.70	-2.23
2015	221.29	-11.96	-18.66	-4.67
2019	238.50	-17.21	-35.87	-4.48
2020	250.34	-11.84	-47.71	-5.30

Table 10. Water Levels and Changes for Simsboro Monitoring Wells (cont.)

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-55-2-0036 (Barespot) (cont.)				
2021	263.83	-13.49	-61.20	-6.12
2022	272.10	-8.27	-69.47	-6.32
58-55-4-0007 (GLR)				
2011*	334.78			
2013	310.19	24.59	24.59	12.30
2014	313.67	-3.48	21.11	7.04
2020	398.44	-84.77	-63.66	-7.07
2021	382.60	15.84	-47.82	-4.78
2022	395.60	-13.00	-60.82	-5.53
58-62-1-0053 (Bastrop)				
2011*	39.63			
2012	45.85	-6.22	-6.22	-6.22
2013	48.66	-2.80	-9.02	-4.51
2014	46.33	2.32	-6.70	-2.23
2015	58.29	-11.96	-18.66	-4.66
2021	74.64	-16.35	-35.01	-3.50
2022	68.34	6.30	-28.71	-2.61
59-33-4-0021 (LP)				
2011*	102.26			
2012	109.67	-7.41	-7.41	-7.41
2013	111.40	-1.73	-9.14	-4.57
2014	115.28	-3.88	-13.02	-4.34
2015	119.52	-4.24	-17.26	-4.32
2019	121.98	-2.46	-19.72	-2.47
2020	127.23	-5.25	-24.97	-2.77
2021	184.22	-56.99	-81.96	-8.20
2022	213.75	-29.53	-111.49	-10.14

* Year of initial water level measurement

3.6 Hooper Aquifer

The lowermost aquifer within the Carrizo-Wilcox Aquifer is the Hooper Formation, which is also generally the least productive of the three Wilcox Group aquifers. The Hooper Formation is used by exempt wells in and near the outcrop area, as well as for municipal purposes by the City of Elgin (which operates wells that appear to be completed in both the Hooper and Simsboro aquifers), Aqua Water Supply Corporation, Manville Water Supply Corporation, and two smaller

permit holders. The Hooper Formation produces a small to moderate amount of water to wells, mainly in the outcrop area. Well yields of larger, non-exempt wells are generally between 200 and 350 gpm; although, in some areas, Hooper Aquifer wells can yield more than 500 gpm. The water quality is generally good, although it deteriorates farther down dip from the outcrop.

The Hooper Formation is composed of predominantly mudstone, with varying amounts of sandstone, and some thin lignite beds in the upper part of the formation. The Hooper Formation crops out in a band approximately 3 miles wide in northwestern Bastrop County near the Travis County line, as well as in far western Lee County (Figure 9). From the outcrop, the Hooper dips at a rate of 125 to 200 feet per mile, with the top of the Hooper reaching a maximum depth of more than 5,000 feet in southern Lee County, although wells completed in the Hooper in the District are generally less than 700 feet deep. The Hooper Formation can be up to 1,300 feet thick within the District, although it is much thinner in and near the outcrop where all of the Hooper wells occur.

Also included in Figure 9 are the Hooper wells currently included in the District monitoring well network. A total of 3 Hooper wells were in the District monitoring well network at the end of 2021. This small number reflects the limited extent and limited use of the Hooper Aquifer within the District, which is directly related to the limited Hooper formation outcrop within the District. Table 11 summarizes the wells in the Hooper Aquifer monitoring well network at the end of 2021.

All water level data for each of the Hooper monitoring wells are provided in Appendix K. Hydrographs of each well are provided in Appendix L. Table 12 summarizes the annual water levels in each of the Hooper monitoring wells starting in 2011. The water levels and changes in water levels presented in Table 12 reflect the variable nature of water levels in the Hooper Aquifer. Although water levels rise and fall from well to well and year to year, the observed data indicate no consistent trend in water levels of the Hooper Aquifer monitoring wells. This is consistent with the hydrographs presented in Appendix L, which show that Hooper Aquifer water levels are fairly static or are slightly increasing or decreasing over time.

Table 11. Summary of Hooper Monitoring Wells

Well No.	Well/Owner Name	Well Type	Notes
58-38-9-0028	Wolff	Domestic	
58-45-8-0008	Puckett	Domestic	
58-53-5-0080	Barton	Domestic	

Table 12. Water Levels and Changes from the Previous Measurement and Initial Water Level for all Hooper Monitoring Wells

Year	Water Level (feet bgs)	Change from Prior Measurement (feet)	Change from Initial Water Level (feet)	Average Annual Change from Initial Water Level (feet)
58-38-9-0028 (Wolff)				
2011*	150.33			
2012	154.01	-3.68	-3.68	-3.68
2013	151.35	2.66	-1.02	-0.51
2014	155.27	-3.92	-4.94	-1.65
2015	154.72	0.55	-4.39	-1.10
2018	153.80	0.92	-3.47	-0.50
2019	153.29	0.51	-2.96	-0.37
2020	151.92	1.37	-1.59	-0.18
2021	155.75	-3.83	-5.42	-0.54
2022	154.96	0.79	-4.63	-0.42
58-45-8-0008 (Puckett)				
2014*	34.89			
2015	35.09	-0.20	-0.20	-0.20
2018	33.13	1.96	1.76	0.44
2019	31.55	1.58	3.34	0.67
2020	30.50	1.05	4.39	0.73
2021	31.32	-0.82	3.57	0.51
2022	31.70	-0.38	3.19	0.40
58-53-5-0080 (Barton)				
2012*	58.62			
2013	57.40	1.22	1.22	1.22
2014	58.77	-1.37	-0.15	-0.08
2018	48.99	8.41	9.63	1.61
2019	49.69	-0.70	8.93	1.28
2020	44.50	5.19	14.12	1.77
2021	49.40	-4.90	9.22	1.02

* Year of initial water level measurement

4. Summary

The Lost Pines GCD has established a water level monitoring network to assess water levels in each of the aquifers managed by the District. This network includes wells historically monitored by the TWDB, for which the District has assumed the responsibility of measuring water. The District has expanded this initial network of wells to include additional wells in all aquifers managed by the District.

Static water levels are measured by District staff every spring and fall. Additional water level measurements are made by staff upon request by a well owner, or when monitoring areas of significant water level change. In addition, water levels are measured by staff when evaluating a new well for inclusion in the monitoring well network. Water levels measured by District staff are combined with historical water level data that are available to create a complete record of water level changes through time for each well.

Water levels in the aquifers managed by the District show varying amounts of change over time. Water levels in the Sparta, Queen City, Calvert Bluff, and Hooper aquifers do not show consistent changes over time. Water level changes in the Carrizo Aquifer vary significantly across the District. In some areas, Carrizo water levels are fairly static, while in other areas significant declines have been observed. Declines are particularly evident in northern Lee County, where many wells have experienced significant impact from the Vista Ridge project in Burleson County. Water level changes in the Simsboro Aquifer are also variable across the District. In some areas, especially in and near the outcrop, water levels in the Simsboro are fairly stable. In downdip areas, water-level declines in many Simsboro Aquifer monitoring wells have occurred, in particular in northern Lee County, where significant impact from the Vista Ridge project has occurred.

This is the first of what will be an annual water level report prepared by the District. Water level changes through time and assessments of the District's compliance with approved DFCs will be summarized in a separate annual report.

Appendix A
Sparta Aquifer
Water Levels

58-55-6-0029		58-55-6-0031		58-55-6-0032	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
1/14/2019	84.92	1/14/2019	76.62	1/14/2019	56.05
10/1/2020	85.19	10/1/2020	76.48	10/1/2020	56.12
4/1/2021	85.20	4/1/2021	76.60	4/1/2021	56.50
10/21/2021	85.30	10/21/2021	76.50	10/21/2021	56.70

58-56-4-0011		58-56-9-0015		58-64-6-0010	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
1/14/2019	87.92	2/14/1995	135.10	10/28/1971	77.00
10/1/2020	88.02	2/26/1996	132.58	8/3/1995	57.50
4/1/2021	88.00	1/27/1997	134.45	2/28/1996	67.9*
10/21/2021	88.00	2/19/1998	131.85	12/6/1996	71.10
		4/28/1998	132.15	12/5/1997	70.09
		2/10/1999	133.10	2/19/1999	76.87
		10/10/2001	135.79	2/24/2000	69.6*
		2/8/2002	133.86	1/31/2001	71.50
		7/11/2002	135.01	2/7/2002	68.19*
		2/10/2003	133.65	3/10/2003	66.4*
		12/12/2003	133.84	2/7/2006	68.07
		2/5/2005	131.15	2/6/2007	69.59
		2/28/2006	132.80	12/10/2009	70.95
		3/7/2007	131.57	1/7/2011	69.45*
		2/29/2008	129.95	11/4/2011	70.12*
		2/24/2009	133.90	10/29/2013	73.41*
		1/13/2010	131.08	10/27/2014	71.55*
		1/18/2011	135.75		
		10/7/2011	143.46		
		12/5/2018	134.50		
		3/12/2020	135.74		
		11/2/2020	135.55		
		4/14/2021	134.38		
		10/28/2021	134.40		

* Questionable measurement

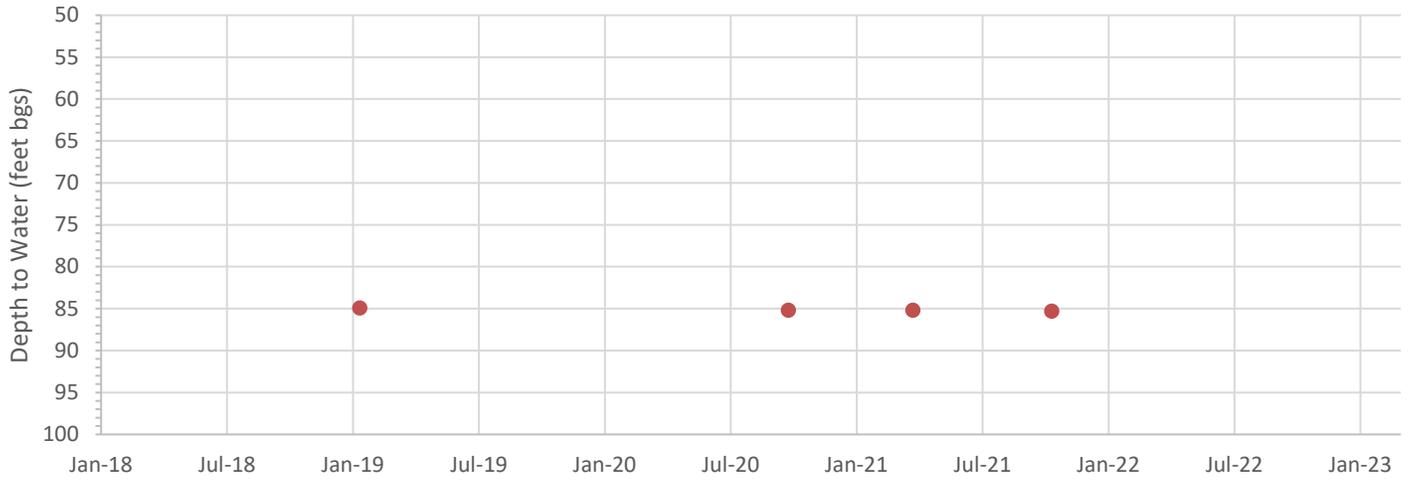
59-33-1-0029		59-34-8-0008		59-41-7-0025	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
2/26/2021	21.60	4/26/1974	13.95	10/28/1971	57.00
4/1/2021	22.10	4/16/1975	13.55	4/23/1974	54.95
5/6/2021	21.78	3/12/1976	13.64	4/17/1975	54.32
6/25/2021	21.40	3/10/1977	13.45	3/12/1976	55.30
8/11/2021	20.63	4/11/1978	14.34	3/11/1977	54.67
10/8/2021	23.00	3/26/1979	14.50	4/11/1978	56.40
11/16/2021	21.19	3/17/1980	15.65	3/18/1980	57.47
2/22/2022	20.10	3/19/1982	16.73	4/1/1981	57.89
		11/18/1982	26.85	11/19/1982	64.03
		11/16/1983	26.08	11/17/1983	56.76
		11/7/1984	29.60	11/7/1984	59.67
		10/16/1985	30.37	10/16/1985	59.78
		12/5/1986	28.40	11/10/1987	58.43
		11/19/1987	30.23	1/17/1989	60.61
		1/18/1989	29.69	11/14/1989	57.90
		11/14/1989	30.86	12/3/1990	59.73
		11/15/1990	30.75	11/8/1991	57.88
		11/13/1991	30.30	12/8/1992	55.32
		11/19/1992	30.36	2/4/1994	56.40
		2/14/1995	29.55	2/13/1995	55.77
		3/1/1996	29.65	2/26/1996	55.07
		1/31/1997	30.26	1/27/1997	57.66
		2/18/1998	29.90	2/19/1998	56.05
		2/10/1999	29.77	2/11/1999	59.42
		2/13/2000	31.90	2/17/2000	63.20
		10/10/2001	31.84	10/9/2001	62.68
		2/7/2002	29.90	2/7/2002	59.56
		2/12/2003	29.88	2/10/2003	58.40
		11/18/2003	31.16	11/18/2003	50.38
		2/7/2005	28.80	2/7/2005	55.72
		2/7/2006	29.80	2/6/2006	58.75
		3/6/2007	29.72	3/6/2007	59.67
		2/28/2008	28.79	2/28/2008	55.32
		2/27/2009	30.18	2/27/2009	60.69
		1/26/2011	31.48	1/14/2010	62.35
		10/13/2011	40.66	1/18/2011	60.00
		10/29/2013	34.36	10/7/2011	68.99
		10/27/2014	32.10	10/4/2012	62.02
		12/11/2017	30.97	10/29/2013	64.63
		12/5/2018	31.36	10/27/2014	67.59
		9/30/2020	33.17	12/11/2017	58.14
				12/5/2018	71.04
				3/12/2020	62.17
				11/2/2020	62.90
				4/1/2021	60.33
				11/5/2021	59.23

59-42-2-0003

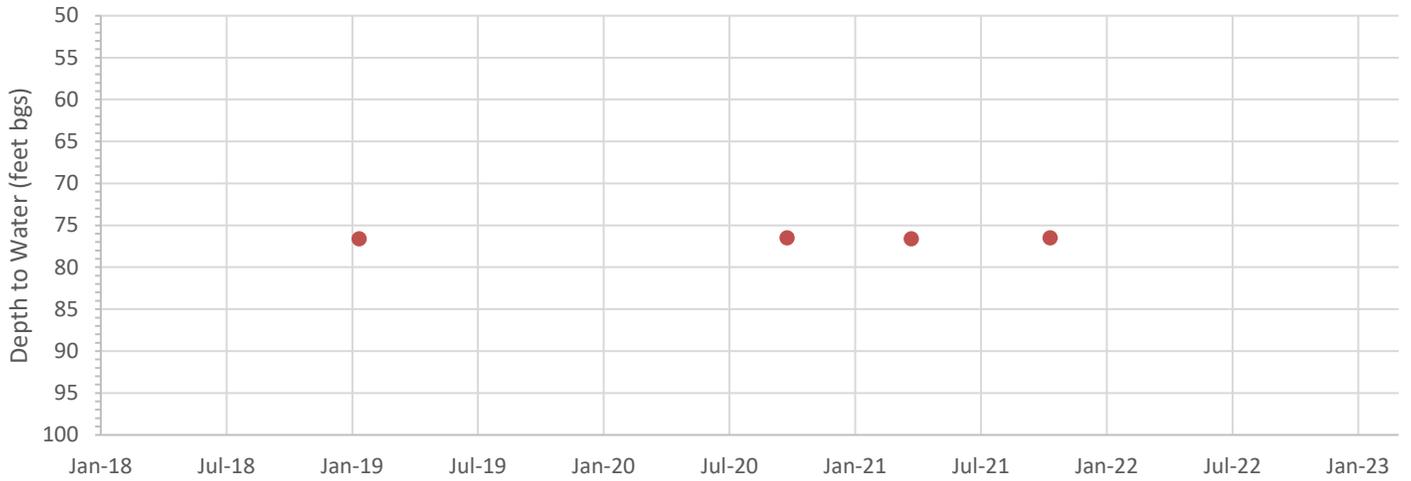
Date	Water Level (ft bgs)
3/4/1964	59.20
4/25/1974	64.90
4/11/1978	65.23
3/26/1979	59.00
11/16/1983	75.02
11/7/1984	79.97
10/16/1985	80.75
12/5/1986	76.68
11/19/1987	78.12
1/18/1989	78.76
11/14/1989	80.62
11/16/1990	83.19
11/13/1991	80.00
11/20/1992	79.65
2/14/1995	78.75
3/1/1996	82.85
1/31/1997	73.54
2/18/1998	78.90
2/16/2000	82.30
10/10/2001	86.03
2/7/2002	78.81
2/24/2003	78.20
11/18/2003	80.07
2/7/2005	79.35
2/7/2006	78.65
3/7/2007	81.18
2/28/2008	80.73
3/24/2009	84.71
1/28/2011	84.59
10/27/2014	80.86
12/5/2018	85.45
3/12/2020	79.29
11/2/2020	81.54
4/1/2021	85.33
10/8/2021	80.20

Appendix B
Sparta Aquifer
Hydrographs

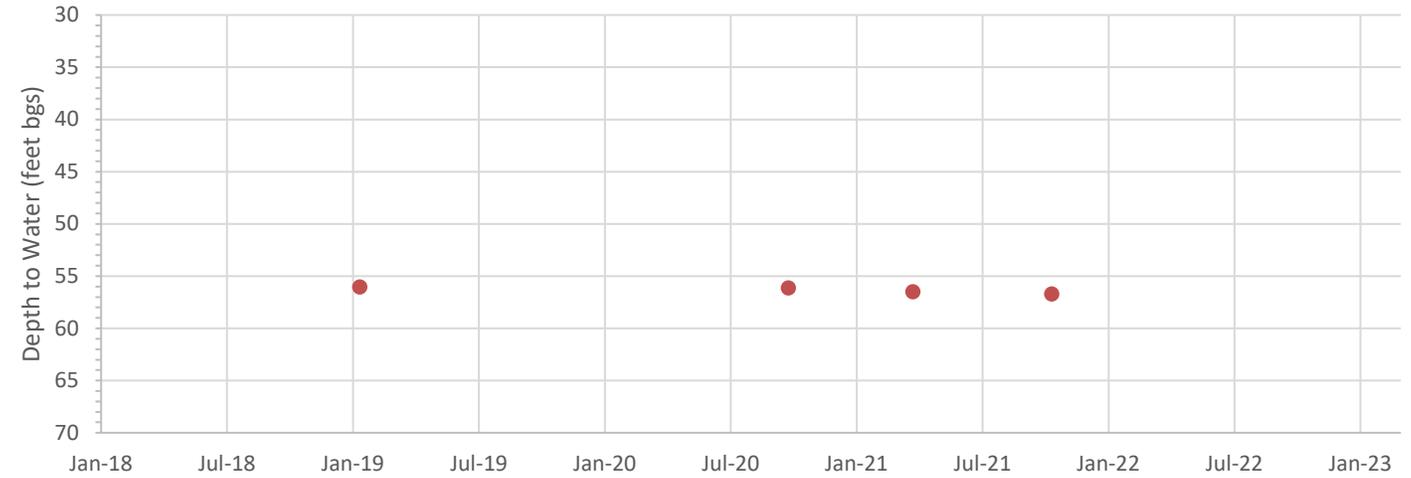
58-55-6-0029 (Marberger Rig Supply Well #1)



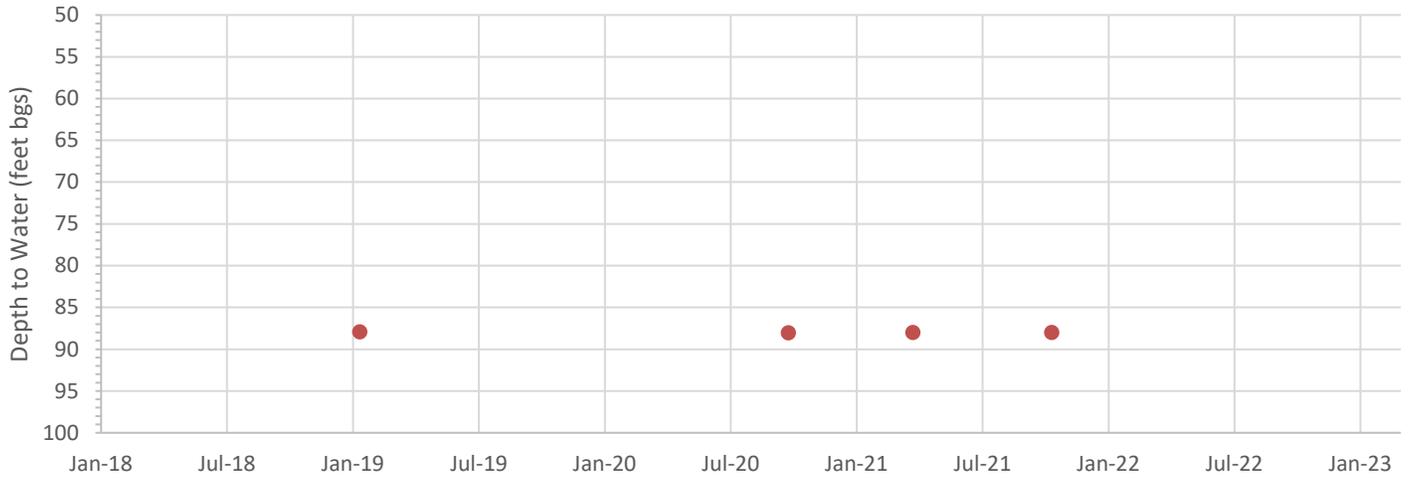
58-55-6-0031 (Marberger Rig Supply Well #4)



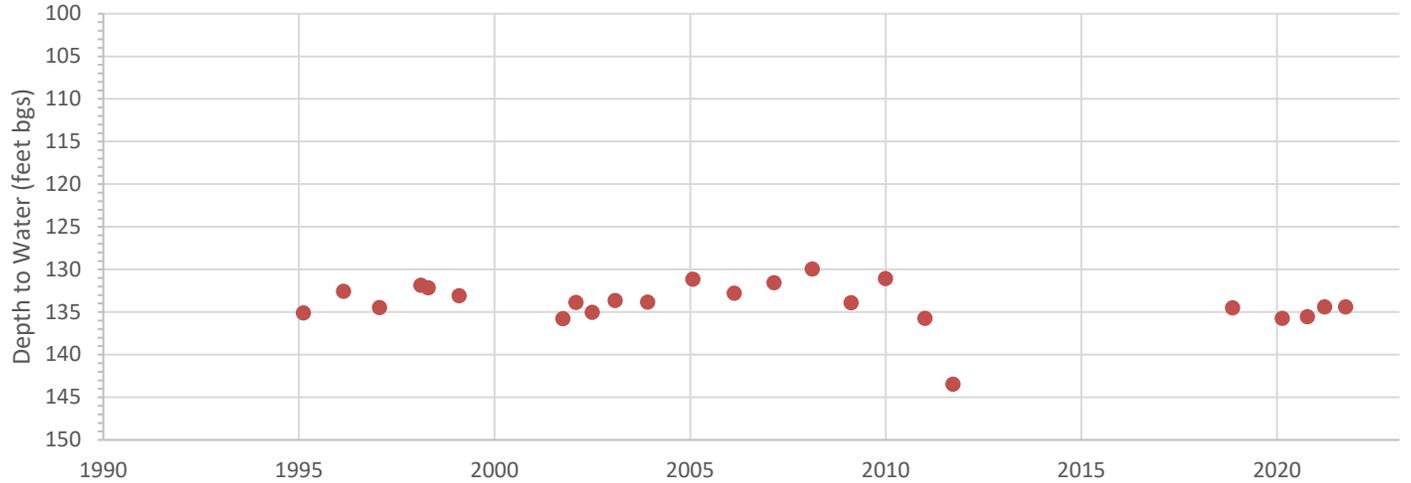
58-55-6-0032 (Marberger Rig Supply Well #5)



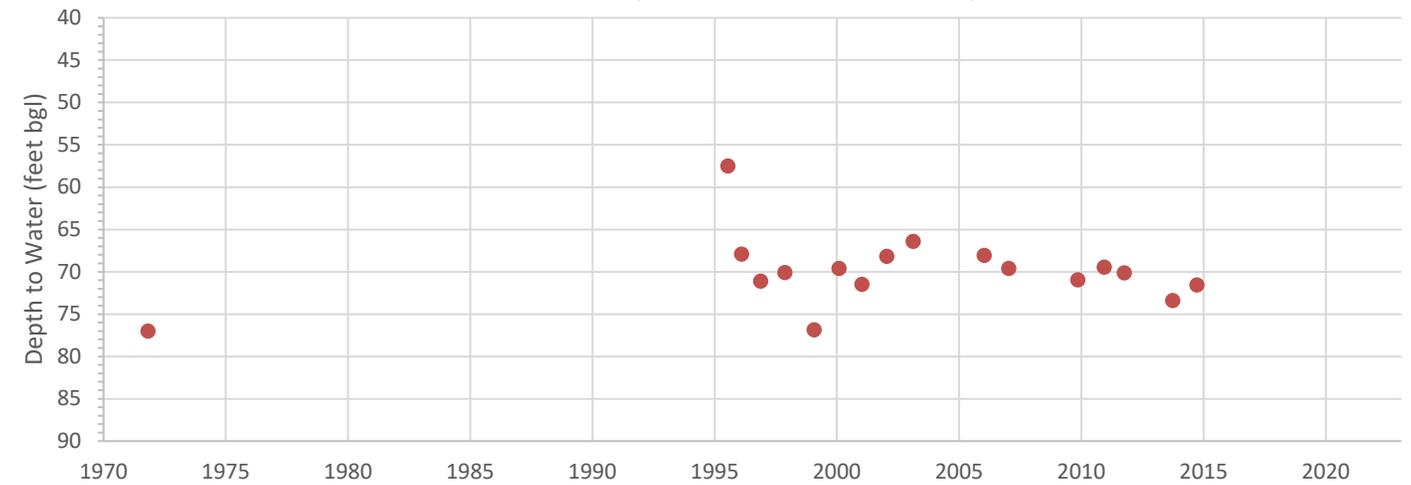
58-56-4-0011 (Marberger Rig Supply Well #2)



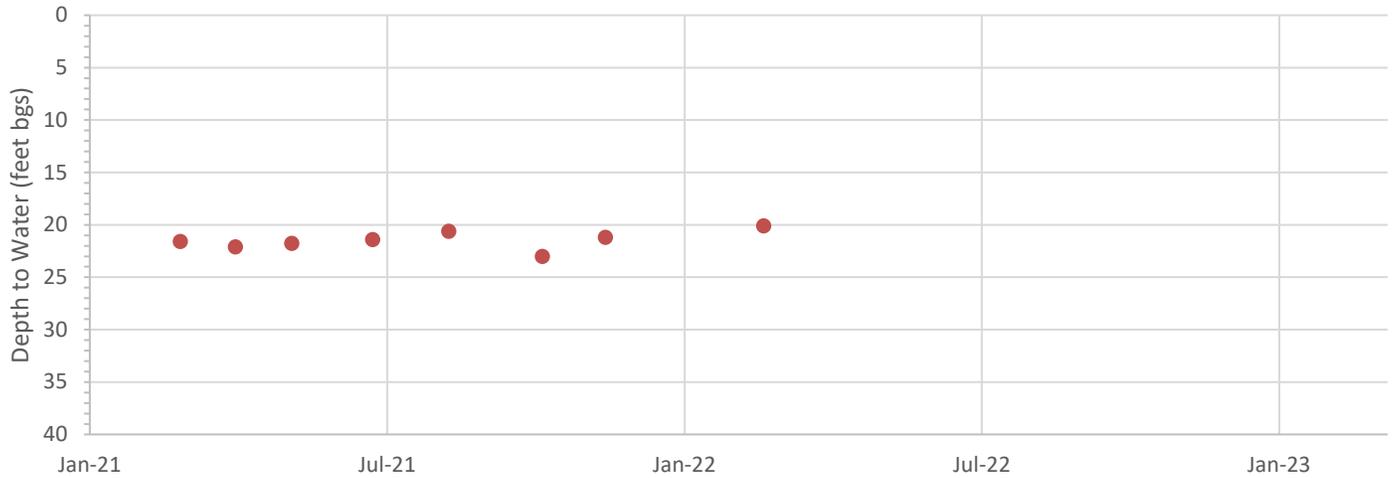
58-56-9-0015 (Lorenz Domestic Well)



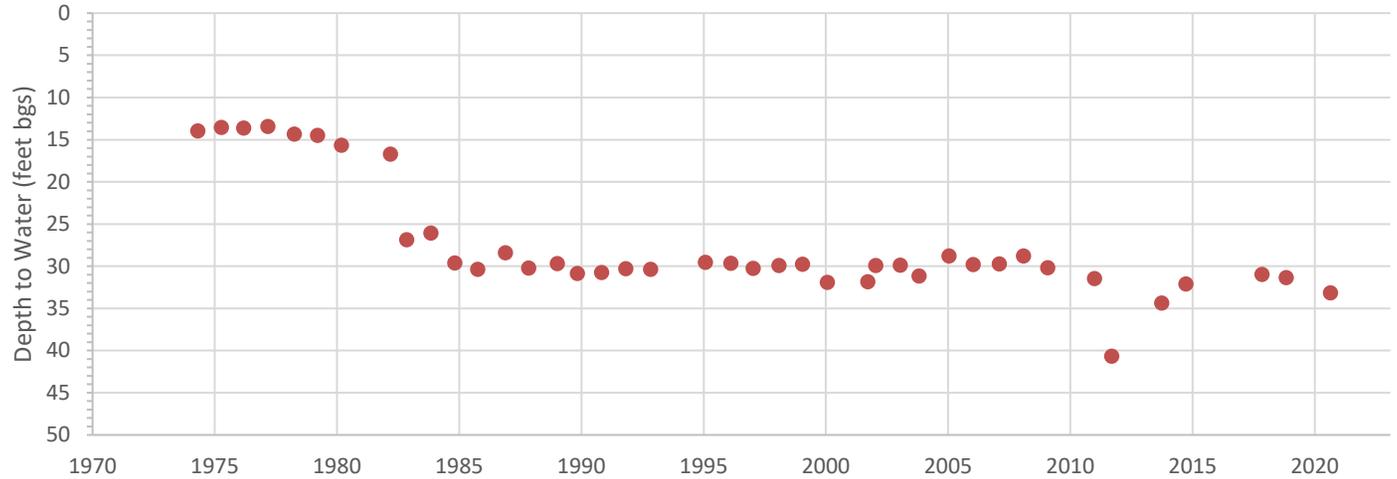
58-64-6-0010 (Wenke Livestock Well)



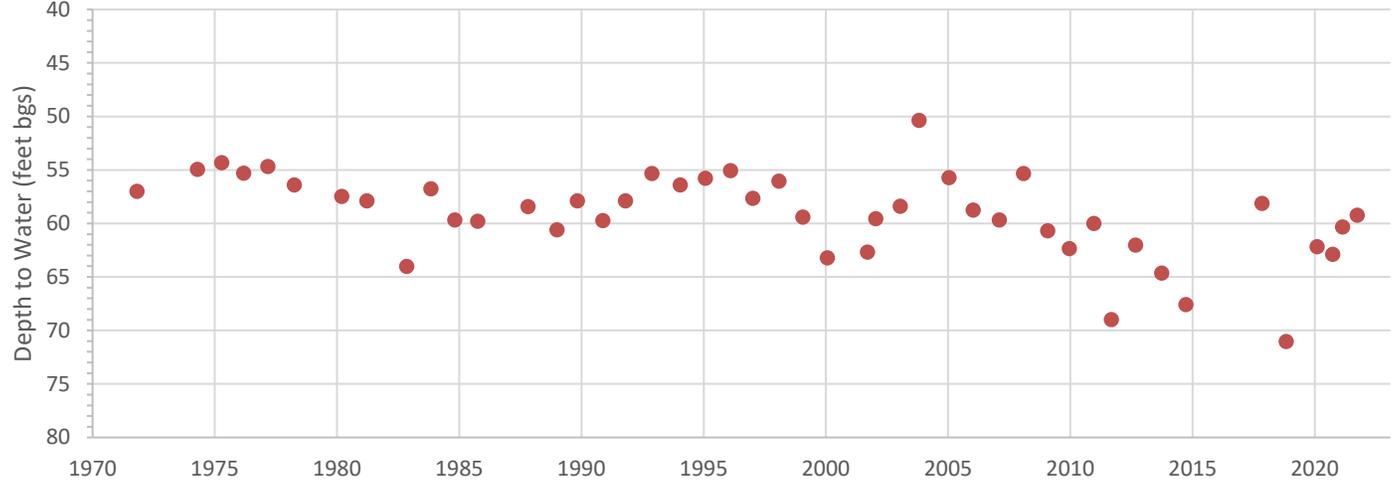
59-33-1-0029 (Gary Brown Rig Supply Well)



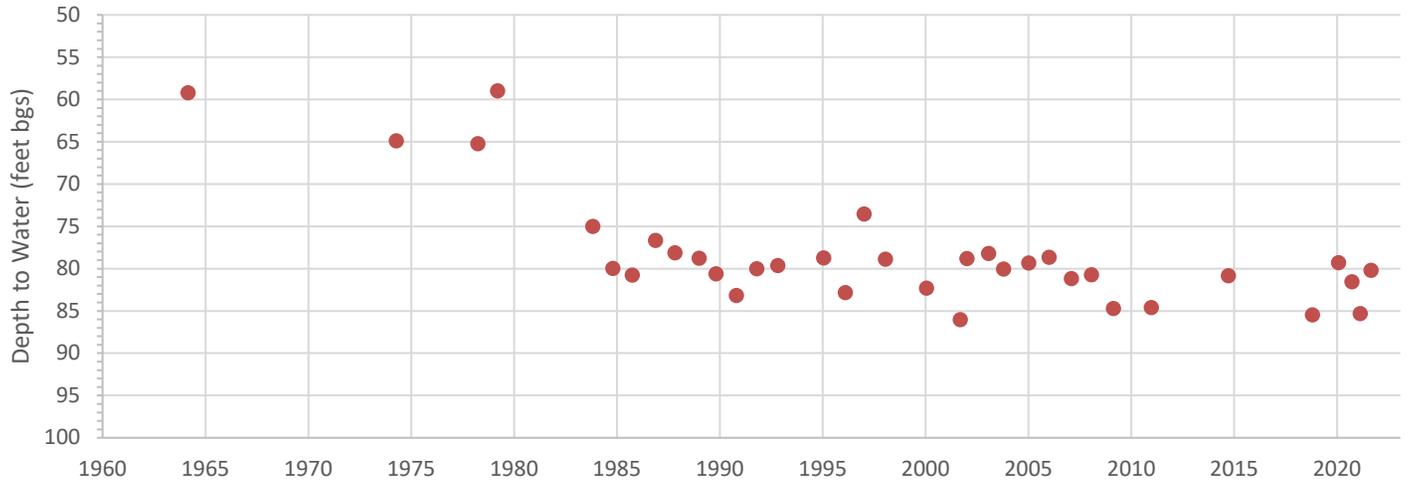
59-34-8-0008 (Dime Box Camp Well)



59-41-7-0025 (Schneider Domestic Well)



59-42-2-0003 (Lee County FWSD Well)



Appendix C
Queen City Aquifer
Water Levels

58-40-6-0035		58-40-6-0049		58-40-6-0051	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
10/30/2013	53.20	8/1/2015	51.63	7/29/2021	49.70
6/2/2021	49.30	6/25/2021	59.93	11/22/2021	50.50
7/29/2021	48.72	8/11/2021	60.93		
11/22/2021	56.90	10/8/2021	63.93		
		11/22/2021	64.33		
		3/18/2022	66.63		

58-40-9-0027		51-41-1-0009		59-42-1-0012	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
1/1/1958	75.00	8/19/2021	89.10	3/26/1986	75.00
4/24/1974	77.12			1/18/1989	77.70
4/17/1975	76.00			11/14/1989	76.42
3/12/1976	75.21			11/13/1991	75.96
3/11/1977	74.16			2/4/1994	76.10
3/17/1978	75.90			2/14/1995	75.40
3/26/1979	75.72			3/1/1996	75.80
3/18/1980	75.49			1/31/1997	75.93
4/1/1981	76.17			2/18/1998	75.30
11/18/1982	76.99			2/10/1999	77.00
11/11/1983	76.22			2/16/2000	78.90
11/7/1984	77.28			10/10/2001	79.90
10/16/1985	77.83			2/7/2002	78.15
12/5/1986	76.72			2/12/2003	77.90
11/10/1987	76.09			11/18/2003	79.36
1/18/1989	77.59			2/7/2005	75.38
11/13/1989	78.09			2/7/2006	75.15
11/16/1990	79.23			2/28/2008	73.47
11/8/1991	78.39			2/27/2009	76.37
12/8/1992	76.39			1/26/2011	82.29
2/4/1994	76.70			10/13/2011	78.76
2/13/1995	76.50			10/5/2012	77.89
3/1/1996	76.68			10/29/2013	83.88
1/27/1997	78.80			10/27/2014	76.65
2/18/1998	79.20			12/11/2017	77.43
2/11/1999	79.87			12/5/2018	77.62
2/17/2000	80.70			3/12/2020	77.67
10/9/2001	80.28			11/2/2020	78.86
2/7/2002	79.22			5/6/2021	77.40
2/11/2003	78.41			10/8/2021	77.90
11/18/2003	79.68				
2/7/2005	77.90				
2/6/2006	79.20				
3/6/2007	80.82				
2/27/2008	78.51				
3/24/2009	82.92				
2/5/2010	80.16				
1/26/2011	82.85				
10/13/2011	85.02				
10/4/2012	84.60				
10/29/2013	85.25				
10/28/2014	85.90				
12/11/2017	83.59				
12/5/2018	43.55				
3/12/2020	69.09				
11/2/2020	77.17				
4/1/2021	73.45				
11/16/2021	77.10				

58-48-2-0014		58-48-5-0037		58-55-6-0030	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
7/10/1970	56.00	2/26/1968	132.00	1/14/2019	85.42
4/25/1974	56.00	4/25/1974	101.75	10/1/2020	86.14
4/17/1975	54.61	4/17/1975	101.67	4/1/2021	85.90
3/12/1976	53.83	4/11/1978	104.77	10/21/2021	86.40
3/11/1977	52.30	3/18/1980	106.54		
4/11/1978	53.15	3/19/1982	107.83		
3/26/1979	51.05	1/18/1989	83.53		
3/18/1980	51.23	11/14/1989	82.13		
4/1/1981	52.34	12/3/1990	83.48		
11/18/1982	52.50	12/8/1992	81.30		
11/17/1983	52.25	2/4/1994	79.30		
11/7/1984	52.74	2/13/1995	81.35		
10/16/1985	53.00	3/1/1996	80.55		
12/5/1986	52.44	1/27/1997	81.72		
11/10/1987	51.83	2/18/1998	82.10		
1/18/1989	55.34	2/11/1999	81.96		
11/13/1989	53.13	2/16/2000	83.20		
12/3/1990	52.69	10/9/2001	82.45		
11/8/1991	53.37	2/10/2003	85.40		
12/8/1992	51.78	11/18/2003	81.96		
2/4/1994	51.30	2/7/2005	80.90		
2/13/1995	51.15	2/6/2006	81.20		
3/1/1996	51.05	3/6/2007	82.51		
1/27/1997	51.87	2/28/2008	80.21		
2/18/1998	52.60	3/24/2009	82.49		
2/11/1999	52.47	2/5/2010	83.04		
10/9/2001	53.00	1/18/2011	82.71		
2/7/2002	51.28	10/7/2011	82.83		
2/11/2003	49.30	10/4/2012	82.36		
11/18/2003	49.57	10/29/2013	83.87		
2/7/2005	49.53	12/11/2017	79.85		
2/6/2006	49.40	12/5/2018	80.58		
3/6/2007	50.53	3/12/2020	77.71		
2/28/2008	0.00	11/2/2020	81.04		
3/24/2009	50.45	4/1/2021	82.33		
2/5/2010	47.10	10/8/2021	80.92		
1/26/2011	53.16				
10/13/2011	51.74				
10/4/2012	52.00				
10/29/2013	52.45				
10/28/2014	52.88				
12/11/2017	54.20				
12/5/2018	50.66				
3/12/2020	50.31				
11/2/2020	51.00				
4/1/2021	51.00				
10/8/2021	51.17				

59-33-2-0029		59-33-2-0040		59-33-4-0017	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
8/17/2021	130.60	11/16/2021	16.40	7/26/2021	124.20
		2/22/2022	15.20	10/8/2021	125.70
				2/14/2022	126.10

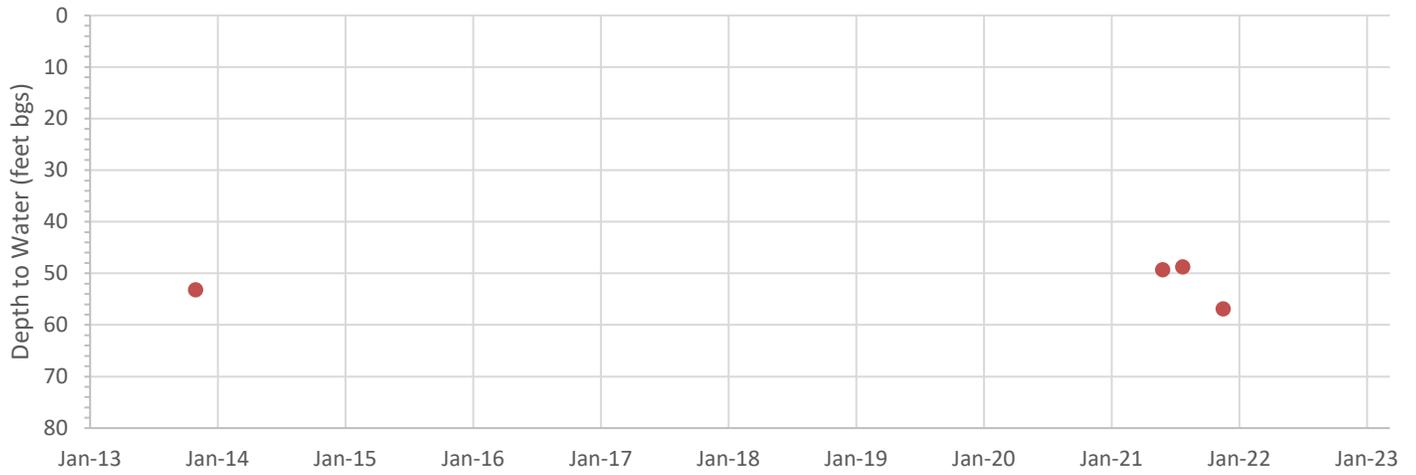
59-33-5-0013		59-33-5-0017		59-33-5-0018	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
8/11/2021	109.72	10/21/2021	91.60	7/1/2005	101.75
9/22/2021	111.00			10/21/2021	113.75
11/16/2021	112.85				
12/29/2021	109.50				
2/14/2022	111.50				

59-33-8-0006		59-33-8-0011		59-34-4-0018	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
10/21/2021	105.90	10/18/2021	108.80	11/5/2021	16.25

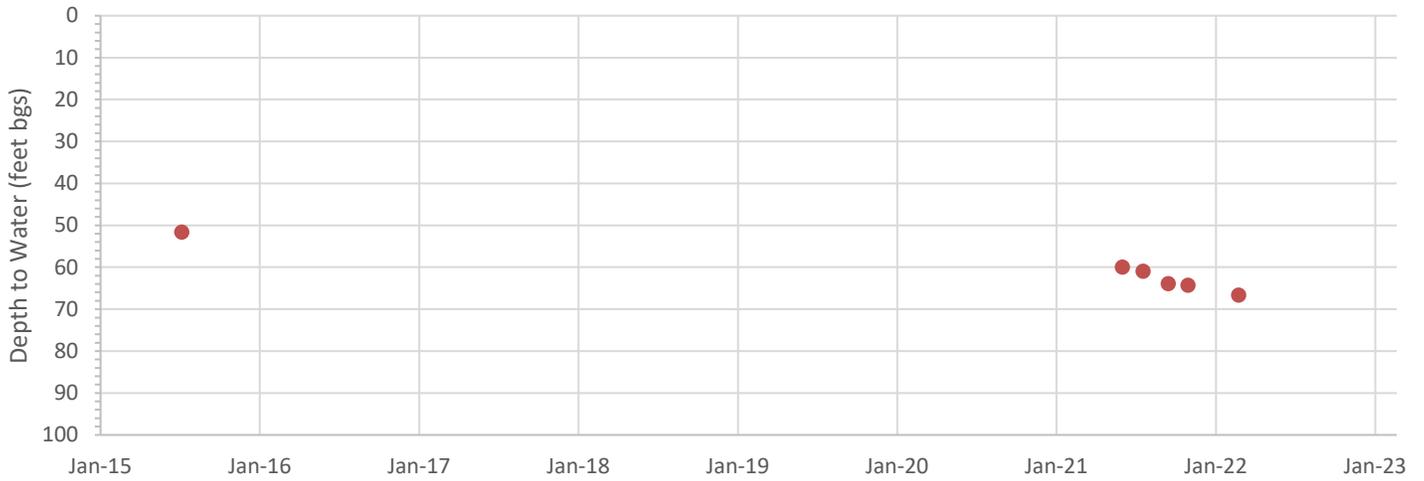
59-34-7-0020		59-34-7-0021	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
6/23/2021	38.30	6/23/2021	38.30

Appendix D
Queen City Aquifer
Hydrographs

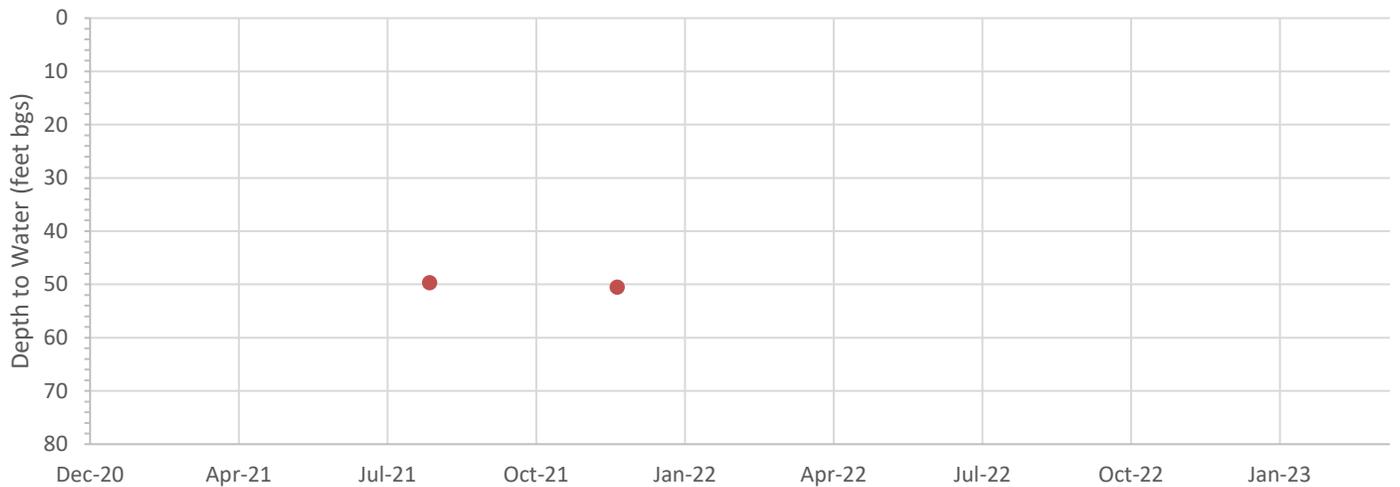
58-40-6-0035 (Faske Irrigation Well)



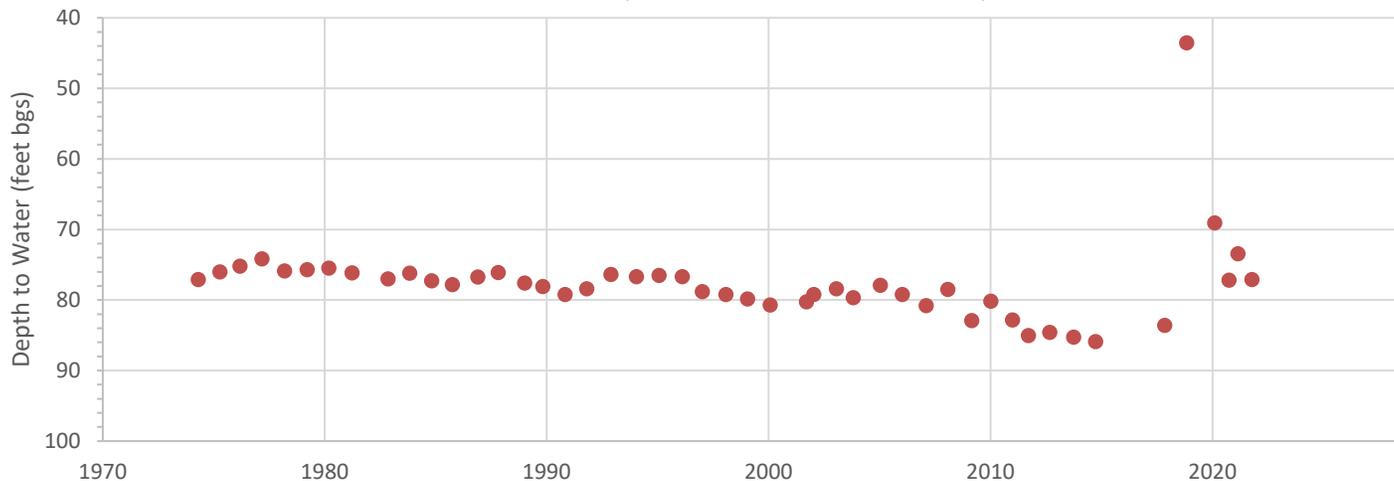
58-40-6-0049 (Yurk Domestic Well)



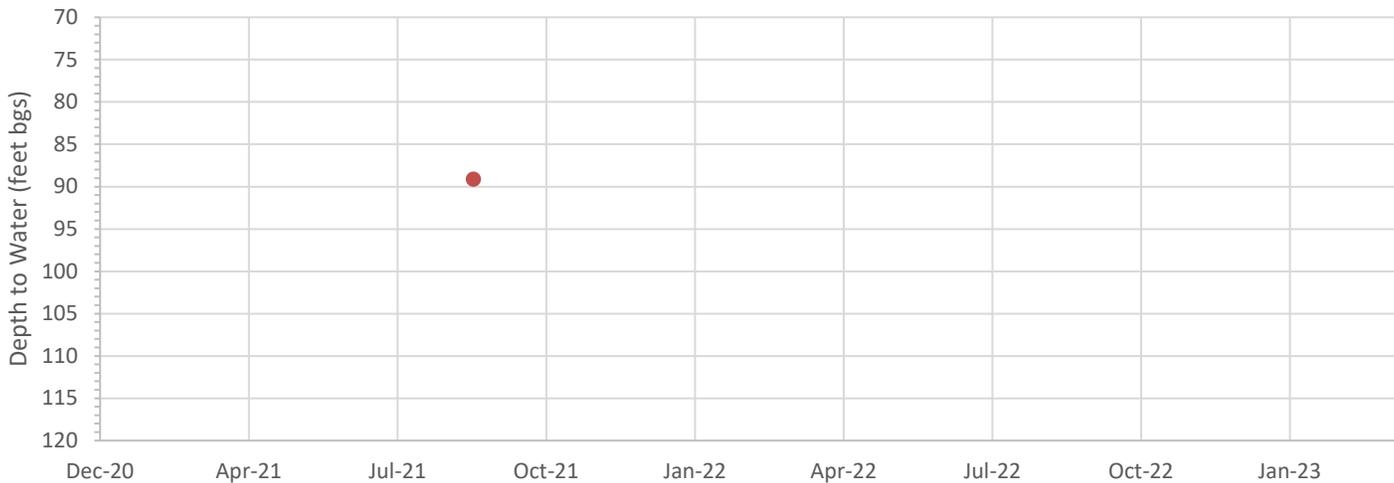
58-40-6-0051 (Faske Domestic Well)



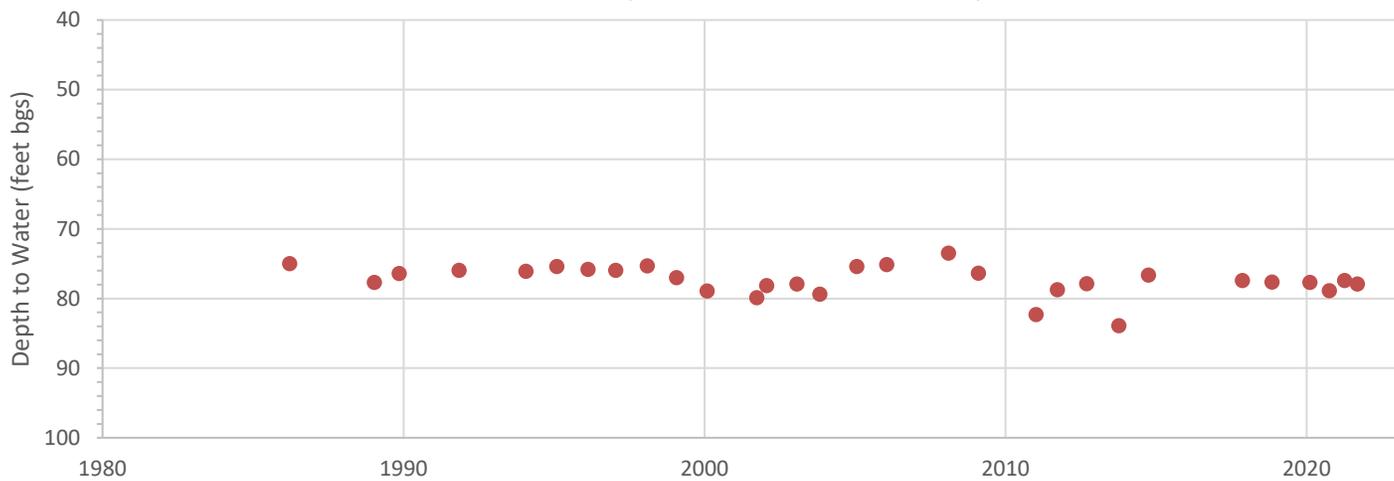
58-40-9-0027 (Drosche Domestic Well)



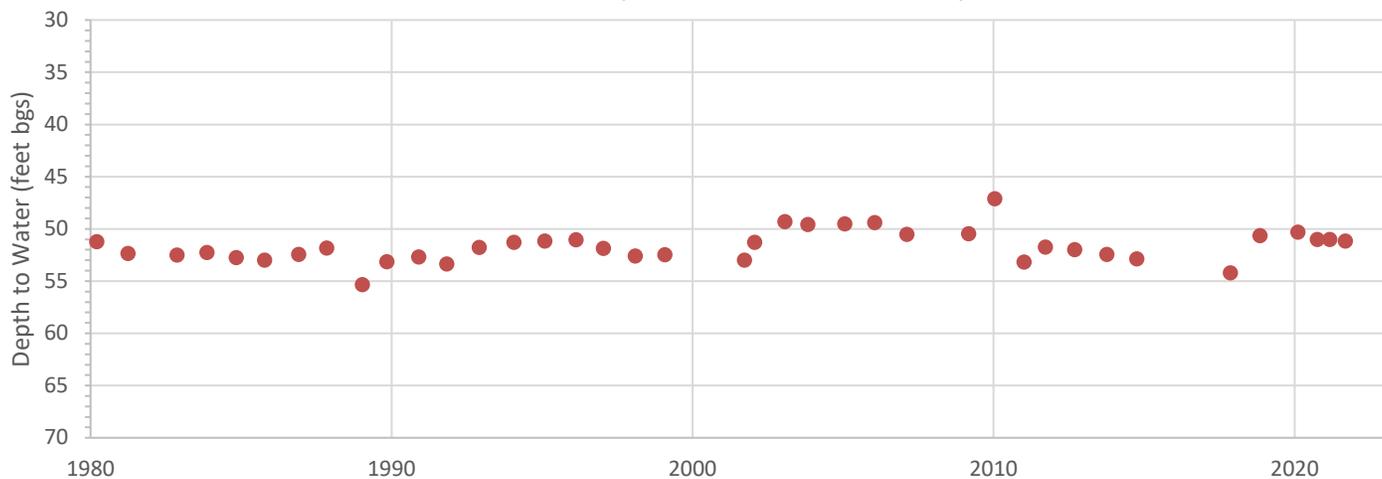
59-41-1-0009 (Marek Domestic Well)



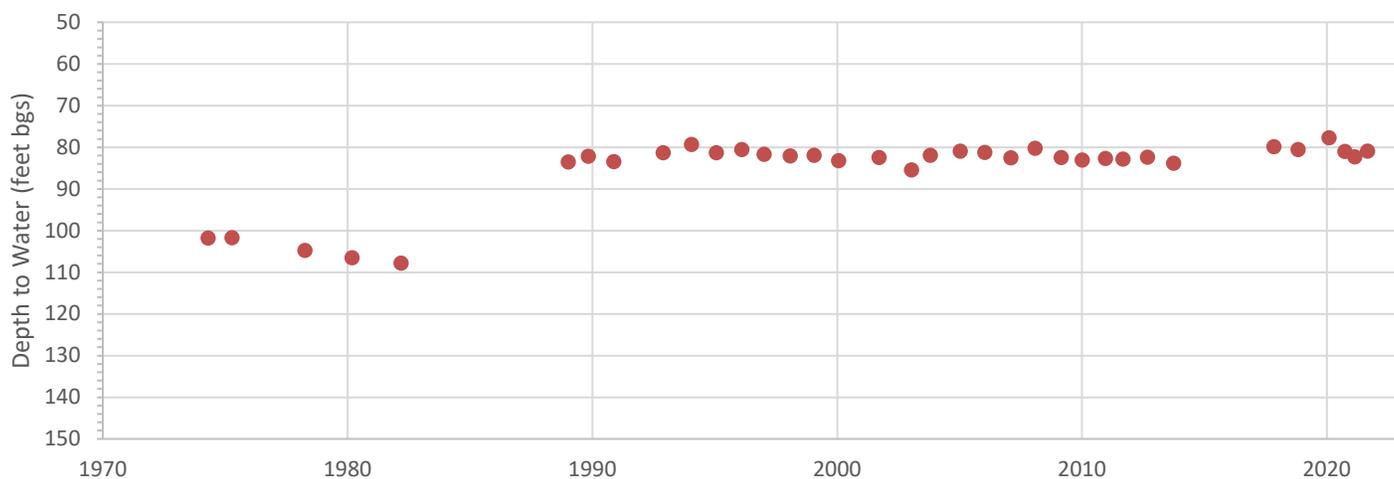
59-42-1-0012 (Whitsel Domestic Well)



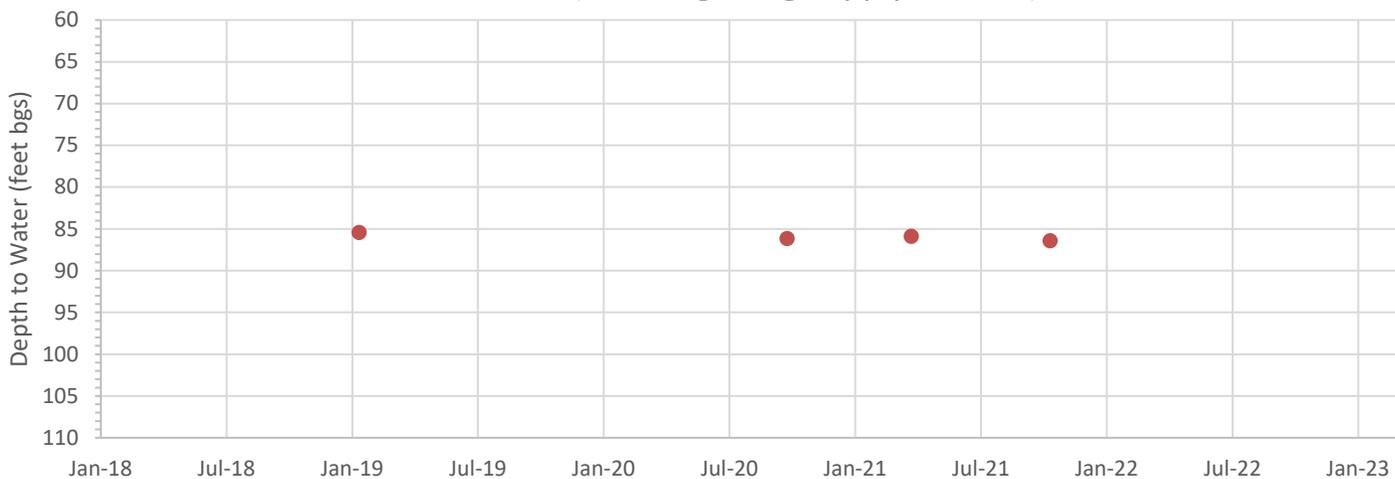
58-48-2-0014 (Jazzlau Domestic Well)



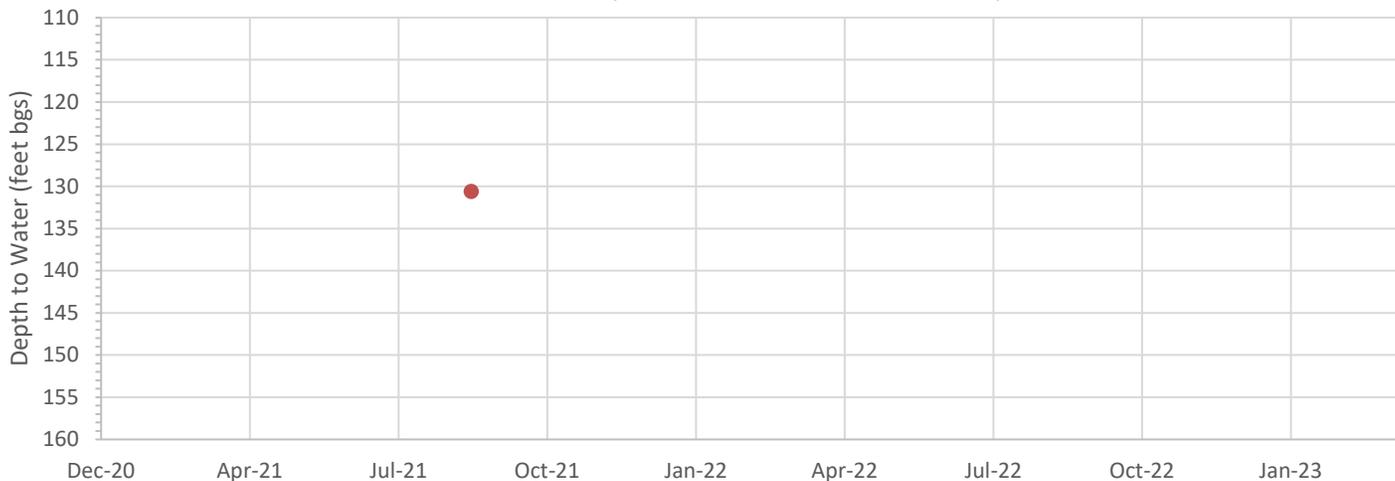
58-48-5-0037 (Wilson Domestic Well)



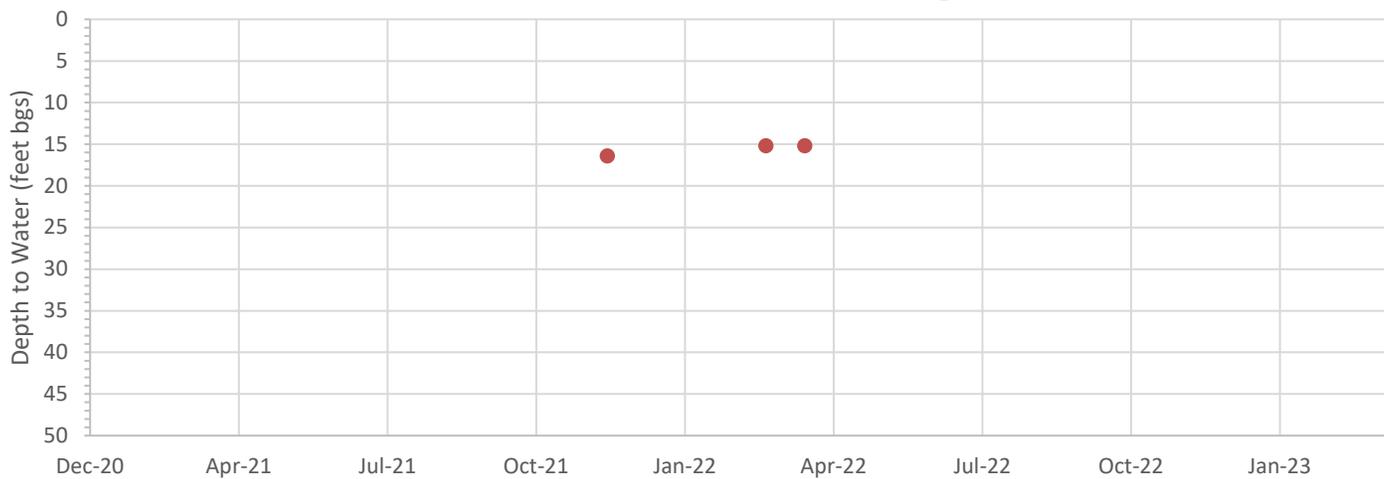
58-55-6-0030 (Marberger Rig Supply Well #3)



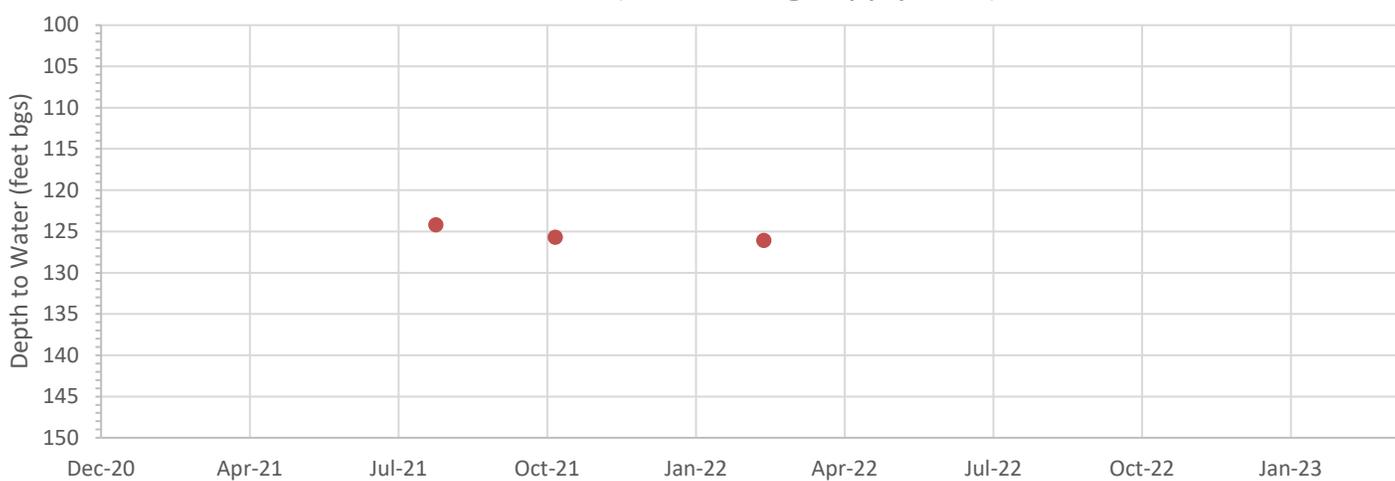
59-33-2-0029 (Estabrook Domestic Well)



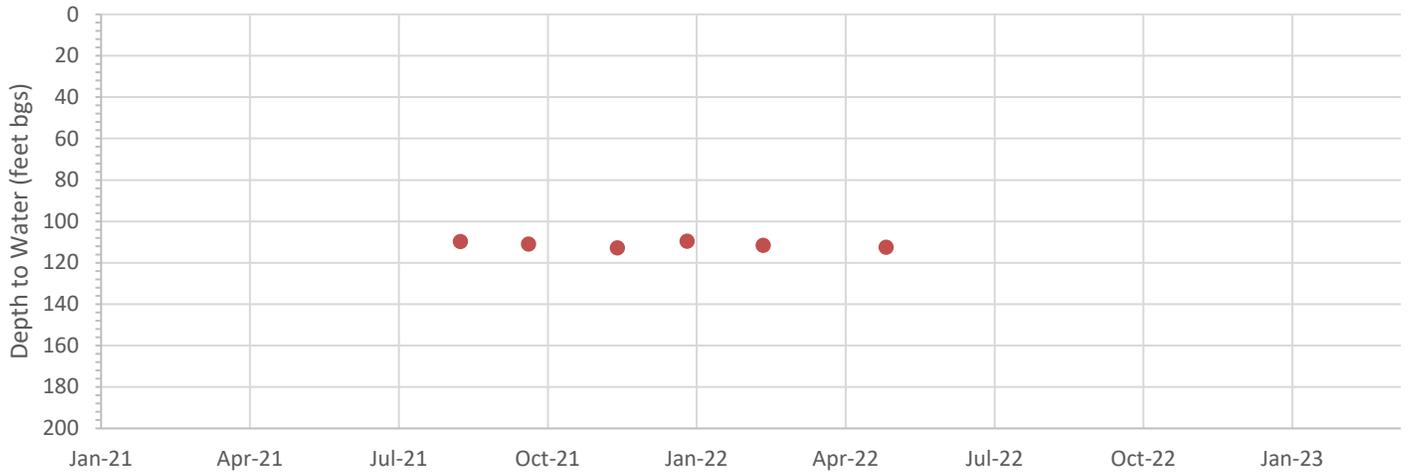
59-33-2-0040 (Rhodes Unused Hand Dug Well)



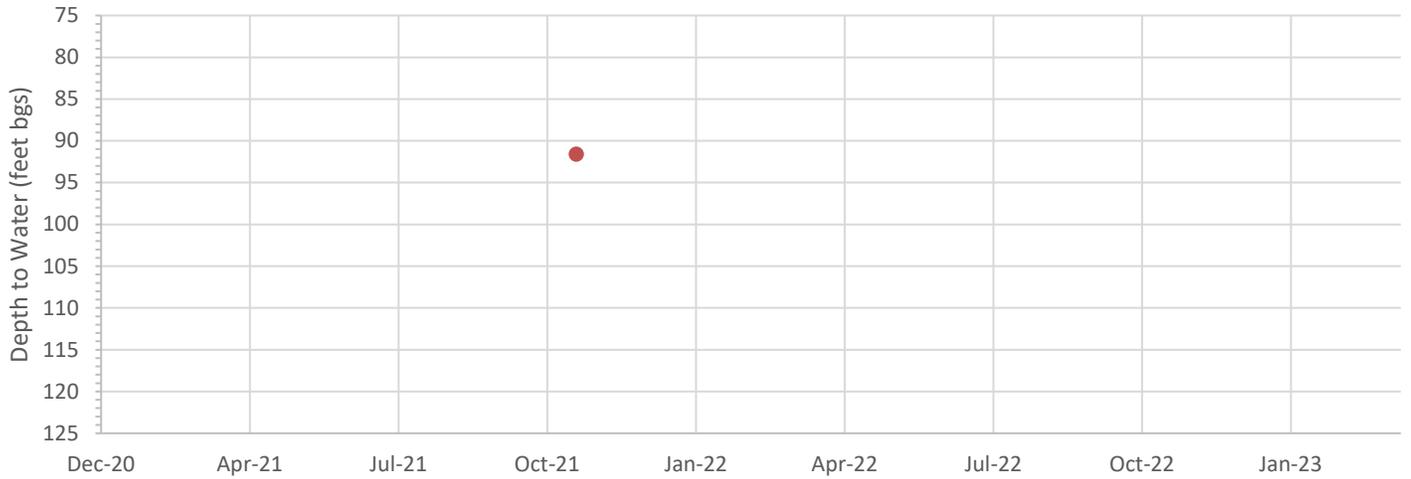
59-33-4-0017 (Forestar Rig Supply Well)



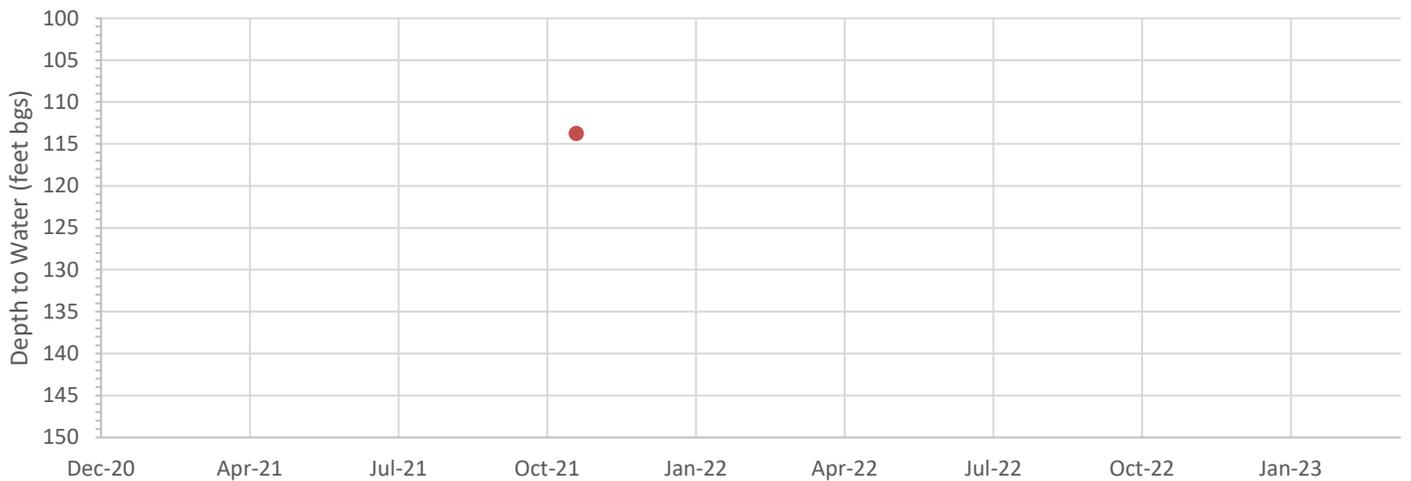
59-33-5-0013 (Raines Domestic Well)



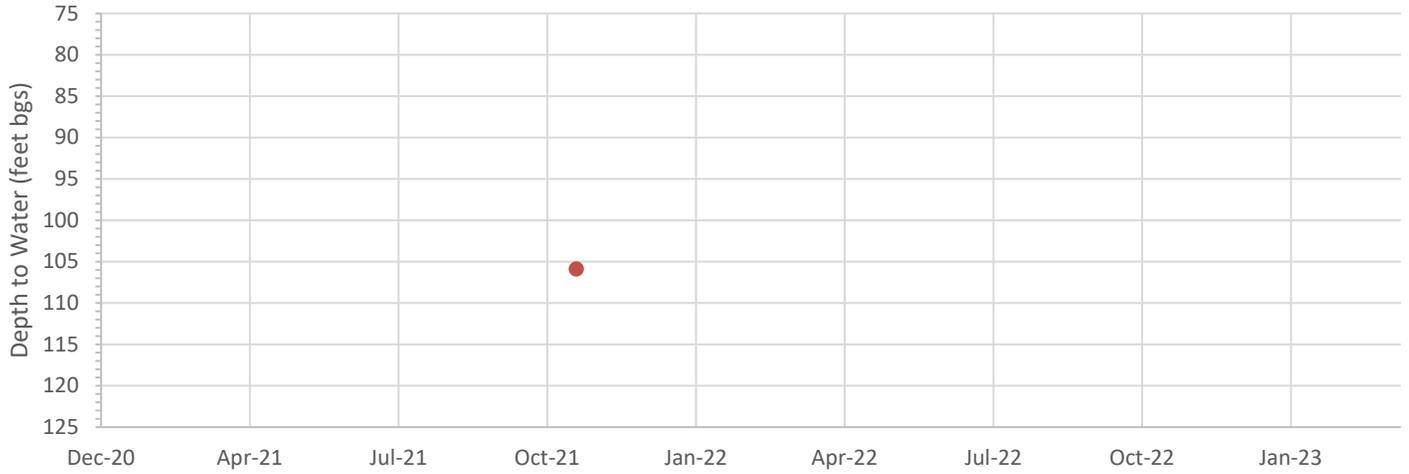
59-33-55-0017 (Wayne Iselt Domestic Well)



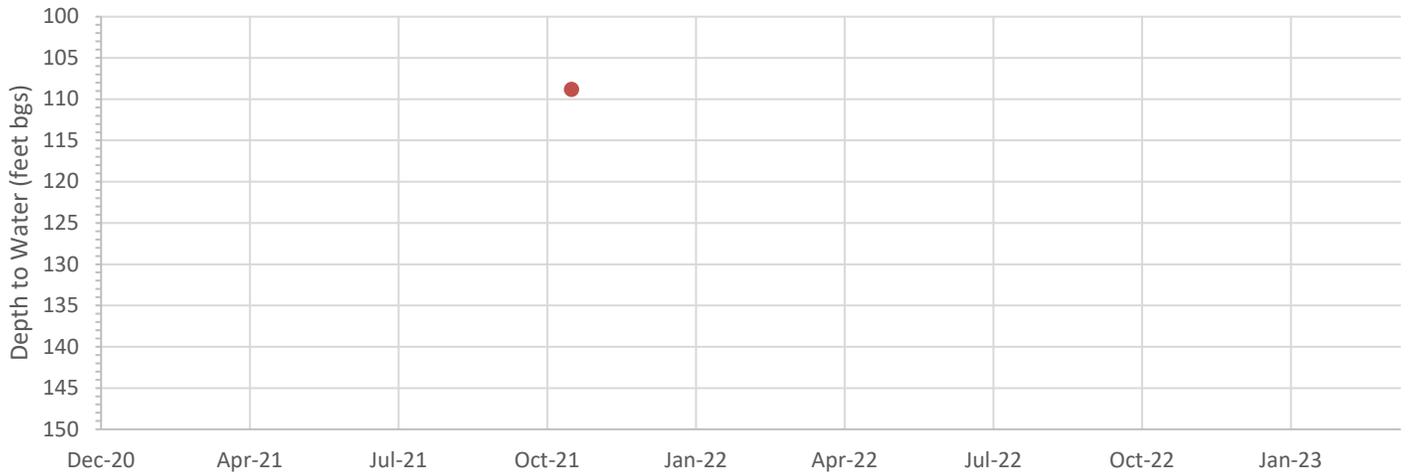
59-33-5-0018 (Iselt Domestic Well)



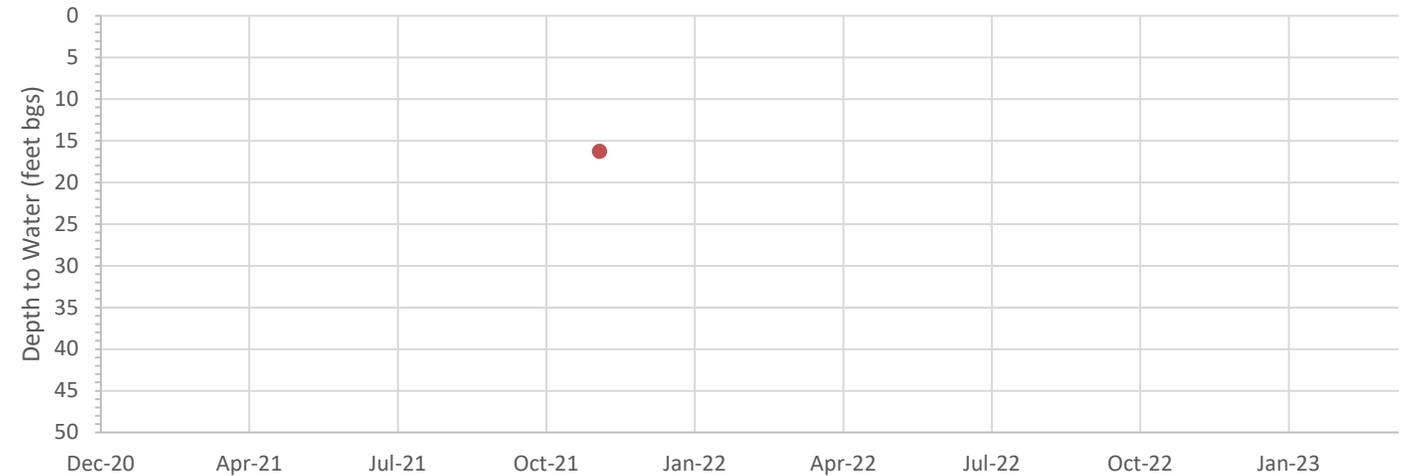
59-33-8-0006 (Nance Domestic Well #1)



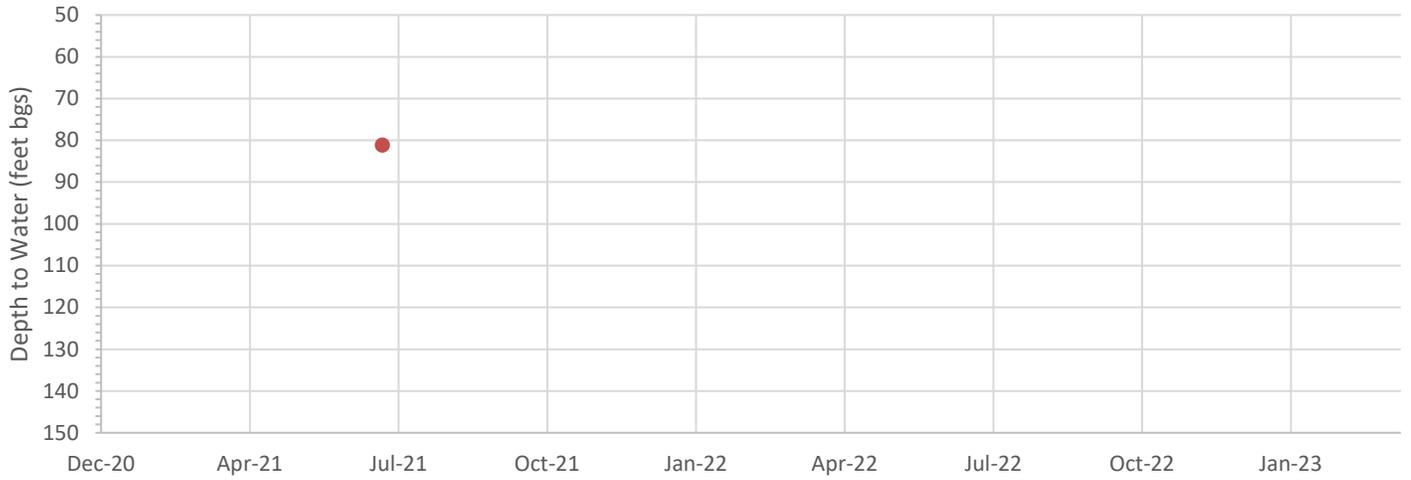
59-33-8-0011 (Nance Domestic Well #2)



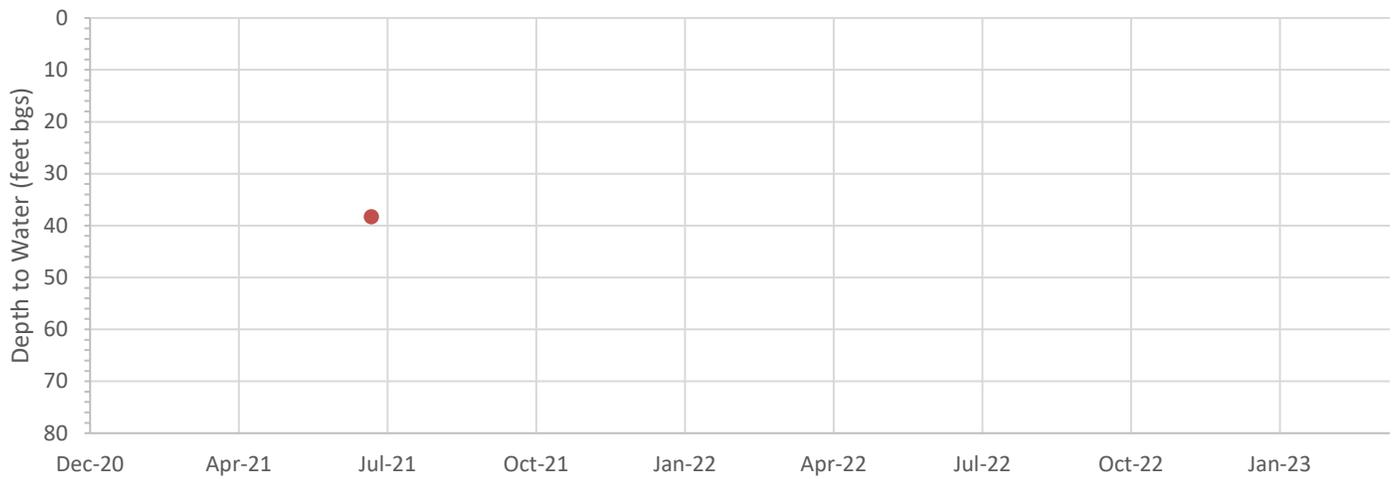
59-34-4-0018 (Pharis Domestic Well)



59-34-7-0020 (Diamond A Domestic Well)



59-34-7-0021 (Diamond A Livestock Well)



Appendix E
Carrizo Aquifer
Water Levels

58-40-3-0021		58-40-3-0023		58-40-6-0052	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
10/18/2021	11.80	10/18/2021	27.05	11/22/2021	155.97
				12/29/2021	156.87

58-40-9-0003		58-48-1-0038		58-55-3-0025	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
11/17/1959	93.60	1/7/2022	65.47	5/3/2020	47.32
1/1/1984	114.60			5/15/2020	48.93
9/7/2001	132.60			6/1/2020	47.81
1/1/2006	131.40			6/15/2020	50.28
1/1/2009	130.60			7/1/2020	50.01
1/1/2010	131.80			7/16/2020	52.29
2/8/2021	175.00			8/1/2020	52.72
2/26/2021	180.30			8/15/2020	54.52
4/1/2021	178.35			9/1/2020	57.33
5/6/2021	181.20			9/17/2020	53.31
6/23/2021	187.50			10/4/2020	55.46
7/26/2021	186.99			10/15/2020	56.61
8/11/2021	189.43			11/4/2020	52.68
9/22/2021	197.20			11/15/2020	53.93
10/7/2021	195.70			12/1/2020	51.72
11/16/2021	196.60			12/20/2020	50.44
2/14/2022	200.40			1/1/2021	49.63
				1/17/2021	48.58
				2/2/2021	48.10
				2/27/2021	47.53
				3/2/2021	47.58
				3/11/2021	47.97
				4/4/2021	54.17
				4/17/2021	52.58
				5/1/2021	50.47
				5/19/2021	49.49
				6/2/2021	48.37
				6/17/2021	49.27
				7/6/2021	52.54
				7/21/2021	50.03
				8/2/2021	54.03
				8/20/2021	55.00
				9/1/2021	55.78
				9/15/2021	61.67
				10/4/2021	55.74
				10/31/2021	53.69
				11/11/2021	51.84
				12/16/2021	50.51
				12/30/2021	49.60
				1/18/2022	49.76
				3/3/2022	48.09
				5/25/2022	56.04
				6/1/2022	60.27
				6/17/2022	57.56

58-63-6-0014		59-25-8-0020		59-25-8-0024	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
5/12/1967	36.88	2/26/2021	67.48	10/7/2021	154.10
4/10/1974	38.24	3/2/2022	71.40		
6/3/1975	39.13				
3/31/1976	39.56				
3/11/1977	38.64				
3/23/1979	39.60				
11/18/1983	44.87				
11/5/1984	45.10				
10/16/1985	47.56				
2/10/1987	73.90				
3/8/1989	60.36				
11/12/1991	50.33				
12/10/1992	46.98				
2/13/1995	49.06				
2/28/1996	50.25				
2/19/1999	49.68				
2/24/2000	51.00				
9/11/2000	59.27				
2/12/2001	52.60				
2/7/2002	51.40				
3/10/2003	50.39				
2/19/2004	56.06				
2/16/2005	51.00				
2/7/2006	53.76				
2/6/2007	55.00				
2/25/2008	56.32				
3/19/2009	56.99				
12/10/2009	56.52				
1/7/2011	58.22				
10/3/2012	59.65				
12/11/2017	60.25				
12/13/2018	59.09				
3/11/2020	58.46				
11/3/2020	64.75				
4/14/2021	62.40				
10/28/2021	64.20				

59-25-8-0025		59-25-8-0026		59-33-1-0030	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
8/25/2021	148.30	10/26/2021	154.40	7/15/2021	175.58
10/7/2021	154.10			8/11/2021	180.33
3/2/2022	164.40			10/8/2021	187.00

59-33-1-0032		59-33-1-0035		59-33-2-0018	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
7/15/2021	199.95	12/3/2021	176.90	5/7/2021	221.70
8/11/2021	204.30			8/6/2021	227.50
10/8/2021	210.80			3/18/2022	247.70
11/22/2021	213.60				
2/14/2022	213.92				
3/18/2022	221.40				

59-33-2-0019		59-33-2-0020		59-33-2-0022	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
4/1/2019	95.43	8/25/2021	160.60	2/26/2021	219.80
11/1/2020	138.83	10/8/2021	171.60	5/7/2021	231.30
6/25/2021	157.63	11/16/2021	170.90	8/6/2021	237.00
8/11/2021	164.13	2/22/2022	176.80	3/18/2022	255.80
9/22/2021	168.23				
11/16/2021	172.63				
2/22/2022	179.03				
5/13/2022	184.43				

59-33-2-0024		59-33-2-0027		59-33-2-0028	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
6/25/2021	134.17	11/16/2021	141.23	8/17/2021	208.90
8/11/2021	139.05	2/14/2022	147.23	3/18/2022	226.80
10/8/2021	147.60	4/11/2022	149.53		
2/14/2022	156.20				
4/12/2022	157.60				

59-33-2-0031		59-33-2-0035		59-33-2-0036	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
7/26/2021	205.75	9/10/2021	155.25	9/14/2021	154.41
10/8/2021	216.67	10/8/2021	159.85	12/20/2021	165.83
11/16/2021	220.33			2/22/2022	168.23
2/22/2022	225.85				
3/18/2022	227.45				

59-33-2-0037		59-33-2-0038		59-33-4-0022	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
9/10/2021	161.00	9/10/2021	157.88	2/8/2021	90.90
2/17/2022	177.90	11/16/2021	161.40	2/26/2021	93.10
4/11/2022	180.20	2/17/2022	165.20	4/1/2021	96.40
		4/11/2022	166.30	6/25/2021	103.35
				10/7/2021	115.60
				11/16/2021	118.10
				2/22/2022	123.50

59-33-4-0023		59-33-4-0024		59-33-5-0007	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
7/26/2021	157.92	8/27/2021	143.80	10/30/2013	146.00
10/8/2021	178.83	10/8/2021	149.30	6/21/2021	216.30
11/22/2021	228.83			7/2/2021	219.00
2/14/2022	230.67			7/1/1939	221.42
				9/22/2021	228.00
				11/22/2021	233.90
				12/29/2021	237.60

59-33-5-0011		59-33-5-0012		59-00-5-0015	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
7/2/2021	178.50	7/7/2021	177.25	9/10/2021	120.58
8/13/2021	183.25	8/13/2021	186.29	2/17/2022	132.90
10/21/2021	191.80				
5/4/2022	203.30				

59-33-5-0016		59-33-5-0019		59-33-6-0017	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
9/28/2021	199.50	12/9/2021	235.60	10/7/2021	223.20
11/16/2021	205.60	12/29/2021	236.10	11/22/2021	230.10
12/29/2021	207.60	2/14/2022	239.00	11/23/2021	230.20
2/14/2022	210.90	5/4/2022	242.60		

59-33-6-0021		59-33-6-0024		59-33-7-0004	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
12/10/2020	156.00	9/24/2021	207.90	3/15/2019	141.40
12/28/2020	169.20	11/22/2021	214.80	3/15/2019	140.30
1/9/2021	169.00			3/15/2019	140.80
2/26/2021	178.00			3/15/2019	144.50
4/1/2021	179.40			3/15/2019	143.80
6/23/2021	190.17			3/15/2019	142.90
8/13/2021	197.40			3/15/2019	144.10
9/24/2021	208.30			3/15/2019	144.70
10/7/2021	208.90			3/15/2019	142.90
11/16/2021	208.41			3/15/2019	143.10
2/14/2022	212.90			3/15/2019	143.60
3/18/2022	213.70			3/15/2019	144.90
5/4/2022	221.80			3/15/2019	146.00
				3/15/2019	148.20
				3/15/2019	148.10
				3/15/2019	151.50
				3/15/2019	157.20
				3/15/2019	160.10
				3/15/2019	160.70
				3/15/2019	164.20
				3/15/2019	166.10
				3/15/2019	167.10
				3/15/2019	170.00
				3/15/2019	165.70
				3/15/2019	170.40
				3/15/2019	173.80

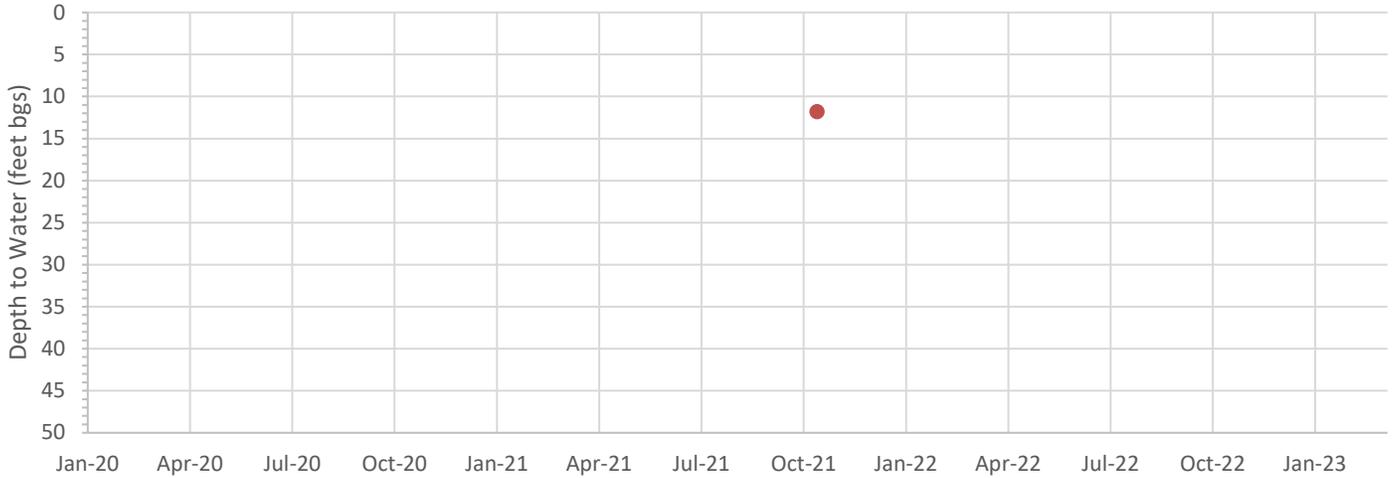
59-33-7-0027		59-33-8-0009		59-34-7-0018	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
10/26/2021	210.33	8/19/2021	227.20	12/12/2017	111.00
11/22/2021	211.83	11/22/2021	233.40	2/26/2021	255.25
2/22/2022	216.03			5/7/2021	272.10
3/18/2022	216.93			8/13/2021	297.70
				10/7/2021	297.10
				11/16/2021	295.20
				2/22/2022	319.50
				3/18/2022	298.00

59-34-7-0019		67-06-9-0019		67-07-2-0026	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
12/5/2017	100.00	12/6/2010	87.56	5/10/1965	35.21
2/26/2021	251.00	10/29/2021	91.19	4/9/1974	41.50
4/8/2021	258.20			6/3/1975	39.48
5/7/2021	265.20			3/31/1976	39.75
6/23/2021	276.80			3/11/1977	39.08
8/13/2021	286.90			3/10/1978	39.09
10/7/2021	297.00			3/23/1979	40.14
11/16/2021	301.95			11/19/1982	43.90
2/22/2022	305.60			11/18/1983	43.58
3/18/2022	299.40			11/5/1984	45.50
				10/16/1985	45.13
				2/10/1987	42.00
				11/13/1987	45.50
				3/8/1989	48.98
				11/15/1989	46.43
				11/9/1990	48.15
				11/12/1991	48.77
				12/10/1992	45.15
				1/25/1994	46.20
				2/14/1995	45.65
				2/28/1996	47.78
				12/6/1996	47.75
				12/5/1997	47.79
				5/28/1998	51.10
				2/11/1999	47.68
				2/24/2000	48.82
				9/18/2000	58.30
				1/31/2001	49.65
				2/7/2002	48.98
				3/10/2003	48.07
				2/19/2004	50.10
				2/16/2005	47.55
				2/7/2006	50.90
				6/13/2006	55.01
				2/6/2007	51.75
				2/26/2008	49.28
				3/17/2009	54.34
				12/10/2009	52.98
				1/7/2011	54.86
				11/4/2011	58.90
				10/3/2012	55.89
				10/17/2013	57.41
				10/27/2014	57.68
				12/11/2017	56.07
				12/13/2018	54.58
				3/11/2020	54.50
				11/3/2020	58.00
				4/14/2021	58.29
				10/28/2021	59.30

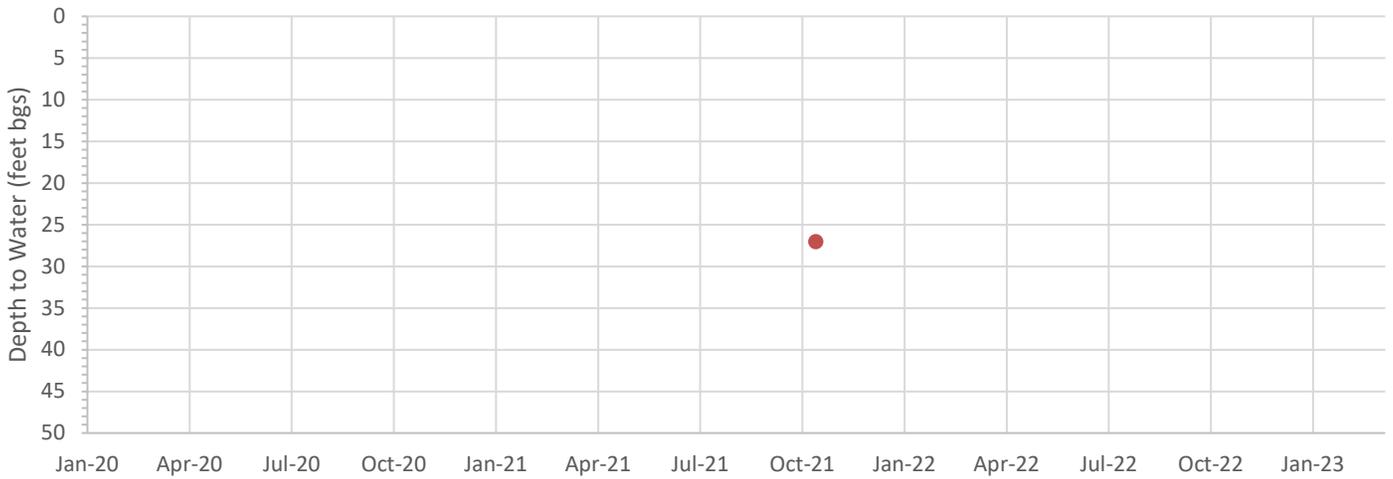
67-07-2-0027		67-14-5-0024	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
8/1/1985	112.00	11/10/2010	126.00
7/23/1987	93.94	10/29/2021	128.90
11/13/1987	86.97		
3/9/1989	94.46		
11/15/1989	86.44		
11/9/1990	87.20		
11/12/1991	90.73		
1/25/1994	86.10		
2/28/1996	87.33		
12/6/1996	97.10		
12/5/1997	88.89		
9/11/2000	98.07		
1/31/2001	90.45		
2/7/2002	96.83		
2/16/2005	88.05		
2/26/2008	95.68		
3/19/2009	98.85		
12/10/2009	98.80		
1/7/2011	95.00		
11/4/2011	99.68		
10/3/2012	98.35		
10/27/2014	94.49		
1/14/2019	91.58		
3/11/2020	91.74		
11/3/2020	95.28		
4/14/2021	94.99		
10/28/2021	90.49		

Appendix F
Carrizo Aquifer
Hydrographs

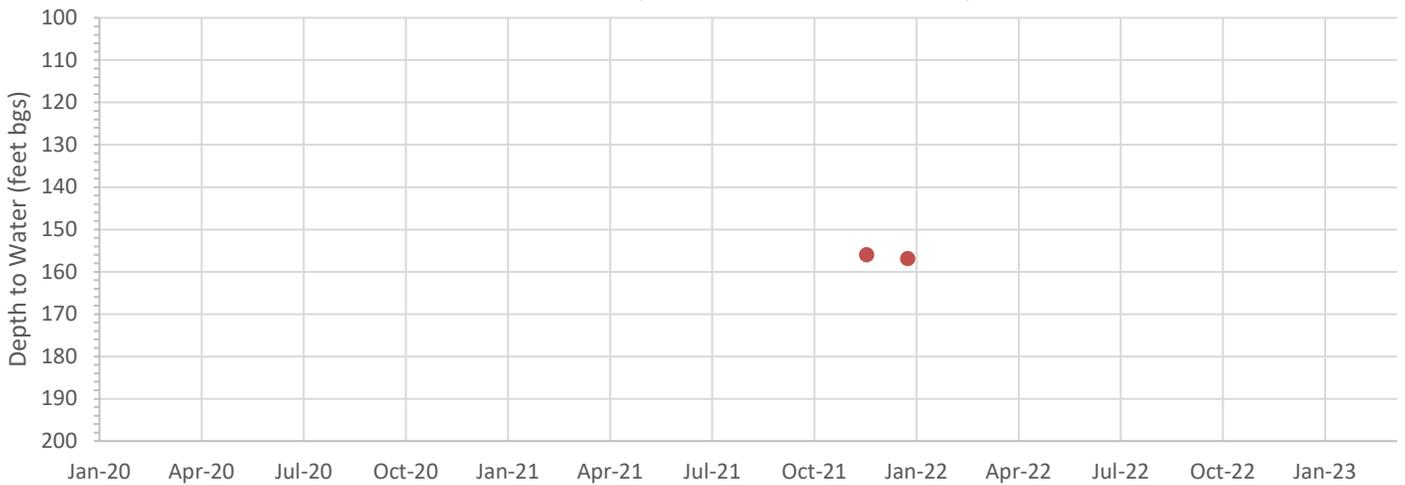
58-40-3-0021 (Poston New Domestic Well)



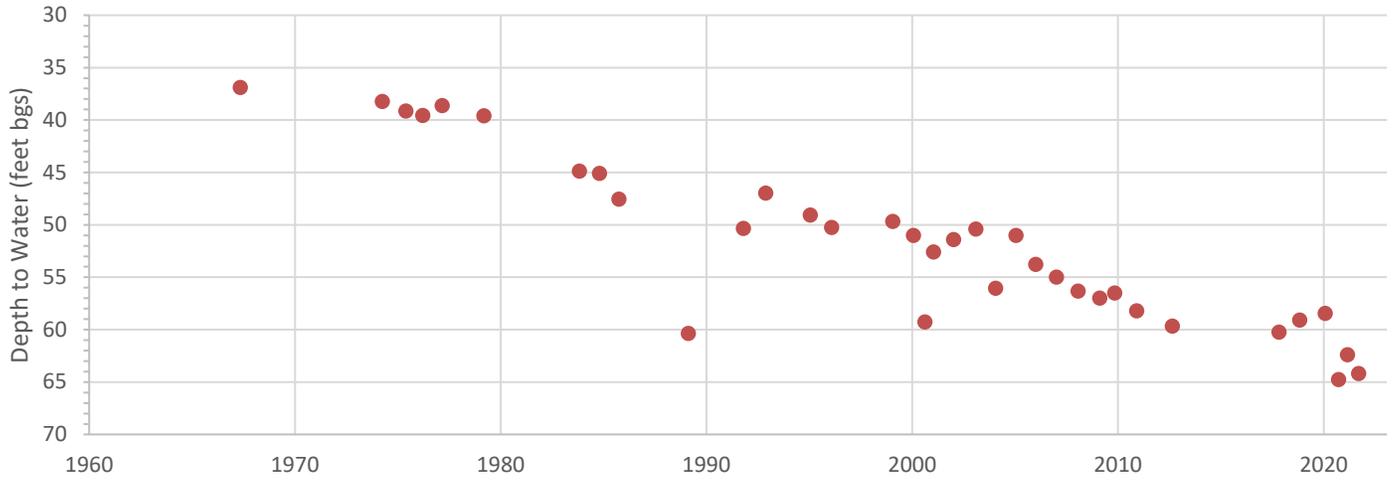
58-40-3-0023 (Poston Old Domestic Well)



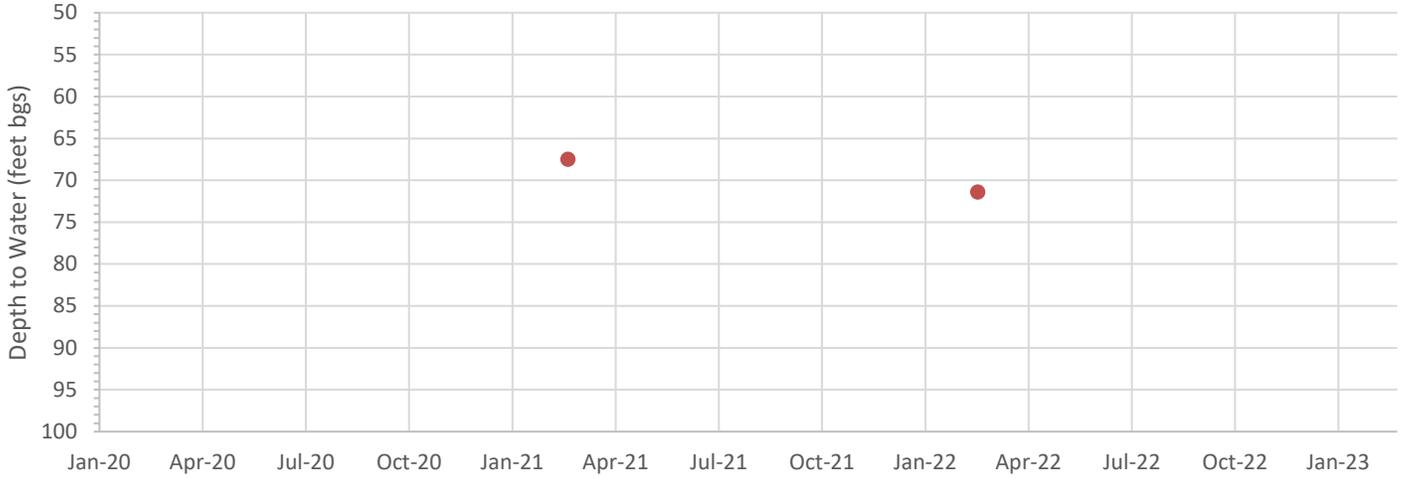
58-40-6-0052 (DeMit Domestic Well)



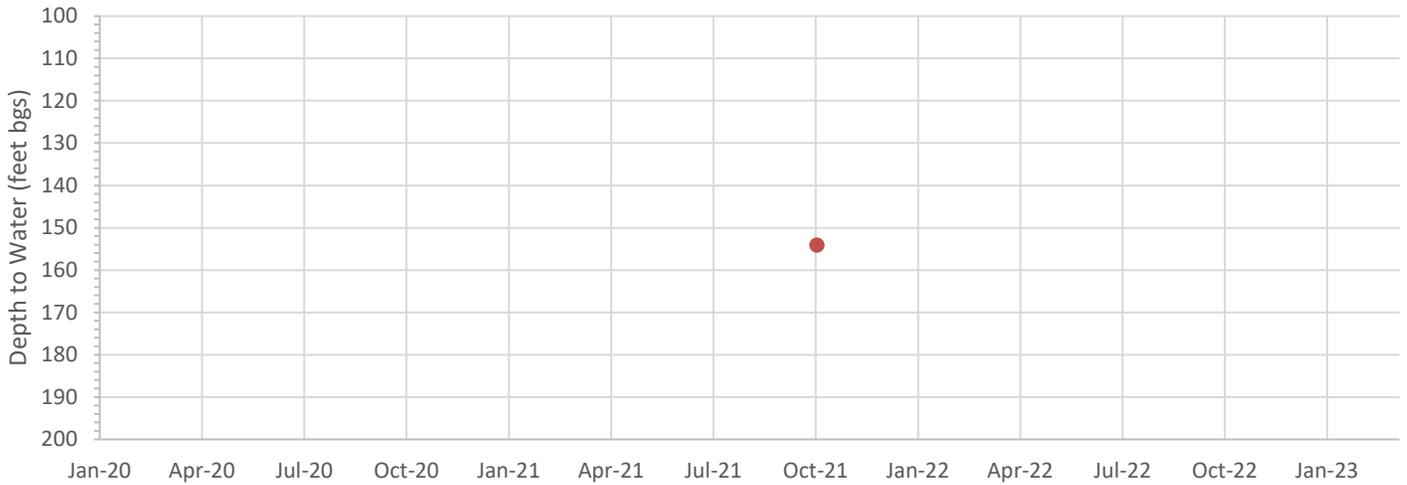
58-63-6-0014 (Buescher Park Well)



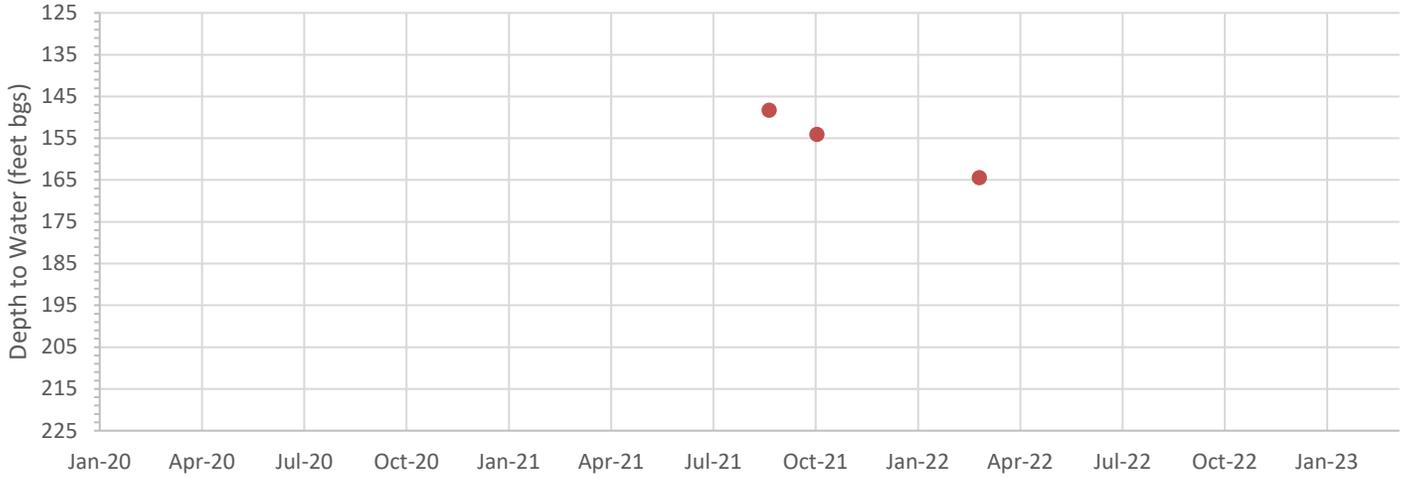
59-25-8-0020 (Hiebert Irrigation Well)



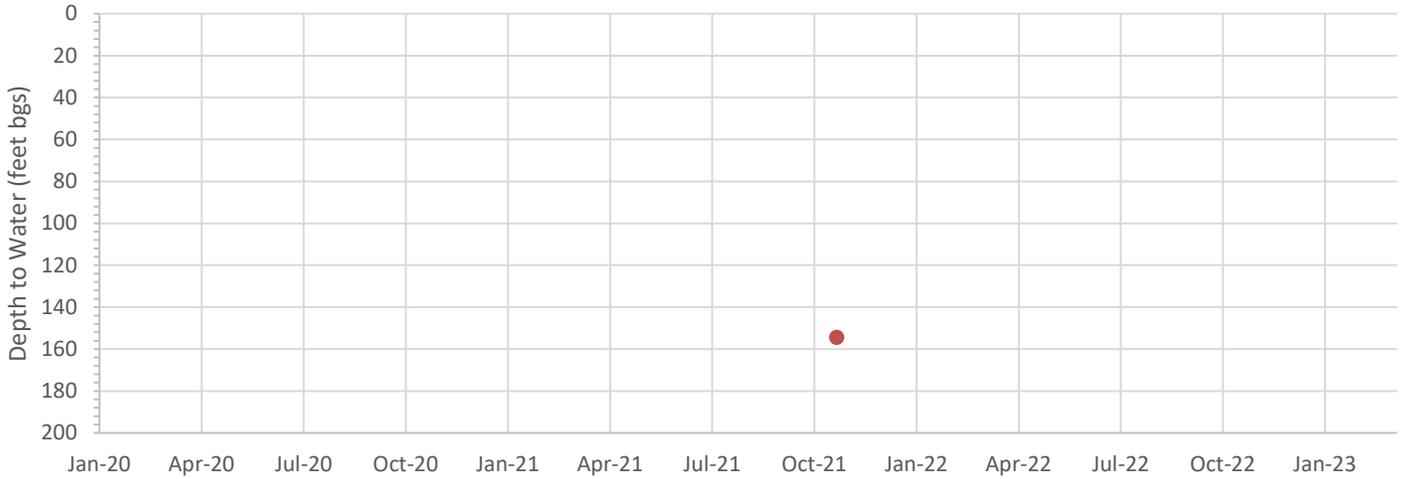
59-25-8-0024 (Stork "Barn" Well)



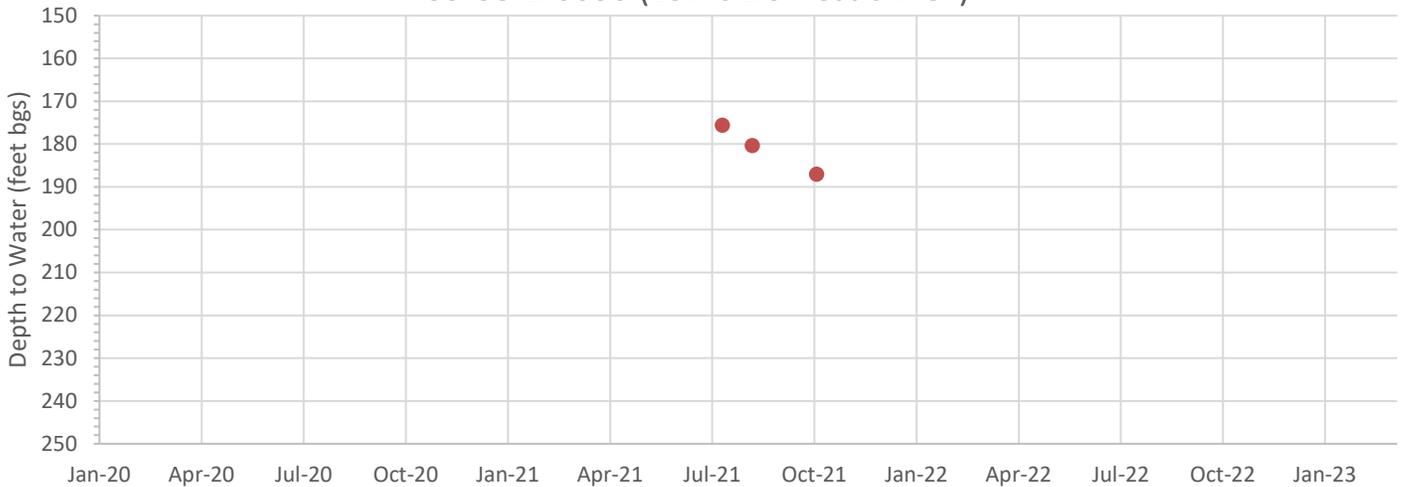
59-25-8-0025 (Stork "Pond" Well)



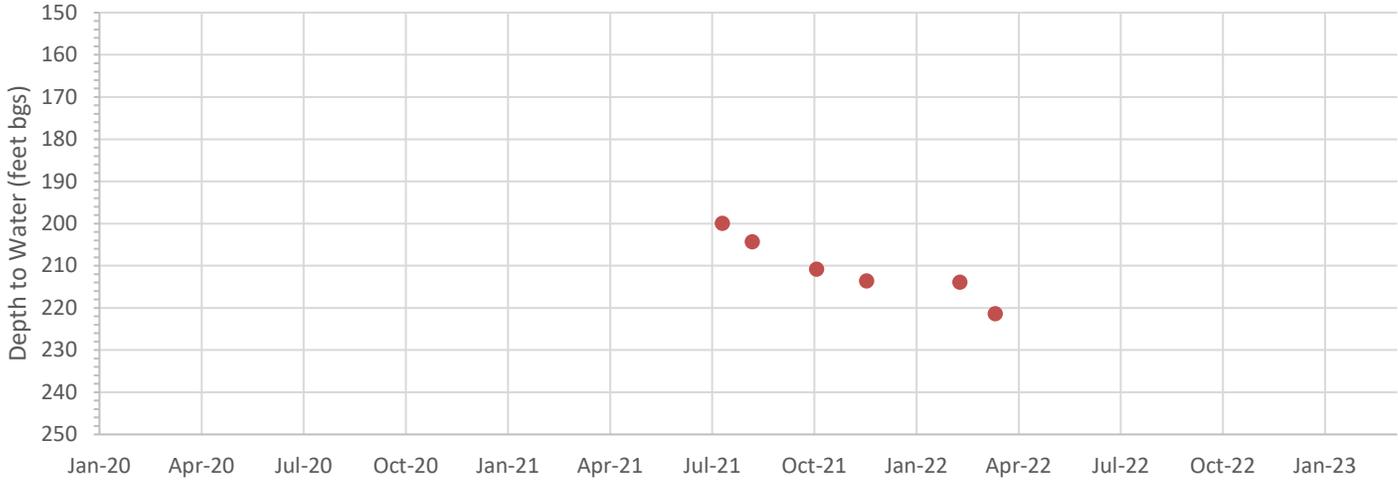
59-25-8-0026 (Weldon Domestic Well)



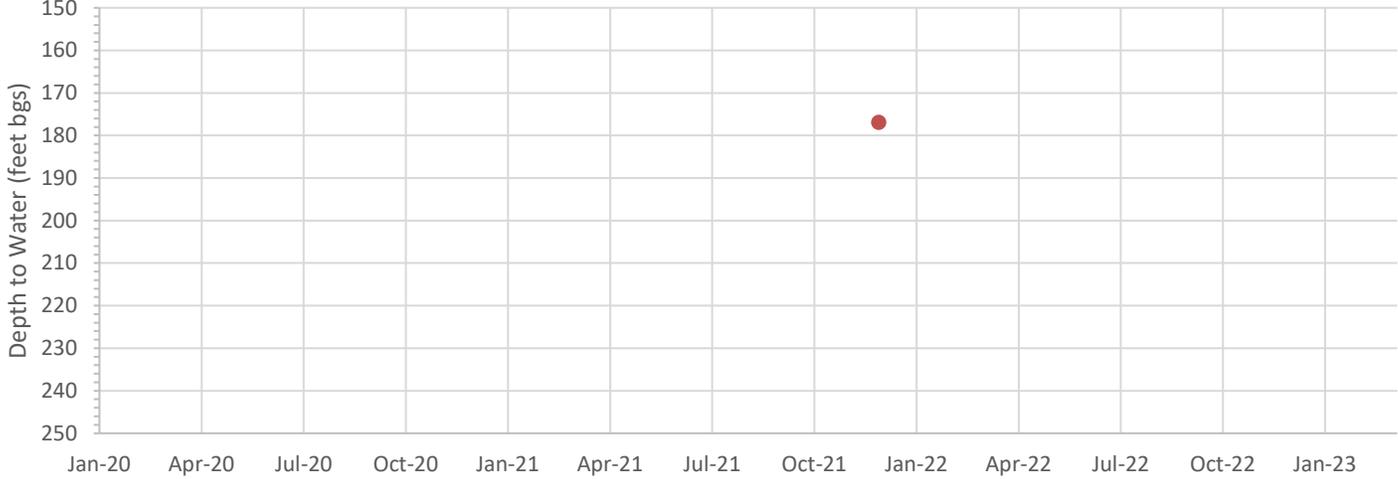
59-33-1-0030 (Lewis Domestic Well)



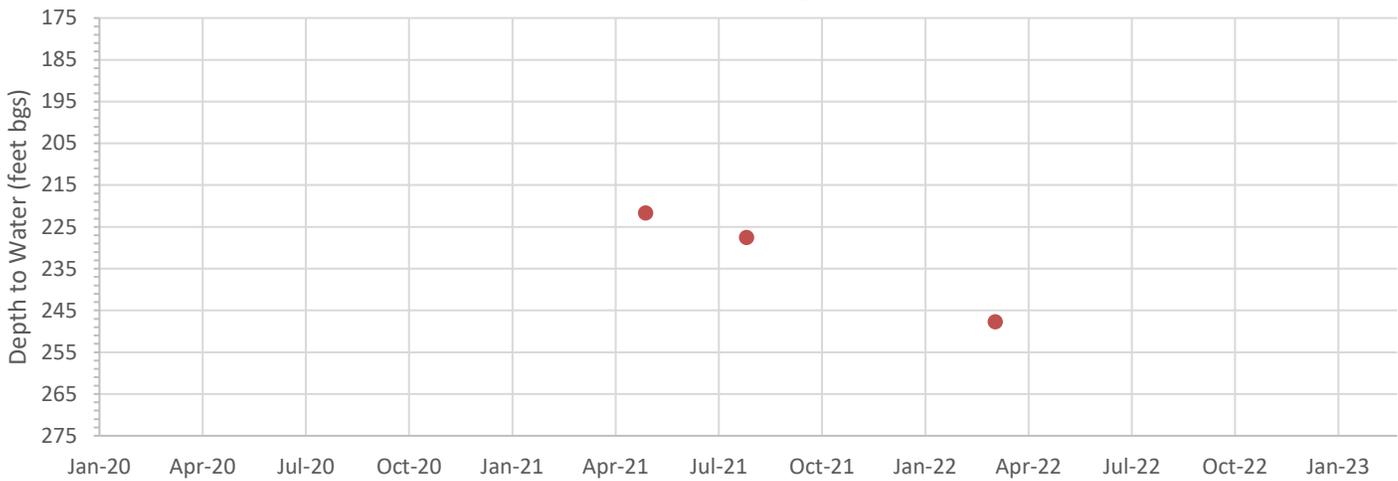
59-33-1-0032 (Don Brown CR411 Domestic Well)



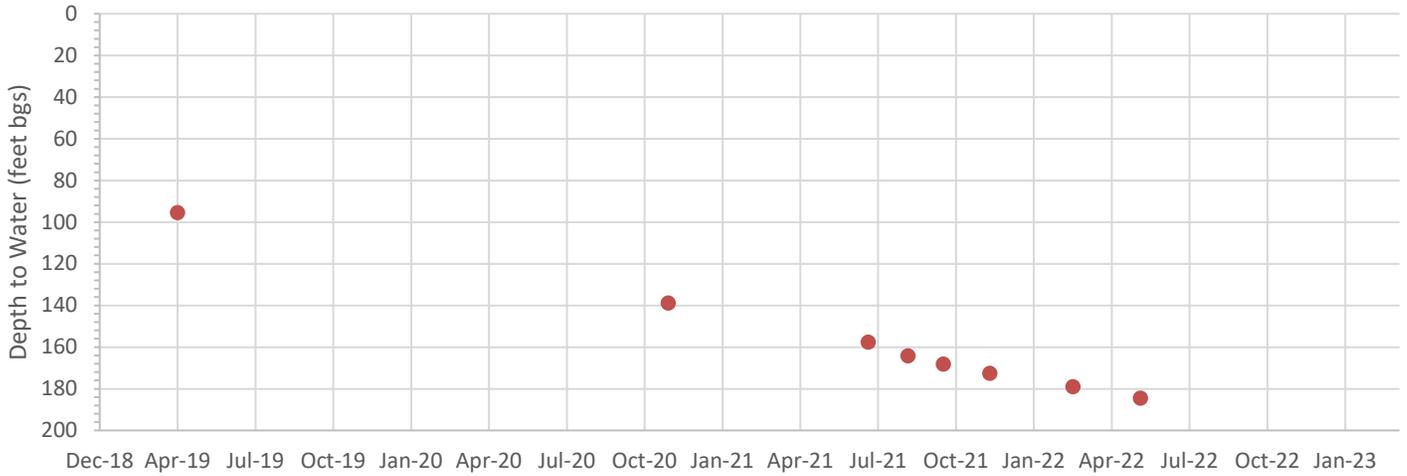
59-33-1-0035 (Darrell Brown Domestic Well)



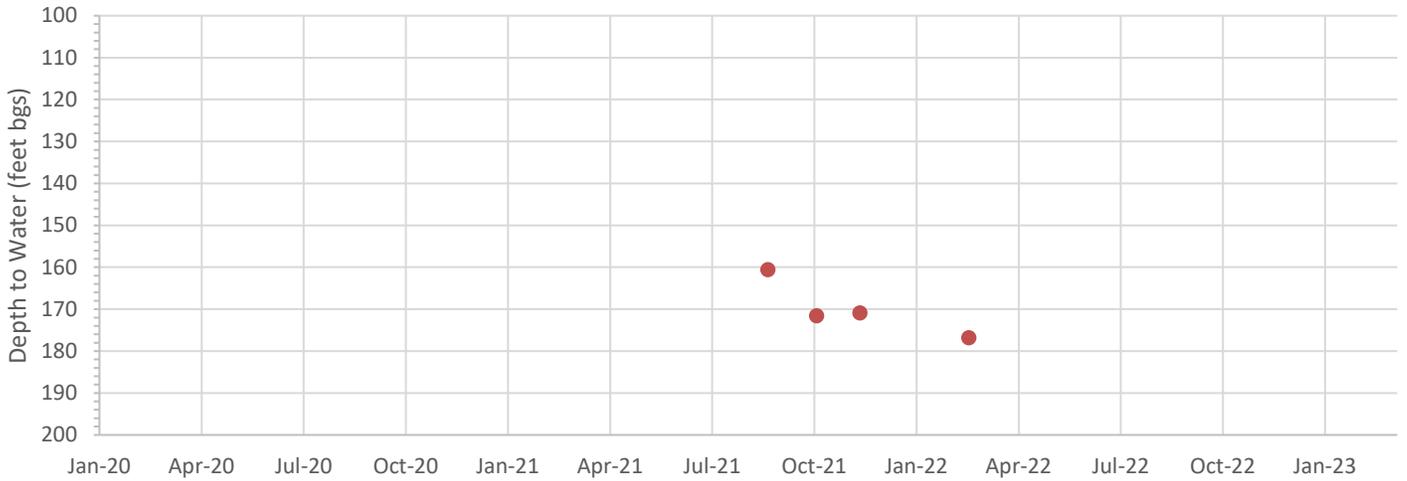
59-33-2-0018 (Orosco Irrigation Well)



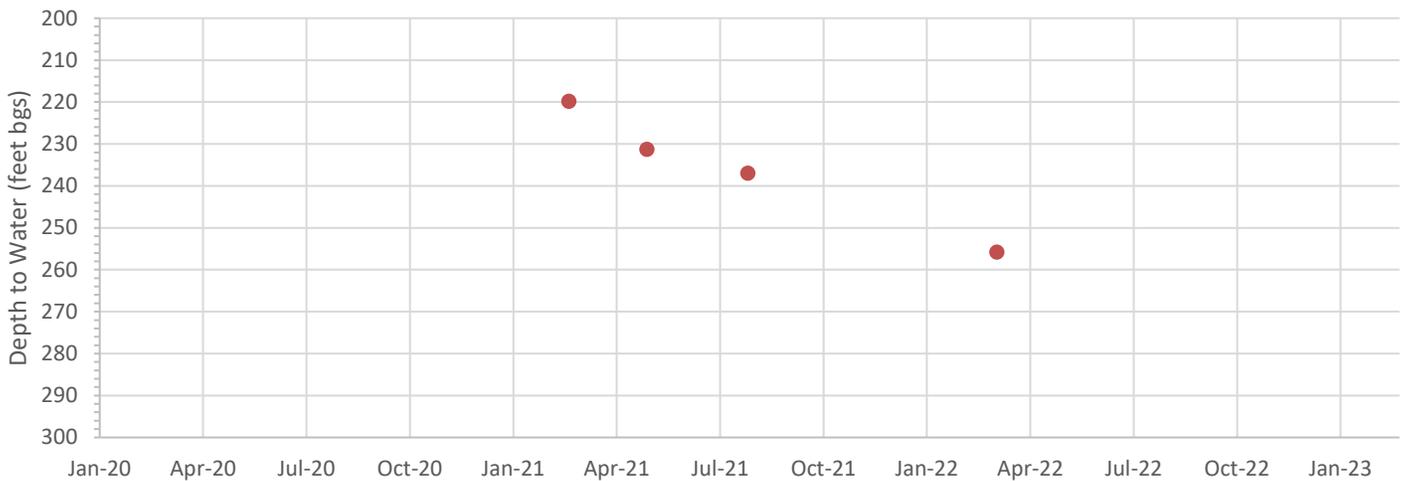
59-33-2-0019 (McKee Domestic Well)



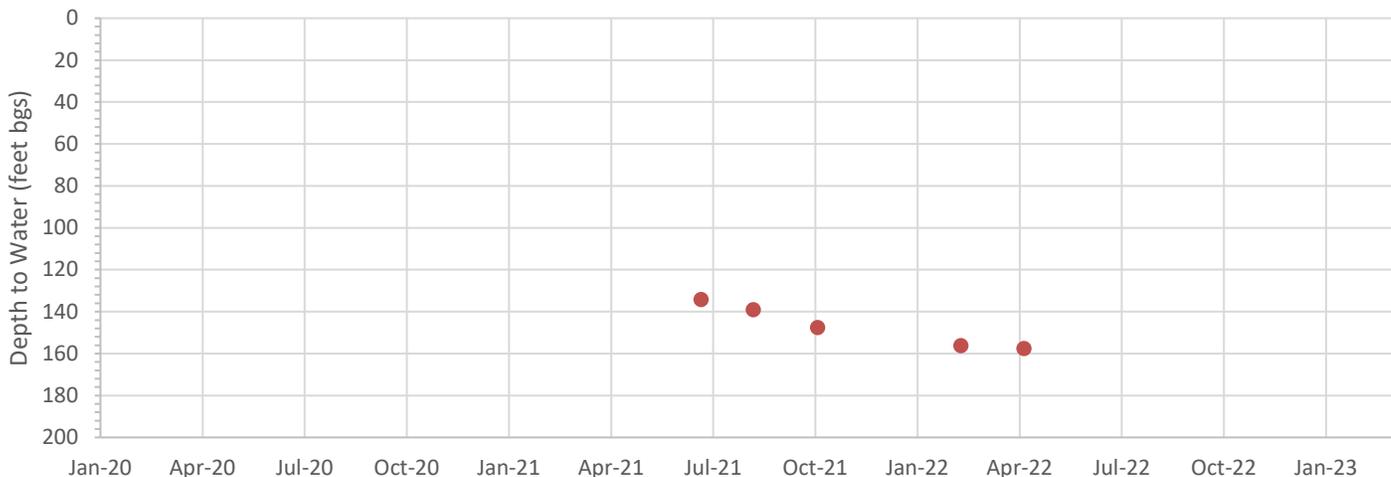
59-33-2-0020 (Heller Domestic Well)



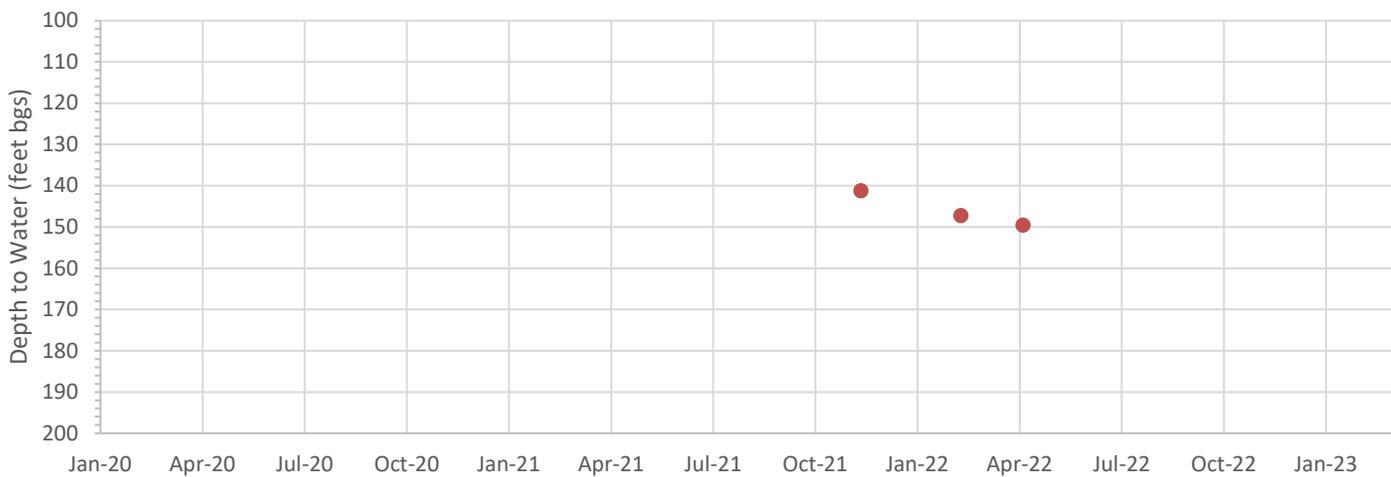
59-33-2-0022 (Orosco Domestic Well)



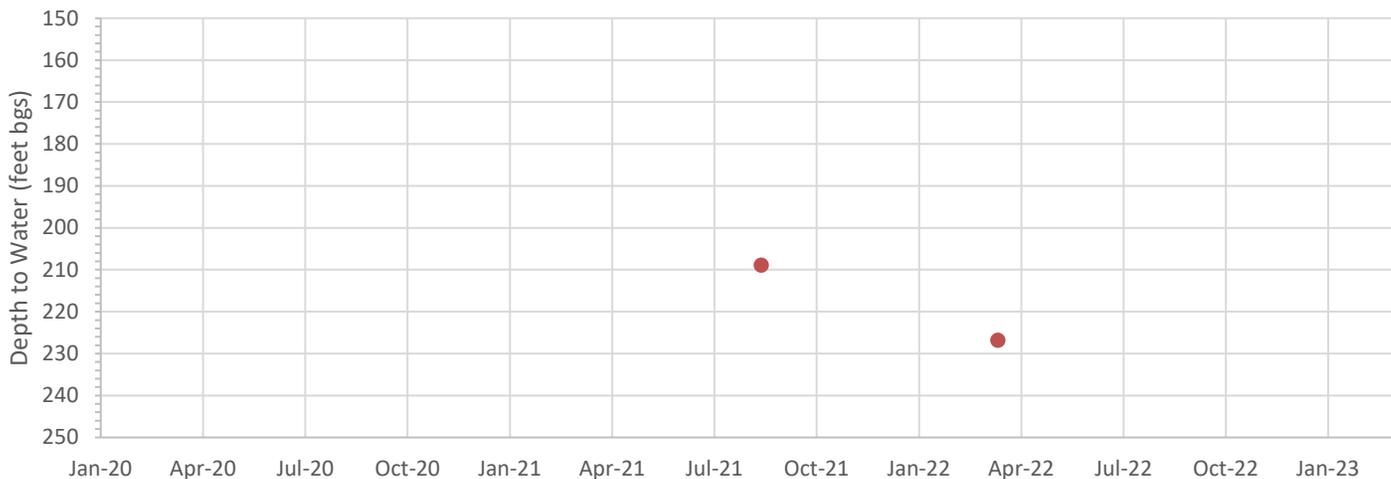
59-33-2-0024 (Lenox Domestic Well)



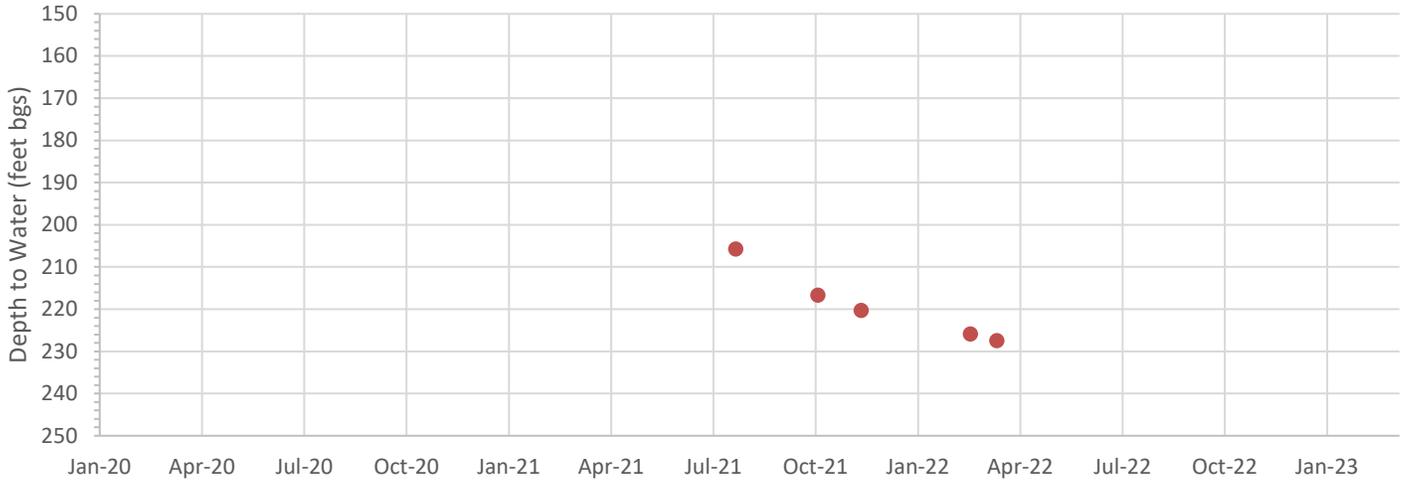
59-33-2-0027 (Wilson Domestic Well)



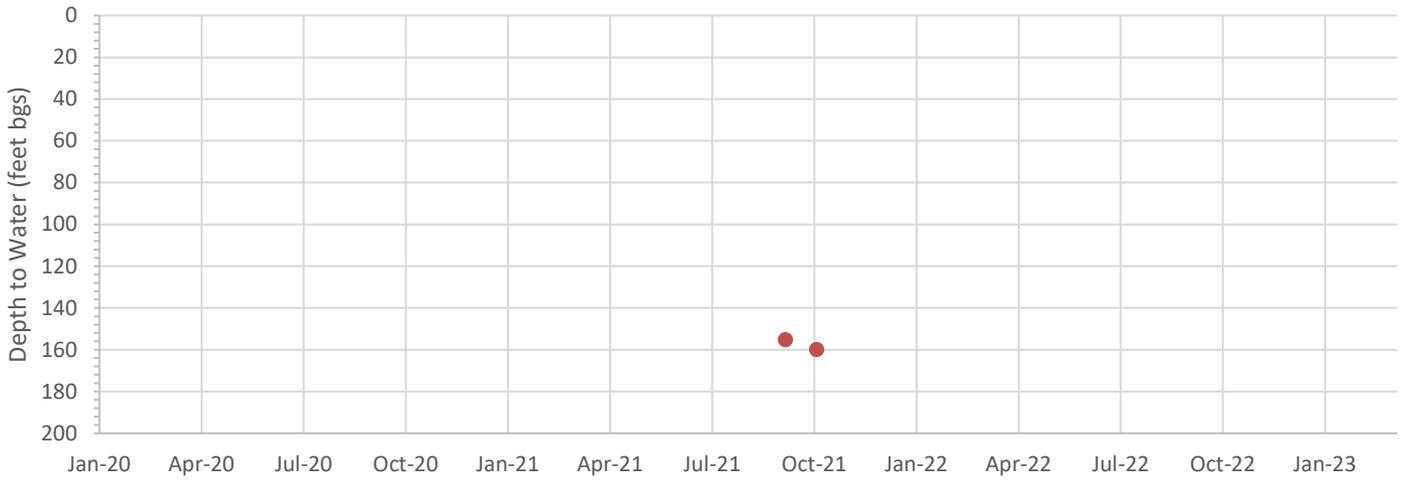
59-33-2-0028 (Estabrook Domestic Well)



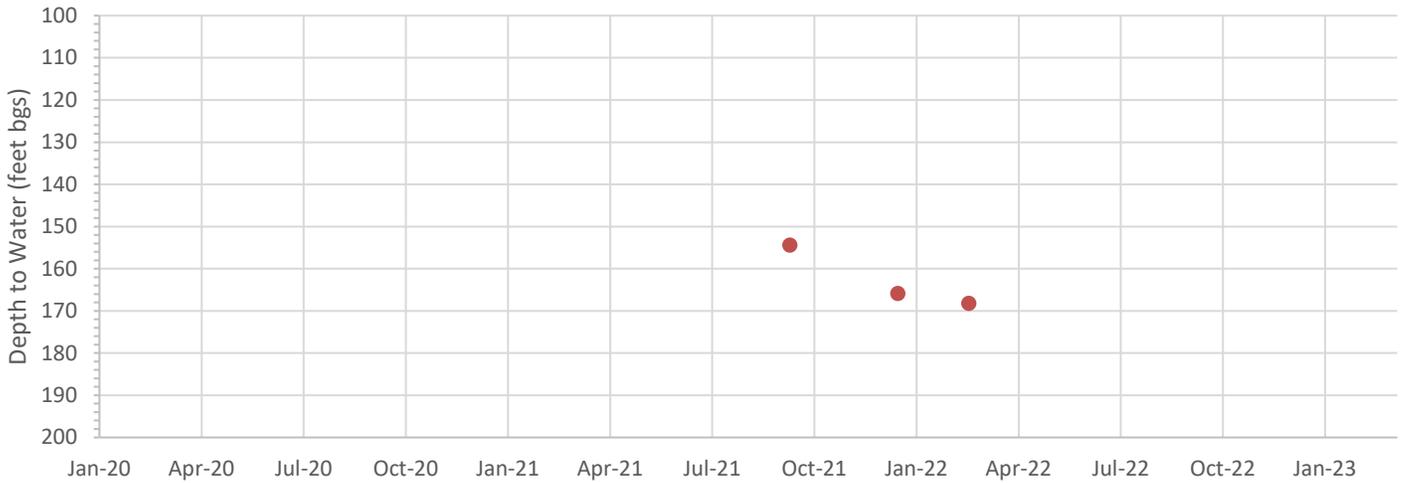
59-33-2-0031 (Rhodes Domestic Well)



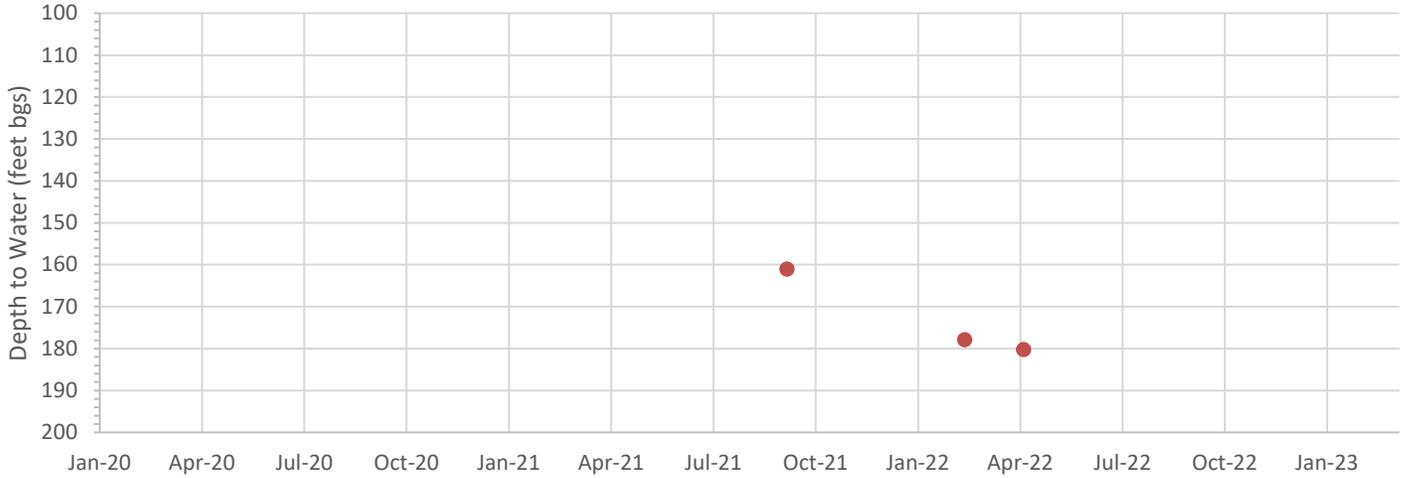
59-33-2-0035 (Richardson Front Well)



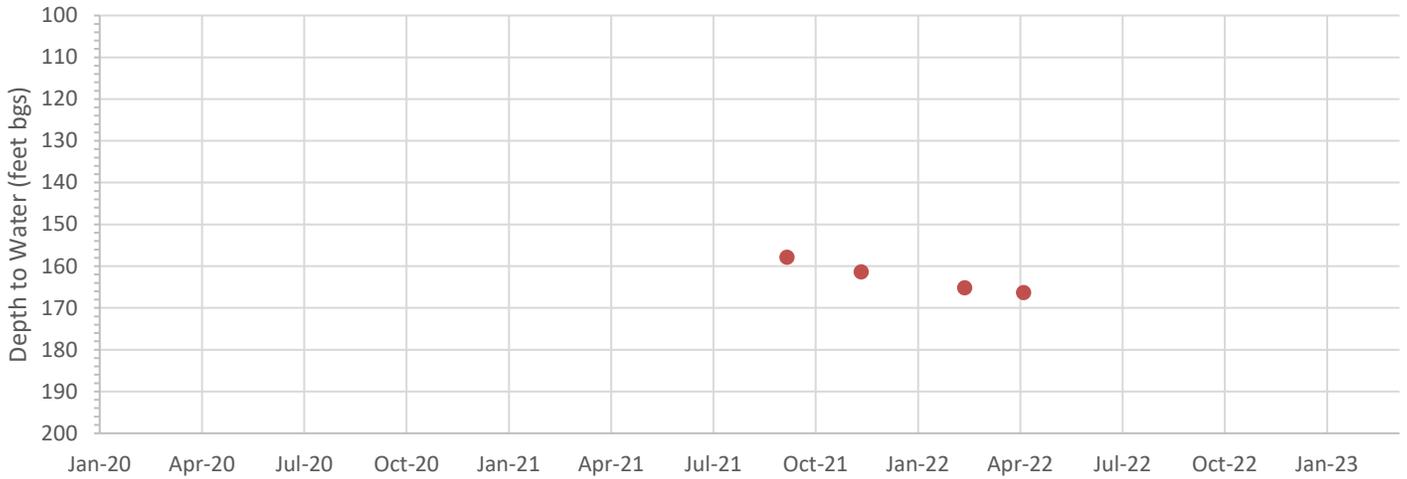
59-33-2-0036 (Richardson Back Well)



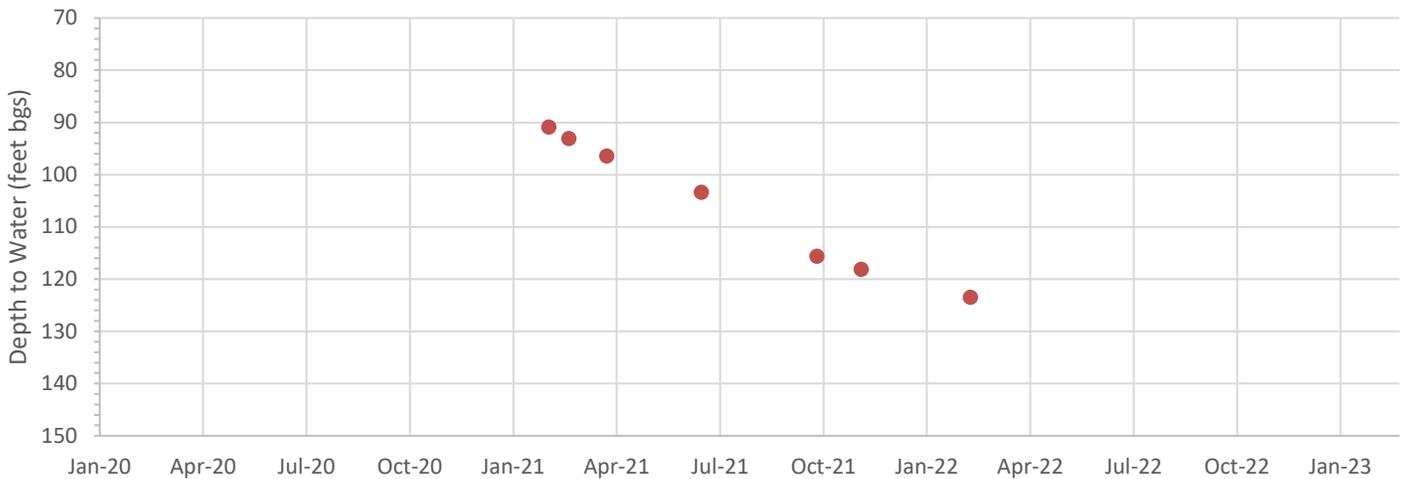
59-33-2-0037 (Johnson Domestic Well)



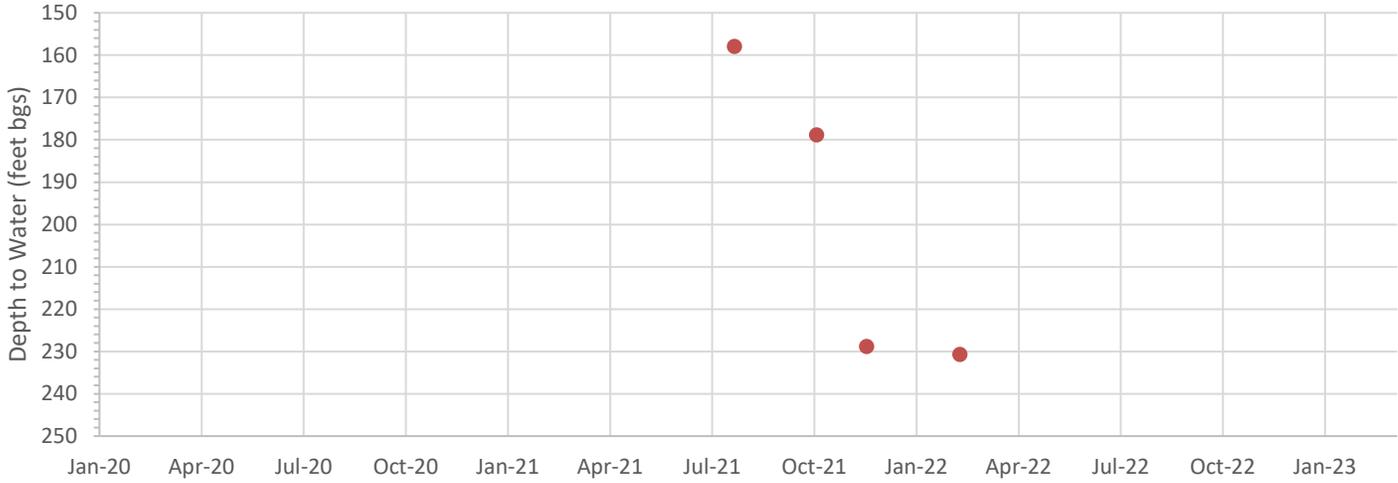
59-33-2-0038 (Kenneth Brown Domestic Well)



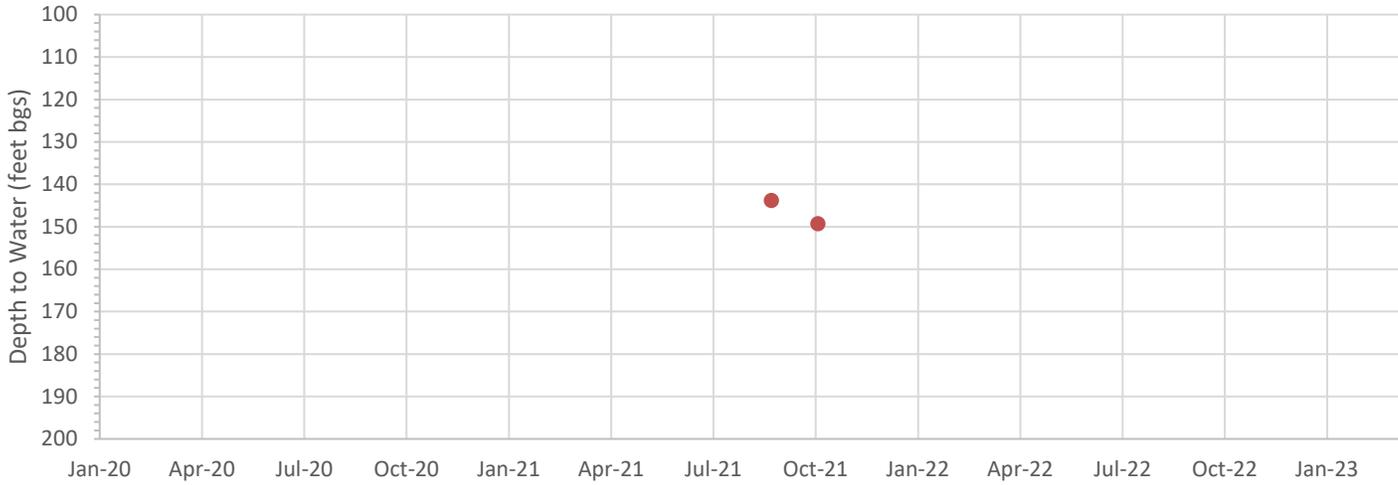
59-33-4-0022 (Gary Brown Stock Tank Well)



59-33-4-0023 (Don Brown CR410 Domestic Well)



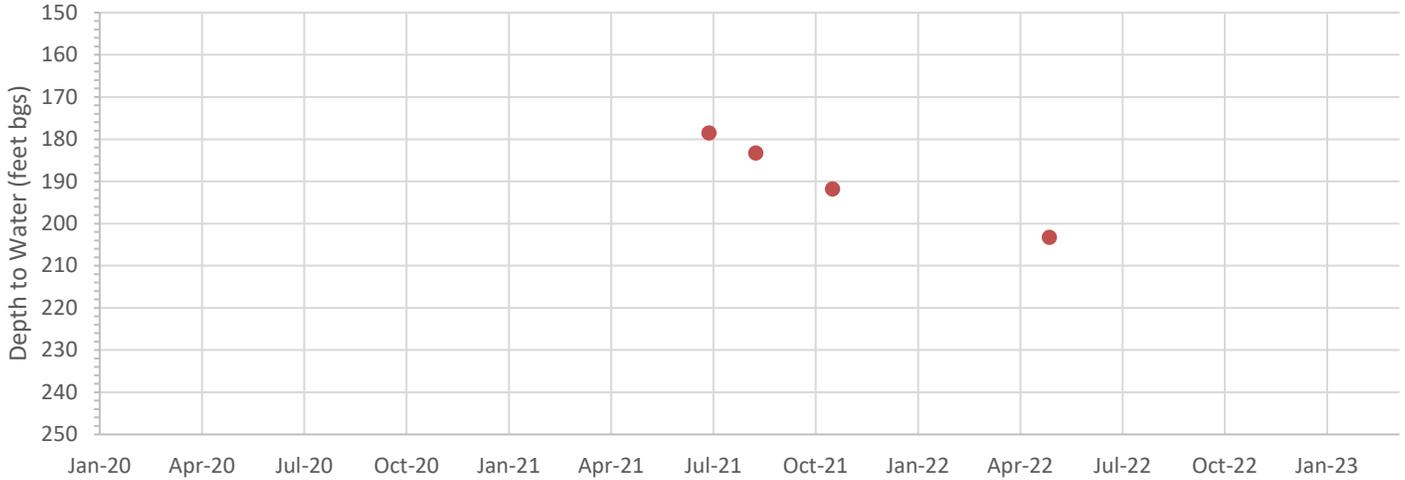
59-33-4-0024 (Leutz Domestic Well)



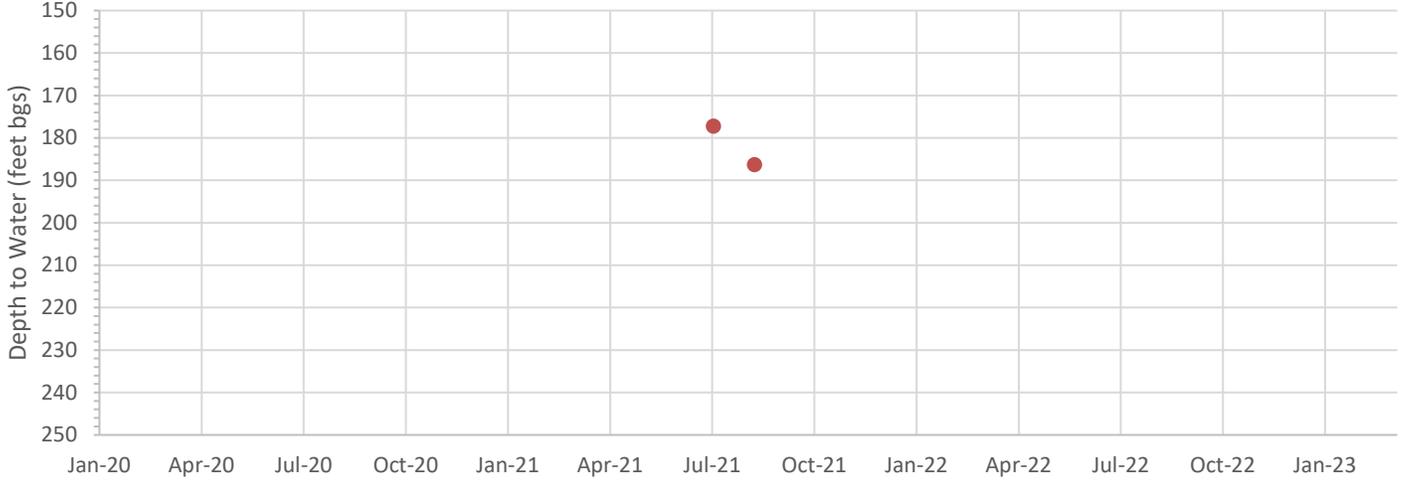
59-33-5-0007 (Faske Domestic Well)



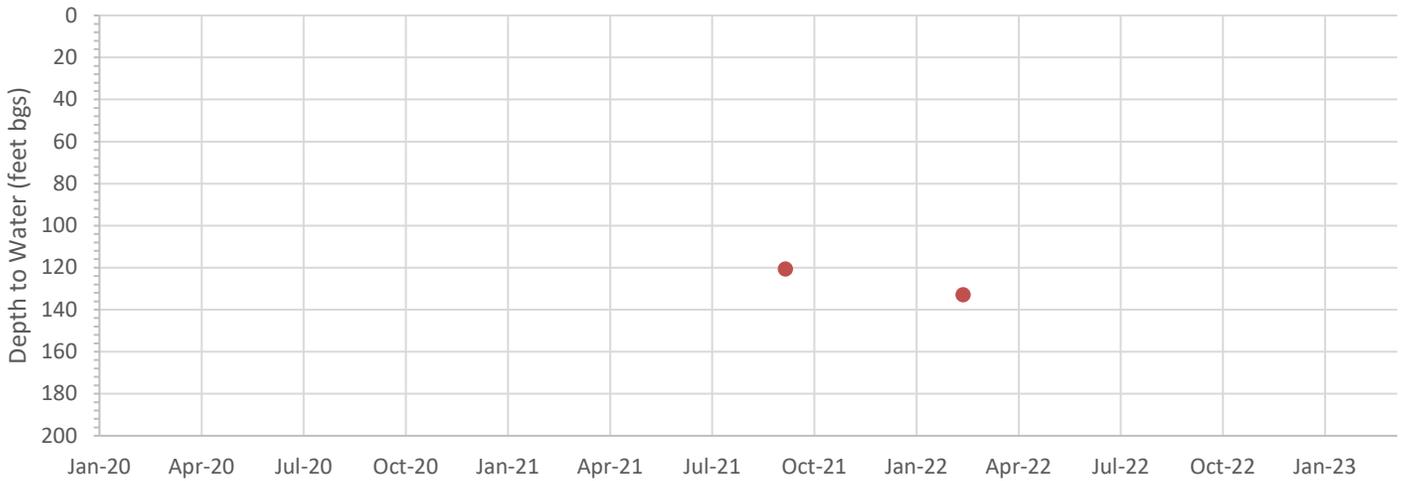
59-33-5-0011 (Dennis Boettcher Domestic Well)



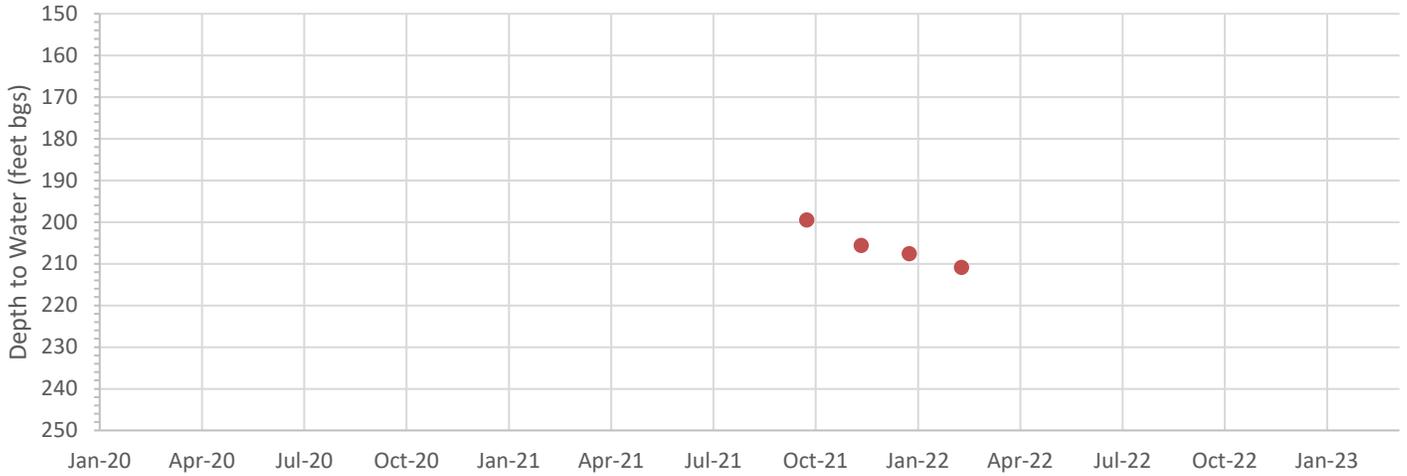
59-33-5-0012 (Laukhuf Domestic Well)



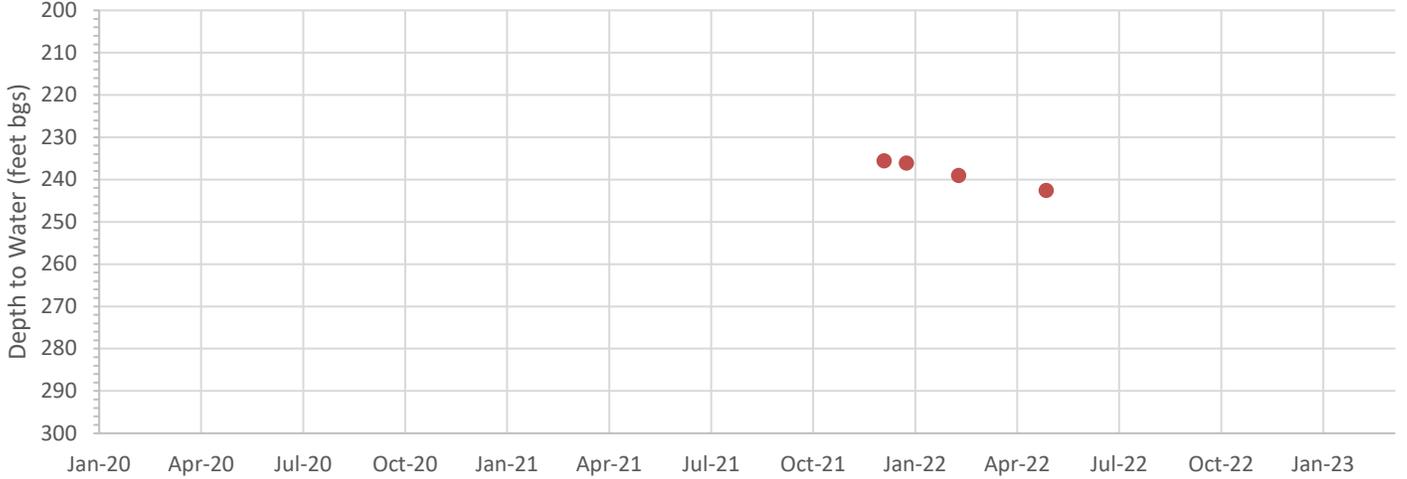
59-33-5-0015 (Welch Domestic Well)



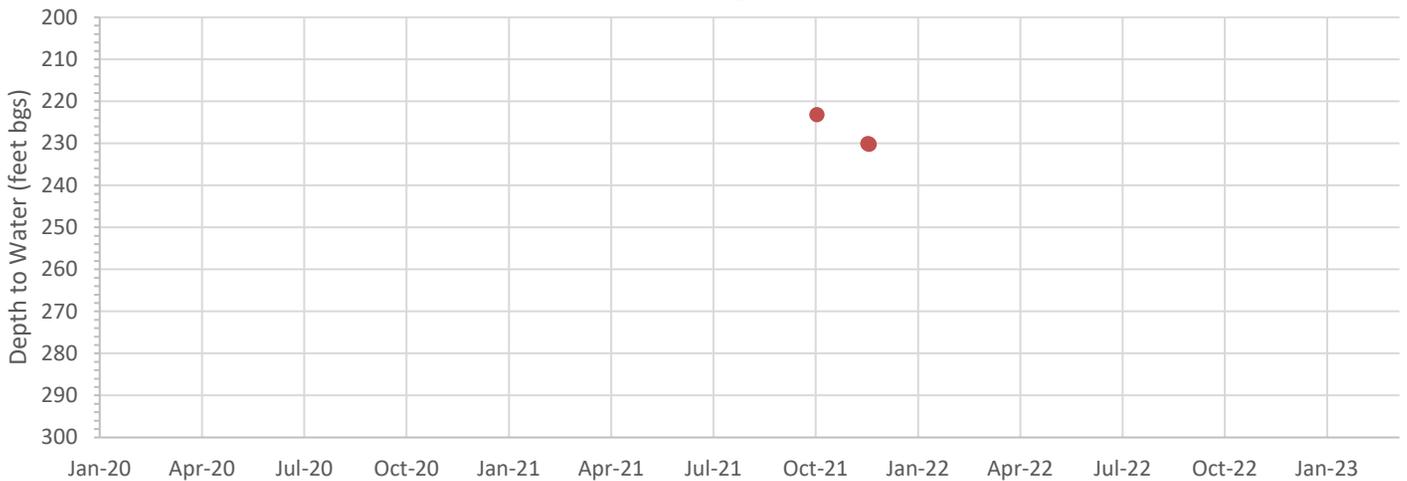
59-33-5-0016 (Rudy Boettcher Domestic Well)



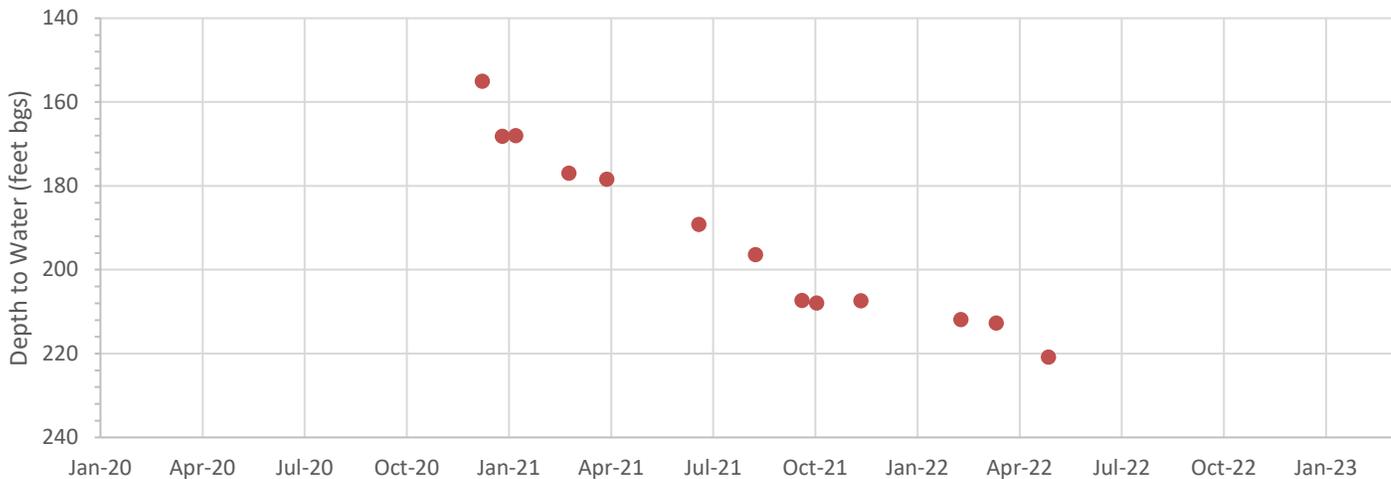
59-33-5-0019 (Patschke Domestic Well)



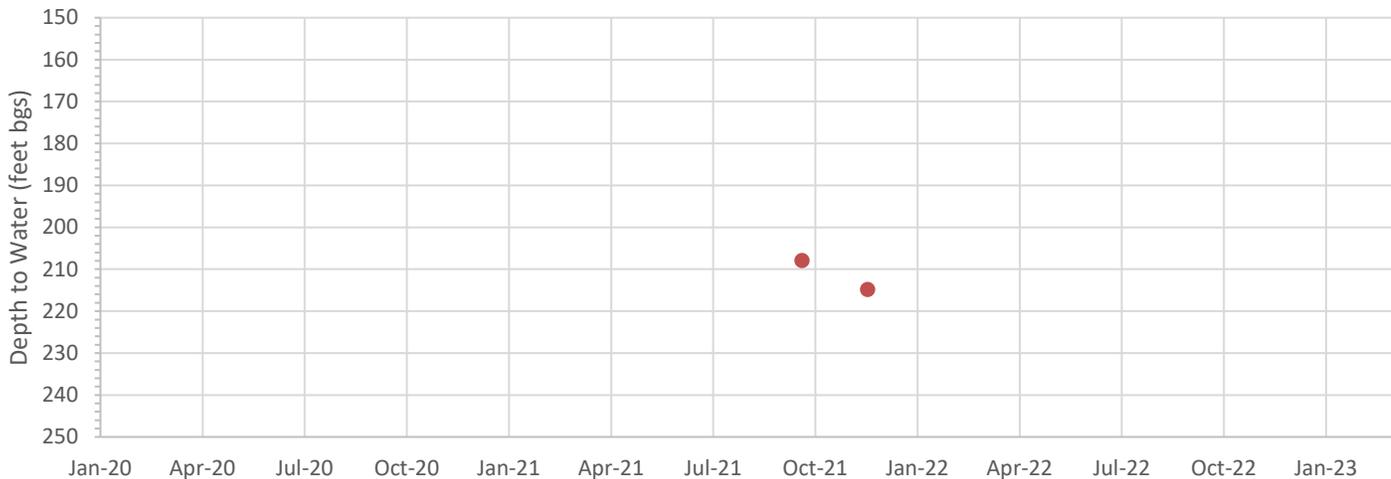
59-33-6-0017 (Herring Domestic Well)



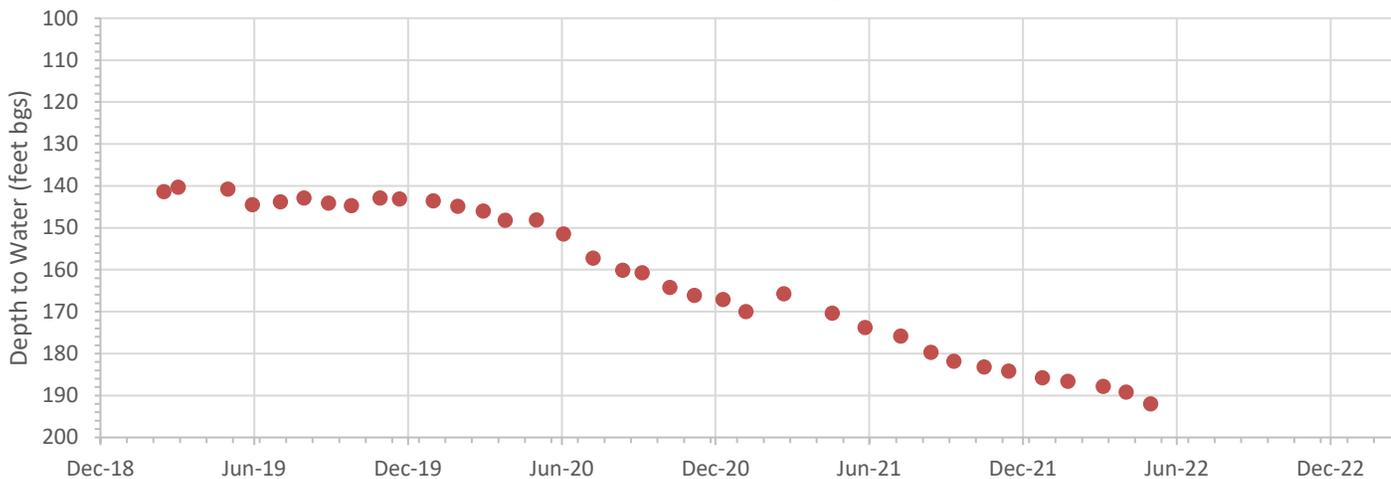
59-33-6-0021 (Martin Domestic Well)



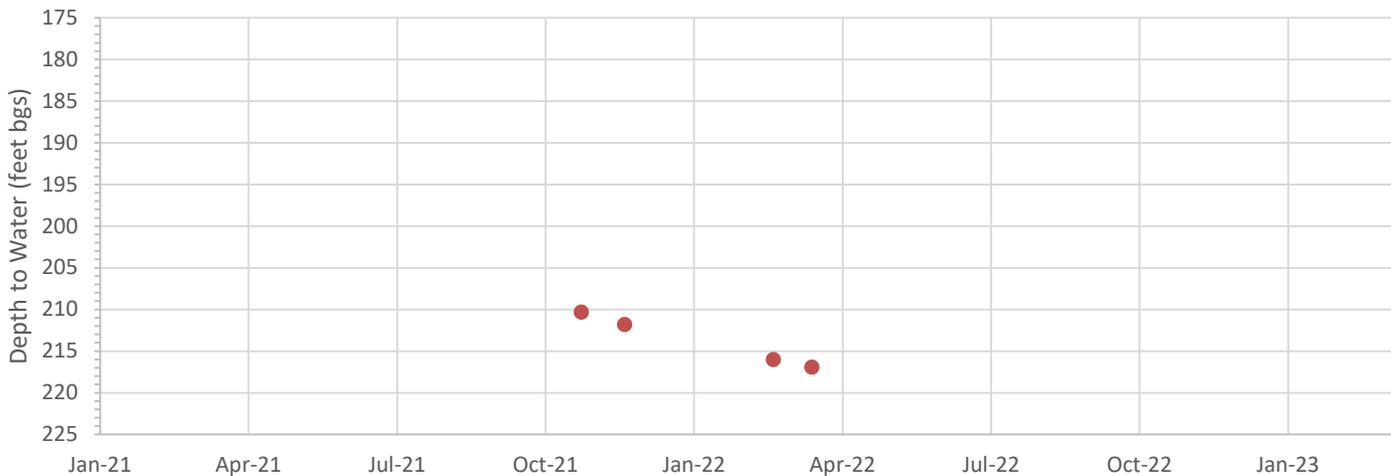
59-33-6-0024 (Dean Domestic Well)



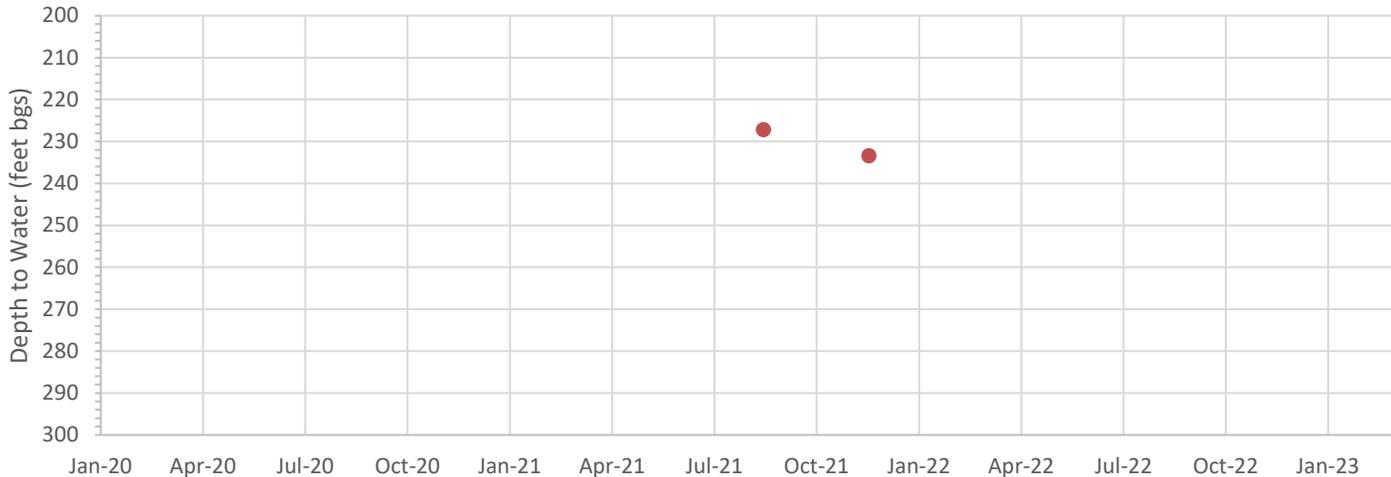
59-33-7-0004 (LCWSC Lexington Well)



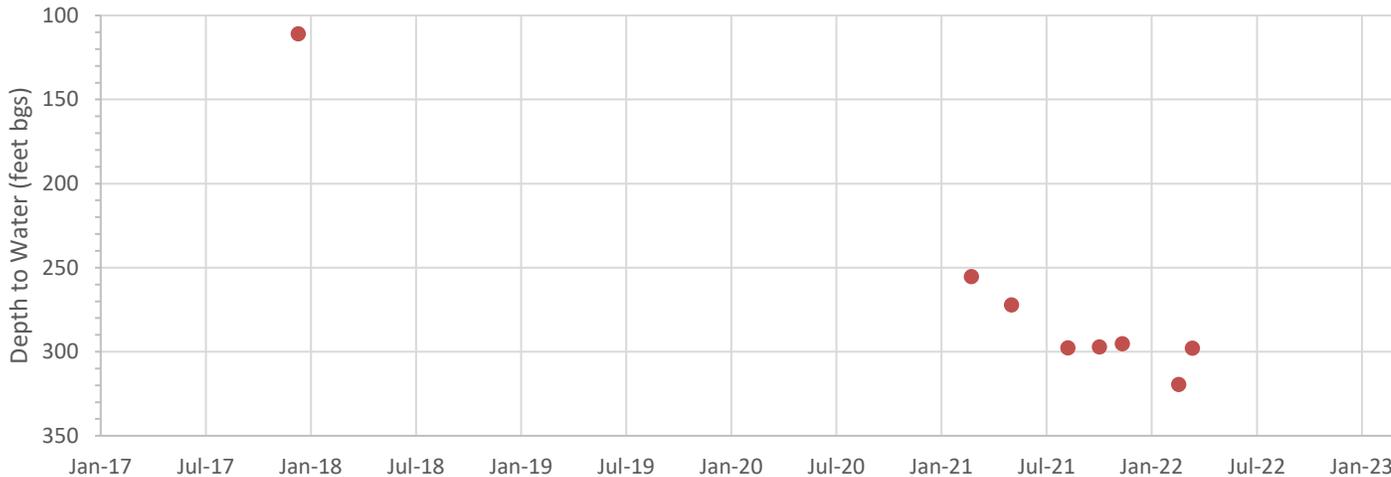
59-33-7-0027 (Walch Domestic Well)



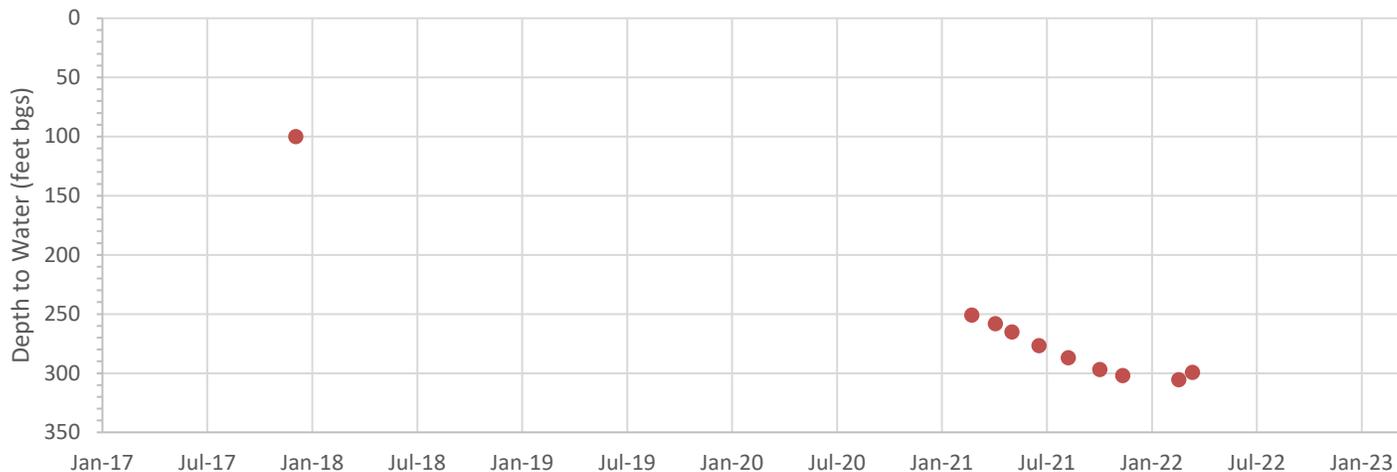
59-33-8-0009 (Craig Boettcher Domestic Well)



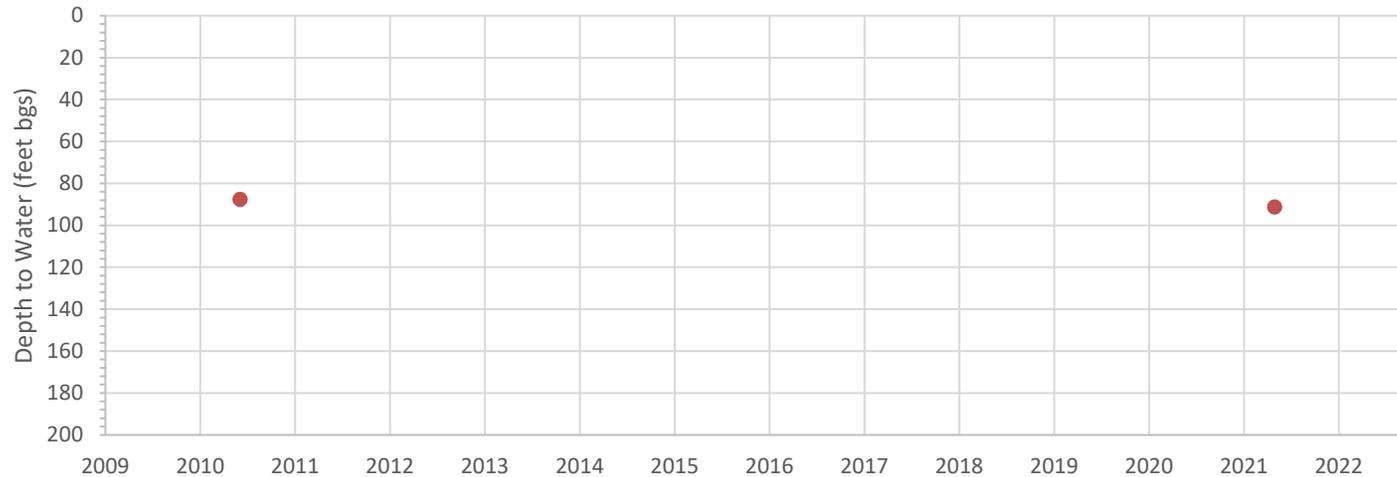
59-34-7-0018 (Diamond A "Fence" Well)



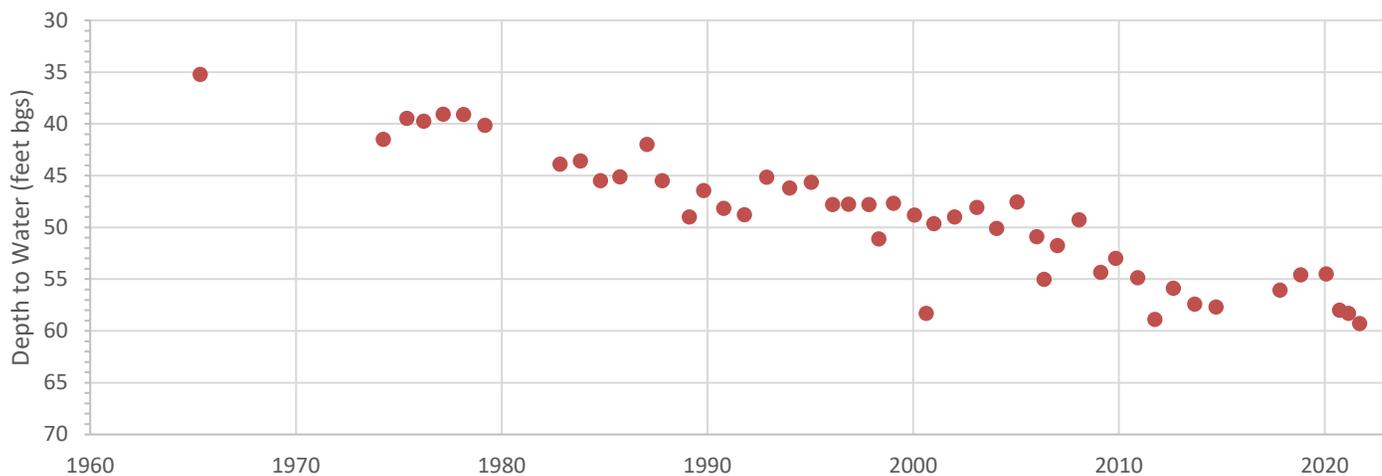
59-34-7-0019 (Diamond A "High" Well)



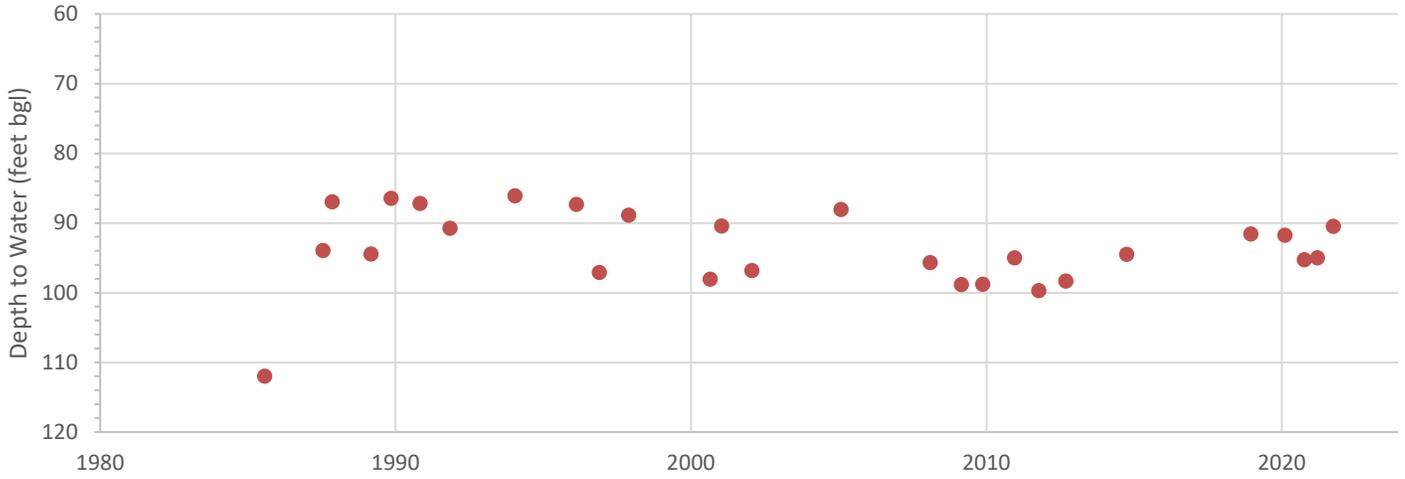
67-06-9-0019 (Aqua Tiner)



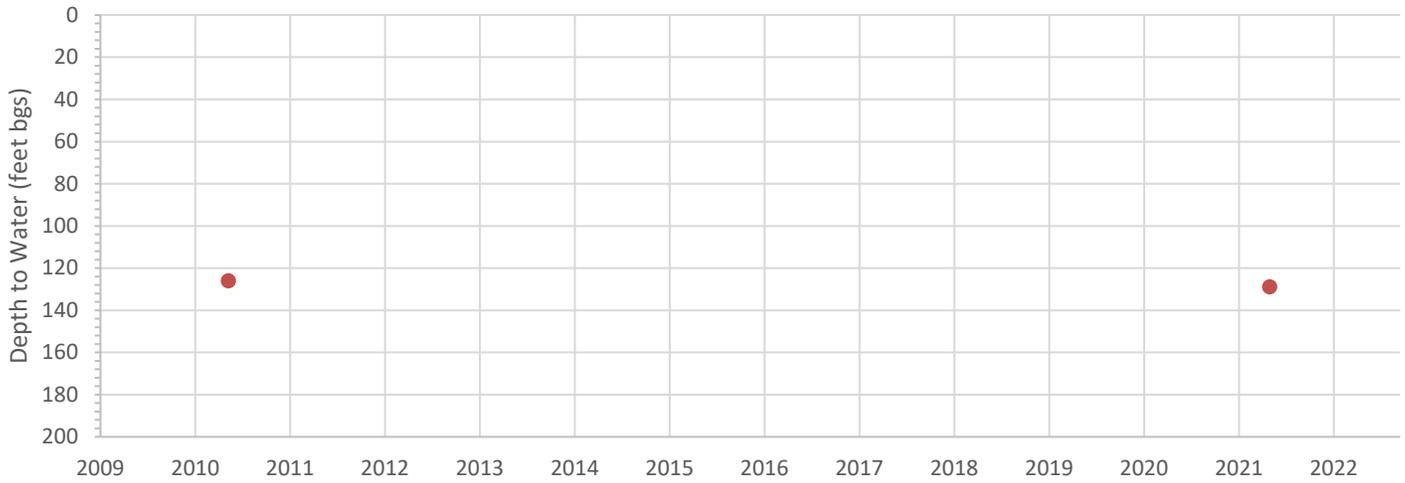
67-07-2-0026 (Steinbach Domestic Well)



67-07-2-0027 (Swank Domestic Well)



67-14-5-0024 (Aqua Foster)



Appendix G
Calvert Bluff Aquifer
Water Levels

58-62-208 Date Water Level (ft bgs)	58-39-9-0062 Date Water Level (ft bgs)	58-39-9-0063 Date Water Level (ft bgs)
<p>Data for this well are from the TWDB online recorder program. This well has continues water level data from August, 2003, but is too large to include in this appendix. To find the data, visit https://www.waterdatafortexas.org/groundwater/well/5862208</p>	<p>9/14/2021 33.20</p>	<p>10/26/2021 56.05</p>

58-40-2-0007		58-40-3-0020		58-40-3-0024	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
3/7/2022	192.40	5/1/2012	65.75	10/18/2021	118.10
		2/1/2013	66.75		
		1/14/2014	66.75		
		6/12/2015	68.05		
		10/18/2021	62.35		

58-40-4-0042		58-40-5-0024		58-40-6-0019	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
8/27/2021	191.60	12/13/1973	96.19	12/3/2021	166.10
		8/4/1975	91.02		
		3/12/1976	90.25		
		3/11/1977	89.19		
		3/17/1978	88.72		
		3/26/1979	88.36		
		3/18/1980	87.93		
		4/22/1981	82.72		
		11/18/1982	87.29		
		11/17/1983	86.70		
		11/7/1984	83.40		
		10/16/1985	79.80		
		12/5/1986	76.43		
		1/18/1989	74.89		
		11/13/1989	76.42		
		11/8/1991	72.50		
		12/8/1992	69.67		
		2/4/1994	70.40		
		2/13/1995	71.40		
		10/9/2001	70.45		
		2/7/2002	69.10		
		2/24/2003	67.74		
		11/18/2003	69.49		
		2/7/2005	69.50		
		3/6/2007	69.18		
		2/27/2008	67.93		

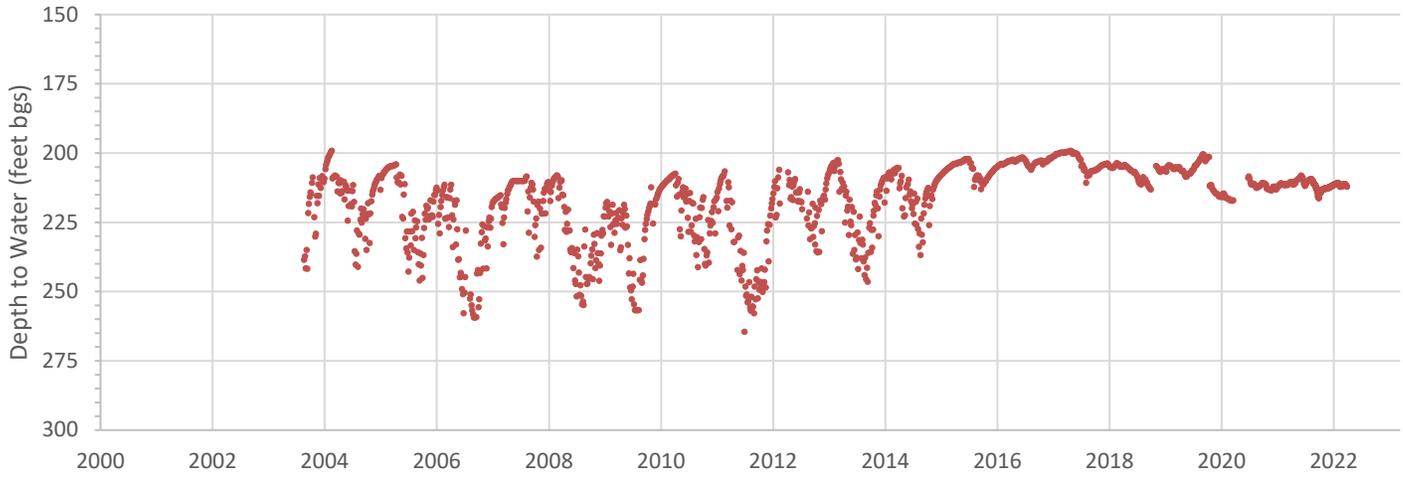
58-40-6-0053		58-40-8-0001		58-47-2-0032	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
12/2/2021	171.85	3/7/2022	118.40	8/27/2021	216.90

58-48-1-0037		58-54-3-0032		58-55-5-0026	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
1/7/2022	205.40	11/10/2021	134.90	11/5/2021	51.00

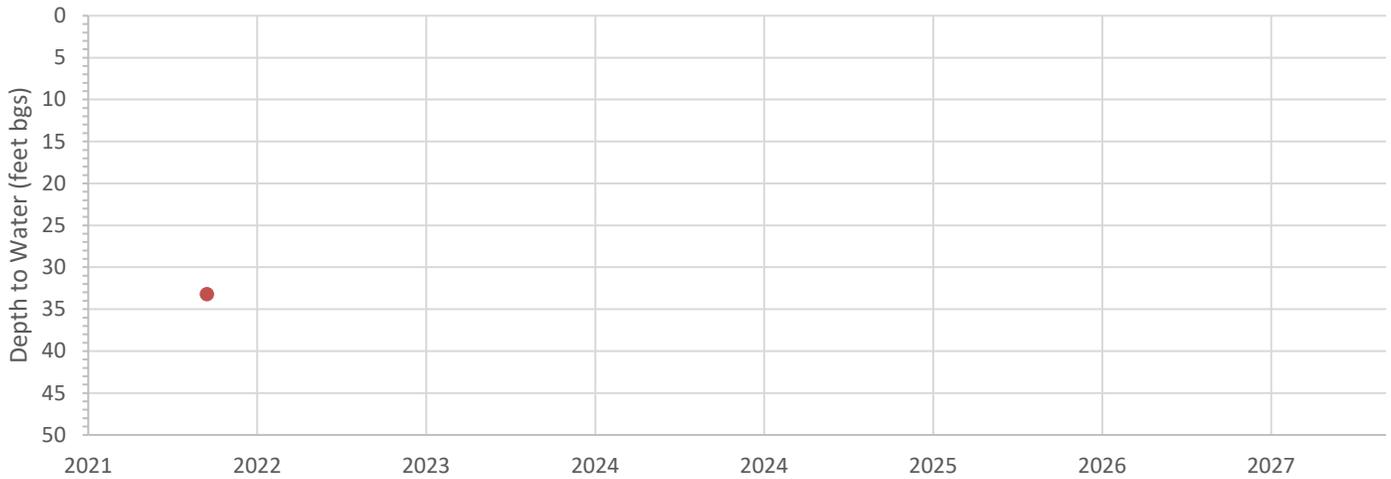
58-55-7-0025		58-62-5-0059	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
12/6/1979	68.00	11/24/1964	43.20
11/15/1989	81.30	7/21/1977	41.92
12/3/1990	76.41	3/10/1978	42.68
11/13/1991	78.57	4/14/1981	44.39
12/10/1992	75.48	11/19/1982	45.85
2/13/1995	63.60	11/18/1983	47.92
3/1/1996	64.05	11/5/1984	44.94
12/5/1996	61.30	10/16/1985	45.82
12/5/1997	56.79	2/11/1987	44.92
2/12/1999	57.91	11/13/1987	46.02
2/18/2000	63.30	3/9/1989	44.10
9/18/2000	73.30	11/12/1991	47.00
2/1/2001	66.50	12/10/1992	44.51
2/8/2002	66.79	1/25/1994	44.30
3/12/2003	63.00	2/16/1995	47.15
2/16/2005	67.45	2/28/1996	49.55
2/6/2006	69.38	2/25/2000	48.45
2/5/2007	69.25	9/18/2000	50.96
2/27/2008	69.32	2/8/2002	49.08
3/17/2009	75.69	3/12/2003	46.84
12/10/2009	71.92	2/10/2006	49.80
1/7/2011	73.24	2/6/2007	50.10
10/3/2012	68.83	2/27/2008	50.83
10/17/2013	68.15	3/19/2009	53.41
10/28/2014	70.76	12/21/2009	50.58
12/13/2018	62.90	1/7/2011	53.80
3/11/2020	61.24	1/20/2012	51.46
10/1/2020	60.98	12/13/2018	47.24
4/12/2021	61.75	10/20/2020	52.98
11/5/2021	61.71	4/14/2021	51.12
		11/10/2021	51.35

Appendix H
Calvert Bluff
Hydrographs

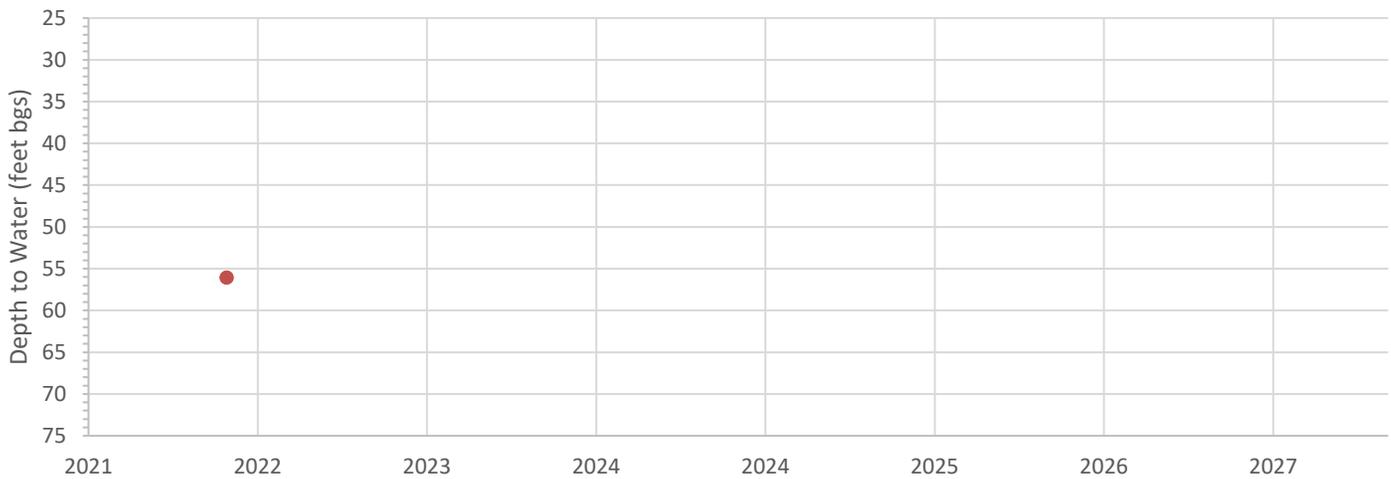
58-62-208 (TWDB Recorder Well)



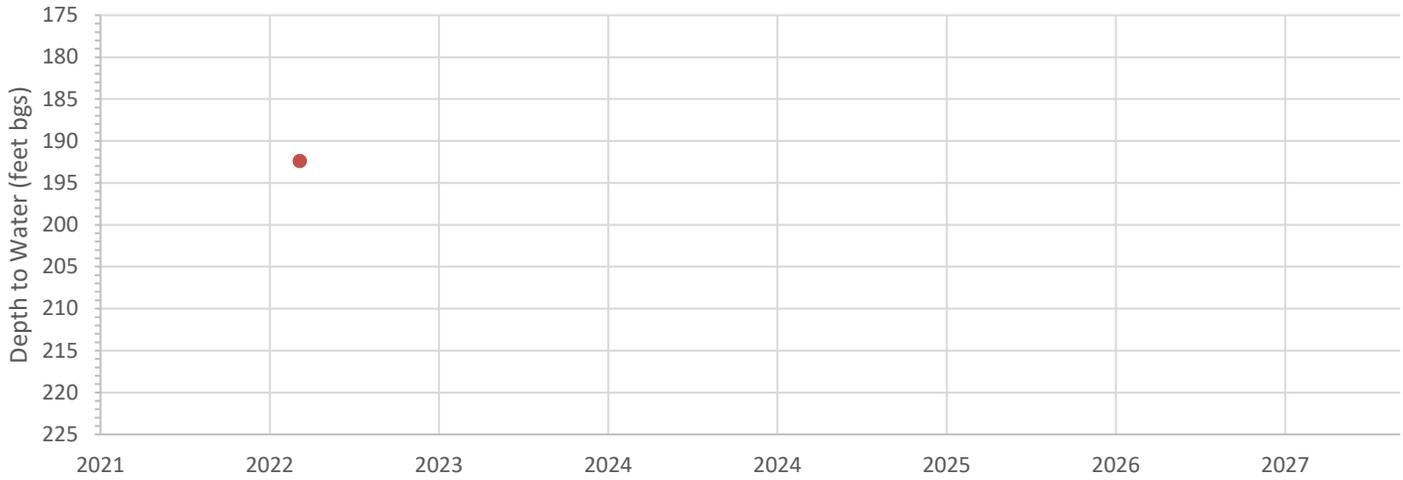
58-39-9-0062 (Kuehne Domestic Well)



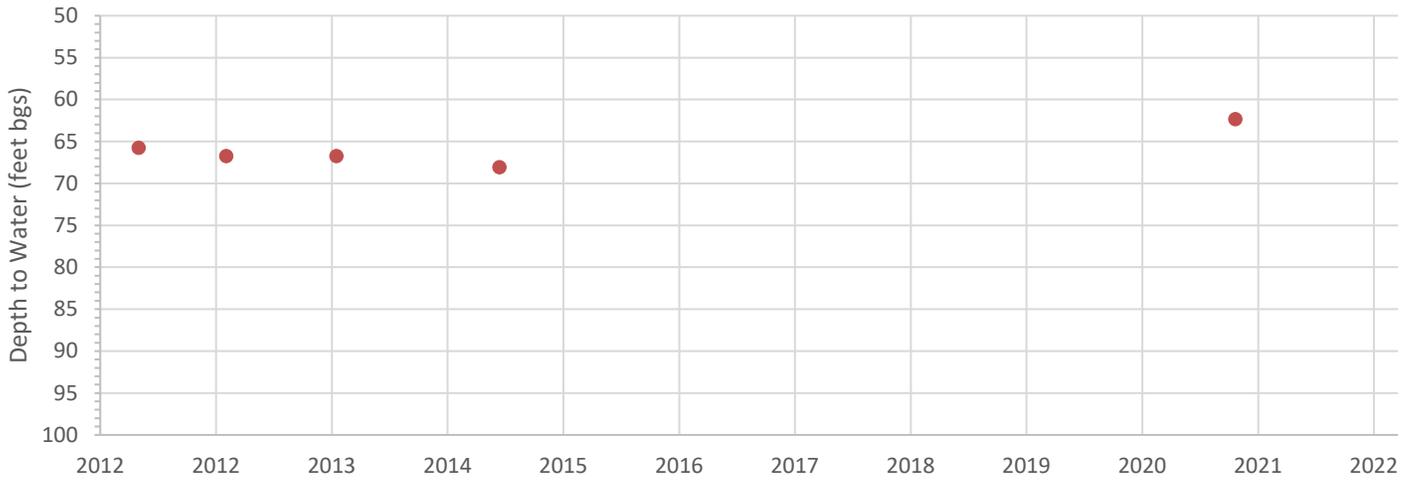
58-39-9-0063 (Adams Domestic Well)



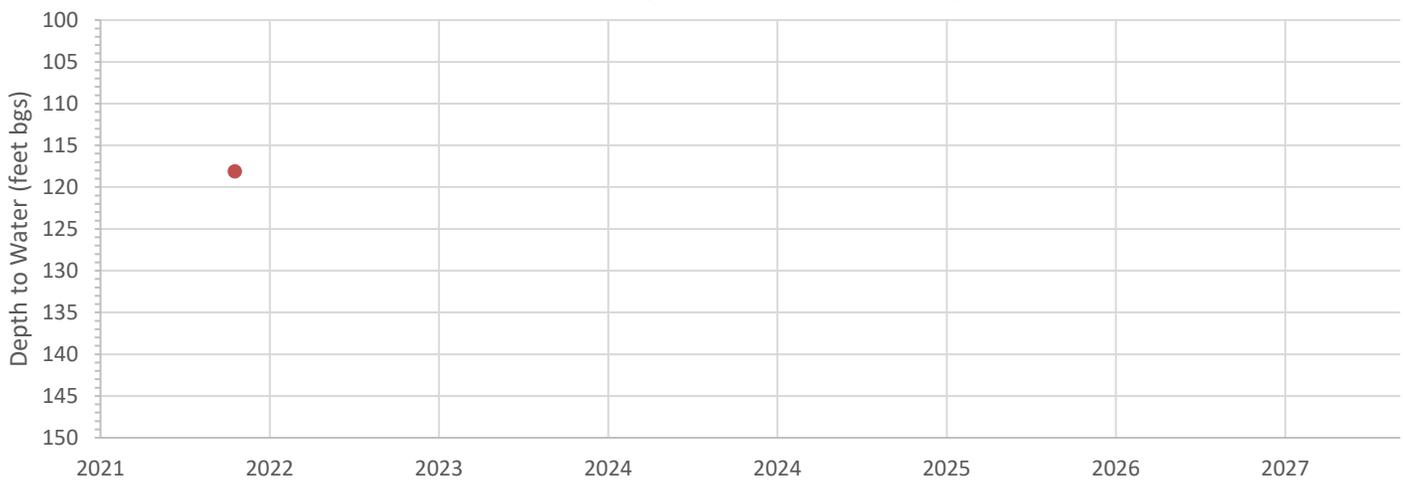
58-40-2-0007 (Merino Domestic Well)



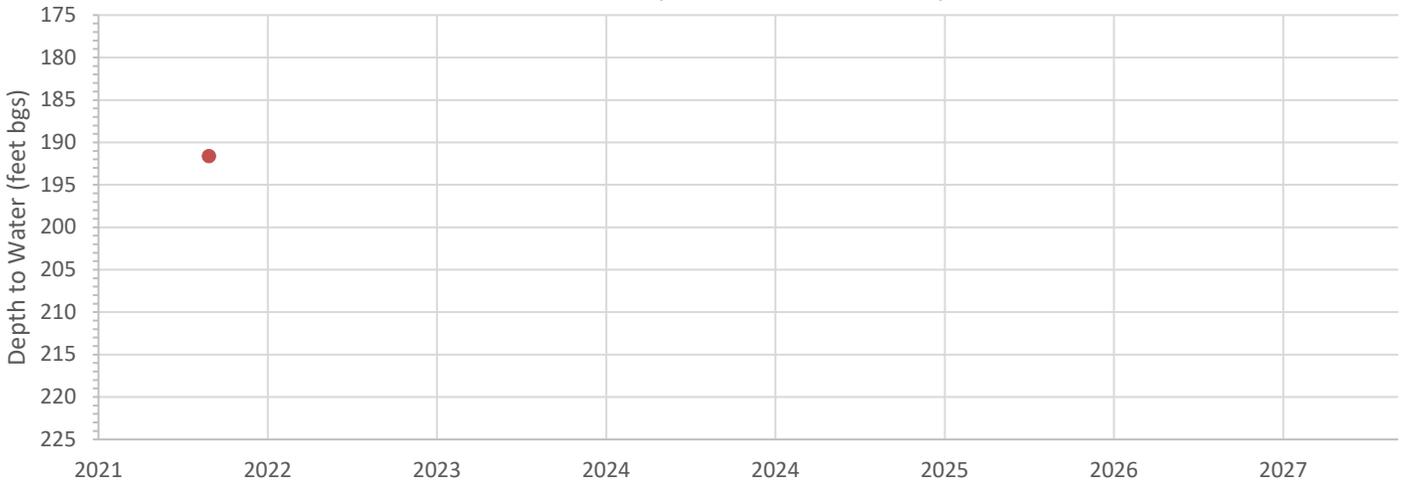
58-40-3-0020 (Degomez Domestic Well)



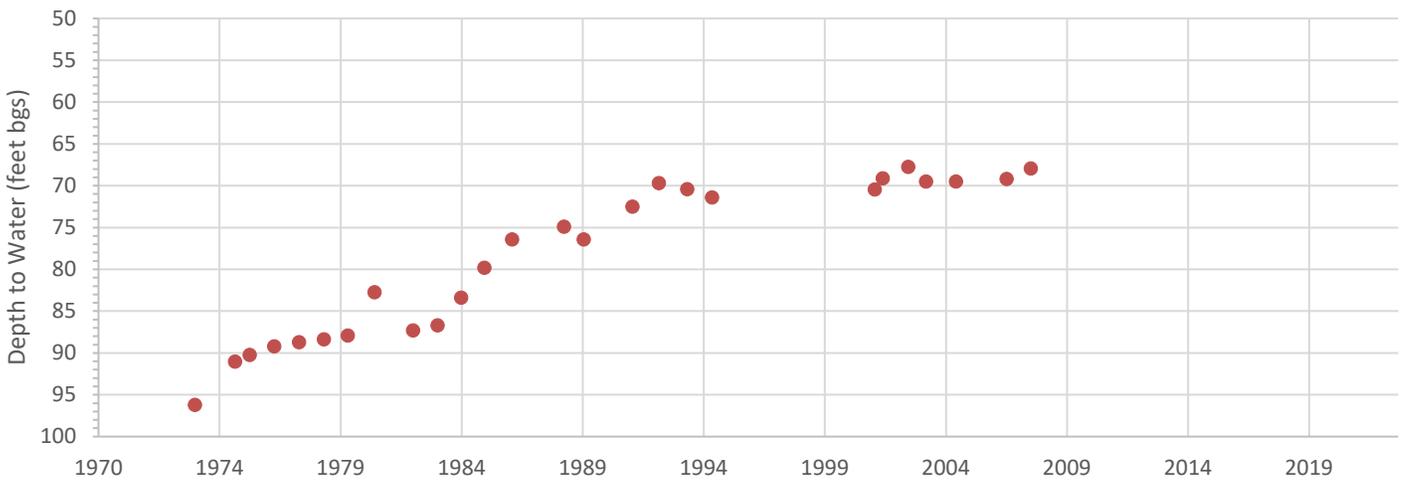
58-40-3-0024 (Cook Domestic Well)



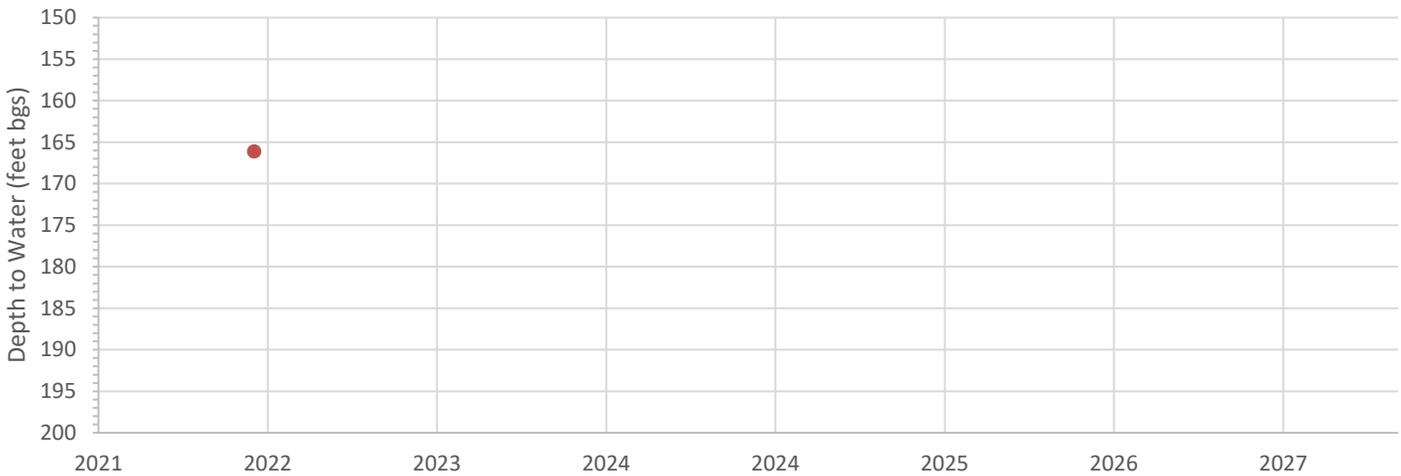
58-40-4-0042 (Fritsche New Well)



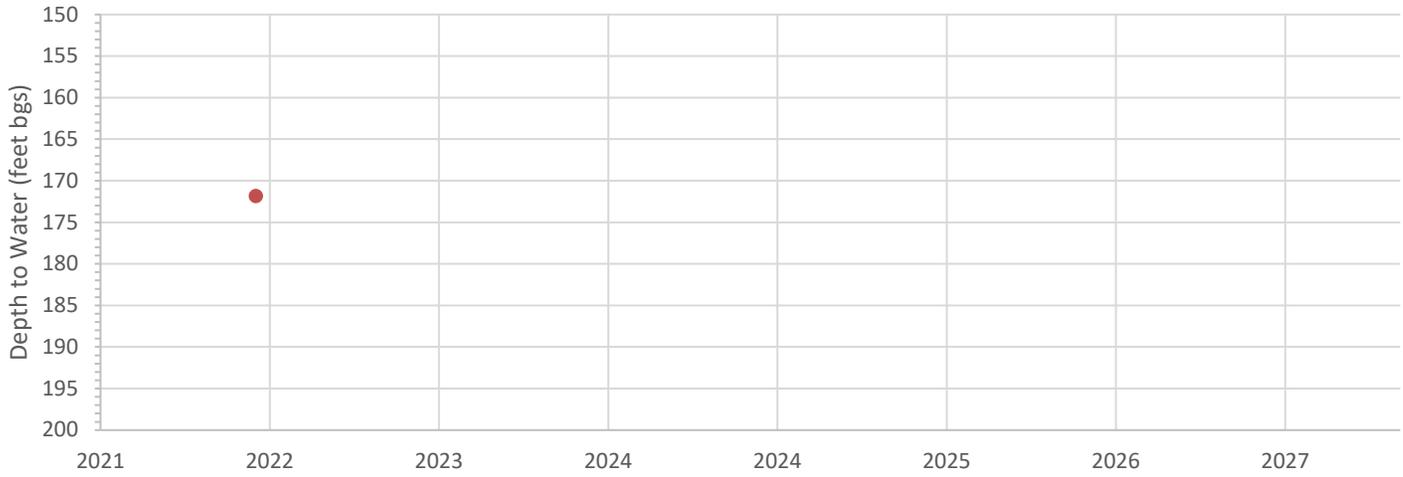
58-40-5-0024 (Goodnight Ranch Domestic Well)



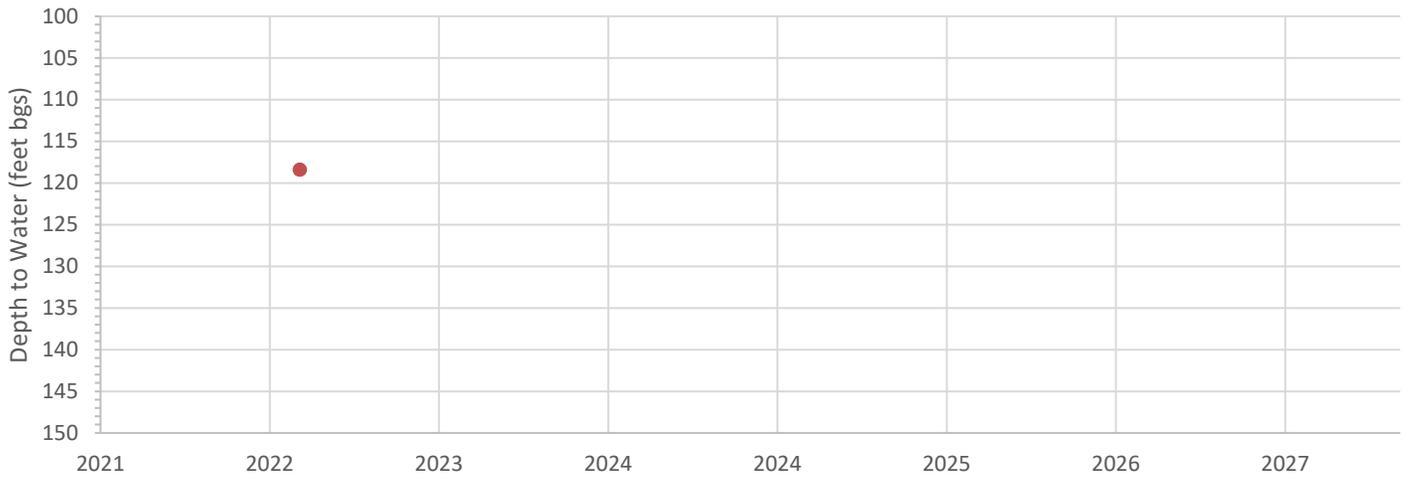
58-40-6-0019 (Stowe Domestic Well)



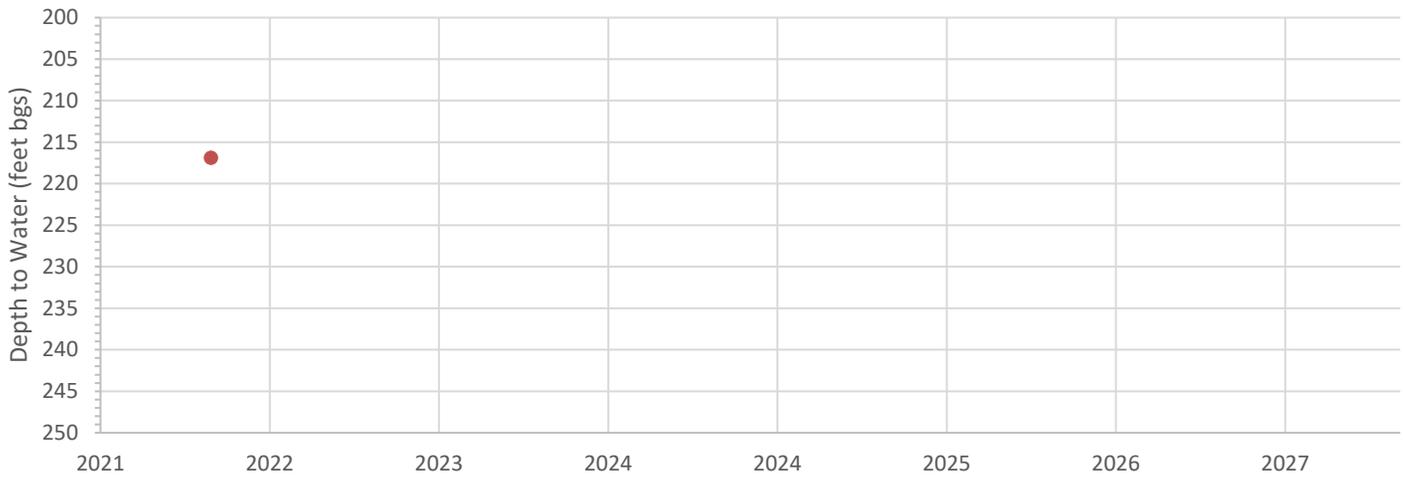
58-40-60--53 (Strong Domestic Well)



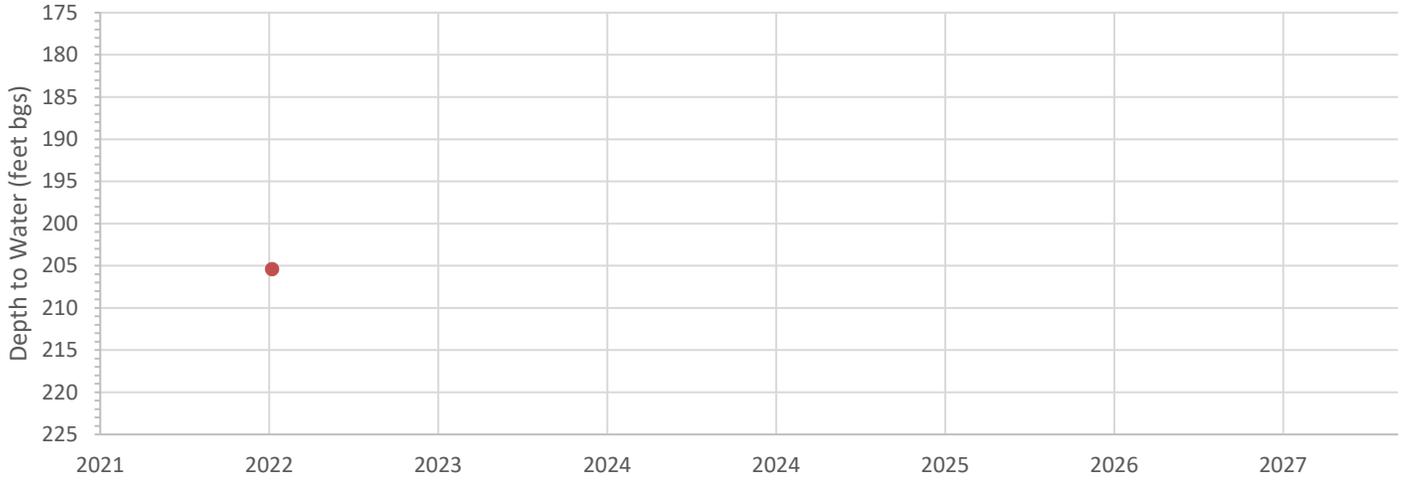
58-40-8-0001 (Gervais Domestic Well)



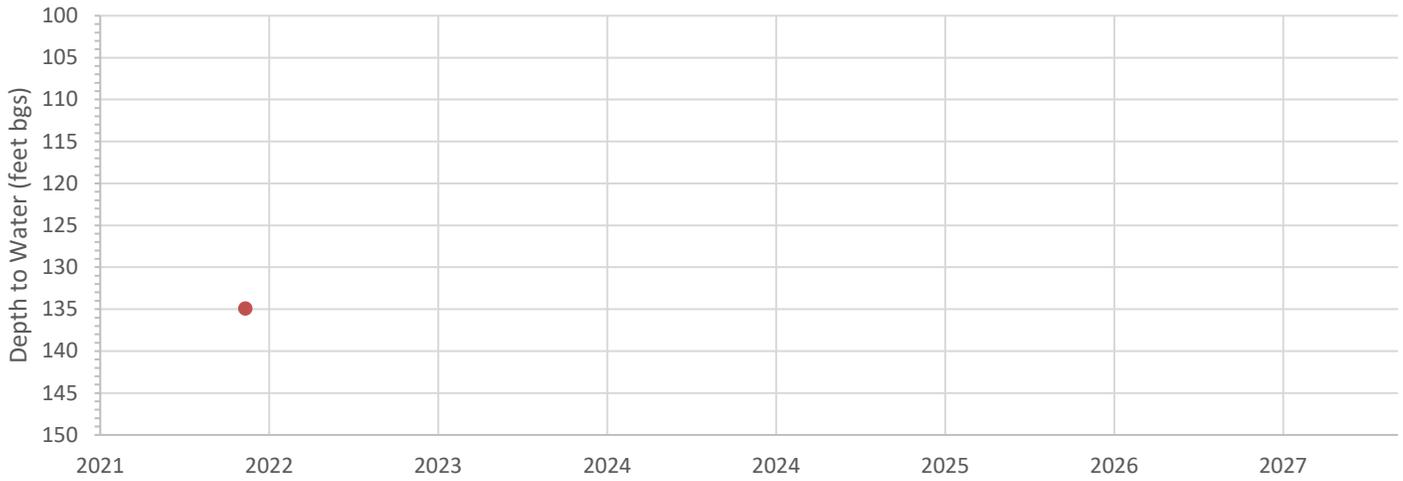
58-47-2-0032 (Glass Domestic Well)



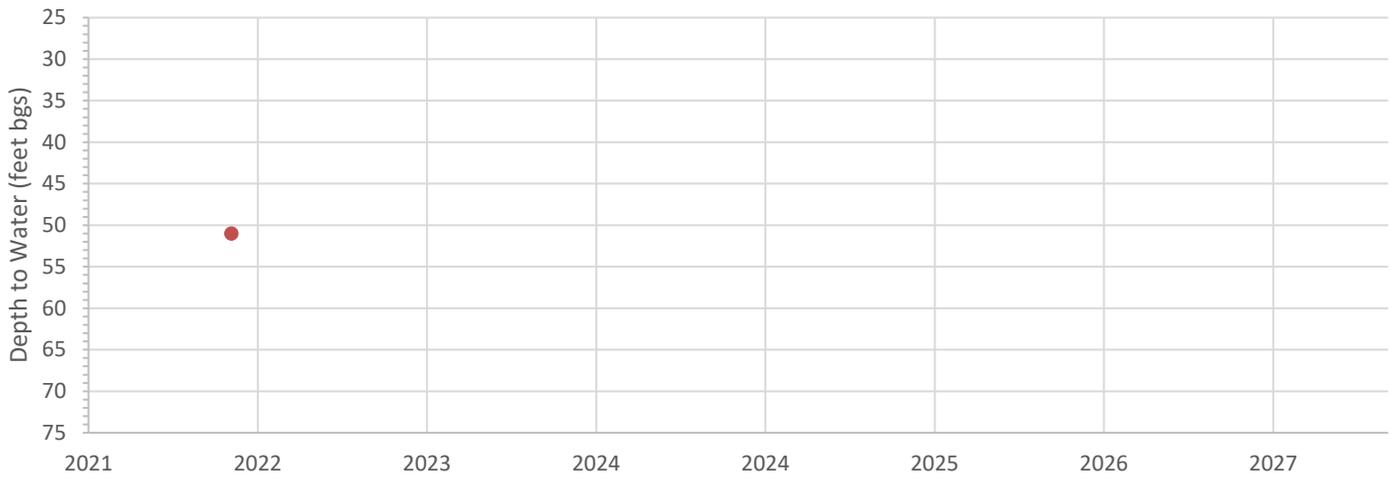
58-48-1-0037 (Chenault Domestic Well)



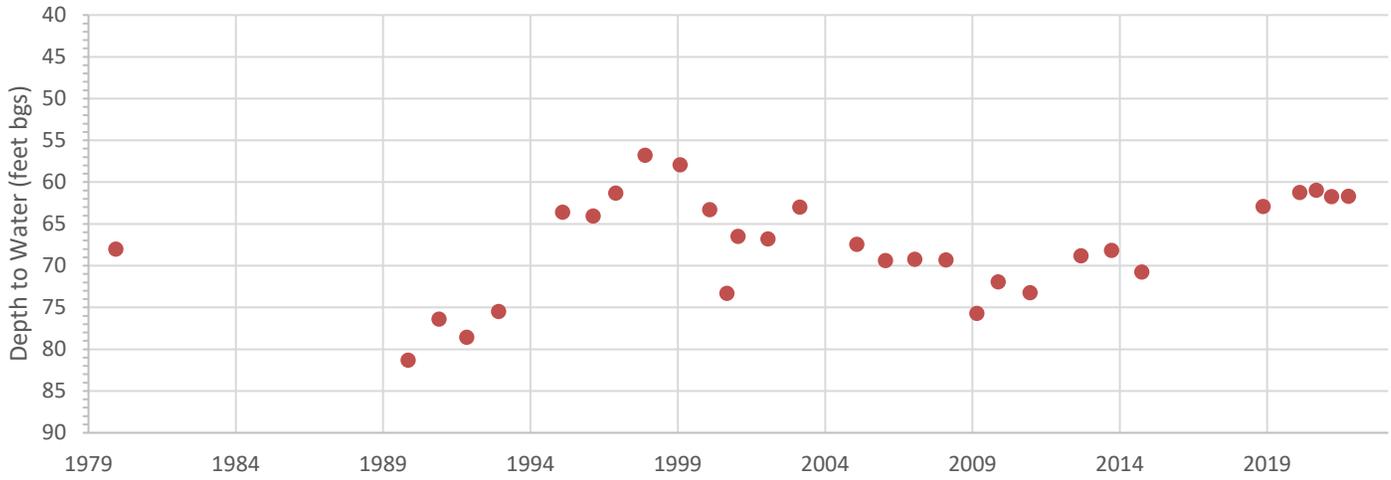
58-54-3-0032 (Hernandez Domestic Well)



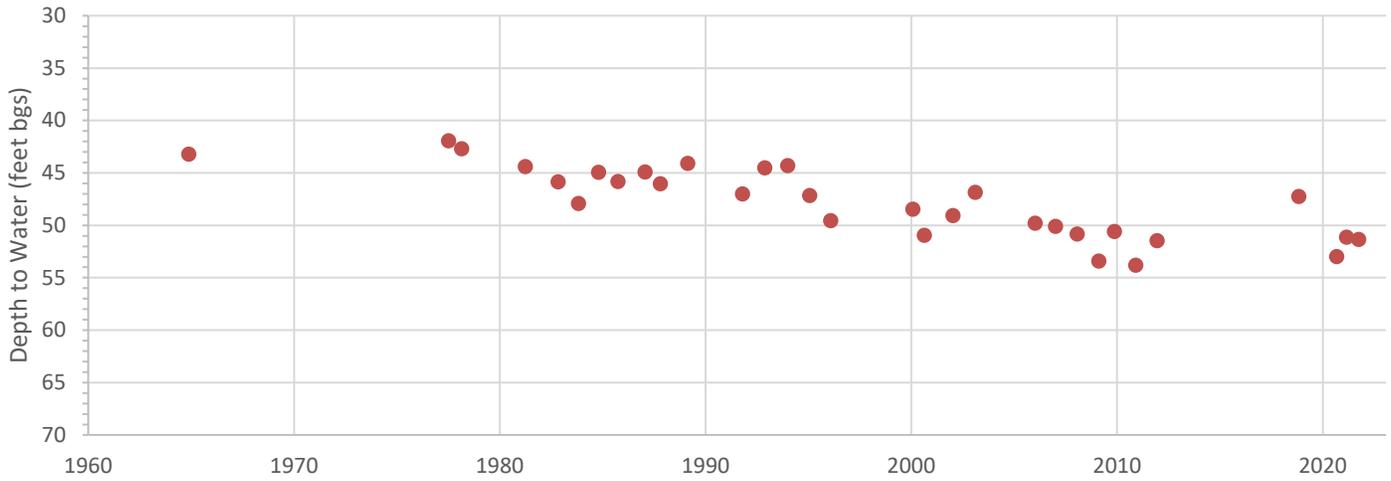
58-55-5-0026 (Sharpe Domestic Well)



58-55-7-0025 (Egger Domestic Well)



58-62-5-0059 (Trigg Stock Well)



Appendix I
Simsboro Aquifer
Water Levels

58-39-6-0022		58-40-4-0041*			
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
8/15/2008	90.00	8/15/2008	122.00	8/1/2014	101.98
9/30/2020	135.88	9/16/2010	132.22	8/20/2014	107.83
2/8/2021	113.40	10/1/2010	130.45	9/18/2014	104.90
4/1/2021	117.40	10/18/2010	130.79	10/1/2014	105.64
10/7/2021	164.00	11/10/2010	132.43	10/15/2014	107.16
		12/1/2010	132.22	12/18/2014	103.08
		1/1/2011	130.58	1/1/2015	100.23
		2/1/2011	128.95	2/1/2015	96.03
		3/3/2011	129.65	3/1/2015	93.78
		4/1/2011	132.76	5/21/2015	97.75
		5/1/2011	136.80	9/1/2019	153.14
		6/1/2011	140.46	4/4/2020	137.92
		7/1/2011	148.83	5/1/2020	144.02
		8/1/2011	160.51	6/1/2020	144.35
		9/1/2011	167.36	6/17/2020	154.53
		10/1/2011	167.50	9/30/2020	136.70
		12/1/2011	158.49	2/8/2021	154.95
		2/1/2012	152.67	4/1/2021	153.40
		3/1/2012	150.85	10/7/2021	196.80
		4/1/2012	146.92		
		5/2/2012	151.94		
		6/1/2012	152.39		
		8/1/2012	156.69		
		9/1/2012	160.50		
		10/1/2012	156.36		
		11/1/2012	153.10		
		12/1/2012	153.40		
		1/1/2013	152.02		
		2/15/2013	149.31		
		3/1/2013	148.03		
		4/5/2013	147.95		
		5/1/2013	147.99		
		5/31/2013	149.18		
		6/18/2013	150.54		
		7/17/2013	153.18		
		8/1/2013	153.24		
		9/1/2013	156.65		
		9/30/2013	170.38		
		10/16/2013	169.56		
		11/1/2013	158.07		
		12/6/2013	145.44		
		1/3/2014	141.64		
		2/14/2014	108.56		
		3/1/2014	106.12		
		4/1/2014	100.91		
		5/1/2014	98.49		
		6/1/2014	105.69		
		7/1/2014	99.33		

*- Some daily data is available for this well.

58-40-3-0019		58-46-3-0029		58-46-3-0029	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
5/1/2012	162.50	8/3/1950	57.58	3/31/1976	54.19
1/14/2014	166.10	9/14/1950	57.58	3/11/1977	53.49
6/12/2015	165.00	10/11/1950	57.73	3/10/1978	52.92
7/29/2021	182.30	11/9/1950	57.58	3/19/1979	53.50
10/18/2021	185.90	4/27/1951	57.89	4/14/1981	53.78
		6/5/1951	57.96	3/25/1982	54.54
		2/21/1952	60.25	11/20/1982	54.13
		4/15/1952	59.90	11/17/1983	53.62
		5/9/1952	59.79	11/5/1984	54.58
		9/18/1952	58.40	10/16/1985	54.47
		1/21/1953	59.53	2/10/1987	53.90
		4/9/1953	59.21	11/13/1987	51.23
		5/20/1953	60.11	3/8/1989	52.31
		9/15/1953	59.31	11/15/1989	52.60
		2/16/1954	60.32	12/3/1990	53.76
		5/17/1954	60.29	11/13/1991	54.06
		8/5/1954	60.28	12/8/1992	51.52
		12/2/1954	61.41	1/25/1994	50.00
		5/18/1955	61.05	2/13/1995	50.15
		8/19/1955	60.89	2/28/1996	49.30
		11/4/1955	61.96	12/5/1996	49.95
		2/9/1956	61.89	2/20/1998	50.59
		5/7/1956	62.24	2/11/1999	54.28
		8/21/1956	65.14	2/24/2000	51.20
		11/27/1956	62.38	9/12/2000	51.80
		2/15/1957	62.31	1/31/2001	52.10
		8/7/1957	62.63	2/8/2002	52.09
		11/15/1957	62.49	3/10/2003	50.90
		4/7/1958	62.66	2/17/2004	50.48
		8/26/1958	61.85	2/16/2005	50.52
		11/25/1959	61.19	2/6/2006	50.40
		9/1/1960	60.93	2/5/2007	51.30
		9/18/1961	60.03	2/27/2008	50.28
		9/19/1962	58.90	2/24/2009	50.65
		9/10/1963	58.38	12/9/2009	51.30
		10/6/1964	58.55	1/18/2011	51.99
		10/8/1965	57.82	11/4/2011	53.19
		10/3/1966	58.50	10/4/2012	53.75
		10/2/1967	59.63	10/18/2013	54.80
		10/15/1968	58.04	10/28/2014	55.72
		11/3/1969	56.54	12/11/2017	54.40
		3/23/1970	56.58	12/13/2018	52.21
		10/1/1970	55.88	3/11/2020	50.57
		3/24/1971	55.23	11/2/2020	50.95
		3/14/1972	55.43	4/12/2021	50.50
		3/16/1973	56.03	10/28/2021	53.51
		3/21/1974	56.10		
		6/2/1975	55.10		

58-46-5-0001		58-46-5-0016		58-46-5-0054	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
4/11/1956	5.00	3/15/1985	85.00	8/3/1950	44.90
10/11/1979	6.80	12/13/2018	58.26	9/14/1950	43.60
12/13/2018	8.04			10/11/1950	43.43
				11/9/1950	43.67
				12/14/1950	42.81
				4/27/1951	43.06
				6/5/1951	43.38
				2/21/1952	44.31
				4/15/1952	45.38
				5/9/1952	44.12
				9/18/1952	44.47
				4/9/1953	44.91
				5/20/1953	45.24
				9/15/1953	46.00
				2/16/1954	45.98
				5/17/1954	46.45
				8/5/1954	46.29
				12/2/1954	46.89
				5/18/1955	46.58
				8/19/1955	47.70
				11/4/1955	47.71
				2/9/1956	47.80
				5/7/1956	48.06
				8/21/1956	48.26
				11/27/1956	48.59
				2/15/1957	48.71
				8/7/1957	50.83
				11/15/1957	48.54
				4/7/1958	47.07
				8/26/1958	47.11
				11/25/1959	46.04
				8/3/1960	44.90
				9/1/1960	46.35
				9/19/1962	40.79
				9/10/1963	39.02
				10/6/1964	42.76
				10/11/1965	41.32
				10/3/1966	38.72
				10/2/1967	40.02
				10/15/1968	37.64
				11/4/1969	36.17
				3/23/1970	34.56
				10/1/1970	37.45
				3/24/1971	38.75
				3/14/1972	41.98
				4/14/1972	41.98
				3/16/1973	44.36
				3/21/1974	45.90

58-46-5-0054 (cont)		58-46-6-0011		58-46-7-0029	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
6/2/1975	41.65	7/21/1987	131.60	3/9/2022	123.60
3/31/1976	41.63	12/13/2018	201.71		
3/11/1977	39.79	10/1/2020	200.94		
3/10/1978	40.21	5/5/2021	209.65		
3/19/1979	43.01	10/21/2021	204.90		
4/14/1981	44.59				
11/20/1982	43.77				
11/17/1983	43.25				
11/5/1984	44.60				
10/16/1985	43.94				
2/10/1987	42.26				
11/13/1987	38.97				
3/8/1989	40.03				
12/3/1990	45.57				
12/8/1992	39.72				
1/25/1994	38.00				
2/13/1995	39.50				
2/28/1996	38.35				
12/5/1996	43.00				
2/11/1999	40.27				
2/18/2000	40.40				
9/12/2000	41.54				
1/31/2001	41.90				
2/8/2002	40.99				
3/10/2003	38.70				
2/17/2004	38.00				
2/16/2005	38.32				
2/6/2006	37.80				
2/5/2007	39.60				
2/27/2008	37.94				
2/24/2009	37.92				
12/10/2009	39.60				
1/18/2011	42.67				
11/4/2011	43.11				
10/4/2012	40.69				
12/11/2017	38.01				
12/13/2018	37.01				
3/11/2020	35.51				
11/2/2020	37.10				
4/11/2021	36.78				
10/28/2021	37.13				

58-53-9-0059		58-54-5-0046		58-54-8-0035	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
11/23/2021	140.17	11/23/2014	195.90	8/10/2017	158.00
		10/20/2020	215.03	5/6/2021	155.90
		5/6/2021	212.05	11/10/2021	157.86

58-54-9-0029		58-55-2-0036*			
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
10/1/2020	142.96	5/22/2008	198.21	4/12/2021	265.30
4/11/2021	145.15	9/16/2010	206.18	5/6/2021	191.52
11/5/2021	146.45	10/1/2010	203.74	10/21/2021	272.10
		11/11/2010	202.07		
		12/1/2010	204.01		
		1/1/2011	202.63		
		2/1/2011	201.85		
		3/3/2011	202.15		
		4/1/2011	203.78		
		5/1/2011	206.26		
		6/1/2011	207.58		
		7/1/2011	208.22		
		8/2/2011	208.85		
		9/4/2013	211.66		
		9/30/2013	209.89		
		11/1/2013	208.94		
		12/1/2013	218.17		
		12/11/2013	215.92		
		1/3/2014	209.33		
		1/31/2014	209.56		
		3/1/2014	212.25		
		3/31/2014	208.62		
		5/1/2014	221.80		
		6/1/2014	217.24		
		7/1/2014	226.72		
		8/1/2014	231.31		
		8/20/2014	235.12		
		10/1/2014	234.02		
		12/18/2014	220.41		
		1/1/2015	221.29		
		2/1/2015	218.06		
		3/1/2015	217.38		
		5/26/2015	211.01		
		1/14/2019	238.50		
		8/27/2019	262.16		
		10/1/2019	265.95		
		11/1/2019	255.93		
		12/1/2019	249.05		
		1/1/2020	250.34		
		2/1/2020	245.27		
		3/1/2020	249.52		
		4/1/2020	250.48		
		4/25/2020	251.38		
		3/11/2020	242.86		
		10/1/2020	263.83		

*- Some daily data is available for this well.

58-55-4-0007*		58-62-1-0053*		59-33-4-0021*	
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
12/27/2010	334.78	4/10/2008	35.70	3/26/09	101.52
1/2/2013	310.19	9/16/2010	43.18	9/16/10	101.98
2/5/2013	310.03	10/1/2010	40.74	1/1/11	102.26
5/31/2013	312.78	11/11/2010	39.07	4/1/11	102.92
7/17/2013	316.87	12/1/2010	41.01	7/1/11	104.08
8/1/2013	316.86	1/1/2011	39.63	10/1/11	106.65
9/1/2013	317.59	2/1/2011	38.85	1/25/12	109.67
9/30/2013	316.37	3/3/2011	39.15	4/1/12	110.04
11/1/2013	314.59	4/1/2011	40.38	6/15/12	108.49
12/1/2013	313.78	5/1/2011	43.26	10/1/12	110.13
1/3/2014	313.67	6/1/2011	44.58	1/1/13	111.40
2/1/2014	307.04	7/1/2011	45.22	3/1/13	111.66
2/27/2014	305.74	8/2/2011	45.85	6/18/13	111.14
8/27/2019	388.36	9/4/2013	48.66	9/30/13	113.14
9/21/2019	398.44	10/16/2013	54.84	1/3/14	115.28
4/12/2021	382.60	11/1/2013	45.94	2/28/14	116.51
10/9/2021	395.60	12/1/2013	55.17	9/18/14	118.36
		1/3/2014	46.33	1/1/15	119.52
		2/1/2014	54.90	3/8/15	119.49
		3/1/2014	49.25	5/26/15	118.29
		4/1/2014	50.23	1/14/19	121.98
		5/1/2014	58.80	9/1/19	123.51
		6/1/2014	54.24	10/1/19	124.83
		7/1/2014	63.72	11/1/19	126.59
		8/1/2014	68.31	12/1/19	126.45
		9/19/2014	66.32	1/1/20	127.23
		10/1/2014	71.02	2/1/20	130.99
		12/18/2014	57.41	3/1/20	139.65
		1/1/2015	58.29	4/1/20	136.93
		2/1/2015	55.06	5/1/20	138.38
		3/1/2015	54.38	6/1/20	142.05
		5/21/2015	55.00	6/29/20	145.26
		10/20/2020	74.64	9/30/20	165.61
		5/6/2021	77.30	2/8/21	184.22
		10/29/2021	71.10	2/26/21	184.90
		11/10/2021	68.34	4/1/21	187.60
				5/6/21	192.12
				6/25/21	197.70
				10/8/21	208.80
				11/16/21	213.75
				2/22/22	216.00

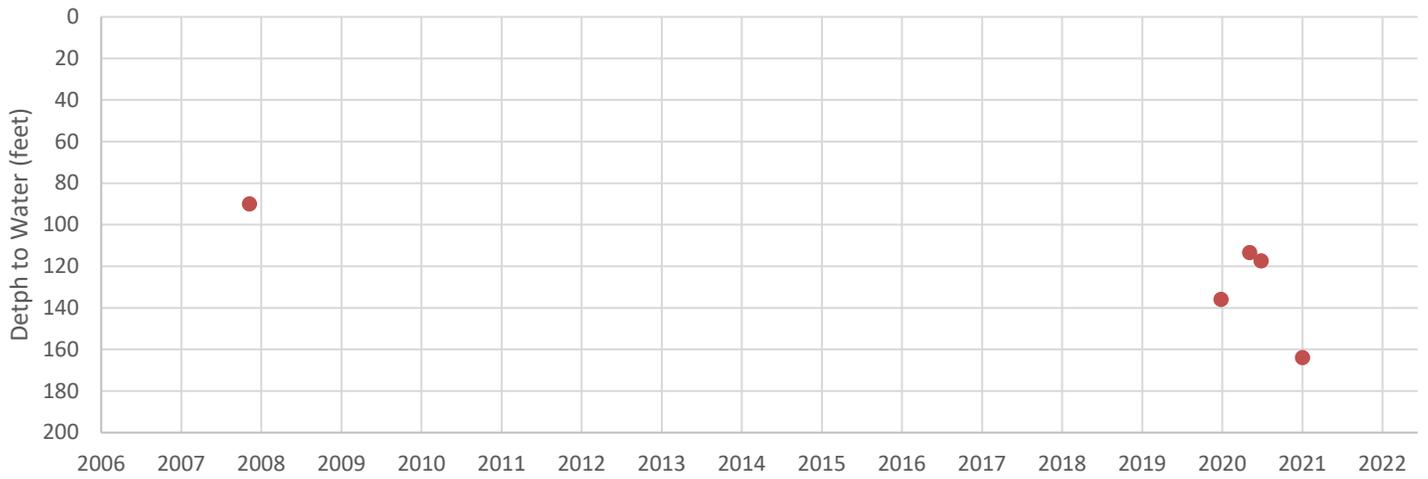
*- Some daily data is available for this well.

*- Some daily data is available for this well.

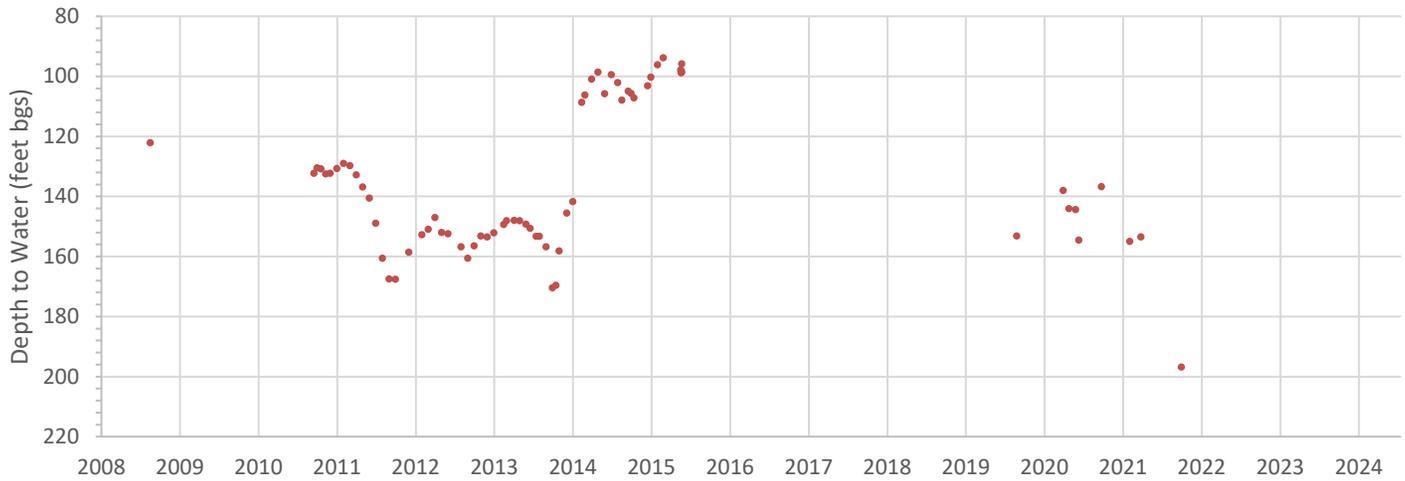
*- Some daily data is available for this well.

Appendix J
Simsboro Aquifer
Hydrographs

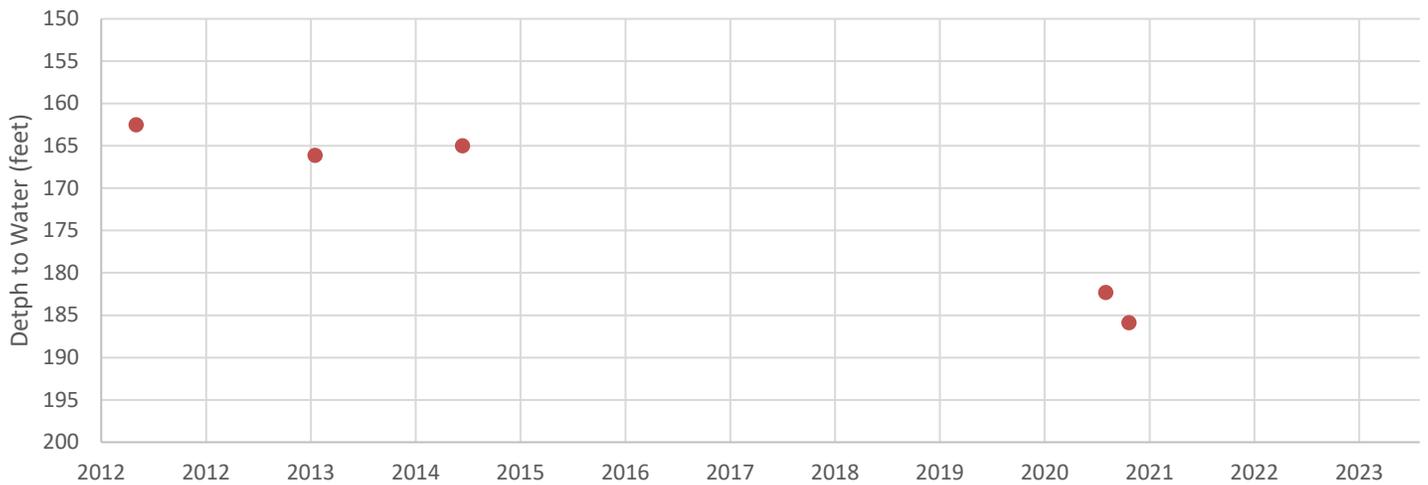
58-39-6-0022 (Heart of Texas Test Well #2)



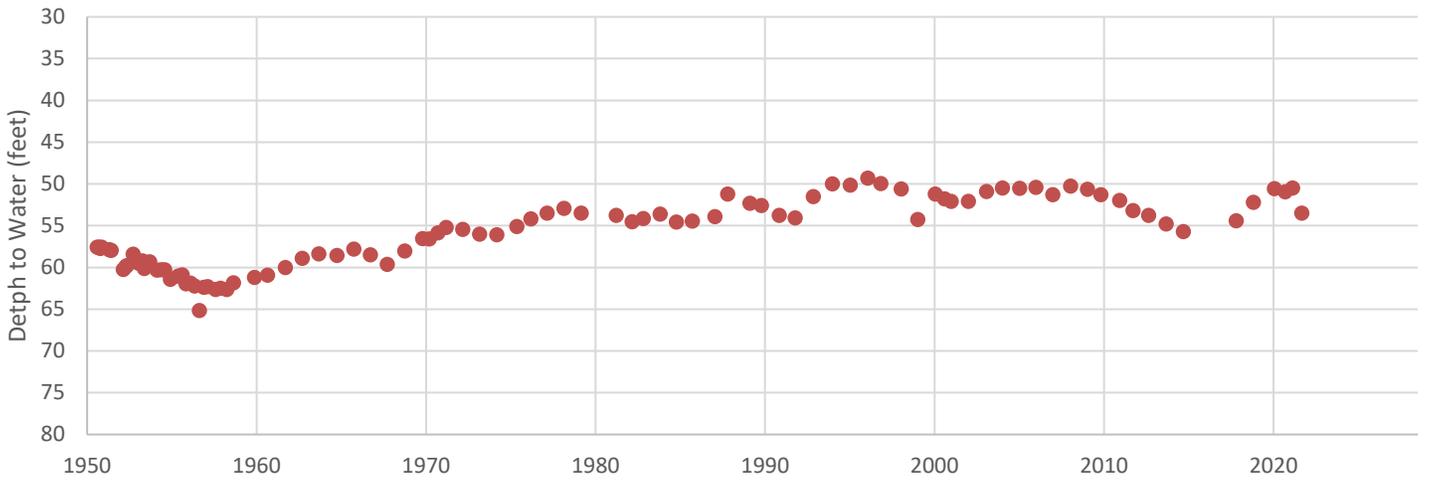
58-40-4-0041 (Heart of Texas SCADA Well)



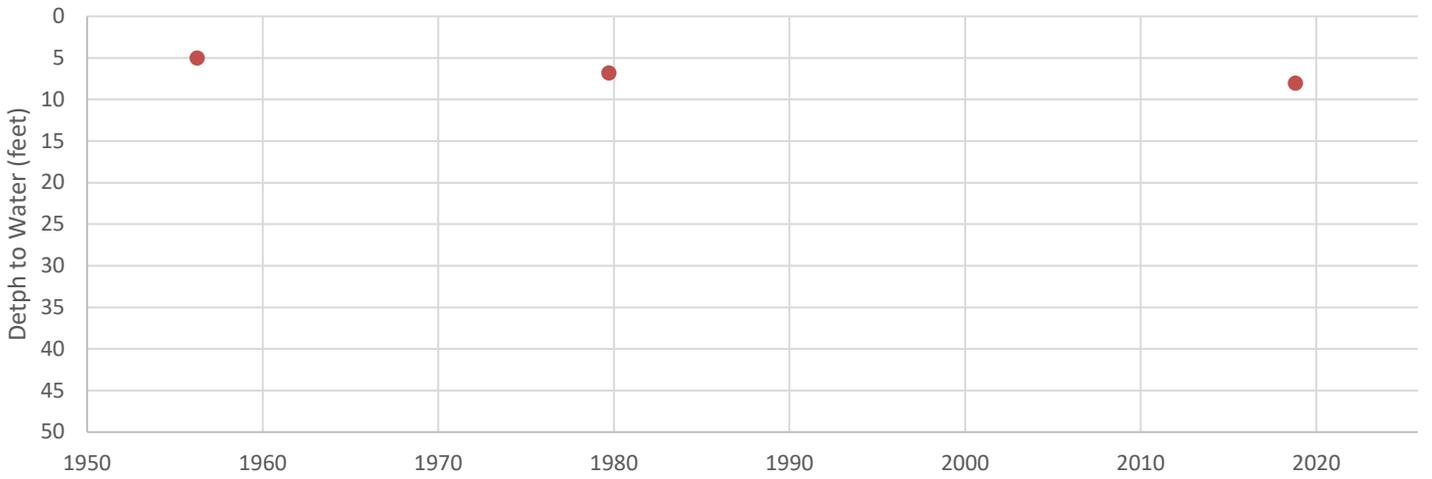
58-40-3-0019 (Degomez Domestic Well)



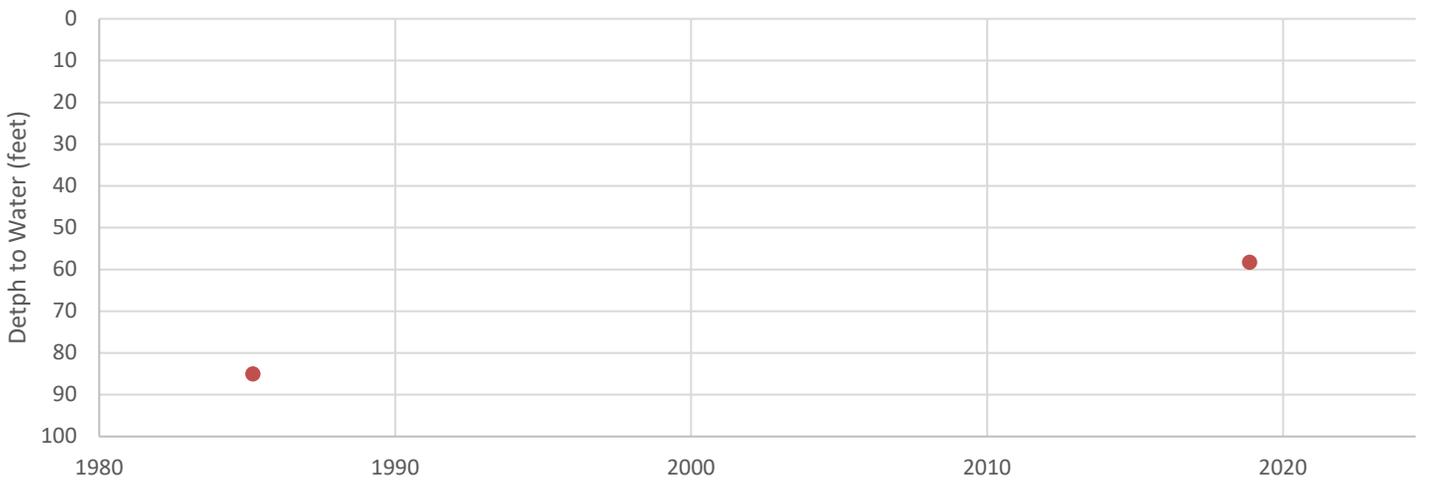
58-46-3-0029 (Cavanaugh Livestock Well)



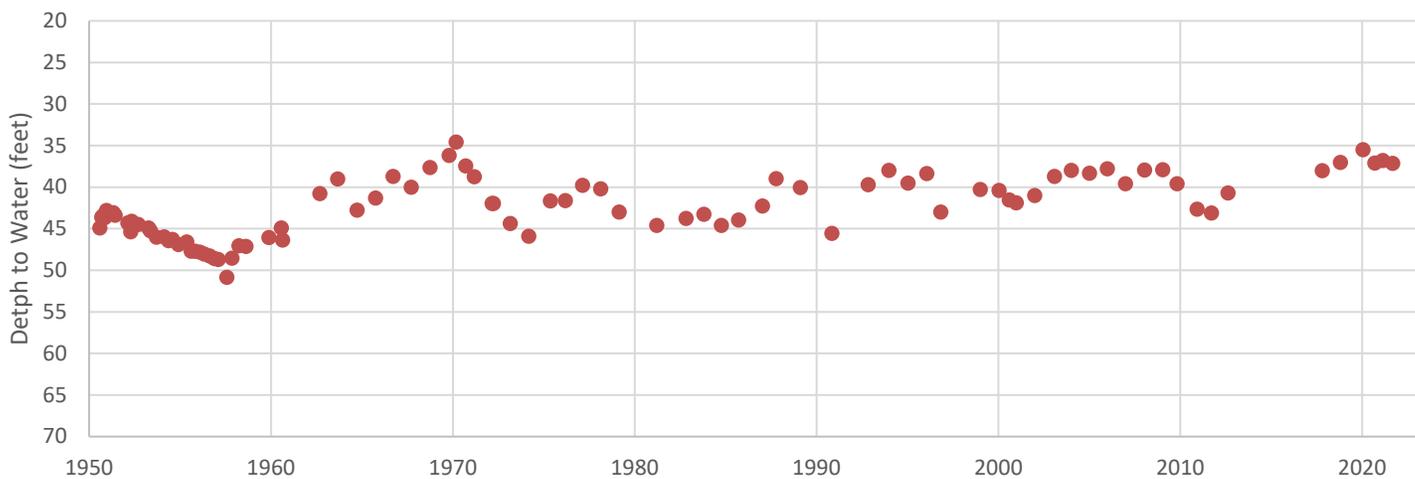
58-46-5-0001 (Elgin #6 Well)



58-46-5-0016 (Elgin #10 Well)



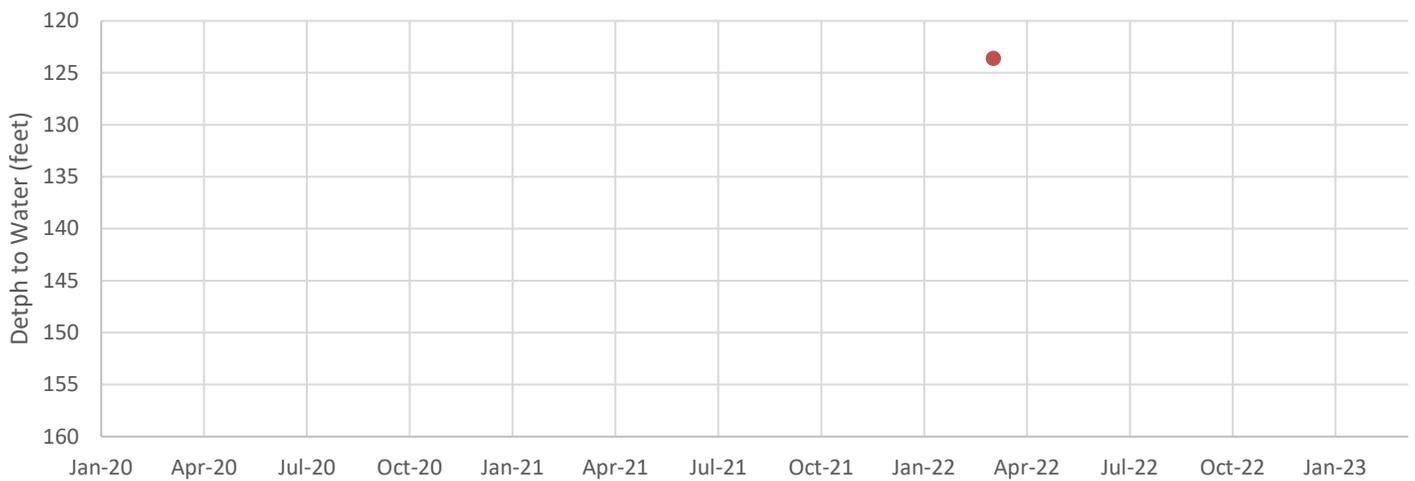
58-46-5-0034 (McDonald Domestic Well)



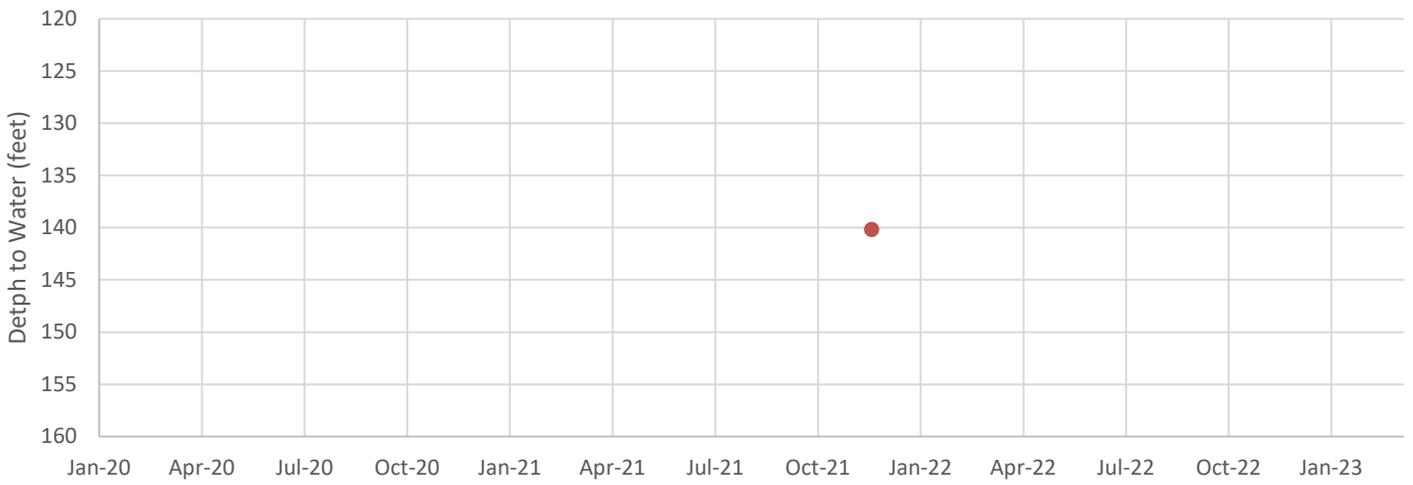
58-46-6-0011 (Elgin #11 Well)



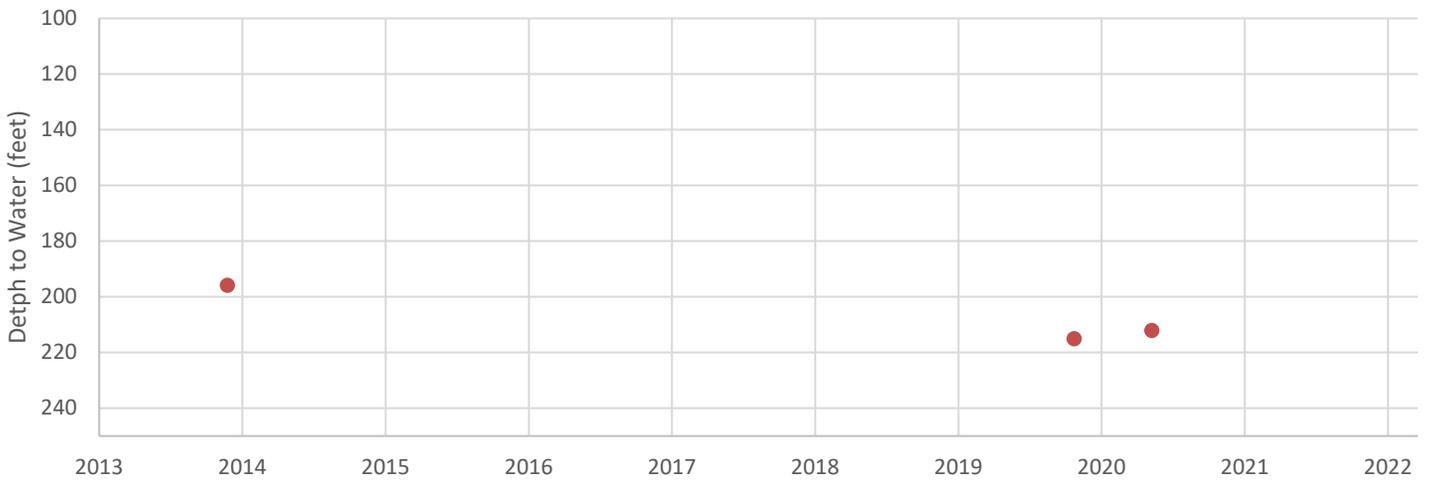
58-46-7-0029 (Cole Domestic Well)



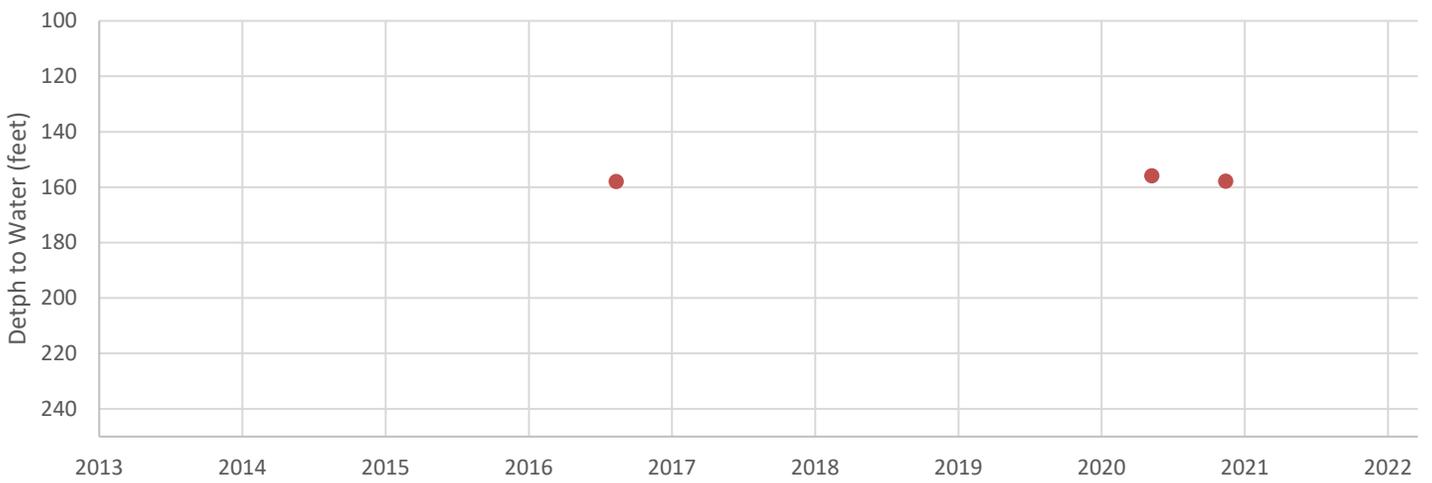
58-53-9-0059 (Ambrose Domestic Well)



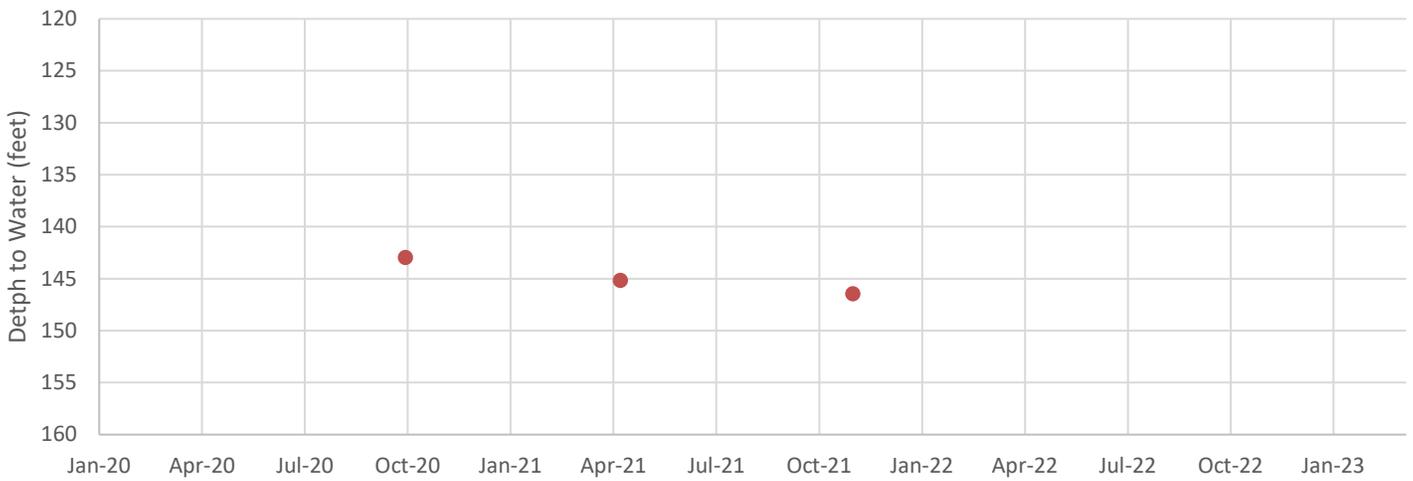
58-54-5-0046 (Bastrop XS Ranch Test Well #2)



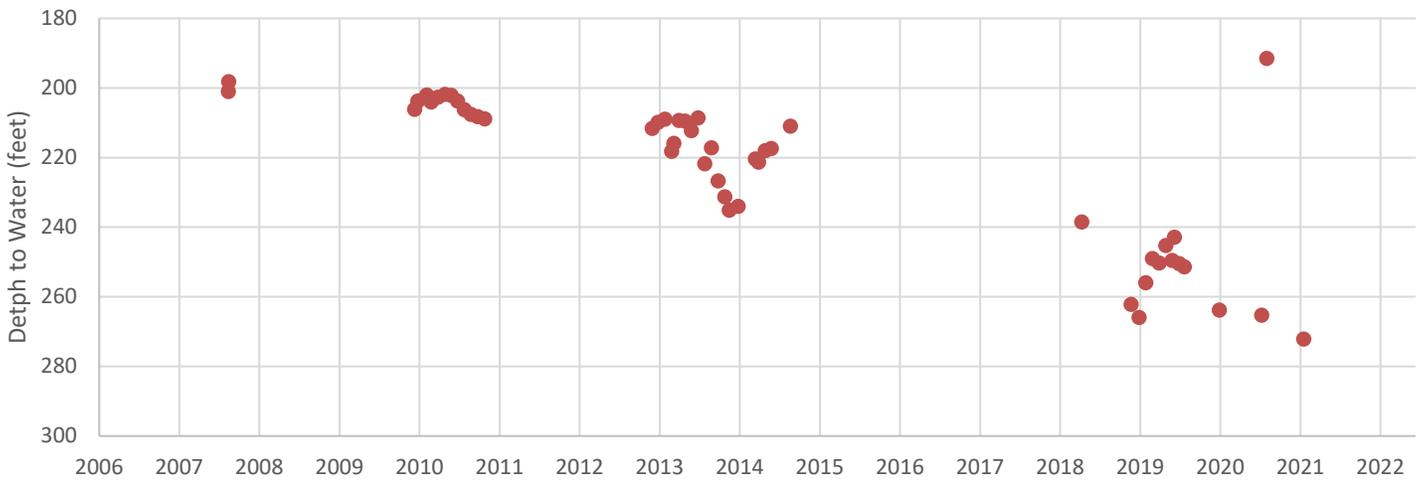
58-54-8-0035 (Bastrop XS Ranch Test Well #1)



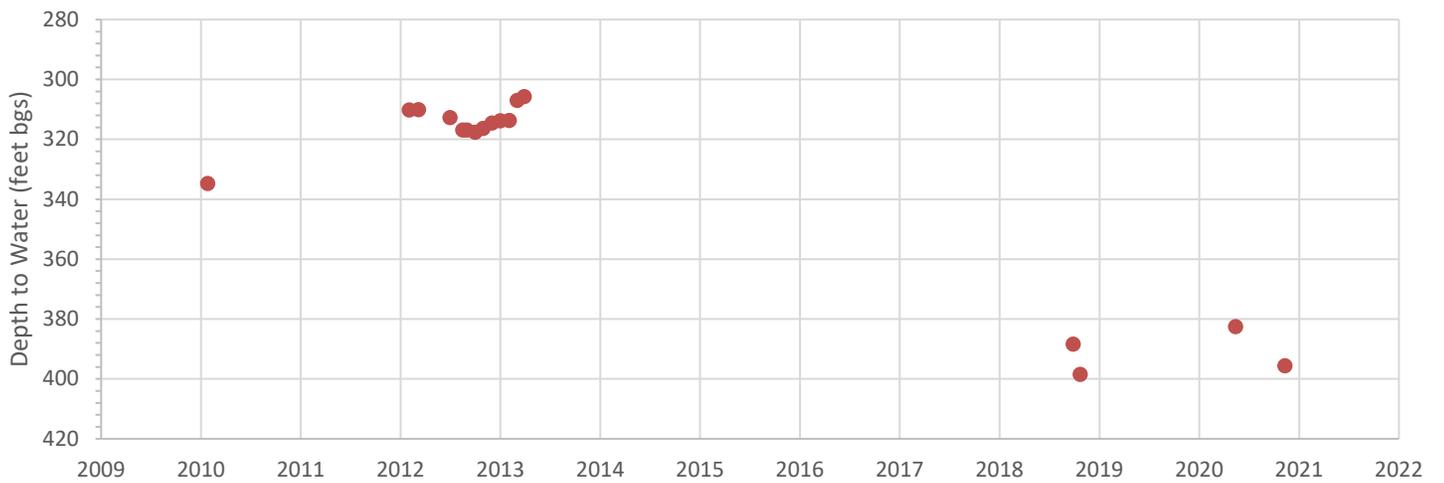
58-54-9-0029 (Weir Domestic Well)



58-55-2-0036 (Barespot SCADA Well)



58-55-4-0007 (GLR SCADA Well)



Appendix K
Hooper Aquifer
Water Levels

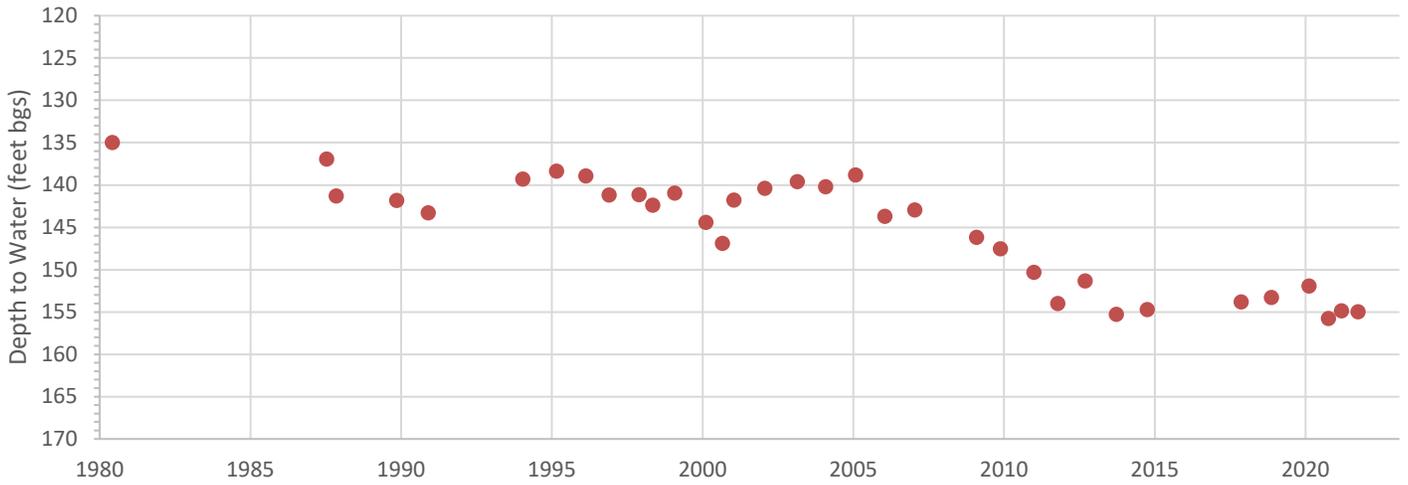
58-38-9-0028		58-45-8-0008			
Date	Water Level (ft bgs)	Date	Water Level (ft bgs)	Date	Water Level (ft bgs)
6/4/1980	135.00	8/4/1947	36.21	6/2/1975	36.44
7/20/1987	136.95	8/4/1950	35.21	3/31/1976	33.60
11/13/1987	141.30	9/14/1950	35.25	3/14/1977	35.50
11/15/1989	141.82	10/11/1950	35.08	3/10/1978	32.36
12/3/1990	143.28	11/9/1950	35.19	11/19/1982	35.55
1/25/1994	139.30	12/14/1950	35.19	11/18/1983	33.65
3/9/1995	138.35	4/27/1951	35.24	11/5/1984	34.64
2/28/1996	138.93	6/5/1951	34.28	2/11/1987	32.88
12/5/1996	141.20	2/21/1952	35.02	11/13/1987	30.87
12/5/1997	141.14	4/15/1952	35.70	3/9/1989	32.40
5/22/1998	142.40	5/9/1952	35.55	11/15/1989	33.17
2/11/1999	140.94	9/18/1952	34.72	12/3/1990	34.67
2/24/2000	144.40	1/21/1953	36.34	11/12/1991	34.70
9/14/2000	146.89	4/9/1953	37.58	12/10/1992	30.89
1/31/2001	141.80	5/20/1953	37.27	1/25/1994	31.50
2/8/2002	140.40	9/16/1953	37.03	3/9/1995	32.47
3/10/2003	139.60	2/16/1954	37.06	2/28/1996	32.57
2/17/2004	140.20	5/17/1954	37.06	12/5/1996	33.90
2/16/2005	138.80	8/5/1954	38.23	12/5/1997	34.07
2/6/2006	143.70	12/2/1954	40.26	2/25/2000	34.55
2/5/2007	142.95	5/18/1955	37.94	9/11/2000	34.99
2/24/2009	146.19	8/19/1955	38.83	2/12/2001	34.85
12/9/2009	147.55	11/4/1955	39.66	2/8/2002	34.20
1/18/2011	150.33	2/9/1956	38.39	3/10/2003	33.86
11/4/2011	154.01	5/7/1956	39.16	2/17/2004	28.40
10/4/2012	151.35	8/21/1956	41.62	2/6/2006	33.45
10/18/2013	155.27	11/27/1956	41.90	2/6/2007	23.95
10/28/2014	154.72	2/15/1957	39.36	2/25/2008	31.78
12/11/2017	153.80	8/7/1957	41.66	2/24/2009	33.19
12/13/2018	153.29	11/15/1957	38.98	12/10/2009	33.68
3/11/2020	151.92	4/7/1958	41.74	10/4/2012	33.98
11/2/2020	155.75	8/26/1958	38.97	10/18/2013	34.89
4/12/2021	154.85	11/25/1959	36.93	10/28/2014	35.09
10/28/2021	154.96	9/1/1960	37.68	12/11/2017	33.13
		9/18/1961	35.20	12/13/2018	31.55
		9/19/1962	34.37	3/11/2020	30.50
		9/10/1963	36.40	11/3/2020	31.32
		10/6/1964	36.20	4/12/2021	31.52
		10/3/1966	37.08	10/28/2021	31.70
		10/2/1967	38.07		
		10/15/1968	37.90		
		11/3/1969	37.66		
		3/23/1970	35.09		
		10/1/1970	35.50		
		3/24/1971	35.13		
		3/14/1972	34.97		
		3/16/1973	36.35		
		3/21/1974	35.16		

58-53-5-0080

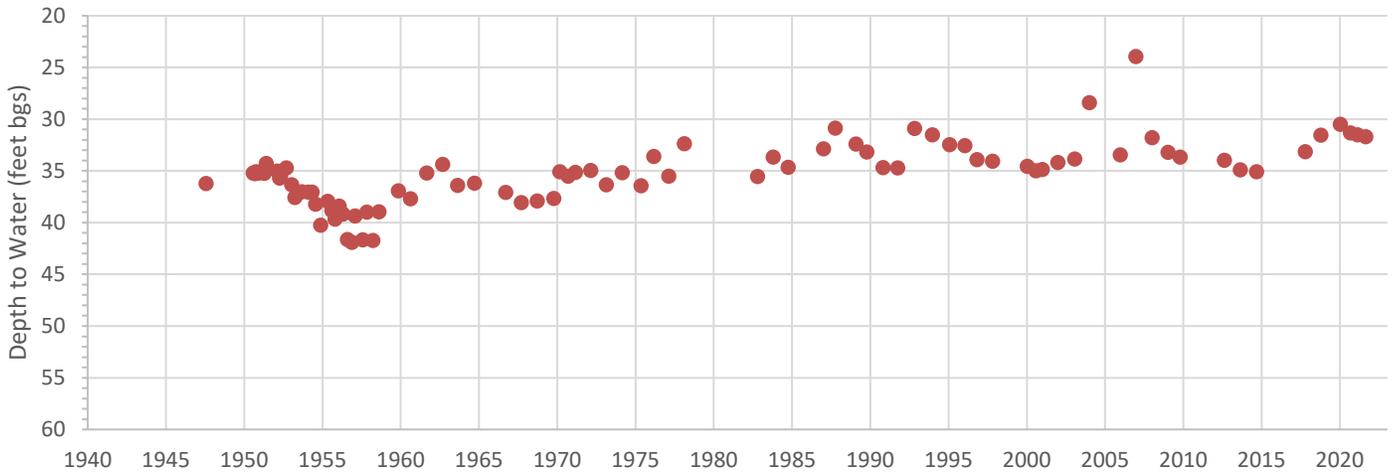
Date	Water Level (ft bgs)
10/5/1964	48.90
7/24/1995	45.55
2/28/1996	46.73
12/5/1996	49.05
12/5/1997	52.00
2/11/1999	51.37
2/25/2000	52.07
9/11/2000	53.79
2/1/2001	54.97
2/8/2002	53.90
3/12/2003	48.06
2/17/2004	45.00
2/6/2006	48.66
2/6/2007	52.08
2/25/2008	47.55
2/24/2009	50.87
12/10/2009	53.98
1/20/2012	58.62
10/4/2012	57.40
10/18/2013	58.77
12/11/2017	48.99
12/13/2018	49.69
3/11/2020	44.50
4/12/2021	49.40

Appendix L
Hooper Aquifer
Hydrographs

58-38-9-0028 (Wolff Domestic Well)



58-45-8-0008 (Puckett Domestic Well)



58-53-5-0080 (Barton Domestic Well)

