

Report of Findings  
Majestic Hills Subdivision (Phase 2)  
Groundwater Availability Certification for Platting:  
Blanco County, Texas

For:  
Lone Star Land Partners, LLC.  
110 CR 250  
Burnet, Texas 78611

Report of Findings: WRGS 19-016



Wet Rock Groundwater Services, L.L.C.

Groundwater Specialists

TBPG Firm No: 50038

317 Ranch Road 620 South, Suite 203

Austin, TX 78734 Ph: 512.773.3226

[www.wetrockgs.com](http://www.wetrockgs.com)

REPORT OF FINDINGS

WRGS 19-016

**Majestic Hills Subdivision (Phase 2)  
Groundwater Availability Certification for Platting:  
Blanco County, Texas**

*for*

Lone Star Land Partners, LLC.

110 CR 250

Burnet, Texas 78611

Burnet County, Texas

December 2019

WRGS Project No. 083-002-19



**Wet Rock Groundwater Services, L.L.C.**

*Groundwater Specialists*

317 Ranch Road 620 South, Suite 203  
Austin, Texas 78734 • Phone: 512-773-3226

www.wetrockgs.com  
TBPG Firm No: 50038

The seal appearing on this document was authorized by Kaveh Khorzad, P.G. 1126 on December 6, 2019:



A handwritten signature in cursive script that reads "Kavch Khorzad".

---

Kaveh Khorzad, P.G.

License No. 1126

Wet Rock Groundwater Services, LLC

TBPG Firm Registration No. 50038



(This Page Left Blank Intentionally)



## *Table of Contents*

Section I: Introduction .....	1
Section II: Projected Water Demand Estimate.....	3
Section III: General Groundwater Resource Information.....	4
III.1. Introduction .....	4
III.2. Stratigraphy and Geologic History.....	4
III.3. Hydrogeology.....	7
Section IV: Aquifer Testing.....	9
IV.1. Well Details.....	9
IV.2. Aquifer Testing.....	18
IV.3. Water Quality .....	43
IV.4. Groundwater Availability.....	45
Section V: Certification .....	55
Section VI: References .....	56



## Figures

Figure 1: Location map.....	1
Figure 2: Groundwater Conservation District map.....	2
Figure 3: Geologic map and stratigraphic column (modified from McGeehee, 1979; Preston et. al, 1996).....	6
Figure 4: Aquifer map.....	7
Figure 5: Well location map .....	9
Figure 6: Well construction profiles of Wells No. 1, No. 2, and No. 3 .....	14
Figure 7: Well construction profiles of Wells No. 4, No. 5, and No. 6 .....	15
Figure 8: Well construction profiles of Wells No. 7, No. 8, and No. 9 .....	16
Figure 9: Well construction profiles of Well No. 10 and St. Well No. 57-60-607 .....	17
Figure 10: Aquifer test hydrograph of Well No. 1 (September 30, 2019).....	19
Figure 11: Aquifer test hydrograph of Well No. 1 and Observation Well No. 2 (September 30, 2018) ....	20
Figure 12: Aquifer test hydrograph of Well No. 3 (October 2, 2019) .....	22
Figure 13: Aquifer test hydrograph of Well No. 3 and Observation Well No. 2 (October 2, 2019) .....	23
Figure 14: Aquifer test hydrograph of Well No. 4 (September 23, 2019).....	25
Figure 15: Aquifer test hydrograph of Well No. 4 and Observation Well No. 5 (September 23, 2019) ....	26
Figure 16: Aquifer test hydrograph of Well No. 6 (September 25, 2019).....	28
Figure 17: Aquifer test hydrograph of Well No. 6 and Observation Well No. 5 (September 25, 2019) ....	29
Figure 18: Aquifer test hydrograph of Well No. 8 (October 7, 2019) .....	31
Figure 19: Aquifer test hydrograph of Well No. 8 and Observation Well No. 7 (October 7, 2019) .....	32
Figure 20: Aquifer test hydrograph of Well No. 8 (December 2, 2019).....	34
Figure 21: Aquifer test hydrograph of Well No. 8 and Observation Well No. 4 (December 2, 2019).....	35
Figure 22: Aquifer test hydrograph of Well No. 9 (September 18, 2019).....	37
Figure 23: Aquifer test hydrograph of Well No. 9 and Observation Well No. 10 (September 18, 2019) ..	38
Figure 24: Aquifer test hydrograph of Well No. 10 (September 9, 2019).....	40
Figure 25: Aquifer test hydrograph of Well No. 10 and Observation Phase I Well No. 4 (September 9, 2019) .....	41
Figure 26: Distance drawdown plot for Well No. 1.....	48
Figure 27: Distance drawdown plot for Well No. 3.....	49
Figure 28: Distance drawdown plot for Well No. 4.....	50
Figure 29: Distance drawdown plot for Well No. 6.....	51
Figure 30: Distance drawdown plot for Well No. 8.....	52
Figure 31: Distance drawdown plot for Well No. 9.....	53
Figure 32: Distance drawdown plot for Well No. 10.....	54



***Tables***

Table 1: Summary of Majestic Hills well construction ..... 12  
Table 1: Summary of Majestic Hills well construction continued..... 13  
Table 2: Summary of aquifer test results ..... 42  
Table 3: Summary of the water quality analysis results ..... 44  
Table 4: Summary of distance-drawdown calculations ..... 47

***Appendices***

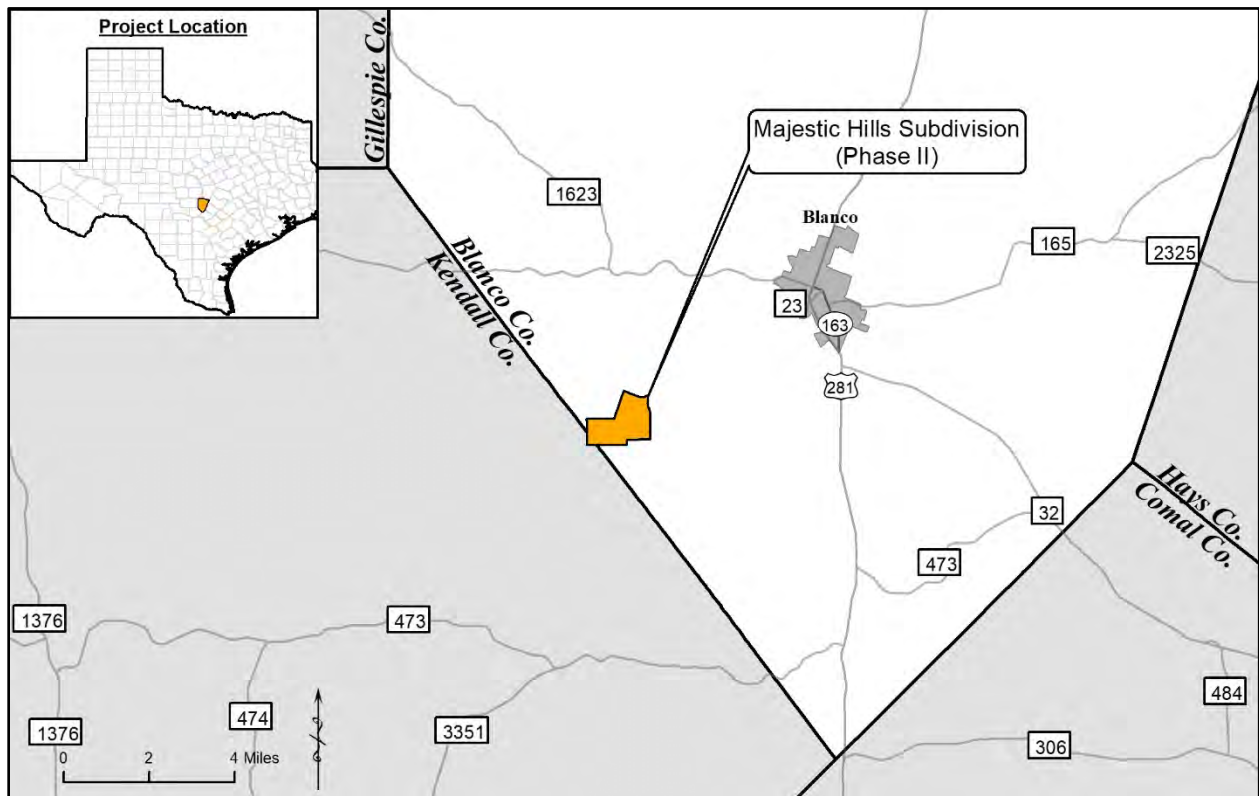
- Appendix A: Certification of Groundwater Availability for Platting Form
- Appendix B: Geophysical Logs
- Appendix C: State Well Reports
- Appendix D: Aquifer Test Data and Analyses
- Appendix E: Well Efficiency Calculations
- Appendix F: Water Quality Reports



## **Section I: Introduction**

This report details the results of a groundwater availability study for Phase II of the proposed Majestic Hills Subdivision (the subdivision) to meet the requirements of the Certification of Groundwater Availability for Platting Form (*Title 30, Texas Administrative Code, Chapter 230, Sections 230.2 through and including 230.11*). Appendix A provides the completed Certification of Groundwater Availability for Platting Form.

The subdivision is located south of Trainer Wuest Rd. along Carolina Trail, approximately 3.5 miles southwest of the City of Blanco in southwestern Blanco County (Figure 1). The second phase of the proposed subdivision is documented within the Blanco County Tax Assessor as Property IDs: 7792, 7800, 7786, and 7787. Lone Star Land Partners, LLC (110 CR 250 Burnet, Texas 78611) is the plat applicant.



**Figure 1: Location map**

Lone Star Land Partners, LLC proposes to develop the second phase of the approximately 1,394 acre Majestic Hills Subdivision. Phase II consists of approximately 789 acres including 116 single family residential lots. The average lot size is 6.16 acres which will be served by individual water wells. The subdivision is located within the jurisdiction of the Blanco Pedernales Groundwater Conservation District (BPGCD). Figure 2 provides a map showing the general location of the subdivision with the county and groundwater district boundaries.





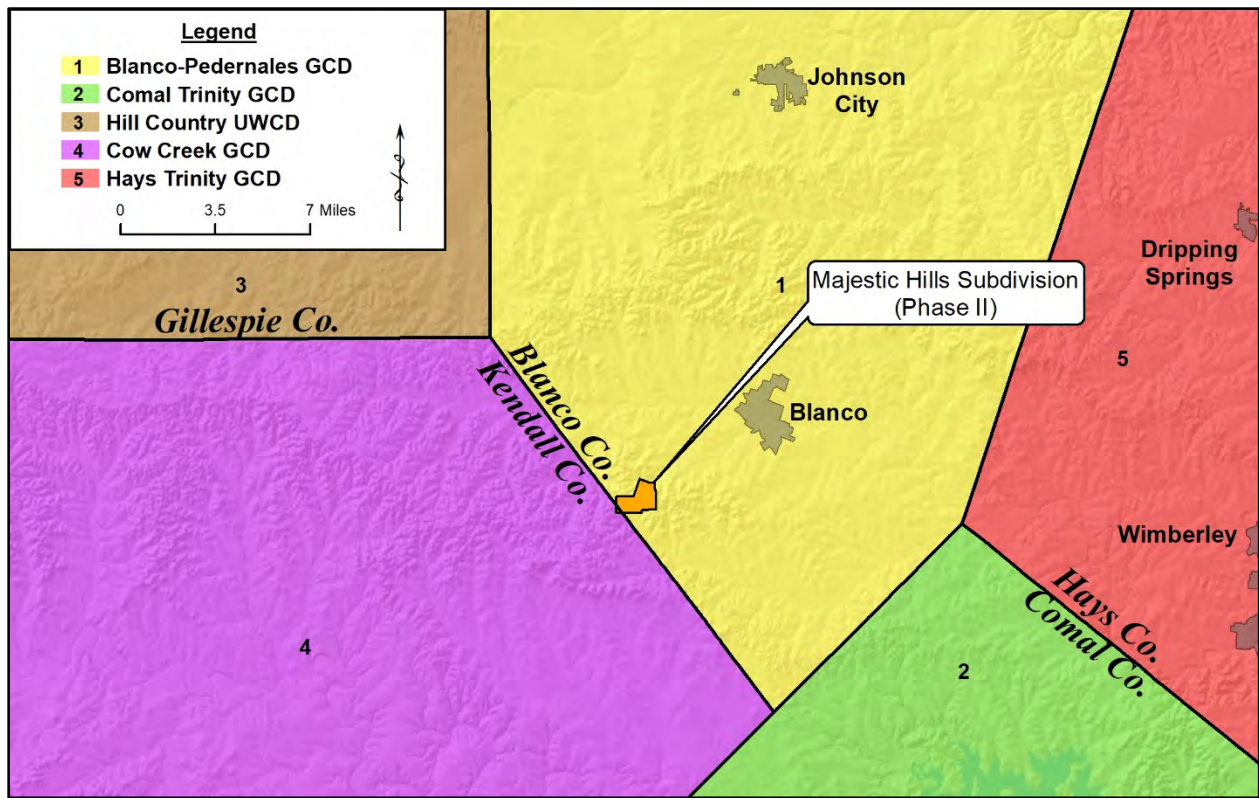


Figure 2: Groundwater Conservation District map

## **Section II: Projected Water Demand Estimate**

The Blanco County development rules and regulations require applicants to use the following formula when calculating demand for a subdivision:

### Equation 1: Total Water Demand

$$Q_s = n \times 3.5 \times 100 \times 365 \text{ days} = 14,819,000 \text{ gallons/year or } 45.48 \text{ acre-feet/year}$$

Where:

$Q_s$  = Total Water Demand at full build out for the subdivision;

$n$  = Number of connections (116 lots);

3.5 = Average number of persons per household; and

100 = The average per capita usage of water per day in gallons.

### Equation 2: Water Demand per Housing Unit

$$Q_h = 3.5 \times 100 \times 365 \text{ days} = 127,750 \text{ gallons/year or } 0.39 \text{ acre-feet/year}$$

Where:

$Q_h$  = Total Water Demand per house per year

Equation 1 assumes 3.5 persons per household using 100 gallons per person per day which results in a total water demand for the subdivision of 45.48 acre-feet/year. Equation 2 results in a water demand per housing unit of 0.39 acre-feet/year. There are no planned non-residential water demands.



## **Section III: General Groundwater Resource Information**

### **III.1. Introduction**

According to the Texas Water Development Board (TWDB), there are two (2) major aquifers (Trinity and Edwards-Trinity (Plateau)) and three (3) minor aquifers (Marble Falls, Hickory, and Ellenburger-San Saba) within Blanco County that supply groundwater resources. The TWDB classifies major aquifers as aquifers that produce large amounts of water over large areas, and minor aquifers as aquifers that produce minor amounts of water over large areas or large amounts of water over small areas. Of these aquifers, all are present at the study area excluding the Marble Falls Aquifer. These aquifers are regionally extensive aquifer systems made up of Cretaceous carbonates and Paleozoic carbonates and sandstones that were deposited throughout central Texas. These aquifers are affected by geologic structures which include the Llano Uplift, the San Marcos Arch, and the Balcones fault system (Ashworth, 1983).

### **III.2. Stratigraphy and Geologic History**

The subdivision overlies the Cretaceous aged sedimentary rocks comprising the Trinity and the Edwards-Trinity (Plateau) Aquifers. The Upper Member of the Glen Rose Formation covers the vast majority of the subdivision's surface, while the Fort Terrett Formation of the Edwards Group crop out over small areas in the east and west of the second phase. The sediments that comprise these groups were deposited approximately 140 million years ago by a Cretaceous aged sea that once dominated the interior of North America and the Gulf Coast region. For approximately 79 million years this shallow sea deposited the sediments that now make up the property and its surrounding area. Figure 3 provides a geologic map and stratigraphic column illustrating the geology surrounding the subdivision.

Making up the base of the study area lies the Cambrian aged Moore Hollow Group which consists of the Riley and Wilberns Formations. The oldest member of the Riley Formation is the Hickory Sandstone consisting of crossbedded terrestrial and marine quartz sandstones, siltstones, and mudstones which make up the Hickory Aquifer. In certain areas the Cap Mountain limestone overlies the Hickory, acting as a confining unit. The youngest member of the Riley Formation, the Lion Mountain Sandstone, is intermittently found overlying the Cap Mountain Limestone. The Welge Sandstone, the oldest member of the Wilberns Group, is hydraulically connected to the Lion Mountain forming the Mid-Cambrian Aquifer. The Morgan Creek Limestone and the Point Peak Shale are found directly above the Welge Sandstone and act as a confining unit between the Mid-Cambrian and the Ellenburger-San Saba aquifers. Completing the Wilberns Group is the San Saba Limestone which is the stratigraphically lowest part of the Ellenburger-San Saba Aquifer (Figure 3; Barnes and Bell, 1977; Preston et. al, 1996).

On top of the Moore Hollow Group is the Ordovician aged Ellenburger Group which consists of the Tanyard, Gorman, and Honeycut Formations and generally encircle the Llano Uplift. The Tanyard Formation is divided into two members: the basal dolostone Threadgill Member, and the overlying limestone Staendebach Member. Above the Tanyard, the Gorman and Honeycut Formations are comprised of dolostones and limestones which complete the Ellenburger Group and the Ellenburger-San Saba Aquifer (Figure 3; Preston et. al, 1996).



Scattered discontinuously throughout the Llano Uplift area are Devonian and Mississippian aged formations consisting of thin remnants of dark shales, petroliferous limestones, crinoidal limestone, chert breccias, fractured cherts, and microgranular limestones with bedded chert (Standen and Ruggiero, 2007; Preston et. al, 1996). Where present, the formations act as confining layers between the Ellenburger-San Saba Aquifer and the Marble Falls Aquifer (Figure 3; Preston et. al, 1996).

Pennsylvanian aged rocks unconformably overlie either the Ellenburger Group or the Devonian-Mississippian Formations. Groups making up this system include the Bend, Canyon, and Strawn Groups. The oldest member of the Bend Group is the Marble Falls Limestone, which is locally divided and makes up the Marble Falls Aquifer. The lower unit consists of massive limestone and reef deposits and the upper unit consists of fine grained bedded limestone with chert nodules and beds. The overlying Smithwick Formation consists of interbedded claystone, siltstone, and sandstone. Above the Bend Group are the Strawn and Canyon Groups comprised of limestones, shales, and fine-grained sandstones. Together with the Smithwick Formation, these groups act as confining units above the Marble Falls Aquifer (Figure 3; Preston et. al, 1996).

Cretaceous aged rocks overlie the Pennsylvanian system. The Cretaceous sediments comprising the Trinity and Edwards Groups were deposited by a shallow Cretaceous sea and once covered the entire region, but have since been eroded away completely in some areas. The Trinity Group is divided into three aquifers from oldest to youngest: The Lower, Middle and Upper Trinity Aquifers. Formations comprising the Lower Trinity Aquifer include, from oldest to youngest, the Hosston Sand Member and Sligo Limestone Member of the Travis Peak Formation. Updip in some parts of the outcrop, the equivalent rocks of the Hosston and Sligo are called the Sycamore sand. Above the Lower Trinity Aquifer is a confining unit separating the Lower Trinity Aquifer from the Middle Trinity Aquifer called the Hammett Shale. The Middle Trinity Aquifer is composed of from oldest to youngest, the Cow Creek Limestone, the Bexar Shale, and the Hensell Sand Members of the Travis Peak Formation and the Lower Glen Rose Formation. Above the Middle Trinity Aquifer is the Upper Trinity Aquifer composed of the Upper Glen Rose Formation, which completes the Trinity Group. Above the Trinity Group, lies the confining Walnut Formation and the Edwards Group. The Edwards Group consists of the Fort Terrett and Segovia Formations (collectively known as Edwards Limestone).



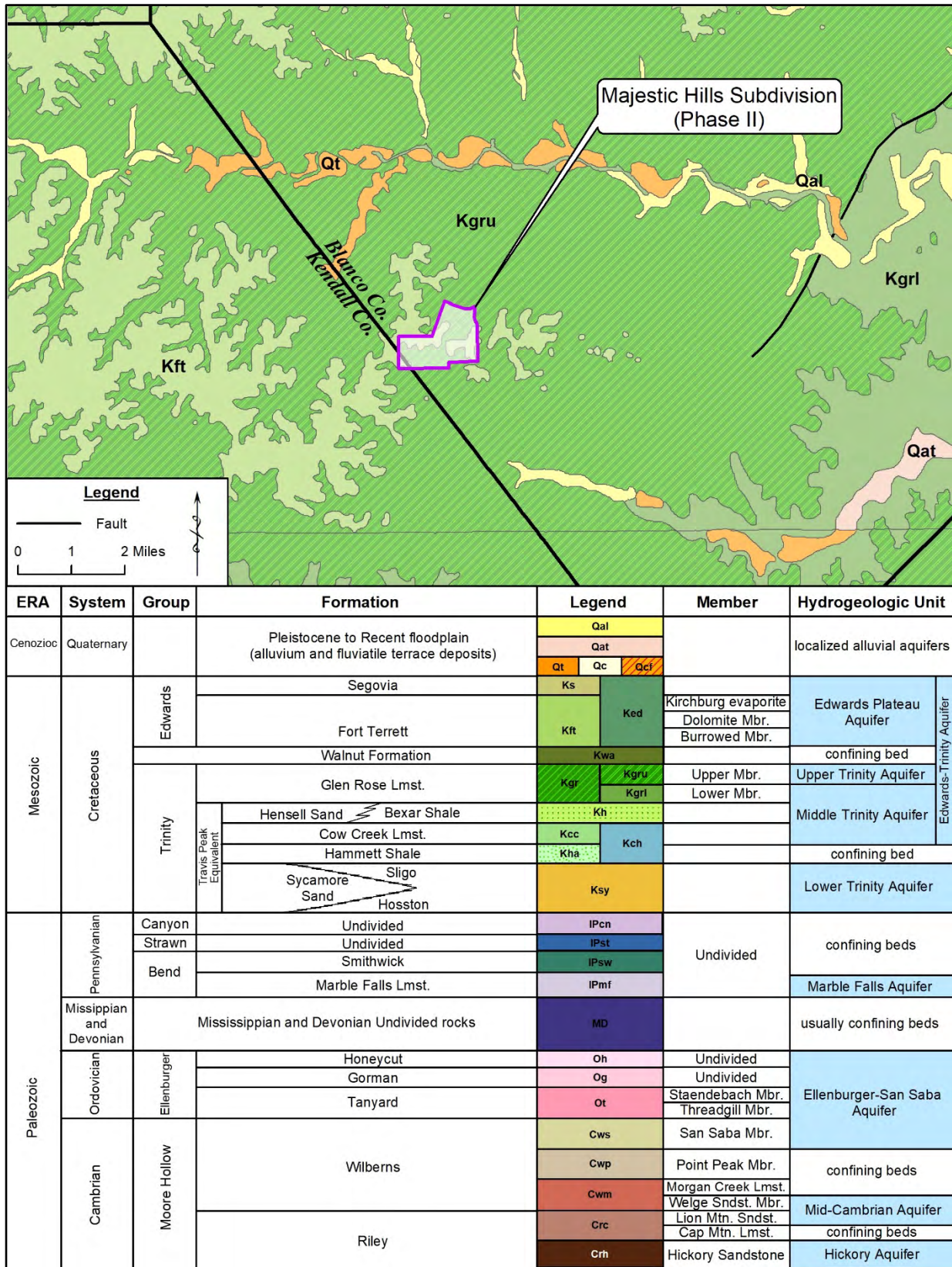


Figure 3: Geologic map and stratigraphic column (modified from McGeehee, 1979; Preston et. al, 1996)

### III.3. Hydrogeology

Figure 4 provides a map of the major and minor aquifers within the area surrounding the subdivision. The major aquifer located within the subdivision is the Trinity Aquifer which encompasses most of Blanco County. Stratigraphically above the Trinity, the Edwards-Trinity (Plateau) Aquifer outcrops in small location on the subdivision. The aquifer's boundaries in Blanco County are defined by the location of where the Edwards Group is saturated. The Edwards Group provides relatively little water to wells and is not a significant a source of water to the subdivision.

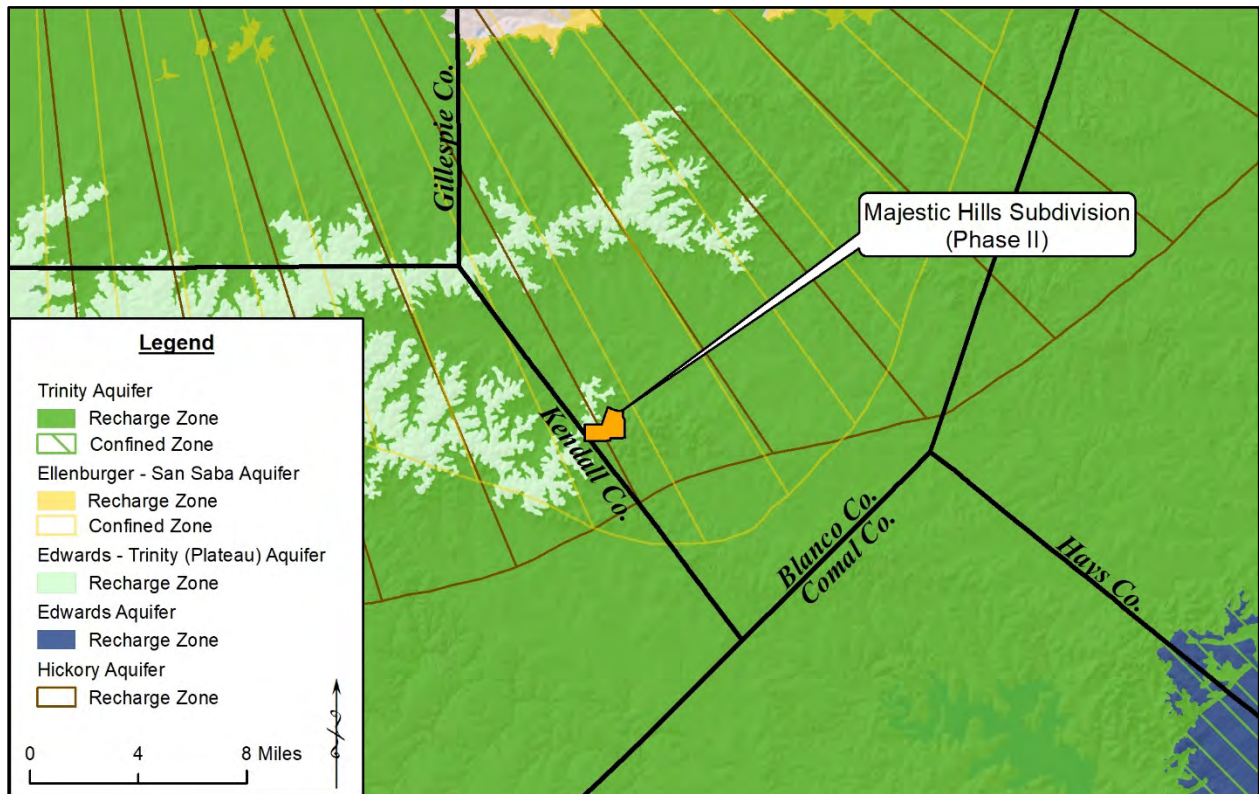


Figure 4: Aquifer map

The Trinity Aquifer in the Hill Country area spans as far north as Gillespie County and as far south as Bexar, Comal, and Hays County where fresh water can be produced. The Upper Trinity Aquifer typically produces poor quality water due to the presence of gypsum and anhydrite layers within the Upper Glen Rose Formation and typically produces lower quantities of water. The Middle Trinity Aquifer contains the Lower Glen Rose Limestone, Hensall Sand, and Cow Creek Limestone and is separated from the Upper Trinity Aquifer by the presence of a fossil marker bed called the Corbula Bed. The Corbula bed is a heavily fossiliferous layer that contains the small fossil clam called *Corbula martinae*. Typically, the highest yielding portion of the Trinity Aquifer is the Middle Trinity Aquifer, specifically the Lower Glen Rose Formation and the Cow Creek Limestone Member of the Travis Peak Formation. These formations are, in some localities, heavily fractured limestone, making them more productive because of their enhanced ability to transmit groundwater. In some areas, the Lower Glen Rose Formation contains the presence of a reef deposit which greatly increases the yield of a well due to its high permeability. Well yield may be increased through acidization, with increases of two or three fold obtained in some instances. The Lower Trinity Aquifer is composed of conglomerates and sandstones that are, in some instances, heavily cemented.

The degree of cementing of these sediments controls the ability of water to move through the aquifer, thereby limiting the ability to produce large yielding wells. In localized areas, wells in the Lower Trinity Aquifer may produce moderate yields, although regionally the Middle Trinity Aquifer produces higher yielding wells with better quality water as compared to the Lower Trinity Aquifer.

The water quality of a well completed within the Middle Trinity Aquifer depends upon several factors, including the degree of fracturing, the amount of time the groundwater is in contact with the rock it is flowing through, and the minerals that compose the rock. For example, groundwater that flows through gypsum and anhydrite beds, which are composed of calcium sulfate ( $\text{CaSO}_4$ ), will typically contain elevated levels of sulfate. Additionally, groundwater that has traveled a longer distance and has had longer contact time with aquifer sediments will also typically contain higher Total Dissolved Solids (TDS) than groundwater that has been in contact with the same rock for a shorter amount of time.

Underlying the Cretaceous rocks is the Ellenburger-San Saba Aquifer which extends from Coleman County south to Kendall County. The aquifer surrounds the Llano uplift and dips radially into the subsurface away from the center of the uplift. The aquifer is made up of the limestone and dolomite sequences of the Tanyard, Gorman, and Honeycut formations of the Ellenburger Group and the San Saba Limestone Member of the Wilberns Formation. Regional block faulting has left the aquifer highly compartmentalized and yields greatly depend on local geologic conditions. In the northern and northwestern portions of Blanco County significant development of subsurface solution features has occurred in the aquifer resulting in yields greater than 200 gpm. In most places the aquifer produces yields between 3 and 45 gpm with very good quality water, with the only concern being low to moderate hardness (Folleett, 1973).

The Hickory Aquifer is the basal aquifer within the subdivision. The Hickory aquifer has a similar structure to that of the Ellenburger-San Saba with a similar extent and a radial dip away from the Llano uplift. The aquifer consists of the Hickory Sandstone Member of the Riley Formation. The Hickory yields low to moderate quantities of water and water quality is variable. In Blanco County the quality can be fresh to saline with reports of yields up to 30 gpm (Folleett, 1973).



## Section IV: Aquifer Testing

### IV.1. Well Details

There are a total of eleven (11) wells located on the second phase of the subdivision. State Well No. 57-60-607 existed prior to commencement of this study while Wells No. 1 to No. 10 were recently constructed. The existing well was completed in the Upper Trinity and each of the newly constructed wells are completed in the Middle Trinity Aquifer. Figure 5 provides a map showing the locations of the wells on the property and includes all wells located within 1,000 ft. of the boundary. Figures 6 through 9 provide well profiles showing formation depths and well construction; Table 1 provides a well construction summary. Appendix B provides geophysical logs performed by BPGCD on Wells No. 2, No. 4, No. 6, No. 7, and No. 9; Appendix C provides the available state well reports for the wells.

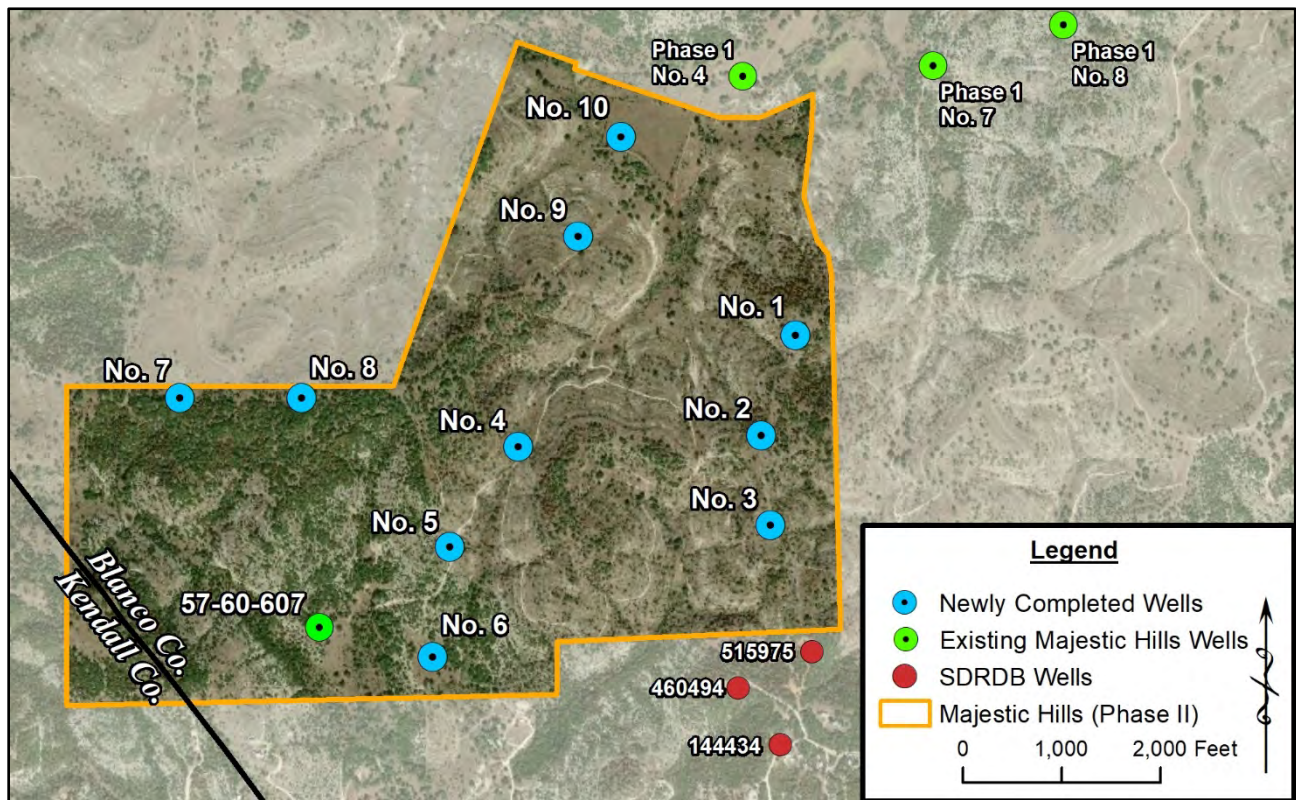


Figure 5: Well location map

To meet the guidelines for the Blanco County development rules and regulations and to adequately assess the availability of groundwater within the vicinity of the proposed subdivision, eight (8) different aquifer tests were conducted utilizing the newly completed Middle Trinity wells. The aquifer tests consisted of pumping one well for at least 24 hours followed by a recovery phase while measuring water levels in both the pumping and observation wells. This is in accordance with the testing procedures of the Texas Administrative Code (TAC) Title 30 Part 1 Chapter 230.8. Based on geophysical logs conducted by BPGCD on Wells No. 2, No. 4, No. 6, No. 7 and No. 9, the wells used in the tests are completed in the Middle Trinity Aquifer. The following provides a summary of the well construction for the ten (10) newly constructed wells used in the tests:



### **Well No. 1**

According to the State Well Report (Tracking No. 522254), drilling of Well No. 1 was completed by Apex Drilling, Inc. on September 13, 2019. The well was drilled to a depth of 705 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 705 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 620 ft. bgl and 680 to 705 ft. bgl with 4 1/2-inch screen from 620 to 680 ft. bgl. The September 17, 2019 geophysical log run by BPGCD on Well No. 2 indicates that the well is screened in within the Hensell Sand and Cow Creek Limestone of the Middle Trinity Aquifer.

### **Well No. 2**

According to the State Well Report (Tracking No. 522251), drilling of Well No. 2 was completed by Apex Drilling, Inc. on September 10, 2019. The well was drilled to a depth of 685 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 685 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 605 ft. bgl with 4 1/2-inch screen from 605 to 685 ft. bgl. The September 17, 2019 geophysical log run by BPGCD on the well indicates that the well is screened in within the Hensell Sand and Cow Creek Limestone of the Middle Trinity Aquifer.

### **Well No. 3**

According to the State Well Report (Tracking No. 522252), drilling of Well No. 3 was completed by Apex Drilling, Inc. on September 12, 2019. The well was drilled to a depth of 665 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 665 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 505 ft. bgl, 525 to 585 ft. bgl, 605 to 625 ft. bgl, and 645 to 665 ft. bgl with 4 1/2-inch screen from 505 to 525 ft. bgl, 585 to 605 ft. bgl, and 625 to 645 ft. bgl. The September 17, 2019 geophysical log run by BPGCD on Well No. 2 indicates that the well is screened in within the Lower Glen Rose Limestone and Hensell Sand of the Middle Trinity Aquifer.

### **Well No. 4**

According to the State Well Report (Tracking No. 522257), drilling of Well No. 4 was completed by Apex Drilling, Inc. on September 16, 2019. The well was drilled to a depth of 640 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 640 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 560 ft. bgl and 620 to 640 ft. bgl with 4 1/2-inch screen from 560 to 620 ft. bgl. The September 16, 2019 geophysical log run by BPGCD on the well indicates that the well is screened in within the Hensell Sand and Cow Creek Limestone of the Middle Trinity Aquifer.

### **Well No. 5**

According to the State Well Report (Tracking No. 522250), drilling of Well No. 5 was completed by Apex Drilling, Inc. on September 9, 2019. The well was drilled to a depth of 500 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 500 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 300 ft. bgl, 320 to 420 ft. bgl, 440 to 460 ft. bgl, and 480 to 500 ft. bgl with 4 1/2-inch screen from 300 to 320 ft. bgl, 420 to 440 ft. bgl, and 460 to 480 ft. bgl. The September 16, 2019 and September 18, 2019 geophysical logs run by BPGCD of Well No. 4 and No. 6 indicate that the well is screened in within the Lower Glen Rose Limestone of the Middle Trinity Aquifer.



### **Well No. 6**

According to the State Well Report (Tracking No. 522248), drilling of Well No. 6 was completed by Apex Drilling, Inc. on September 6, 2019. The well was drilled to a depth of 465 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 465 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 260 ft. bgl, 280 to 360 ft. bgl, 380 to 420 ft. bgl, and 440 to 460 ft. bgl with 4 1/2-inch screen from 260 to 280 ft. bgl, 360 to 380 ft. bgl, and 420 to 440 ft. bgl. The September 18, 2019 geophysical log run by BPGCD on the well indicates that the well is screened in within the Lower Glen Rose Limestone and Hensell Sand of the Middle Trinity Aquifer.

### **Well No. 7**

According to the State Well Report (Tracking No. 522260), drilling of Well No. 7 was completed by Apex Drilling, Inc. on September 18, 2019. The well was drilled to a depth of 640 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 640 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 440 ft. bgl, 460 to 540 ft. bgl, 560 to 600 ft. bgl, and 620 to 640 ft. bgl with 4 1/2-inch screen from 440 to 460 ft. bgl, 540 to 560 ft. bgl, and 600 to 620 ft. bgl. The September 19, 2019 geophysical log run by BPGCD on the well indicates that the well is screened in within the Lower Glen Rose Limestone and Hensell Sand of the Middle Trinity Aquifer.

### **Well No. 8**

According to the State Well Report (Tracking No. 522259), drilling of Well No. 8 was completed by Apex Drilling, Inc. on September 17, 2019. The well was drilled to a depth of 620 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 620 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 400 ft. bgl, 420 to 540 ft. bgl, 560 to 580 ft. bgl, and 600 to 620 ft. bgl with 4 1/2-inch screen from 400 to 420 ft. bgl, 540 to 560 ft. bgl, and 580 to 600 ft. bgl. The September 19, 2019 geophysical log run by BPGCD on Well No. 7 indicates that the well is screened in within the Lower Glen Rose Limestone and Hensell Sand of the Middle Trinity Aquifer.

### **Well No.9**

According to the State Well Report (Tracking No. 522256), drilling of Well No. 9 was completed by Apex Drilling, Inc. on September 14, 2019. The well was drilled to a depth of 565 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 565 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 465 ft. bgl with 4 1/2-inch screen from 465 to 565 ft. bgl. The September 16, 2019 geophysical log run by BPGCD on the well indicates that the well is screened in within the Lower Glen Rose Limestone and Hensell Sand of the Middle Trinity Aquifer.

### **Well No. 10**

According to the State Well Report (Tracking No. 522247), drilling of Well No. 10 was completed by Apex Drilling, Inc. on September 3, 2019. The well was drilled to a depth of 505 ft. bgl with a 8-inch borehole from 0 to 50 ft. bgl and a 6 1/4-inch borehole from 50 to 505 ft. bgl. The well was completed with 4 1/2-inch PVC casing set from +2 to 405 ft. bgl, 425 to 445 ft. bgl, and 485 to 505 ft. bgl with 4 1/2-inch screen from 405 to 425 ft. bgl and 445 to 485 ft. bgl. The September 16, 2019 geophysical log run by BPGCD on Well No. 9 indicates that the well is screened within the Lower Glen Rose Limestone and Hensell Sand of the Middle Trinity Aquifer.



**Table 1: Summary of Majestic Hills Phase II well construction**

Well	Tracking No.	Latitude	Longitude	Elevation (ft. MSL)	Date Completed	Aquifer	Well Depth (ft. bgs)	Static Water Level (ft. bgs; date; ft. MSL)	Borehole (diameter; ft. bgs)	Casing (diameter; material; ft. bgs)	Screen (diameter; material; ft. bgs)
Well No. 1	522254	30° 03' 17" N	98° 29' 14" W	1,809	9/13/2019	Middle Trinity	705	378.0 (9/30/2019) 1,432.1	8" (0-50) 6 1/4" (50-705)	4 1/2" PVC (+2-620) (680-705)	4 1/2" PVC Screen (620-680)
Well No. 2	522251	30° 03' 07" N	98° 29' 18" W	1,813	9/10/2019	Middle Trinity	685	374.9 (9/30/2019) 1,438.1	8" (0-50) 6 1/4" (50-685)	4 1/2" PVC (+2-605)	4 1/2" PVC Screen (605-685)
Well No. 3	522252	30° 02' 58" N	98° 29' 17" W	1,814	9/12/2019	Middle Trinity	665	317.6 (10/2/2019) 1,496.4	8" (0-50) 6 1/4" (50-665)	4 1/2" PVC (+2-505) (525-585) (605-625) (645-665)	4 1/2" PVC Screen (505-525) (585-605) (625-645)
Well No. 4	522257	30° 03' 06" N	98° 29' 46" W	1,742	9/16/2019	Middle Trinity	640	352.5 (9/23/2019) 1,389.6	8" (0-50) 6 1/4" (50-640)	4 1/2" PVC (+2-560) (620-640)	4 1/2" PVC Screen (560-620)
Well No. 5	522250	30° 02' 56" N	98° 29' 54" W	1,723	9/9/2019	Middle Trinity	500	205.0 (9/25/19) 1,518.0	8" (0-50) 6 1/4" (50-500)	4 1/2" PVC (+2-300) (320-420) (440-460) (480-500)	4 1/2" PVC Screen (300-320) (420-440) (460-480)
Well No. 6	522248	30° 02' 45" N	98° 29' 56" W	1,649	9/6/2019	Middle Trinity	465	137.0 (9/25/19) 1,512.0	8" (0-50) 6 1/4" (50-465)	4 1/2" PVC (+2-260) (280-360) (380-420) (440-460)	4 1/2" PVC Screen (260-280) (360-380) (420-440)
Well No. 7	522260	30° 03' 11" N	98° 30' 25" W	1,852	9/18/2019	Middle Trinity	640	298.8 (10/7/2019) 1,553.3	8" (0-50) 6 1/4" (50-640)	4 1/2" PVC (+2-440) (460-540) (560-600) (620-640)	4 1/2" PVC Screen (440-460) (540-560) (600-620)

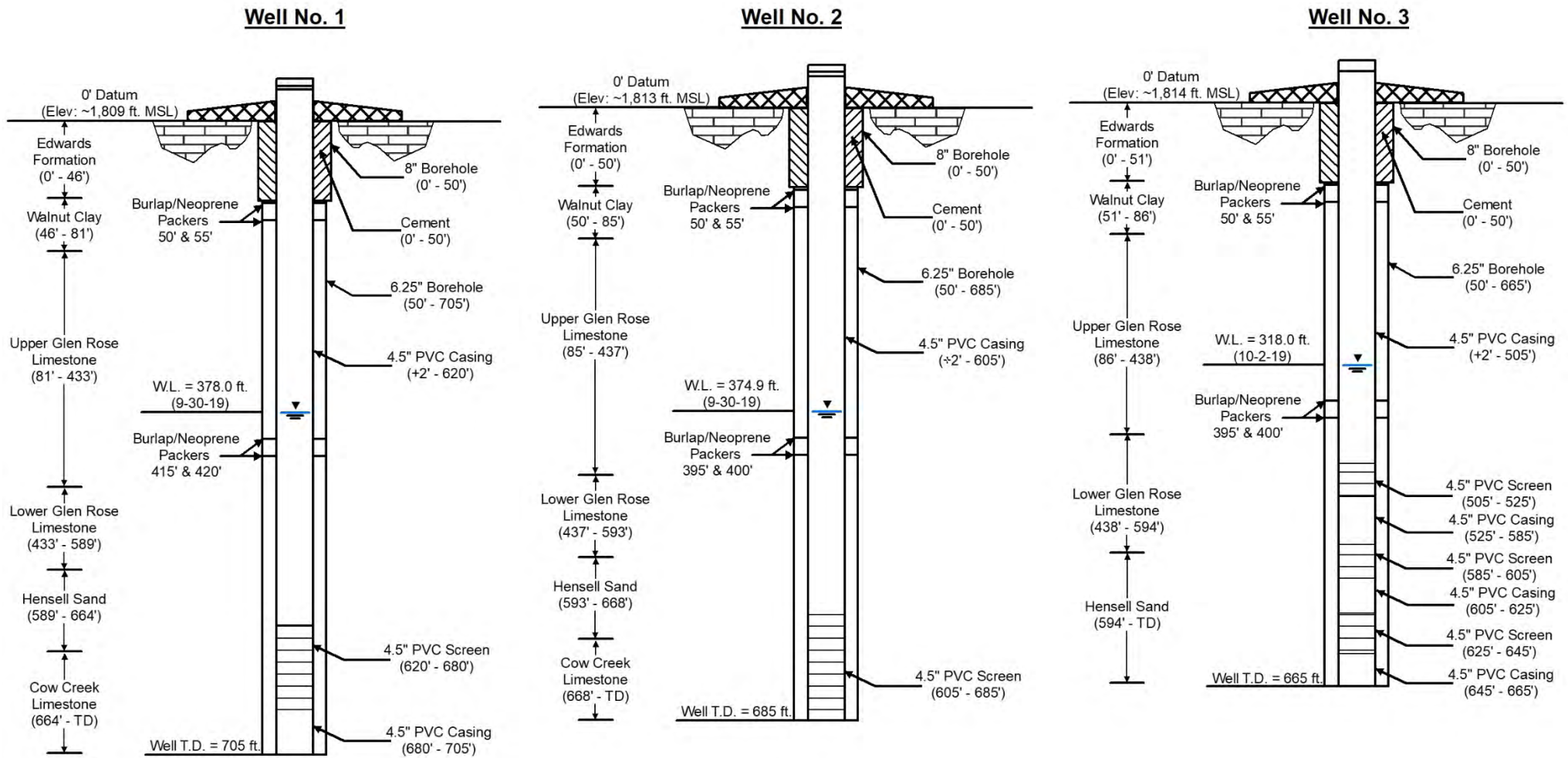


**Table 1: Summary of Majestic Hills Phase II well construction (continued)**

Well	Tracking No.	Latitude	Longitude	Elevation (ft. MSL)	Date Completed	Aquifer	Well Depth (ft. bgs)	Static Water Level (ft. bgs; date; ft. MSL)	Borehole (diameter; ft. bgs)	Casing (diameter; material; ft. bgs)	Screen (diameter; material; ft. bgs)
Well No. 8	522259	30° 03' 11" N	98° 30' 11" W	1,831	9/17/2019	Middle Trinity	620	343.2 (10/7/19) 1,487.8	8" (0-50) 6 1/4" (50-620)	4 1/2" PVC (+2-400) (420-540) (560-580) (600-620)	4 1/2" PVC Screen (400-420) (540-560) (580-600)
Well No. 9	522256	30° 03' 27" N	98° 29' 39" W	1,714	9/14/2019	Middle Trinity	565	283.0 (9/18/2019) 1,431.0	8" (0-50) 6 1/4" (50-565)	4 1/2" PVC (+2-465)	4 1/2" PVC Screen (465-565)
Well No. 10	522247	30° 03' 37" N	98° 29' 34" W	1,615	9/3/2019	Middle Trinity	505	191.1 (9/9/2019) 1,423.9	8" (0-50) 6 1/4" (50-505)	4 1/2" PVC (+2-405) (425-445) (485-505)	4 1/2" PVC Screen (405-425) (445-485)
St. Well	57-60-607	30° 02' 48" N	98° 30' 09" W	1,658	8/18/1967	Upper Trinity	110	72.1 (10/24/1968) 1,586.8	N/A	4 1/2" PVC (0-100)	4 1/2" PVC Screen (100-110)
Well Report	144434	30° 02' 36" N	98° 29' 16" W	1,827	6/2/2008	Middle Trinity	444	306.0 (6-2-2008) 1,521.0	8 5/8" (0-50) 6 3/4' (50-444)	5" PVC (+2-284) (304-364)	5" PVC Screen (284-304) (364-444)
Well Report	460494	30° 02' 41.7"N	98° 29' 20.8"W	1,762	9/12/2017	Middle Trinity	418	189.0 (9/12/2017) 1,573.0	9" (0-460)	4 1/2" PVC (+2-398) (398-418)	N/A
Well Report	515975	30° 02' 45.3"N	98° 29' 12.3"W	1,798	6/3/2019	Middle Trinity	418	272.0 (6/2/2019) 1,526.0	12" (0-7) 9' (7-460)	4 1/2" PVC (+2-338) (358-398)	4 1/2" PVC Screen (338-358) (398-418)

Note: ft. = feet; bgl = below ground level; gpm = gallons per minute; MSL = Mean Sea Level; N/A = not available; Estimated Well Yields (gpm): Well Report 515975 = 10, Well Report 460494 = 10, & Well Report 144434 = 33.



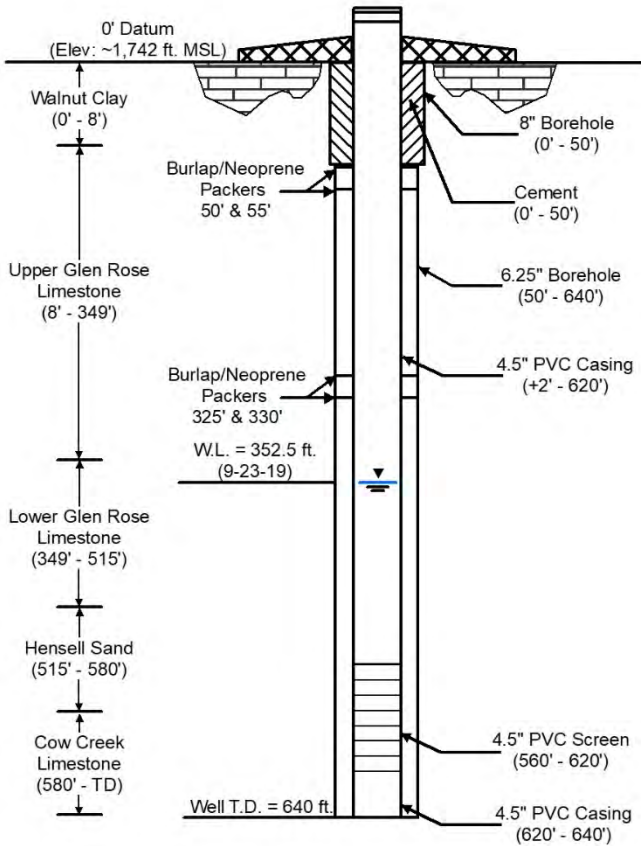


Notes:  
 - Well profiles created with the information from State Well Reports and downhole geophysical logs (9-17-19).  
 - Figure for schematic purposes; not drawn to scale.

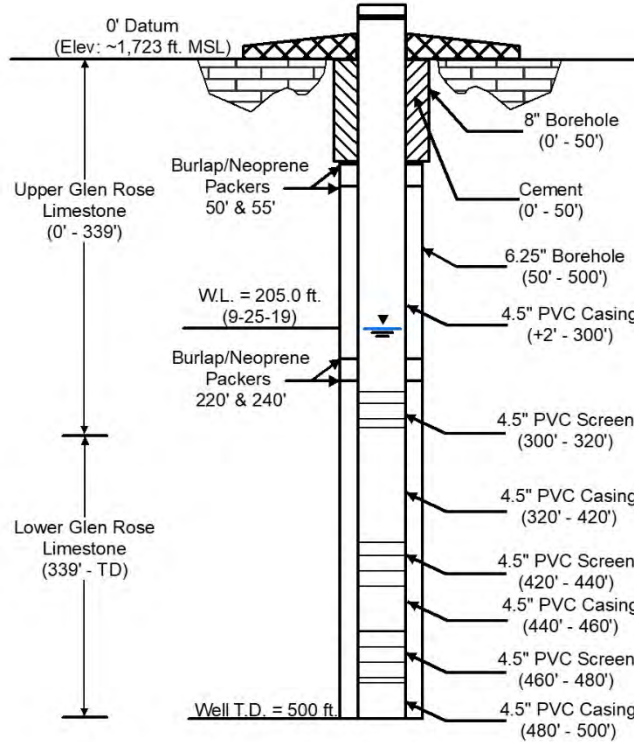
Figure 6: Well construction profiles of Wells No. 1, No. 2, and No. 3



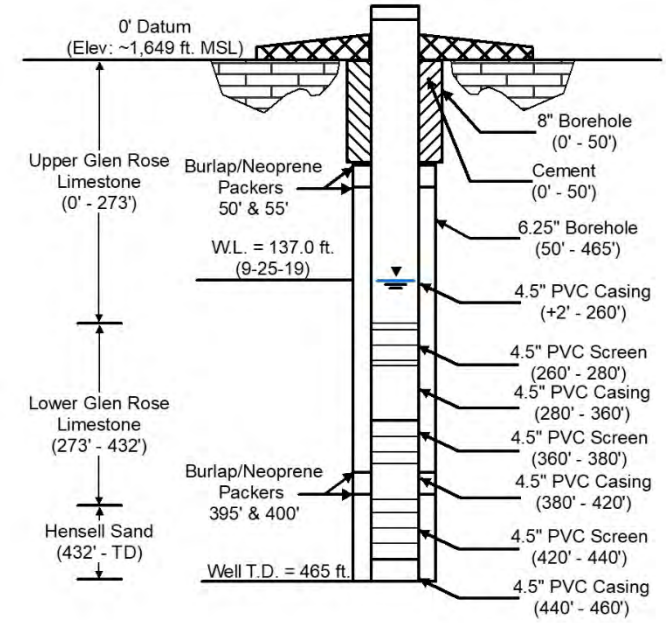
**Well No. 4**



**Well No. 5**



**Well No. 6**

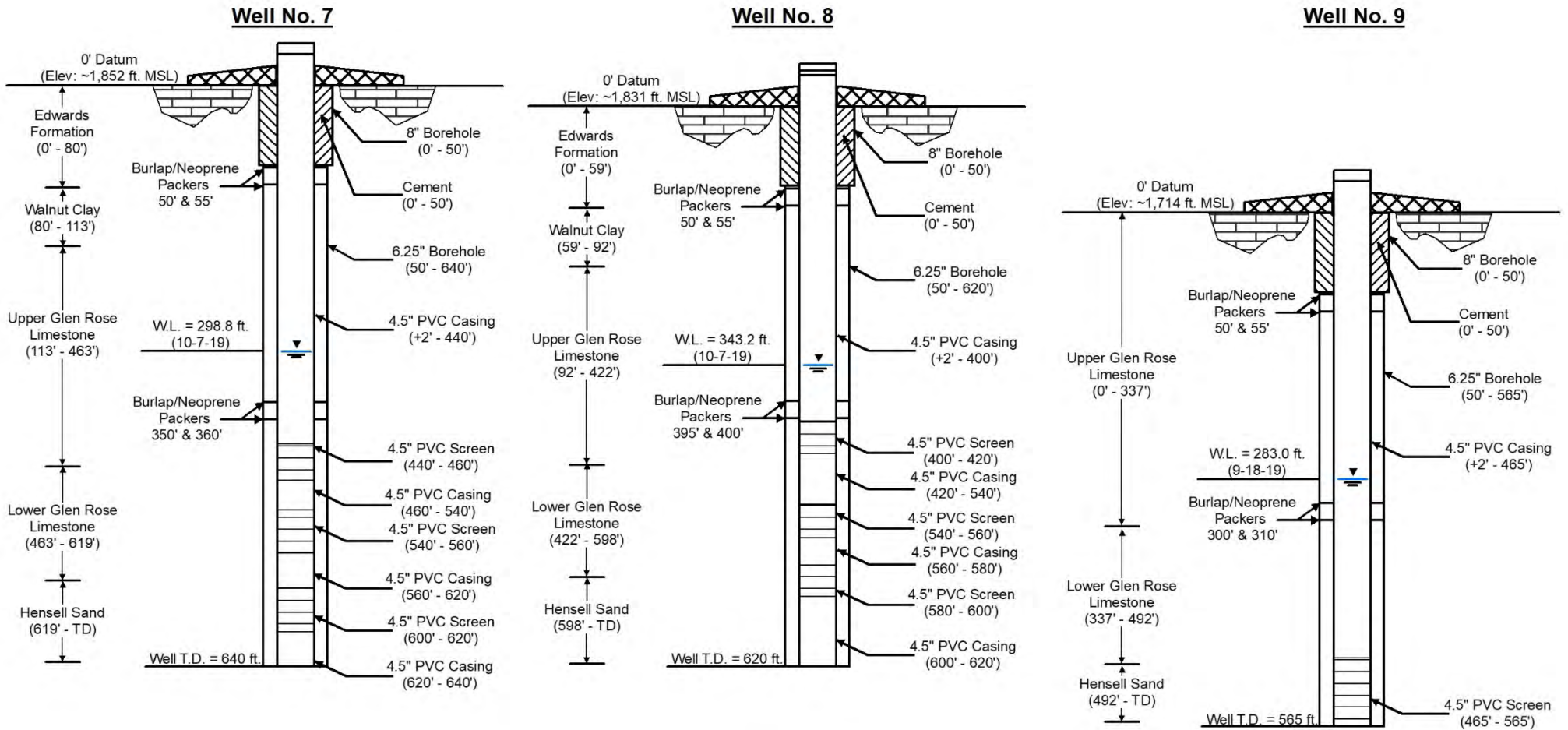


Notes:

- Well profiles created with the information from State Well Reports and downhole geophysical logs (9-16-19) & (9-18-19).
- Figure for schematic purposes; not drawn to scale.

**Figure 7: Well construction profiles of Wells No. 4, No. 5, and No. 6**



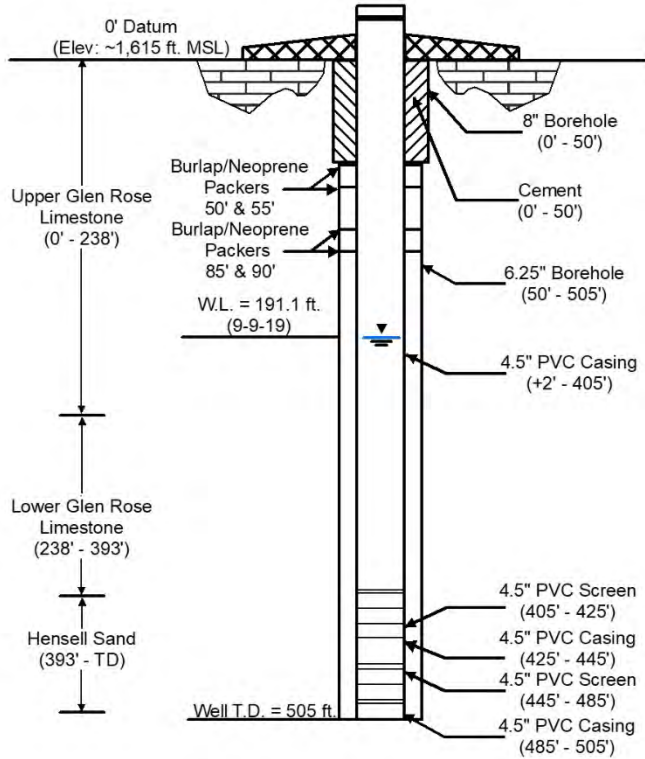


Notes:  
 - Well profiles created with the information from State Well Reports and downhole geophysical logs (9-16-19) & (9-19-19).  
 - Figure for schematic purposes; not drawn to scale.

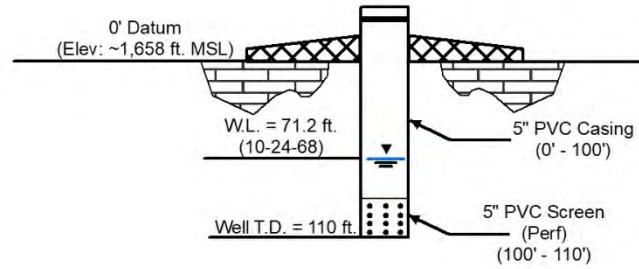
Figure 8: Well construction profiles of Wells No. 7, No. 8, and No. 9



**Well No. 10**



**St. Well No. 57-60-607**



Notes:

- Well profiles created with the information from State Well Reports and downhole geophysical logs (9-16-19).
- Figure for schematic purposes; not drawn to scale.

**Figure 9: Well construction profiles of Well No. 10 and St. Well No. 57-60-607**





## IV.2. Aquifer Testing

Eight (8) aquifer tests were performed to assess the hydrogeologic properties of the Middle Trinity Aquifer within the subdivision. For each aquifer test, Apex Drilling, Inc. set a submersible pump within the pumping well that was capable of varying its discharge rate. Prior to the start of the aquifer test, pressure transducers capable of measuring the water level and temperature at one minute intervals were placed in the pumping and observation wells to gather data for the duration of each test. Meter readings and water levels were taken prior to, during, and at the conclusion of the tests. Each aquifer test had at least a 24-hour pumping phase followed by a recovery phase. The data from the aquifer test was analyzed using the Cooper-Jacob method, Table 2 provides a summary of the aquifer testing results; Appendix D provides the results of the aquifer analysis; and Appendix E provides well efficiency calculations for each well.

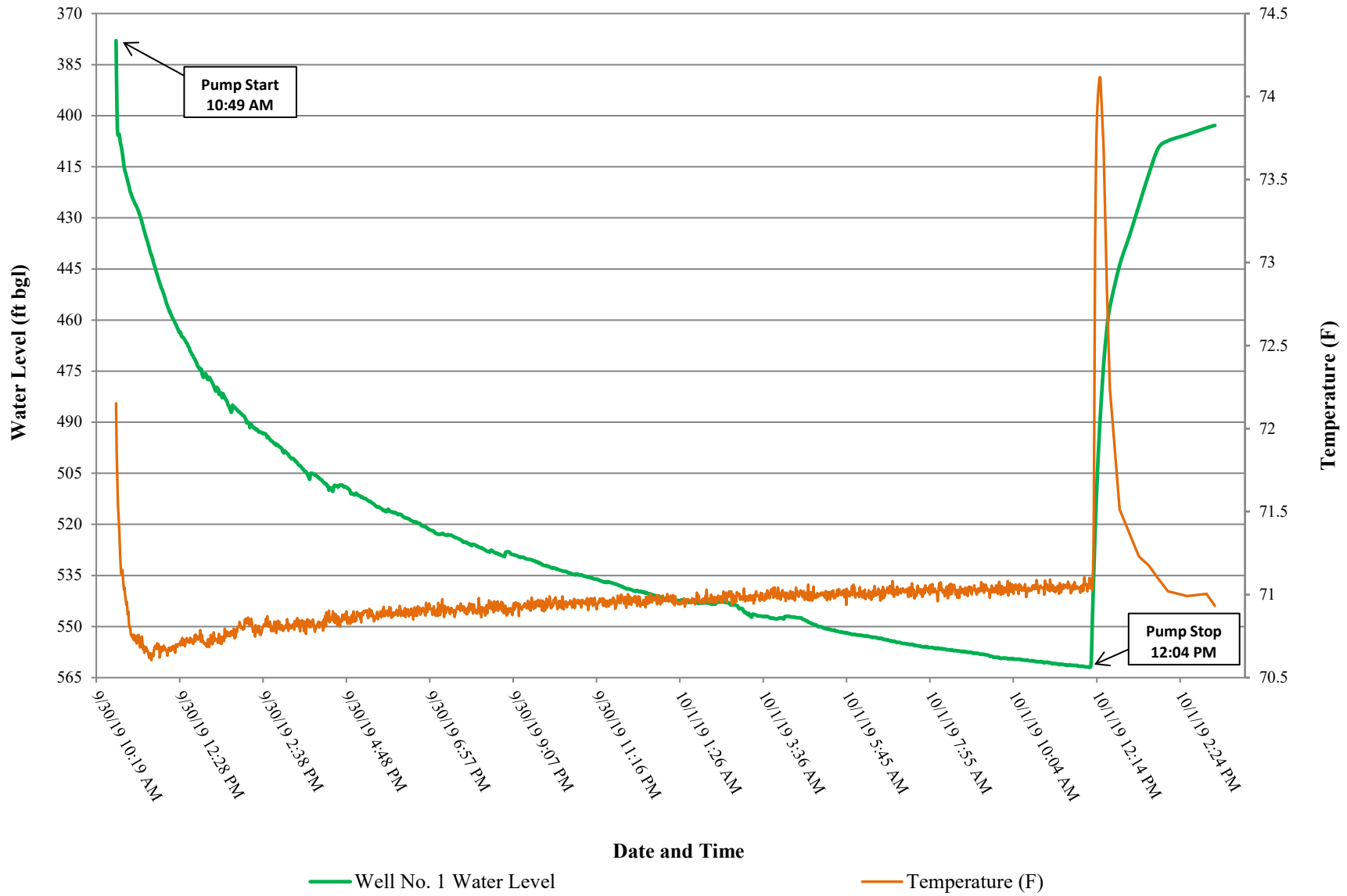
### **Aquifer Test of Well No. 1 (September 30, 2019):**

The aquifer test of Well No. 1 (pumping well) was conducted on September 30, 2019 with Well No. 2 (observation well), approximately 1,070 ft. away from the pumping well. A 3 horsepower submersible pump was set in the pumping well on 660 feet of 1 1/4-inch PVC column pipe. The pump was started at 10:49 A.M. on September 30, 2019; the water level was monitored for 25.25 hours of pumping and 3.22 hours of recovery. Prior to the pumping phase of the aquifer test, the static water level of the pumping well was measured at 378.0 ft. bgl (1,432.1 ft. MSL) and the static water level of the observation well was measured at 374.9 ft. bgl (1,438.1 ft. MSL).

Well No. 1 was pumped at an average rate of 9.4 gpm and the final measured pump rate was 9.0 gpm with 183.84 feet of drawdown resulting in a specific capacity of 0.05 gpm/ft. When compared to the theoretical specific capacity (0.03 gpm/ft.), Well No. 1 produced at an efficiency of 117%. The Cooper-Jacob analysis resulted in a transmissivity of 6.7 ft<sup>2</sup>/day, and a hydraulic conductivity of 0.02 ft./day. A maximum drawdown of 2.18 feet was observed in Well No. 2 indicating a hydraulic connection between the two wells. Due to the observed hydraulic connection, we calculated a storativity value for Well No. 2 of  $7.2 \times 10^{-5}$ . Figure 10 provides a hydrograph of the pumping well and temperature over the duration of the aquifer test; Figure 11 provides a hydrograph of both the pumping and observation well over the duration of the test.

The water level within Well No. 1 declined steadily throughout most of the pumping phase reaching near a stable pumping level towards the latter portion of the pumping phase (Figure 10). Small fluctuations in water level during the pumping phase were observed which may indicate response to some well development occurring. The water level in the observation well indicated a small hydraulic response to pumping from Well No. 1 with approximately 2.18 ft. of measured drawdown (Figure 11). After the pump was shut off, recovery was measured in the pumping well; the water level in the pumping well recovered 86% in approximately 3.2 hours. There were no aquifer boundary conditions observed during the testing.





**Figure 10: Aquifer test hydrograph of Well No. 1 (September 30, 2019)**



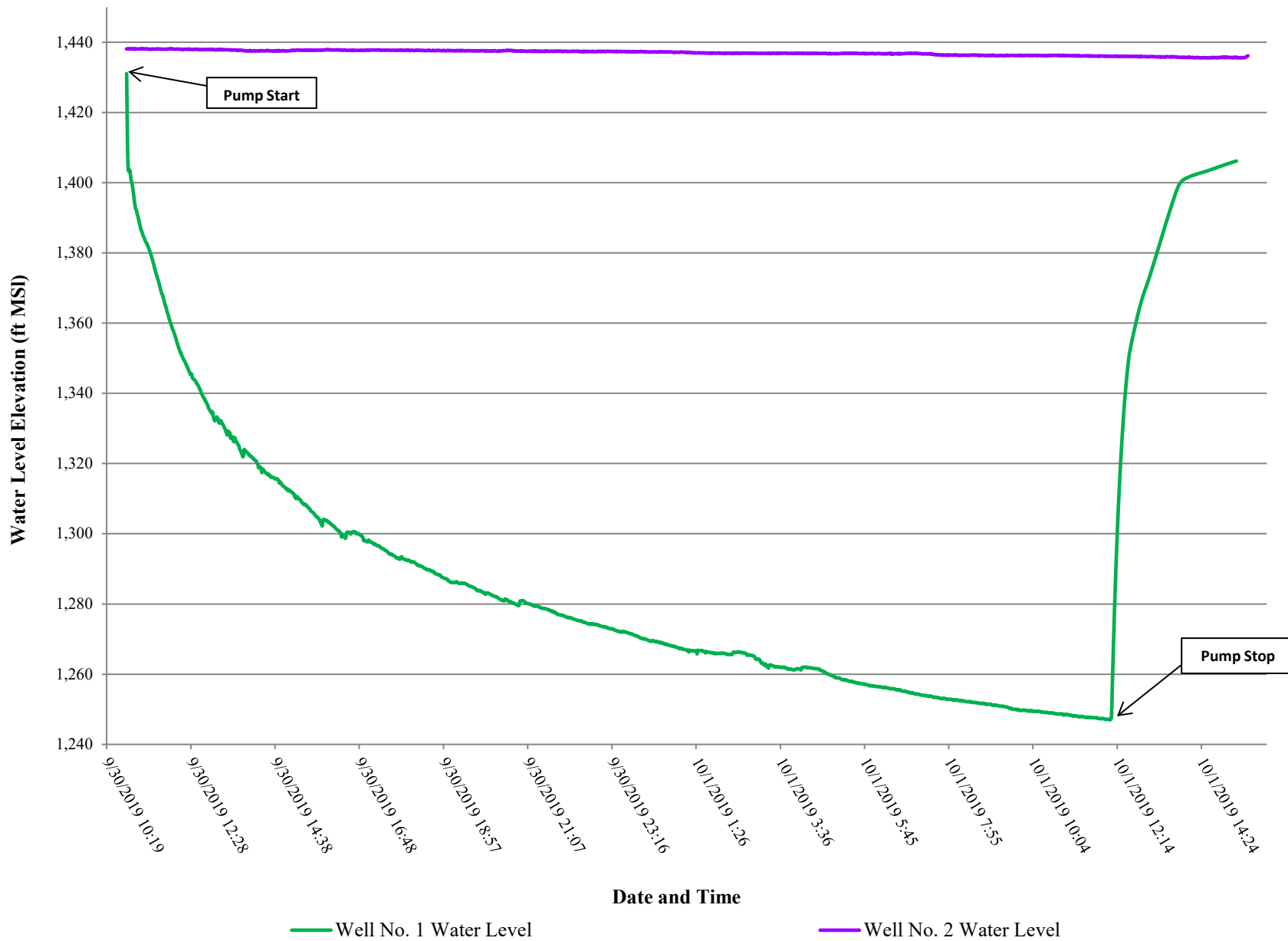


Figure 11: Aquifer test hydrograph of Well No. 1 and Observation Well No. 2 (September 30, 2018)



### **Aquifer Test of Well No. 3 (October 2, 2019):**

The aquifer test of Well No. 3 (pumping well) was conducted on October 2, 2019 with Well No. 2 (observation well), approximately 905 ft. away from the pumping well. A 3 horsepower submersible pump was set in the pumping well on 620 feet of 1 1/4-inch PVC column pipe. The pump was started at 12:04 P.M. on October 2, 2019; the water level was monitored for 24.03 hours of pumping and 21.2 hours of recovery. Prior to the pumping phase of the aquifer test, the static water level of the pumping well was measured at 317.6 ft. bgl (1,496.4 ft. MSL) and the static water level of the observation well was measured at 378.1 ft. bgl (1,434.1 ft. MSL).

Well No. 3 was pumped at an initial rate of 12.5 gpm; however, in order to prevent the pumping level from reaching the pump, the discharge rate was reduced to approximately 7 gpm. The well produced at an average rate of 6.5 gpm over the 24-hour period and the final measured pump rate was 6.1 gpm with 281.78 feet of drawdown resulting in a specific capacity of 0.02 gpm/ft. When compared to the theoretical specific capacity (0.03 gpm/ft.), Well No. 3 produced at an efficiency of 67%. The Cooper-Jacob analysis resulted in a transmissivity of 6.7 ft<sup>2</sup>/day, and a hydraulic conductivity of 0.03 ft./day. A maximum drawdown of 3.84 feet was observed in Well No. 2 approximately 20 hours after the pumping well was shut off, indicating a hydraulic connection between the two wells. Due to the observed hydraulic connection, we calculated a storativity value for Well No. 2 of  $4.5 \times 10^{-5}$ . Figure 12 provides a hydrograph of the pumping well and temperature over the duration of the aquifer test; Figure 13 provides a hydrograph of both the pumping and observation well over the duration of the test.

Approximately 90 minutes into the test, the pumping rate was adjusted to 7 gpm in Well No. 3 to prevent the water level from reaching the pump. After the pumping rate was adjusted, the water level slowly dropped throughout the duration of the pumping phase and stabilized at approximately 600 ft. bgl (Figure 12). According to the geophysical log of Well No. 2, Well No. 3 is screened within the Lower Glen Rose Limestone and Hensell Sand while Well No. 2 is screened within the Hensell Sand and Cow Creek Limestone; both wells have packers placed at the base of the Upper Glen Rose Limestone. The higher static water level observed in Well No. 3 may be attributed to the well also being screened within the Lower Glen Rose Limestone. The water level in the observation well slowly dropped throughout the test and displayed a delayed response to the shutting off of the pump at the end of the recovery phase (Figure 13). After the pump was shut off, recovery was measured in both wells; the water level in the pumping well recovered 90% in approximately 5.4 hours. There were no aquifer boundary conditions observed during the testing.



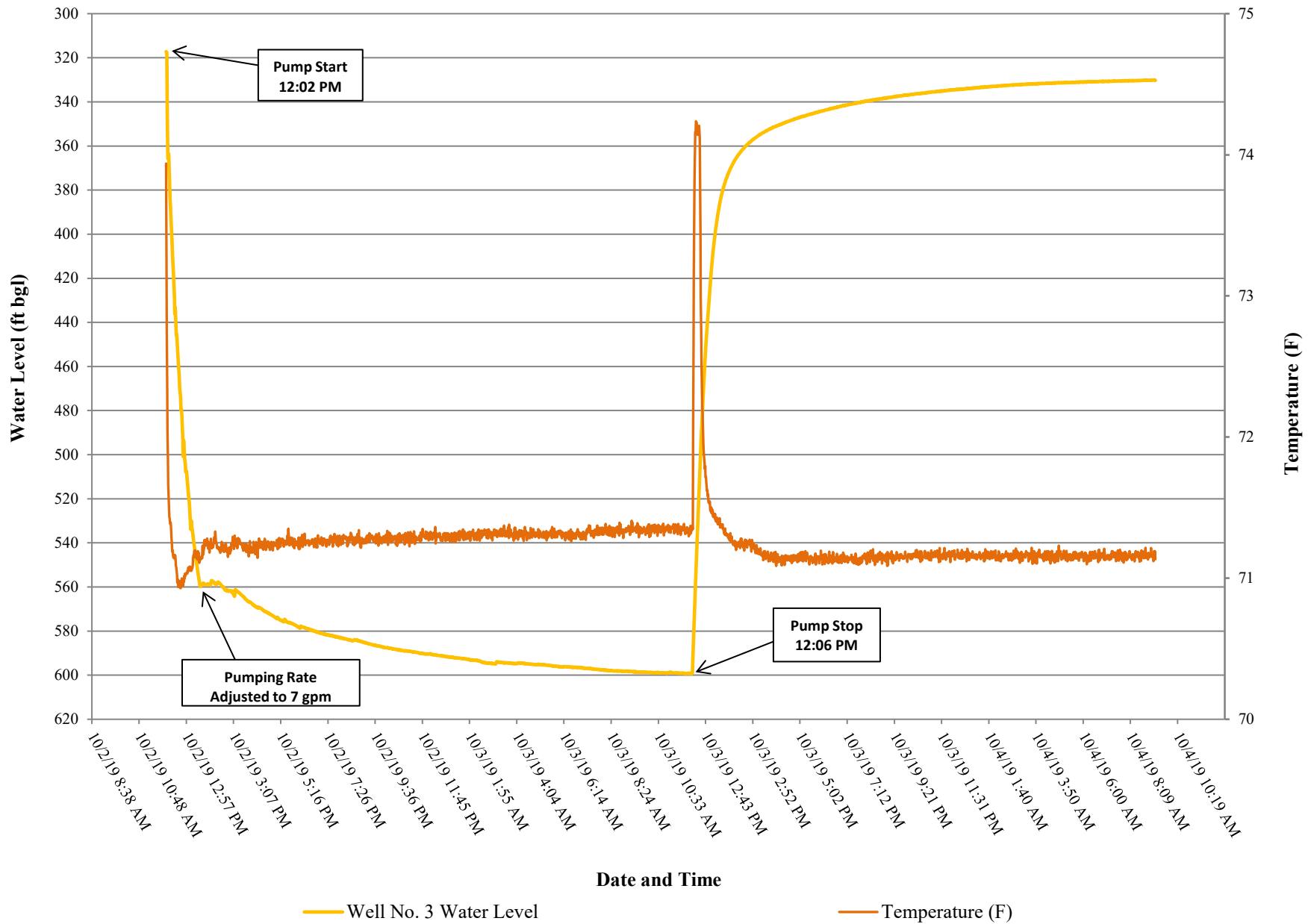


Figure 12: Aquifer test hydrograph of Well No. 3 (October 2, 2019)



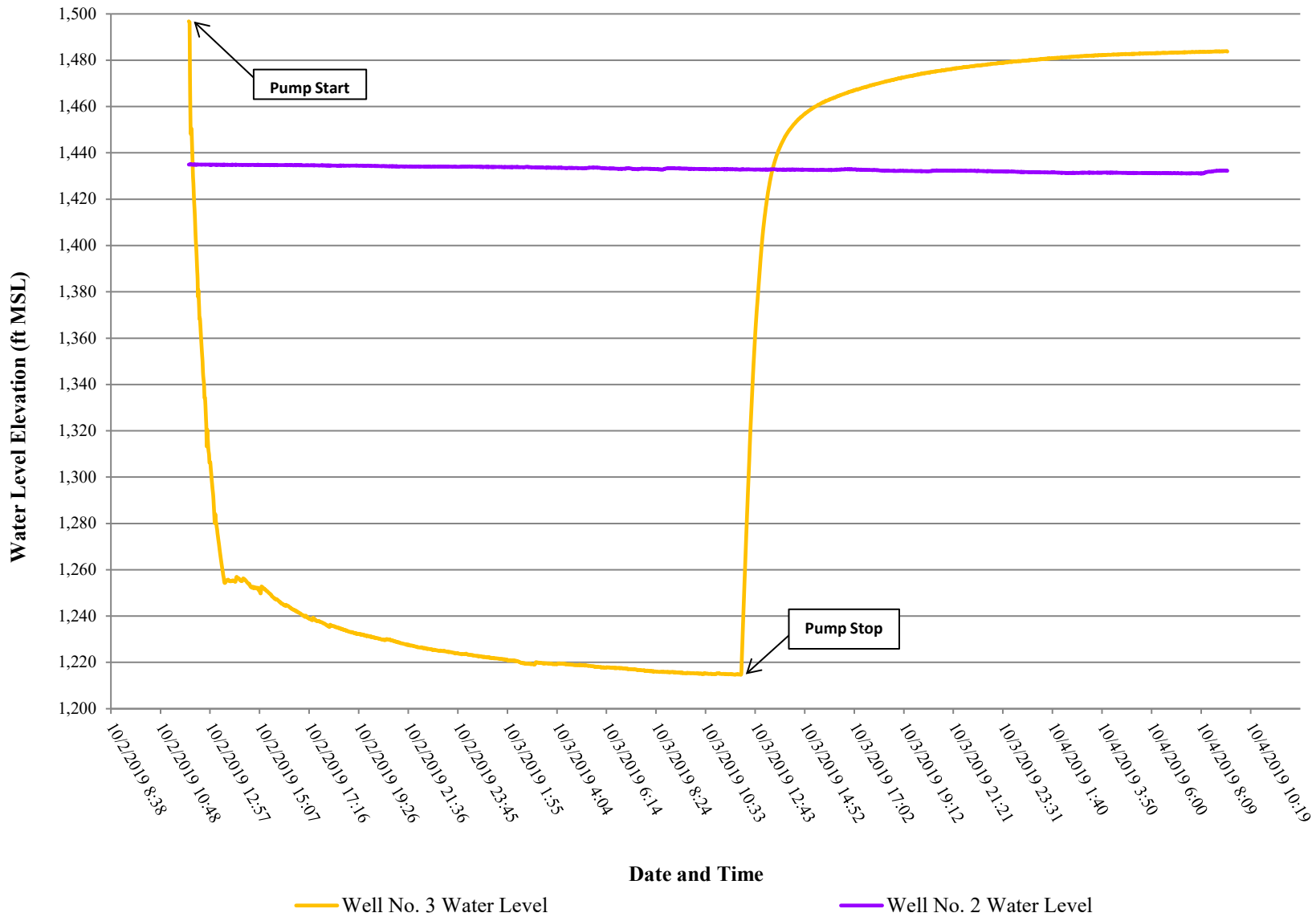


Figure 13: Aquifer test hydrograph of Well No. 3 and Observation Well No. 2 (October 2, 2019)



#### **Aquifer Test of Well No. 4 (September 23, 2019):**

The aquifer test of Well No. 4 (pumping well) was conducted on September 23, 2019 with Well No. 5 (observation well), approximately 1,230 ft. away from the pumping well. A 3 horsepower submersible pump was set in the pumping well on 620 feet of 1 1/4-inch PVC column pipe. The pump was started at 10:02 A.M. on September 23, 2019; the water level was monitored for 25.02 hours of pumping and 22.17 hours of recovery. Prior to the pumping phase of the aquifer test, the static water level of the pumping well was measured at 352.5 ft. bgl (1,389.6 ft. MSL) and the static water level of the observation well was measured at 204.8 ft. bgl (1,518.7 ft. MSL).

Well No. 4 was pumped at an initial rate of 12.5 gpm; however, in order to prevent the pumping level from reaching the pump, the discharge rate was reduced to approximately 4.2 gpm. The well produced at an average rate of 4.2 gpm over the 25-hour period and the final measured pump rate was 4.0 gpm with 128.20 feet of drawdown resulting in a specific capacity of 0.03 gpm/ft. When compared to the theoretical specific capacity (0.03 gpm/ft.), Well No. 4 produced at an efficiency of 100%. The Cooper-Jacob analysis resulted in a transmissivity of 6.3 ft<sup>2</sup>/day, and a hydraulic conductivity of 0.02 ft./day. There was no observable drawdown within the observation well, therefore a storativity could not be calculated. Figure 14 provides a hydrograph of the pumping well and temperature over the duration of the aquifer test; Figure 15 provides a hydrograph of both the pumping and observation well over the duration of the test.

Approximately 3 minutes into the test, the pumping rate was adjusted to 4.2 gpm in Well No. 4 to prevent the water level from reaching the pump. After the pumping rate was adjusted, the water level slowly dropped throughout the duration of the pumping phase stabilizing at approximately 480 ft. bgl (Figure 14). According to the geophysical logs of Well No. 4 and No. 6, Well No. 5 is screened within the Lower Glen Rose Limestone while Well No. 4 is screened within the Hensell Sand and Cow Creek Limestone; both wells have packers placed at the base of the Upper Glen Rose Limestone. The higher static water level observed in Well No. 4 may be attributed to the well being screened within the Lower Glen Rose Limestone. The water level in the observation well did not show a noticeable response directly related to starting or stopping the pump in Well No. 4 and maintained a stable water level throughout the test (Figure 15). The yield of Well No. 5 was estimated by the driller to be 60 gpm. After the pump was shut off, the water level in the pumping well recovered 85% in approximately 22 hours. There were no aquifer boundary conditions observed during the testing.



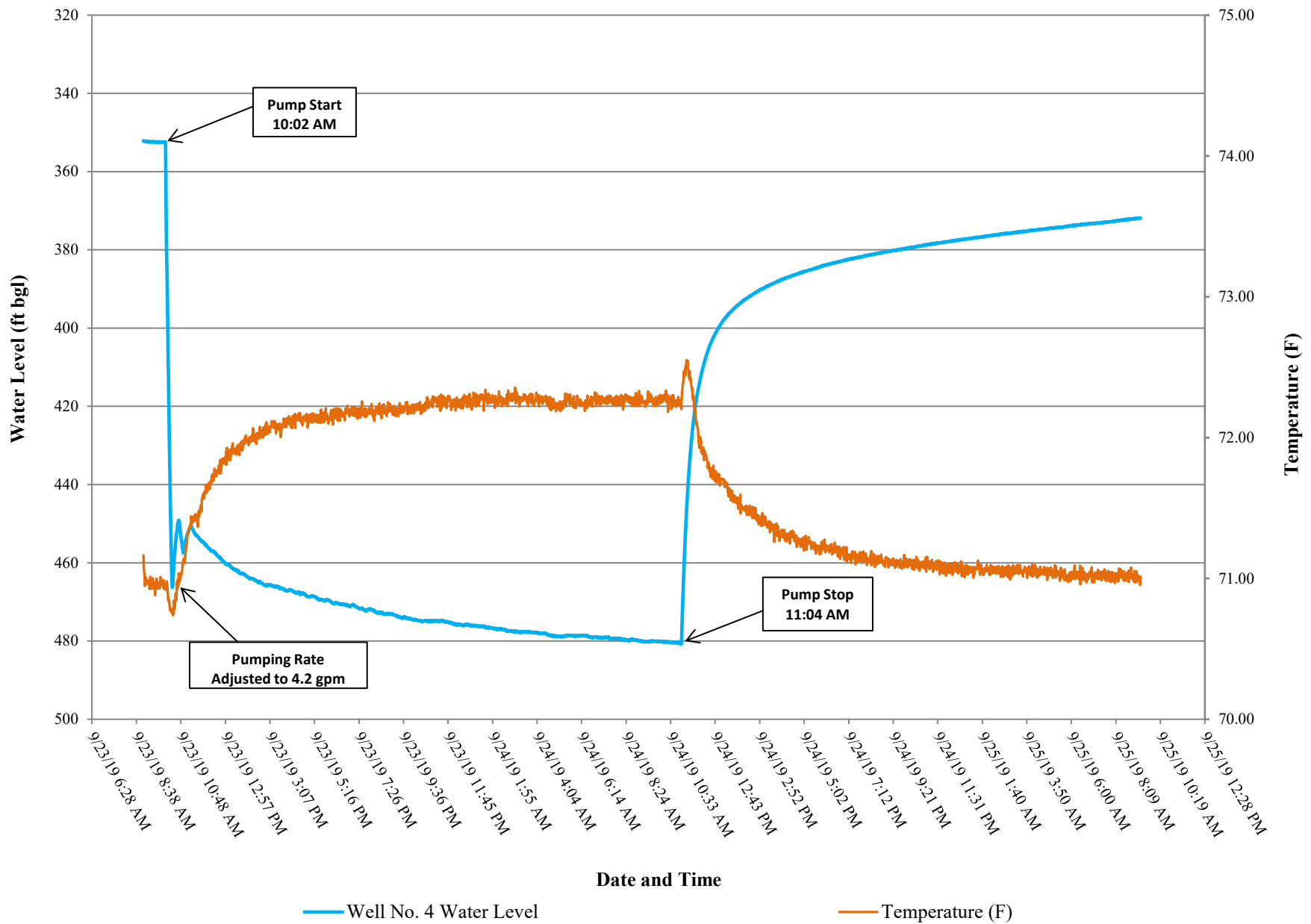


Figure 14: Aquifer test hydrograph of Well No. 4 (September 23, 2019)





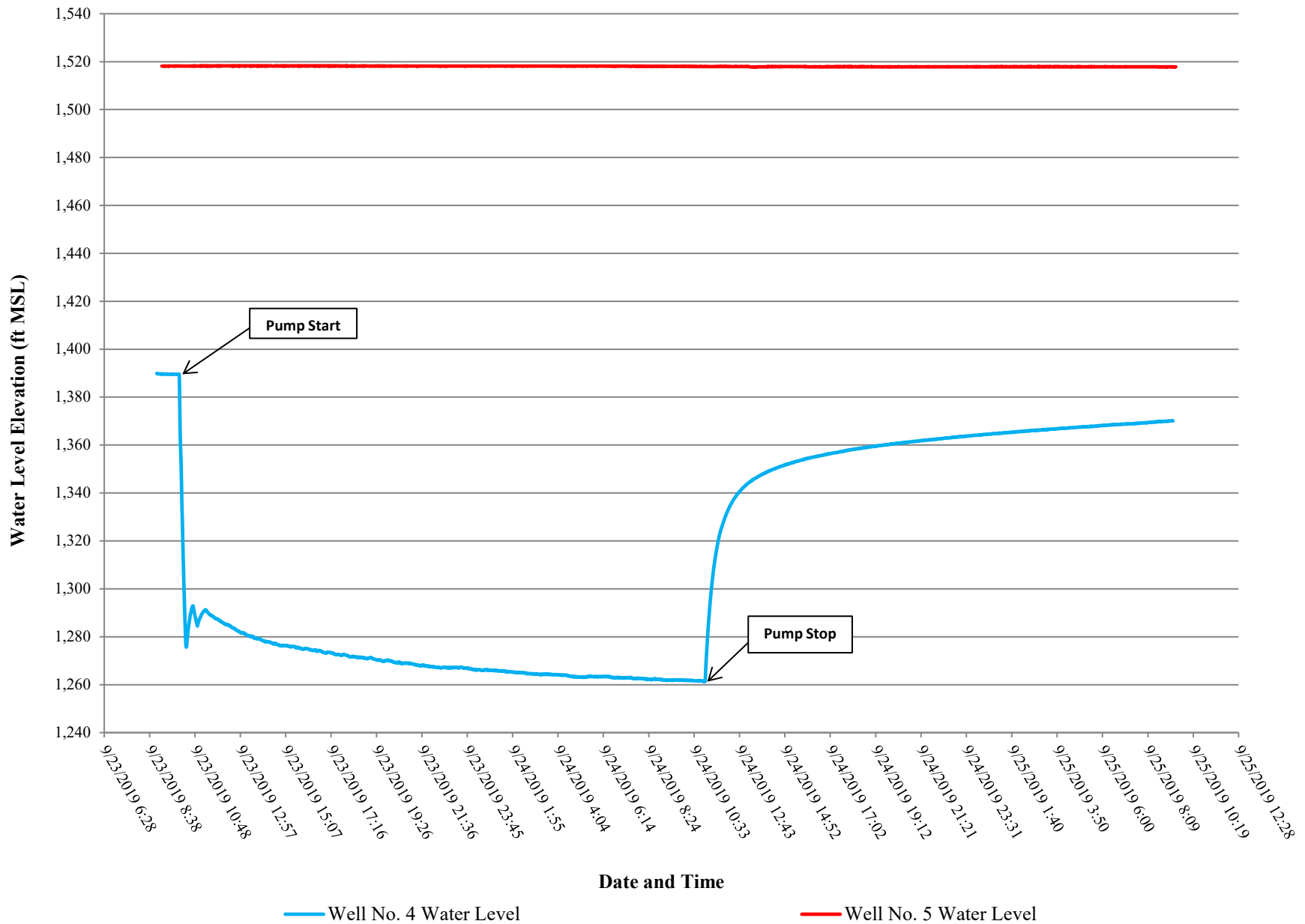


Figure 15: Aquifer test hydrograph of Well No. 4 and Observation Well No. 5 (September 23, 2019)



### **Aquifer Test of Well No. 6 (September 25, 2019):**

The aquifer test of Well No. 6 (pumping well) was conducted on September 25, 2019 with Well No. 5 (observation well), approximately 1,126 ft. away from the pumping well. A 10-horsepower submersible pump was set in the pumping well on 420 feet of 2-inch PVC column pipe. The pump was started at 10:13 A.M. on September 25, 2019; the water level was monitored for 24.43 hours of pumping and 22 hours of recovery. Prior to the pumping phase of the aquifer test, the static water level of the pumping well was measured at 137.0 ft. bgl (1,512.0 ft. MSL) and the static water level of the observation well was measured at 205.2 ft. bgl (1,517.8 ft. MSL).

Well No. 6 was pumped at an average rate of 33.2 gpm and the final measured pump rate was 33.0 gpm with 10.49 feet of drawdown resulting in a specific capacity of 3.15 gpm/ft. When compared to the theoretical specific capacity (1.56 gpm/ft.), Well No. 6 produced at an efficiency of 202%. The Cooper-Jacob analysis resulted in a transmissivity of 492.4 ft<sup>2</sup>/day, and a hydraulic conductivity of 2.56 ft./day. A maximum drawdown of 3.03 feet was observed in the observation well approximately 24 hours into the pumping phase. Due to the observed hydraulic connection, we calculated a storativity value for Well No. 5 of  $3.8 \times 10^{-5}$ . Figure 16 provides a hydrograph of the pumping well and temperature over the duration of the aquifer test; Figure 17 provides a hydrograph of both the pumping and observation well over the duration of the test.

The water level in Well No. 6 initially stabilized early in the test at 145.5 ft. bgl then recovered approximately 2 ft. followed by a slow decline in water level throughout the pumping phase. This water level fluctuation may be due to a recharge boundary condition or more likely due to well development. After the fluctuation, the water level slowly dropped throughout the duration of the pumping phase (Figure 16). According to the geophysical logs of Well No. 4 and No. 6, Well No. 5 is screened within the Lower Glen Rose Limestone while Well No. 6 is screened within the Lower Glen Rose Limestone and Hensell Sand; both wells have packers placed in the Upper Glen Rose Limestone; Well No. 6 has a packer also placed in the Lower Glen Rose Limestone. The water level in the observation well showed a noticeable response directly related to starting and stopping the pump in Well No. 6 (Figure 17). After the pump was shut off, recovery was measured in both wells; the water level in the pumping well recovered 90% in approximately 18 hours. There were no aquifer boundary conditions observed during the testing.



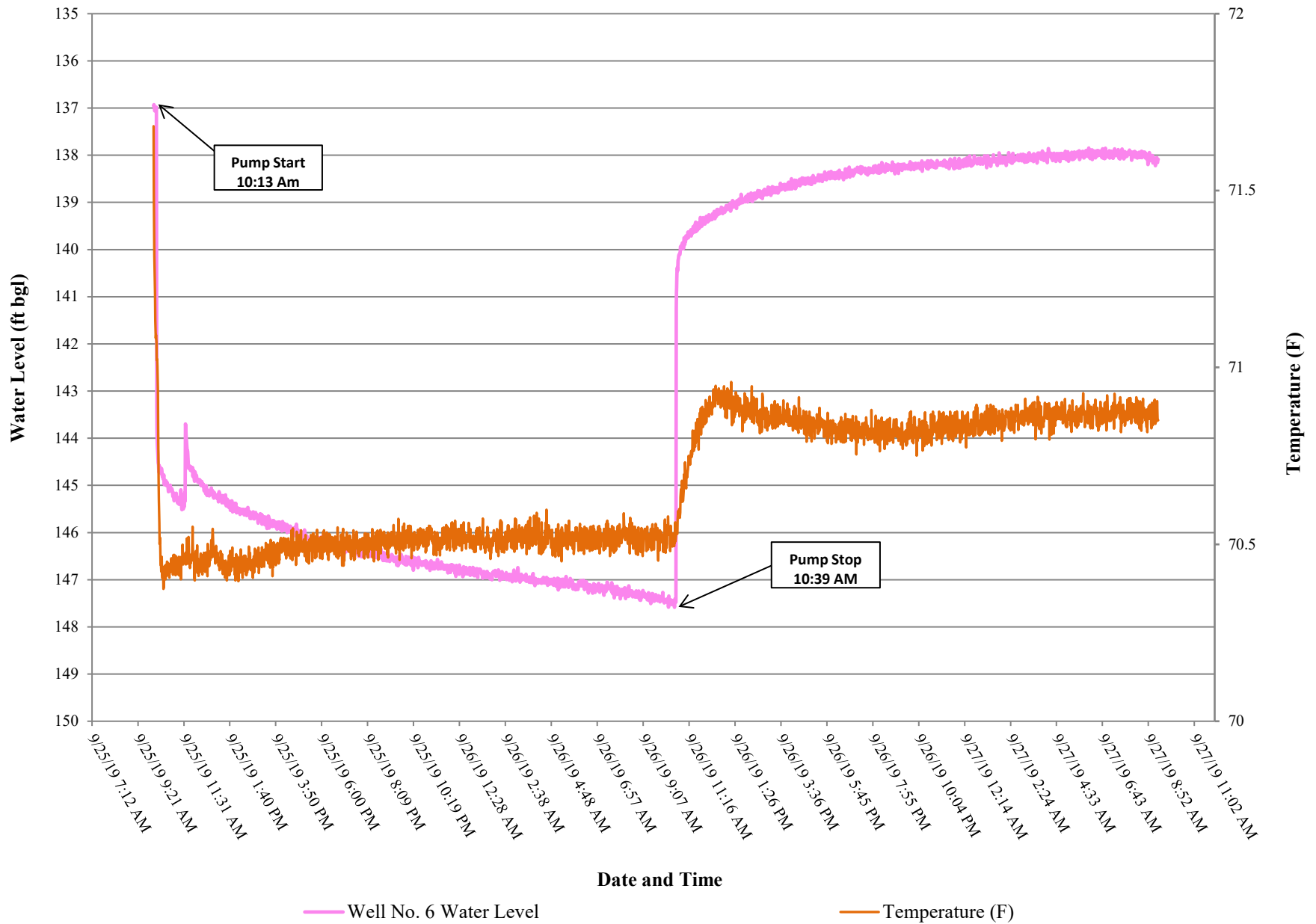


Figure 16: Aquifer test hydrograph of Well No. 6 (September 25, 2019)



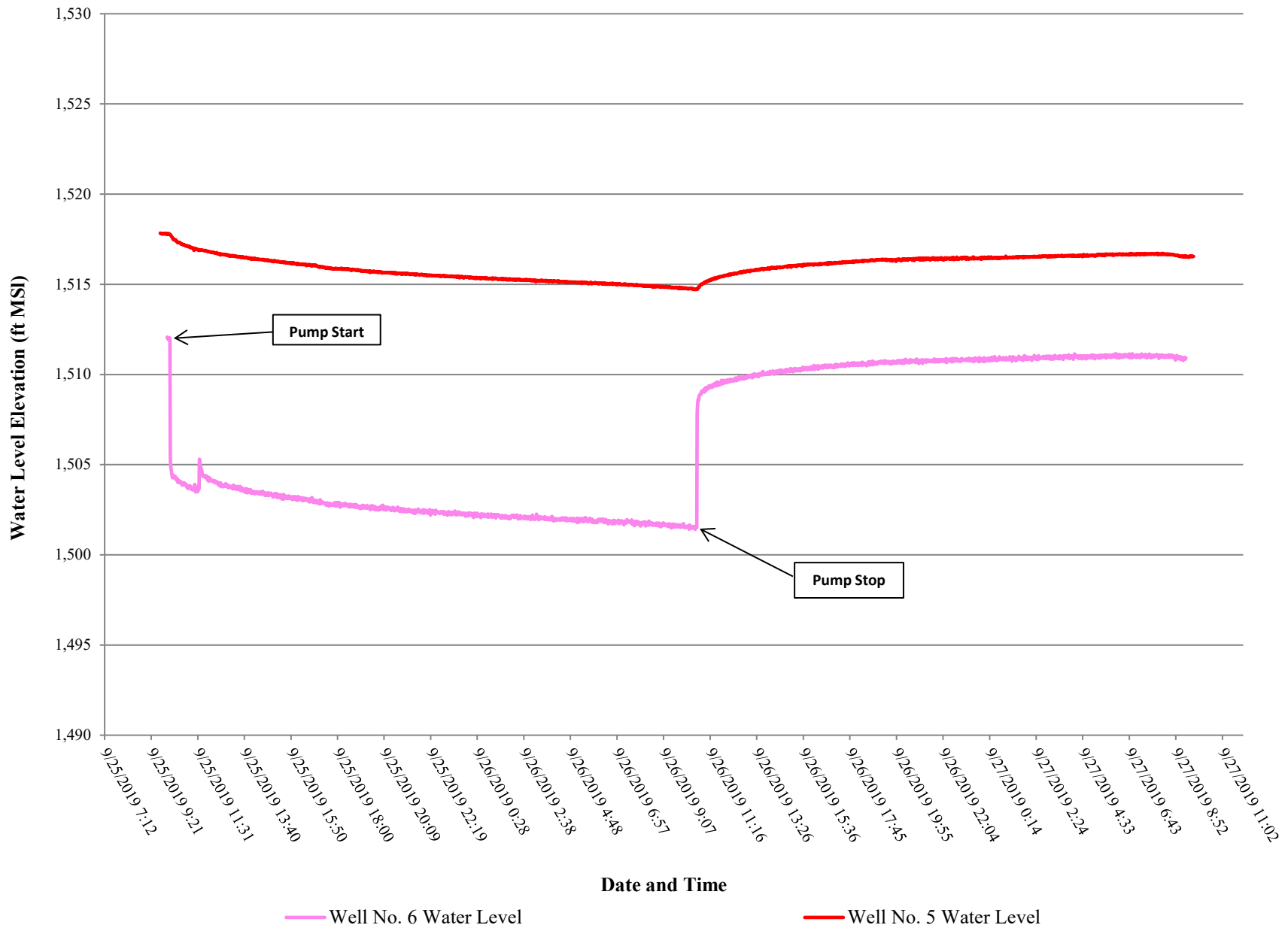


Figure 17: Aquifer test hydrograph of Well No. 6 and Observation Well No. 5 (September 25, 2019)



### **Aquifer Test of Well No. 8 (October 7, 2019):**

The aquifer test of Well No. 8 (pumping well) was conducted on October 7, 2019 with Well No. 7 (observation well), approximately 1,230 ft. away from the pumping well. A 3 horsepower submersible pump was set in the pumping well on 580 feet of 1 1/4-inch PVC column pipe. The pump was started at 12:46 P.M. on October 7, 2019; the water level was monitored for 27.73 hours of pumping and 17.43 hours of recovery. Prior to the pumping phase of the aquifer test, the static water level of the pumping well was measured at 343.2 ft. bgl (1,487.8 ft. MSL) and the static water level of the observation well was measured at 298.8 ft. bgl (1,553.3 ft. MSL).

Well No. 8 was pumped at an average rate of 9.0 gpm and the final measured pump rate was 7.2 gpm with 236.41 feet of drawdown resulting in a specific capacity of 0.03 gpm/ft. When compared to the theoretical specific capacity (0.02 gpm/ft.), Well No. 8 produced at an efficiency of 150%. The Cooper-Jacob analysis resulted in a transmissivity of 4.9 ft<sup>2</sup>/day, and a hydraulic conductivity of 0.03 ft./day. A maximum drawdown of 1.06 feet was observed in Well No. 7 indicating a hydraulic connection between the two wells. Due to the observed hydraulic connection, we calculated a storativity value for Well No. 7 of  $2.2 \times 10^{-5}$ . Figure 18 provides a hydrograph of the pumping well and temperature over the duration of the aquifer test; Figure 19 provides a hydrograph of both the pumping and observation well over the duration of the test.

Approximately two hours into the test, the pumping level in Well No. 8 stabilized at approximately 420 ft. bgl. The water level was stable at approximately 420 ft. bgl for approximately 6 hours before dropping 160 ft. to the pump where the pumping level remained for the duration of the pumping phase (Figure 18). The reduction in water level could be due to a number of factors including, fractures feeding the well drying out due to lowering of water levels or a no flow boundary condition. According to the geophysical log of Well No. 7, both wells are screened within the Lower Glen Rose Limestone and Hensell Sand with packers placed in the Upper Glen Rose Limestone. After the pump was shut off, recovery was measured in both wells; the water level in the pumping well recovered 71% in approximately 17.4 hours. During the recovery phase, the water level in the pumping well mirrored the pumping phase displaying a sharp recovery to approximately 420 ft. bgl before steadily rising for the rest of the recovery period.



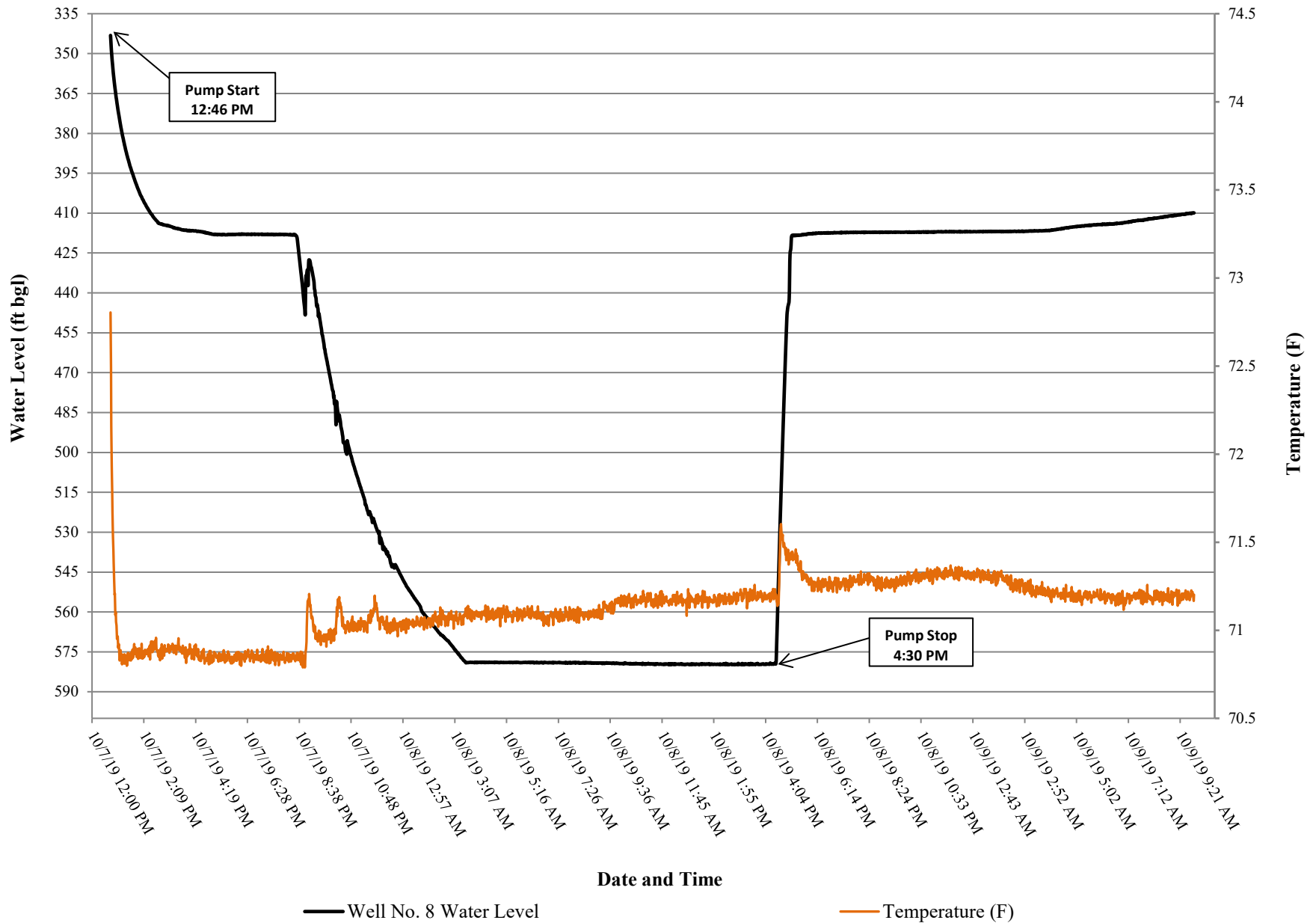


Figure 18: Aquifer test hydrograph of Well No. 8 (October 7, 2019)



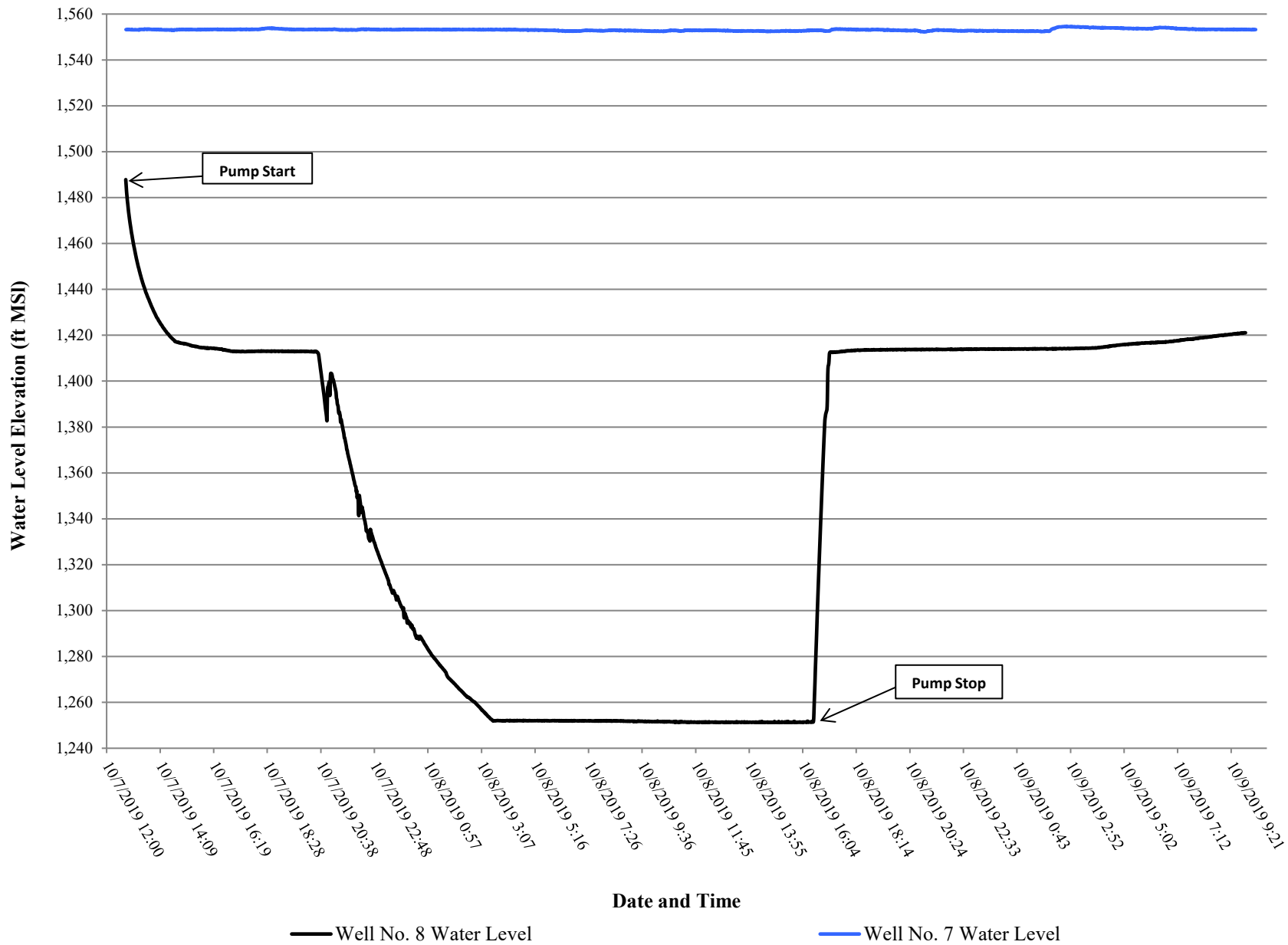


Figure 19: Aquifer test hydrograph of Well No. 8 and Observation Well No. 7 (October 7, 2019)



### **Aquifer Test of Well No. 8 (December 2, 2019):**

The aquifer test of Well No. 8 (pumping well) was conducted on December 2, 2019 with Well No. 4 (observation well), approximately 2,255 ft. away from the pumping well. A 3 horsepower submersible pump was set in the pumping well on 580 feet of 1 1/4-inch PVC column pipe. The pump was started at 10:27 A.M. on December 2, 2019; the water level was monitored for 24.00 hours of pumping and 23.63 hours of recovery. Prior to the pumping phase of the aquifer test, the static water level of the pumping well was measured at 347.2 ft. bgl (1,483.8 ft. MSL) and the static water level of the observation well was measured at 354.6 ft. bgl (1,387.4 ft. MSL).

Well No. 8 was pumped at an average rate of 5.9 gpm and the final measured pump rate was 5.9 gpm with 67.16 feet of drawdown resulting in a specific capacity of 0.09 gpm/ft. When compared to the theoretical specific capacity (0.08 gpm/ft.), Well No. 8 produced at an efficiency of 112%. The Cooper-Jacob analysis resulted in a transmissivity of 21.2 ft<sup>2</sup>/day, and a hydraulic conductivity of 0.12 ft./day. There was no observable drawdown within the observation well, therefore a storativity could not be calculated. Figure 20 provides a hydrograph of the pumping well and temperature over the duration of the aquifer test; Figure 21 provides a hydrograph of both the pumping and observation well over the duration of the test.

Approximately eleven (11) hours into the test, the pumping level in Well No. 8 stabilized at approximately 410 ft. bgl. The water level was stable at 410 ft. bgl for approximately one (1) hour before dropping 5 ft. over the rest of the pumping phase. The reduction in water level could be due to a number of factors including, fractures feeding the well drying out due to lowering of water levels or a no flow boundary condition. After the pump was shut off, recovery was measured in both wells; the water level in the pumping well recovered 75% in approximately 23.63 hours. During the recovery phase, the water level in the pumping well mirrored the pumping phase displaying a sharp recovery to approximately 408 ft. bgl before steadily rising for the rest of the recovery period.





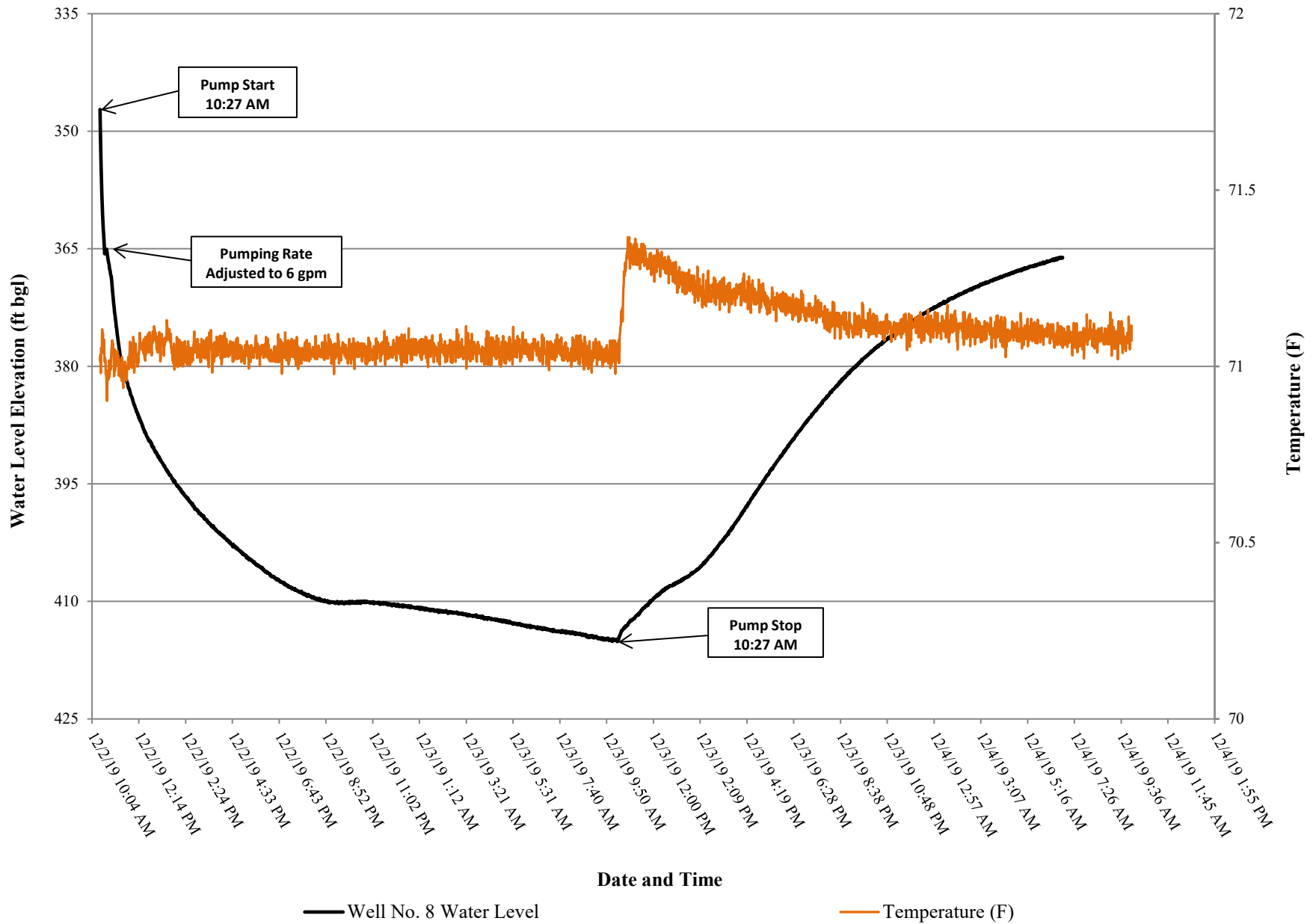


Figure 20: Aquifer test hydrograph of Well No. 8 (December 2, 2019)



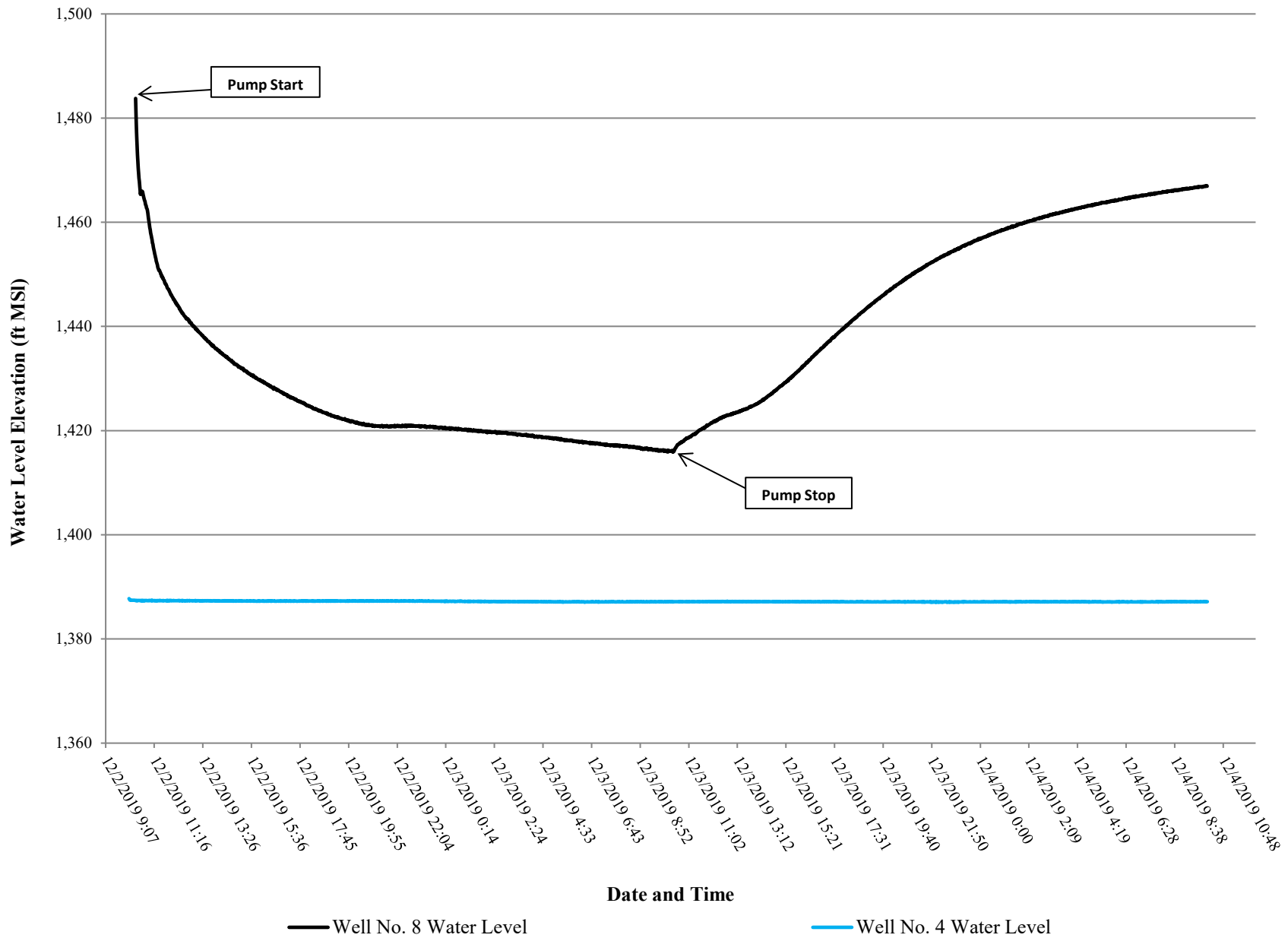


Figure 21: Aquifer test hydrograph of Well No. 8 and Observation Well No. 4 (December 2, 2019)



### **Aquifer Test of Well No. 9 (September 18, 2019):**

The aquifer test of Well No. 9 (pumping well) was conducted on September 18, 2019 with Well No. 10 (observation well), approximately 1,102 ft. away from the pumping well. A 5 horsepower submersible pump was set in the pumping well on 520 feet of 1 1/4-inch PVC column pipe. The pump was started at 11:02 A.M. on September 18, 2019; the water level was monitored for 25.35 hours of pumping and 22.1 hours of recovery. Prior to the pumping phase of the aquifer test, the static water level of the pumping well was measured at 283.0 ft. bgl (1,431.0 ft. MSL) and the static water level of the observation well was measured at 184.4 ft. bgl (1,430.6 ft. MSL).

Well No. 9 was pumped at an average rate of 25.5 gpm and the final measured pump rate was 25.0 gpm with 47.95 feet of drawdown resulting in a specific capacity of 0.52 gpm/ft. When compared to the theoretical specific capacity (0.96 gpm/ft.), Well No. 4 produced at an efficiency of 54%. The Cooper-Jacob analysis resulted in a transmissivity of 158.3 ft<sup>2</sup>/day, and a hydraulic conductivity of 0.69 ft./day. A maximum drawdown of 9.66 feet was observed in the observation well indicating a hydraulic connection between the two wells. Due to the observed hydraulic connection, we calculated a storativity value for Well No. 10 of  $1.7 \times 10^{-5}$ . Figure 22 provides a hydrograph of the pumping well and temperature over the duration of the aquifer test; Figure 23 provides a hydrograph of both the pumping and observation well over the duration of the test.

The water level in Well No. 9 initially declined steadily reaching a stabilized pumping level near the end of the pumping phase. Fluctuations of approximately 1 to 3 feet in the pumping level were observed throughout the pumping phase with at one point near the end of the pumping phase the water level increased and leveled off for approximately 1.5 hours (Figure 20). The fluctuations could be due to a number of factors which include well development occurring during the pumping phase or an aquifer recharge boundary condition. The water level in the observation well did show an observable response directly related to starting or stopping the pump in Well No. 9 (Figure 21). After the pump was shut off, recovery was measured in the both of the wells; the water level in the pumping well recovered 90% in approximately 12 hours. There were no aquifer boundary conditions observed during the testing.



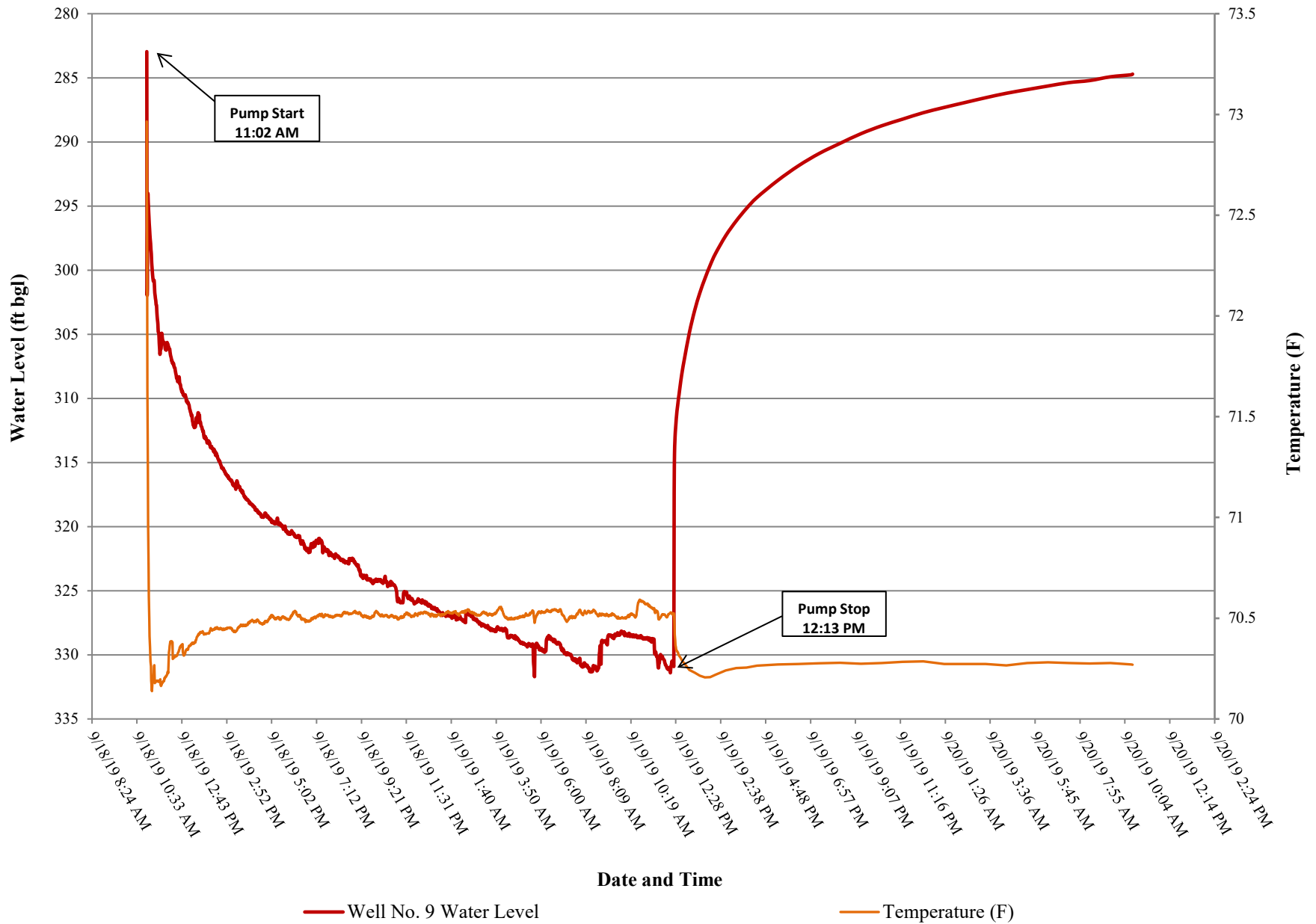


Figure 22: Aquifer test hydrograph of Well No. 9 (September 18, 2019)



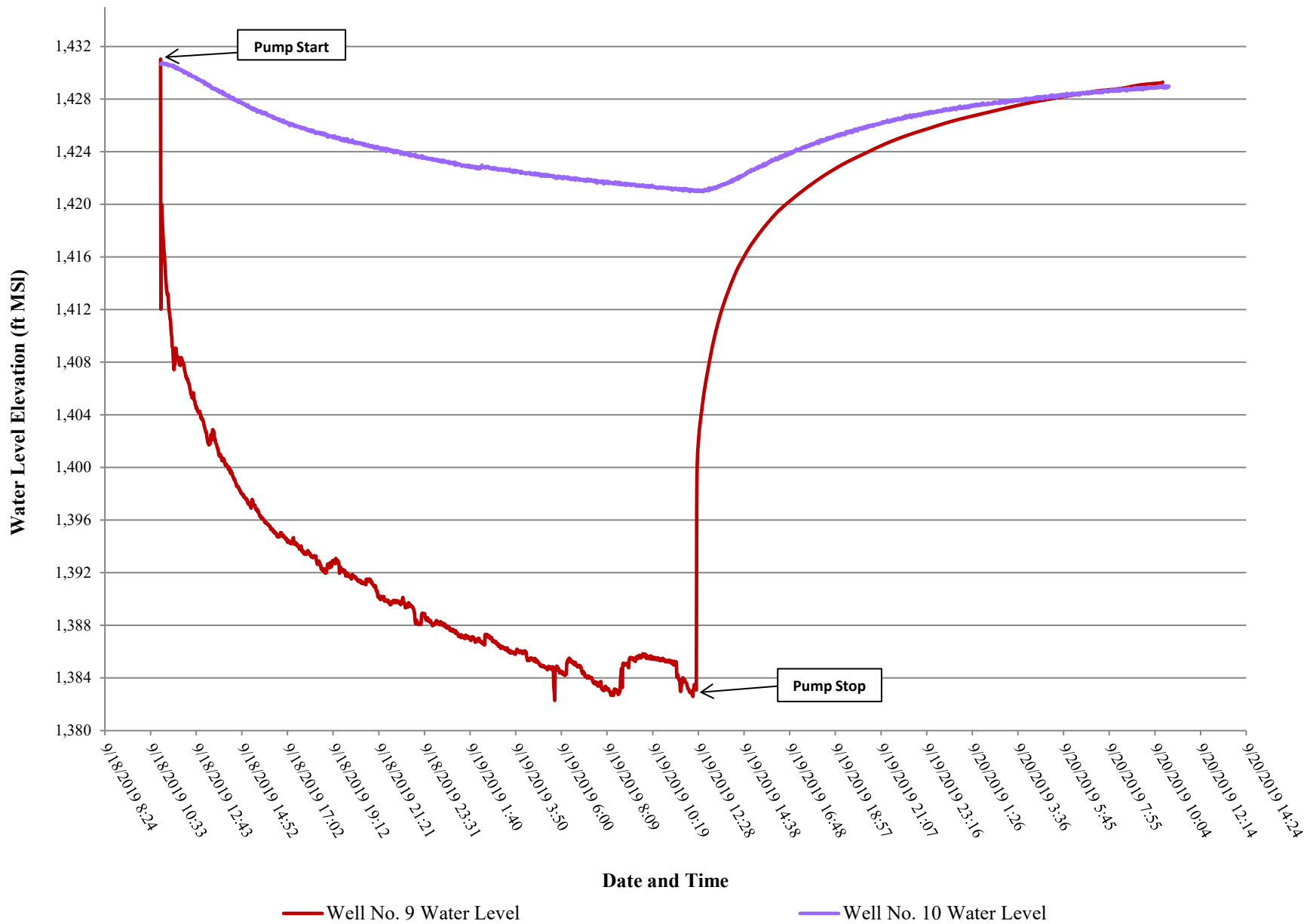


Figure 23: Aquifer test hydrograph of Well No. 9 and Observation Well No. 10 (September 18, 2019)



### **Aquifer Test of Well No. 10 (September 9, 2019):**

The aquifer test of Well No. 10 (pumping well) was conducted on September 9, 2019 with Phase I Well No. 4 (observation well), approximately 1,372 ft. away from the pumping well. A 3 horsepower submersible pump was set in the pumping well on 460 feet of 1 1/4-inch PVC column pipe. The pump was started at 10:40 A.M.; the water level was monitored for 24.77 hours of pumping and 21.96 hours of recovery. Prior to the pumping phase of the aquifer test, the static water level of the pumping well was measured at 191.1 ft. bgl (1,423.9 ft. MSL) and the static water level of the observation well was measured at 204.8 ft. bgl (1,518.7 ft. MSL).

Well No. 10 was pumped at an average rate of 15.7 gpm and the final measured pump rate was 16.0 gpm with 19.53 feet of drawdown resulting in a specific capacity of 0.82 gpm/ft. When compared to the theoretical specific capacity (0.82 gpm/ft.), Well No. 10 produced at an efficiency of 149%. The Cooper-Jacob analysis resulted in a transmissivity of 155.2 ft<sup>2</sup>/day, and a hydraulic conductivity of 0.65 ft./day. A maximum drawdown of 1.98 feet was observed in the observation well indicating a hydraulic connection between the two wells. Due to the observed hydraulic connection, we calculated a storativity value for Phase I Well No. 4 of  $1.2 \times 10^{-4}$ . Figure 24 provides a hydrograph of the pumping well and temperature over the duration of the aquifer test; Figure 25 provides a hydrograph of both the pumping and observation well over the duration of the test.

During the first 3 minutes of the pumping phase, the water level rapidly declined by approximately 50 feet (Figure 22). After this initial drawdown, the pumping level returned to 198.8 ft. bgl and produced turbid water, which is indicative of well development. During the remainder of the pumping phase, the water level slowly declined with intermittent fluctuations ranging from approximately 1 to 4 feet (Figure 22). This could be due to continued development within the production interval of the well. The water level in the observation well displayed an observable response related to starting or stopping the pump in Well No. 10. Throughout the pumping phase, the water in the observation well drewdown steadily, with a small drop in water level near the end of the pumping phase (Figure 23). After the pump was shut off, recovery was measured in both wells; the water level in the pumping well recovered 90% in approximately 12 minutes. There were no aquifer boundary conditions observed during the testing.



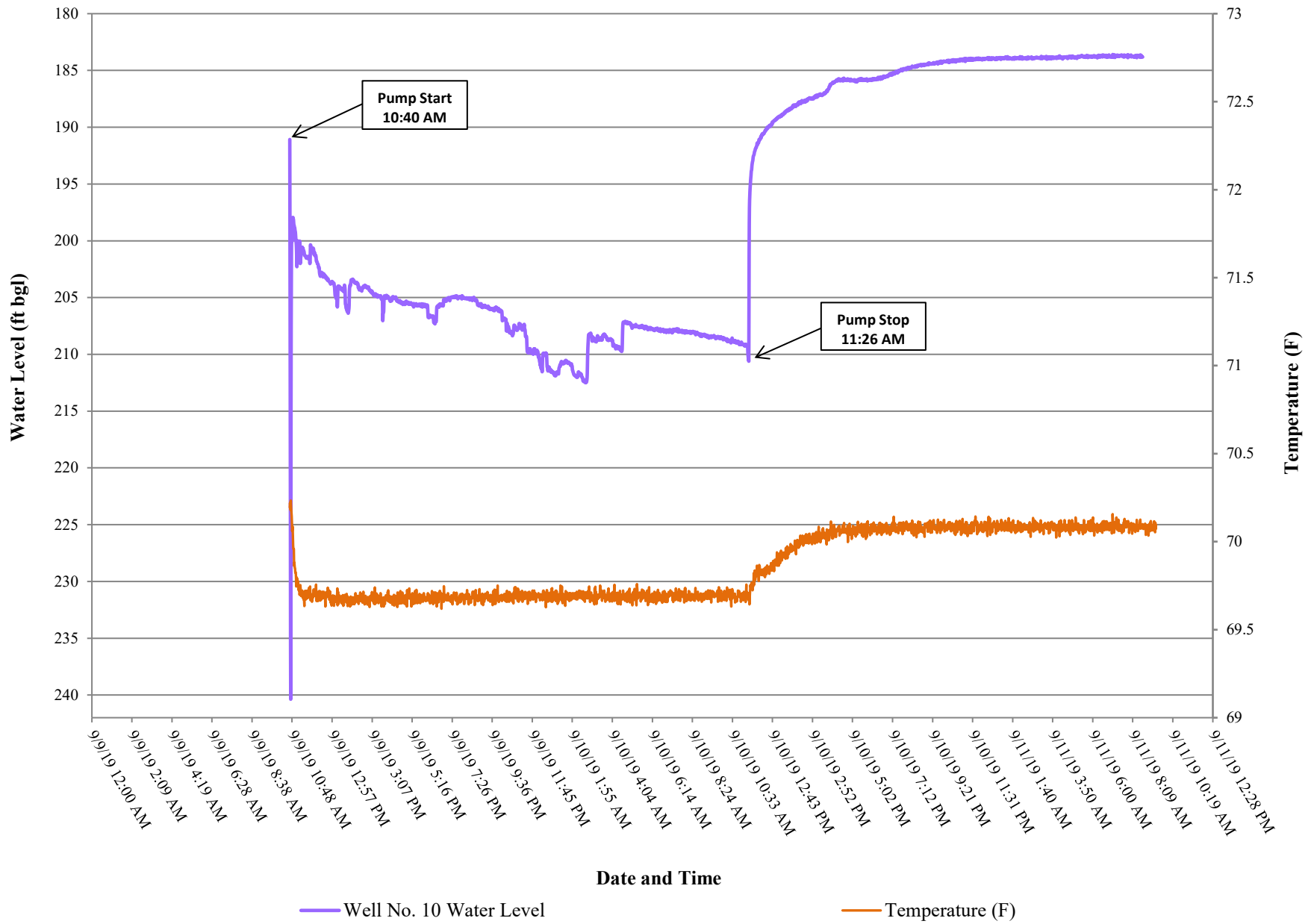


Figure 24: Aquifer test hydrograph of Well No. 10 (September 9, 2019)



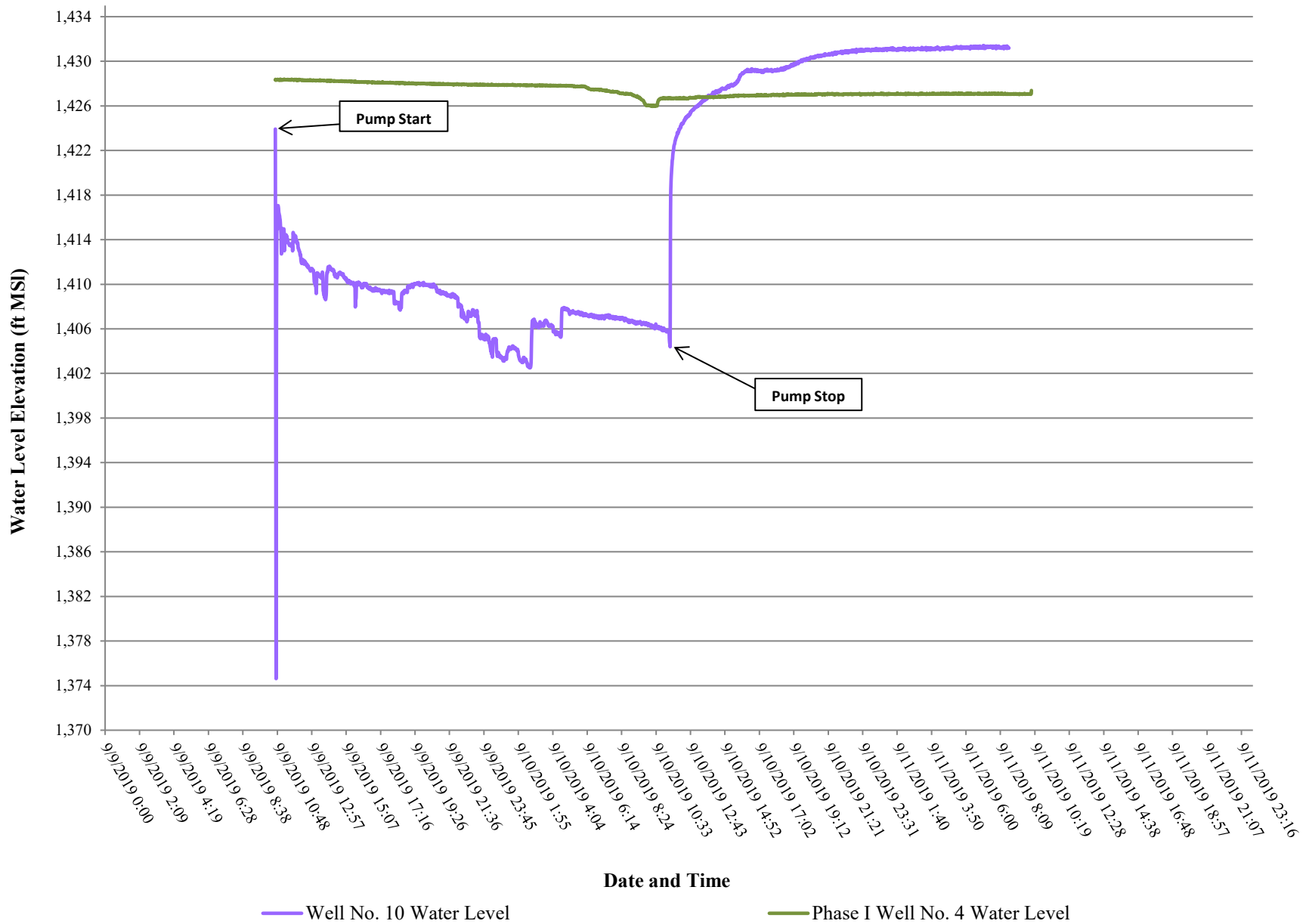


Figure 25: Aquifer test hydrograph of Well No. 10 and Observation Phase I Well No. 4 (September 9, 2019)





**Table 2: Summary of aquifer test results**

Date	Well	Average Pump Rate (gpm)	Final Pump Rate (gpm)	Drawdown (ft.)	Specific Capacity (gpm/ft.)	Transmissivity (ft <sup>2</sup> /d)	Storativity	Hydraulic Conductivity (ft./d)	Well Efficiency	Aquifer Thickness (ft.)	Aquifer Boundary Detected
9/30/2019	PW No. 1	9.4	9.0	183.84	0.05	6.7	-	0.02	117%	272	No
	OW No. 2	-	-	2.18	-	223.7	7.2E-5	0.9	-	248	No
10/2/2019	PW No. 3	6.5	6.1	281.78	0.02	6.7	-	0.03	67%	227	No
	OW No. 2	-	-	0.38	-	43.5	4.5E-5	0.18	-	248	No
9/23/2019	PW No. 4	4.2	4.0	128.20	0.03	6.3	-	0.02	100%	291	No
	OW No. 5	-	-	0.22	-	58.7	-	0.36	-	161	No
9/25/2019	PW No. 6	33.2	33.0	10.49	3.15	492.4	-	2.56	202%	192	No
	OW No. 5	-	-	3.03	-	574.4	3.8E-5	3.57	-	161	No
10/7/2019	PW No. 8	9.0	7.2	236.41	0.03	4.9	-	0.03	150%	172	Yes*
	OW No. 7	-	-	1.06	-	312.9	2.2E-05	1.77	-	177	No
12/2/2019	PW No. 8	5.9	5.9	67.16	0.09	21.2	-	0.12	112%	172	Yes*
	OW No. 4	-	-	-	-	223.4	-	0.77	-	291	No
9/18/2019	PW No. 9	25.5	25.0	47.95	0.52	158.3	-	0.69	54%	228	No
	OW No. 10	-	-	9.66	-	306.7	1.7E-5	1.29	-	238	No
9/9/2019	PW No. 10	15.7	16.0	19.53	0.82	155.2	-	0.65	149%	238	No
	OW Phase I No. 4	-	-	1.98	-	816.5	1.2E-4	2.84	-	287	No

Note: PW = Pumping Well; OW = Observation Well; ft. = feet; gpm = gallons per minute; d = day; \*=Possible no flow boundary condition observed.



### IV.3. Water Quality

Water quality samples were collected from each aquifer test's pumping well. The samples were collected by Apex Drilling, Inc. staff in sealed containers and stored on ice in a cooler. The samples for Well No. 10 were transported after collection to the Pollution Control Services Laboratories (PCSL), the samples for the rest of the wells were transported to Aqua-Tech Laboratories, Inc. and each sample was tested in accordance with Texas Administrative Code 230.9 (Determination of Groundwater Quality). Appendix F provides a copy of the water quality reports.

Table 3 provides the water quality summary of the samples. The results were compared to Texas Commission on Environmental Quality (TCEQ) Maximum Contaminant Levels (MCL) and Secondary Contaminant Levels (SCL). The results show all samples met the TCEQ MCLs. In various combinations, the concentrations of fluoride, iron, sulfate, or TDS surpassed the TCEQ SCLs in Wells No. 1, 4, 8, 9, and 10 (Table 2). The elevated sulfate and TDS concentrations observed in the wells are not uncommon for the area. Groundwater flowing through gypsum and anhydrite layers found within the aquifer account for the elevated sulfate and TDS. According to TWDB report 174 "Ground-Water Resources of Blanco County, Texas," elevated levels of iron and fluoride are also not uncommon for the area.

Concentrations above the SCL standards are not considered health risks but may affect the taste and odor of the water. The variability in water chemistry is likely due to the different formations of the Middle Trinity the wells are completed into. The two samples (Wells No. 1 and No. 4) that reported elevated sulfate and TDS concentrations are both completed deeper into the Cow Creek Limestone which may be a source of more elevated TDS and sulfate concentrations.



**Table 3: Summary of the water quality analysis results**

Well	Sample Data	Cl	Conductivity (mhos/cm)	F	Fe	NO3	Mn	pH	SO4	Hardness (as CaCO3)	TDS	TC/E. coli
		TCEQ MCLs & SCLs										
		300 <sup>2</sup>		4 <sup>1</sup> & 2 <sup>2</sup>	0.3 <sup>2</sup>	1 <sup>1</sup>	0.05 <sup>2</sup>	6.5-8.5 <sup>2</sup>	300 <sup>2</sup>		1000 <sup>2</sup>	Presence
1	10/1/2019	13.6	1.28	2.08	0.092	<0.02	0.00168	7.8	460	760	1,020	Absent
3	10/3/2019	11.3	0.808	0.77	0.245	<0.02	0.00767	7.6	256	545	682	Absent
4	9/24/2019	14.7	1.61	0.94	0.062	<0.02	0.00175	7.3	624	980	1,380	Absent
6	12/11/2018	11.1	0.679	1.94	0.149	<0.02	0.00357	7.6	127	400	474	Absent
8	10/8/2019	10.7	0.693	1.01	0.577	<0.02	0.0117	7.4	154	500	516	Absent
9	9/19/2019	<3	0.961	3.42	0.186	<0.01	0.00223	7.3	<3.0	525	694	Absent
10	9/10/2019	11.5	0.98*	3.91	<0.050	0.0159	0.00214	7.67	231	524	654	Absent

Note: 1 = TCEQ Maximum Containment Level; 2 = TCEQ Secondary Constituent Level; Concentrations in orange are above TCEQ SCLs; All units expressed in mg/L (except pH & E.C.); \*=Field measurement.



#### IV.4. Groundwater Availability

Based upon the analysis of the aquifer tests, drawdown estimates were made at various distances from each pumping well after 10 years and 30 years. Figures 26, 27 and 29 to 32 provide distance-drawdown plots for a single pumping well producing at a rate of 5 gpm for 1.17 hours a day (350 gallons per day). As Well No. 4 tested at a reduced rate, Figure 28 provides a distance-drawdown plot for a single pumping well producing at a rate of 4 gpm for 1.46 hours a day (350 gallons per day). This represents the total water demand at full build out of the subdivision per housing unit (0.39 acre-feet/year for each housing unit).

Assumptions used in the drawdown calculation include:

- Future pumpage from the aquifer or from interconnected aquifers from area wells outside of the subdivision or any other factor that cannot be predicted that will affect the storage of water in the aquifer;
- Long-term impacts to the aquifer based on climatic variations; and
- Future impacts to usable groundwater due to unforeseen or unpredictable contamination.

Drawdown estimates were calculated using the Theis equation. The Theis equation employs the following assumptions:

1. The water bearing formation is uniform in character and the hydraulic conductivity is the same in all directions;
2. The formation is uniform in thickness and infinite in areal extent;
3. The formation receives no recharge from any source;
4. The pumped well penetrates, and receives water from, the full thickness of the water bearing formation;
5. The water removed from storage is discharges instantaneously when the head is lowered;
6. The pumping well is 100% efficient;
7. All water removed from the well comes from aquifer storage;
8. Laminar flow exists throughout the well and aquifer; and
9. The water table or potentiometric surface has no slope.

It is important to note that several of the assumptions used to derive the Theis equation are not necessarily appropriate for the Middle Trinity Aquifer. These include assumptions 1, 3, 7 and 8. The Middle Trinity Aquifer is a karst aquifer and is fractured, not uniform or homogenous in character or in its hydrogeologic properties (transmissivity and storativity). In addition, the Theis assumptions that (i) the formation receives no recharge from any source and (ii) that all water removed from the well comes from aquifer storage leads to inaccuracies in estimating drawdown. Driscoll (1986) states, "The assumption that an aquifer receives no recharge during the pumping period is one of the six fundamental conditions upon which the non-equilibrium formulas (Theis) are based. Therefore, all water discharged from a well is assumed to be taken from storage within the aquifer. It is known, however that most formations receive recharge. Hydrographs from long-term observation wells monitored by the US Geological Survey, various



state agencies, and similar data-gathering agencies in other parts of the world show that most water-bearing formations receive continual or intermittent recharge.”

Furthermore, contrary to the Theis assumptions, Konikow and Leake (2014) note that with increased pumping time, (i) the fraction of pumpage derived from storage tends to decrease, and (ii) the fraction derived from capture (recharge) increases. Eventually a new equilibrium will be achieved when no more water is derived from storage and heads, or water levels, in the aquifer stabilize. This result is achieved when the initial cone of depression formed by discharge reaches a new source of water, typically the recharge zone of the aquifer. The actual response time for an aquifer system to reach a new equilibrium is a function of the dimensions, hydraulic properties, and boundary conditions for each specific aquifer. For example, the response time will decrease as the hydraulic diffusivity of the aquifer increases (Theis 1940; Barlow and Leake 2012). The response time can range from days to millennia (Bredehoeft and Durbin 2009; Walton 2011).

Since the Theis equation assumes (i) that all water is derived from storage and (ii) that the aquifer receives no recharge, the Theis equation overestimates drawdown within a well that is located in an aquifer that receives recharge rapidly. For this reason, using the Theis equation to calculate drawdown over periods of time greater than when water from capture exceeds water from storage leads to an exaggerated estimate of drawdown.

Table 4 provides a summary of the results from the distance-drawdown calculations. Estimates of drawdown are based on the following assumptions:

- Total daily water demand (entire subdivision) = 45.48 acre-feet/year
- Total daily water demand (per housing unit) = 0.39 acre-feet/year = 350 gpd;
- The individual Wells No. 1, 3, 6, 8, 9, and 10 will be pumped at 5 gpm for 1.17 hours per day and Well No. 4 will be pumped at 4 gpm for 1.46 hours per day for Table 4;
- A transmissivity value and a storativity value taken from each individual aquifer test. The values from the first test of Well No. 8 were chosen to represent the well as a storativity value could be calculated from this test. The storativity value, used in the calculations for Well No. 4, was an average of the other tests because no hydraulic connection was observed between Well No. 4 and the observation well during the test.

The edge of the cone of depression was estimated by taking the distance from the pumped well where the drawdown flattened out or was minimal.

Based upon the distance-drawdown calculations, the drawdown after 10 years of production and a well spacing of 100 feet results in an average of 10.2 ft. (drawdown) well interference. At a spacing of 250 feet the well interference reduces to an average of 4.8 ft. (drawdown) and at a spacing of 500 feet the well interference reduces further to an average of 3.1 ft. (drawdown).

The drawdown after 30 years of production and a well spacing of 100 feet results in an average of 10.7 ft. (drawdown) well interference. At a spacing of 250 feet the well interference reduces to an average of 4.9 ft. (drawdown) and at a spacing of 500 feet the well interference reduces further to an average of 3.6



ft. (drawdown).

Due to the limited well interference calculated, we recommend a well spacing of 250 feet.

**Table 4: Summary of distance-drawdown calculations**

Well	Drawdown at Pumped Well After 10-Years of Pumping (ft)	Drawdown at Pumped Well After 30-Years of Pumping (ft)	Property Boundary Distance (ft)	Drawdown (ft)	Property Boundary Distance (ft)	Drawdown (ft)	Dist. to Outer Edges of Cone of Depression - 10 years (feet)	Dist. to Outer Edges of Cone of Depression - 30 years (feet)
No. 1	143.5	144.1	374	4.5	374	5.1	250	250
No. 3	148.8	149.4	677	4.0	677	4.6	300	300
No. 4	127.4	128.0	1,411	3.6	1,411	4.2	350	350
No. 6	2.72	2.7	411	0.4	411	0.4	100	100
No. 8	208.8	209.7	113	10.0	113	10.8	300	300
No. 9	8.3	8.3	1,254	0.4	1,254	0.4	100	100
No. 10	7.5	7.5	1,320	0.2	1,320	0.2	100	100



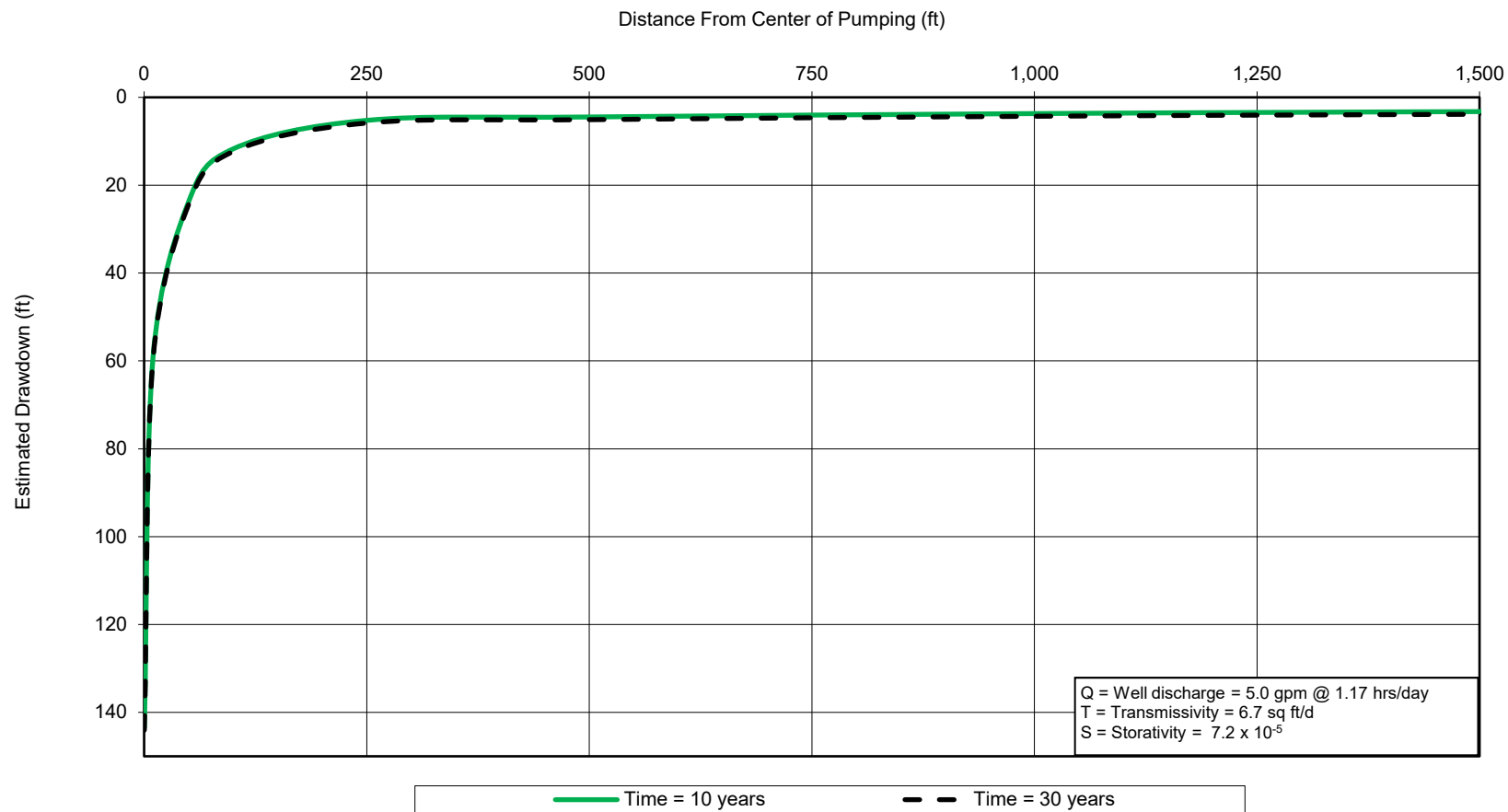


Figure 26: Distance drawdown plot for Well No. 1



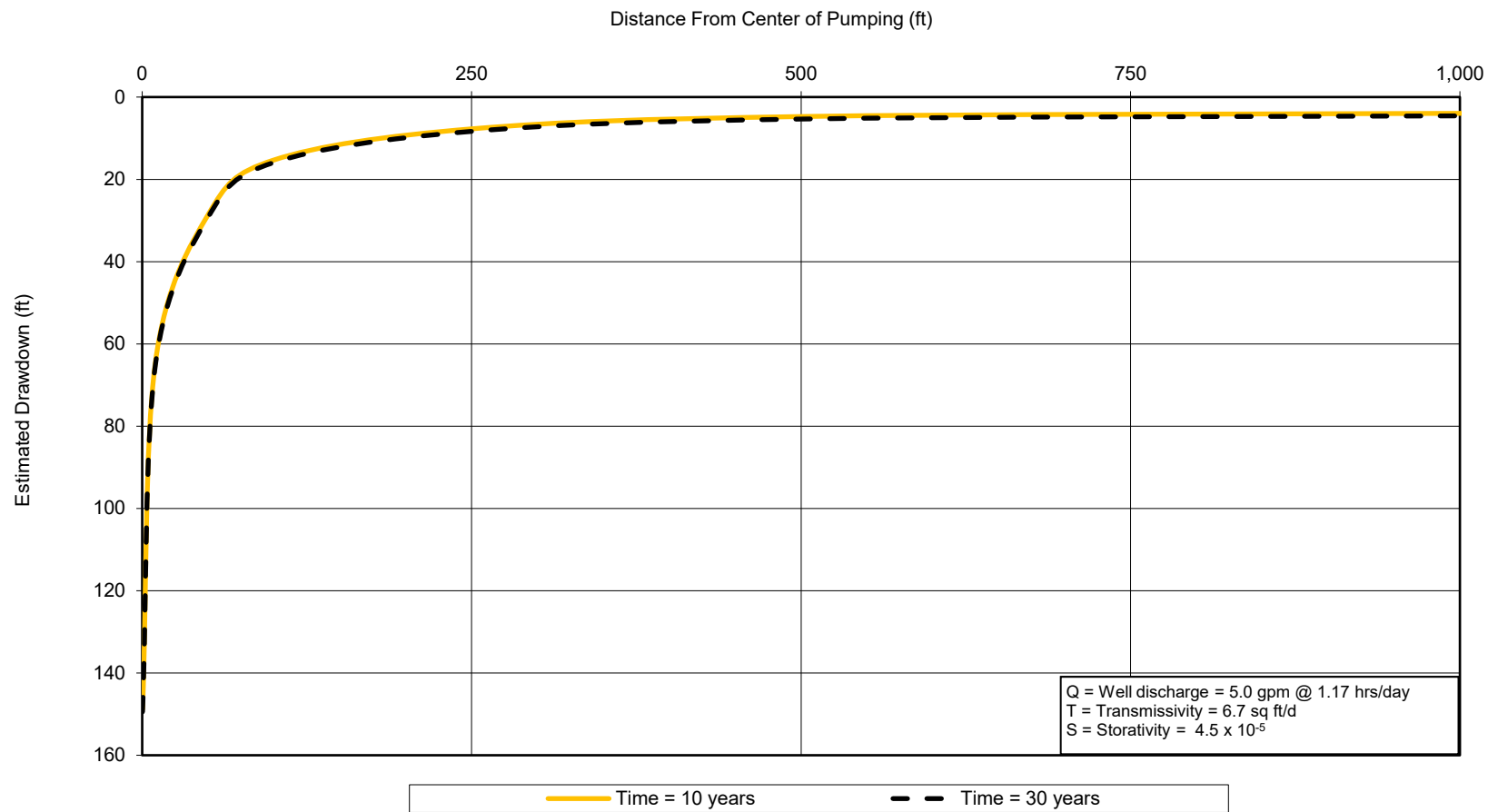


Figure 27: Distance drawdown plot for Well No. 3





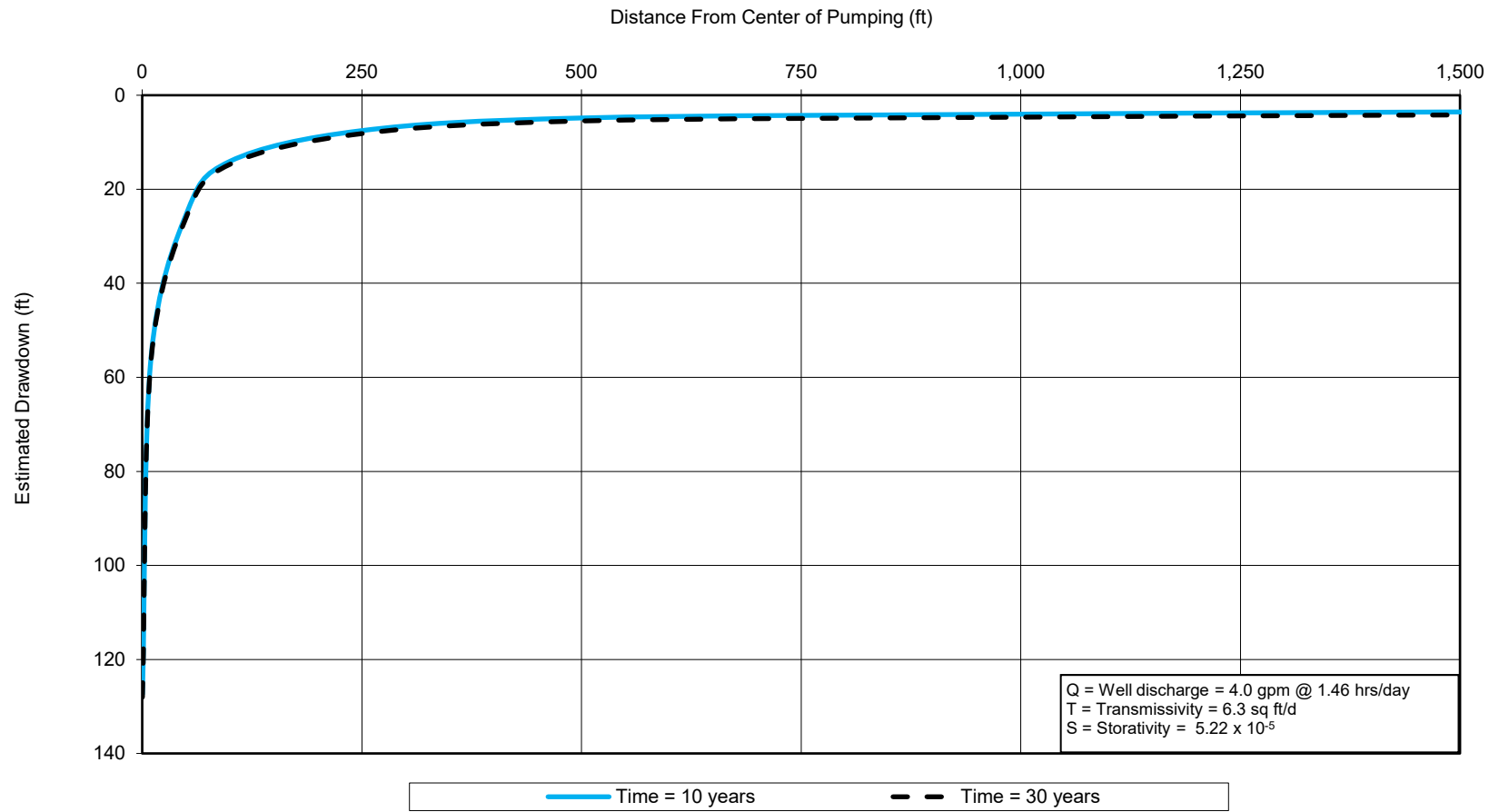


Figure 28: Distance drawdown plot for Well No. 4



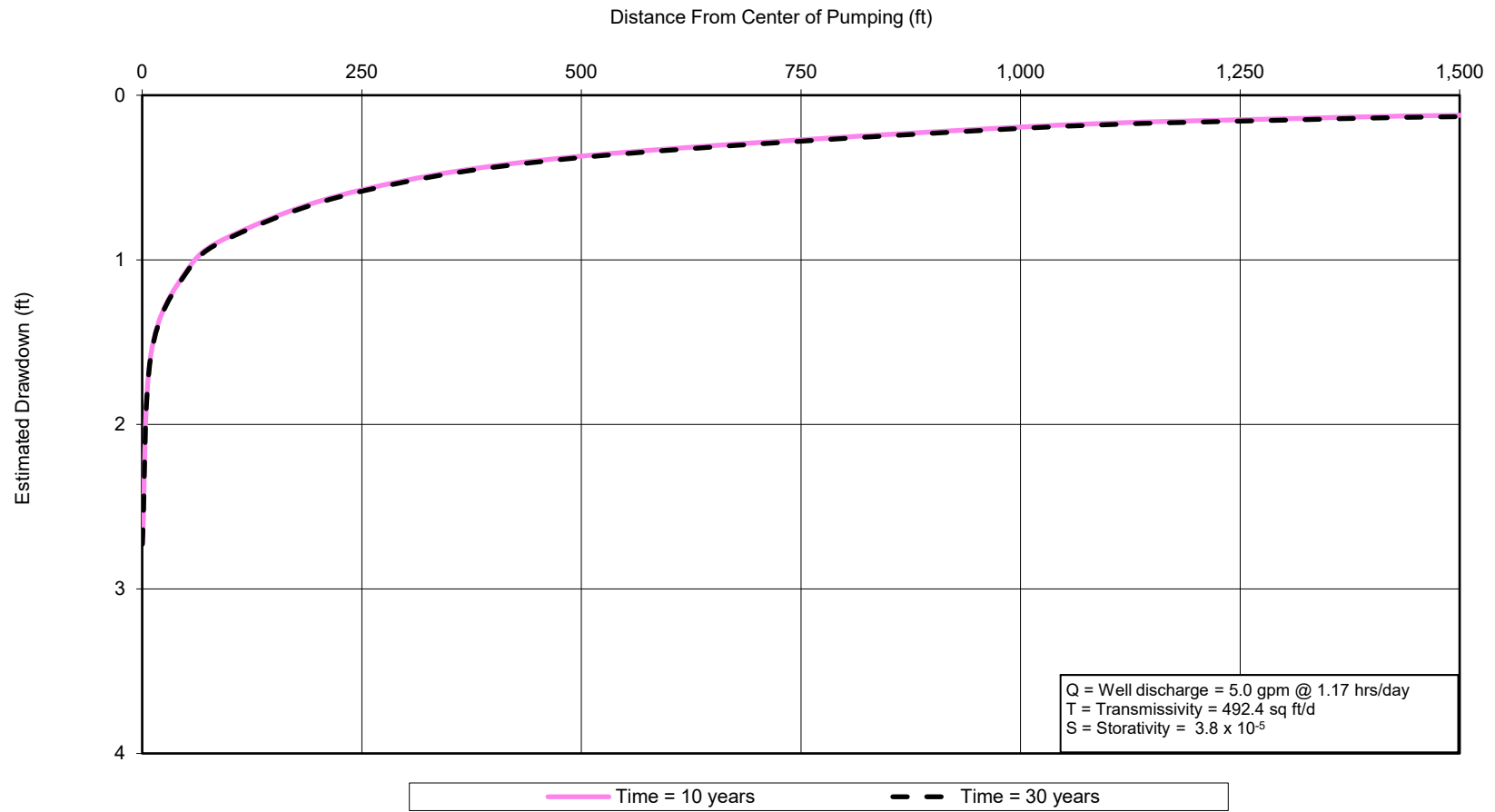


Figure 29: Distance drawdown plot for Well No. 6



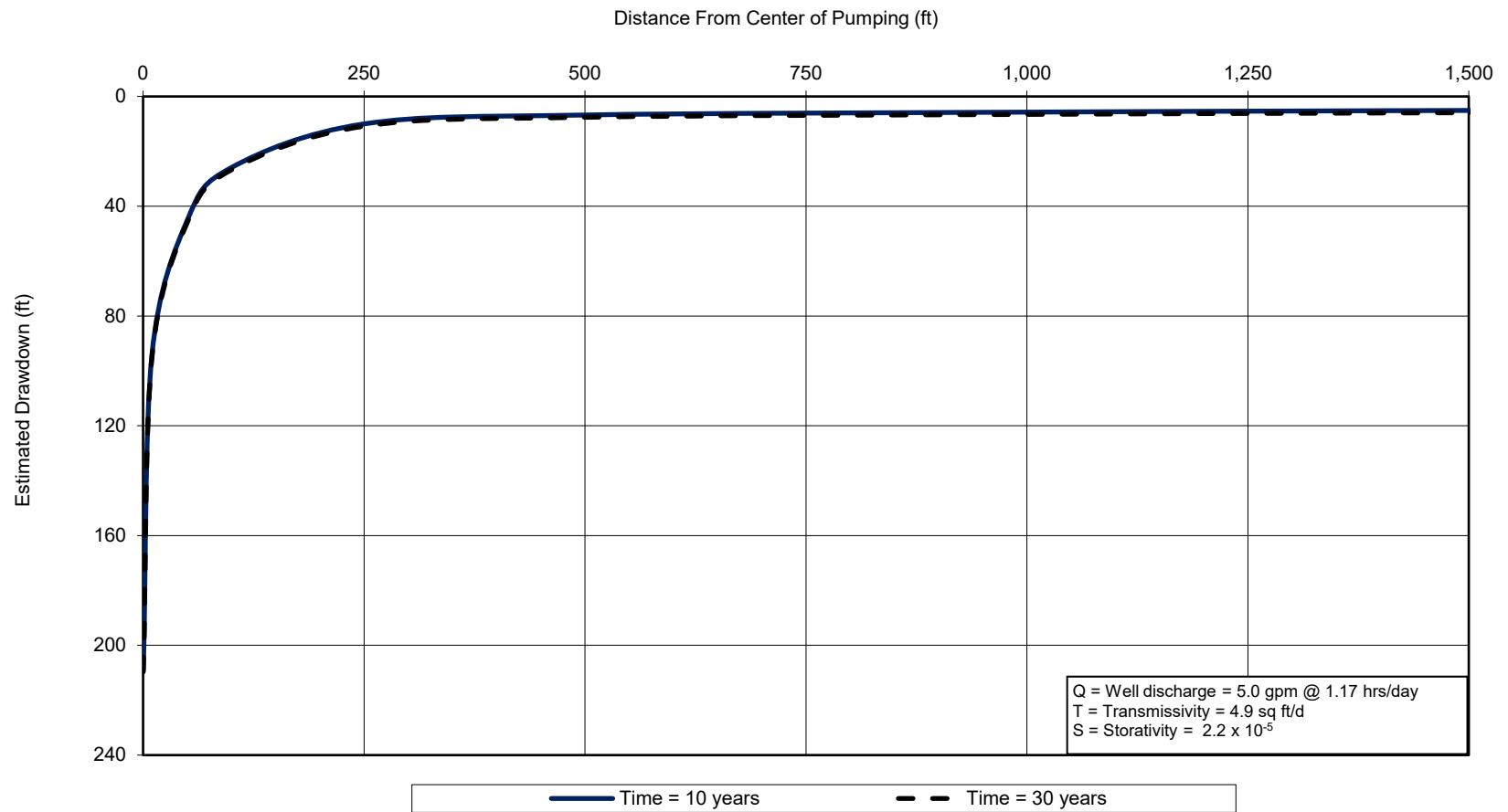


Figure 30: Distance drawdown plot for Well No. 8



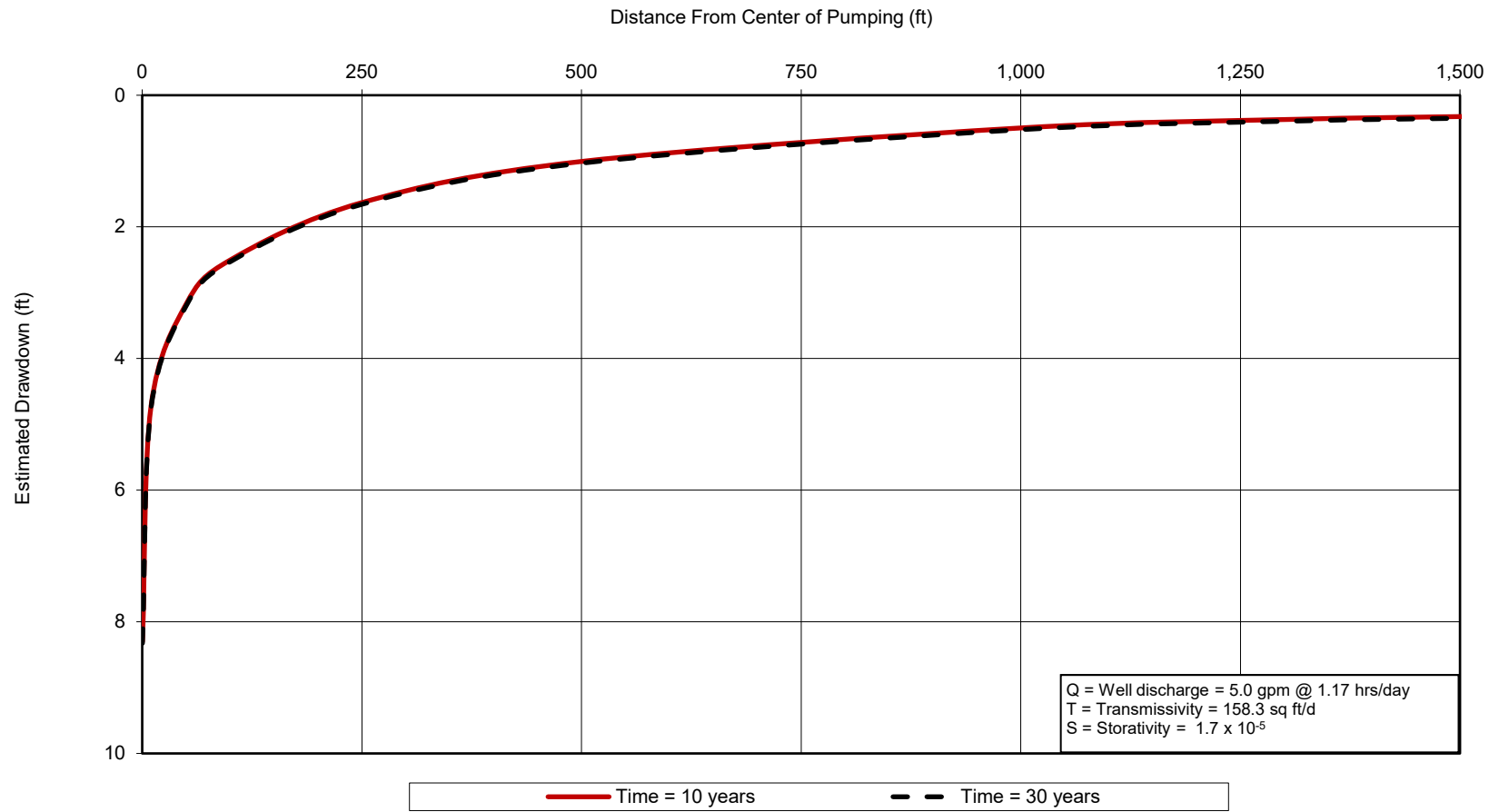


Figure 31: Distance drawdown plot for Well No. 9



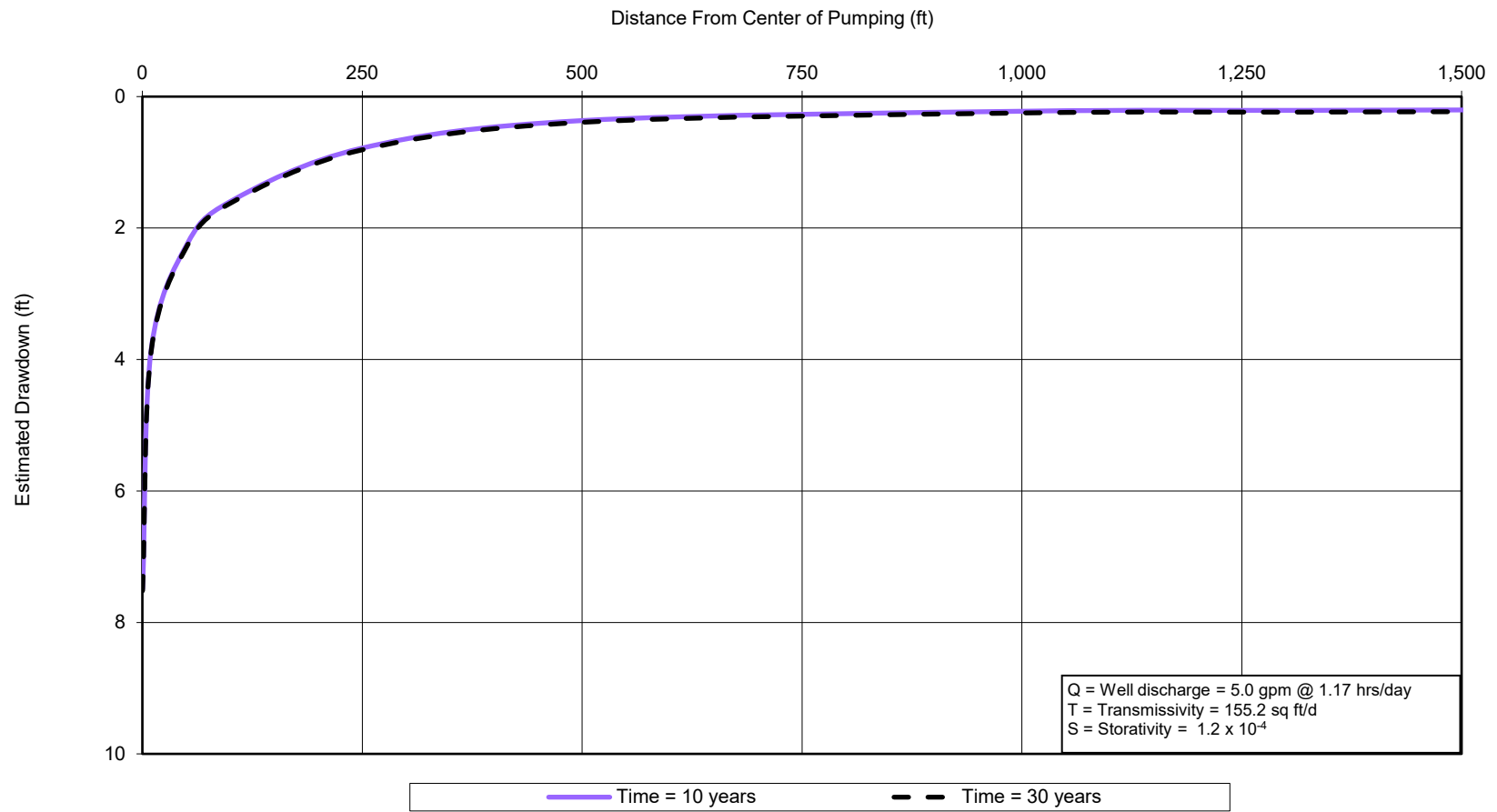


Figure 32: Distance drawdown plot for Well No. 10



## **Section V: Certification**

I, Kaveh Khorzad, Texas Licensed Professional Geoscientist, certificate number 1126, based on best judgment, current groundwater conditions, and the information developed and presented in this form, certify that adequate groundwater is available from the underlying aquifer to supply the anticipated use of the proposed subdivision.

The Middle Trinity Aquifer in Blanco County exhibits variable yield and water quality and is susceptible to reduction in yield during prolonged drought. For these reasons we recommend that each homeowner construct their well as deep as practical to the base of the Hensell Sand or Cow Creek Limestone within the Middle Trinity Aquifer to provide the maximum possible yield and to set their pumps as deep as possible to protect from lowering water levels during drought.



## **Section VI: References**

- Ashworth, J. B., 1983, Ground-water availability of the Lower Cretaceous formations in the Hill Country of south-central Texas: Texas Department of Water Resources Report 273,173 p.
- Barlow, P.M., and Leake, S.A., 2012. Streamflow depletion by wells—Understanding and managing the effects of groundwater pumping on streamflow. U.S. Geological Survey Circular 1376. Reston, Virginia: USGS.
- Bredehoeft, J.D., and T.J. Durbin. 2009. Ground water development—The time to full capture problem. *Ground Water* 47, no. 4: 506–514. DOI:10.1111/j.1745-6584.2008.00538.x
- Driscoll, F.G., 1986. *Groundwater and Wells* (2<sup>nd</sup>. Ed.): Johnson Division, St. Paul, Minnesota, p. 1021.
- Folleet, C.R., 1973. *Ground-Water Resources of Blanco County, Texas*: Texas Department of Water Resources Report 174.
- Konikow L.F. and Leake S.A., 2014, Depletion and Capture: Revisiting “The Source of Water Derived from Wells”, Vol. 52, *Groundwater–Focus Issue* 2014, p. 100–111.
- McGeehee, R.V., 1979. *Precambrian Rocks of the Southeastern Llano Region, Texas*. Texas Bureau of Economic Geology, Geological Circular 79-3, 36 p.
- Preston, R.D., Pavilcek, D.J., Bluntzer, R.L., and Derton, J., 1996. *The Paleozoic and Related Aquifers of Central Texas*. TWDB Report 346, 77 p.
- Theis, C.V. 1940. The source of water derived from wells—Essential factors controlling the response of an aquifer to development. *Civil Engineering* 10: 277–280.
- Walton, W.C. 2011. Aquifer system response time and groundwater supply management. *Ground Water* 49, no. 2: 126–127.



# **Appendix A**

## Certification of Groundwater Availability for Platting Form





**CERTIFICATION OF GROUNDWATER AVAILABILITY FOR PLATTING FORM**

Use of this form: If required by a municipal authority pursuant to §212.0101, Texas Local Government Code or a county authority pursuant to §232.0031, Texas Local Government Code, the plat applicant and the Texas licensed professional engineer or Texas licensed professional geoscientist shall use this form based upon the requirements of Title 30, Texas Administrative Code, Chapter 230 to certify that adequate groundwater is available under the land to be subdivided (if the source of water for the subdivision is groundwater under the subdivision) for any subdivision subject to platting under §§212.004 and 232.001, Texas Local Government Code. The form and Chapter 230 do not replace state requirements applicable to public drinking water supply systems or the authority of counties or groundwater conservation districts under either §35.019 or Chapter 36 of the Texas Water Code.

**Administrative Information (30 TAC, §230.4).**

- 1. Name of Proposed Subdivision: Majestic Hills Subdivision Phase II
- 2. Any Previous Name Which Identifies the Tract of Land: \_\_\_\_\_
- 3. Property Owner's Name(s): Lone Star Land Partners, LLC  
Address: 9508 East Highway 71 Spicewood, Texas 78669  
Phone: 800-511-2430  
Fax: \_\_\_\_\_
- 4. Plat Applicant's Name: Lone Star Land Partners, LLC  
Address: 9508 East Highway 71 Spicewood, Texas 78669  
Phone: 877-888-7579  
Fax: \_\_\_\_\_
- 5. Licensed Professional Engineer or Geoscientist  
Name: Kaveh Khorzad, P.G.  
Address: 317 Ranch Road 620 S., Suite 203, Lakeway, TX 78734  
Phone: 512-773-3226  
Fax: \_\_\_\_\_  
Certificate Number: TBPG License No: 1126
- 6. Location and Property Description of Proposed Subdivision: approximately 3.5 miles southwest of the City of Blanco located south of Trainer Wuest Rd. along Carolina Trail.
- 7. Tax Assessor Parcel Number(s).  
Book: \_\_\_\_\_  
Map: \_\_\_\_\_  
Parcel: Property IDs: 7792, 7800, 7786, and 7787

**Proposed Subdivision Information (30 TAC, §230.5).**

- 8. Purpose of Proposed Subdivision (single family/multi-family residential, non-residential, commercial): single family
- 9. Size of Proposed Subdivision (acres): 789
- 10. Number of Proposed Lots: 116
- 11. Average Size of Proposed Lots (acres): 6.16
- 12. Anticipated Method of Water Distribution.  
Expansion of Existing Public Water Supply System: Yes  No   
New (Proposed) Public Water Supply System: Yes  No   
Individual Water Wells to Serve Individual Lots:  Yes  No  
Combination of Methods: Yes  No   
Description (if needed): \_\_\_\_\_
- 13. Additional Information (if required by the municipal or county authority): \_\_\_\_\_

Note: If public water supply system is anticipated, written application for service to existing water providers within a 1/2-mile radius should be attached to this form (30 TAC §230.5(f)).

**Projected Water Demand Estimate (30 TAC, §230.6).**

- 14. Residential Water Demand Estimate at Full Build Out (includes both single family and multi-family residential).  
Number of Proposed Housing Units (single and multi-family): 116 single family housing units

Average Number of Persons per Housing Unit: 3.5 persons  
Gallons of Water Required per Person per Day: 100 gallons per capita per day (gpcd)  
Water Demand per Housing Unit per year (acre feet/year): 0.39 acre-ft (assuming 100 gpcd)  
Total Expected Residential Water Demand per Year (acre feet/year): 45.48 acre-ft

15. Non-residential Water Demand Estimate at Full Build Out.  
Type(s) of Non-residential Water Uses: N/A  
Water Demand per Type per Year (acre feet/year): N/A
16. Total Water Demand Estimate at Full Build Out (acre feet/year): 45.48 acre-ft/year
17. Sources of Information Used for Demand Estimates: Blanco County development rule and regulations

**General Groundwater Resource Information (30 TAC, §230.7).**

18. Identify and describe, using Texas Water Development Board names, the aquifer(s) which underlies the proposed subdivision:  
*Note: Users may refer to Aquifers of Texas (Texas Water Development Board Report 345, 1995) to obtain general information pertaining to the state's aquifers. This reference is available via the Internet (www.twdb.state.tx.us).* Trinity Aquifer

**Obtaining Site-Specific Groundwater Data (30 TAC, §230.8).**

19. Have all known existing, abandoned, and inoperative wells within the proposed subdivision been located, identified, and shown on the plat as required under §230.8(b)?  Yes No
20. Were the geologic and groundwater resource factors identified under §230.7(b) considered in planning and designing the aquifer test required under §230.8(c)?  Yes No
21. Have test and observation wells been located, drilled, logged, completed, developed, and shown on the plat as required by §230.8(c)(1 through 4)?  Yes No
22. Have all reasonable precautions been taken to ensure that contaminants do not reach the subsurface environment and that undesirable groundwater has been confined to the zone(s) of origin (§230.8(c)(5))?  Yes No
23. Has an aquifer test been conducted which meets the requirements of §§230.8(c)(1 and 6)?  Yes No
24. Were existing wells or previous aquifer test data used?  Yes No
25. If yes, did they meet the requirements of §230.8(c)(7)?  Yes No
26. Were additional observation wells or aquifer testing utilized?  Yes No

*Note: If expansion of an existing public water supply system or a new public water supply system is the anticipated method of water distribution for the proposed subdivision, site-specific groundwater data shall be developed under the requirements of 30 TAC, Chapter 290, Subchapter D (related to Rules and Regulations for Public Water Systems) and the applicable information and correspondence developed in meeting those requirements shall be attached to this form pursuant to §230.8(a).*

**Determination of Groundwater Quality (30 TAC, §230.9).**

27. Have water quality samples been collected as required by §230.9?  Yes No
28. Has a water quality analysis been performed which meets the requirements of §230.9?  Yes No

**Determination of Groundwater Availability (30 TAC, §230.10).**

29. Have the aquifer parameters required by §230.10(c) been determined?  Yes No
30. If so, provide the aquifer parameters as determined.  
Rate of yield and drawdown: (See attached Table 2)  
Specific capacity: (See attached Table 2 & Appendix D)  
Efficiency of the pumped well: (See attached Table 2 & Appendix E)  
Transmissivity: (See attached Table 2 & Appendix D)  
Coefficient of storage: (See attached Table 2)  
Hydraulic conductivity: (See attached Table 2 & Appendix D)  
Were any recharge or barrier boundaries detected? Yes  No
- If yes, please describe:  
Thickness of aquifer(s): (See Table 2 & Appendix D)
31. Have time-drawdown determinations been calculated as required under §230.10(d)(1)  Yes No
32. Have distance-drawdown determinations been calculated as required under §230.10(d)(2)?  Yes No
33. Have well interference determinations been made as required under §230.10(d)(3)?  Yes No
34. Has the anticipated method of water delivery, the annual groundwater demand estimates at full build out, and geologic and groundwater information been taken into account in making these determinations?  Yes No
35. Has the water quality analysis required under §230.9 been compared to primary and secondary public drinking water standards as required under §230.10(e)?  Yes No

Does the concentration of any analyzed constituent exceed the standards?

Yes  No

If yes, please list the constituent(s) and concentration measure(s) which exceed standards: See Section IV.3

**Groundwater Availability and Usability Statements (30 TAC, §230.11(a) and (b)).**

36. Drawdown of the aquifer at the pumped well(s) is estimated to be \_\_\_\_\_ feet over a 10-year period and \_\_\_\_\_ feet over a 30-year period. See Attached Table 4 & 5
37. Drawdown of the aquifer at the property boundary is estimated to be \_\_\_\_\_ feet over a 10-year period and \_\_\_\_\_ feet over a 30-year period. See Attached Table 4 & 5
38. The distance from the pumped well(s) to the outer edges of the cone(s)-of-depression is estimated to be \_\_\_\_\_ feet over a 10-year period and \_\_\_\_\_ feet over a 30-year period. See Attached Table 4 & 5
39. The recommended minimum spacing limit between wells is 250 feet with a recommended well yield of 5 gallons per minute per well.
40. Available groundwater  is  is not (circle one) of sufficient quality to meet the intended use of the platted subdivision.
41. The groundwater availability determination does not consider the following conditions (identify any assumptions or uncertainties that are inherent in the groundwater availability determination): See Appendices.

**Certification of Groundwater Availability (30 TAC, §230.11(c)). Must be signed by a Texas Licensed Professional Engineer or a Texas Licensed Professional Geoscientist.**

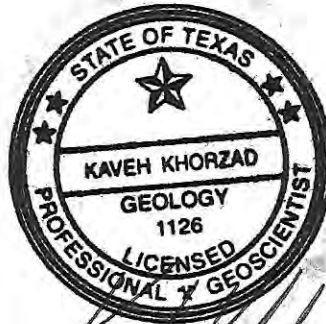
42. I, Kaveh Khorzad, Texas Licensed Professional Engineer or Texas Licensed Professional Geoscientist (circle which applies), certificate number 1126, based on best professional judgement, ~~current groundwater conditions~~, and the information developed and presented in this form, certify that adequate groundwater is available from the underlying aquifer(s) to supply the anticipated use of the proposed subdivision.

Date: 12/6/2019

(affix seal)

Adopted January 23, 2003

Effective February 13, 2003



*Kaveh Khorzad*  
12-6-19

# **Appendix B**

## Geophysical Logs



# **Geophysical Log**

**Well No. 2**

# Blanco-Pedernales Groundwater Conservation District



Borehole Name or #: **Majestic Hills Phase 2 Well #2**  
 Logs: **GR RES**  
 Logging Dates: **9/17/2019**

**601 West Main, P. O. Box 1516, Johnson City, TX 78636 - - - (830) 868-9196 - - - manager@blancocountygroundwater.org**

Well Owner: **LSLP Majestic Hills Ranch LLP** Well Regist. #: **20190085**  
 Latitude: **30° 03' 06.1"** Longitude: **98° 29' 12.0"** Blanco County, Texas  
 Elevation MSL: **Topo: 1820** **GPS:** **Google Earth:** GPS Datum: **NAD 27**

Borehole Data

Drilling Contractor: **Apex Drilling** Date Drilled: **9/10/2019**  
 Measuring Point: **2.5** **Feet Above Ground Level** Driller TD: **685**  
 Depth Reference: **Ground Level** Logger TD: **678**  
 Water Level: **359.2** **Feet Below Measuring Point**

Bit Record				Casing Record			
Run	Bit Size	From	To	PVC / Steel	Size	From	To
1	8	0	50	PVC	4.5	+2.5	685
2	6025	50	685				
3							

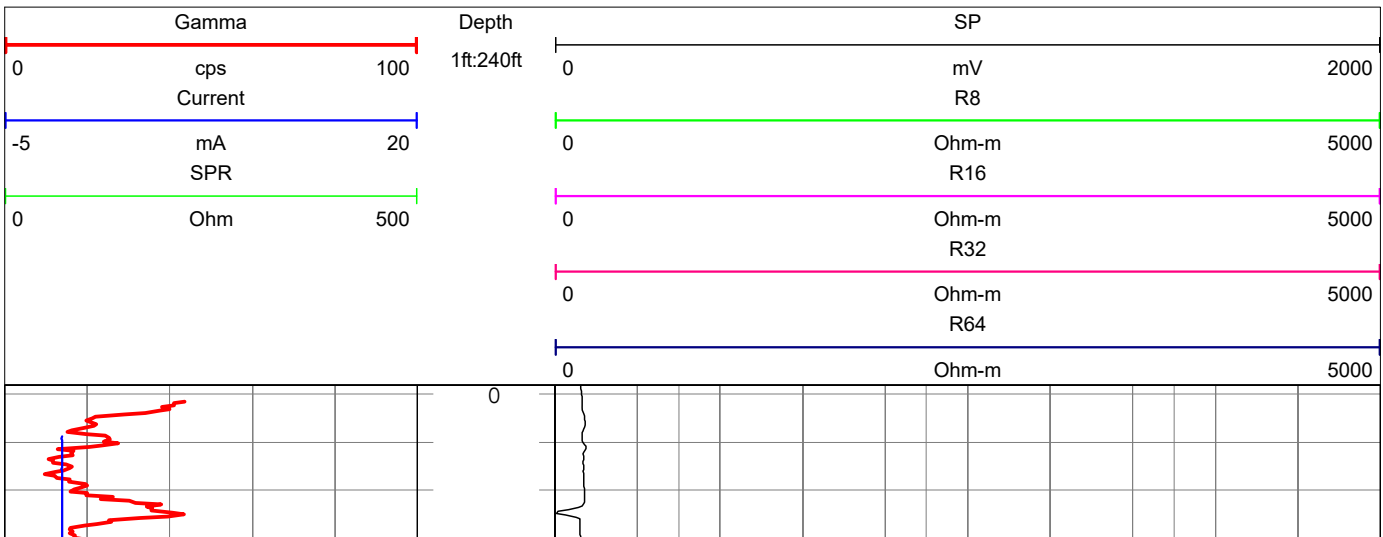
Logging Data

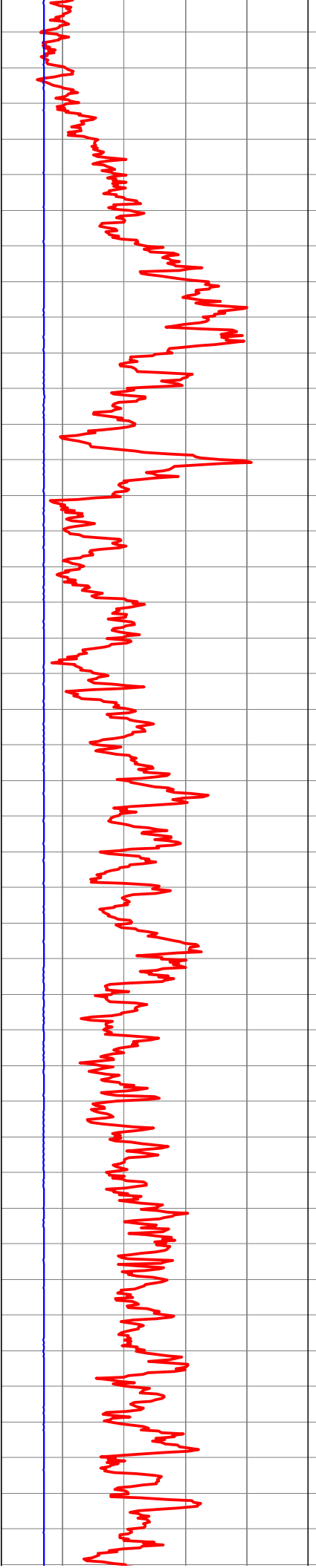
Logged By: **R. Fieseler** Witness: **None**

Log Type	Run #	Up / Down	From	To	Feet / Min.
GR RES	1	UP	678	0	15
	2				15
	3				
	4				

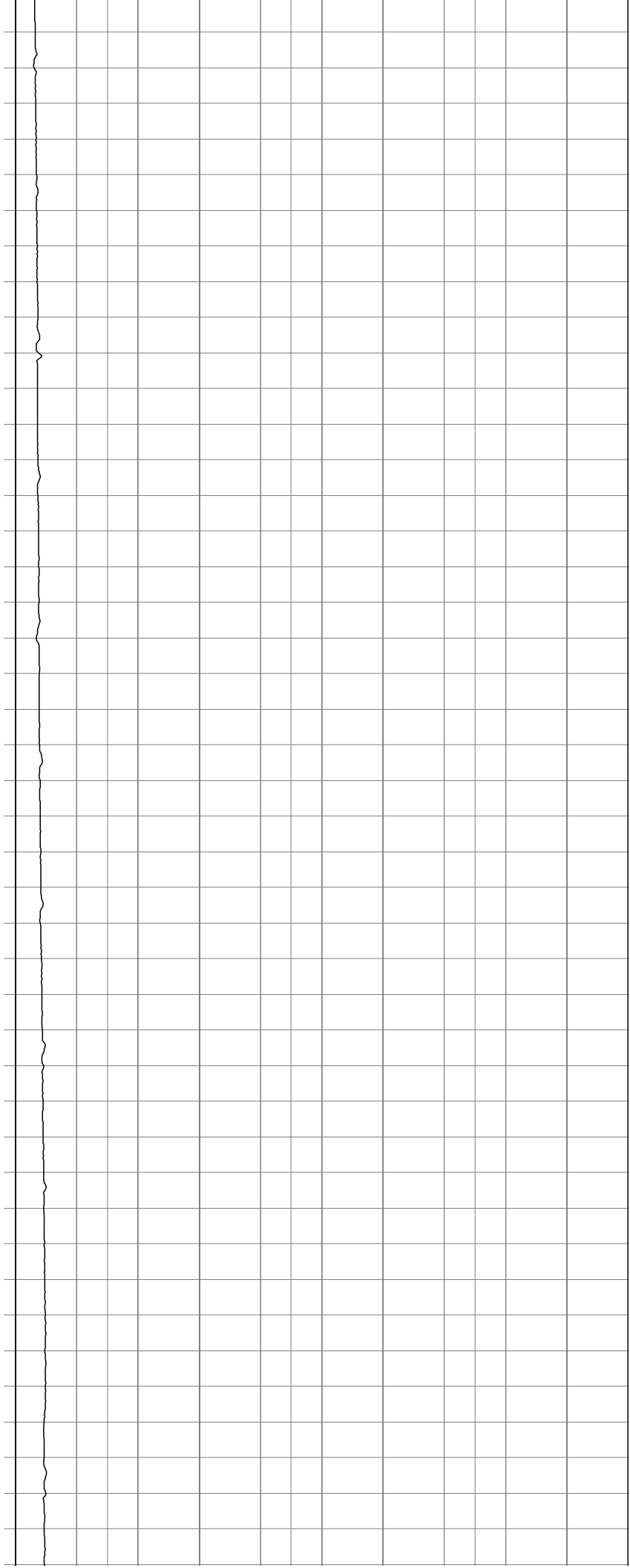
*Comments:*

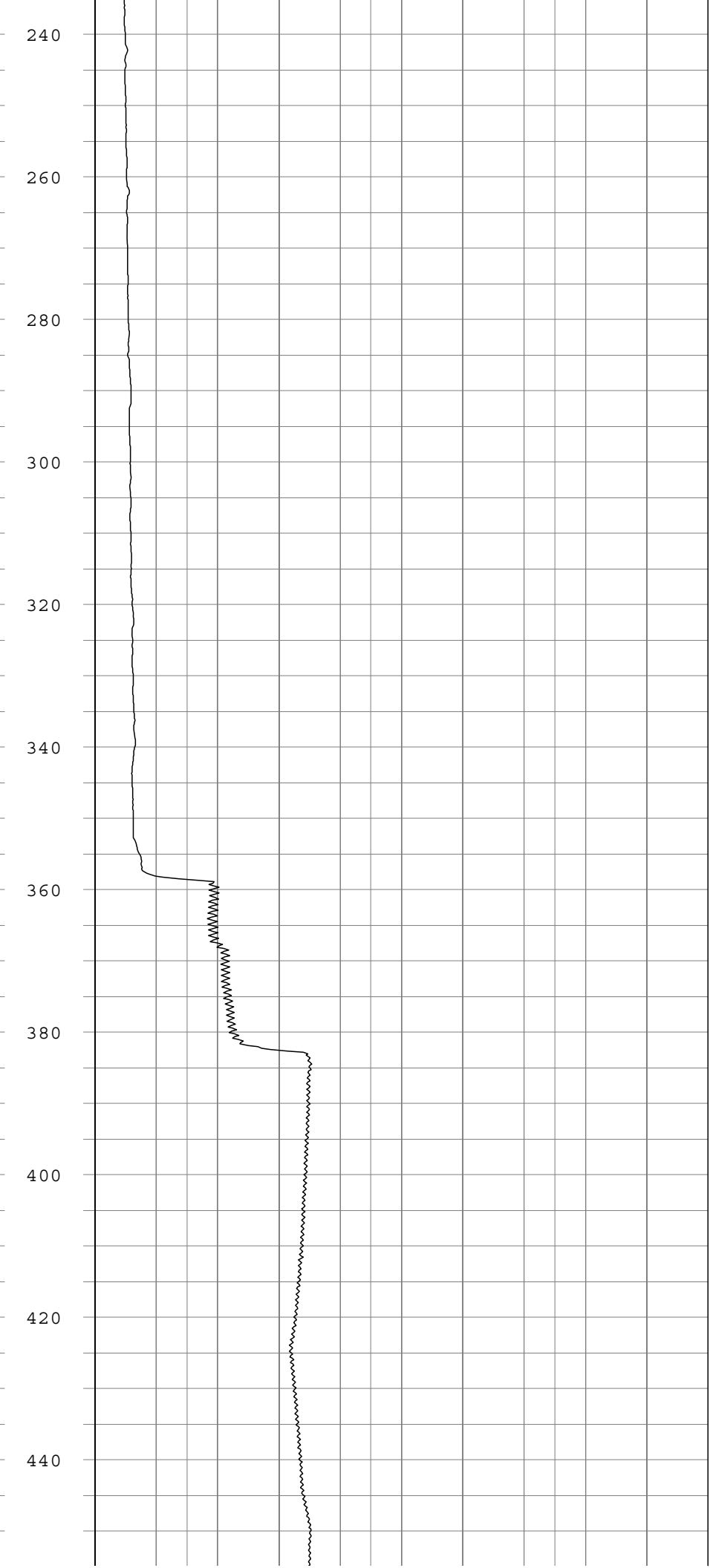
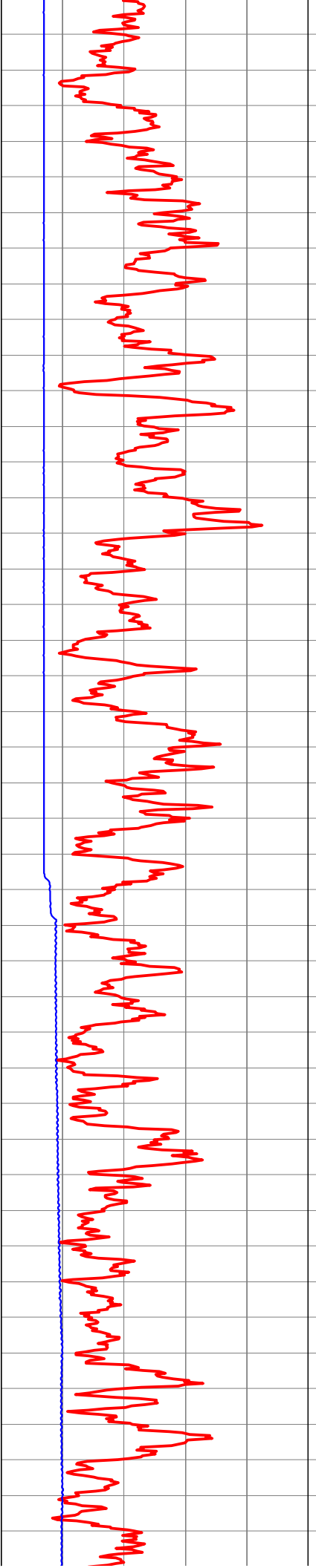
Correlated with Twin Sisters Hall well and 57614JS (James Steel well)



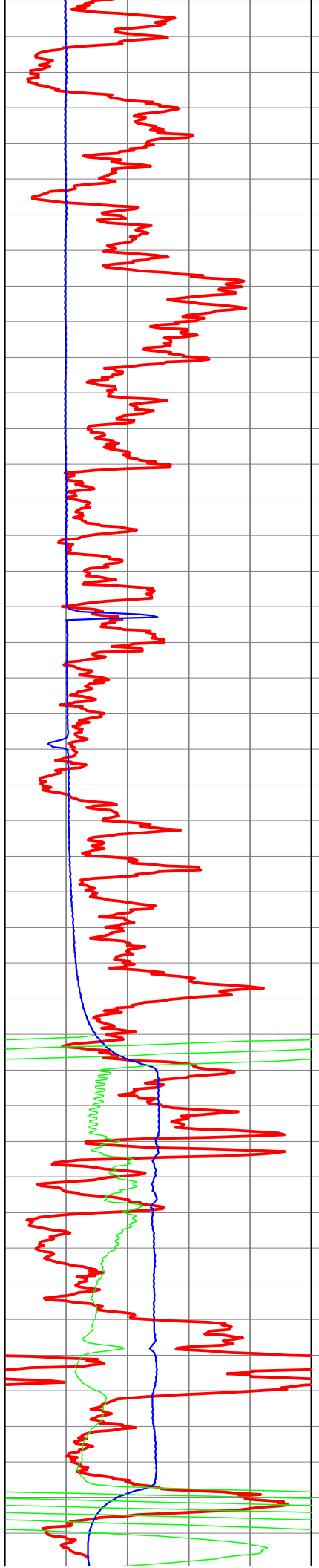


20  
40  
60  
80  
100  
120  
140  
160  
180  
200  
220











# **Geophysical Log**

**Well No. 4**

# Blanco-Pedernales Groundwater Conservation District



Borehole Name or #: **Majestic Hills Phase 2 Well #4**  
 Logs: **GR RES**  
 Logging Dates: **9/16/2019**

**601 West Main, P. O. Box 1516, Johnson City, TX 78636 - - - (830) 868-9196 - - - manager@blancocountygroundwater.org**

Well Owner: **LSLP Majestic Hills Ranch LLP** Well Regist. #: **20190087**  
 Latitude: **30° 03' 05.1"** Longitude: **98° 29' 45.3"** Blanco County, Texas  
 Elevation MSL: **Topo: 1745** **GPS:** **Google Earth:** GPS Datum: **NAD 27**

Borehole Data

Drilling Contractor: **Apex Drilling** Date Drilled: **9/16/2019**  
 Measuring Point: **2.7** **Feet Above Ground Level** Driller TD: **685**  
 Depth Reference: **354.8** **Ground Level** Logger TD: **636.5**  
 Water Level: **354.8** **Feet Below Measuring Point**

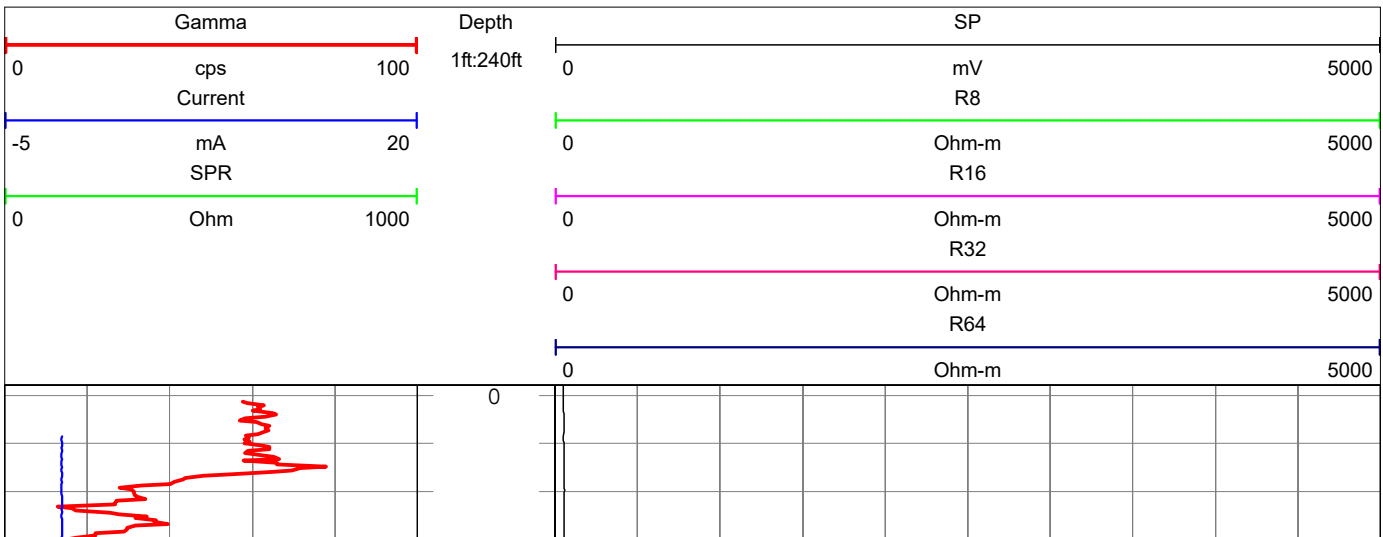
Bit Record				Casing Record			
Run	Bit Size	From	To	PVC / Steel	Size	From	To
1	8	0	50	PVC	4.5	+2.7	636
2	6.25	50	640				
3							

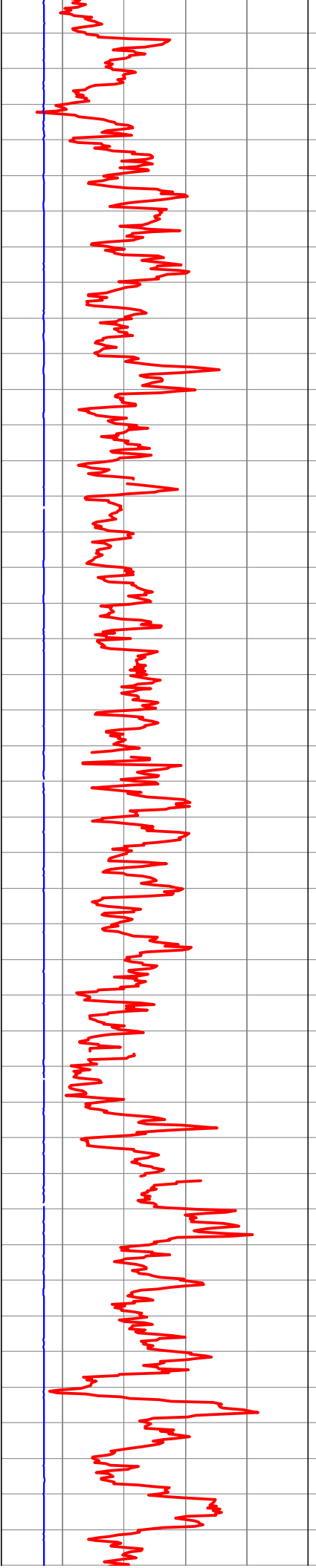
Logging Data

Logged By: **R. Fieseler** Witness: **None**

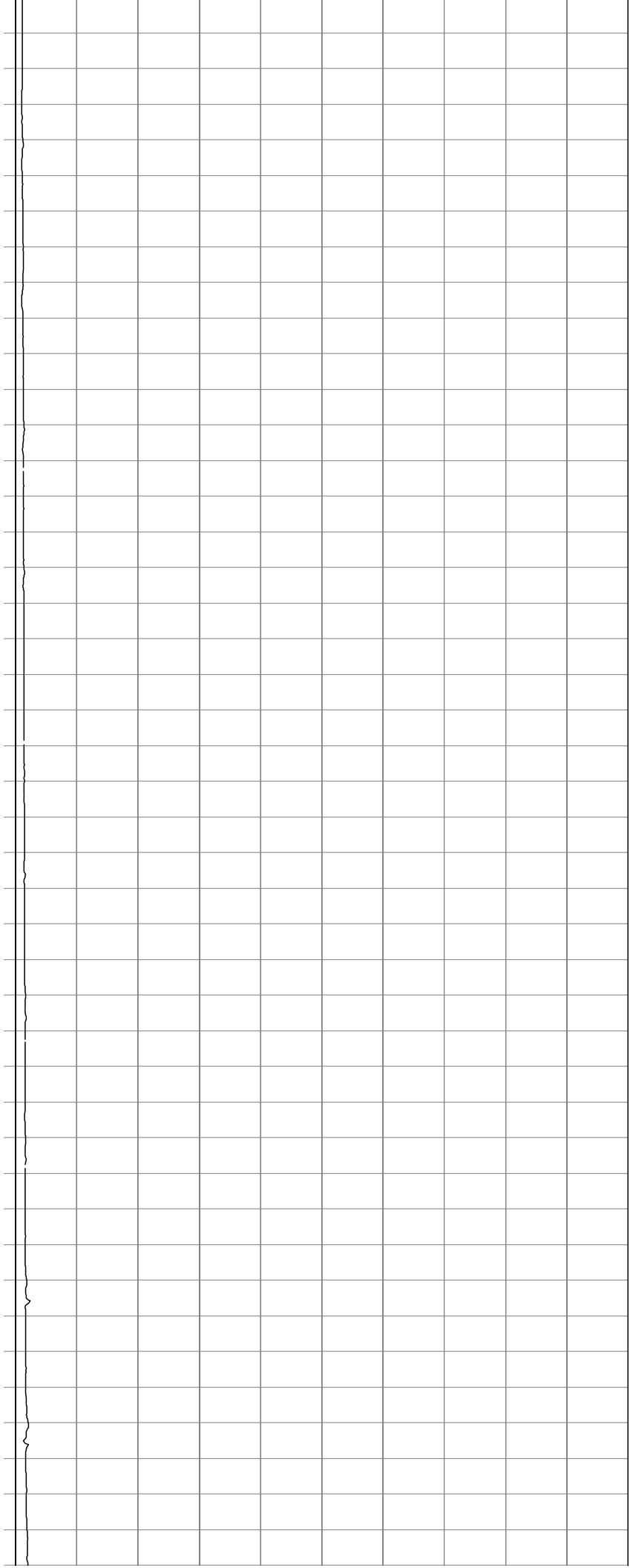
Log Type	Run #	Up / Down	From	To	Feet / Min.
GR RES	1	UP	636	0	15
	2				15
	3				
	4				

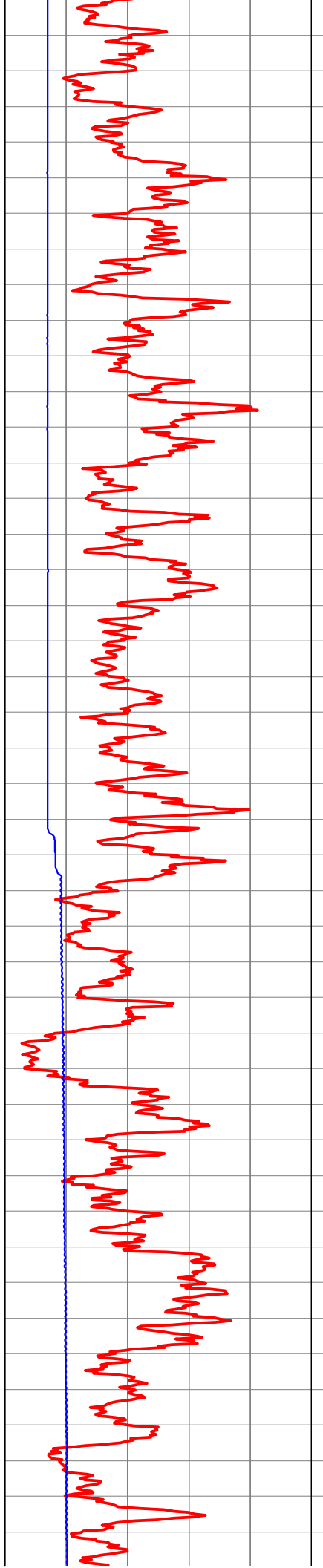
*Comments:*



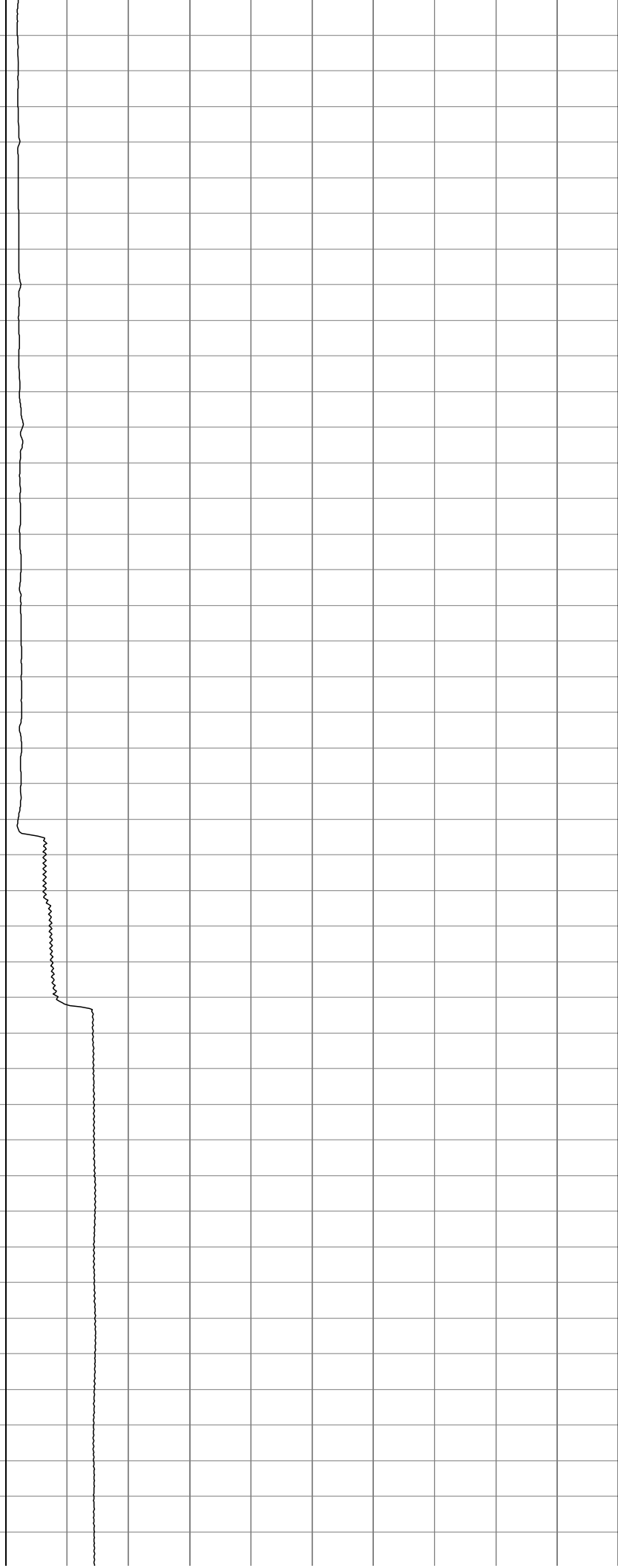


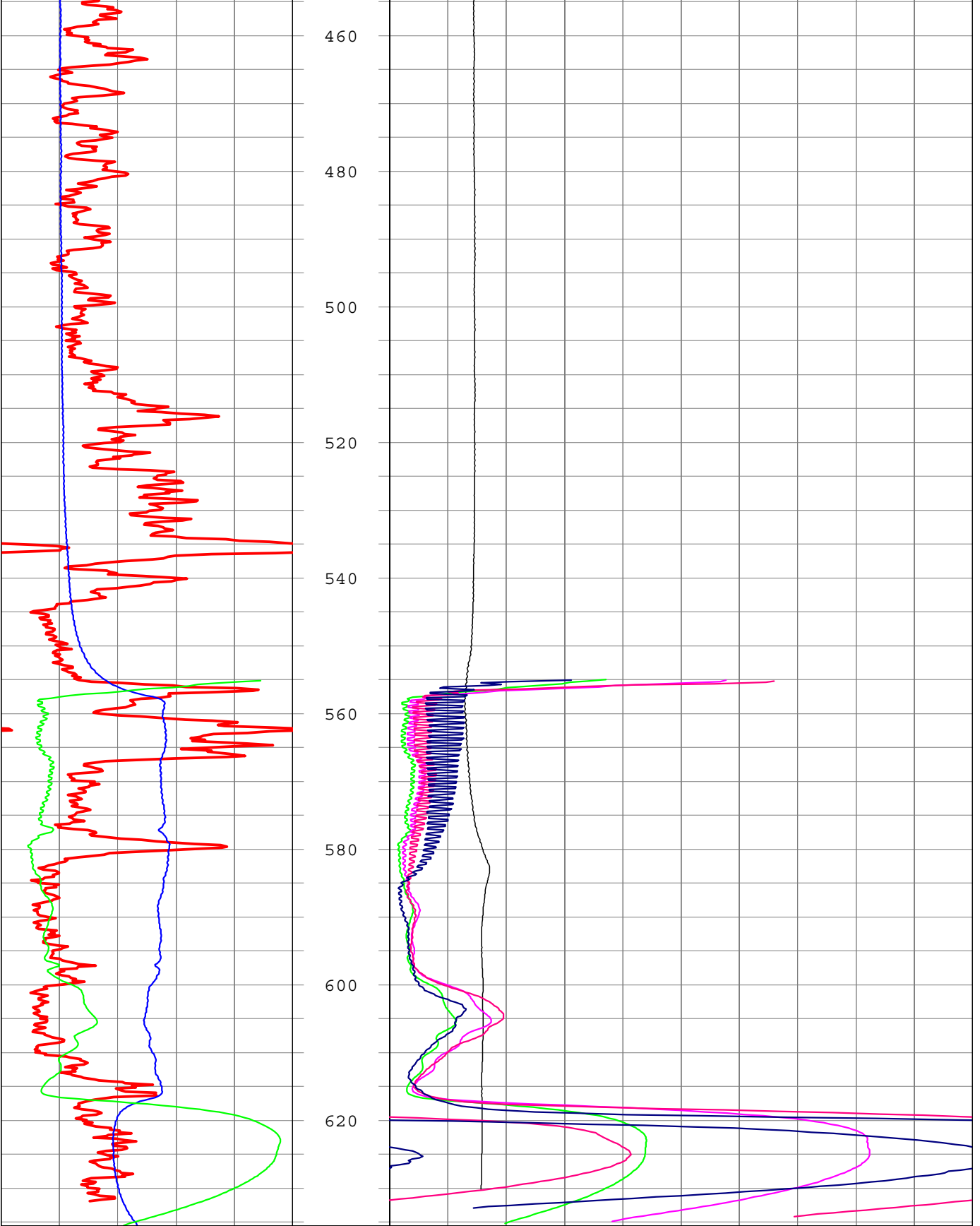
20  
40  
60  
80  
100  
120  
140  
160  
180  
200  
220





240  
260  
280  
300  
320  
340  
360  
380  
400  
420  
440





# **Geophysical Log**

**Well No. 6**



# Blanco-Pedernales Groundwater Conservation District



Borehole Name or #: **Majestic Hills Phase 2 Well #6**  
 Logs: **GR RES**  
 Logging Dates: **9/18/2019**

**601 West Main, P. O. Box 1516, Johnson City, TX 78636 - - - (830) 868-9196 - - - manager@blancocountygroundwater.org**

Well Owner: **LSLP Majestic Hills Ranch LLP** Well Regist. #: **20190089**  
 Latitude: **30° 02' 44.6"** Longitude: **98° 29' 54.9"** Blanco County, Texas  
 Elevation MSL: **Topo: 1655** **GPS:** **Google Earth:** GPS Datum: **NAD 27**

Borehole Data

Drilling Contractor: **Apex Drilling** Date Drilled: **9/6/2019**  
 Measuring Point: **1.5** **Feet Above Ground Level** Driller TD: **460**  
 Depth Reference: **Ground Level** Logger TD: **460**  
 Water Level: **136.2** **Feet Below Measuring Point**

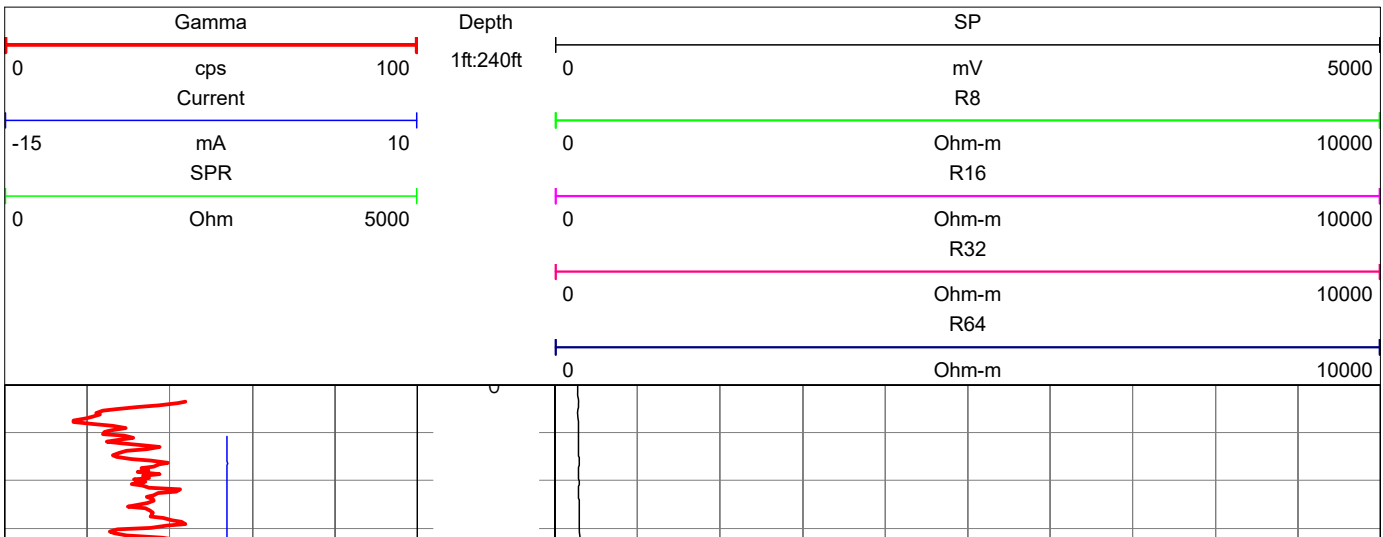
Bit Record				Casing Record			
Run	Bit Size	From	To	PVC / Steel	Size	From	To
1	8	0	50	PVC	4.5	1.5	460
2	6.25	50	465				
3							

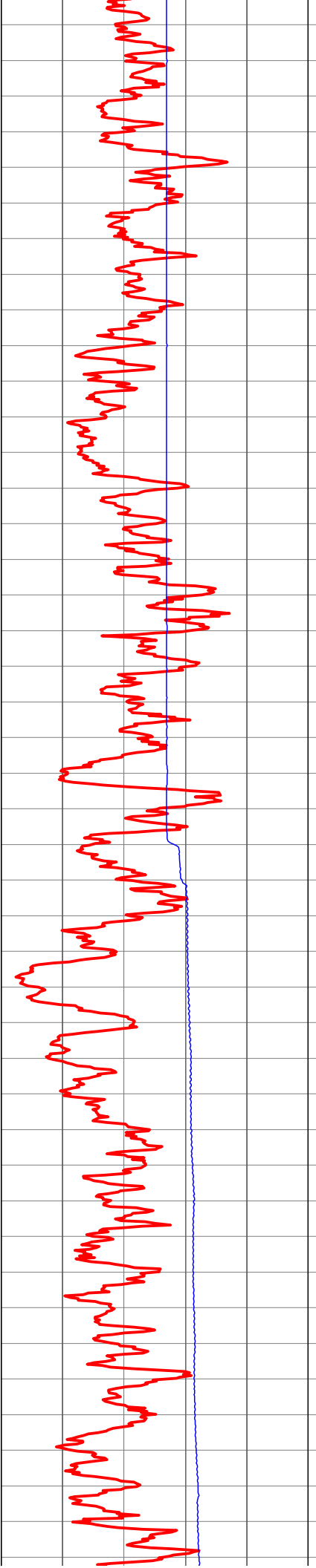
Logging Data

Logged By: **R. Fieseler** Witness: **None**

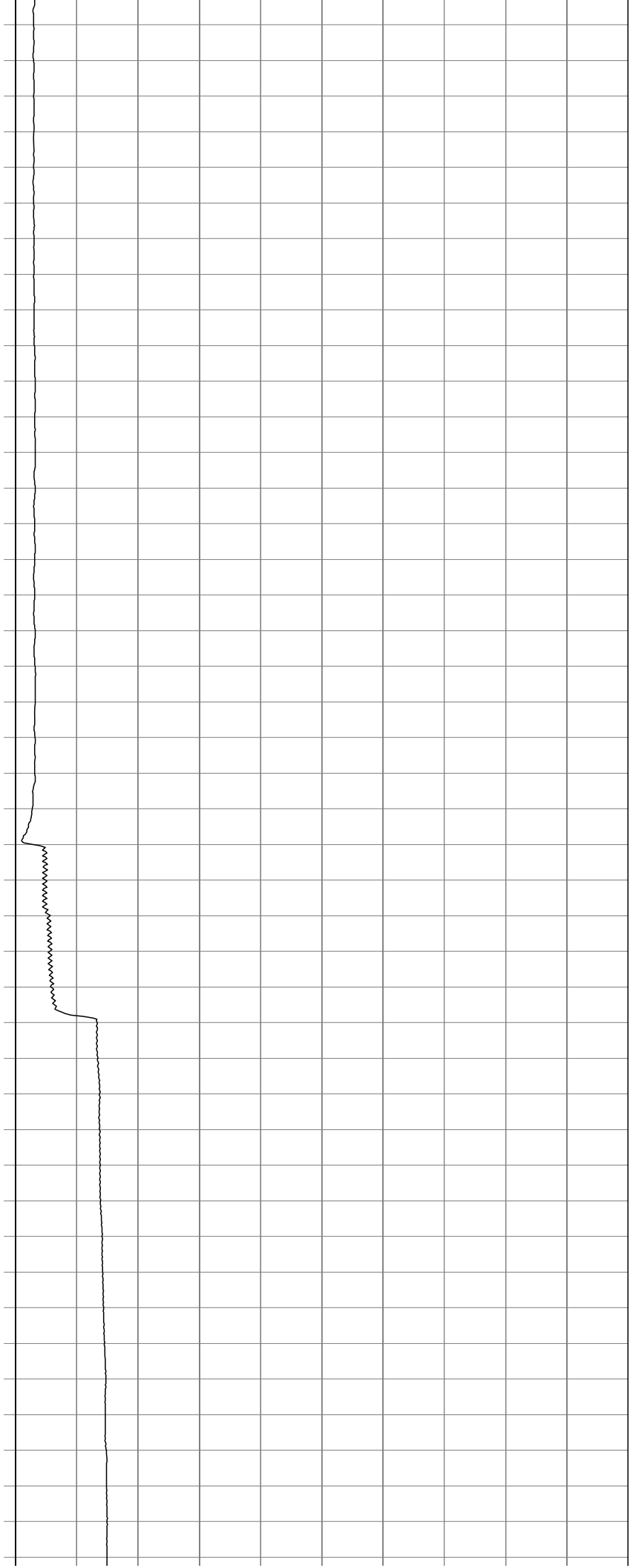
Log Type	Run #	Up / Down	From	To	Feet / Min.
GR RES	1	UP	460	0	15
	2				15
	3				
	4				

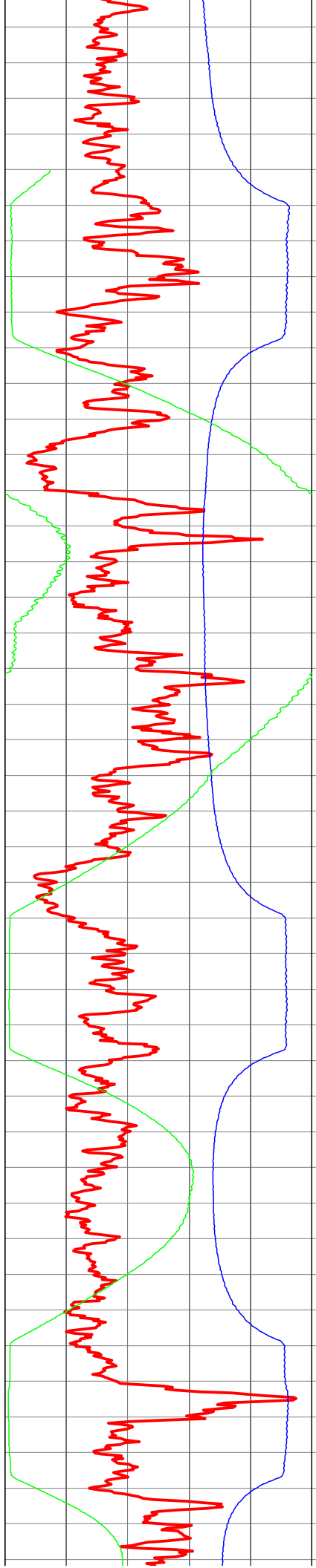
*Comments:*





20  
40  
60  
80  
100  
120  
140  
160  
180  
200  
220





240

260

280

300

320

340

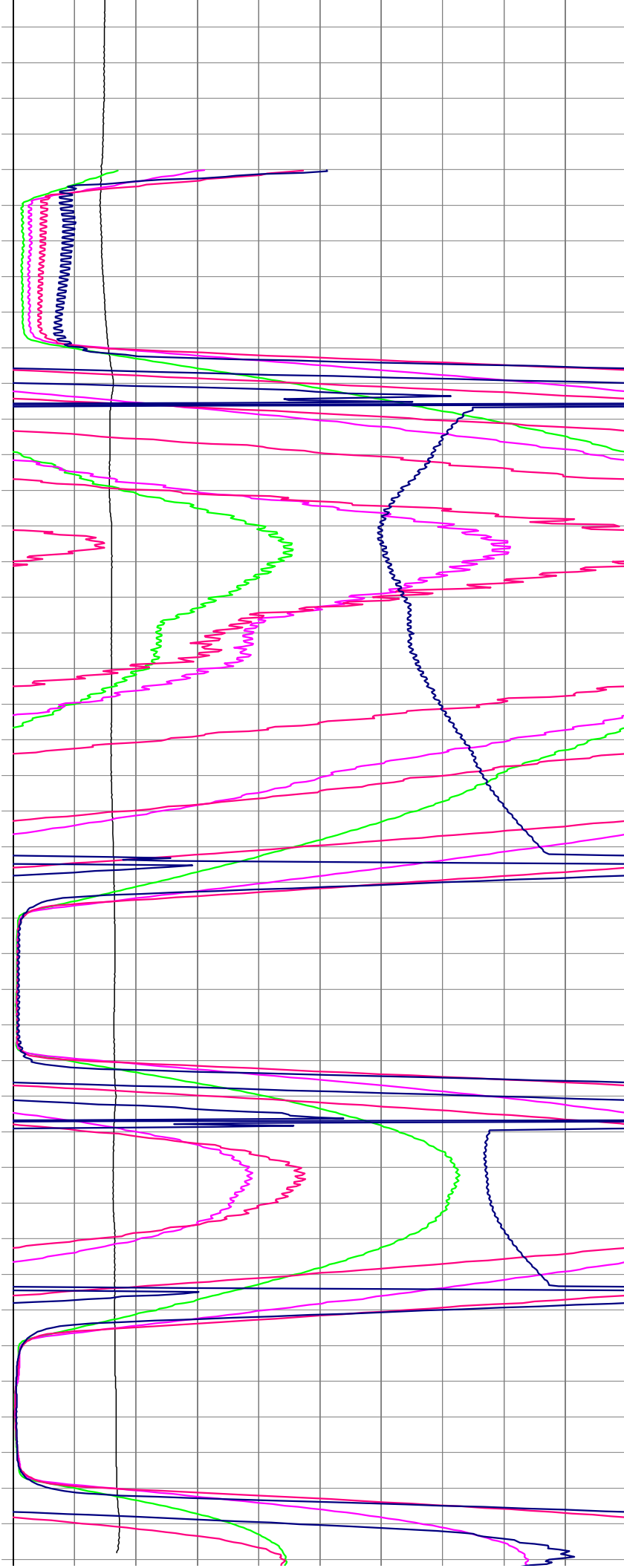
360

380

400

420

440





# **Geophysical Log**

**Well No. 7**

# Blanco-Pedernales Groundwater Conservation District



Borehole Name or #: **Majestic Hills Phase 2 Well #7**  
 Logs: **GR RES**  
 Logging Dates: **9/19/2019**

**601 West Main, P. O. Box 1516, Johnson City, TX 78636 - - - (830) 868-9196 - - - manager@blancocountygroundwater.org**

Well Owner: **LSLP Majestic Hills Ranch LLP** Well Regist. #: **20190090**  
 Latitude: **30° 02' 10.7"** Longitude: **98° 30' 24.4"** Blanco County, Texas  
 Elevation MSL: **Topo: 1843** GPS: **Google Earth:** GPS Datum: **NAD 27**

Borehole Data

Drilling Contractor: **Apex Drilling** Date Drilled: **9/18/2019**  
 Measuring Point: **2.3** Feet Above Ground Level Driller TD: **640**  
 Depth Reference: **Ground Level** Logger TD: **634**  
 Water Level: **311.8** Feet Below Measuring Point

Bit Record				Casing Record			
Run	Bit Size	From	To	PVC / Steel	Size	From	To
1	8	0	50	PVC	4.5	2.3	TD
2	6.25	50	640				
3							

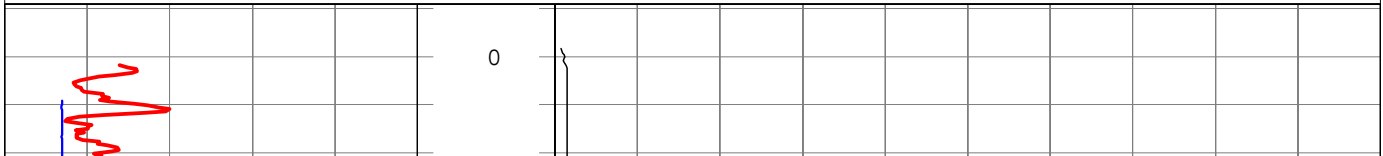
Logging Data

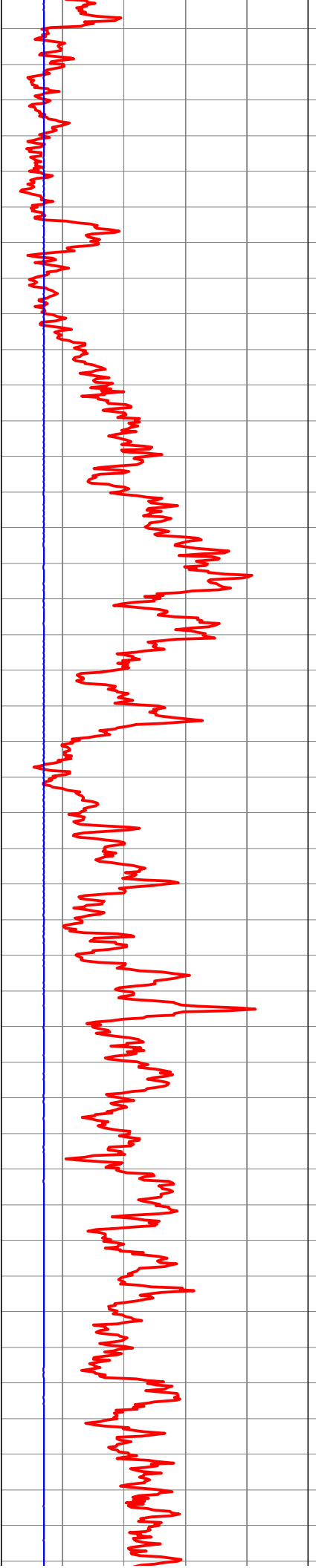
Logged By: **R. Fieseler** Witness: **None**

Log Type	Run #	Up / Down	From	To	Feet / Min.
GR RES	1	UP	634	0	15
	2				15
	3				
	4				

*Comments:*

Gamma	Depth	SP
0 cps	1ft:240ft	0 mV
100 Current		5000 R8
-5 mA		0 Ohm-m
20 SPR		10000 R16
0 Ohm		0 Ohm-m
		10000 R32
		0 Ohm-m
		10000 R64
		0 Ohm-m
		10000





20

40

60

80

100

120

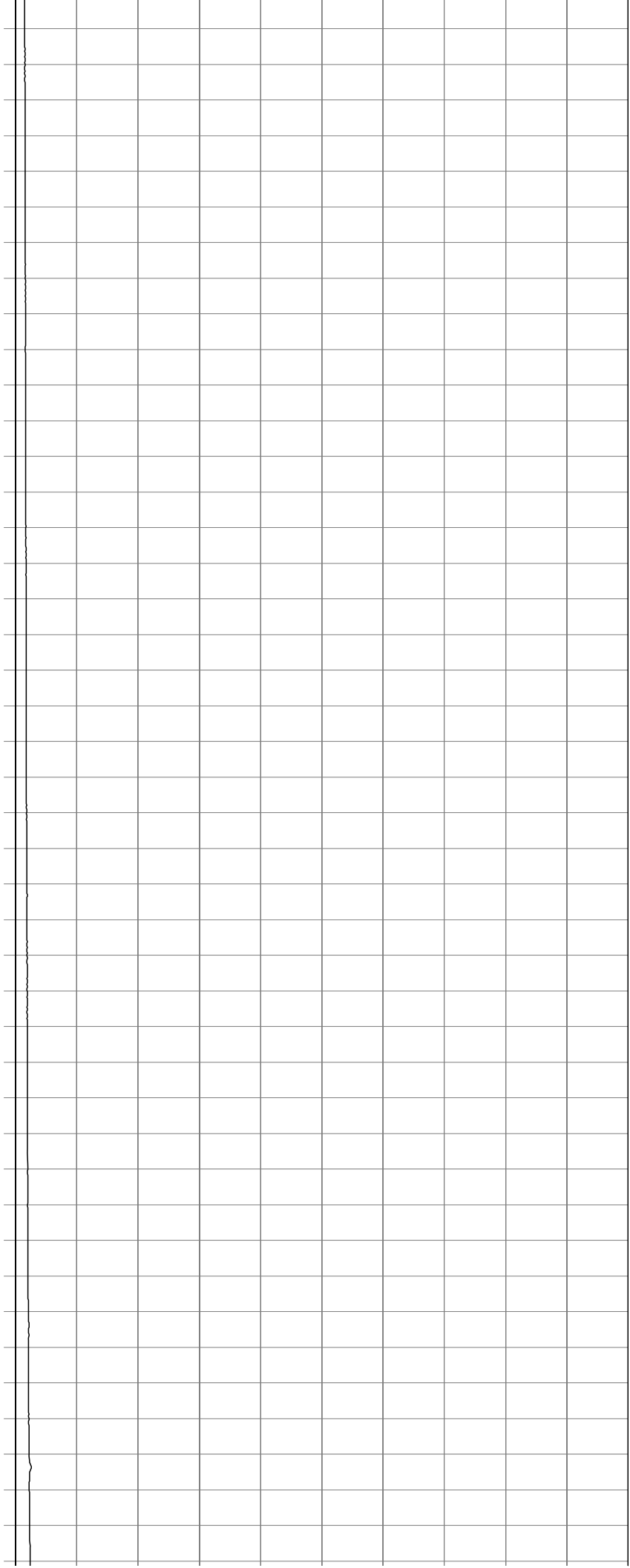
140

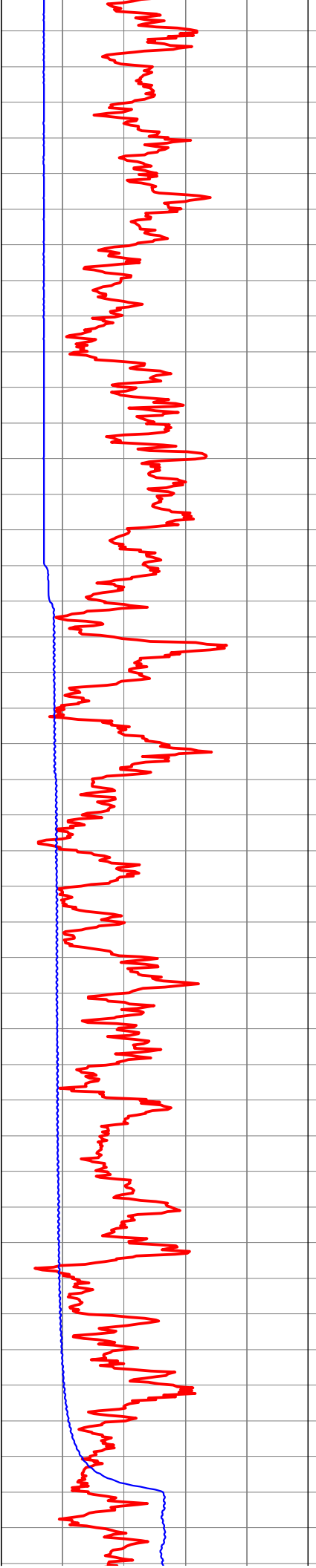
160

180

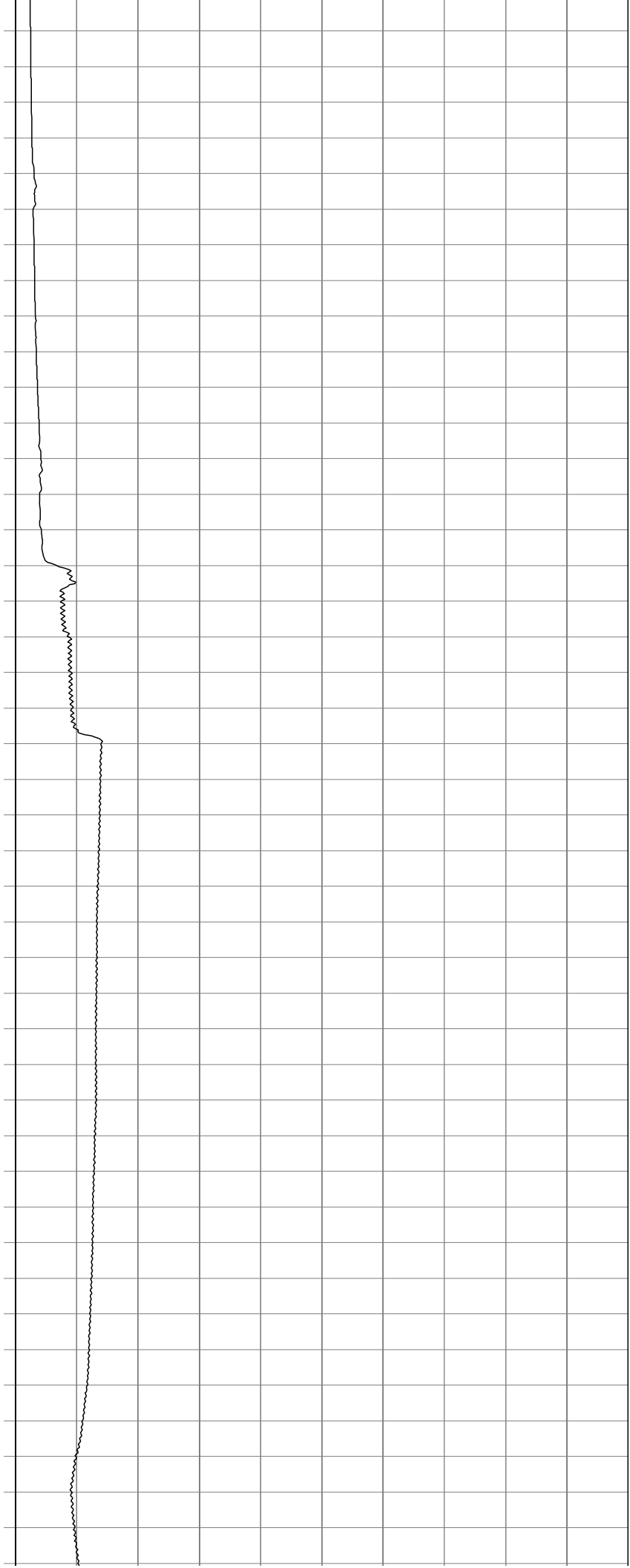
200

220

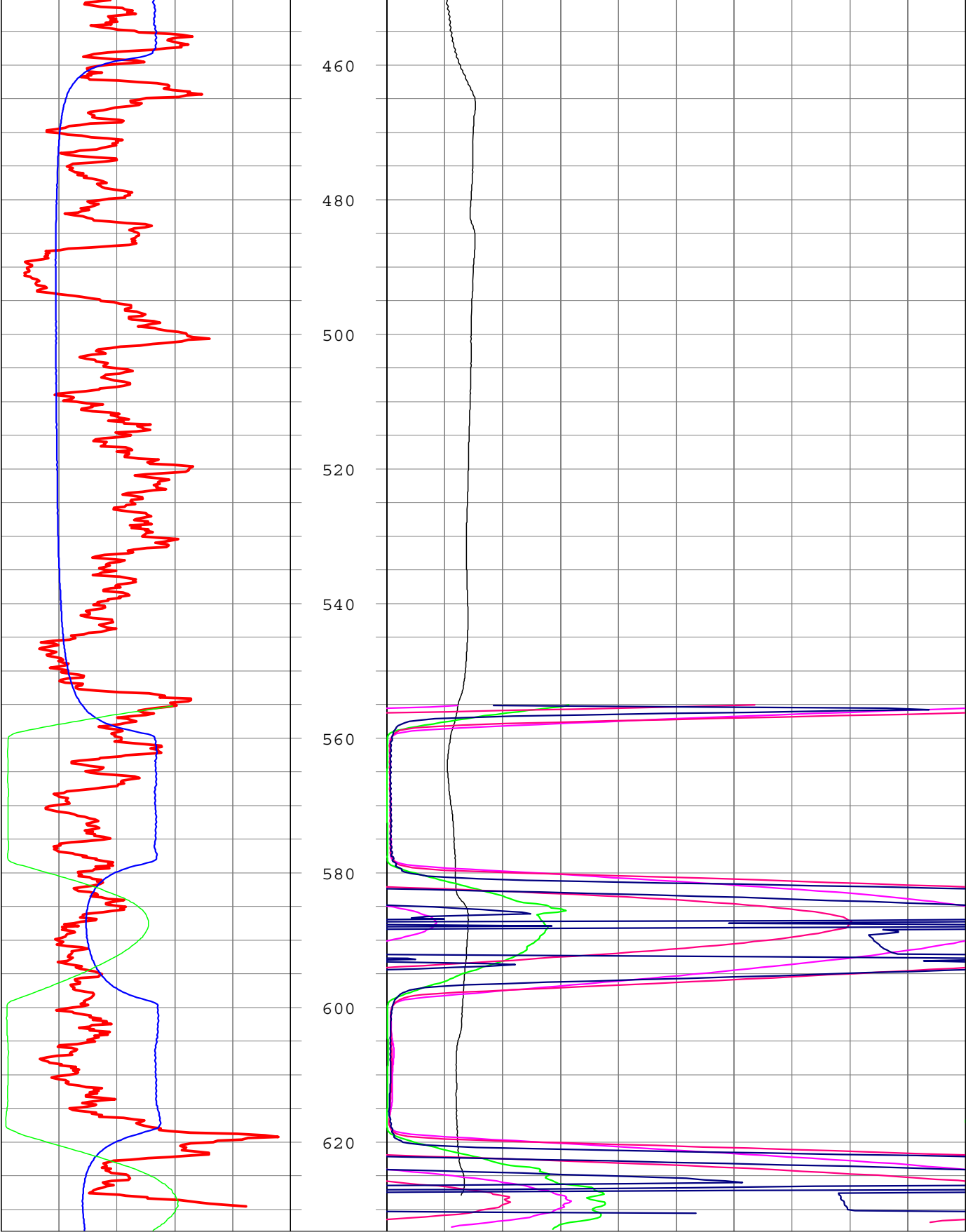




240  
260  
280  
300  
320  
340  
360  
380  
400  
420  
440







# **Geophysical Log**

**Well No. 9**

# Blanco-Pedernales Groundwater Conservation District



Borehole Name or #: **Majestic Hills Phase 2 Well #9**  
 Logs: **GR RES**  
 Logging Dates: **9/16/2019**

**601 West Main, P. O. Box 1516, Johnson City, TX 78636 - - - (830) 868-9196 - - - manager@blancocountygroundwater.org**

Well Owner: **LSLP Majestic Hills Ranch LLP** Well Regist. #: **20190092**  
 Latitude: **30° 03' 26.4"** Longitude: **98° 29' 38.0"** Blanco County, Texas  
 Elevation MSL: **Topo: 1720** GPS: **Google Earth:** GPS Datum: **NAD 27**

Borehole Data

Drilling Contractor: **Apex Drilling** Date Drilled: **9/14/2019**  
 Measuring Point: **2.0** Feet Above Ground Level Driller TD: **560**  
 Depth Reference: **Ground Level** Logger TD: **560**  
 Water Level: **282.5** Feet Below Measuring Point

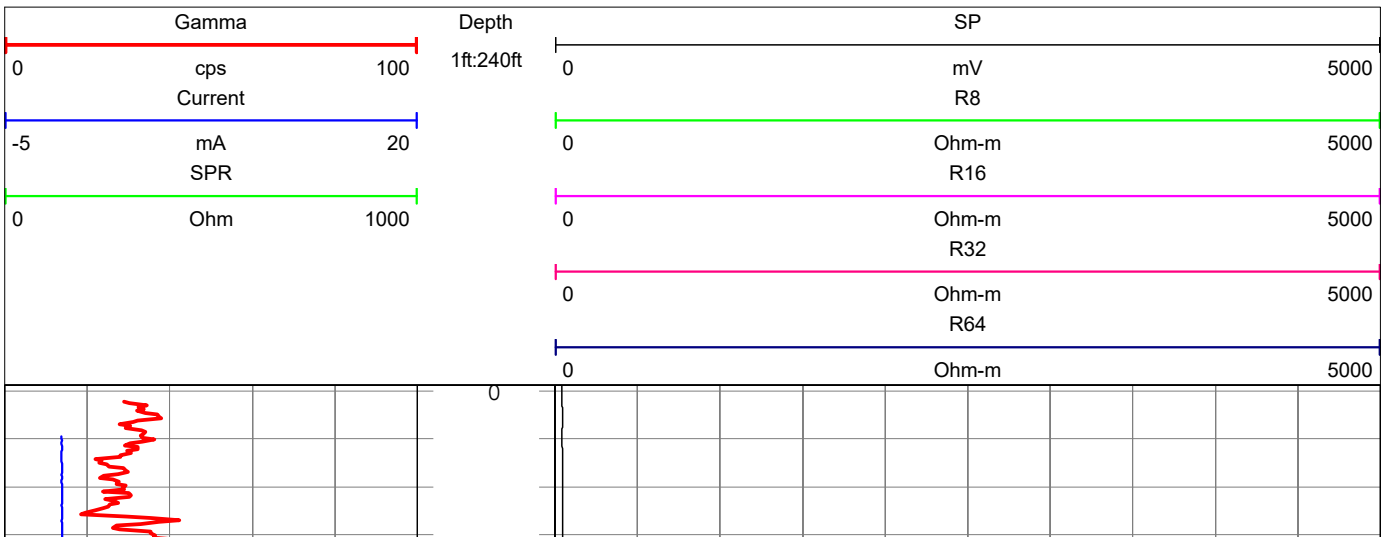
Bit Record				Casing Record			
Run	Bit Size	From	To	PVC / Steel	Size	From	To
1	8	0	50	PVC	4.5	+2	560
2	6.25	50	560				
3							

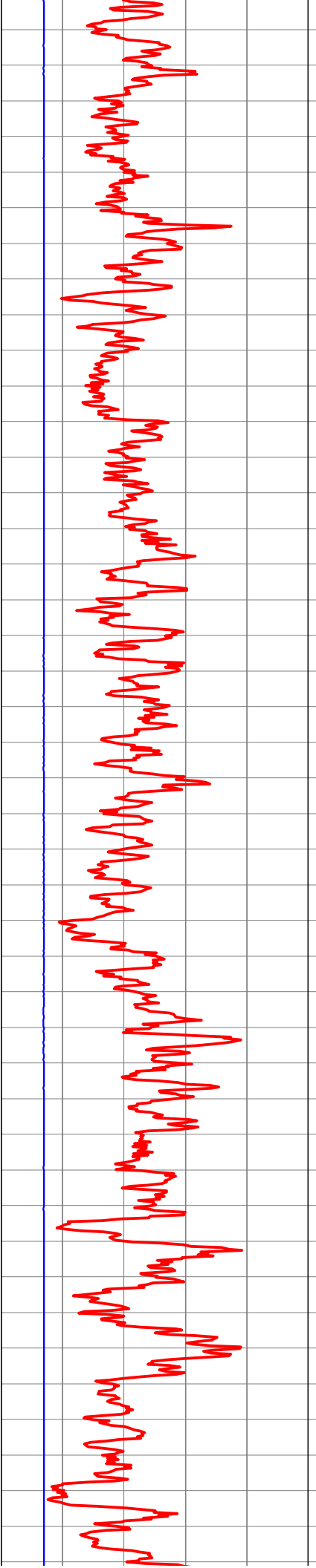
Logging Data

Logged By: **R. Fieseler** Witness: **None**

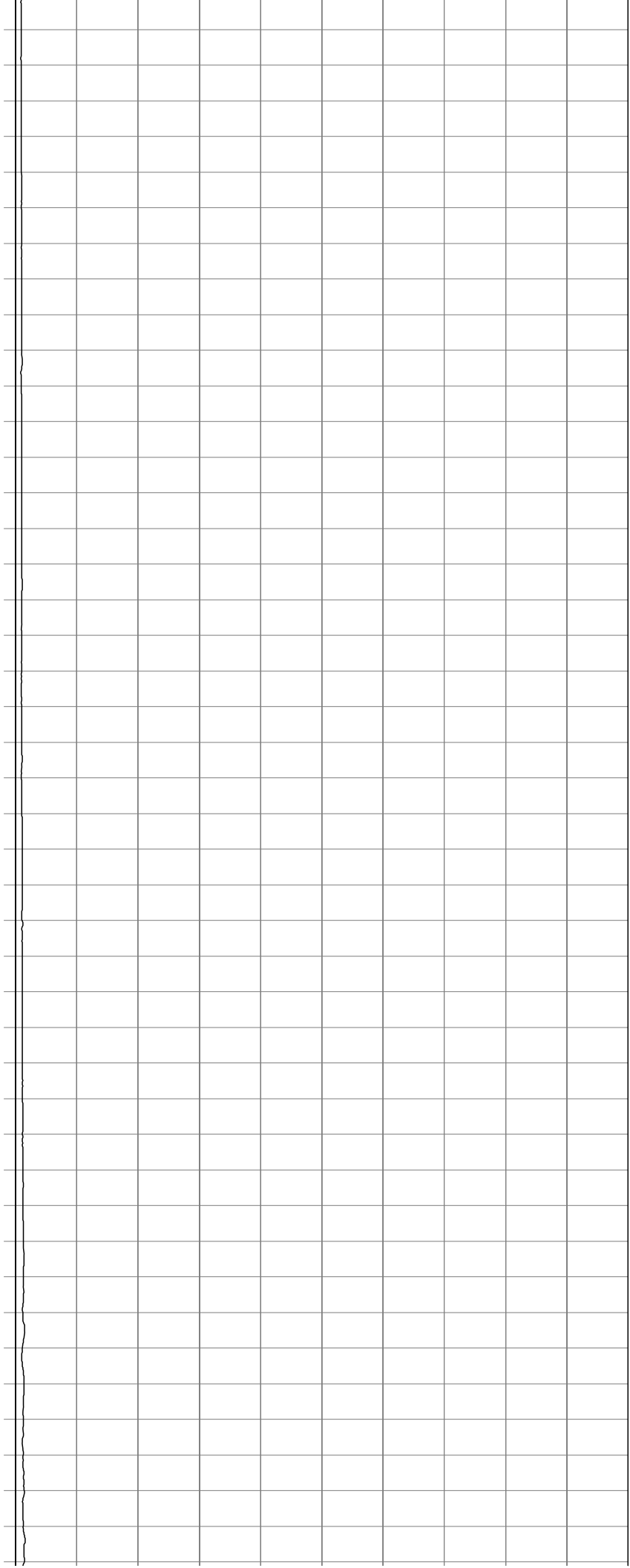
Log Type	Run #	Up / Down	From	To	Feet / Min.
GR RES	1	UP	560	0	15
	2				15
	3				
	4				

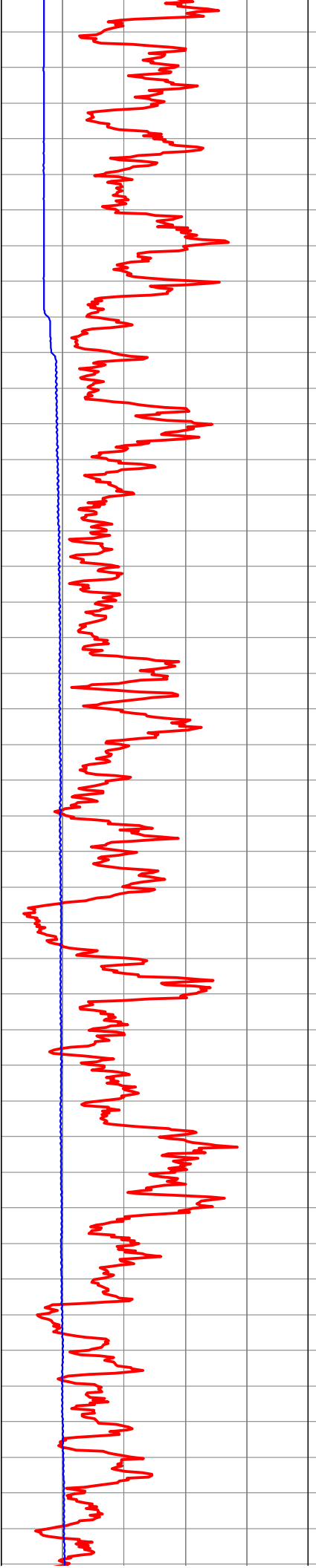
*Comments:*



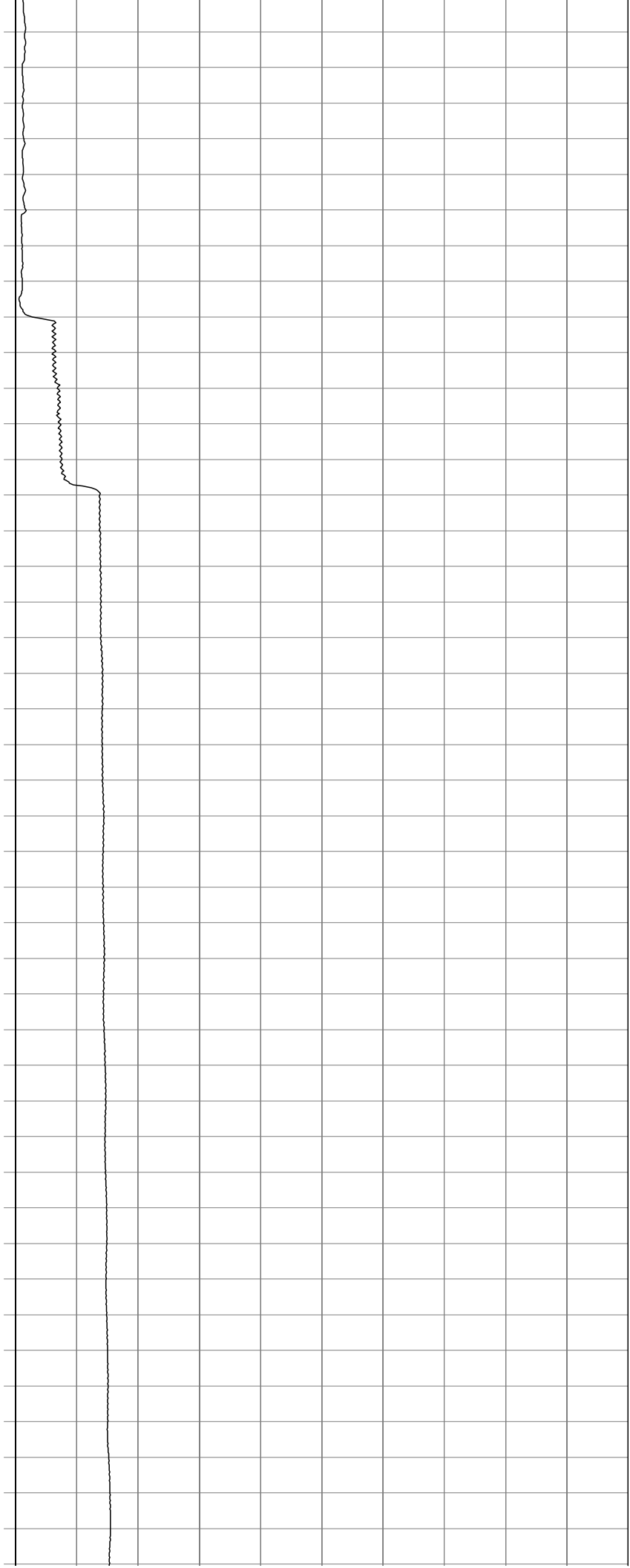


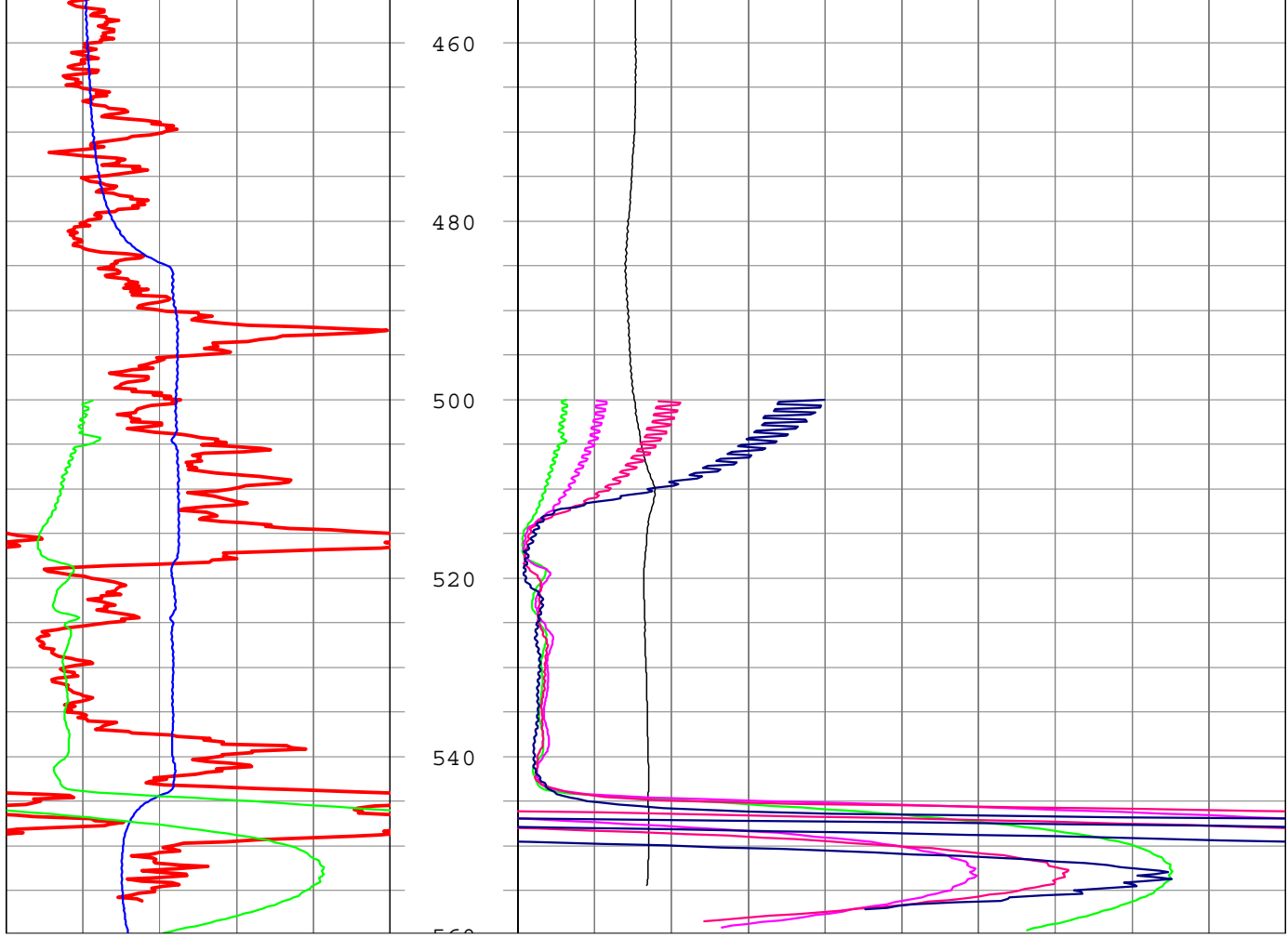
20  
40  
60  
80  
100  
120  
140  
160  
180  
200  
220





240  
260  
280  
300  
320  
340  
360  
380  
400  
420  
440





# **Appendix C**

## State Well Reports



# **Well Report**

**Well No. 1**



# STATE OF TEXAS WELL REPORT for Tracking #522254

Owner: **LSLP Majestic Hills LLC** Owner Well #: **1**  
Address: **P O Box 1987** Grid #: **57-61-4**  
**Marble Falls , TX 78654**  
Well Location: **Majestic Hill Subdivision Phase II** Latitude: **30° 03' 17" N**  
**Blanco, TX** Longitude: **098° 29' 14" W**  
Well County: **Blanco** Elevation: **No Data**  
Number of Wells Drilled: **10**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/12/2019** Drilling End Date: **9/13/2019**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>705</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>3 Benseal 3 Portland 6 Bags/Sacks</b>

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.**  
**Burlap/Neoprene at 55 ft.**  
**Burlap/Neoprene at 415 ft.**  
**Burlap/Neoprene at 420 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 12 GPM**

Water Quality:

<i>Strata Depth (ft.)</i>	<i>Water Type</i>
<b>423 - 700</b>	<b>M. Trinity</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Top Soil</b>
<b>1</b>	<b>51</b>	<b>Tan LS</b>
<b>51</b>	<b>59</b>	<b>Gray Tan LS</b>
<b>59</b>	<b>115</b>	<b>Tan LS</b>
<b>115</b>	<b>157</b>	<b>Gray Tan LS</b>
<b>157</b>	<b>165</b>	<b>Tan LS</b>
<b>165</b>	<b>423</b>	<b>Gray Tan LS</b>
<b>423</b>	<b>425</b>	<b>Tan LS</b>
<b>425</b>	<b>617</b>	<b>Tan Gray LS</b>
<b>617</b>	<b>627</b>	<b>Tan LS</b>
<b>627</b>	<b>700</b>	<b>Tan Gray LS</b>
<b>700</b>	<b>705</b>	<b>Gray LS</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>2</b>	<b>620</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>620</b>	<b>680</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>680</b>	<b>705</b>

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

# **Well Report**

**Well No. 2**

## STATE OF TEXAS WELL REPORT for Tracking #522251

Owner:	LSLP Majestic Hills LLC	Owner Well #:	2
Address:	P O Box 1987 Marble Falls , TX 78654	Grid #:	57-61-4
Well Location:	Majestic Hill Subdivision Phase II Blanco, TX	Latitude:	30° 03' 07" N
Well County:	Blanco	Longitude:	098° 29' 18" W
Number of Wells Drilled:	10	Elevation:	No Data

Type of Work:	<b>New Well</b>	Proposed Use:	<b>Domestic</b>
---------------	-----------------	---------------	-----------------

Drilling Start Date: **9/10/2019**      Drilling End Date: **9/10/2019**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>685</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>3 Benseal / 3 Portland 6 Bags/Sacks</b>

Seal Method: **Slurry**

Distance to Property Line (ft.): **50**

Sealed By: **Driller**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion:	Surface Sleeve Installed	Surface Completion by Driller
---------------------	--------------------------	-------------------------------

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.**  
**Burlap/Neoprene at 55 ft.**  
**Burlap/Neoprene at 395 ft.**  
**Burlap/Neoprene at 400 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted**                      **Yield: 6 GPM**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>400 - 665</b>	<b>M. Trinity</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Top Soil</b>
<b>1</b>	<b>35</b>	<b>Tan LS</b>
<b>35</b>	<b>45</b>	<b>Gray Tan LS</b>
<b>45</b>	<b>117</b>	<b>Tan LS</b>
<b>117</b>	<b>360</b>	<b>Gray Tan LS</b>
<b>360</b>	<b>638</b>	<b>Tan Gray LS</b>
<b>638</b>	<b>642</b>	<b>Tan LS</b>
<b>642</b>	<b>665</b>	<b>Gray LS</b>
<b>665</b>	<b>685</b>	<b>Gray LS w/ Clay</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>2</b>	<b>605</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>605</b>	<b>685</b>

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation**  
**P.O. Box 12157**  
**Austin, TX 78711**  
**(512) 334-5540**

# **Well Report**

**Well No. 3**

# STATE OF TEXAS WELL REPORT for Tracking #522252

Owner: **LSLP Majestic Hills LLC** Owner Well #: **3**  
Address: **P O Box 1987** Grid #: **57-61-4**  
**Marble Falls, TX 78654**  
Well Location: **Majestic Hill Subdivision Phase II** Latitude: **30° 02' 58" N**  
**Blanco, TX** Longitude: **098° 29' 17" W**  
Well County: **Blanco** Elevation: **No Data**  
Number of Wells Drilled: **10**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/11/2019** Drilling End Date: **9/12/2019**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>665</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>3 Benseal 3 Portland 6 Bags/Sacks</b>

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other  
concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.**  
**Burlap/Neoprene at 55 ft.**  
**Burlap/Neoprene at 395 ft.**  
**Burlap/Neoprene at 400 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 12 GPM**



Water Quality:

Strata Depth (ft.)	Water Type
400 - 660	M. Trinity

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	1	Top Soil
1	27	Tan LS
27	57	Gray Tan LS
57	67	Tan LS
67	280	Gray Tan LS
280	400	Tan Gray LS
400	423	Tan LS
423	428	Gray Tan LS
428	515	Tan Gray LS
515	525	Tan LS
525	635	Tan Gray LS
635	645	Tan LS
645	660	Gray LS
660	665	Gray Clay

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	Blank	New Plastic (PVC)	SDR17	2	505
4.5	Screen	New Plastic (PVC)	.035	505	525
4.5	Blank	New Plastic (PVC)	SDR17	525	585
4.5	Screen	New Plastic (PVC)	.035	585	605
4.5	Blank	New Plastic (PVC)	SDR17	605	625
4.5	Screen	New Plastic (PVC)	.035	625	645
4.5	Blank	New Plastic (PVC)	SDR17	645	665

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

# **Well Report**

**Well No. 4**

## STATE OF TEXAS WELL REPORT for Tracking #522257

Owner: <b>LSLP Majestic Hills LLC</b>	Owner Well #: <b>4</b>
Address: <b>P O Box 1987 Marble Falls , TX 78654</b>	Grid #: <b>57-61-4</b>
Well Location: <b>Majestic Hill Subdivision Phase II Blanco, TX</b>	Latitude: <b>30° 03' 06" N</b>
Well County: <b>Blanco</b>	Longitude: <b>098° 29' 46" W</b>
Number of Wells Drilled: <b>10</b>	Elevation: <b>No Data</b>

Type of Work: <b>New Well</b>	Proposed Use: <b>Domestic</b>
-------------------------------	-------------------------------

Drilling Start Date: **9/16/2019**      Drilling End Date: **9/16/2019**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>640</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>3 Benseal/3 Portland 6 Bags/Sacks</b>

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: <b>Surface Sleeve Installed</b>	<b>Surface Completion by Driller</b>
---	--------------------------------------

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.**  
**Burlap/Neoprene at 55 ft.**  
**Burlap/Neoprene at 325 ft.**  
**Burlap/Neoprene at 330 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted**                      **Yield: 8 GPM**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>330 - 620</b>	<b>M. Trinity</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Top Soil</b>
<b>1</b>	<b>21</b>	<b>Tan LS</b>
<b>21</b>	<b>350</b>	<b>Gray Tan LS</b>
<b>350</b>	<b>475</b>	<b>Tan Gray LS</b>
<b>475</b>	<b>486</b>	<b>Tan LS</b>
<b>486</b>	<b>540</b>	<b>Tan Gray LS</b>
<b>540</b>	<b>591</b>	<b>Tan LS</b>
<b>591</b>	<b>620</b>	<b>Tan LS</b>
<b>620</b>	<b>640</b>	<b>Gray LS</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>2</b>	<b>560</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>560</b>	<b>620</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>620</b>	<b>640</b>

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation**  
**P.O. Box 12157**  
**Austin, TX 78711**  
**(512) 334-5540**

# **Well Report**

**Well No. 5**

# STATE OF TEXAS WELL REPORT for Tracking #522250

Owner: **LSLP Majestic Hills LLC** Owner Well #: **5**  
Address: **P O Box 1987** Grid #: **57-61-4**  
**Marble Falls , TX 78654**  
Well Location: **Majestic Hill Subdivision Phase II 5** Latitude: **30° 02' 56" N**  
**Blanco, TX** Longitude: **098° 29' 54" W**  
Well County: **Blanco** Elevation: **No Data**  
Number of Wells Drilled: **10**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/9/2019** Drilling End Date: **9/9/2019**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>500</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>3 Benseal 3 Portland 6 Bags/Sacks</b>

Seal Method: **Slurry**

Distance to Property Line (ft.): **50**

Sealed By: **Driller**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.**  
**Burlap/Neoprene at 55 ft.**  
**Burlap/Neoprene at 220 ft.**  
**Burlap/Neoprene at 240 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 60+ GPM**

Water Quality:

Strata Depth (ft.)	Water Type
240 - 480	M. Trinity

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson**

License Number: **54989**

Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	1	Top Soil
1	20	Tan LS
20	175	Gray Tan LS
175	290	Tan Gray LS
290	320	Tan LS
320	365	Tan Gray LS
365	370	Tan LS
370	420	Tan Gray LS
420	430	Tan LS
430	460	Tan Gray LS
460	480	Tan LS
480	500	Gray Tan LS w/ Clay

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	Blank	New Plastic (PVC)	SDR17	2	300
4.5	Screen	New Plastic (PVC)	.035	300	320
4.5	Blank	New Plastic (PVC)	SDR17	320	420
4.5	Screen	New Plastic (PVC)	.035	420	440
4.5	Blank	New Plastic (PVC)	SDR17	440	460
4.5	Screen	New Plastic (PVC)	.035	460	480
4.5	Blank	New Plastic (PVC)	SDR17	480	500



---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

# **Well Report**

**Well No. 6**

## STATE OF TEXAS WELL REPORT for Tracking #522248

Owner: <b>LSLP Majestic Hills LLC</b>	Owner Well #: <b>6</b>
Address: <b>P O Box 1987 Marble Falls , TX 78654</b>	Grid #: <b>57-61-4</b>
Well Location: <b>Majestic Hill Subdivision Phase II Blanco, TX</b>	Latitude: <b>30° 02' 45" N</b>
Well County: <b>Blanco</b>	Longitude: <b>098° 29' 56" W</b>
Number of Wells Drilled: <b>10</b>	Elevation: <b>No Data</b>

Type of Work: <b>New Well</b>	Proposed Use: <b>Domestic</b>
-------------------------------	-------------------------------

Drilling Start Date: **9/6/2019**      Drilling End Date: **9/6/2019**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>465</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>3 Benseal 3 Portland 6 Bags/Sacks</b>

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other  
concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: <b>Surface Sleeve Installed</b>	<b>Surface Completion by Driller</b>
---	--------------------------------------

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.  
Burlap/Neoprene at 55 ft.  
Burlap/Neoprene at 125 ft.  
Burlap/Neoprene at 130 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted                      Yield: 60+ GPM**

Water Quality:

Strata Depth (ft.)	Water Type
130 - 437	M. Trinity

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson**

License Number: **54989**

Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	1	Top Soil
1	70	Tan LS
70	96	Gray Tan LS
96	125	Gray Tan LS w/ Clay
125	263	Tan Gray LS
263	269	Tan LS
269	355	Tan Gray LS
355	371	Tan LS
371	437	Tan Gray LS
437	465	Gray Tan LS w/ Clay

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	Blank	New Plastic (PVC)	SDR17	2	260
4.5	Screen	New Plastic (PVC)	.035	260	280
4.5	Blank	New Plastic (PVC)	SDR17	280	360
4.5	Screen	New Plastic (PVC)	.035	360	380
4.5	Blank	New Plastic (PVC)	SDR17	380	420
4.5	Screen	New Plastic (PVC)	.035	420	440
4.5	Blank	New Plastic (PVC)	SDR17	440	460

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

# **Well Report**

**Well No. 7**

# STATE OF TEXAS WELL REPORT for Tracking #522260

Owner: **LSLP Majestic Hills LLC** Owner Well #: **7**  
Address: **P O Box 1987** Grid #: **57-60-6**  
**Marble Falls , TX 78654**  
Well Location: **Majestic Hill Subdivision Phase II** Latitude: **30° 03' 11" N**  
**Blanco, TX** Longitude: **098° 30' 25" W**  
Well County: **Blanco** Elevation: **No Data**  
Number of Wells Drilled: **10**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/18/2019** Drilling End Date: **9/18/2019**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>640</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data: **No Data**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other  
concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.**  
**Burlap/Neoprene at 55 ft.**  
**Burlap/Neoprene at 350 ft.**  
**Burlap/Neoprene at 360 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 8-10 GPM**

Water Quality:	Strata Depth (ft.)	Water Type
	<b>450 - 620</b>	<b>M. Trinity</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

**Report Amended on 10/8/2019 by Request #28963**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
<b>0</b>	<b>1</b>	<b>Top Soil</b>
<b>1</b>	<b>84</b>	<b>Tan LS</b>
<b>84</b>	<b>116</b>	<b>Gray Tan LS</b>
<b>116</b>	<b>124</b>	<b>Tan LS</b>
<b>124</b>	<b>325</b>	<b>Gray Tan LS</b>
<b>325</b>	<b>450</b>	<b>Tan Ls Gray LS</b>
<b>450</b>	<b>452</b>	<b>Tan LS</b>
<b>452</b>	<b>610</b>	<b>Tan Gray LS</b>
<b>610</b>	<b>640</b>	<b>Gray Tan LS w/ Clay</b>

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>2</b>	<b>440</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>440</b>	<b>460</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>460</b>	<b>540</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>540</b>	<b>560</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>560</b>	<b>600</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>600</b>	<b>620</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>620</b>	<b>640</b>



---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

# **Well Report**

**Well No. 8**

# STATE OF TEXAS WELL REPORT for Tracking #522259

Owner:	LSLP Majestic Hills LLC	Owner Well #:	8
Address:	P O Box 1897 Marble Falls , TX 78611	Grid #:	57-60-6
Well Location:	Majestic Hill Subdivision Phase II Blanco, TX	Latitude:	30° 03' 11" N
Well County:	Blanco	Longitude:	098° 30' 11" W
		Elevation:	No Data
Number of Wells Drilled:	10		

Type of Work: <b>New Well</b>	Proposed Use: <b>Domestic</b>
-------------------------------	-------------------------------

Drilling Start Date: **9/17/2019**      Drilling End Date: **9/17/2019**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>620</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>3 Benseal / 3 Portland 6 Bags/Sacks</b>

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion:	<b>Surface Sleeve Installed</b>	<b>Surface Completion by Driller</b>
---------------------	---------------------------------	--------------------------------------

Water Level: **No Data**

Packers: **Burlap/ Neoprene at 50 ft.**  
**Burlap/ Neoprene at 55 ft.**  
**Burlap/ Neoprene at 395 ft.**  
**Burlap/ Neoprene at 400 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted**                      **Yield: 20 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
400 - 600	M. Trinity

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	1	Top Soil
1	14	Tan White LS
14	95	Tan LS
95	210	Gray Tan LS
210	418	Tan Lt Gray LS
418	420	Tan LS
420	580	Tan Gray LS
580	600	Tan LS
600	620	Gray Tan LS w/ Clay

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	Blank	New Plastic (PVC)	SDR17	2	400
4.5	Screen	New Plastic (PVC)	.035	400	420
4.5	Blank	New Plastic (PVC)	SDR17	420	540
4.5	Screen	New Plastic (PVC)	.035	540	560
4.5	Blank	New Plastic (PVC)	SDR17	560	580
4.5	Screen	New Plastic (PVC)	.035	580	600
4.5	Blank	New Plastic (PVC)	SDR17	600	620

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

# **Well Report**

**Well No. 9**

# STATE OF TEXAS WELL REPORT for Tracking #522256

Owner: **LSLP Majestic Hills LLC** Owner Well #: **9**  
Address: **P O Box 1987** Grid #: **57-61-4**  
**Marble Falls , TX 78654**  
Well Location: **Majestic Hill Subdivision Phase II** Latitude: **30° 03' 27" N**  
**Blanco, TX** Longitude: **098° 29' 39" W**  
Well County: **Blanco** Elevation: **No Data**  
Number of Wells Drilled: **10**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/14/2019** Drilling End Date: **9/14/2019**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>565</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>3 Benseal 3 Portland 6 Bags/Sacks</b>

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other  
concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.**  
**Burlap/Neoprene at 55 ft.**  
**Burlap/Neoprene at 300 ft.**  
**Burlap/Neoprene at 310 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 30 GPM**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>315 - 545</b>	<b>M. Trinity</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Top Soil</b>
<b>1</b>	<b>17</b>	<b>Tan LS</b>
<b>17</b>	<b>315</b>	<b>Gray Tan LS</b>
<b>315</b>	<b>328</b>	<b>Tan LS</b>
<b>328</b>	<b>362</b>	<b>Tan Gray LS</b>
<b>362</b>	<b>368</b>	<b>Tan LS</b>
<b>368</b>	<b>500</b>	<b>Tan Gray LS</b>
<b>500</b>	<b>547</b>	<b>Tan LS</b>
<b>547</b>	<b>565</b>	<b>Gray Tan LS</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>2</b>	<b>465</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>465</b>	<b>565</b>

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation**  
**P.O. Box 12157**  
**Austin, TX 78711**  
**(512) 334-5540**



# **Well Report**

**Well No. 10**

## STATE OF TEXAS WELL REPORT for Tracking #522247

Owner: **LSLP Majestic Hills LLC** Owner Well #: **10**  
Address: **P O Box 1987** Grid #: **57-61-4**  
**Marble Falls , TX 78654**  
Well Location: **Majestic Hill Subdivision II** Latitude: **30° 03' 37" N**  
**Blanco, TX** Longitude: **098° 29' 34" W**  
Well County: **Blanco** Elevation: **No Data**  
Number of Wells Drilled: **10**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/3/2019** Drilling End Date: **9/3/2019**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>50</b>
	<b>6.25</b>	<b>50</b>	<b>505</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data: **No Data**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other  
concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: **Surface Sleeve Installed**

**Surface Completion by Driller**

Water Level: **No Data**

Packers: **Burlap/Neoprene at 50 ft.**  
**Burlap/Neoprene at 55 ft.**  
**Burlap/Neoprene at 85 ft.**  
**Burlap/Neoprene at 90 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted** Yield: **30 GPM**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>90 - 482</b>	<b>M. Trinity</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**  
**P.O. Box 867**  
**Marble Falls, TX 78654**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Top Soil</b>
<b>1</b>	<b>21</b>	<b>Tan LS</b>
<b>21</b>	<b>210</b>	<b>Gray Tan LS</b>
<b>210</b>	<b>235</b>	<b>Tan LS</b>
<b>235</b>	<b>262</b>	<b>Gray Tan LS</b>
<b>262</b>	<b>270</b>	<b>Tan LS</b>
<b>270</b>	<b>460</b>	<b>Tan Gray LS</b>
<b>460</b>	<b>482</b>	<b>Tan LS</b>
<b>482</b>	<b>505</b>	<b>Tan Gray LS w/ Clay</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>2</b>	<b>405</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>405</b>	<b>425</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>425</b>	<b>445</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>.035</b>	<b>445</b>	<b>485</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR17</b>	<b>485</b>	<b>505</b>

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation**  
**P.O. Box 12157**  
**Austin, TX 78711**  
**(512) 334-5540**

# **Well Report**

**St. Well No. 57-60-607**

[GWDB Reports and Downloads](#)

**Well Basic Details**

[Scanned Documents](#)

State Well Number	5760607
County	Blanco
River Basin	Guadalupe
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Blanco-Pedernales GCD
Latitude (decimal degrees)	30.046667
Latitude (degrees minutes seconds)	30° 02' 48" N
Longitude (decimal degrees)	-98.502501
Longitude (degrees minutes seconds)	098° 30' 09" W
Coordinate Source	+/- 1 Second
Aquifer Code	218GLRSU - Glen Rose Limestone, Upper Member
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1733
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	110
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	8/18/1967
Drilling Method	Cable Tool
Borehole Completion	Perforated or Slotted

Well Type	Withdrawal of Water
Well Use	Stock
Water Level Observation	Miscellaneous Measurements
Water Quality Available	Yes
Pump	Piston
Pump Depth (feet below land surface)	
Power Type	Windmill
Annular Seal Method	
Surface Completion	
Owner	Max C. Kluge and Hugo Brodbeck
Driller	E.R. Owens
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	7/30/1990
Last Update Date	10/21/1998

**Remarks** | Reported yield 46 GPM in 1967.

<b>Casing</b>						
Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
5	Blank	Plastic (PVC)			0	100
5	Screen	Plastic (PVC)			100	110

**Well Tests - No Data**

**Lithology - No Data**

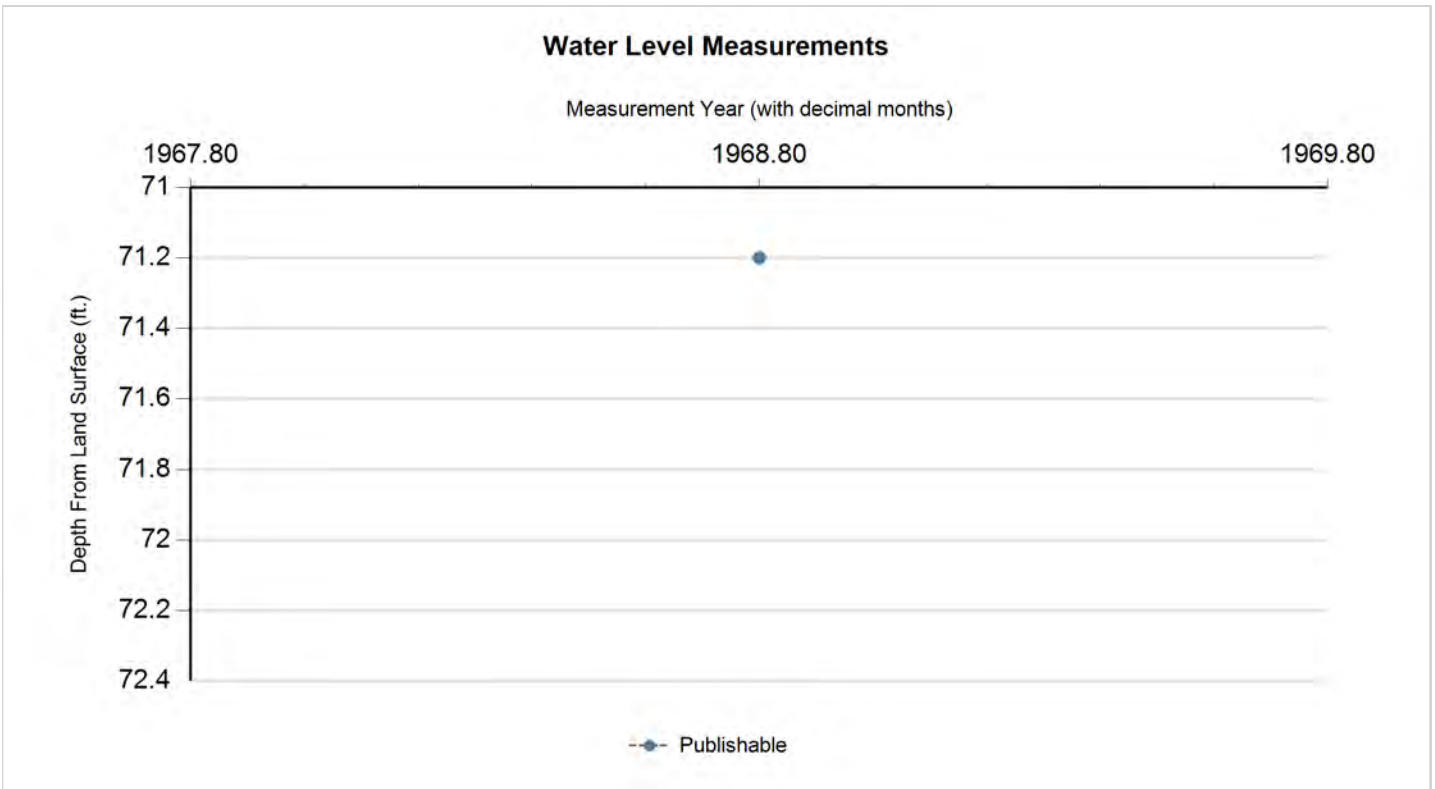
**Annular Seal Range - No Data**

**Borehole - No Data**

**Plugged Back - No Data**

**Filter Pack - No Data**

**Packers - No Data**



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	10/24/1968		71.2		1661.8	1	Texas Water Development Board	Steel Tape		

### Code Descriptions

Status Code	Status Description
P	Publishable

### Water Quality Analysis

**Sample Date:** 10/24/1968    **Sample Time:** 0000    **Sample Number:** 1    **Collection Entity:** U.S. Geological Survey

**Sampled Aquifer:** Glen Rose Limestone, Upper Member

**Analyzed Lab:** U.S. Geological Survey Lab

**Reliability:** Reliability unknown or not available

**Collection Remarks:** No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)		281.97	mg/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		344	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		110	ug/L	
00910	CALCIUM (MG/L)		81	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		9	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		370	mg/L	
00920	MAGNESIUM (MG/L)		41	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.8	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		690	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		100	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		20	C	

\* Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..

**GWDB DISCLAIMER:** Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (<http://www.twdb.texas.gov/groundwater/data/gwdbbrpt.asp>) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at [GroundwaterData@twdb.texas.gov](mailto:GroundwaterData@twdb.texas.gov).

# **Well Report**

**No. 460494**



## STATE OF TEXAS WELL REPORT for Tracking #460494

Owner: <b>James Steel</b>	Owner Well #: <b>No Data</b>
Address: <b>1197 Kendalia Ranch Road Blanco, TX 78606</b>	Grid #: <b>57-61-4</b>
Well Location: <b>1197 Kendalia Ranch Road Blanco, TX 78606</b>	Latitude: <b>30° 02' 41.7" N</b>
Well County: <b>Blanco</b>	Longitude: <b>098° 29' 20.8" W</b>
	Elevation: <b>1762 ft. above sea level</b>
Type of Work: <b>New Well</b>	
	Proposed Use: <b>Domestic</b>

Drilling Start Date: **9/7/2017**      Drilling End Date: **9/12/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	<b>9</b>	<b>0</b>	<b>460</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>Cement 21 Bags/Sacks</b>

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other  
concentrated contamination (ft.): **150**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Measurement**

Surface Completion: **Surface Sleeve Installed**

**Surface Completion by Driller**

Water Level: **189 ft. below land surface, and 10 GPM  
artesian flow on 2017-09-12**

Packers: **Rubber at 50 ft.  
Rubber at 55 ft.  
Rubber at 220 ft.**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>No Data</b>	<b>No Data</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Kutscher Drilling**  
**3810 Hunter Road**  
**San Marcos, TX 78666**

Driller Name: **Kutscher Drilling LTD** License Number: **54746**

Apprentice Name: **Martin Hardy** Apprentice Number: **54746**

Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>2</b>	<b>Top Soil</b>
<b>2</b>	<b>53</b>	<b>Tan Limestone</b>
<b>53</b>	<b>59</b>	<b>Grey Limestone</b>
<b>59</b>	<b>94</b>	<b>Tan Limestone</b>
<b>94</b>	<b>117</b>	<b>Dark Tan Limestone</b>
<b>117</b>	<b>316</b>	<b>Grey Limestone</b>
<b>316</b>	<b>412</b>	<b>Grey/Tan Limestone</b>
<b>412</b>	<b>433</b>	<b>Tan Limestone</b>
<b>433</b>	<b>460</b>	<b>Grey Limestone</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR-17</b>	<b>-2</b>	<b>398</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR-17 0.35</b>	<b>398</b>	<b>418</b>

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

# **Well Report**

**No. 144434**

## STATE OF TEXAS WELL REPORT for Tracking #144434

Owner:	Linda D. Cox	Owner Well #:	1
Address:	446 Vanderbilt San Antonio, TX 78210	Grid #:	57-61-4
Well Location:	1145 First Mile Rd Blanco, TX 78606	Latitude:	30° 02' 36" N
Well County:	Blanco	Longitude:	098° 29' 16" W
		Elevation:	No Data

Type of Work: <b>New Well</b>	Proposed Use: <b>Domestic</b>
-------------------------------	-------------------------------

Drilling Start Date: **6/2/2008**      Drilling End Date: **6/2/2008**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	8.62	0	50
	6.75	50	444

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	0	63	5 cement

Seal Method: **gravity cemented**

Sealed By: **Driller**

Distance to Property Line (ft.): **75**

Distance to Septic Field or other concentrated contamination (ft.): **120**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **estimated**

Surface Completion: **Pitless Adapter Used**

Water Level: **306 ft.** below land surface on **2008-06-02**      Measurement Method: **Unknown**

Packers: **poorboy 63'**

Type of Pump: **No Data**

Well Tests: **Jetted**      Yield: **33 GPM**

Water Quality:

<i>Strata Depth (ft.)</i>	<i>Water Type</i>
<b>284, 375, 404</b>	<b>20 grains of hardness</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **L & L Drilling Co.**

**P.O. Box 217  
Hye, TX 78635**

Driller Name: **Gregory A. Smith**

License Number: **1595**

Apprentice Name: **Lynette Smith**

Apprentice Number: **56980**

Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>brown topsoil &amp; white limestone</b>
<b>1</b>	<b>58</b>	<b>white &amp; yellow limestone</b>
<b>58</b>	<b>66</b>	<b>gray shale &amp; clay</b>
<b>66</b>	<b>92</b>	<b>yellow limestone</b>
<b>92</b>	<b>138</b>	<b>gray limestone</b>
<b>138</b>	<b>146</b>	<b>yellow limestone</b>
<b>146</b>	<b>370</b>	<b>gray limestone with clay layers</b>
<b>284</b>	<b>304</b>	<b>water 1 gpm</b>
<b>370</b>	<b>444</b>	<b>gray limestone with yellow layers</b>
<b>375</b>	<b>384</b>	<b>water 30 gpm</b>
<b>404</b>	<b>424</b>	<b>water 2 gpm</b>

<i>Dia. (in.)</i>	<i>New/Used</i>	<i>Type</i>	<i>Setting From/To (ft.)</i>
<b>5</b>	<b>new</b>	<b>plastic solid</b>	<b>+2 - 284 0.265</b>
<b>5</b>	<b>new</b>	<b>plastic slotted</b>	<b>284 - 304 0.265</b>
<b>5</b>	<b>new</b>	<b>plastic solid</b>	<b>304 - 364 0.265</b>
<b>5</b>	<b>new</b>	<b>plastic slotted</b>	<b>364 - 444 0.265</b>

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

**Well Report**

**No. 515975**



## STATE OF TEXAS WELL REPORT for Tracking #515975

Owner:	Kevin & Julie Zinke	Owner Well #:	BP
Address:	503 COTTAGE GROVE CT League City, TX 77573	Grid #:	57-61-4
Well Location:	Lot 15 Kendialia Ranch Road Blanco, TX 78606	Latitude:	30° 02' 45.3" N
	Next to 1197	Longitude:	098° 29' 12.3" W
Well County:	Blanco	Elevation:	1798 ft. above sea level
Type of Work: <b>New Well</b>		Proposed Use: <b>Domestic</b>	

Drilling Start Date: **5/30/2019**      Drilling End Date: **6/3/2019**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	<b>12</b>	<b>0</b>	<b>7</b>
	<b>9</b>	<b>7</b>	<b>460</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	<b>0</b>	<b>50</b>	<b>Cement 23 Bags/Sacks</b>

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **Not installed**

Distance to Septic Tank (ft.): **Not Installed**

Method of Verification: **Wheel**

Surface Completion: **Surface Sleeve Installed**

**Surface Completion by Driller**

Water Level: **272 ft. below land surface on 2019-06-02**      Measurement Method: **Electric Line**

Packers: **Rubber at 50 ft.**  
**Rubber at 220 ft.**  
**Rubber at 380 ft.**

Type of Pump: **Submersible**

Well Tests: **Estimated**      **Yield: 10 GPM**

Water Quality:

<i>Strata Depth (ft.)</i>	<i>Water Type</i>
<b>390 - 440</b>	<b>Cow Creek</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Kutscher Drilling, LTD**  
**3810 Hunter Road**  
**San Marcos, TX 78666**

Driller Name: **Derek Scott**

License Number: **59574**

Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Top Soil</b>
<b>1</b>	<b>13</b>	<b>Caliche</b>
<b>13</b>	<b>40</b>	<b>Tan Limestone</b>
<b>40</b>	<b>70</b>	<b>Grey Limestone</b>
<b>70</b>	<b>93</b>	<b>Tan Limestone</b>
<b>93</b>	<b>255</b>	<b>Grey Limestone</b>
<b>255</b>	<b>270</b>	<b>Grey Shale</b>
<b>270</b>	<b>340</b>	<b>Grey Limestone</b>
<b>340</b>	<b>360</b>	<b>Light Brown &amp; Grey Limestone</b>
<b>360</b>	<b>380</b>	<b>Light Brown &amp; Grey Limes w/ Clay</b>
<b>380</b>	<b>460</b>	<b>Grey and Tan Limestone</b>

Casing:  
BLANK PIPE & WELL SCREEN DATA

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR 17</b>	<b>-2</b>	<b>338</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>SDR 17 0.035</b>	<b>338</b>	<b>358</b>
<b>4.5</b>	<b>Blank</b>	<b>New Plastic (PVC)</b>	<b>SDR 17</b>	<b>358</b>	<b>398</b>
<b>4.5</b>	<b>Screen</b>	<b>New Plastic (PVC)</b>	<b>SDR 17 0.035</b>	<b>398</b>	<b>418</b>

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711  
(512) 334-5540**

# **Appendix D**

## Aquifer Test Data and Analysis



# **Aquifer Test**

**Well No. 1**

**Majestic Hills Well No. 1 - Aquifer Test (September 30, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 1 Temperature (F)	PW Well No. 1 Water Level (ft bgs)	PW Well No. 1 Water Level (ft MSL)	PW Well No. 1 Drawdown (ft)	PW Well No. 1 Pump Rate (gpm)	PW Well No. 1 Specific Capacity (gpm/ft)	Comments	OW Well No. 2 Water Level (ft MSL)	OW Well No. 2 Drawdown (ft)
9/30/19 10:49 AM	0		72.15	377.95	1,431.05	0.00			Pump Start	1,438.10	0.00
9/30/19 10:50 AM	1		71.87	392.64	1,416.36	14.69			Meter: 404,924.494 gallons	1,438.09	0.01
9/30/19 10:51 AM	2		71.67	403.63	1,405.38	25.68				1,438.15	-0.05
9/30/19 10:52 AM	3		71.55	405.71	1,403.29	27.76				1,438.06	0.05
9/30/19 10:53 AM	4		71.47	405.34	1,403.66	27.39	12.5	0.46	pH: 7.3/ EC: 0.88	1,438.10	0.01
9/30/19 10:54 AM	5		71.37	405.56	1,403.44	27.61				1,438.19	-0.09
9/30/19 10:55 AM	6		71.28	406.93	1,402.07	28.98				1,438.10	0.00
9/30/19 10:56 AM	7		71.17	408.26	1,400.74	30.31				1,438.16	-0.05
9/30/19 10:57 AM	8		71.13	408.91	1,400.09	30.96				1,438.05	0.05
9/30/19 10:58 AM	9		71.12	410.01	1,398.99	32.06				1,438.19	-0.09
9/30/19 10:59 AM	10		71.15	411.27	1,397.73	33.33				1,438.14	-0.04
9/30/19 11:00 AM	11		71.08	412.71	1,396.29	34.76				1,438.04	0.06
9/30/19 11:01 AM	12		71.03	414.32	1,394.68	36.37				1,438.03	0.07
9/30/19 11:02 AM	13		71.04	415.52	1,393.49	37.57				1,438.18	-0.07
9/30/19 11:03 AM	14		70.99	416.46	1,392.54	38.51				1,438.04	0.07
9/30/19 11:04 AM	15		70.98	416.84	1,392.16	38.89				1,438.07	0.03
9/30/19 11:09 AM	20		70.83	420.66	1,388.34	42.71				1,438.00	0.10
9/30/19 11:14 AM	25		70.74	423.85	1,385.15	45.90	11.0	0.24		1,438.16	-0.06
9/30/19 11:19 AM	30		70.75	426.03	1,382.97	48.08				1,438.15	-0.05
9/30/19 11:34 AM	45		70.67	434.62	1,374.38	56.67				1,438.10	0.00
9/30/19 11:49 AM	60		70.69	444.19	1,364.81	66.24	11.0	0.17	pH: 7.38/ EC: 0.81	1,438.12	-0.01
9/30/19 12:04 PM	75		70.69	452.93	1,356.07	74.98				1,438.05	0.06
9/30/19 12:19 PM	90		70.68	460.12	1,348.88	82.17				1,438.01	0.10
9/30/19 12:34 PM	105		70.71	465.35	1,343.66	87.40				1,438.04	0.06
9/30/19 12:49 PM	120		70.70	470.67	1,338.33	92.72				1,437.97	0.14
9/30/19 1:19 PM	150		70.70	478.61	1,330.39	100.67				1,437.84	0.26
9/30/19 1:49 PM	180		70.77	486.67	1,322.33	108.72	10.5	0.10		1,437.60	0.51
9/30/19 2:19 PM	210		70.86	490.67	1,318.33	112.72				1,437.55	0.55
9/30/19 2:49 PM	240		70.82	495.31	1,313.70	117.36	10.0	0.09	pH: 7.12/ EC: 0.96	1,437.50	0.60
9/30/19 3:49 PM	300		70.80	505.97	1,303.03	128.02				1,437.76	0.34
9/30/19 4:49 PM	360		70.82	509.29	1,299.71	131.35				1,437.68	0.43
9/30/19 5:49 PM	420		70.89	516.28	1,292.72	138.33				1,437.70	0.40
9/30/19 6:49 PM	480		70.88	520.67	1,288.33	142.72				1,437.66	0.45
9/30/19 7:49 PM	540		70.93	525.27	1,283.73	147.32				1,437.51	0.59
9/30/19 8:49 PM	600		70.90	529.17	1,279.83	151.22				1,437.48	0.62

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
MSL = Mean Sea Level    Pump Setting = 660 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 1 - Aquifer Test (September 30, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 1 Temperature (F)	PW Well No. 1 Water Level (ft bgs)	PW Well No. 1 Water Level (ft MSL)	PW Well No. 1 Drawdown (ft)	PW Well No. 1 Pump Rate (gpm)	PW Well No. 1 Specific Capacity (gpm/ft)	Comments	OW Well No. 2 Water Level (ft MSL)	OW Well No. 2 Drawdown (ft)
9/30/19 9:49 PM	660		70.97	531.57	1,277.43	153.62				1,437.48	0.62
9/30/19 10:49 PM	720		70.94	534.83	1,274.17	156.88				1,437.30	0.80
9/30/19 11:49 PM	780		70.99	537.74	1,271.27	159.79				1,437.40	0.70
10/1/19 12:49 AM	840		70.99	541.09	1,267.91	163.14				1,437.21	0.89
10/1/19 1:49 AM	900		70.94	542.85	1,266.15	164.90				1,436.86	1.25
10/1/19 2:49 AM	960		70.98	543.59	1,265.41	165.64				1,436.89	1.22
10/1/19 3:49 AM	1,020		71.01	547.48	1,261.52	169.53				1,436.80	1.30
10/1/19 4:49 AM	1,080		71.02	549.01	1,259.99	171.06				1,436.78	1.32
10/1/19 5:49 AM	1,140		70.99	552.06	1,256.94	174.11				1,436.72	1.38
10/1/19 6:49 AM	1,200		71.02	553.96	1,255.04	176.01				1,436.85	1.26
10/1/19 7:49 AM	1,260		71.04	555.93	1,253.07	177.98				1,436.34	1.76
10/1/19 8:49 AM	1,320		71.04	557.47	1,251.53	179.53				1,436.28	1.82
10/1/19 9:49 AM	1,380		71.04	559.20	1,249.80	181.25				1,436.24	1.86
10/1/19 10:49 AM	1,440		71.04	560.35	1,248.65	182.40				1,436.20	1.90
10/1/19 11:49 AM	1,500		71.05	561.71	1,247.29	183.77				1,436.05	2.06
10/1/19 12:04 PM	1,515	0	71.10	561.79	1,247.21	183.84	9.0	0.05	Pump Stop	1,436.04	2.07
10/1/19 12:05 PM	1,516	1	71.04	559.86	1,249.14	181.91			Meter: 419,189.672 gallons	1,436.02	2.08
10/1/19 12:06 PM	1,517	2	71.06	552.28	1,256.73	174.33			Avg. Pump Rate: 9.42	1,436.01	2.10
10/1/19 12:07 PM	1,518	3	71.03	545.56	1,263.44	167.61				1,436.01	2.10
10/1/19 12:08 PM	1,519	4	71.22	539.01	1,269.99	161.06				1,436.07	2.03
10/1/19 12:09 PM	1,520	5	71.53	532.83	1,276.17	154.88				1,435.97	2.13
10/1/19 12:10 PM	1,521	6	72.47	527.06	1,281.94	149.11				1,436.03	2.07
10/1/19 12:11 PM	1,522	7	73.13	521.66	1,287.34	143.71				1,436.13	1.97
10/1/19 12:12 PM	1,523	8	73.52	516.49	1,292.51	138.54				1,436.07	2.03
10/1/19 12:13 PM	1,524	9	73.74	511.74	1,297.26	133.79				1,436.00	2.10
10/1/19 12:14 PM	1,525	10	73.90	507.11	1,301.89	129.16				1,436.03	2.07
10/1/19 12:15 PM	1,526	11	74.00	502.75	1,306.25	124.80				1,435.99	2.12
10/1/19 12:16 PM	1,527	12	74.04	498.68	1,310.32	120.73				1,435.92	2.18
10/1/19 12:17 PM	1,528	13	74.09	494.93	1,314.07	116.98				1,436.04	2.06
10/1/19 12:18 PM	1,529	14	74.12	491.29	1,317.71	113.34				1,436.02	2.08
10/1/19 12:19 PM	1,530	15	74.11	488.00	1,321.00	110.05				1,435.98	2.12
10/1/19 12:24 PM	1,535	20	73.69	473.41	1,335.59	95.46				1,435.99	2.11
10/1/19 12:29 PM	1,540	25	72.84	462.93	1,346.07	84.98				1,436.01	2.09
10/1/19 12:34 PM	1,545	30	72.24	456.01	1,352.99	78.06				1,436.00	2.10
10/1/19 12:49 PM	1,560	45	71.51	443.88	1,365.12	65.94				1,435.87	2.23

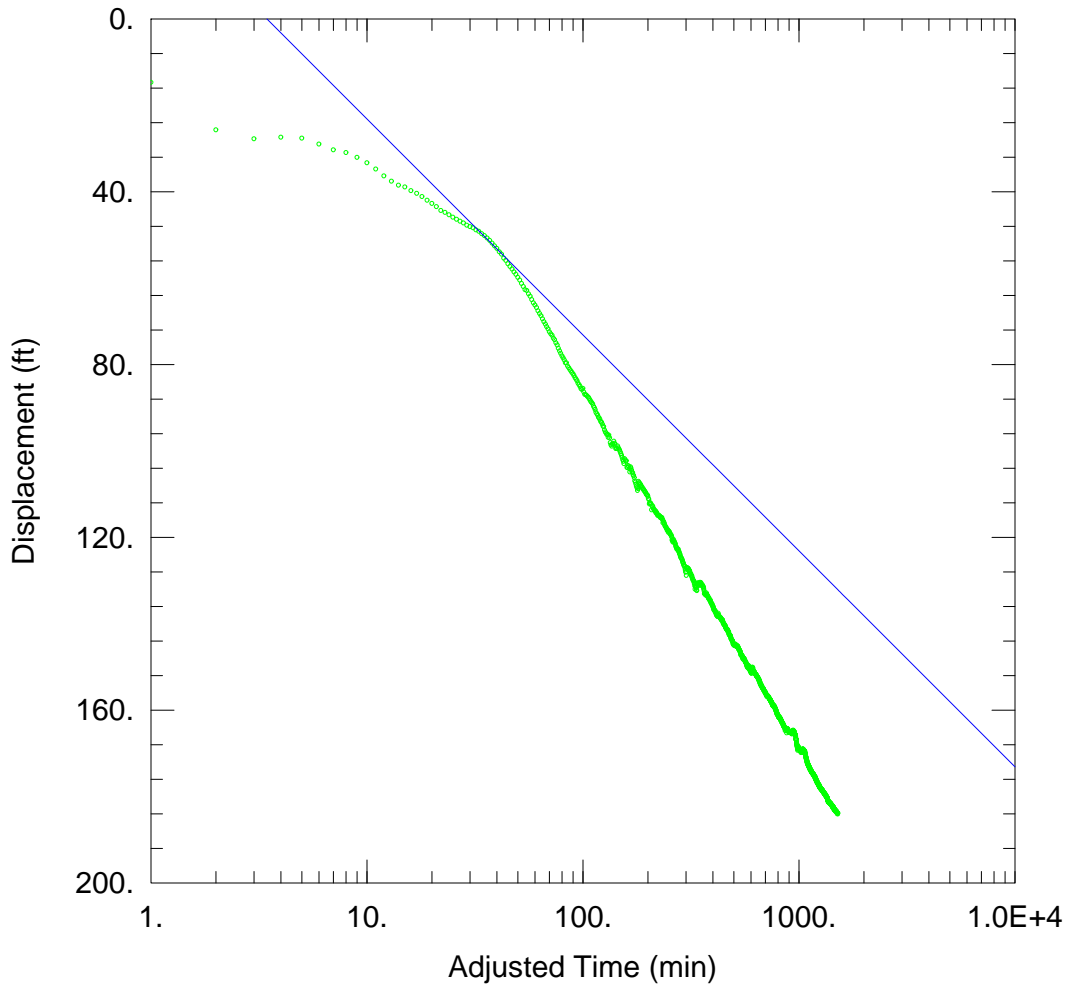
Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 660 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 1 - Aquifer Test (September 30, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 1 Temperature (F)	PW Well No. 1 Water Level (ft bgs)	PW Well No. 1 Water Level (ft MSL)	PW Well No. 1 Drawdown (ft)	PW Well No. 1 Pump Rate (gpm)	PW Well No. 1 Specific Capacity (gpm/ft)	Comments	OW Well No. 2 Water Level (ft MSL)	OW Well No. 2 Drawdown (ft)
10/1/19 1:04 PM	1,575	60	71.37	435.40	1,373.60	57.46				1,435.94	2.16
10/1/19 1:19 PM	1,590	75	71.23	426.34	1,382.66	48.39				1,435.91	2.19
10/1/19 1:34 PM	1,605	90	71.18	417.34	1,391.67	39.39				1,435.85	2.26
10/1/19 1:49 PM	1,620	105	71.10	409.55	1,399.45	31.60				1,435.69	2.42
10/1/19 2:04 PM	1,635	120	71.02	407.37	1,401.63	29.42				1,435.80	2.30
10/1/19 2:34 PM	1,665	150	70.99	405.53	1,403.47	27.58				1,435.64	2.46
10/1/19 3:04 PM	1,695	180	71.01	403.58	1,405.42	25.64				1,435.71	2.39
10/1/19 3:17 PM	1,708	193	70.93	402.84	1,406.16	24.89				1,435.59	2.51

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 660 ft    EC=Electrical conductivity (mS/cm)





WELL TEST ANALYSIS

Data Set: \...\PW No. 1.aqt  
 Date: 11/07/19

Time: 14:26:32

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 1  
 Test Date: 9-30-19

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

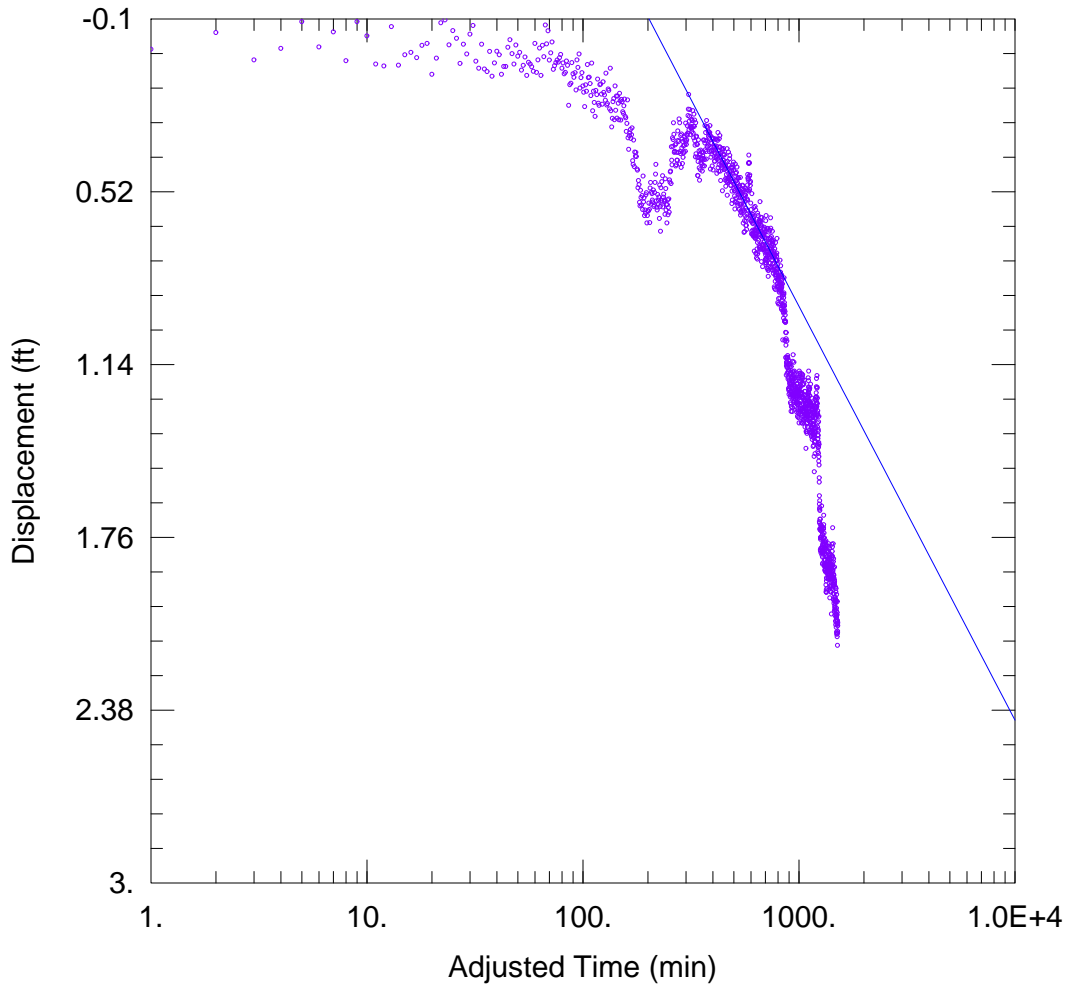
Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 1	0	0	Well No. 1	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 6.647 ft<sup>2</sup>/day



WELL TEST ANALYSIS

Data Set: \...\OW No. 2.aqt  
 Date: 11/07/19

Time: 14:26:13

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 1  
 Test Date: 9-30-19

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 1	0	0	• Well No. 2	1069.3	0

SOLUTION

Aquifer Model: Confined  
 T = 223.7 ft<sup>2</sup>/day

Solution Method: Cooper-Jacob  
 S = 7.208E-5

# **Aquifer Test**

**Well No. 3**

**Majestic Hills Well No. 3 - Aquifer Test (October 2, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 3 Temperature (F)	PW Well No. 3 Water Level (ft bgs)	PW Well No. 3 Water Level (ft MSL)	PW Well No. 3 Drawdown (ft)	PW Well No. 3 Pump Rate (gpm)	PW Well No. 3 Specific Capacity (gpm/ft)	Comments	OW Well No. 2 Water Level (ft MSL)	OW Well No. 2 Drawdown (ft)
10/2/19 12:04 PM	0		72.76	317.58	1,496.42	0.00	12.50		Pump Start	378.09	0.00
10/2/19 12:05 PM	1		72.34	340.33	1,473.67	22.75	12.50	0.55	Meter: 419,190.67	377.98	-0.11
10/2/19 12:06 PM	2		72.04	355.65	1,458.35	38.07	12.5	0.33		378.09	0.00
10/2/19 12:07 PM	3		71.83	365.79	1,448.21	48.21	12.5	0.26		378.00	-0.09
10/2/19 12:08 PM	4		71.66	365.91	1,448.09	48.33	12.5	0.26		378.00	-0.08
10/2/19 12:09 PM	5		71.57	363.54	1,450.46	45.96	12.5	0.27		377.94	-0.15
10/2/19 12:10 PM	6		71.52	368.30	1,445.70	50.72	12.5	0.25		378.04	-0.05
10/2/19 12:11 PM	7		71.43	373.52	1,440.48	55.94	12.0	0.21		378.05	-0.04
10/2/19 12:12 PM	8		71.43	378.81	1,435.19	61.23	12.0	0.20		378.03	-0.06
10/2/19 12:13 PM	9		71.39	384.43	1,429.57	66.85	12.0	0.18		378.11	0.02
10/2/19 12:14 PM	10		71.39	387.16	1,426.84	69.58	12.0	0.17		378.07	-0.02
10/2/19 12:15 PM	11		71.38	391.68	1,422.32	74.10	12.0	0.16		377.99	-0.10
10/2/19 12:16 PM	12		71.32	395.44	1,418.56	77.86	12.0	0.15		378.08	-0.01
10/2/19 12:17 PM	13		71.28	398.34	1,415.66	80.76	12.0	0.15		378.12	0.03
10/2/19 12:18 PM	14		71.23	402.02	1,411.98	84.44	12.0	0.14		377.97	-0.12
10/2/19 12:19 PM	15		71.19	406.75	1,407.25	89.17	12.0	0.13		378.04	-0.05
10/2/19 12:24 PM	20		71.14	425.00	1,389.00	107.42	11.0	0.10		378.04	-0.05
10/2/19 12:29 PM	25		71.09	441.04	1,372.96	123.46	11.0	0.09		378.03	-0.06
10/2/19 12:34 PM	30		70.99	453.71	1,360.29	136.13	11.0	0.08		378.10	0.01
10/2/19 12:39 PM	35		70.98	468.60	1,345.40	151.02	10.5	0.07		378.06	-0.03
10/2/19 12:44 PM	40		70.96	479.45	1,334.55	161.87	10.0	0.06		378.11	0.02
10/2/19 12:49 PM	45		70.95	500.80	1,313.20	183.22	10.0	0.05		378.05	-0.04
10/2/19 12:54 PM	50		71.03	503.19	1,310.81	185.61	9.5	0.05		378.10	0.01
10/2/19 12:59 PM	55		71.03	509.34	1,304.66	191.76	9.0	0.05		378.05	-0.04
10/2/19 1:04 PM	60		71.07	519.05	1,294.95	201.47	9.0	0.04		378.10	0.01
10/2/19 1:19 PM	75		71.19	540.79	1,273.22	223.21	9.0	0.04		378.13	0.04
10/2/19 1:34 PM	90		71.12	558.40	1,255.60	240.82	7.0	0.03	Reducd Pumping Rate	378.09	0.00
10/2/19 1:49 PM	105		71.23	558.82	1,255.18	241.24	7.0	0.03		378.23	0.14
10/2/19 2:04 PM	120		71.23	559.20	1,254.80	241.62	7.0	0.03		378.11	0.02
10/2/19 2:19 PM	135		71.25	558.62	1,255.38	241.04	7.0	0.03		378.21	0.12
10/2/19 2:34 PM	150		71.21	559.37	1,254.63	241.79	7.0	0.03		378.16	0.07
10/2/19 2:49 PM	165		71.18	561.80	1,252.20	244.22	7.0	0.03		378.13	0.04
10/2/19 3:04 PM	180		71.26	562.47	1,251.53	244.89	7.0	0.03		378.16	0.07
10/2/19 3:34 PM	210		71.20	564.38	1,249.62	246.80	7.0	0.03		378.33	0.24
10/2/19 4:04 PM	240		71.22	568.44	1,245.56	250.86				378.24	0.16

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 620 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 3 - Aquifer Test (October 2, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 3 Temperature (F)	PW Well No. 3 Water Level (ft bgs)	PW Well No. 3 Water Level (ft MSL)	PW Well No. 3 Drawdown (ft)	PW Well No. 3 Pump Rate (gpm)	PW Well No. 3 Specific Capacity (gpm/ft)	Comments	OW Well No. 2 Water Level (ft MSL)	OW Well No. 2 Drawdown (ft)
10/2/19 4:34 PM	270		71.26	571.14	1,242.86	253.56				378.35	0.26
10/2/19 5:04 PM	300		71.24	573.88	1,240.12	256.30				378.42	0.33
10/2/19 6:04 PM	360		71.23	577.99	1,236.01	260.41				378.46	0.37
10/2/19 7:04 PM	420		71.26	580.84	1,233.16	263.26				378.52	0.43
10/2/19 8:04 PM	480		71.28	583.05	1,230.95	265.47				378.61	0.52
10/2/19 9:04 PM	540		71.27	585.12	1,228.88	267.54				378.75	0.66
10/2/19 10:04 PM	600		71.28	587.54	1,226.46	269.96				378.92	0.83
10/2/19 11:04 PM	660		71.25	588.99	1,225.01	271.41				378.97	0.88
10/3/19 12:04 AM	720		71.28	590.40	1,223.60	272.82				378.91	0.82
10/3/19 1:04 AM	780		71.29	591.86	1,222.14	274.28				379.11	1.02
10/3/19 2:04 AM	840		71.31	593.21	1,220.79	275.63				379.10	1.01
10/3/19 3:04 AM	900		71.32	594.84	1,219.16	277.26				379.26	1.18
10/3/19 4:04 AM	960		71.31	594.83	1,219.17	277.25				379.51	1.42
10/3/19 5:04 AM	1,020		71.35	594.98	1,219.02	277.40				379.64	1.55
10/3/19 6:04 AM	1,080		71.34	596.15	1,217.85	278.57				379.54	1.45
10/3/19 7:04 AM	1,140		71.28	596.73	1,217.27	279.15				379.89	1.80
10/3/19 8:04 AM	1,200		71.33	597.66	1,216.34	280.08				379.89	1.80
10/3/19 9:04 AM	1,260		71.33	598.21	1,215.79	280.63				379.63	1.54
10/3/19 10:04 AM	1,320		71.32	598.66	1,215.34	281.08				379.96	1.87
10/3/19 11:04 AM	1,380		71.34	598.70	1,215.30	281.12				380.07	1.98
10/3/19 12:04 PM	1,440		71.36	599.22	1,214.78	281.64				380.22	2.13
10/3/19 12:06 PM	1,442	0	71.35	599.36	1,214.64	281.78	6.1	0.02	Pump Stop	380.06	1.97
10/3/19 12:07 PM	1,443	1	71.36	598.76	1,215.24	281.18			Meter: 428,529.05	380.14	2.05
10/3/19 12:08 PM	1,444	2	71.35	593.72	1,220.29	276.14			Avg. Pump Rate: 6.48	380.21	2.12
10/3/19 12:09 PM	1,445	3	71.95	589.07	1,224.93	271.49				380.15	2.06
10/3/19 12:10 PM	1,446	4	72.66	584.25	1,229.75	266.67				380.08	1.99
10/3/19 12:11 PM	1,447	5	73.16	579.35	1,234.65	261.77				380.19	2.10
10/3/19 12:12 PM	1,448	6	73.61	574.75	1,239.25	257.17				380.04	1.95
10/3/19 12:13 PM	1,449	7	73.82	570.07	1,243.93	252.49				380.20	2.11
10/3/19 12:14 PM	1,450	8	74.03	565.50	1,248.50	247.92				380.16	2.07
10/3/19 12:15 PM	1,451	9	74.16	560.87	1,253.14	243.29				380.17	2.08
10/3/19 12:16 PM	1,452	10	74.17	556.38	1,257.62	238.80				380.14	2.06
10/3/19 12:17 PM	1,453	11	74.24	551.92	1,262.08	234.34				380.13	2.05
10/3/19 12:18 PM	1,454	12	74.23	547.48	1,266.52	229.90				380.11	2.02
10/3/19 12:19 PM	1,455	13	74.23	543.03	1,270.97	225.45				380.13	2.04

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
MSL = Mean Sea Level    Pump Setting = 620 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 3 - Aquifer Test (October 2, 2019)**

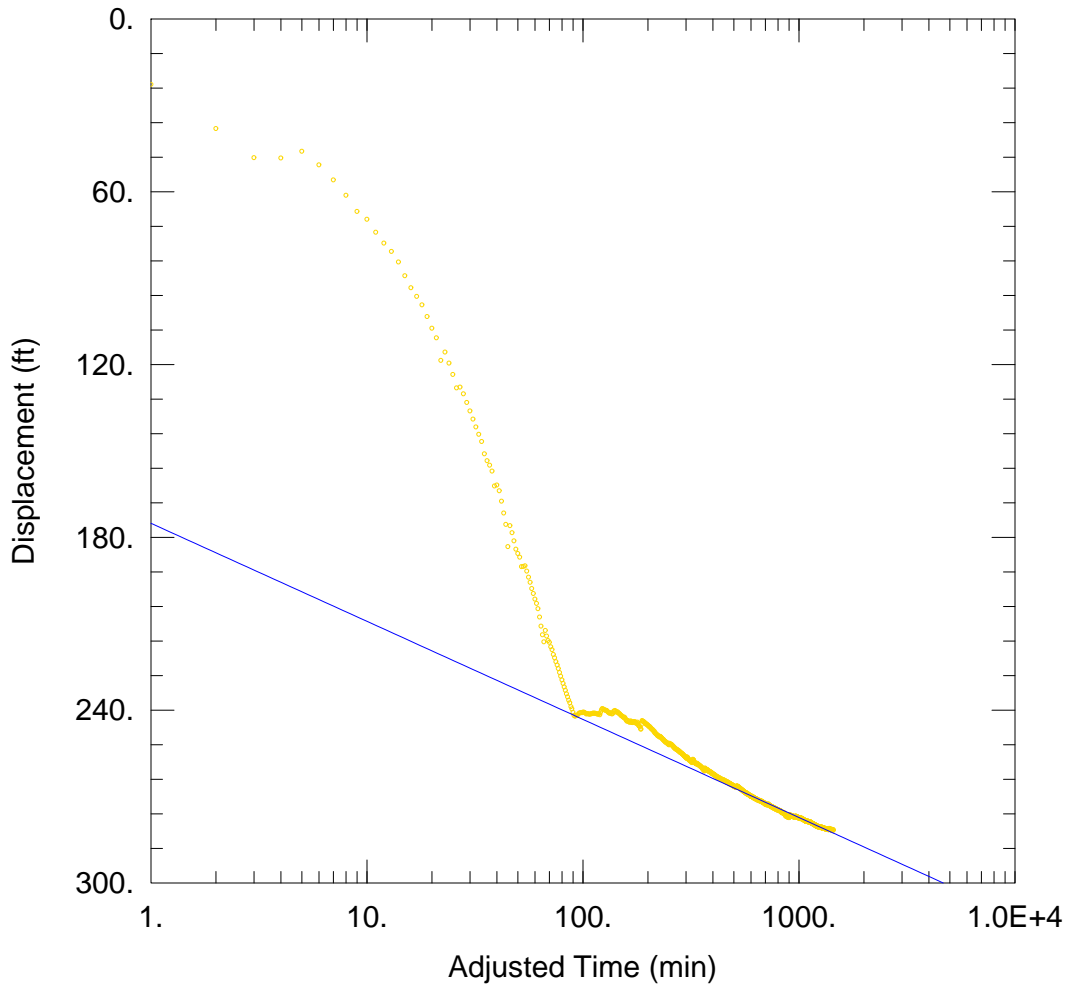
Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 3 Temperature (F)	PW Well No. 3 Water Level (ft bgs)	PW Well No. 3 Water Level (ft MSL)	PW Well No. 3 Drawdown (ft)	PW Well No. 3 Pump Rate (gpm)	PW Well No. 3 Specific Capacity (gpm/ft)	Comments	OW Well No. 2 Water Level (ft MSL)	OW Well No. 2 Drawdown (ft)
10/3/19 12:20 PM	1,456	14	74.18	538.60	1,275.40	221.02				380.11	2.02
10/3/19 12:21 PM	1,457	15	74.14	534.46	1,279.55	216.88				380.07	1.98
10/3/19 12:26 PM	1,462	20	74.19	513.63	1,300.38	196.05				380.05	1.96
10/3/19 12:31 PM	1,467	25	72.75	492.95	1,321.05	175.37				380.16	2.07
10/3/19 12:36 PM	1,472	30	72.09	475.14	1,338.86	157.56				380.11	2.02
10/3/19 12:41 PM	1,477	35	71.77	459.09	1,354.91	141.51				380.23	2.14
10/3/19 12:46 PM	1,482	40	71.65	445.28	1,368.72	127.70				380.23	2.14
10/3/19 12:51 PM	1,487	45	71.55	433.98	1,380.02	116.40				380.13	2.04
10/3/19 12:56 PM	1,492	50	71.48	422.86	1,391.14	105.28				380.21	2.12
10/3/19 1:01 PM	1,497	55	71.46	412.63	1,401.38	95.05				380.25	2.16
10/3/19 1:06 PM	1,502	60	71.43	404.44	1,409.56	86.86				380.17	2.08
10/3/19 1:21 PM	1,517	75	71.42	387.00	1,427.00	69.42				380.22	2.13
10/3/19 1:36 PM	1,532	90	71.31	376.85	1,437.15	59.27				380.19	2.10
10/3/19 1:51 PM	1,547	105	71.32	370.32	1,443.68	52.74				380.25	2.16
10/3/19 2:06 PM	1,562	120	71.24	365.72	1,448.28	48.14				380.22	2.13
10/3/19 2:21 PM	1,577	135	71.26	362.36	1,451.64	44.78				380.17	2.08
10/3/19 2:36 PM	1,592	150	71.26	359.62	1,454.39	42.04				380.14	2.05
10/3/19 2:51 PM	1,607	165	71.27	357.35	1,456.65	39.77				380.31	2.22
10/3/19 3:06 PM	1,622	180	71.20	355.58	1,458.43	38.00				380.34	2.25
10/3/19 3:36 PM	1,652	210	71.12	352.57	1,461.43	34.99				380.37	2.28
10/3/19 4:06 PM	1,682	240	71.12	350.53	1,463.47	32.95				380.37	2.28
10/3/19 4:36 PM	1,712	270	71.13	348.56	1,465.45	30.98				380.03	1.94
10/3/19 5:06 PM	1,742	300	71.13	346.78	1,467.22	29.20				380.16	2.07
10/3/19 6:06 PM	1,802	360	71.14	344.00	1,470.01	26.42				380.51	2.42
10/3/19 7:06 PM	1,862	420	71.12	341.48	1,472.52	23.90				380.75	2.66
10/3/19 8:06 PM	1,922	480	71.10	339.58	1,474.42	22.00				380.91	2.82
10/3/19 9:06 PM	1,982	540	71.14	338.05	1,475.95	20.47				380.66	2.57
10/3/19 10:06 PM	2,042	600	71.14	336.65	1,477.35	19.07				380.64	2.55
10/3/19 11:06 PM	2,102	660	71.16	335.49	1,478.52	17.91				381.02	2.93
10/4/19 12:06 AM	2,162	720	71.20	334.57	1,479.43	16.99				381.14	3.05
10/4/19 1:06 AM	2,222	780	71.15	333.67	1,480.33	16.09				381.30	3.21
10/4/19 2:06 AM	2,282	840	71.15	332.77	1,481.23	15.19				381.57	3.49
10/4/19 3:06 AM	2,342	900	71.11	332.20	1,481.80	14.62				381.52	3.43

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 620 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 3 - Aquifer Test (October 2, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 3 Temperature (F)	PW Well No. 3 Water Level (ft bgs)	PW Well No. 3 Water Level (ft MSL)	PW Well No. 3 Drawdown (ft)	PW Well No. 3 Pump Rate (gpm)	PW Well No. 3 Specific Capacity (gpm/ft)	Comments	OW Well No. 2 Water Level (ft MSL)	OW Well No. 2 Drawdown (ft)
10/4/19 4:06 AM	2,402	960	71.15	331.63	1,482.37	14.05				381.57	3.48
10/4/19 5:06 AM	2,462	1020	71.14	331.38	1,482.62	13.80				381.63	3.54
10/4/19 6:06 AM	2,522	1080	71.17	330.97	1,483.03	13.39				381.76	3.67
10/4/19 7:06 AM	2,582	1140	71.14	330.70	1,483.30	13.12				381.83	3.74
10/4/19 8:06 AM	2,642	1200	71.18	330.44	1,483.56	12.86				381.79	3.70
10/4/19 9:06 AM	2,702	1260	71.21	330.19	1,483.81	12.61				380.66	2.57

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 620 ft    EC=Electrical conductivity (mS/cm)



WELL TEST ANALYSIS

Data Set: \...\PW No. 3.aqt  
 Date: 11/07/19

Time: 14:27:30

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 3  
 Test Date: 10-2-2019

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 3	0	0	Well No. 3	0	0

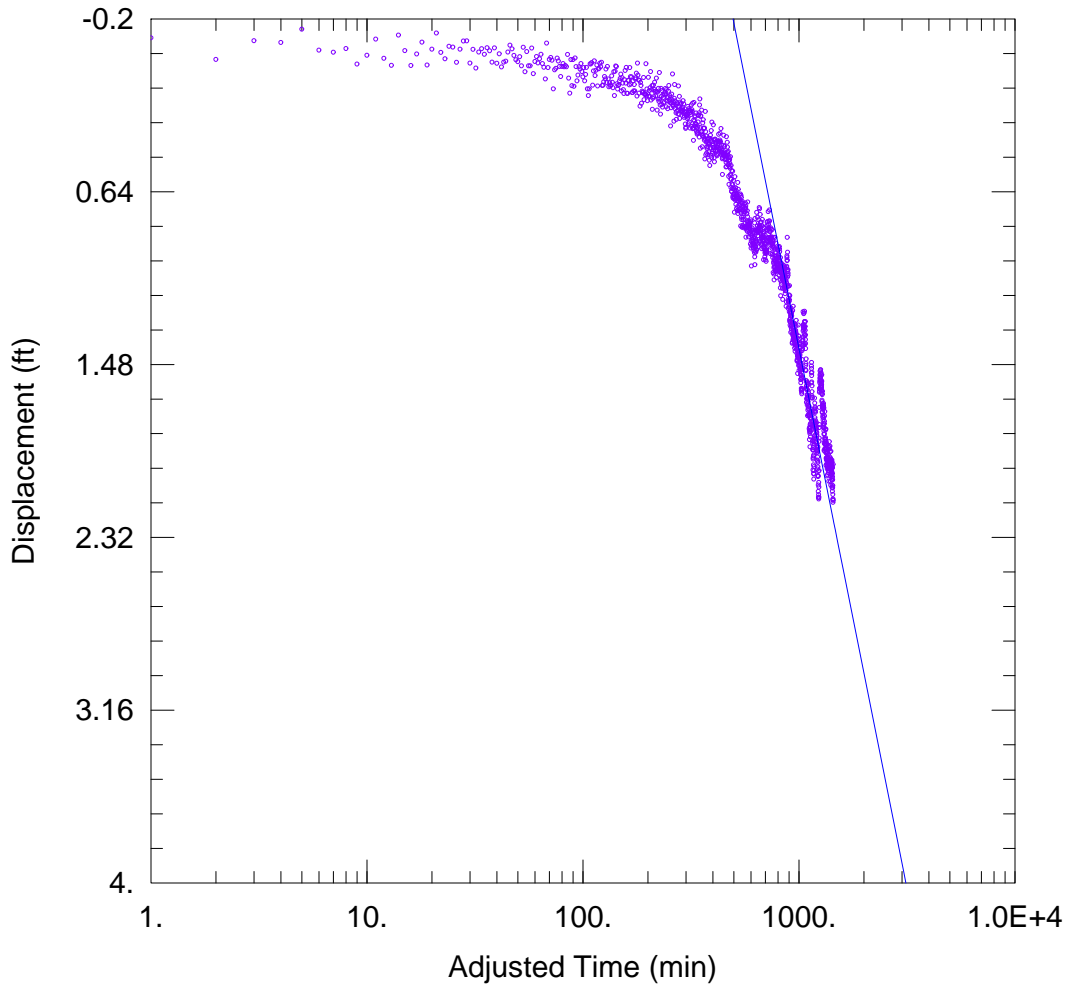
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 6.713 ft<sup>2</sup>/day





WELL TEST ANALYSIS

Data Set: \...\OW No. 2.aqt  
 Date: 11/07/19

Time: 14:27:14

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 3  
 Test Date: 10-2-2019

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
Well No. 3	0	0

Well Name	X (ft)	Y (ft)
• Well No. 2	905	0

SOLUTION

Aquifer Model: Confined  
 T = 43.54 ft<sup>2</sup>/day

Solution Method: Cooper-Jacob  
 S = 4.485E-5

# **Aquifer Test**

**Well No. 4**

**Majestic Hills Phase II Well No. 4 - Aquifer Test (September 23, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 4 Temperature (F)	PW Well No. 4 Water Level (ft bgs)	PW Well No. 4 Water Level (ft MSL)	PW Well No. 4 Drawdown (ft)	PW Well No. 4 Pump Rate (gpm)	PW Well No. 4 Specific Capacity (gpm/ft)	Comments	OW Well No. 5 Water Level (ft MSL)	OW Well No. 5 Drawdown (ft)
9/23/19 10:02 AM	0		70.92	352.45	1,389.55	0.00			Pump Start	1,518.17	0.00
9/23/19 10:03 AM	1		70.95	357.95	1,384.05	5.50	12.50	2.27	Meter = 398,671.75 gallons	1,518.19	-0.02
9/23/19 10:04 AM	2		70.94	369.83	1,372.17	17.38	12.5	0.72		1,518.19	-0.01
9/23/19 10:05 AM	3		70.93	377.82	1,364.18	25.38	12.5	0.49		1,518.16	0.01
9/23/19 10:06 AM	4		70.98	383.18	1,358.82	30.73	12.0	0.39		1,518.19	-0.02
9/23/19 10:07 AM	5		70.96	387.36	1,354.64	34.91	12.0	0.34		1,518.15	0.03
9/23/19 10:08 AM	6		70.92	393.43	1,348.57	40.98	12.0	0.29		1,518.17	0.00
9/23/19 10:09 AM	7		70.90	400.85	1,341.15	48.40	12.0	0.25		1,518.18	-0.01
9/23/19 10:10 AM	8		70.85	408.51	1,333.49	56.06	12.0	0.21		1,518.17	0.00
9/23/19 10:11 AM	9		70.87	412.98	1,329.02	60.54	12.0	0.20		1,518.18	0.00
9/23/19 10:12 AM	10		70.83	419.92	1,322.08	67.47	12.0	0.18		1,518.17	0.00
9/23/19 10:13 AM	11		70.84	426.07	1,315.93	73.62	12.0	0.16		1,518.18	0.00
9/23/19 10:14 AM	12		70.81	431.97	1,310.03	79.52	12.0	0.15		1,518.20	-0.02
9/23/19 10:15 AM	13		70.79	437.45	1,304.55	85.00	12.0	0.14		1,518.18	-0.01
9/23/19 10:16 AM	14		70.78	442.74	1,299.26	90.30	11.0	0.12		1,518.16	0.01
9/23/19 10:17 AM	15		70.77	447.91	1,294.09	95.46	11.0	0.12		1,518.17	0.00
9/23/19 10:22 AM	20		70.77	466.30	1,275.70	113.85	3.6	0.03	Reduced Pumping Rate	1,518.19	-0.02
9/23/19 10:27 AM	25		70.84	460.04	1,281.96	107.59	3.7	0.03		1,518.19	-0.02
9/23/19 10:32 AM	30		70.89	454.57	1,287.43	102.13	3.7	0.04		1,518.19	-0.02
9/23/19 10:37 AM	35		70.93	450.88	1,291.12	98.43	4.3	0.04	Increased Pumping Rate	1,518.16	0.01
9/23/19 10:42 AM	40		70.97	449.17	1,292.83	96.72	5.6	0.06		1,518.20	-0.03
9/23/19 10:47 AM	45		71.04	453.17	1,288.83	100.72	5.6	0.06		1,518.16	0.01
9/23/19 10:52 AM	50		71.11	456.37	1,285.63	103.92	4.2	0.04	Reduced Pumping Rate	1,518.16	0.02
9/23/19 10:57 AM	55		71.14	455.84	1,286.16	103.39	4.2	0.04		1,518.17	0.01
9/23/19 11:02 AM	60		71.21	453.97	1,288.03	101.52	4.2	0.04		1,518.17	0.00
9/23/19 11:17 AM	75		71.44	450.68	1,291.32	98.23	4.4	0.04		1,518.24	-0.07
9/23/19 11:32 AM	90		71.44	452.97	1,289.03	100.52	4.2	0.04		1,518.22	-0.04
9/23/19 11:47 AM	105		71.48	454.55	1,287.45	102.10	4.2	0.04		1,518.21	-0.03
9/23/19 12:02 PM	120		71.61	455.78	1,286.22	103.33	4.2	0.04		1,518.20	-0.03
9/23/19 12:17 PM	135		71.73	456.98	1,285.02	104.53	4.2	0.04		1,518.20	-0.03
9/23/19 12:32 PM	150		71.75	458.09	1,283.91	105.64	4.2	0.04		1,518.19	-0.02
9/23/19 12:47 PM	165		71.82	459.33	1,282.67	106.89	4.2	0.04		1,518.22	-0.05
9/23/19 1:02 PM	180		71.85	460.50	1,281.50	108.05	4.2	0.04	pH: 7.79; EC: 1.32	1,518.13	0.04
9/23/19 1:32 PM	210		71.91	461.94	1,280.06	109.49				1,518.22	-0.05
9/23/19 2:02 PM	240		71.98	463.66	1,278.34	111.21				1,518.22	-0.05

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
MSL = Mean Sea Level    Pump Setting = 460 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Phase II Well No. 4 - Aquifer Test (September 23, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 4 Temperature (F)	PW Well No. 4 Water Level (ft bgs)	PW Well No. 4 Water Level (ft MSL)	PW Well No. 4 Drawdown (ft)	PW Well No. 4 Pump Rate (gpm)	PW Well No. 4 Specific Capacity (gpm/ft)	Comments	OW Well No. 5 Water Level (ft MSL)	OW Well No. 5 Drawdown (ft)
9/23/19 3:02 PM	300		72.06	465.63	1,276.37	113.18				1,518.17	0.00
9/23/19 4:02 PM	360		72.14	466.93	1,275.07	114.48				1,518.23	-0.06
9/23/19 5:02 PM	420		72.16	468.69	1,273.31	116.24				1,518.22	-0.05
9/23/19 6:02 PM	480		72.13	469.76	1,272.24	117.31				1,518.23	-0.06
9/23/19 7:02 PM	540		72.20	470.95	1,271.05	118.50				1,518.19	-0.02
9/23/19 8:02 PM	600		72.24	472.01	1,269.99	119.56				1,518.17	0.01
9/23/19 9:02 PM	660		72.21	473.04	1,268.96	120.60				1,518.16	0.01
9/23/19 10:02 PM	720		72.21	474.59	1,267.41	122.14				1,518.14	0.03
9/23/19 11:02 PM	780		72.24	474.77	1,267.23	122.32				1,518.15	0.02
9/24/19 12:02 AM	840		72.25	475.60	1,266.40	123.15				1,518.12	0.05
9/24/19 1:02 AM	900		72.26	476.08	1,265.92	123.63				1,518.15	0.02
9/24/19 2:02 AM	960		72.25	476.82	1,265.18	124.37				1,518.17	0.01
9/24/19 3:02 AM	1,020		72.24	477.49	1,264.51	125.04				1,518.16	0.02
9/24/19 4:02 AM	1,080		72.32	477.78	1,264.22	125.34				1,518.14	0.03
9/24/19 5:02 AM	1,140		72.24	478.75	1,263.25	126.30				1,518.16	0.01
9/24/19 6:02 AM	1,200		72.24	478.62	1,263.38	126.17				1,518.13	0.05
9/24/19 7:02 AM	1,260		72.28	479.13	1,262.87	126.68				1,518.14	0.04
9/24/19 8:02 AM	1,320		72.25	479.48	1,262.52	127.03				1,518.03	0.14
9/24/19 9:02 AM	1,380		72.30	479.92	1,262.08	127.47				1,518.07	0.10
9/24/19 10:02 AM	1,440		72.30	480.11	1,261.89	127.66				1,517.96	0.21
9/24/19 11:02 AM	1,500		72.27	480.68	1,261.32	128.24				1,518.02	0.15
9/24/19 11:04 AM	1,502	0	72.20	480.64	1,261.36	128.20	4.0	0.03	Pump Stop	1,517.98	0.20
9/24/19 11:05 AM	1,503	1	72.27	478.90	1,263.10	126.45			Meter = 404,924.53 gallons	1,517.99	0.18
9/24/19 11:06 AM	1,504	2	72.32	475.55	1,266.45	123.10			Avg. Pump Rate: 4.16	1,518.00	0.18
9/24/19 11:07 AM	1,505	3	72.33	472.66	1,269.34	120.21				1,517.98	0.19
9/24/19 11:08 AM	1,506	4	72.39	469.91	1,272.09	117.46				1,517.97	0.21
9/24/19 11:09 AM	1,507	5	72.39	467.33	1,274.67	114.89				1,518.02	0.16
9/24/19 11:10 AM	1,508	6	72.41	464.90	1,277.10	112.46				1,517.99	0.18
9/24/19 11:11 AM	1,509	7	72.47	462.66	1,279.34	110.21				1,517.97	0.20
9/24/19 11:12 AM	1,510	8	72.43	460.31	1,281.69	107.86				1,517.96	0.22
9/24/19 11:13 AM	1,511	9	72.45	458.09	1,283.91	105.64				1,518.00	0.18
9/24/19 11:14 AM	1,512	10	72.45	456.05	1,285.95	103.61				1,517.98	0.19
9/24/19 11:15 AM	1,513	11	72.50	454.06	1,287.94	101.61				1,518.00	0.18
9/24/19 11:16 AM	1,514	12	72.44	452.20	1,289.80	99.75				1,518.00	0.17
9/24/19 11:17 AM	1,515	13	72.51	450.37	1,291.63	97.92				1,517.97	0.20

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 460 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Phase II Well No. 4 - Aquifer Test (September 23, 2019)**

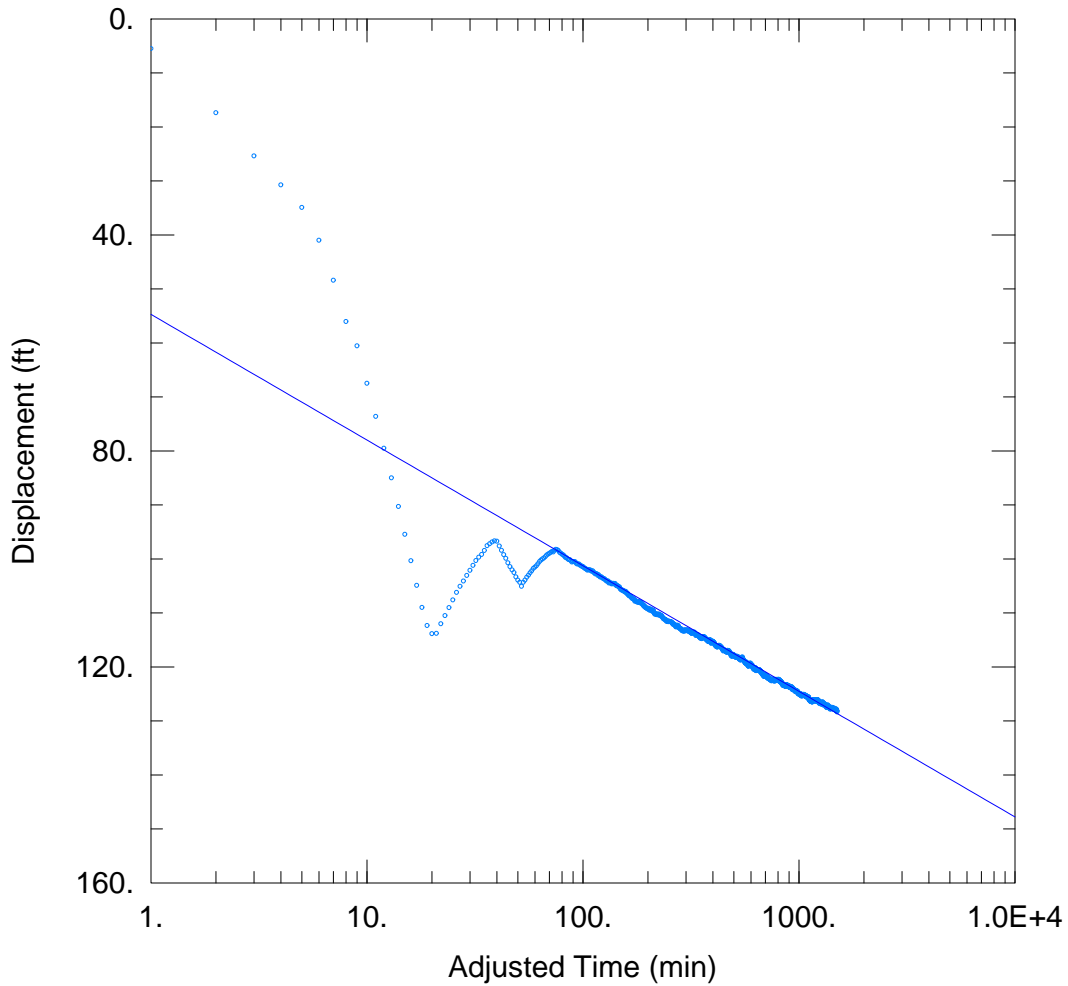
Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 4 Temperature (F)	PW Well No. 4 Water Level (ft bgs)	PW Well No. 4 Water Level (ft MSL)	PW Well No. 4 Drawdown (ft)	PW Well No. 4 Pump Rate (gpm)	PW Well No. 4 Specific Capacity (gpm/ft)	Comments	OW Well No. 5 Water Level (ft MSL)	OW Well No. 5 Drawdown (ft)
9/24/19 11:18 AM	1,516	14	72.52	448.50	1,293.50	96.05				1,517.98	0.20
9/24/19 11:19 AM	1,517	15	72.55	446.89	1,295.11	94.44				1,517.98	0.19
9/24/19 11:24 AM	1,522	20	72.49	439.42	1,302.58	86.98				1,517.98	0.20
9/24/19 11:29 AM	1,527	25	72.41	433.27	1,308.73	80.82				1,517.97	0.20
9/24/19 11:34 AM	1,532	30	72.36	428.26	1,313.74	75.81				1,518.01	0.17
9/24/19 11:39 AM	1,537	35	72.30	424.02	1,317.98	71.58				1,517.97	0.20
9/24/19 11:44 AM	1,542	40	72.20	420.31	1,321.69	67.86				1,517.97	0.20
9/24/19 11:49 AM	1,547	45	72.11	417.50	1,324.50	65.05				1,517.99	0.18
9/24/19 11:54 AM	1,552	50	71.97	415.24	1,326.76	62.79				1,517.96	0.21
9/24/19 11:59 AM	1,557	55	72.01	413.01	1,328.99	60.56				1,518.03	0.15
9/24/19 12:04 PM	1,562	60	71.89	411.08	1,330.92	58.63				1,517.97	0.20
9/24/19 12:19 PM	1,577	75	71.84	406.46	1,335.54	54.01				1,517.98	0.20
9/24/19 12:34 PM	1,592	90	71.71	402.94	1,339.06	50.49				1,518.01	0.17
9/24/19 12:49 PM	1,607	105	71.70	400.31	1,341.69	47.86				1,518.02	0.15
9/24/19 1:11 PM	1,622	120	71.65	397.52	1,344.48	45.07				1,518.01	0.16
9/24/19 1:26 PM	1,637	135	71.59	396.02	1,345.98	43.57				1,517.75	0.42
9/24/19 1:41 PM	1,652	150	71.59	394.74	1,347.26	42.29				1,517.82	0.35
9/24/19 1:56 PM	1,667	165	71.60	393.57	1,348.43	41.12				1,517.89	0.28
9/24/19 2:11 PM	1,682	180	71.50	392.65	1,349.35	40.20				1,517.92	0.26
9/24/19 2:41 PM	1,712	210	71.44	390.91	1,351.09	38.46				1,517.89	0.28
9/24/19 3:11 PM	1,742	240	71.38	389.37	1,352.63	36.93				1,517.92	0.25
9/24/19 4:11 PM	1,802	300	71.32	387.10	1,354.90	34.65				1,517.85	0.32
9/24/19 5:11 PM	1,862	360	71.25	385.30	1,356.70	32.85				1,517.88	0.30
9/24/19 6:11 PM	1,922	420	71.22	383.75	1,358.25	31.30				1,517.93	0.25
9/24/19 7:11 PM	1,982	480	71.17	382.39	1,359.61	29.94				1,517.85	0.32
9/24/19 8:11 PM	2,042	540	71.13	381.34	1,360.66	28.89				1,517.87	0.30
9/24/19 9:11 PM	2,102	600	71.12	380.37	1,361.63	27.92				1,517.89	0.28
9/24/19 10:11 PM	2,162	660	71.09	379.46	1,362.54	27.02				1,517.85	0.32
9/24/19 11:11 PM	2,222	720	71.12	378.57	1,363.43	26.12				1,517.86	0.31
9/25/19 12:11 AM	2,282	780	71.09	377.67	1,364.33	25.22				1,517.90	0.27
9/25/19 1:11 AM	2,342	840	71.05	377.07	1,364.93	24.62				1,517.82	0.35
9/25/19 2:11 AM	2,402	900	71.07	376.35	1,365.65	23.90				1,517.88	0.29
9/25/19 3:11 AM	2,462	960	71.08	375.68	1,366.32	23.23				1,517.90	0.27

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 460 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Phase II Well No. 4 - Aquifer Test (September 23, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 4 Temperature (F)	PW Well No. 4 Water Level (ft bgs)	PW Well No. 4 Water Level (ft MSL)	PW Well No. 4 Drawdown (ft)	PW Well No. 4 Pump Rate (gpm)	PW Well No. 4 Specific Capacity (gpm/ft)	Comments	OW Well No. 5 Water Level (ft MSL)	OW Well No. 5 Drawdown (ft)
9/25/19 4:11 AM	2,522	1020	71.04	374.99	1,367.01	22.54				1,517.89	0.29
9/25/19 5:11 AM	2,582	1080	71.04	374.39	1,367.61	21.94				1,517.85	0.32
9/25/19 6:11 AM	2,642	1140	71.04	373.75	1,368.25	21.30				1,517.85	0.32
9/25/19 7:11 AM	2,702	1200	71.04	373.25	1,368.75	20.81				1,517.86	0.31
9/25/19 8:11 AM	2,762	1260	71.03	372.51	1,369.49	20.06				1,517.82	0.35
9/25/19 9:11 AM	2,822	1320	71.00	371.97	1,370.03	19.52				1,517.79	0.38

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 460 ft    EC=Electrical conductivity (mS/cm)



WELL TEST ANALYSIS

Data Set: \...\PW No. 4.aqt  
 Date: 11/07/19

Time: 14:27:56

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 4  
 Test Date: 9-23-2019

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

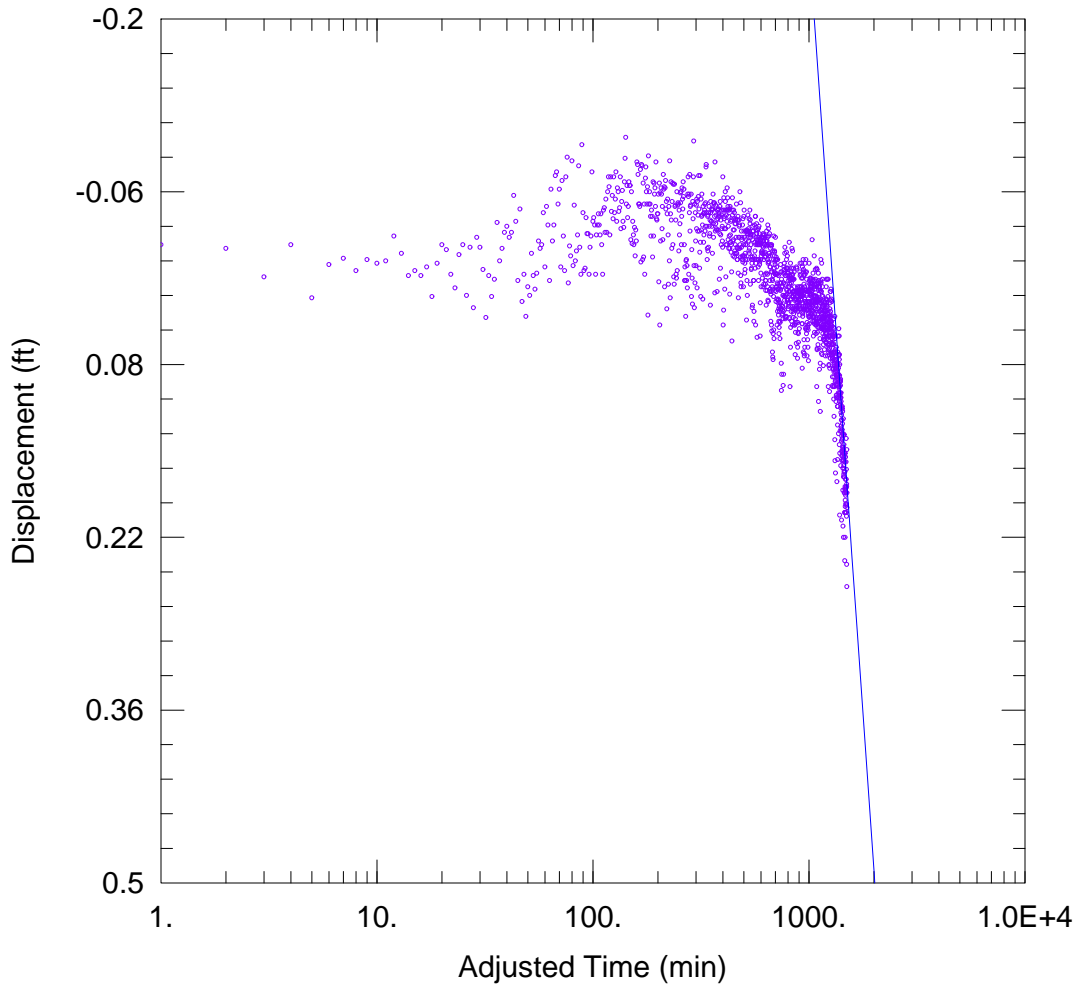
Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 4	0	0	• Well No. 4	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 6.306 ft<sup>2</sup>/day



WELL TEST ANALYSIS

Data Set: \...\OW No. 5.aqt  
 Date: 11/07/19

Time: 14:29:17

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 3  
 Test Date: 10-2-2019

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 4	0	0	Well No. 5	620	0

SOLUTION

Aquifer Model: Confined  
 T = 58.7 ft<sup>2</sup>/day

Solution Method: Cooper-Jacob  
 S = 0.0003033



# **Aquifer Test**

**Well No. 6**

**Majestic Hills Well No. 6 - Aquifer Test (September 25, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 6 Temperature (F)	PW Well No. 6 Water Level (ft bgs)	PW Well No. 6 Water Level (ft MSL)	PW Well No. 6 Drawdown (ft)	PW Well No. 6 Pump Rate (gpm)	PW Well No. 6 Specific Capacity (gpm/ft)	Comments	OW Well No. 5 Water Level (ft MSL)	OW Well No. 5 Drawdown (ft)
9/25/19 10:13 AM	0		71.07	136.98	1,512.02	0.00			Pump Start	1,517.78	0.00
9/25/19 10:14 AM	1		71.02	143.34	1,505.66	6.35	33.00	5.19	Meter: 48,685 gallons	1,517.75	0.03
9/25/19 10:15 AM	2		71.02	144.00	1,505.00	7.02	33.0	4.70		1,517.73	0.05
9/25/19 10:16 AM	3		71.00	144.21	1,504.79	7.22	33.0	4.57		1,517.70	0.08
9/25/19 10:17 AM	4		70.94	144.34	1,504.66	7.36	33.0	4.48		1,517.66	0.11
9/25/19 10:18 AM	5		70.84	144.52	1,504.48	7.54	33.0	4.38		1,517.63	0.14
9/25/19 10:19 AM	6		70.68	144.56	1,504.44	7.58	33.0	4.36		1,517.61	0.17
9/25/19 10:20 AM	7		70.63	144.72	1,504.28	7.74	34.0	4.39		1,517.59	0.19
9/25/19 10:21 AM	8		70.56	144.58	1,504.42	7.60	33.0	4.34		1,517.56	0.22
9/25/19 10:22 AM	9		70.50	144.63	1,504.37	7.65	33.0	4.32		1,517.49	0.29
9/25/19 10:23 AM	10		70.52	144.62	1,504.38	7.63	33.0	4.32		1,517.52	0.25
9/25/19 10:24 AM	11		70.49	144.71	1,504.29	7.72	33.0	4.27		1,517.50	0.27
9/25/19 10:25 AM	12		70.44	144.71	1,504.29	7.72	33.0	4.27		1,517.47	0.31
9/25/19 10:26 AM	13		70.44	144.75	1,504.25	7.76	33.0	4.25		1,517.47	0.31
9/25/19 10:27 AM	14		70.42	144.64	1,504.36	7.66	33.0	4.31		1,517.44	0.33
9/25/19 10:28 AM	15		70.47	144.67	1,504.33	7.68	33.0	4.30	pH: 8.07/ EC: 1.34	1,517.47	0.31
9/25/19 10:33 AM	20		70.37	144.85	1,504.15	7.87	33.0	4.19	pH: 8.04/ EC: 1.31	1,517.37	0.41
9/25/19 10:38 AM	25		70.44	144.90	1,504.10	7.91	33.0	4.17	pH: 8.10/ EC: 1.29	1,517.32	0.46
9/25/19 10:43 AM	30		70.45	144.94	1,504.07	7.95	33.0	4.15	pH: 8.10/ EC: 1.27	1,517.27	0.50
9/25/19 10:58 AM	45		70.45	145.12	1,503.88	8.14	33.0	4.05	pH: 8.06/ EC: 1.23	1,517.12	0.66
9/25/19 11:13 AM	60		70.42	145.38	1,503.62	8.39	33.0	3.93	pH: 8.05/ EC: 1.19	1,517.02	0.76
9/25/19 11:28 AM	75		70.45	145.45	1,503.55	8.47	33.0	3.90	pH: 7.85/ EC: 1.18	1,516.95	0.83
9/25/19 11:43 AM	90		70.48	144.54	1,504.46	7.56	33.0	4.37	pH: 7.76/ EC: 1.28	1,516.90	0.88
9/25/19 11:58 AM	105		70.46	144.71	1,504.29	7.72	33.0	4.27	pH: 7.96/ EC: 1.22	1,516.82	0.96
9/25/19 12:13 PM	120		70.43	144.89	1,504.11	7.91	33.0	4.17	pH: 7.96/ EC: 1.20	1,516.79	0.99
9/25/19 12:43 PM	150		70.45	145.14	1,503.86	8.16	33.0	4.04	pH: 7.89/ EC: 1.14	1,516.67	1.11
9/25/19 1:13 PM	180		70.43	145.22	1,503.78	8.23	33.0	4.01	pH: 7.86/ EC: 1.11	1,516.54	1.24
9/25/19 1:43 PM	210		70.42	145.44	1,503.56	8.45				1,516.47	1.31
9/25/19 2:13 PM	240		70.44	145.58	1,503.42	8.60				1,516.40	1.38
9/25/19 3:13 PM	300		70.45	145.73	1,503.27	8.75				1,516.25	1.53
9/25/19 4:13 PM	360		70.49	145.83	1,503.17	8.85				1,516.14	1.64
9/25/19 5:13 PM	420		70.51	146.13	1,502.87	9.15				1,515.95	1.82
9/25/19 6:13 PM	480		70.50	146.25	1,502.75	9.27				1,515.85	1.93
9/25/19 7:13 PM	540		70.51	146.39	1,502.62	9.40				1,515.75	2.03
9/25/19 8:13 PM	600		70.52	146.42	1,502.58	9.43				1,515.65	2.13

Note: bgs = below ground surface    Column Pipe Diameter = 2 inches    Horsepower = 10 HP  
 MSL = Mean Sea Level    Pump Setting = 420 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 6 - Aquifer Test (September 25, 2019)**

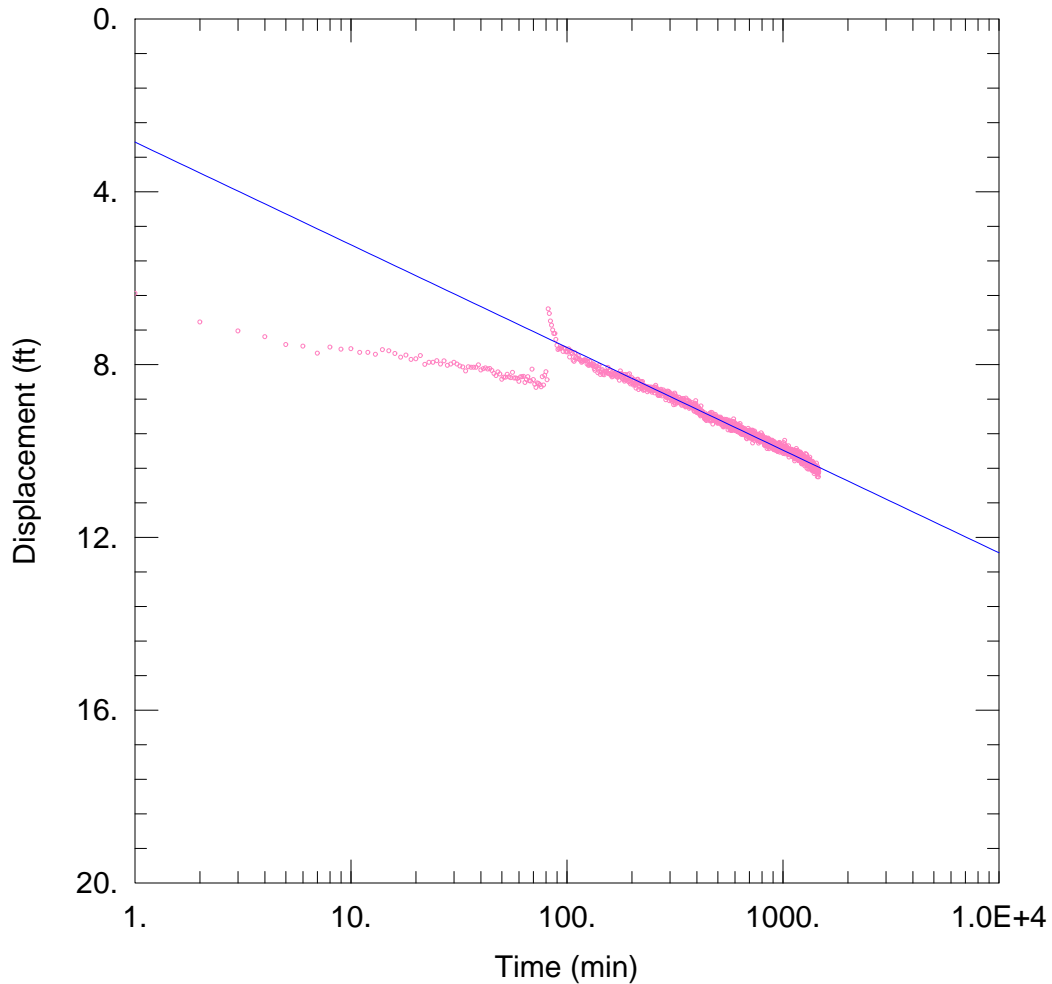
Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 6 Temperature (F)	PW Well No. 6 Water Level (ft bgs)	PW Well No. 6 Water Level (ft MSL)	PW Well No. 6 Drawdown (ft)	PW Well No. 6 Pump Rate (gpm)	PW Well No. 6 Specific Capacity (gpm/ft)	Comments	OW Well No. 5 Water Level (ft MSL)	OW Well No. 5 Drawdown (ft)
9/25/19 9:13 PM	660		70.51	146.58	1,502.42	9.60				1,515.58	2.20
9/25/19 10:13 PM	720		70.46	146.70	1,502.30	9.72				1,515.51	2.26
9/25/19 11:13 PM	780		70.52	146.77	1,502.23	9.79				1,515.44	2.34
9/26/19 12:13 AM	840		70.48	146.76	1,502.24	9.78				1,515.36	2.42
9/26/19 1:13 AM	900		70.51	146.80	1,502.20	9.82				1,515.29	2.48
9/26/19 2:13 AM	960		70.48	146.87	1,502.13	9.89				1,515.27	2.51
9/26/19 3:13 AM	1,020		70.54	146.74	1,502.26	9.76				1,515.21	2.57
9/26/19 4:13 AM	1,080		70.47	147.02	1,501.98	10.04				1,515.15	2.63
9/26/19 5:13 AM	1,140		70.51	147.10	1,501.90	10.12				1,515.10	2.67
9/26/19 6:13 AM	1,200		70.55	147.11	1,501.90	10.12				1,515.06	2.72
9/26/19 7:13 AM	1,260		70.51	147.20	1,501.80	10.22				1,514.99	2.79
9/26/19 8:13 AM	1,320		70.54	147.21	1,501.79	10.23				1,514.92	2.85
9/26/19 9:13 AM	1,380		70.52	147.31	1,501.69	10.33				1,514.89	2.89
9/26/19 10:13 AM	1,440		70.49	147.41	1,501.59	10.43				1,514.74	3.03
9/26/19 10:39 AM	1,466	0	70.52	147.48	1,501.52	10.49	33.0	3.15	Pump Stop	1,514.73	2.54
9/26/19 10:40 AM	1,467	1	70.54	141.25	1,507.75	4.26			Meter: 97,331 gallons	1,514.72	2.55
9/26/19 10:41 AM	1,468	2	70.53	140.80	1,508.20	3.82			Avg. Pump Rate: 33.18	1,514.78	2.50
9/26/19 10:42 AM	1,469	3	70.53	140.48	1,508.52	3.49				1,514.76	2.52
9/26/19 10:43 AM	1,470	4	70.53	140.38	1,508.62	3.40				1,514.80	2.47
9/26/19 10:44 AM	1,471	5	70.57	140.45	1,508.55	3.46				1,514.86	2.42
9/26/19 10:45 AM	1,472	6	70.59	140.24	1,508.76	3.25				1,514.86	2.41
9/26/19 10:46 AM	1,473	7	70.59	140.20	1,508.80	3.21				1,514.86	2.42
9/26/19 10:47 AM	1,474	8	70.58	140.13	1,508.87	3.14				1,514.89	2.39
9/26/19 10:48 AM	1,475	9	70.60	140.11	1,508.89	3.12				1,514.94	2.33
9/26/19 10:49 AM	1,476	10	70.60	140.09	1,508.91	3.11				1,514.96	2.32
9/26/19 10:50 AM	1,477	11	70.58	140.11	1,508.89	3.13				1,515.00	2.28
9/26/19 10:51 AM	1,478	12	70.59	140.06	1,508.94	3.08				1,514.98	2.29
9/26/19 10:52 AM	1,479	13	70.63	139.94	1,509.06	2.95				1,514.97	2.30
9/26/19 10:53 AM	1,480	14	70.66	139.96	1,509.04	2.97				1,515.03	2.25
9/26/19 10:54 AM	1,481	15	70.62	139.98	1,509.03	2.99				1,515.03	2.25
9/26/19 10:59 AM	1,486	20	70.62	139.87	1,509.14	2.88				1,515.07	2.21
9/26/19 11:04 AM	1,491	25	70.69	139.89	1,509.11	2.91				1,515.12	2.15
9/26/19 11:09 AM	1,496	30	70.70	139.77	1,509.23	2.79				1,515.17	2.11
9/26/19 11:24 AM	1,511	45	70.75	139.58	1,509.42	2.60				1,515.30	1.97
9/26/19 11:39 AM	1,526	60	70.84	139.60	1,509.40	2.61				1,515.37	1.91

Note: bgs = below ground surface    Column Pipe Diameter = 2 inches    Horsepower = 10 HP  
 MSL = Mean Sea Level    Pump Setting = 420 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 6 - Aquifer Test (September 25, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 6 Temperature (F)	PW Well No. 6 Water Level (ft bgs)	PW Well No. 6 Water Level (ft MSL)	PW Well No. 6 Drawdown (ft)	PW Well No. 6 Pump Rate (gpm)	PW Well No. 6 Specific Capacity (gpm/ft)	Comments	OW Well No. 5 Water Level (ft MSL)	OW Well No. 5 Drawdown (ft)
9/26/19 11:54 AM	1,541	75	70.88	139.47	1,509.53	2.48				1,515.48	1.79
9/26/19 12:09 PM	1,556	90	70.89	139.34	1,509.66	2.35				1,515.54	1.74
9/26/19 12:24 PM	1,571	105	70.90	139.31	1,509.69	2.33				1,515.58	1.70
9/26/19 12:39 PM	1,586	120	70.92	139.25	1,509.75	2.26				1,515.70	1.58
9/26/19 1:09 PM	1,616	150	70.92	139.05	1,509.95	2.07				1,515.74	1.54
9/26/19 1:39 PM	1,646	180	70.91	138.98	1,510.02	1.99				1,515.84	1.44
9/26/19 2:09 PM	1,676	210	70.86	138.87	1,510.13	1.88				1,515.93	1.35
9/26/19 2:39 PM	1,706	240	70.85	138.83	1,510.17	1.84				1,515.96	1.31
9/26/19 3:39 PM	1,766	300	70.85	138.66	1,510.34	1.67				1,516.06	1.21
9/26/19 4:39 PM	1,826	360	70.88	138.49	1,510.51	1.51				1,516.17	1.11
9/26/19 5:39 PM	1,886	420	70.85	138.35	1,510.65	1.37				1,516.21	1.07
9/26/19 6:39 PM	1,946	480	70.81	138.41	1,510.59	1.43				1,516.32	0.96
9/26/19 7:39 PM	2,006	540	70.80	138.32	1,510.68	1.34				1,516.36	0.91
9/26/19 8:39 PM	2,066	600	70.82	138.21	1,510.79	1.23				1,516.33	0.95
9/26/19 9:39 PM	2,126	660	70.87	138.18	1,510.82	1.19				1,516.40	0.87
9/26/19 10:39 PM	2,186	720	70.87	138.11	1,510.89	1.13				1,516.43	0.85
9/26/19 11:39 PM	2,246	780	70.82	138.17	1,510.83	1.19				1,516.45	0.83
9/27/19 12:39 AM	2,306	840	70.86	138.16	1,510.84	1.17				1,516.47	0.81
9/27/19 1:39 AM	2,366	900	70.85	138.12	1,510.88	1.14				1,516.52	0.75
9/27/19 2:39 AM	2,426	960	70.88	138.04	1,510.96	1.06				1,516.57	0.71
9/27/19 3:39 AM	2,486	1020	70.85	138.11	1,510.90	1.12				1,516.55	0.73
9/27/19 4:39 AM	2,546	1080	70.88	138.02	1,510.98	1.04				1,516.60	0.68
9/27/19 5:39 AM	2,606	1140	70.85	138.05	1,510.95	1.07				1,516.65	0.62
9/27/19 6:39 AM	2,666	1200	70.88	137.99	1,511.01	1.00				1,516.66	0.61
9/27/19 7:39 AM	2,726	1260	70.88	138.04	1,510.96	1.05				1,516.69	0.59
9/27/19 8:39 AM	2,786	1320	70.86	138.03	1,510.97	1.05				1,516.64	0.64

Note: bgs = below ground surface    Column Pipe Diameter = 2 inches    Horsepower = 10 HP  
 MSL = Mean Sea Level    Pump Setting = 420 ft    EC=Electrical conductivity (mS/cm)



WELL TEST ANALYSIS

Data Set: \...\Well 6 PW.aqt  
Date: 11/07/19

Time: 14:29:59

PROJECT INFORMATION

Company: WRGS  
Client: Lone Star Land Partners  
Project: 083-002-19  
Location: Blanco County  
Test Well: Well No. 6  
Test Date: 9/25/2019

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

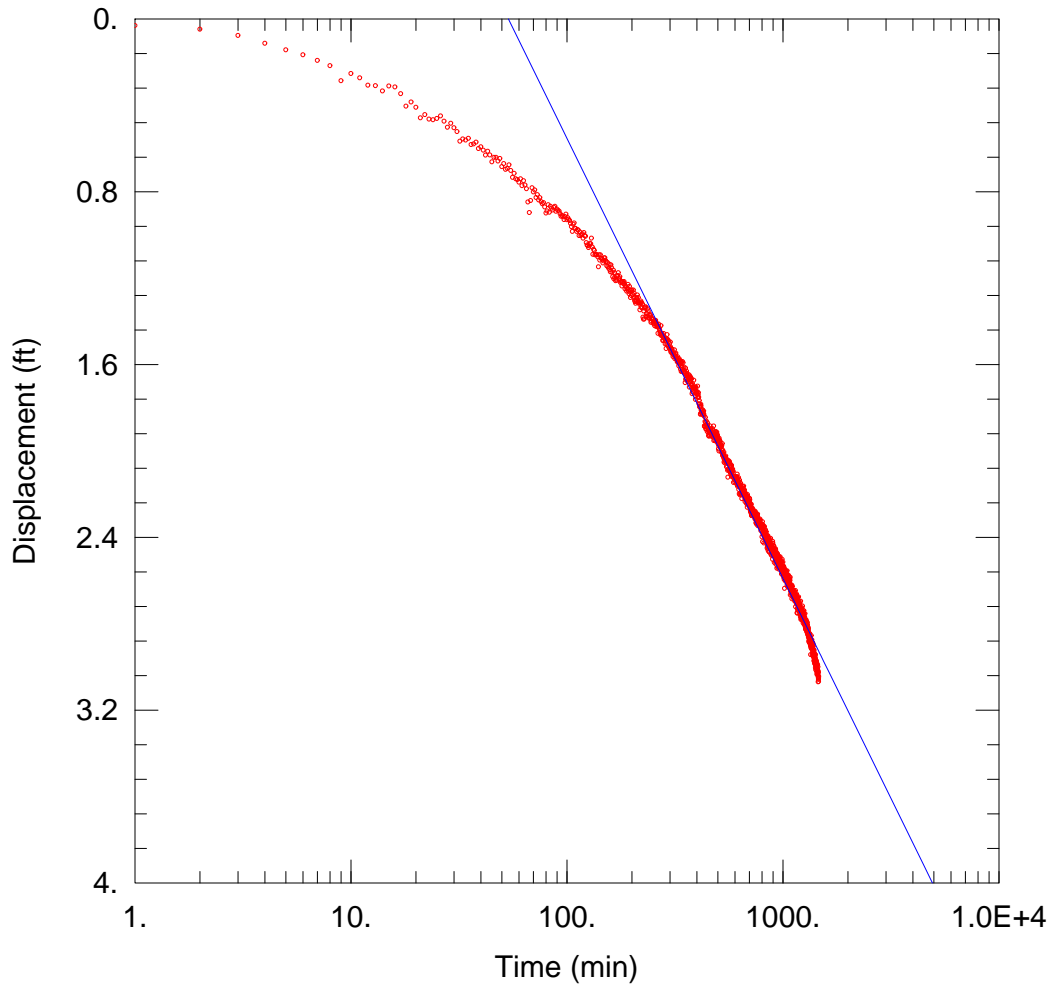
Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 6	0	0	Well No. 6	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 492.4 ft<sup>2</sup>/day



WELL TEST ANALYSIS

Data Set: \...\Well 5 OW.aqt  
 Date: 11/07/19

Time: 14:30:13

PROJECT INFORMATION

Company: WRGS  
 Client: Lone Star Land Partners  
 Project: 083-002-19  
 Location: Blanco County  
 Test Well: Well No. 6  
 Test Date: 9/25/2019

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 6	0	0	• Well No. 5	1126	0

SOLUTION

Aquifer Model: Confined  
 T = 574.4 ft<sup>2</sup>/day

Solution Method: Cooper-Jacob  
 S = 3.785E-5

# **Aquifer Test**

**Well No. 8**

**Majestic Hills Well No. 8 - Aquifer Test (October 7, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 8 Temperature (F)	PW Well No. 8 Water Level (ft bgs)	PW Well No. 8 Water Level (ft MSL)	PW Well No. 8 Drawdown (ft)	PW Well No. 8 Pump Rate (gpm)	PW Well No. 8 Specific Capacity (gpm/ft)	Comments	OW Well No. 7 Water Level (ft MSL)	OW Well No. 7 Drawdown (ft)
10/7/19 12:46 PM	0		72.80	343.17	1,487.83	0.00			Pump Start	1,553.26	0.00
10/7/19 12:47 PM	1		72.49	345.73	1,485.27	2.56	14.0	5.48	Meter: 428,528.9 gallons	1,553.24	0.02
10/7/19 12:48 PM	2		72.16	348.46	1,482.54	5.28	13.0	2.46		1,553.25	0.01
10/7/19 12:49 PM	3		71.93	350.47	1,480.53	7.29	13.0	1.78		1,553.31	-0.06
10/7/19 12:50 PM	4		71.78	352.48	1,478.52	9.31	13.0	1.40		1,553.20	0.05
10/7/19 12:51 PM	5		71.67	354.06	1,476.94	10.89	12.5	1.15		1,553.31	-0.05
10/7/19 12:52 PM	6		71.54	355.80	1,475.20	12.63	12.5	0.99		1,553.19	0.06
10/7/19 12:53 PM	7		71.45	357.43	1,473.57	14.25	13.0	0.91		1,553.26	0.00
10/7/19 12:54 PM	8		71.39	358.82	1,472.18	15.65	13.0	0.83		1,553.29	-0.03
10/7/19 12:55 PM	9		71.29	360.24	1,470.76	17.07	12.9	0.76		1,553.19	0.06
10/7/19 12:56 PM	10		71.20	361.58	1,469.42	18.41	13.0	0.71		1,553.25	0.01
10/7/19 12:57 PM	11		71.21	362.82	1,468.18	19.65	13.0	0.66		1,553.21	0.05
10/7/19 12:58 PM	12		71.09	363.97	1,467.03	20.79	12.6	0.61		1,553.17	0.08
10/7/19 12:59 PM	13		71.10	365.20	1,465.80	22.03	12.8	0.58		1,553.12	0.14
10/7/19 1:00 PM	14		71.05	366.44	1,464.56	23.27	12.7	0.55		1,553.22	0.03
10/7/19 1:01 PM	15		71.03	367.32	1,463.68	24.15	12.8	0.53	pH: 7.71/ EC: 0.66	1,553.17	0.09
10/7/19 1:06 PM	20		70.91	372.43	1,458.57	29.25	12.7	0.43	pH: 7.44/ EC: 0.69	1,553.16	0.10
10/7/19 1:11 PM	25		70.89	376.89	1,454.11	33.72	12.7	0.38	pH: 7.38/ EC: 0.70	1,553.14	0.12
10/7/19 1:16 PM	30		70.85	380.90	1,450.10	37.73	12.6	0.33	pH: 7.38/ EC: 0.69	1,553.09	0.16
10/7/19 1:31 PM	45		70.85	390.20	1,440.80	47.03	12.3	0.26	pH: 7.36/ EC: 0.69	1,553.37	-0.12
10/7/19 1:46 PM	60		70.88	397.30	1,433.70	54.13	12.4	0.23	pH: 7.37/ EC: 0.68	1,553.36	-0.11
10/7/19 2:01 PM	75		70.87	403.23	1,427.77	60.05	12.4	0.21	pH: 7.36/ EC: 0.68	1,553.24	0.02
10/7/19 2:16 PM	90		70.86	407.52	1,423.48	64.35	12.3	0.19	pH: 7.36/ EC: 0.68	1,553.07	0.18
10/7/19 2:31 PM	105		70.88	410.95	1,420.05	67.78	12.0	0.18	pH: 7.36/ EC: 0.67	1,553.04	0.21
10/7/19 2:46 PM	120		70.86	413.69	1,417.32	70.51	12.1	0.17	pH: 7.35/ EC: 0.67	1,553.11	0.15
10/7/19 3:16 PM	150		70.90	415.00	1,416.00	71.82	12.1	0.17	pH: 7.43/ EC: 0.67	1,553.26	0.00
10/7/19 3:46 PM	180		70.88	416.28	1,414.72	73.11	12.1	0.17	pH: 7.41/ EC: 0.66	1,553.16	0.10
10/7/19 4:16 PM	210		70.91	416.66	1,414.34	73.48				1,553.27	-0.01
10/7/19 4:46 PM	240		70.83	417.46	1,413.54	74.29				1,553.26	0.00
10/7/19 5:46 PM	300		70.84	418.01	1,412.99	74.84				1,553.32	-0.06
10/7/19 6:46 PM	360		70.85	417.95	1,413.05	74.78				1,553.72	-0.47
10/7/19 7:46 PM	420		70.86	418.07	1,412.93	74.90				1,553.26	0.00
10/7/19 8:46 PM	480		70.87	437.38	1,393.62	94.21				1,553.30	-0.05
10/7/19 9:46 PM	540		70.91	464.61	1,366.39	121.44				1,553.16	0.10
10/7/19 10:46 PM	600		71.01	500.59	1,330.41	157.42				1,553.30	-0.05

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 580 ft    EC=Electrical conductivity (mS/cm)



**Majestic Hills Well No. 8 - Aquifer Test (October 7, 2019)**

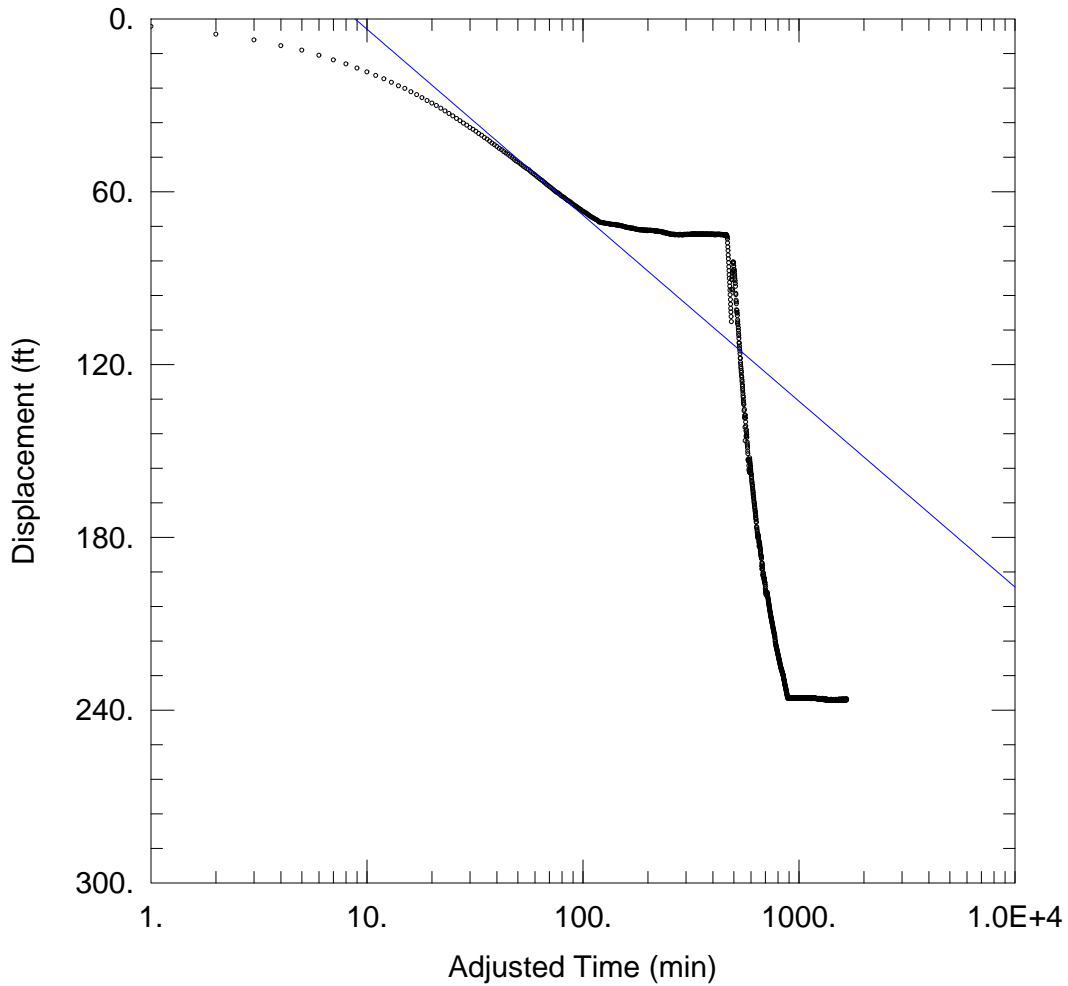
Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 8 Temperature (F)	PW Well No. 8 Water Level (ft bgs)	PW Well No. 8 Water Level (ft MSL)	PW Well No. 8 Drawdown (ft)	PW Well No. 8 Pump Rate (gpm)	PW Well No. 8 Specific Capacity (gpm/ft)	Comments	OW Well No. 7 Water Level (ft MSL)	OW Well No. 7 Drawdown (ft)
10/7/19 11:46 PM	660		71.13	526.10	1,304.91	182.92				1,553.16	0.09
10/8/19 12:46 AM	720		71.02	544.35	1,286.65	201.18				1,553.19	0.07
10/8/19 1:46 AM	780		71.04	560.07	1,270.94	216.89				1,553.21	0.05
10/8/19 2:46 AM	840		71.05	570.40	1,260.60	227.23				1,553.21	0.05
10/8/19 3:46 AM	900		71.06	578.89	1,252.11	235.72				1,553.22	0.03
10/8/19 4:46 AM	960		71.10	579.04	1,251.96	235.87				1,553.11	0.15
10/8/19 5:46 AM	1,020		71.10	578.98	1,252.03	235.80				1,552.91	0.34
10/8/19 6:46 AM	1,080		71.08	579.13	1,251.88	235.95				1,552.58	0.67
10/8/19 7:46 AM	1,140		71.08	579.21	1,251.79	236.04				1,552.84	0.41
10/8/19 8:46 AM	1,200		71.10	579.07	1,251.94	235.89				1,552.83	0.42
10/8/19 9:46 AM	1,260		71.11	579.34	1,251.66	236.17				1,552.63	0.62
10/8/19 10:46 AM	1,320		71.16	579.47	1,251.53	236.30				1,552.86	0.39
10/8/19 11:46 AM	1,380		71.18	579.71	1,251.29	236.54				1,552.90	0.35
10/8/19 12:46 PM	1,440		71.18	579.69	1,251.31	236.52				1,552.83	0.43
10/8/19 1:46 PM	1,500		71.17	579.69	1,251.31	236.51				1,552.59	0.67
10/8/19 2:46 PM	1,560		71.18	579.62	1,251.38	236.45				1,552.47	0.79
10/8/19 3:46 PM	1,620		71.18	579.51	1,251.49	236.34				1,552.51	0.75
10/8/19 4:30 PM	1,664	0	71.20	579.58	1,251.42	236.41	7.2	0.03	Pump Stop	1,552.94	0.32
10/8/19 4:31 PM	1,665	1	71.20	578.11	1,252.89	234.94			Meter: 443,552.878 gallons	1,552.92	0.34
10/8/19 4:32 PM	1,666	2	71.16	572.83	1,258.18	229.65			Avg. Pump Rate: 9.03	1,552.91	0.34
10/8/19 4:33 PM	1,667	3	71.16	567.68	1,263.32	224.51				1,552.99	0.27
10/8/19 4:34 PM	1,668	4	71.14	562.59	1,268.41	219.42				1,552.91	0.35
10/8/19 4:35 PM	1,669	5	71.15	556.66	1,274.34	213.49				1,552.92	0.34
10/8/19 4:36 PM	1,670	6	71.17	551.65	1,279.35	208.48				1,552.91	0.35
10/8/19 4:37 PM	1,671	7	71.15	546.51	1,284.49	203.34				1,552.91	0.35
10/8/19 4:38 PM	1,672	8	71.25	541.41	1,289.59	198.24				1,552.85	0.41
10/8/19 4:39 PM	1,673	9	71.30	535.75	1,295.25	192.58				1,552.96	0.30
10/8/19 4:40 PM	1,674	10	71.43	530.42	1,300.58	187.25				1,552.88	0.38
10/8/19 4:41 PM	1,675	11	71.53	525.36	1,305.64	182.19				1,552.81	0.44
10/8/19 4:42 PM	1,676	12	71.58	520.43	1,310.57	177.26				1,552.94	0.32
10/8/19 4:43 PM	1,677	13	71.60	515.57	1,315.43	172.39				1,552.90	0.36
10/8/19 4:44 PM	1,678	14	71.56	510.76	1,320.24	167.59				1,552.89	0.36
10/8/19 4:45 PM	1,679	15	71.54	505.98	1,325.02	162.81				1,552.95	0.31
10/8/19 4:50 PM	1,684	20	71.49	482.53	1,348.48	139.35				1,552.86	0.39
10/8/19 4:55 PM	1,689	25	71.47	460.01	1,370.99	116.84				1,552.81	0.44

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 580 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 8 - Aquifer Test (October 7, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 8 Temperature (F)	PW Well No. 8 Water Level (ft bgs)	PW Well No. 8 Water Level (ft MSL)	PW Well No. 8 Drawdown (ft)	PW Well No. 8 Pump Rate (gpm)	PW Well No. 8 Specific Capacity (gpm/ft)	Comments	OW Well No. 7 Water Level (ft MSL)	OW Well No. 7 Drawdown (ft)
10/8/19 5:00 PM	1,694	30	71.41	445.39	1,385.61	102.22				1,552.63	0.63
10/8/19 5:15 PM	1,709	45	71.42	418.35	1,412.66	75.17				1,553.16	0.10
10/8/19 5:30 PM	1,724	60	71.37	418.28	1,412.72	75.11				1,553.34	-0.09
10/8/19 5:45 PM	1,739	75	71.32	418.02	1,412.99	74.84				1,553.38	-0.12
10/8/19 6:00 PM	1,754	90	71.22	417.77	1,413.23	74.60				1,553.40	-0.14
10/8/19 6:15 PM	1,769	105	71.22	417.52	1,413.48	74.35				1,553.29	-0.03
10/8/19 6:30 PM	1,784	120	71.25	417.48	1,413.52	74.31				1,553.20	0.05
10/8/19 7:00 PM	1,814	150	71.27	417.40	1,413.60	74.23				1,553.21	0.05
10/8/19 7:30 PM	1,844	180	71.25	417.24	1,413.76	74.06				1,553.06	0.20
10/8/19 8:00 PM	1,874	210	71.28	417.26	1,413.74	74.09				1,552.93	0.32
10/8/19 8:30 PM	1,904	240	71.29	417.24	1,413.76	74.07				1,552.77	0.49
10/8/19 9:30 PM	1,964	300	71.27	417.21	1,413.79	74.04				1,552.98	0.28
10/8/19 10:30 PM	2,024	360	71.32	417.08	1,413.92	73.90				1,552.65	0.60
10/8/19 11:30 PM	2,084	420	71.34	417.02	1,413.98	73.85				1,552.69	0.57
10/9/19 12:30 AM	2,144	480	71.33	416.98	1,414.02	73.80				1,552.57	0.69
10/9/19 1:30 AM	2,204	540	71.29	417.01	1,413.99	73.83				1,552.54	0.72
10/9/19 2:30 AM	2,264	600	71.24	416.85	1,414.15	73.68				1,554.44	-1.18
10/9/19 3:30 AM	2,324	660	71.21	416.58	1,414.42	73.41				1,554.25	-0.99
10/9/19 4:30 AM	2,384	720	71.24	415.66	1,415.34	72.48				1,553.95	-0.69
10/9/19 5:30 AM	2,444	780	71.17	414.59	1,416.41	71.42				1,553.64	-0.38
10/9/19 6:30 AM	2,504	840	71.15	414.09	1,416.91	70.92				1,554.12	-0.87
10/9/19 7:30 AM	2,564	900	71.21	412.86	1,418.14	69.69				1,553.64	-0.38
10/9/19 8:30 AM	2,624	960	71.16	411.71	1,419.29	68.54				1,553.27	-0.02
10/9/19 9:30 AM	2,684	1020	71.19	410.42	1,420.58	67.25				1,553.26	0.00
10/9/19 9:56 AM	2,710	1046	71.20	409.91	1,421.09	66.74				1,553.29	-0.04

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 580 ft    EC=Electrical conductivity (mS/cm)



WELL TEST ANALYSIS

Data Set: \...\PW No 8.aqt  
 Date: 11/07/19

Time: 14:30:39

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 8  
 Test Date: 10-7-19

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

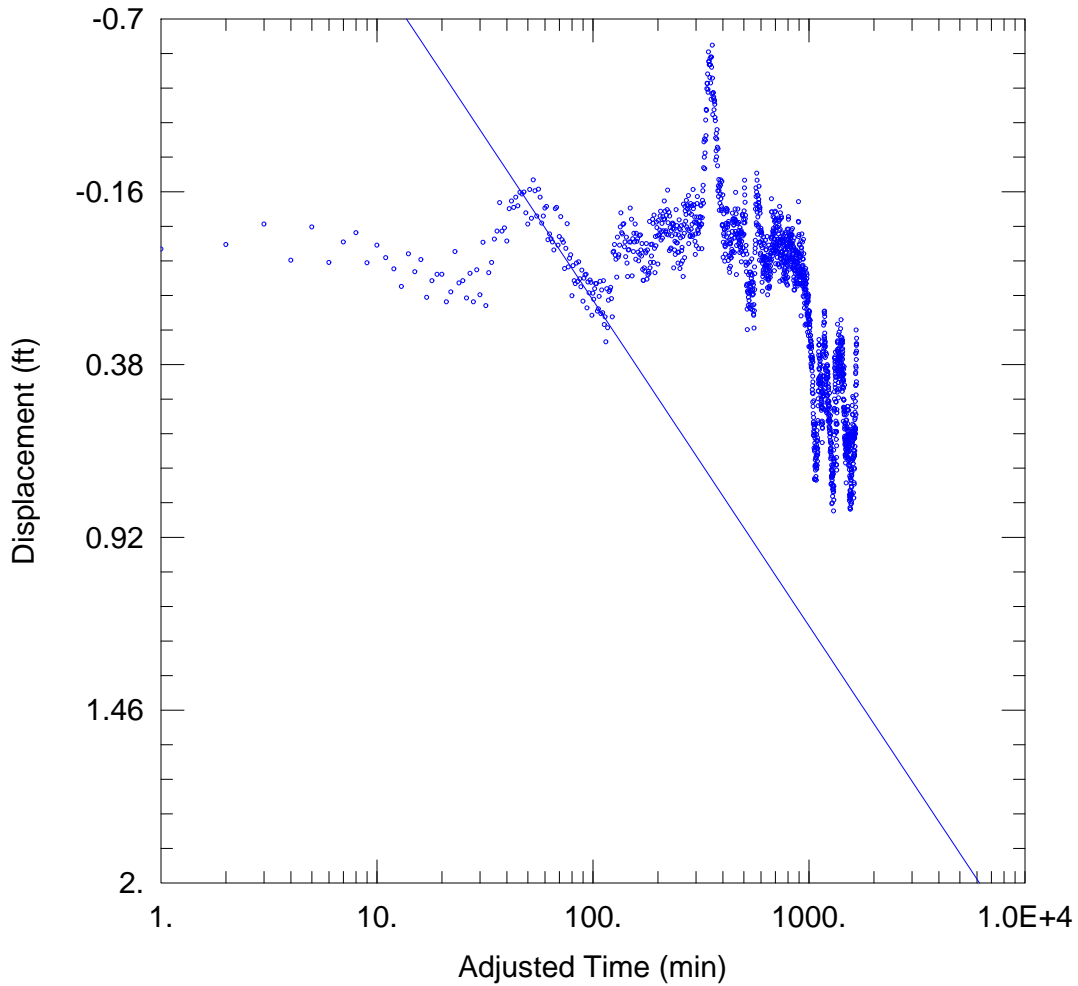
Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 8	0	0	Well No. 8	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 4.933 ft<sup>2</sup>/day



WELL TEST ANALYSIS

Data Set: \...\OW No 7.aqt  
 Date: 11/07/19

Time: 14:30:51

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 8  
 Test Date: 10-7-19

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 8	0	0	• Well No. 7	1229.9	0

SOLUTION

Aquifer Model: Confined  
 T = 312.9 ft<sup>2</sup>/day

Solution Method: Cooper-Jacob  
 S = 2.153E-5

# **Aquifer Test**

**Well No. 8 (2)**

**Majestic Hills Well No. 8 - Aquifer Test (October 7, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 8 Temperature (F)	PW Well No. 8 Water Level (ft bgs)	PW Well No. 8 Water Level (ft MSL)	PW Well No. 8 Drawdown (ft)	PW Well No. 8 Pump Rate (gpm)	PW Well No. 8 Specific Capacity (gpm/ft)	Comments	OW Well No. 7 Water Level (ft MSL)	OW Well No. 7 Drawdown (ft)
10/7/19 12:46 PM	0		72.80	343.17	1,487.83	0.00			Pump Start	1,553.26	0.00
10/7/19 12:47 PM	1		72.49	345.73	1,485.27	2.56	14.0	5.48	Meter: 428,528.9 gallons	1,553.24	0.02
10/7/19 12:48 PM	2		72.16	348.46	1,482.54	5.28	13.0	2.46		1,553.25	0.01
10/7/19 12:49 PM	3		71.93	350.47	1,480.53	7.29	13.0	1.78		1,553.31	-0.06
10/7/19 12:50 PM	4		71.78	352.48	1,478.52	9.31	13.0	1.40		1,553.20	0.05
10/7/19 12:51 PM	5		71.67	354.06	1,476.94	10.89	12.5	1.15		1,553.31	-0.05
10/7/19 12:52 PM	6		71.54	355.80	1,475.20	12.63	12.5	0.99		1,553.19	0.06
10/7/19 12:53 PM	7		71.45	357.43	1,473.57	14.25	13.0	0.91		1,553.26	0.00
10/7/19 12:54 PM	8		71.39	358.82	1,472.18	15.65	13.0	0.83		1,553.29	-0.03
10/7/19 12:55 PM	9		71.29	360.24	1,470.76	17.07	12.9	0.76		1,553.19	0.06
10/7/19 12:56 PM	10		71.20	361.58	1,469.42	18.41	13.0	0.71		1,553.25	0.01
10/7/19 12:57 PM	11		71.21	362.82	1,468.18	19.65	13.0	0.66		1,553.21	0.05
10/7/19 12:58 PM	12		71.09	363.97	1,467.03	20.79	12.6	0.61		1,553.17	0.08
10/7/19 12:59 PM	13		71.10	365.20	1,465.80	22.03	12.8	0.58		1,553.12	0.14
10/7/19 1:00 PM	14		71.05	366.44	1,464.56	23.27	12.7	0.55		1,553.22	0.03
10/7/19 1:01 PM	15		71.03	367.32	1,463.68	24.15	12.8	0.53	pH: 7.71/ EC: 0.66	1,553.17	0.09
10/7/19 1:06 PM	20		70.91	372.43	1,458.57	29.25	12.7	0.43	pH: 7.44/ EC: 0.69	1,553.16	0.10
10/7/19 1:11 PM	25		70.89	376.89	1,454.11	33.72	12.7	0.38	pH: 7.38/ EC: 0.70	1,553.14	0.12
10/7/19 1:16 PM	30		70.85	380.90	1,450.10	37.73	12.6	0.33	pH: 7.38/ EC: 0.69	1,553.09	0.16
10/7/19 1:31 PM	45		70.85	390.20	1,440.80	47.03	12.3	0.26	pH: 7.36/ EC: 0.69	1,553.37	-0.12
10/7/19 1:46 PM	60		70.88	397.30	1,433.70	54.13	12.4	0.23	pH: 7.37/ EC: 0.68	1,553.36	-0.11
10/7/19 2:01 PM	75		70.87	403.23	1,427.77	60.05	12.4	0.21	pH: 7.36/ EC: 0.68	1,553.24	0.02
10/7/19 2:16 PM	90		70.86	407.52	1,423.48	64.35	12.3	0.19	pH: 7.36/ EC: 0.68	1,553.07	0.18
10/7/19 2:31 PM	105		70.88	410.95	1,420.05	67.78	12.0	0.18	pH: 7.36/ EC: 0.67	1,553.04	0.21
10/7/19 2:46 PM	120		70.86	413.69	1,417.32	70.51	12.1	0.17	pH: 7.35/ EC: 0.67	1,553.11	0.15
10/7/19 3:16 PM	150		70.90	415.00	1,416.00	71.82	12.1	0.17	pH: 7.43/ EC: 0.67	1,553.26	0.00
10/7/19 3:46 PM	180		70.88	416.28	1,414.72	73.11	12.1	0.17	pH: 7.41/ EC: 0.66	1,553.16	0.10
10/7/19 4:16 PM	210		70.91	416.66	1,414.34	73.48				1,553.27	-0.01
10/7/19 4:46 PM	240		70.83	417.46	1,413.54	74.29				1,553.26	0.00
10/7/19 5:46 PM	300		70.84	418.01	1,412.99	74.84				1,553.32	-0.06
10/7/19 6:46 PM	360		70.85	417.95	1,413.05	74.78				1,553.72	-0.47
10/7/19 7:46 PM	420		70.86	418.07	1,412.93	74.90				1,553.26	0.00
10/7/19 8:46 PM	480		70.87	437.38	1,393.62	94.21				1,553.30	-0.05
10/7/19 9:46 PM	540		70.91	464.61	1,366.39	121.44				1,553.16	0.10
10/7/19 10:46 PM	600		71.01	500.59	1,330.41	157.42				1,553.30	-0.05

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 580 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 8 - Aquifer Test (October 7, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 8 Temperature (F)	PW Well No. 8 Water Level (ft bgs)	PW Well No. 8 Water Level (ft MSL)	PW Well No. 8 Drawdown (ft)	PW Well No. 8 Pump Rate (gpm)	PW Well No. 8 Specific Capacity (gpm/ft)	Comments	OW Well No. 7 Water Level (ft MSL)	OW Well No. 7 Drawdown (ft)
10/7/19 11:46 PM	660		71.13	526.10	1,304.91	182.92				1,553.16	0.09
10/8/19 12:46 AM	720		71.02	544.35	1,286.65	201.18				1,553.19	0.07
10/8/19 1:46 AM	780		71.04	560.07	1,270.94	216.89				1,553.21	0.05
10/8/19 2:46 AM	840		71.05	570.40	1,260.60	227.23				1,553.21	0.05
10/8/19 3:46 AM	900		71.06	578.89	1,252.11	235.72				1,553.22	0.03
10/8/19 4:46 AM	960		71.10	579.04	1,251.96	235.87				1,553.11	0.15
10/8/19 5:46 AM	1,020		71.10	578.98	1,252.03	235.80				1,552.91	0.34
10/8/19 6:46 AM	1,080		71.08	579.13	1,251.88	235.95				1,552.58	0.67
10/8/19 7:46 AM	1,140		71.08	579.21	1,251.79	236.04				1,552.84	0.41
10/8/19 8:46 AM	1,200		71.10	579.07	1,251.94	235.89				1,552.83	0.42
10/8/19 9:46 AM	1,260		71.11	579.34	1,251.66	236.17				1,552.63	0.62
10/8/19 10:46 AM	1,320		71.16	579.47	1,251.53	236.30				1,552.86	0.39
10/8/19 11:46 AM	1,380		71.18	579.71	1,251.29	236.54				1,552.90	0.35
10/8/19 12:46 PM	1,440		71.18	579.69	1,251.31	236.52				1,552.83	0.43
10/8/19 1:46 PM	1,500		71.17	579.69	1,251.31	236.51				1,552.59	0.67
10/8/19 2:46 PM	1,560		71.18	579.62	1,251.38	236.45				1,552.47	0.79
10/8/19 3:46 PM	1,620		71.18	579.51	1,251.49	236.34				1,552.51	0.75
10/8/19 4:30 PM	1,664	0	71.20	579.58	1,251.42	236.41	7.2	0.03	Pump Stop	1,552.94	0.32
10/8/19 4:31 PM	1,665	1	71.20	578.11	1,252.89	234.94			Meter: 443,552.878 gallons	1,552.92	0.34
10/8/19 4:32 PM	1,666	2	71.16	572.83	1,258.18	229.65			Avg. Pump Rate: 9.03	1,552.91	0.34
10/8/19 4:33 PM	1,667	3	71.16	567.68	1,263.32	224.51				1,552.99	0.27
10/8/19 4:34 PM	1,668	4	71.14	562.59	1,268.41	219.42				1,552.91	0.35
10/8/19 4:35 PM	1,669	5	71.15	556.66	1,274.34	213.49				1,552.92	0.34
10/8/19 4:36 PM	1,670	6	71.17	551.65	1,279.35	208.48				1,552.91	0.35
10/8/19 4:37 PM	1,671	7	71.15	546.51	1,284.49	203.34				1,552.91	0.35
10/8/19 4:38 PM	1,672	8	71.25	541.41	1,289.59	198.24				1,552.85	0.41
10/8/19 4:39 PM	1,673	9	71.30	535.75	1,295.25	192.58				1,552.96	0.30
10/8/19 4:40 PM	1,674	10	71.43	530.42	1,300.58	187.25				1,552.88	0.38
10/8/19 4:41 PM	1,675	11	71.53	525.36	1,305.64	182.19				1,552.81	0.44
10/8/19 4:42 PM	1,676	12	71.58	520.43	1,310.57	177.26				1,552.94	0.32
10/8/19 4:43 PM	1,677	13	71.60	515.57	1,315.43	172.39				1,552.90	0.36
10/8/19 4:44 PM	1,678	14	71.56	510.76	1,320.24	167.59				1,552.89	0.36
10/8/19 4:45 PM	1,679	15	71.54	505.98	1,325.02	162.81				1,552.95	0.31
10/8/19 4:50 PM	1,684	20	71.49	482.53	1,348.48	139.35				1,552.86	0.39
10/8/19 4:55 PM	1,689	25	71.47	460.01	1,370.99	116.84				1,552.81	0.44

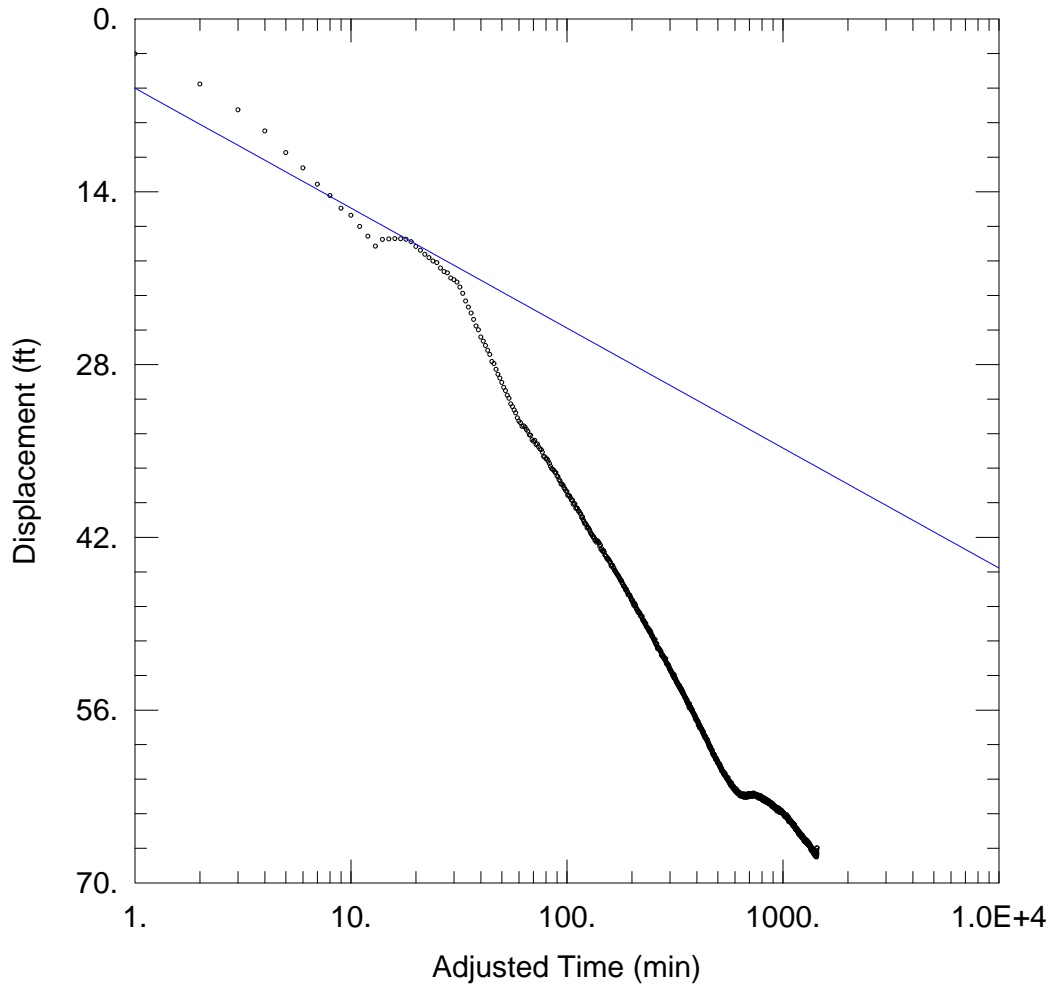
Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 580 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 8 - Aquifer Test (October 7, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 8 Temperature (F)	PW Well No. 8 Water Level (ft bgs)	PW Well No. 8 Water Level (ft MSL)	PW Well No. 8 Drawdown (ft)	PW Well No. 8 Pump Rate (gpm)	PW Well No. 8 Specific Capacity (gpm/ft)	Comments	OW Well No. 7 Water Level (ft MSL)	OW Well No. 7 Drawdown (ft)
10/8/19 5:00 PM	1,694	30	71.41	445.39	1,385.61	102.22				1,552.63	0.63
10/8/19 5:15 PM	1,709	45	71.42	418.35	1,412.66	75.17				1,553.16	0.10
10/8/19 5:30 PM	1,724	60	71.37	418.28	1,412.72	75.11				1,553.34	-0.09
10/8/19 5:45 PM	1,739	75	71.32	418.02	1,412.99	74.84				1,553.38	-0.12
10/8/19 6:00 PM	1,754	90	71.22	417.77	1,413.23	74.60				1,553.40	-0.14
10/8/19 6:15 PM	1,769	105	71.22	417.52	1,413.48	74.35				1,553.29	-0.03
10/8/19 6:30 PM	1,784	120	71.25	417.48	1,413.52	74.31				1,553.20	0.05
10/8/19 7:00 PM	1,814	150	71.27	417.40	1,413.60	74.23				1,553.21	0.05
10/8/19 7:30 PM	1,844	180	71.25	417.24	1,413.76	74.06				1,553.06	0.20
10/8/19 8:00 PM	1,874	210	71.28	417.26	1,413.74	74.09				1,552.93	0.32
10/8/19 8:30 PM	1,904	240	71.29	417.24	1,413.76	74.07				1,552.77	0.49
10/8/19 9:30 PM	1,964	300	71.27	417.21	1,413.79	74.04				1,552.98	0.28
10/8/19 10:30 PM	2,024	360	71.32	417.08	1,413.92	73.90				1,552.65	0.60
10/8/19 11:30 PM	2,084	420	71.34	417.02	1,413.98	73.85				1,552.69	0.57
10/9/19 12:30 AM	2,144	480	71.33	416.98	1,414.02	73.80				1,552.57	0.69
10/9/19 1:30 AM	2,204	540	71.29	417.01	1,413.99	73.83				1,552.54	0.72
10/9/19 2:30 AM	2,264	600	71.24	416.85	1,414.15	73.68				1,554.44	-1.18
10/9/19 3:30 AM	2,324	660	71.21	416.58	1,414.42	73.41				1,554.25	-0.99
10/9/19 4:30 AM	2,384	720	71.24	415.66	1,415.34	72.48				1,553.95	-0.69
10/9/19 5:30 AM	2,444	780	71.17	414.59	1,416.41	71.42				1,553.64	-0.38
10/9/19 6:30 AM	2,504	840	71.15	414.09	1,416.91	70.92				1,554.12	-0.87
10/9/19 7:30 AM	2,564	900	71.21	412.86	1,418.14	69.69				1,553.64	-0.38
10/9/19 8:30 AM	2,624	960	71.16	411.71	1,419.29	68.54				1,553.27	-0.02
10/9/19 9:30 AM	2,684	1020	71.19	410.42	1,420.58	67.25				1,553.26	0.00
10/9/19 9:56 AM	2,710	1046	71.20	409.91	1,421.09	66.74				1,553.29	-0.04

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 580 ft    EC=Electrical conductivity (mS/cm)





WELL TEST ANALYSIS

Data Set: \...\PW No 8.aqt  
 Date: 12/06/19

Time: 11:54:01

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners, LLC  
 Location: Blanco County  
 Test Well: Well No. 8  
 Test Date: 12-2-19

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

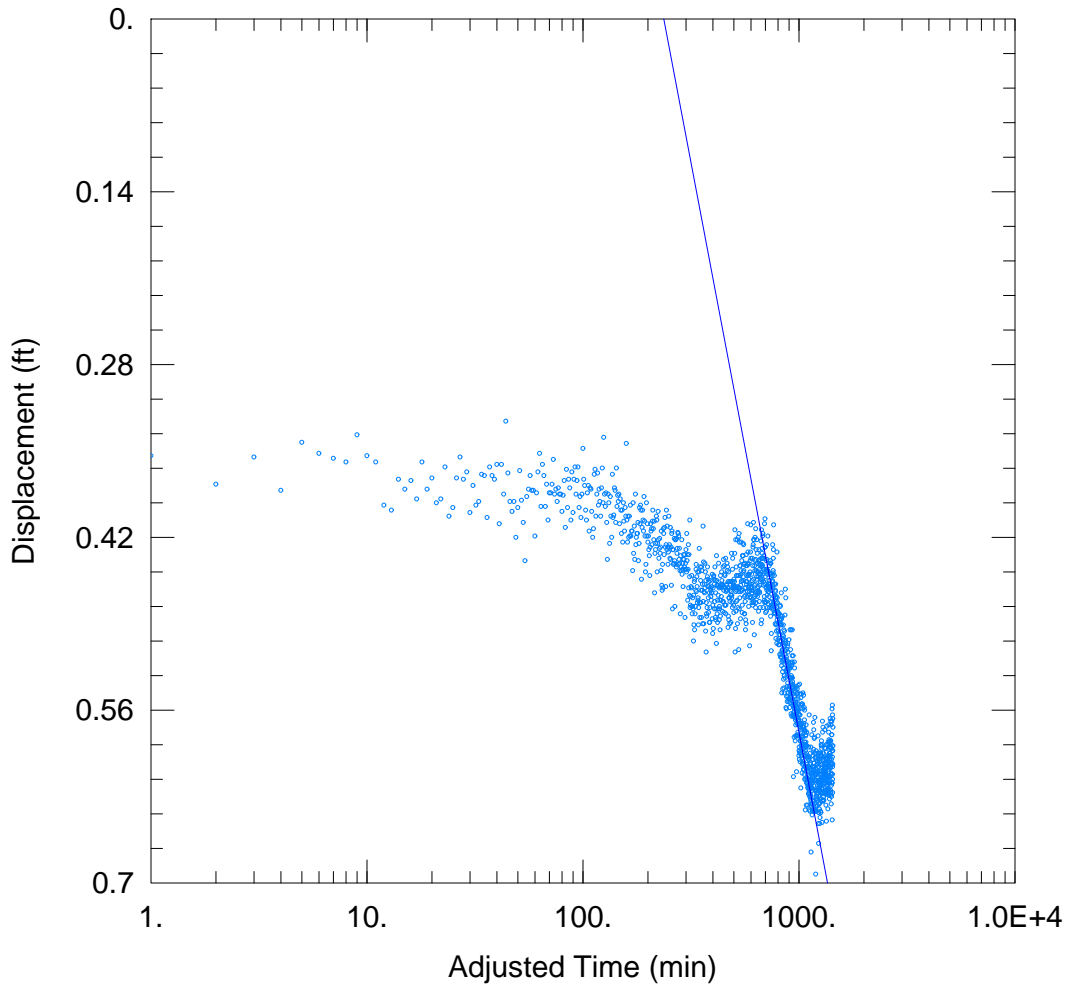
Well Name	X (ft)	Y (ft)
Well No. 8	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 21.23 ft<sup>2</sup>/day



WELL TEST ANALYSIS

Data Set: \...\OW No 4.aqt  
 Date: 12/06/19

Time: 11:53:39

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners, LLC  
 Location: Blanco County  
 Test Well: Well No. 8  
 Test Date: 12-2-19

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 8	0	0	Well No. 4	2255	0

SOLUTION

Aquifer Model: Confined  
 T = 223.4 ft<sup>2</sup>/day

Solution Method: Cooper-Jacob

# **Aquifer Test**

**Well No. 9**

**Majestic Hills Well No. 9 - Aquifer Test (September 18, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 9 Temperature (F)	PW Well No. 9 Water Level (ft bgs)	PW Well No. 9 Water Level (ft MSL)	PW Well No. 9 Drawdown (ft)	PW Well No. 9 Pump Rate (gpm)	PW Well No. 9 Specific Capacity (gpm/ft)	Comments	OW Well No. 10 Water Level (ft MSL)	OW Well No. 10 Drawdown (ft)
9/18/19 11:02 AM	0		72.97	282.96	1,431.04	0.00			Pump Start	1,430.64	0.00
9/18/19 11:03 AM	1		72.27	301.97	1,412.03	19.01			Meter: 359,883.946 gallons	1,430.73	-0.09
9/18/19 11:04 AM	2		71.64	297.47	1,416.53	14.51	24.0	1.65		1,430.68	-0.04
9/18/19 11:05 AM	3		71.25	294.00	1,420.00	11.05				1,430.69	-0.05
9/18/19 11:06 AM	4		70.97	294.62	1,419.38	11.66				1,430.73	-0.09
9/18/19 11:07 AM	5		70.76	295.25	1,418.75	12.29				1,430.78	-0.14
9/18/19 11:08 AM	6		70.61	295.80	1,418.20	12.84	24.0	1.87		1,430.73	-0.09
9/18/19 11:09 AM	7		70.49	296.36	1,417.64	13.40				1,430.69	-0.05
9/18/19 11:10 AM	8		70.41	296.78	1,417.22	13.82			pH: 7.6/ EC: 0.90	1,430.71	-0.07
9/18/19 11:11 AM	9		70.36	297.26	1,416.74	14.30				1,430.72	-0.08
9/18/19 11:12 AM	10		70.32	297.63	1,416.38	14.67				1,430.66	-0.02
9/18/19 11:13 AM	11		70.29	297.92	1,416.08	14.96				1,430.65	-0.01
9/18/19 11:14 AM	12		70.26	298.41	1,415.59	15.45				1,430.73	-0.09
9/18/19 11:15 AM	13		70.19	298.71	1,415.29	15.75				1,430.71	-0.07
9/18/19 11:16 AM	14		70.16	299.38	1,414.62	16.42				1,430.62	0.02
9/18/19 11:17 AM	15		70.14	299.75	1,414.25	16.80	26.5	1.58		1,430.68	-0.04
9/18/19 11:22 AM	20		70.24	300.88	1,413.12	17.92				1,430.65	-0.01
9/18/19 11:27 AM	25		70.19	302.22	1,411.78	19.27				1,430.60	0.04
9/18/19 11:32 AM	30		70.19	303.64	1,410.36	20.68				1,430.56	0.07
9/18/19 11:47 AM	45		70.18	305.33	1,408.67	22.37				1,430.30	0.34
9/18/19 12:02 PM	60		70.23	305.76	1,408.24	22.80				1,430.15	0.49
9/18/19 12:17 PM	75		70.30	307.24	1,406.76	24.28	26.0	1.07	pH: 7.4/ EC: 0.95	1,429.97	0.67
9/18/19 12:32 PM	90		70.33	308.65	1,405.35	25.69				1,429.69	0.95
9/18/19 12:47 PM	105		70.32	309.72	1,404.28	26.76				1,429.53	1.11
9/18/19 1:02 PM	120		70.35	310.38	1,403.62	27.43				1,429.38	1.26
9/18/19 1:32 PM	150		70.42	311.20	1,402.80	28.24				1,428.80	1.83
9/18/19 2:02 PM	180		70.43	313.55	1,400.45	30.60				1,428.46	2.18
9/18/19 2:32 PM	210		70.45	314.91	1,399.09	31.95				1,427.96	2.68
9/18/19 3:02 PM	240		70.45	316.35	1,397.66	33.39				1,427.60	3.04
9/18/19 4:02 PM	300		70.48	318.26	1,395.74	35.30				1,426.95	3.69
9/18/19 5:02 PM	360		70.52	319.65	1,394.35	36.69				1,426.17	4.47
9/18/19 6:02 PM	420		70.52	320.47	1,393.53	37.51				1,425.61	5.03
9/18/19 7:02 PM	480		70.50	321.53	1,392.47	38.57				1,425.18	5.46
9/18/19 8:02 PM	540		70.51	322.38	1,391.63	39.42				1,424.74	5.90
9/18/19 9:02 PM	600		70.53	322.74	1,391.26	39.78				1,424.48	6.16

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 5 HP  
 MSL = Mean Sea Level    Pump Setting = 520 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 9 - Aquifer Test (September 18, 2019)**

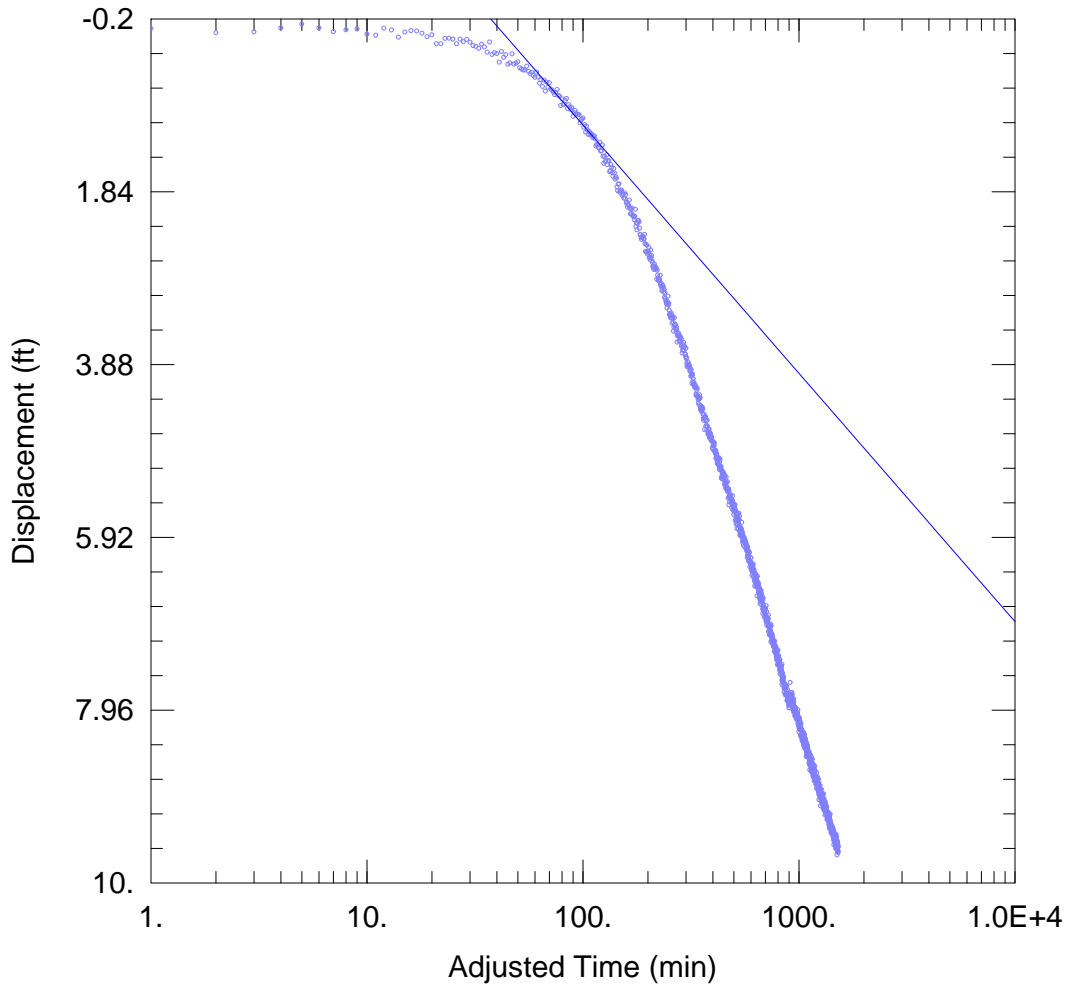
Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 9 Temperature (F)	PW Well No. 9 Water Level (ft bgs)	PW Well No. 9 Water Level (ft MSL)	PW Well No. 9 Drawdown (ft)	PW Well No. 9 Pump Rate (gpm)	PW Well No. 9 Specific Capacity (gpm/ft)	Comments	OW Well No. 10 Water Level (ft MSL)	OW Well No. 10 Drawdown (ft)
9/18/19 10:02 PM	660		70.53	324.26	1,389.74	41.30				1,424.05	6.59
9/18/19 11:02 PM	720		70.50	324.99	1,389.01	42.03				1,423.67	6.97
9/19/19 12:02 AM	780		70.52	325.87	1,388.13	42.91				1,423.41	7.23
9/19/19 1:02 AM	840		70.52	326.58	1,387.42	43.63				1,423.05	7.59
9/19/19 2:02 AM	900		70.52	327.13	1,386.87	44.18				1,422.77	7.87
9/19/19 3:02 AM	960		70.52	327.61	1,386.40	44.65				1,422.66	7.97
9/19/19 4:02 AM	1,020		70.55	328.07	1,385.93	45.11				1,422.39	8.25
9/19/19 5:02 AM	1,080		70.51	329.11	1,384.89	46.15				1,422.13	8.51
9/19/19 6:02 AM	1,140		70.53	329.59	1,384.41	46.63				1,421.95	8.69
9/19/19 7:02 AM	1,200		70.52	329.70	1,384.30	46.74				1,421.80	8.83
9/19/19 8:02 AM	1,260		70.52	330.93	1,383.08	47.97				1,421.74	8.90
9/19/19 9:02 AM	1,320		70.51	328.96	1,385.04	46.00				1,421.56	9.08
9/19/19 10:02 AM	1,380		70.50	328.38	1,385.62	45.42				1,421.41	9.22
9/19/19 11:02 AM	1,440		70.57	328.72	1,385.28	45.77				1,421.24	9.39
9/19/19 12:02 PM	1,500		70.50	330.92	1,383.08	47.97				1,421.08	9.56
9/19/19 12:23 PM	1,521	0	70.52	330.91	1,383.09	47.95	25.0	0.52	Pump Stop	1,421.00	9.64
9/19/19 12:24 PM	1,522	1	70.50	317.29	1,396.71	34.33			Meter: 398,656.368 gallons	1,421.00	9.64
9/19/19 12:25 PM	1,523	2	70.46	314.32	1,399.68	31.36			Avg. Pump Rate: 25.49	1,421.09	9.54
9/19/19 12:26 PM	1,524	3	70.42	313.40	1,400.60	30.44				1,421.01	9.62
9/19/19 12:27 PM	1,525	4	70.39	312.76	1,401.24	29.80				1,421.11	9.53
9/19/19 12:28 PM	1,526	5	70.37	312.36	1,401.64	29.40				1,421.06	9.58
9/19/19 12:29 PM	1,527	6	70.36	312.00	1,402.00	29.04				1,421.03	9.61
9/19/19 12:30 PM	1,528	7	70.34	311.61	1,402.39	28.65				1,421.00	9.64
9/19/19 12:31 PM	1,529	8	70.34	311.31	1,402.69	28.35				1,421.03	9.61
9/19/19 12:32 PM	1,530	9	70.34	311.01	1,402.99	28.05				1,421.06	9.58
9/19/19 12:33 PM	1,531	10	70.34	310.78	1,403.22	27.83				1,421.03	9.61
9/19/19 12:34 PM	1,532	11	70.33	310.57	1,403.43	27.62				1,420.98	9.66
9/19/19 12:35 PM	1,533	12	70.33	310.34	1,403.66	27.39				1,420.99	9.65
9/19/19 12:36 PM	1,534	13	70.32	310.11	1,403.89	27.15				1,421.07	9.57
9/19/19 12:37 PM	1,535	14	70.32	309.89	1,404.11	26.93				1,420.98	9.66
9/19/19 12:38 PM	1,536	15	70.31	309.71	1,404.29	26.75				1,421.06	9.57
9/19/19 12:43 PM	1,541	20	70.30	308.66	1,405.34	25.71				1,421.00	9.64
9/19/19 12:48 PM	1,546	25	70.29	307.77	1,406.23	24.82				1,421.06	9.58
9/19/19 12:53 PM	1,551	30	70.28	307.01	1,406.99	24.05				1,421.08	9.56
9/19/19 1:08 PM	1,566	45	70.24	304.86	1,409.14	21.91				1,421.14	9.50

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 5 HP  
MSL = Mean Sea Level    Pump Setting = 520 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Well No. 9 - Aquifer Test (September 18, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 9 Temperature (F)	PW Well No. 9 Water Level (ft bgs)	PW Well No. 9 Water Level (ft MSL)	PW Well No. 9 Drawdown (ft)	PW Well No. 9 Pump Rate (gpm)	PW Well No. 9 Specific Capacity (gpm/ft)	Comments	OW Well No. 10 Water Level (ft MSL)	OW Well No. 10 Drawdown (ft)
9/19/19 1:23 PM	1,581	60	70.23	303.16	1,410.84	20.20				1,421.38	9.26
9/19/19 1:38 PM	1,596	75	70.21	301.78	1,412.22	18.82				1,421.54	9.10
9/19/19 1:53 PM	1,611	90	70.21	300.64	1,413.36	17.68				1,421.68	8.96
9/19/19 2:08 PM	1,626	105	70.21	299.61	1,414.39	16.65				1,421.83	8.81
9/19/19 2:23 PM	1,641	120	70.22	298.72	1,415.28	15.76				1,422.12	8.52
9/19/19 2:53 PM	1,671	150	70.24	297.31	1,416.70	14.35				1,422.52	8.12
9/19/19 3:23 PM	1,701	180	70.25	296.16	1,417.84	13.21				1,422.89	7.75
9/19/19 3:53 PM	1,731	210	70.26	295.18	1,418.82	12.22				1,423.23	7.41
9/19/19 4:23 PM	1,761	240	70.27	294.33	1,419.67	11.37				1,423.67	6.97
9/19/19 5:23 PM	1,821	300	70.27	293.00	1,421.00	10.05				1,424.32	6.32
9/19/19 6:23 PM	1,881	360	70.27	291.86	1,422.15	8.90				1,424.93	5.71
9/19/19 7:23 PM	1,941	420	70.28	290.89	1,423.11	7.94				1,425.33	5.31
9/19/19 8:23 PM	2,001	480	70.28	290.11	1,423.89	7.15				1,425.85	4.79
9/19/19 9:23 PM	2,061	540	70.27	289.36	1,424.64	6.40				1,426.28	4.36
9/19/19 10:23 PM	2,121	600	70.28	288.74	1,425.26	5.78				1,426.66	3.98
9/19/19 11:23 PM	2,181	660	70.28	288.23	1,425.77	5.27				1,426.89	3.75
9/20/19 12:23 AM	2,241	720	70.29	287.72	1,426.28	4.76				1,427.31	3.33
9/20/19 1:23 AM	2,301	780	70.27	287.31	1,426.69	4.35				1,427.49	3.15
9/20/19 2:23 AM	2,361	840	70.27	286.93	1,427.07	3.97				1,427.70	2.94
9/20/19 3:23 AM	2,421	900	70.27	286.55	1,427.45	3.59				1,427.85	2.79
9/20/19 4:23 AM	2,481	960	70.27	286.20	1,427.80	3.25				1,428.09	2.55
9/20/19 5:23 AM	2,541	1020	70.28	285.92	1,428.08	2.96				1,428.28	2.36
9/20/19 6:23 AM	2,601	1080	70.28	285.64	1,428.36	2.68				1,428.42	2.22
9/20/19 7:23 AM	2,661	1140	70.28	285.37	1,428.63	2.42				1,428.60	2.04
9/20/19 8:23 AM	2,721	1200	70.28	285.22	1,428.79	2.26				1,428.69	1.95
9/20/19 9:23 AM	2,781	1260	70.28	284.92	1,429.08	1.96				1,428.79	1.85
9/20/19 10:23 AM	2,841	1320	70.27	284.76	1,429.24	1.81				1,428.98	1.66
9/20/19 10:27 AM	2,845	1324	70.27	284.71	1,429.29	1.75				1,429.01	1.63

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 5 HP  
MSL = Mean Sea Level    Pump Setting = 520 ft    EC=Electrical conductivity (mS/cm)



WELL TEST ANALYSIS

Data Set: \...\PW No. 9.aqt  
 Date: 11/07/19

Time: 14:31:19

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 9  
 Test Date: 9-18-10

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

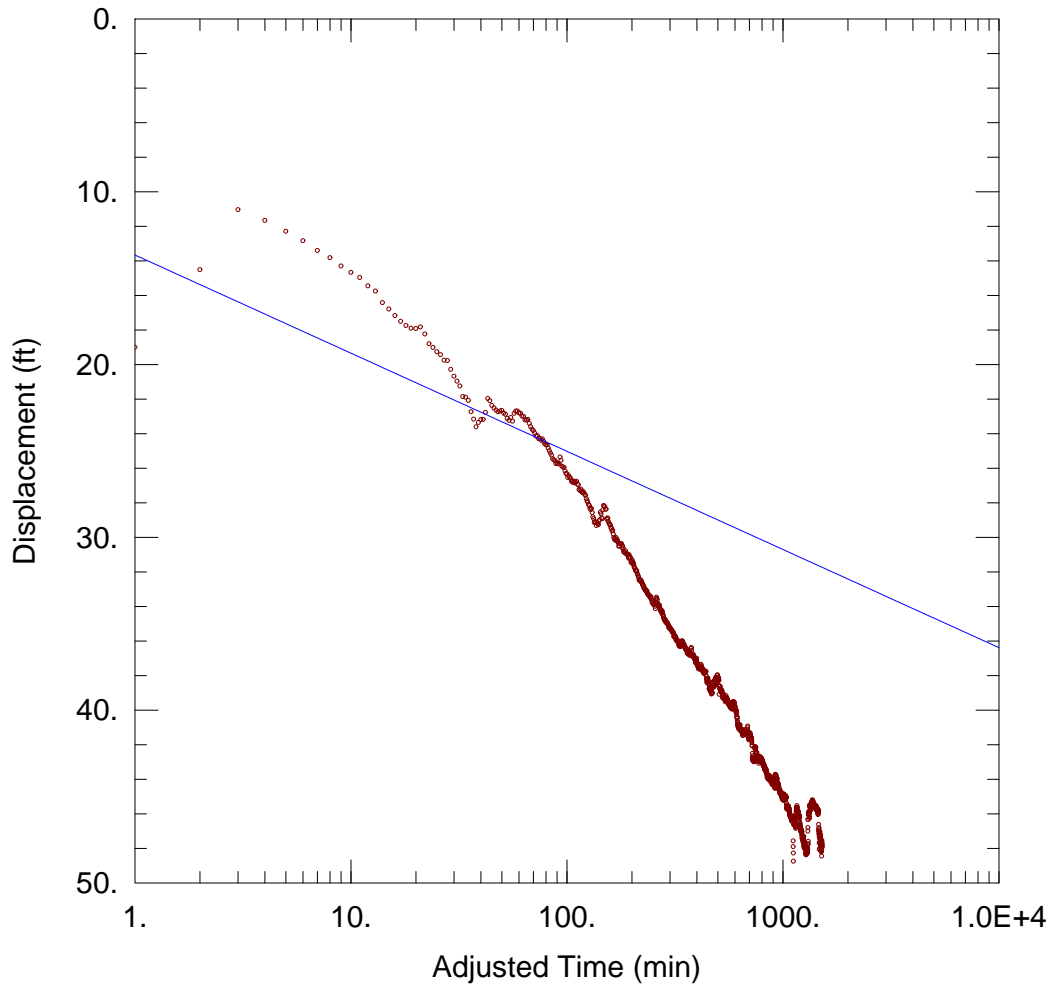
Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 9	0	0	Well No. 10	1101.7	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 306.7 ft<sup>2</sup>/day



WELL TEST ANALYSIS

Data Set: \...\OW No. 10.aqt  
 Date: 11/07/19

Time: 14:31:29

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 9  
 Test Date: 9-18-10

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 9	0	0	• Well No. 9	0	0

SOLUTION

Aquifer Model: Confined  
 T = 158.3 ft<sup>2</sup>/day

Solution Method: Cooper-Jacob  
 S = 0.0009716



# **Aquifer Test**

**Well No. 10**

**Majestic Hills Phase II Well No. 10 - Aquifer Test (Septmeber 9, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 10 Temperature (F)	PW Well No. 10 Water Level (ft bgs)	PW Well No. 10 Water Level (ft MSL)	PW Well No. 10 Drawdown (ft)	PW Well No. 10 Pump Rate (gpm)	PW Well No. 10 Specific Capacity (gpm/ft)	Comments	OW 1 No. 4 Water Level (ft MSL)	Phase Well No. 4 Drawdown (ft)
9/9/19 10:40 AM	0		70.20	191.08	1,423.92	0.00			Pump Start	1,428.34	0.00
9/9/19 10:41 AM	1		70.22	205.78	1,409.22	14.70			Meter: 334,808.416 gallons	1,428.39	-0.05
9/9/19 10:42 AM	2		70.18	223.61	1,391.39	32.53	16.0	0.49		1,428.35	-0.01
9/9/19 10:43 AM	3		70.23	240.38	1,374.63	49.29				1,428.30	0.04
9/9/19 10:44 AM	4		70.21	214.47	1,400.53	23.39	16.0	0.68		1,428.32	0.02
9/9/19 10:45 AM	5		70.18	203.80	1,411.20	12.72				1,428.36	-0.02
9/9/19 10:46 AM	6		70.14	199.28	1,415.72	8.20				1,428.36	-0.02
9/9/19 10:47 AM	7		70.11	200.06	1,414.94	8.98				1,428.36	-0.02
9/9/19 10:48 AM	8		70.06	199.69	1,415.31	8.61	16.5	1.92	pH: 7.64/ EC: 0.96	1,428.37	-0.03
9/9/19 10:49 AM	9		70.09	198.33	1,416.67	7.25				1,428.39	-0.04
9/9/19 10:50 AM	10		70.03	197.94	1,417.06	6.86				1,428.37	-0.03
9/9/19 10:51 AM	11		69.98	198.04	1,416.96	6.96				1,428.30	0.04
9/9/19 10:52 AM	12		69.96	198.17	1,416.83	7.09				1,428.31	0.03
9/9/19 10:53 AM	13		69.96	198.55	1,416.45	7.47				1,428.32	0.02
9/9/19 10:54 AM	14		69.86	198.65	1,416.36	7.56				1,428.33	0.01
9/9/19 10:55 AM	15		69.88	198.79	1,416.21	7.71				1,428.32	0.02
9/9/19 11:00 AM	20		69.80	200.02	1,414.98	8.94	16.0	1.79		1,428.34	0.00
9/9/19 11:05 AM	25		69.75	200.00	1,415.00	8.92				1,428.32	0.02
9/9/19 11:10 AM	30		69.72	200.11	1,414.89	9.03				1,428.31	0.04
9/9/19 11:25 AM	45		69.67	200.90	1,414.10	9.82				1,428.34	0.00
9/9/19 11:40 AM	60		69.69	201.37	1,413.63	10.29				1,428.31	0.03
9/9/19 11:55 AM	75		69.70	200.64	1,414.36	9.56				1,428.34	0.00
9/9/19 12:10 PM	90		69.68	202.00	1,413.00	10.92	16.0	1.47	pH: 7.24/ EC: 0.98	1,428.38	-0.04
9/9/19 12:25 PM	105		69.72	202.85	1,412.15	11.77				1,428.31	0.03
9/9/19 12:40 PM	120		69.71	203.24	1,411.76	12.16				1,428.30	0.04
9/9/19 1:10 PM	150		69.67	204.94	1,410.06	13.86				1,428.30	0.04
9/9/19 1:40 PM	180		69.68	205.56	1,409.44	14.48				1,428.27	0.07
9/9/19 2:10 PM	210		69.65	203.68	1,411.32	12.60				1,428.23	0.12
9/9/19 2:40 PM	240		69.67	204.01	1,410.99	12.93				1,428.22	0.12
9/9/19 3:40 PM	300		69.64	205.26	1,409.74	14.18				1,428.18	0.16
9/9/19 4:40 PM	360		69.70	205.52	1,409.49	14.43				1,428.11	0.23
9/9/19 5:40 PM	420		69.70	205.61	1,409.39	14.53				1,428.07	0.28
9/9/19 6:40 PM	480		69.65	205.76	1,409.24	14.68				1,428.07	0.28
9/9/19 7:40 PM	540		69.71	204.84	1,410.16	13.76				1,428.01	0.33
9/9/19 8:40 PM	600		69.66	205.26	1,409.74	14.18				1,428.00	0.34

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 460 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Phase II Well No. 10 - Aquifer Test (Septmeber 9, 2019)**

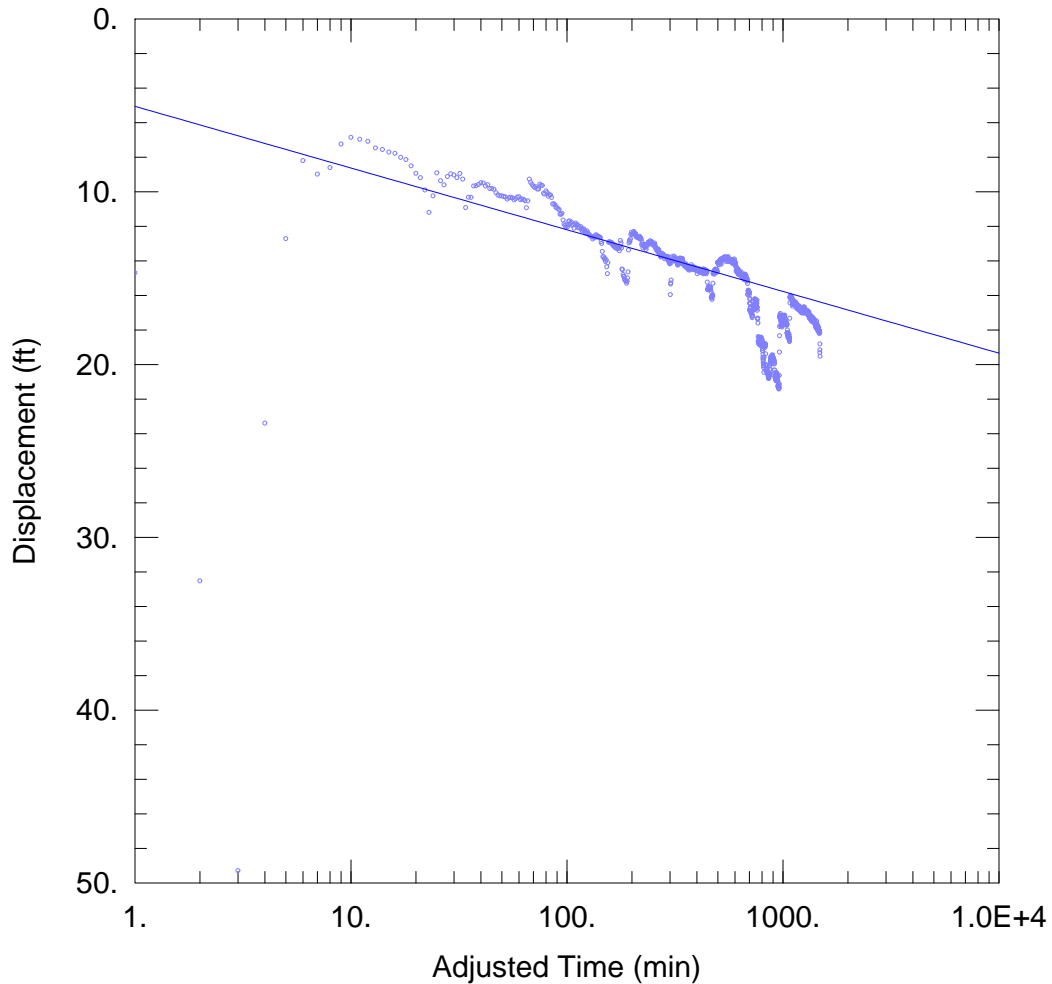
Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 10 Temperature (F)	PW Well No. 10 Water Level (ft bgs)	PW Well No. 10 Water Level (ft MSL)	PW Well No. 10 Drawdown (ft)	PW Well No. 10 Pump Rate (gpm)	PW Well No. 10 Specific Capacity (gpm/ft)	Comments	OW 1 No. 4 Water Level (ft MSL)	Phase Well No. 4 Drawdown (ft)
9/9/19 9:40 PM	660		69.67	206.12	1,408.88	15.04				1,427.93	0.41
9/9/19 10:40 PM	720		69.66	208.30	1,406.71	17.21				1,427.91	0.43
9/9/19 11:40 PM	780		69.68	209.69	1,405.32	18.60				1,427.91	0.43
9/10/19 12:40 AM	840		69.68	211.13	1,403.87	20.05				1,427.91	0.43
9/10/19 1:40 AM	900		69.68	210.80	1,404.20	19.72				1,427.87	0.47
9/10/19 2:40 AM	960		69.71	212.47	1,402.53	21.39				1,427.87	0.48
9/10/19 3:40 AM	1,020		69.70	208.25	1,406.75	17.17				1,427.84	0.50
9/10/19 4:40 AM	1,080		69.69	207.16	1,407.84	16.08				1,427.79	0.56
9/10/19 5:40 AM	1,140		69.73	207.46	1,407.54	16.38				1,427.75	0.59
9/10/19 6:40 AM	1,200		69.67	207.91	1,407.09	16.83				1,427.43	0.91
9/10/19 7:40 AM	1,260		69.73	207.88	1,407.12	16.80				1,427.29	1.05
9/10/19 8:40 AM	1,320		69.71	208.09	1,406.91	17.01				1,427.09	1.25
9/10/19 9:40 AM	1,380		69.69	208.47	1,406.53	17.39				1,426.53	1.81
9/10/19 10:40 AM	1,440		69.68	208.79	1,406.21	17.71				1,426.36	1.98
9/10/19 11:26 AM	1,486	0	69.70	210.61	1,404.39	19.53	16.0	0.82	Pump Stop	1,426.67	1.67
9/10/19 11:27 AM	1,487	1	69.71	201.07	1,413.93	9.99			Meter: 358,160.192 gallons	1,426.69	1.65
9/10/19 11:28 AM	1,488	2	69.64	197.13	1,417.87	6.05			Avg. Pump Rate: 15.71	1,426.67	1.67
9/10/19 11:29 AM	1,489	3	69.68	196.10	1,418.90	5.02				1,426.71	1.63
9/10/19 11:30 AM	1,490	4	69.73	195.42	1,419.58	4.34				1,426.70	1.64
9/10/19 11:31 AM	1,491	5	69.75	195.02	1,419.98	3.94				1,426.69	1.65
9/10/19 11:32 AM	1,492	6	69.74	194.57	1,420.43	3.49				1,426.66	1.68
9/10/19 11:33 AM	1,493	7	69.75	194.27	1,420.73	3.19				1,426.66	1.68
9/10/19 11:34 AM	1,494	8	69.75	193.87	1,421.13	2.79				1,426.70	1.65
9/10/19 11:35 AM	1,495	9	69.77	193.77	1,421.23	2.69				1,426.67	1.67
9/10/19 11:36 AM	1,496	10	69.75	193.42	1,421.58	2.34				1,426.70	1.65
9/10/19 11:37 AM	1,497	11	69.76	193.19	1,421.81	2.11				1,426.66	1.68
9/10/19 11:38 AM	1,498	12	69.72	193.03	1,421.97	1.95				1,426.67	1.67
9/10/19 11:39 AM	1,499	13	69.74	192.92	1,422.08	1.84				1,426.68	1.66
9/10/19 11:40 AM	1,500	14	69.74	192.65	1,422.35	1.57				1,426.67	1.67
9/10/19 11:41 AM	1,501	15	69.76	192.53	1,422.47	1.45				1,426.69	1.65
9/10/19 11:46 AM	1,506	20	69.83	192.07	1,422.93	0.99				1,426.70	1.64
9/10/19 11:51 AM	1,511	25	69.82	191.68	1,423.32	0.60				1,426.69	1.65
9/10/19 11:56 AM	1,516	30	69.82	191.42	1,423.58	0.34				1,426.69	1.65
9/10/19 12:11 PM	1,531	45	69.82	190.64	1,424.36	-0.44				1,426.67	1.67
9/10/19 12:26 PM	1,546	60	69.83	190.00	1,425.01	-1.09				1,426.67	1.67

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 460 ft    EC=Electrical conductivity (mS/cm)

**Majestic Hills Phase II Well No. 10 - Aquifer Test (Septmeber 9, 2019)**

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	PW Well No. 10 Temperature (F)	PW Well No. 10 Water Level (ft bgs)	PW Well No. 10 Water Level (ft MSL)	PW Well No. 10 Drawdown (ft)	PW Well No. 10 Pump Rate (gpm)	PW Well No. 10 Specific Capacity (gpm/ft)	Comments	OW 1	Phase Well No. 4 Water Level (ft MSL)	OW Phase 1 Well No. 4 Drawdown (ft)
9/10/19 12:41 PM	1,561	75	69.88	189.76	1,425.24	-1.32					1,426.72	1.63
9/10/19 12:56 PM	1,576	90	69.90	189.23	1,425.77	-1.85					1,426.73	1.61
9/10/19 1:11 PM	1,591	105	69.91	189.03	1,425.97	-2.05					1,426.84	1.50
9/10/19 1:26 PM	1,606	120	69.96	188.58	1,426.43	-2.51					1,426.78	1.56
9/10/19 1:56 PM	1,636	150	69.97	188.05	1,426.95	-3.03					1,426.76	1.58
9/10/19 2:26 PM	1,666	180	70.00	187.69	1,427.31	-3.39					1,426.82	1.52
9/10/19 2:56 PM	1,696	210	70.04	187.43	1,427.57	-3.65					1,426.80	1.54
9/10/19 3:26 PM	1,726	240	70.08	187.14	1,427.86	-3.94					1,426.87	1.47
9/10/19 4:26 PM	1,786	300	70.05	185.82	1,429.18	-5.26					1,426.90	1.44
9/10/19 5:26 PM	1,846	360	70.05	185.75	1,429.25	-5.33					1,426.94	1.40
9/10/19 6:26 PM	1,906	420	70.09	185.75	1,429.25	-5.33					1,426.98	1.36
9/10/19 7:26 PM	1,966	480	70.08	185.12	1,429.89	-5.97					1,426.99	1.35
9/10/19 8:26 PM	2,026	540	70.09	184.60	1,430.40	-6.48					1,427.02	1.32
9/10/19 9:26 PM	2,086	600	70.08	184.41	1,430.59	-6.67					1,427.04	1.31
9/10/19 10:26 PM	2,146	660	70.07	184.17	1,430.83	-6.91					1,427.05	1.29
9/10/19 11:26 PM	2,206	720	70.11	183.97	1,431.03	-7.11					1,427.03	1.31
9/11/19 12:26 AM	2,266	780	70.13	183.99	1,431.01	-7.09					1,427.08	1.26
9/11/19 1:26 AM	2,326	840	70.06	183.93	1,431.07	-7.16					1,427.06	1.28
9/11/19 2:26 AM	2,386	900	70.07	183.95	1,431.05	-7.13					1,427.06	1.28
9/11/19 3:26 AM	2,446	960	70.09	183.90	1,431.10	-7.18					1,427.05	1.29
9/11/19 4:26 AM	2,506	1020	70.10	183.85	1,431.15	-7.23					1,427.08	1.26
9/11/19 5:26 AM	2,566	1080	70.06	183.73	1,431.28	-7.36					1,427.06	1.28
9/11/19 6:26 AM	2,626	1140	70.06	183.69	1,431.32	-7.40					1,427.09	1.25
9/11/19 7:26 AM	2,686	1200	70.09	183.74	1,431.26	-7.34					1,427.09	1.25
9/11/19 8:26 AM	2,746	1260	70.06	183.77	1,431.24	-7.32					1,427.13	1.21
9/11/19 9:24 AM	2,804	1318	70.10	183.95	1,431.05	-7.13					1,427.04	1.30

Note: bgs = below ground surface    Column Pipe Diameter = 1 1/4 inches    Horsepower = 3 HP  
 MSL = Mean Sea Level    Pump Setting = 460 ft    EC=Electrical conductivity (mS/cm)



TEST NO. 1

Data Set: \...\PW Well No. 10.aqt  
 Date: 11/07/19

Time: 14:31:55

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 10  
 Test Date: 9-9-10

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

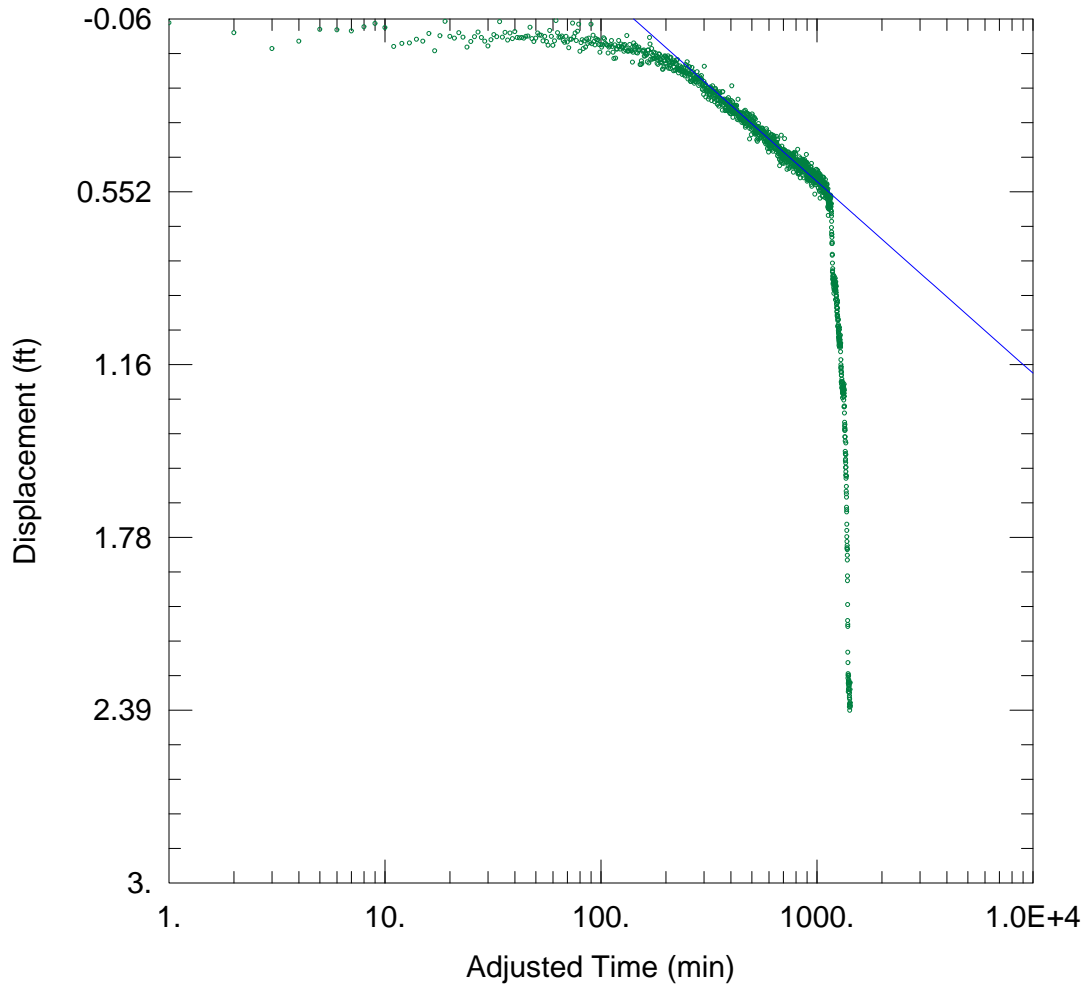
Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 10	0	0	Well No. 10	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 155.2 ft<sup>2</sup>/day



TEST NO. 1

Data Set: \...\OW Phase 1 Well No. 4.aqt  
 Date: 11/07/19

Time: 14:32:07

PROJECT INFORMATION

Company: Wet Rock Groundwater Services  
 Client: Lone Star Land Partners  
 Project: Majestic Hills Phase II  
 Location: Blanco County  
 Test Well: Well No. 10  
 Test Date: 9-9-10

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Well No. 10	0	0	Phase 1 Well No. 4	1371.5	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 816.5 ft<sup>2</sup>/day

S = 0.0001176

# **Appendix E**

## Well Efficiency Calculation



## **Well Efficiency**

**Well No. 1**





Wet Rock Groundwater Services, L.L.C.  
Groundwater Specialists  
TBPG Firm No: 50038  
317 Ranch Road 620 South, Suite 203  
Austin, Texas 78734 • Ph: 512-773-3226  
www.wetrockgs.com

---

### Well Efficiency Calculations Well No. 1

From: *Driscoll, F.G., 1986: Groundwater and Wells: second Ed. Pp.575-579*

Well Efficiency = (Actual specific capacity / Theoretical specific capacity)

Actual Specific Capacity = Q/s

Where: Q = Discharge of well, in gpm; and  
s = drawdown, in feet

**Actual Specific Capacity = 9 gpm / 183.84 ft. = 0.05 gpm/ft.**

$$\text{Theoretical Specific Capacity} = \frac{Q}{s} = \frac{T}{264 \log \frac{0.3Tt}{r^2 S}} = \frac{T}{2000}$$

Where: T = Transmissivity, in gpd/ft  
t = Time of pumping, in days  
S = Storage Coefficient, =  $7.2 \times 10^{-5}$   
r = radius of well, in ft.

$$\text{Theoretical Specific Capacity: } \frac{6.7}{264 \log \frac{(0.3)(6.7)(1.05)}{(0.1875)^2 (0.000072)}} = 0.03$$

**Efficiency = Actual Specific Capacity / Theoretical Specific Capacity = 0.05 / 0.03 = 117%**

## **Well Efficiency**

**Well No. 3**



Wet Rock Groundwater Services, L.L.C.  
Groundwater Specialists  
TBPG Firm No: 50038  
317 Ranch Road 620 South, Suite 203  
Austin, Texas 78734 • Ph: 512-773-3226  
www.wetrockgs.com

---

### Well Efficiency Calculations Well No. 3

From: *Driscoll, F.G., 1986: Groundwater and Wells: second Ed. Pp.575-579*

Well Efficiency = (Actual specific capacity / Theoretical specific capacity)

Actual Specific Capacity =  $Q/s$

Where: Q = Discharge of well, in gpm; and  
s = drawdown, in feet

**Actual Specific Capacity = 6.1 gpm / 281.78 ft. = 0.02 gpm/ft.**

$$\text{Theoretical Specific Capacity} = \frac{Q}{s} = \frac{T}{264 \log \frac{0.3Tt}{r^2 S}} = \frac{T}{2000}$$

Where: T = Transmissivity, in gpd/ft  
t = Time of pumping, in days  
S = Storage Coefficient, =  $4.5 \times 10^{-5}$   
r = radius of well, in ft.

$$\text{Theoretical Specific Capacity: } \frac{6.7}{264 \log \frac{(0.3)(6.7)(1.0)}{(0.1875)^2 (0.000045)}} = 0.03$$

**Efficiency = Actual Specific Capacity / Theoretical Specific Capacity = 0.02 / 0.03 = 67%**

## **Well Efficiency**

**Well No. 4**



**Well Efficiency Calculations**  
**Well No. 4**

From: *Driscoll, F.G., 1986: Groundwater and Wells: second Ed. Pp.575-579*

Well Efficiency = (Actual specific capacity / Theoretical specific capacity)

Actual Specific Capacity =  $Q/s$

Where: Q = Discharge of well, in gpm; and  
s = drawdown, in feet

**Actual Specific Capacity = 4 gpm / 128.2 ft. = 0.03 gpm/ft.**

$$\text{Theoretical Specific Capacity} = \frac{Q}{s} = \frac{T}{264 \log \frac{0.3Tt}{r^2 S}} = \frac{T}{2000}$$

Where: T = Transmissivity, in gpd/ft  
t = Time of pumping, in days  
S = Storage Coefficient, =  $5.22 \times 10^{-5}$   
r = radius of well, in ft.

**Theoretical Specific Capacity:**  $\frac{6.306}{264 \log \frac{(0.3)(6.306)(1.04)}{(0.1875)^2 (0.0000522)}} = \mathbf{0.03}$

**Efficiency = Actual Specific Capacity / Theoretical Specific Capacity = 0.03 / 0.03 = 100%**

## **Well Efficiency**

**Well No. 6**



Wet Rock Groundwater Services, L.L.C.  
Groundwater Specialists  
TBPG Firm No: 50038  
317 Ranch Road 620 South, Suite 203  
Austin, Texas 78734 • Ph: 512-773-3226  
www.wetrockgs.com

---

### Well Efficiency Calculations Well No. 6

From: *Driscoll, F.G., 1986: Groundwater and Wells: second Ed. Pp.575-579*

Well Efficiency = (Actual specific capacity / Theoretical specific capacity)

Actual Specific Capacity =  $Q/s$

Where: Q = Discharge of well, in gpm; and  
s = drawdown, in feet

**Actual Specific Capacity = 33 gpm / 10.49 ft. = 3.15 gpm/ft.**

$$\text{Theoretical Specific Capacity} = \frac{Q}{s} = \frac{T}{264 \log \frac{0.3Tt}{r^2 S}} = \frac{T}{2000}$$

Where: T = Transmissivity, in gpd/ft  
t = Time of pumping, in days  
S = Storage Coefficient, =  $3.78 \times 10^{-5}$   
r = radius of well, in ft.

$$\text{Theoretical Specific Capacity: } \frac{492.2}{264 \log \frac{(0.3)(492.2)(1.02)}{(0.1875)^2 (0.0000378)}} = 1.56$$

**Efficiency = Actual Specific Capacity / Theoretical Specific Capacity = 3.15 / 1.56 = 202%**

## **Well Efficiency**

**Well No. 8**





Wet Rock Groundwater Services, L.L.C.  
Groundwater Specialists  
TBPG Firm No: 50038  
317 Ranch Road 620 South, Suite 203  
Austin, Texas 78734 • Ph: 512-773-3226  
www.wetrockgs.com

---

### Well Efficiency Calculations Well No. 8

From: *Driscoll, F.G., 1986: Groundwater and Wells: second Ed. Pp.575-579*

Well Efficiency = (Actual specific capacity / Theoretical specific capacity)

Actual Specific Capacity =  $Q/s$

Where: Q = Discharge of well, in gpm; and  
s = drawdown, in feet

**Actual Specific Capacity = 9 gpm / 236.41 ft. = 0.03 gpm/ft.**

$$\text{Theoretical Specific Capacity} = \frac{Q}{s} = \frac{T}{264 \log \frac{0.3Tt}{r^2 S}} = \frac{T}{2000}$$

Where: T = Transmissivity, in gpd/ft  
t = Time of pumping, in days  
S = Storage Coefficient, =  $2.15 \times 10^{-5}$   
r = radius of well, in ft.

$$\text{Theoretical Specific Capacity: } \frac{4.933}{264 \log \frac{(0.3)(4.933)(1.16)}{(0.1875)^2 (0.0000215)}} = 0.02$$

**Efficiency = Actual Specific Capacity / Theoretical Specific Capacity = 0.03 / 0.02 = 150%**

## **Well Efficiency**

**Well No. 8 (2)**



**Well Efficiency Calculations  
Well No. 8 (2)**

From: *Driscoll, F.G., 1986: Groundwater and Wells: second Ed. Pp.575-579*

Well Efficiency = (Actual specific capacity / Theoretical specific capacity)

Actual Specific Capacity = Q/s

Where: Q = Discharge of well, in gpm; and  
s = drawdown, in feet

**Actual Specific Capacity = 5.9 gpm / 67.16 ft. = 0.09 gpm/ft.**

$$\text{Theoretical Specific Capacity} = \frac{Q}{s} = \frac{T}{264 \log \frac{0.3Tt}{r^2 S}} = \frac{T}{2000}$$

Where: T = Transmissivity, in gpd/ft  
t = Time of pumping, in days  
S = Storage Coefficient, =  $5.22 \times 10^{-5}$   
r = radius of well, in ft.

**Theoretical Specific Capacity:**  $\frac{21.23}{264 \log \frac{(0.3)(21.23)(1.00)}{(0.1875)^2 (0.0000522)}} = 0.08$

**Efficiency = Actual Specific Capacity / Theoretical Specific Capacity = 0.09 / 0.08 = 112%**

## **Well Efficiency**

**Well No. 9**



Wet Rock Groundwater Services, L.L.C.  
Groundwater Specialists  
TBPG Firm No: 50038  
317 Ranch Road 620 South, Suite 203  
Austin, Texas 78734 • Ph: 512-773-3226  
www.wetrockgs.com

---

### Well Efficiency Calculations Well No. 9

From: *Driscoll, F.G., 1986: Groundwater and Wells: second Ed. Pp.575-579*

Well Efficiency = (Actual specific capacity / Theoretical specific capacity)

Actual Specific Capacity =  $Q/s$

Where: Q = Discharge of well, in gpm; and  
s = drawdown, in feet

**Actual Specific Capacity = 25 gpm / 47.95 ft. = 0.52 gpm/ft.**

$$\text{Theoretical Specific Capacity} = \frac{Q}{s} = \frac{T}{264 \log \frac{0.3Tt}{r^2 S}} = \frac{T}{2000}$$

Where: T = Transmissivity, in gpd/ft  
t = Time of pumping, in days  
S = Storage Coefficient, =  $1.7 \times 10^{-5}$   
r = radius of well, in ft.

$$\text{Theoretical Specific Capacity: } \frac{158.3}{264 \log \frac{(0.3)(158.3)(1.06)}{(0.1875)^2 (0.000017)}} = 0.96$$

**Efficiency = Actual Specific Capacity / Theoretical Specific Capacity = 0.52 / 0.96 = 54%**

## **Well Efficiency**

**Well No. 10**



Wet Rock Groundwater Services, L.L.C.  
Groundwater Specialists  
TBPG Firm No: 50038  
317 Ranch Road 620 South, Suite 203  
Austin, Texas 78734 • Ph: 512-773-3226  
www.wetrockgs.com

---

### Well Efficiency Calculations Well No. 10

From: *Driscoll, F.G., 1986: Groundwater and Wells: second Ed. Pp.575-579*

Well Efficiency = (Actual specific capacity / Theoretical specific capacity)

Actual Specific Capacity =  $Q/s$

Where:  $Q$  = Discharge of well, in gpm; and  
 $s$  = drawdown, in feet

**Actual Specific Capacity = 25 gpm / 47.95 ft. = 0.82 gpm/ft.**

$$\text{Theoretical Specific Capacity} = \frac{Q}{s} = \frac{T}{264 \log \frac{0.3Tt}{r^2 S}} = \frac{T}{2000}$$

Where:  $T$  = Transmissivity, in gpd/ft  
 $t$  = Time of pumping, in days  
 $S$  = Storage Coefficient, =  $1.2 \times 10^{-4}$   
 $r$  = radius of well, in ft.

$$\text{Theoretical Specific Capacity: } \frac{155.2}{264 \log \frac{(0.3)(155.2)(1.03)}{(0.1875)^2 (0.00012)}} = 0.55$$

**Efficiency = Actual Specific Capacity / Theoretical Specific Capacity = 0.82 / 0.55 = 149%**

# **Appendix F**

## Water Quality Report





# **Water Quality**

**Well No. 1**

Email information for report date:

10/7/19 12:55

C032141

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/7/19 12:55  
**C032141**

**MAJESTIC HILLS II NO1**

Collected: 10/01/19 12:00 by CLIENT  
 Received: 10/01/19 15:00 by Kelly Kukowski

Type: Grab  
 Matrix: Drinking Water  
 C-O-C #: 295073

Lab ID#	C032141-01	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch
<b>Microbiological Analyses</b>											
<b>Total Coliforms</b>		<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	10/01/19 17:48 JLL	SM9223 B 2004	M104125
<b>Escherichia coli (E.coli)</b>		<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	10/01/19 17:48 JLL	SM9223 B 2004	M104125

**Microbiological Analyses - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	Log10 Comparison Control Limit	Batch
<b>Escherichia coli (E.coli) - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	10/01/19 17:48 JLL						M104125
Duplicate	Absent	N/A	N/A	N/A	10/01/19 17:48 JLL		Absent			200	M104125
<b>Total Coliforms - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	10/01/19 17:48 JLL						M104125
Duplicate	Absent	N/A	N/A	N/A	10/01/19 17:48 JLL		Absent			200	M104125

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
<b>C032141-01</b>										
Escherichia coli (E.coli)	SM9223 B 2004	10/1/19 17:40 JLL	Austin	A	100	mL	100	mL	1	M104125
Total Coliforms	SM9223 B 2004	10/1/19 17:40 JLL	Austin	A	100	mL	100	mL	1	M104125



**Chain-of-Custody & Analysis Request**

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken		S - Solid		LAB USE ONLY (initials <i>KK</i> )		
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. +	Analysis Requested			Cooler ID	Bottle pH	Sub-contract	Lab ID #
<b>15</b>			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A			<i>cut</i>	-	-	C032141-01A
MHI #1	12:00 10-1-19	-	G	DW	1L	P	1	<i>select for</i> NO2 NO3 pH Cl Cond F Fe			-	-	AWA	C03020-01A
MHI #1	10-1-19 12:00							Hardness Mn SO4 TDS						
<i>MEZ</i>														

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<i>[Signature]</i>	Date: 10-1-19 Time: 15:00	<i>[Signature]</i>	
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time:		
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Sample Info <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input checked="" type="checkbox"/> Received in Lab Kelly Kukowski <i>KK</i>	Sample Info <input type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good
	Date: Time:		Date: 10-1-19 Time: 15:00

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone # :	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

+ Sample Pres.	pH Paper ID#:	1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	9 =	
(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)						

Cooler ID: <i>cut</i>	Temp °C: 9.3 / 9.3	CT	Therm ID: 0715570	Cooler ID:	Temp °C: /	CT	Therm ID:
-----------------------	--------------------	----	-------------------	------------	------------	----	-----------

Email information for report date:

10/14/19 13:24

C032020

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed: 10/14/19 13:24**  
**C032020**

MAJESTIC HILLS II NO1		Collected: 10/01/19 12:00 by CLIENT Received: 10/01/19 15:00 by Kelly Kukowski					Type	Matrix		C-O-C #		
Lab ID#	C032020-01	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
<b>General Chemistry</b>												
Total Dissolved Solids	1020	mg/L			25.0	50.0	50.0	Bryan	10/02/19 14:02 MRH	SM2540 C 2011	M104156	NEL
Nitrate as N (NO3N)	<0.0200	mg/L				0.0200	0.0200	Austin	10/03/19 14:45 JLL	SM4500-NO3-F 2011	[CALC]	NEL
Nitrite as N	<0.01	mg/L			0.002	0.002	0.01	Austin	10/02/19 10:45 JLL	SM4500 NO2- B 2011	M104148	NEL
Nitrate/Nitrite as N	<0.02	mg/L			0.02	0.02	0.02	Bryan	10/03/19 14:45 MRB	SM4500-NO3-F 2011	M104223	INF
Total Hardness (EDTA) as CaCO3	760	mg/L			1.00	5.00	5.00	Bryan	10/04/19 08:11 MRH	SM2340 C 2011	M104271	NEL
Fluoride	2.08	mg/L			0.04	0.04	0.10	Bryan	10/08/19 14:15 PNS	SM4500-F C 2011	M104397	NEL
pH, Lab	7.8	S.U.		Hold-03		N/A	N/A	Austin	10/04/19 12:24 KT	SM4500-H+ B 2011	M104292	DWP
Temperature @ pH Analysis	19.8	Deg. C				N/A	N/A	Austin	10/04/19 12:24 KT	SM4500-H+ B 2011	M104292	DWP
Specific Conductance (adjusted to 25.0°C)	1280	uS/cm			2.00	2.00	2.00	Bryan	10/03/19 12:11 CJO	SM2510 B 2011	M104230	DWP,NEL
<b>Metals (Total)</b>												
Iron	0.092	mg/L			0.002	0.002	0.010	Bryan	10/11/19 15:40 PNS	EPA 200.7 R4.4	M104453	NEL
Manganese	1.68	ug/L			0.108	0.111	0.412	Bryan	10/03/19 15:51 AKS	EPA 200.8 R5.4	M104213	NEL
<b>General Chemistry</b>												
Sulfate as SO4	460	mg/L			0.01	30	30	Sub	10/03/19 11:33 ANA	EPA 300.0	SUB	NEL
Chloride	13.6	mg/L			0.02		3	Sub	10/02/19 16:36 ANA	EPA 300.0	SUB	NEL

**Explanation of Notes**

Hold-03 This parameter was outside of EPA holding at the time the sample was received in the laboratory.

J Analyte detected below the SQL but above the MDL.

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/14/19 13:24**

**C032020**

General Chemistry - Quality Control													
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch	
<b>Fluoride - SM4500-F C 2011</b>													<i>Bryan</i>
Initial Cal Check	0.32	mg/L			10/08/19 14:15 PNS	0.356		91.0	90 - 110			1910086	
Blank	<0.10	mg/L	0.04	0.10	10/08/19 14:15 PNS							M104397	
LCS	0.73	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.798		91.9	90 - 110			M104397	
LCS Dup	0.73	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.798		91.9	90 - 110	0.00	6.23	M104397	
Matrix Spike	4.20	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.798	3.45	93.9	78.1 - 125			M104397	
Matrix Spike Dup	4.22	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.798	3.45	96.4	78.1 - 125	2.63	5.72	M104397	
MRL Check	<0.10	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.0998		90.3	73.4 - 118			M104397	
<b>Nitrate/Nitrite as N - SM4500-NO3-F 2011</b>													<i>Bryan</i>
Initial Cal Check	1.25	mg/L			10/03/19 14:45 MRB	1.15		109	90 - 110			1910044	
Low Cal Check	0.02	mg/L			10/03/19 14:45 MRB	0.0200		104	70 - 130			1910044	
Blank	<0.02	mg/L	0.02	0.02	10/03/19 14:45 MRB							M104223	
LCS	0.53	mg/L	0.02	0.02	10/03/19 14:45 MRB	0.500		105	91.3 - 109			M104223	
LCS Dup	0.51	mg/L	0.02	0.02	10/03/19 14:45 MRB	0.500		101	91.3 - 109	4.14	6.8	M104223	
Matrix Spike	0.68	mg/L	0.02	0.02	10/03/19 14:45 MRB	0.500	0.14	109	94.1 - 111			M104223	
Matrix Spike Dup	0.69	mg/L	0.02	0.02	10/03/19 14:45 MRB	0.500	0.14	111	94.1 - 111	1.48	8.65	M104223	
<b>Nitrite as N - SM4500 NO2- B 2011</b>													<i>Austin</i>
Initial Cal Check	0.07	mg/L			05/29/19 12:06 KT	0.0725		102	90 - 110			1905274	
Blank	<0.01	mg/L	0.002	0.01	10/02/19 10:45 JLL							M104148	
LCS	0.08	mg/L	0.002	0.01	10/02/19 10:45 JLL	0.0800		99.6	90 - 110			M104148	
LCS Dup	0.08	mg/L	0.002	0.01	10/02/19 10:45 JLL	0.0800		97.0	90 - 110	2.68	8.12	M104148	
Matrix Spike	0.08	mg/L	0.002	0.01	10/02/19 10:45 JLL	0.0800	<0.01	99.6	70.6 - 117			M104148	
Matrix Spike Dup	0.08	mg/L	0.002	0.01	10/02/19 10:45 JLL	0.0800	<0.01	100	70.6 - 117	0.879	8.18	M104148	
MRL Check	0.01	mg/L	0.002	0.01	10/02/19 10:45 JLL	0.0100		107	70 - 130			M104148	
<b>pH, Lab - SM4500-H+ B 2011</b>													<i>Austin</i>
Duplicate	7.6	Std Units			10/04/19 12:24 KT		7.6			0.132	2.05	M104292	
Reference	6.9	Std Units			10/04/19 12:24 KT	6.86		100	95 - 105			M104292	
Reference	9.1	Std Units			10/04/19 12:24 KT	9.18		99.6	95 - 105			M104292	
Reference	6.9	Std Units			10/04/19 12:24 KT	6.86		101	95 - 105			M104292	
Reference	9.1	Std Units			10/04/19 12:24 KT	9.18		99.5	95 - 105			M104292	
<b>Specific Conductance (adjusted to 25.0°C) - SM2510 B 2011</b>													<i>Bryan</i>
Initial Cal Check	489	uS/cm			10/03/19 12:11 CJO	472		104	85 - 115			1910049	
Blank	<2.00	uS/cm	2.00	2.00	10/03/19 12:11 CJO							M104230	
Duplicate	673	uS/cm	2.00	2.00	10/03/19 12:11 CJO		679			0.888	2	M104230	
LCS	1400	uS/cm	2.00	2.00	10/03/19 12:11 CJO	1410		99.5	90 - 110			M104230	

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/14/19 13:24**

**C032020**

General Chemistry - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Total Dissolved Solids - SM2540 C 2011</b>												Bryan
Blank	<25.0	mg/L	25.0	25.0	10/02/19 14:02 MRH							M104156
Duplicate	296	mg/L	50.0	50.0	10/02/19 14:02 MRH		296			0.00	9.13	M104156
Reference	520	mg/L	100	100	10/02/19 14:02 MRH	500		104	81 - 121			M104156
<b>Total Hardness (EDTA) as CaCO3 - SM2340 C 2011</b>												Bryan
Initial Cal Check	60.0	mg/L			10/04/19 08:11 MRH	54.4		110	85 - 115			1910060
Blank	<1.00	mg/L	1.00	1.00	10/04/19 08:11 MRH							M104271
Duplicate	400	mg/L	2.00	2.00	10/04/19 08:11 MRH		400			0.00	9.52	M104271
LCS	100	mg/L	1.00	1.00	10/04/19 08:11 MRH	100		100	90 - 110			M104271
LCS Dup	100	mg/L	1.00	1.00	10/04/19 08:11 MRH	100		100	90 - 110	0.00	6.47	M104271
Matrix Spike	600	mg/L	2.00	2.00	10/04/19 08:11 MRH	200	400	100	87.6 - 111			M104271
MRL Check	3.00	mg/L	1.00	1.00	10/04/19 08:11 MRH	4.00		75.0	70 - 130			M104271
Metals (Total) - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Iron - EPA 200.7 R4.4</b>												Bryan
Blank	<0.010	mg/L	0.002	0.010	10/10/19 16:25 PNS							M104453
LCS	0.933	mg/L	0.002	0.010	10/10/19 16:28 PNS	1.00		93.3	84.5 - 115.4			M104453
LCS Dup	0.929	mg/L	0.002	0.010	10/10/19 16:31 PNS	1.00		92.9	84.5 - 115.4	0.394	20	M104453
Duplicate	0.232	mg/L	0.002	0.010	10/10/19 16:35 PNS		0.235			1.37	20	M104453
Matrix Spike	1.15	mg/L	0.002	0.010	10/10/19 16:38 PNS	1.00	0.235	91.8	69.5 - 130.4			M104453
<b>Manganese - EPA 200.8 R5.4</b>												Bryan
Blank	<0.412	ug/L	0.111	0.412	10/03/19 15:14 AKS							M104213
LCS	8.89	ug/L	0.112	0.416	10/03/19 15:22 AKS	10.0		88.9	84.5 - 115.4			M104213
LCS Dup	8.83	ug/L	0.112	0.416	10/03/19 15:29 AKS	10.0		88.3	84.5 - 115.4	0.632	20	M104213
Duplicate	1.81	ug/L	0.111	0.412	10/03/19 15:36 AKS		1.68			7.65	20	M104213
Matrix Spike	10.9	ug/L	0.112	0.416	10/03/19 15:44 AKS	10.0	1.68	91.7	69.5 - 130.4			M104213
Preparation Procedures - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Turbidity - SM2130 B 2011</b>												Bryan



**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/14/19 13:24  
**C032020**

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
<b>C032020-01</b>										
Fluoride	SM4500-F C 2011	10/8/19 14:15 PNS	Bryan	A	25.0	mL	25.0	mL	1	M104397
Iron	EPA 200.7 R4.4	10/9/19 10:03 AKS	Bryan	C	10.0	mL	10.2	mL	1	M104453
Manganese	EPA 200.8 R5.4	10/3/19 10:47 AKS	Bryan	C	10.0	mL	10.3	mL	1	M104213
Nitrate/Nitrite as N	SM4500-NO3-F 2011	10/3/19 11:42 MRB	Bryan	E	10.0	mL	10.0	mL	1	M104223
Nitrite as N	SM4500 NO2- B 2011	10/2/19 10:45 JLL	Austin	D	25.0	mL	25.0	mL	1	M104148
pH, Lab	SM4500-H+ B 2011	10/4/19 12:24 KT	Austin	D	50.0	mL	50.0	mL	1	M104292
Sample Acidified to pH<2 in Lab	N/A	10/1/19 15:54 KK	Bryan	C	100	mL	100	mL	1	M104112
Specific Conductance (adjusted to 25.0°C)	SM2510 B 2011	10/3/19 12:11 CJO	Bryan	A	25.0	mL	25.0	mL	1	M104230
Temperature @ pH Analysis	SM4500-H+ B 2011	10/4/19 12:24 KT	Austin	D	50.0	mL	50.0	mL	1	M104292
Total Dissolved Solids	SM2540 C 2011	10/2/19 14:02 MRH	Bryan	A	50.0	mL	100	mL	1	M104156
Total Hardness (EDTA) as CaCO3	SM2340 C 2011	10/4/19 8:11 MRH	Bryan	C	10.0	mL	50.0	mL	1	M104271
Turbidity	SM2130 B 2011	10/2/19 9:20 MRH	Bryan	C	10.0	mL	10.0	mL	1	M104143
See sub-contract reports for preparation information of subcontracted analyses.										
<b>C032020-01RE1</b>										
Sample Acidified to pH<2 in Lab	N/A	10/1/19 15:56 KK	Bryan	E	100	mL	100	mL	1	M104113



**Chain-of-Custody & Analysis Request**

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken		S - Solid		LAB USE ONLY (initials <i>KK</i> )		
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. +	Analysis Requested			Cooler ID	Bottle pH	Sub-contract	Lab ID #
<b>15</b>			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A			<i>cut</i>	-	-	C032141-0LA
MHI #1	12:00 10-1-19	-	G	DW	1L	P	1	<i>select for</i> NO2 NO3 pH Cl Cond F Fe			-	-	AWA	C03020-0LA
MHI #1	10-1-19 12:00							Hardness Mn SO4 TDS						
<i>MER</i>														

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<i>[Signature]</i>	Date: 10-1-19 Time: 15:00	<i>[Signature]</i>	
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time:		
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input checked="" type="checkbox"/> Received in Lab Kelly Kukowski <i>KK</i>	Sample Info "X" all that apply <input checked="" type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good
	Date: 10-1-19 Time: 15:00		

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone # :	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

+ Sample Pres.	pH Paper ID#: 1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	
	≤ 6 °C (not frozen)				

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>cut</i>	Temp °C: 9.3 / 9.3	CT	Therm ID: 0715570	Cooler ID:	Temp °C: /	CT	Therm ID:
-----------------------	--------------------	----	-------------------	------------	------------	----	-----------



Ana-Lab Corp.  
 P.O. Box 9000  
 Kilgore, TX 75663  
 903/984-0551

LELAP-accredited #02008

# Report

Table of Contents

Printed 10/07/2019 Page 1 of 1

Aqua-Tech Laboratories (Austin)  
 John Brien  
 635 Phil Gramm Blvd.  
 Bryan, TX 77807-9104

Account

**AQU5-C**

Project

**892193**

## C032020

This report consists of this Table of Contents and the following pages:

Report Name	Description	Pages
892193_r03_03_ProjectResults	Ana-Lab Project P:892193 C:AQU5 Project Results t:304	2
892193_r03_06_ProjectTRRP	Ana-Lab Project P:892193 C:AQU5 Project TRRP Results Report for Class	2
892193_r10_05_ProjectQC	Ana-Lab Project P:892193 C:AQU5 Project Quality Control Groups	1
892193_r99_09_CoC_1_of_1	Ana-Lab CoC AQU5 892193_1_of_1	2
<b>Total Pages:</b>		<b>7</b>



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



NELAP-accredited #T104704201-19-15



# Results

Printed: 10/07/2019 14:21

Page 1 of 2  
892193

**Report To**

C032020

Account  
**AQU5-C**

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

## Results

<b>1825070</b>	<b>C032020-01</b>					<i>Received:</i> 10/02/2019	
Drinking Water	<i>Collected by:</i> Client	Aqua-Tech Laboratori		<i>PO:</i>			
	<i>Taken:</i> 10/01/2019 12:00:00						
<hr/>							
EPA 300.0 2.1	<i>Prepared:</i> 861896	10/02/2019	16:36:00	<i>Analyzed</i> 861896	10/02/2019	16:36:00	ATN
<i>Parameter</i>	<i>Results</i>	<i>Units</i>	<i>RL</i>	<i>Flag</i>	<i>CAS</i>	<i>Bottle</i>	
N Chloride	13.6	mg/L	3.00			01	
<hr/>							
EPA 300.0 2.1	<i>Prepared:</i> 862068	10/03/2019	11:33:00	<i>Analyzed</i> 862068	10/03/2019	11:33:00	ATN
<i>Parameter</i>	<i>Results</i>	<i>Units</i>	<i>RL</i>	<i>Flag</i>	<i>CAS</i>	<i>Bottle</i>	
N Sulfate	460	mg/L	30.0			01	

## Sample Preparation

<b>1825070</b>	<b>C032020-01</b>					<i>Received:</i> 10/02/2019	
Cooler Return	<i>Prepared:</i>	10/07/2019	17:00:00	<i>Analyzed</i>	10/07/2019	17:00:00	WTS
<b>z Return Cooler/No bottles Require</b>	<b>RETURNED</b>						





# Results

Printed: 10/07/2019 14:21

Page 2 of 2  
892193

Qualifiers:

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column. MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.

Bill Peery, MS, VP Technical Services





# Results Summary

Project

**892193**

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

C032020

CAS	Parameter	Results	MDL	SDL	MQL	MQLAdj	Flag	Units	Target	Bottle	Dilute	
<b>Drinking Water</b>		<b>Ion Chromatography</b>				<b>EPA 300.0 2.1</b>						
<b>1825070</b>	<b>C032020-01</b>											
		Collection:	10/01/2019		12:00:00	Client			Received:	10/02/2019		
	Prepared:	<b>861896</b>										
	Chloride	13.6	0.0196	0.196	0.300	3.00		mg/L	250	01	10.00	
									Secondary Standard			
	Prepared:	<b>862068</b>										
	Sulfate	460	0.00775	0.775	0.300	30.0		mg/L	250	01	100.00	
									Secondary Standard			

MDL is Method Detection Limit (40 CFR 136 Appendix B)

SDL is Sample Detection Limit and is the adjusted MDL (sample specific dilutions, dry weight)

MQL is the Method Quantitation Limit and corresponds to a low standard

MQLADJ is the Adjusted Method Quantitation Limit (dilutions, dry weight)

Qualifiers:

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation. These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.





# Results Summary

## Project

**892193**

C032020

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Bill Peery, MS, VP Technical Services





# Quality Control

Printed 10/07/2019

Page 1 of 1  
892193

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

Analytical Set **861896** EPA 300.0 2.1

**Blank**

<u>Parameter</u>	<u>PrepSet</u>	<u>Reading</u>	<u>MDL</u>	<u>MQL</u>	<u>Units</u>	<u>File</u>
Chloride	861896	ND	0.0196	0.300	mg/L	120450371

**CCV**

<u>Parameter</u>	<u>Reading</u>	<u>Known</u>	<u>Units</u>	<u>Recover%</u>	<u>Limits%</u>	<u>File</u>
Chloride	9.76	10.0	mg/L	97.6	90.0 - 110	120450368
	9.58	10.0	mg/L	95.8	90.0 - 110	120450385
	9.64	10.0	mg/L	96.4	90.0 - 110	120450398

**LCS Dup**

<u>Parameter</u>	<u>PrepSet</u>	<u>LCS</u>	<u>LCSD</u>	<u>Known</u>	<u>Limits%</u>	<u>LCS%</u>	<u>LCSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Chloride	861896	5.01	4.98	5.00	85.0 - 110	100	99.6	mg/L	0.601	20.0

**MSD**

<u>Parameter</u>	<u>Sample</u>	<u>MS</u>	<u>MSD</u>	<u>UNK</u>	<u>Known</u>	<u>Limits</u>	<u>MS%</u>	<u>MSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Chloride	1825070	22.8	23.2	13.6	10.0	80.0 - 120	92.0	96.0	mg/L	4.26	20.0
	1825318	19.6	19.7	10.2	10.0	80.0 - 120	94.0	95.0	mg/L	1.06	20.0

Analytical Set **862068** EPA 300.0 2.1

**Blank**

<u>Parameter</u>	<u>PrepSet</u>	<u>Reading</u>	<u>MDL</u>	<u>MQL</u>	<u>Units</u>	<u>File</u>
Sulfate	862068	ND	0.00775	0.300	mg/L	120455785

**CCV**

<u>Parameter</u>	<u>Reading</u>	<u>Known</u>	<u>Units</u>	<u>Recover%</u>	<u>Limits%</u>	<u>File</u>
Sulfate	10.2	10.0	mg/L	102	90.0 - 110	120455782
	10.1	10.0	mg/L	101	90.0 - 110	120455798
	10.5	10.0	mg/L	105	90.0 - 110	120455803

**LCS Dup**

<u>Parameter</u>	<u>PrepSet</u>	<u>LCS</u>	<u>LCSD</u>	<u>Known</u>	<u>Limits%</u>	<u>LCS%</u>	<u>LCSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Sulfate	862068	5.08	5.05	5.00	88.0 - 110	102	101	mg/L	0.592	20.0

**MSD**

<u>Parameter</u>	<u>Sample</u>	<u>MS</u>	<u>MSD</u>	<u>UNK</u>	<u>Known</u>	<u>Limits</u>	<u>MS%</u>	<u>MSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Sulfate	1824706	17.1	16.8	12.8	5.00	80.0 - 120	86.0	80.0	mg/L	7.23	20.0
	1824707	24.3	24.8	19.6	5.00	80.0 - 120	94.0	104	mg/L	10.1	20.0

\* Out RPD is Relative Percent Difference:  $\frac{\text{abs}(r1-r2)}{\text{mean}(r1,r2)} * 100\%$  Recover% is Recovery Percent:  $\frac{\text{result}}{\text{known}} * 100\%$   
Blank - Method Blank; CCV - Continuing Calibration Verification







ATL - Bryan Facility, 636 Phil Gramm Blvd, Bryan, TX 77807, (979) 772-5707, Fax: (979) 772-8193

ATL - Austin Facility, 7500 Hwy 71 W, Suite 105, Austin, TX 78733, (972) 391-9599, Fax: (972) 391-9592

SHIPPED TO: Ana-Lab Corp. (NELAP Cert. T104704201), 2600 Dudley Road, Kilgore, TX 75662, Phone: (903) 984-0551, Fax: (903) 984-5914

C-O-C #

847 - C032020

T104704371



Chain-of-Custody & Analysis Request

All analyses must be performed by a TNI approved method certified by the TCEQ. Contact ATL's sample custodian via voice and email if your methods do not meet this criteria.

Analysis Request for: Chloride - EPA 300.0 Sample ID: C032020-01 Sampled: 10/01/19 12:00 Matrix: Drinking Water Laboratory ID >> 1825070

CONTAINERS SUPPLIED: ( ) C032020-01 [B] - CI S04 0.5LP (ATL indicates cooler number in parentheses for each container - only required if more than one cooler listed below.)

Form with fields for Client (Kelly Kukowski), Analyst (Kathy Turner), Date (10-1-19), Time (1645), and various checkboxes for handling and analysis procedures.

892193 CoC Print Group 001 of 001

10/17/2019

https://www2.lso.com/weblabels/?labelsize=us&combinedlabel=1&sessionkey=%7B5487E746E-0C07-4349-B08E-0011E1029D84%7D



Airbill No. ZY015PKG

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
**RECEIVING**  
**ANA LAB CORP**  
**2600 DUDLEY RD**  
**KILGORE, TX 75662**  
**9039840551**

From:  
KELLY KUKOWSKI  
AQUA-TECH LABORATORIES, INC.  
7500 W HWY 71 SUITE 105  
AUSTIN, TX 78735  
5123019659



**LSO GROUND**  
END OF BUSINESS DAY DELIVERY

*S*

PRINT DATE: 10/1/2019  
QUICKCODE: WEIGHT: 35.00LBS  
REF 1: 1D00V.0000 REF 2:

Therm#: 6444 Corr Fact: 0.1  
Temp: 0.1 °C

Date: 10/1 Time: 10:00 Tech: KU

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 6:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

# **Water Quality**

**Well No. 3**

Email information for report date:

10/8/19 11:25

C032370

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/8/19 11:25  
**C032370**

**MAJESTIC HILLS II NO3**

Collected: 10/03/19 12:00 by CLIENT  
 Received: 10/03/19 15:00 by Kelly Kukowski

Type: Grab  
 Matrix: Drinking Water  
 C-O-C #: 295112

Lab ID#	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
C032370-01											
<b>Microbiological Analyses</b>											
<b>Total Coliforms</b>	<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	10/03/19 17:40 JLL	SM9223 B 2004	M104258	NEL
<b>Escherichia coli (E.coli)</b>	<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	10/03/19 17:40 JLL	SM9223 B 2004	M104258	NEL

**Microbiological Analyses - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	Log10 Comparison Control Limit	Batch
<b>Escherichia coli (E.coli) - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	10/03/19 17:40 JLL						M104258
<b>Total Coliforms - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	10/03/19 17:40 JLL						M104258

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch	
<b>C032370-01</b>											
Escherichia coli (E.coli)	SM9223 B 2004	10/3/19 17:30 JLL	Austin	A	100	mL	100	mL	1	M104258	
Total Coliforms	SM9223 B 2004	10/3/19 17:30 JLL	Austin	A	100	mL	100	mL	1	M104258	



Chain-of-Custody & Analysis Request

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water	S - Solid	LAB USE ONLY (initials <i>PK</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. +	Analysis Requested	Cooler ID	Bottle pH	Sub-contract	Lab ID #	
24			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A	ret	-	-	C032370-01A	
MHTI #3	10-3-19 12:00	-	G	DW	1L	P	1	NO2 pH Cl Cond F Fe		-	Ana	C032370-01A	
MHTI #3	10-3-19 12:00							Hardness Mn NO3 JO4 TDS					
<i>MFEZKA</i>													

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply
<i>M BELKEZ</i>	Date: 10-3-19 Time: 15:00 <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	<i>MFEZ</i>	Date: Time: <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Date: Time: <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Date: Time: <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
Relinquished by: (print & sign) <input type="checkbox"/> Client <input checked="" type="checkbox"/> ATL Field-arrival in Lab	Date: Time: <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input checked="" type="checkbox"/> Received in Lab <i>Kelly Kukowski</i>	Date: 10-5-19 Time: 1500 <input checked="" type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input checked="" type="checkbox"/> CTU * <input checked="" type="checkbox"/> Cond Good

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone #:	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

+ Sample Pres.	pH Paper ID#:	1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>CLT</i>	Temp °C: <i>5.7</i>	CT	Therm ID: <i>0715570</i>	Cooler ID:	Temp °C: <i>/</i>	CT	Therm ID:
-----------------------	---------------------	----	--------------------------	------------	-------------------	----	-----------

Email information for report date:

10/25/19 08:51

C032347

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



**TCEQ DW Lab ID TX 239**

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/25/19 8:51  
**C032347**

**MAJESTIC HILLS II NO3**

Collected: 10/03/19 12:00 by CLIENT  
 Received: 10/03/19 15:00 by Kelly Kukowski

Type  
 Grab

Matrix  
 Drinking Water

C-O-C #  
 295112

Lab ID#	C032347-01	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
<b>General Chemistry</b>												
Total Dissolved Solids	682	mg/L			25.0	50.0	50.0	Bryan	10/04/19 15:15 MRH	SM2540 C 2011	M104302	NEL
Nitrate as N (NO3N)	<0.0200	mg/L				0.0200	0.0200	Austin	10/09/19 15:35 AEL	SM4500-NO3-F 2011	[CALC]	NEL
Nitrite as N	<0.01	mg/L		J (0.003)	0.002	0.002	0.01	Austin	10/04/19 07:58 AEL	SM4500 NO2- B 2011	M104263	NEL
Nitrate/Nitrite as N	0.02	mg/L			0.02	0.02	0.02	Bryan	10/09/19 15:35 MRB	SM4500-NO3-F 2011	M104470	INF
Total Hardness (EDTA) as CaCO3	545	mg/L			1.00	1.00	1.00	Bryan	10/09/19 11:12 MRH	SM2340 C 2011	M104463	NEL
Fluoride	0.77	mg/L			0.04	0.04	0.10	Bryan	10/08/19 14:15 PNS	SM4500-F C 2011	M104397	NEL
pH, Lab	7.6	S.U.		Hold-03		N/A	N/A	Austin	10/04/19 12:24 KT	SM4500-H+ B 2011	M104292	DWP
Temperature @ pH Analysis	19.6	Deg. C				N/A	N/A	Austin	10/04/19 12:24 KT	SM4500-H+ B 2011	M104292	DWP
Specific Conductance (adjusted to 25.0°C)	808	uS/cm			2.00	2.00	2.00	Bryan	10/09/19 10:52 CJO	SM2510 B 2011	M104456	DWP,NEL
<b>Metals (Total)</b>												
Iron	0.245	mg/L			0.002	0.001	0.005	Bryan	10/11/19 16:50 PNS	EPA 200.7 R4.4	M104459	NEL
Manganese	7.67	ug/L		RPD-01	0.108	0.135	0.500	Bryan	10/17/19 12:20 MRG	EPA 200.8 R5.4	M104409	NEL
<b>General Chemistry</b>												
Sulfate as SO4	256	mg/L			0.01	3	3	Sub	10/07/19 17:24 ANA	EPA 300.0	SUB	NEL
Chloride	11.3	mg/L			0.01		3	Sub	10/07/19 17:24 ANA	EPA 300.0	SUB	NEL

**Explanation of Notes**

- Hold-03 This parameter was outside of EPA holding at the time the sample was received in the laboratory.
- J Analyte detected below the SQL but above the MDL.
- RPD-01 Duplicate RPD is outside acceptable range. Acceptance of run is not based on matrix QC.



**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/25/19**

**8:51**

**C032347**

General Chemistry - Quality Control													
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch	
<b>Fluoride - SM4500-F C 2011</b>													<i>Bryan</i>
Initial Cal Check	0.32	mg/L			10/08/19 14:15 PNS	0.356		91.0	90 - 110			1910086	
Blank	<0.10	mg/L	0.04	0.10	10/08/19 14:15 PNS							M104397	
LCS	0.73	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.798		91.9	90 - 110			M104397	
LCS Dup	0.73	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.798		91.9	90 - 110	0.00	6.23	M104397	
Matrix Spike	4.20	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.798	3.45	93.9	78.1 - 125			M104397	
Matrix Spike Dup	4.22	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.798	3.45	96.4	78.1 - 125	2.63	5.72	M104397	
MRL Check	<0.10	mg/L	0.04	0.10	10/08/19 14:15 PNS	0.0998		90.3	73.4 - 118			M104397	
<b>Nitrate/Nitrite as N - SM4500-NO3-F 2011</b>													<i>Bryan</i>
Initial Cal Check	1.27	mg/L			10/09/19 15:35 MRB	1.15		110	90 - 110			1910106	
Low Cal Check	0.02	mg/L			10/09/19 15:35 MRB	0.0200		115	70 - 130			1910106	
Blank	<0.02	mg/L	0.02	0.02	10/09/19 15:35 MRB							M104470	
LCS	0.52	mg/L	0.02	0.02	10/09/19 15:35 MRB	0.500		104	91.3 - 109			M104470	
LCS Dup	0.51	mg/L	0.02	0.02	10/09/19 15:35 MRB	0.500		101	91.3 - 109	3.14	6.8	M104470	
Matrix Spike	0.82	mg/L	0.02	0.02	10/09/19 15:35 MRB	0.500	0.28	109	94.1 - 111			M104470	
Matrix Spike Dup	0.82	mg/L	0.02	0.02	10/09/19 15:35 MRB	0.500	0.28	109	94.1 - 111	0.00	8.65	M104470	
<b>Nitrite as N - SM4500 NO2- B 2011</b>													<i>Austin</i>
Initial Cal Check	0.07	mg/L			05/29/19 12:06 KT	0.0725		102	90 - 110			1905274	
Blank	<0.01	mg/L	0.002	0.01	10/04/19 07:58 AEL							M104263	
LCS	0.08	mg/L	0.002	0.01	10/04/19 07:58 AEL	0.0800		98.3	90 - 110			M104263	
LCS Dup	0.08	mg/L	0.002	0.01	10/04/19 07:58 AEL	0.0800		97.9	90 - 110	0.448	8.12	M104263	
Matrix Spike	0.08	mg/L	0.002	0.01	10/04/19 07:58 AEL	0.0800	<0.01	94.3	70.6 - 117			M104263	
Matrix Spike Dup	0.07	mg/L	0.002	0.01	10/04/19 07:58 AEL	0.0800	<0.01	93.0	70.6 - 117	1.41	8.18	M104263	
MRL Check	0.01	mg/L	0.002	0.01	10/04/19 07:58 AEL	0.0100		100	70 - 130			M104263	
<b>pH, Lab - SM4500-H+ B 2011</b>													<i>Austin</i>
Duplicate	7.6	Std Units			10/04/19 12:24 KT		7.6			0.132	2.05	M104292	
Reference	6.9	Std Units			10/04/19 12:24 KT	6.86		100	95 - 105			M104292	
Reference	9.1	Std Units			10/04/19 12:24 KT	9.18		99.6	95 - 105			M104292	
Reference	6.9	Std Units			10/04/19 12:24 KT	6.86		101	95 - 105			M104292	
Reference	9.1	Std Units			10/04/19 12:24 KT	9.18		99.5	95 - 105			M104292	
<b>Specific Conductance (adjusted to 25.0°C) - SM2510 B 2011</b>													<i>Bryan</i>
Initial Cal Check	490	uS/cm			10/09/19 10:52 CJO	472		104	85 - 115			1910103	
Blank	<2.00	uS/cm	2.00	2.00	10/09/19 10:52 CJO							M104456	
Duplicate	1100	uS/cm	2.00	2.00	10/09/19 10:52 CJO		1110			0.0905	2	M104456	
LCS	1410	uS/cm	2.00	2.00	10/09/19 10:52 CJO	1410		99.9	90 - 110			M104456	

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/25/19**

**8:51**

**C032347**

General Chemistry - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Total Dissolved Solids - SM2540 C 2011</b>												<i>Bryan</i>
Blank	<25.0	mg/L	25.0	25.0	10/04/19 15:15 MRH							M104302
Duplicate	500	mg/L	50.0	50.0	10/04/19 15:15 MRH		490			2.02	9.13	M104302
Reference	452	mg/L	100	100	10/04/19 15:15 MRH	500		90.4	81 - 121			M104302
<b>Total Hardness (EDTA) as CaCO3 - SM2340 C 2011</b>												<i>Bryan</i>
Blank	<1.00	mg/L	1.00	1.00	10/09/19 11:12 MRH							M104463
Duplicate	2.00	mg/L	1.00	1.00	10/09/19 11:12 MRH		2.00			0.00	9.52	M104463
LCS	100	mg/L	1.00	1.00	10/09/19 11:12 MRH	100		100	90 - 110			M104463
LCS Dup	97.0	mg/L	1.00	1.00	10/09/19 11:12 MRH	100		97.0	90 - 110	3.05	6.47	M104463
Matrix Spike	102	mg/L	1.00	1.00	10/09/19 11:12 MRH	100	2.00	100	87.6 - 111			M104463
MRL Check	2.00	mg/L	1.00	1.00	10/09/19 11:12 MRH	4.00		50.0	50 - 150			M104463
Initial Cal Check	54.0	mg/L			10/10/19 09:43 MRH	54.4		99.3	85 - 115			1910120
Metals (Total) - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Iron - EPA 200.7 R4.4</b>												<i>Bryan</i>
Blank	<0.005	mg/L	0.001	0.005	10/11/19 16:33 PNS							M104459
LCS	0.454	mg/L	0.001	0.005	10/11/19 16:36 PNS	0.500		90.7	84.5 - 115.4			M104459
LCS Dup	0.470	mg/L	0.001	0.005	10/11/19 16:40 PNS	0.500		94.0	84.5 - 115.4	3.53	20	M104459
Duplicate	0.386	mg/L	0.001	0.005	10/11/19 16:43 PNS		0.402			3.92	20	M104459
Matrix Spike	0.883	mg/L	0.001	0.005	10/11/19 16:46 PNS	0.500	0.402	96.4	69.5 - 130.4			M104459
<b>Manganese - EPA 200.8 R5.4</b>												<i>Bryan</i>
Blank	<0.500	ug/L	0.135	0.500	10/17/19 10:28 MRG							M104409
LCS	5.29	ug/L	0.135	0.500	10/17/19 11:10 MRG	5.00		106	84.5 - 115.4			M104409
LCS Dup	5.58	ug/L	0.135	0.500	10/17/19 11:20 MRG	5.00		112	84.5 - 115.4	5.35	20	M104409
Matrix Spike	6.89	ug/L	0.135	0.500	10/17/19 11:40 MRG	5.00	3.14	74.9	69.5 - 130.4			M104409
Duplicate	2.24	ug/L	0.135	0.500	10/24/19 01:54 MRG		3.14			33.4	20	M104409
Preparation Procedures - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Turbidity - SM2130 B 2011</b>												<i>Bryan</i>
Initial Cal Check	6.1	NTU			10/02/19 10:00 MRH	6.55		92.8	90 - 110			1910020
Low Cal Check	1.1	NTU			10/02/19 10:00 MRH	1.02		110	70 - 130			1910020

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/25/19 8:51  
**C032347**

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
<b>C032347-01</b>										
Fluoride	SM4500-F C 2011	10/8/19 14:15 PNS	Bryan	A	25.0	mL	25.0	mL	1	M104397
Iron	EPA 200.7 R4.4	10/9/19 10:58 AKS	Bryan	C	50.0	mL	25.0	mL	1	M104459
Manganese	EPA 200.8 R5.4	10/8/19 13:10 AOG	Bryan	C	50.0	mL	25.0	mL	2.5	M104409
Nitrate/Nitrite as N	SM4500-NO3-F 2011	10/9/19 11:34 MRB	Bryan	E	10.0	mL	10.0	mL	1	M104470
Nitrite as N	SM4500 NO2- B 2011	10/4/19 7:58 AEL	Austin	D	25.0	mL	25.0	mL	1	M104263
pH, Lab	SM4500-H+ B 2011	10/4/19 12:24 KT	Austin	D	50.0	mL	50.0	mL	1	M104292
Sample Acidified to pH<2 in Lab	N/A	10/3/19 15:35 KK	Bryan	C	100	mL	100	mL	1	M104235
Specific Conductance (adjusted to 25.0°C)	SM2510 B 2011	10/9/19 10:52 CJO	Bryan	A	25.0	mL	25.0	mL	1	M104456
Temperature @ pH Analysis	SM4500-H+ B 2011	10/4/19 12:24 KT	Austin	D	50.0	mL	50.0	mL	1	M104292
Total Dissolved Solids	SM2540 C 2011	10/4/19 15:15 MRH	Bryan	A	50.0	mL	100	mL	1	M104302
Total Hardness (EDTA) as CaCO3	SM2340 C 2011	10/9/19 11:12 AKS	Bryan	C	50.0	mL	50.0	mL	1	M104463
Turbidity	SM2130 B 2011	10/4/19 8:59 MRH	Bryan	C	10.0	mL	10.0	mL	1	M104281
See sub-contract reports for preparation information of subcontracted analyses.										
<b>C032347-01RE1</b>										
Sample Acidified to pH<2 in Lab	N/A	10/3/19 15:35 KK	Bryan	E	100	mL	100	mL	1	M104242

**Bryan Lab:**   
 635 Phil Gramm Blvd.  
 Bryan, Texas 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193

**Austin Lab:**   
 7500 W. Hwy. 71, Suite 105  
 Austin, Texas 78735  
 Phone: (512) 301-9559  
 Email: corp@aquatechlabs.com

C-O-C # 295112



V-0023 R01

Chain-of-Custody & Analysis Request

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken	S - Solid	LAB USE ONLY (initials <i>PK</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. +	Analysis Requested	Cooler ID	Bottle pH	Sub-contract	Lab ID #	
24			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A	ret	-	-	C032370-01A	
MHTI #3	10-3-19 12:00	-	G	DW	1L	P	1	NO2 pH Cl Cond F Fe		-	Ana	C032371-01A	
MHTI #3	10-3-19 12:00							Hardness Mn NO3 JO4 TDS					
<i>MFEZKA</i>													

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<i>M. BELKEZ</i>	Date: 10-3-19 Time: 15:00	<i>MFEZ</i>	Date: Time:
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time:		Date: Time:
Relinquished by: (print & sign) <input type="checkbox"/> Client <input checked="" type="checkbox"/> ATL Field-arrival in Lab	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input checked="" type="checkbox"/> Received in Lab <i>Kelly Kukowski</i>	Sample Info "X" all that apply <input checked="" type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input checked="" type="checkbox"/> CTU * <input checked="" type="checkbox"/> Cond Good
	Date: Time:		Date: 10-5-19 Time: 1500

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone #:	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

+ Sample Pres.	pH Paper ID#:	1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	9 =	
		≤ 6 °C (not frozen)				

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>CK</i>	Temp °C: 5.7	CT	Therm ID: 0715570	Cooler ID:	Temp °C: /	CT	Therm ID:
----------------------	--------------	----	-------------------	------------	------------	----	-----------



Ana-Lab Corp.  
 P.O. Box 9000  
 Kilgore, TX 75663  
 903/984-0551

LELAP-accredited #02008

# Report

Table of Contents

Printed 10/10/2019 Page 1 of 1

Aqua-Tech Laboratories (Austin)  
 John Brien  
 635 Phil Gramm Blvd.  
 Bryan, TX 77807-9104

Account

**AQU5-C**

Project

**892786**

This report consists of this Table of Contents and the following pages:

<u>Report Name</u>	<u>Description</u>	<u>Pages</u>
892786_r03_03_ProjectResults	Ana-Lab Project P:892786 C:AQU5 Project Results t:304	1
892786_r03_06_ProjectTRRP	Ana-Lab Project P:892786 C:AQU5 Project TRRP Results Report for Class	2
892786_r10_05_ProjectQC	Ana-Lab Project P:892786 C:AQU5 Project Quality Control Groups	1
892786_r99_09_CoC__1_of_1	Ana-Lab CoC AQU5 892786_1_of_1	2

**Total Pages: 6**



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



NELAP-accredited #T104704201-19-15



# Results

Printed: 10/10/2019 21:21

Page 1 of 1  
892786

### Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

## Results

<b>1826417</b>	<b>C032347-01</b>					<i>Received:</i> 10/05/2019	
Drinking Water	<i>Collected by:</i> Client	Aqua-Tech Laboratori				<i>PO:</i>	
	<i>Taken:</i> 10/03/2019 12:00:00						
<i>EPA 300.0 2.1</i>	<i>Prepared:</i> 862716	10/07/2019	17:24:00	<i>Analyzed</i> 862716	10/07/2019	17:24:00	ATN
<i>Parameter</i>	<i>Results</i>	<i>Units</i>	<i>RL</i>	<i>Flag</i>	<i>CAS</i>	<i>Bottle</i>	
N Chloride	11.3	mg/L	3.00			01	
N Sulfate	256	mg/L	3.00			01	

### Qualifiers:

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column.

MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.

Bill Peery, MS, VP Technical Services





Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 10/10/2019

Page 1 of 2

# Results Summary

## Project

**892786**

Report To  
 Aqua-Tech Laboratories (Austin)  
 John Brien  
 635 Phil Gramm Blvd.  
 Bryan, TX 77807-9104

DW

CAS	Parameter	Results	MDL	SDL	MQL	MQLAdj	Flag	Units	Target	Bottle	Dilute
<b>Drinking Water</b>		<b>Ion Chromatography</b>				<b>EPA 300.0 2.1</b>					
<b>1826417</b>	<b>C032347-01</b>										
		Collection:	10/03/2019		12:00:00	Client			Received:	10/05/2019	
	Prepared:										
					Analyzed:	<b>862716</b>		10/7/19	17:24:00		
	Chloride	11.3	0.0053	0.053	0.300	3.00		mg/L	250	01	10.00
									Secondary Standard		
	Sulfate	256	0.00775	0.0775	0.300	3.00		mg/L	250	01	10.00
									Secondary Standard		

MDL is Method Detection Limit (40 CFR 136 Appendix B)

SDL is Sample Detection Limit and is the adjusted MDL (sample specific dilutions, dry weight)

MQL is the Method Quantitation Limit and corresponds to a low standard

MQLADJ is the Adjusted Method Quantitation Limit (dilutions, dry weight)

Qualifiers:

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation. These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 10/10/2019

Page 2 of 2

# Results Summary

## Project

**892786**

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

DW

Bill Peery, MS, VP Technical Services



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15





Quality Control

Printed 10/10/2019

Page 1 of 1

892786

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

Analytical Set **862716** EPA 300.0 2.1

Blank

Parameter	PrepSet	Reading	MDL	MDL	Units	File
Chloride	862716	0.129	0.0053	0.300	mg/L	120471516
Sulfate	862716	ND	0.00775	0.300	mg/L	120471516

CCV

Parameter	Reading	Known	Units	Recover%	Limits%	File
Chloride	10.3	10.0	mg/L	103	90.0 - 110	120471512
	10.5	10.0	mg/L	105	90.0 - 110	120471526
	10.3	10.0	mg/L	103	90.0 - 110	120471541
Sulfate	10.2	10.0	mg/L	102	90.0 - 110	120471512
	10.3	10.0	mg/L	103	90.0 - 110	120471526
	10.2	10.0	mg/L	102	90.0 - 110	120471541

LCS Dup

Parameter	PrepSet	LCS	LCSD	Known	Limits%	LCS%	LCSD%	Units	RPD	Limit%
Chloride	862716	4.97	5.04	5.00	85.0 - 110	99.4	101	mg/L	1.40	20.0
Sulfate	862716	5.02	5.06	5.00	88.0 - 110	100	101	mg/L	0.794	20.0

MSD

Parameter	Sample	MS	MSD	UNK	Known	Limits	MS%	MSD%	Units	RPD	Limit%
Chloride	1825671	190	190	144	50.0	80.0 - 120	92.0	92.0	mg/L	0	20.0
Sulfate	1825671	239	238	198	50.0	80.0 - 120	82.0	80.0	mg/L	2.47	20.0
Chloride	1825773	146	148	106	50.0	80.0 - 120	80.0	84.0	mg/L	4.88	20.0
Sulfate	1825773	184	184	138	50.0	80.0 - 120	92.0	92.0	mg/L	0	20.0

\* Out RPD is Relative Percent Difference:  $\text{abs}(r1-r2) / \text{mean}(r1,r2) * 100\%$

Recover% is Recovery Percent:  $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification



1  
2  
3  
4  
5



ATI - Boon Facility:  
635 Phil Gramm Blvd  
Spring, TX 77807  
(979) 778-3707  
Fax (979) 778-3193

ATI - Austin Facility:  
/500 Hwy 77 W, Suite 108  
Austin, TX 78735  
(512) 571-9559  
Fax (512) 307-9552

**SHIPPED TO:**  
Ana-Lab Corp. (NELAP Cert. T104704201)  
2600 Dudley Road  
Kilgore, TX 75662  
Phone: (903) 984-0551  
Fax: (903) 984-5914

**C-O-C #**  
114 - C032347



T104704371  
Page 1 of 1

**Chain-of-Custody & Analysis Request**

All analyses must be performed by a TML approved method certified by the TCEQ. Contact ATL's sample custodian via voice and email if your methods do not meet this criteria.

Analysis Request for: **Chloride - EPA 300.0** Sample ID: **C032347-01** Sampled: **10/03/19 12:00** Matrix: **Drinking Water**

Laboratory ID >> **182647**

**CONTAINERS SUPPLIED:** ( ) C032347-01 [B] - CI S04 0.5LP ( ) ATL Indicates cooler number in parentheses for each container - only required if more than one cooler listed below. )

Requisitioned by: (print & sign) <input checked="" type="checkbox"/> ATL/Analyte <input type="checkbox"/> ATL D/yan <input type="checkbox"/> Sample		Date	Time	<input checked="" type="checkbox"/> Used <input type="checkbox"/> Custody Sealed <input type="checkbox"/> Not Chilled	Sample title *X* at that apply	Abbreviations: D/W - Drinking Water NP - Non-Permeable Water S - Solid CU - Custody Transfer Uncovered SIF - Sterile Plastic LP - Luer Plastic LG - Luer Glass
Carrier & Tracking Number <b>Kelly Kukowski</b>		10/3/19	1215			
Lone Star Received by: (print & sign) <i>[Signature]</i>		Cooler 1: aqu5 - zY015PKS			5 DAY TAT	
Received by: (print & sign) <i>[Signature]</i>		Date	Time	<input checked="" type="checkbox"/> Resealable <input type="checkbox"/> Non-Resealable	Aqua-Tech Comments and Special Instructions  Please email reports to: corp@aquatechlabs.com Please return cooler(s) to: Austin Facility	
Line below documents condition at receipt in lab (shipped to) listed above.						
Cooler Temperature (C) Cooler 1 N/A	Temp. Read (TR) Corrected Temp. (CT) Thermometer ID N/A					

892786 CoC Print Group 001 of 001

10/17/2019

https://www2.iso.com/weblabels/?labelsize=0&combinedlabel=1&sessionkey=%7B467F740C700743495C084CC11F0C28D84%7D



Airbill No. ZY015PKS

LSO  
1-800-800-8984  
www.iso.com

SHIP TO:  
RECEIVING  
ANA LAB CORP  
2600 DUDLEY RD  
KILGORE, TX 75662  
9039840551

From:  
KELLY KUKOWSKI  
ACUA-TECH LABORATORIES, INC.  
7500 W HWY 71 SUITE 105  
AUSTIN, TX 78735  
5123019559



PRINT DATE: 10/1/2019  
QUICKCODE: WEIGHT: 35.00LBS  
REF 1: 1D03V.0000 REF 2:

Therm#: 6208 Corr Fact: 0.0  
Temp: 1.6 / 1.6 °C

Date: 10/4 Time: 0830 Tech: ET

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

# **Water Quality**

**Well No. 4**

Email information for report date:

10/2/19 12:44

C031260

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/2/19 12:44**

**C031260**

<b>MAJESTIC HILLS II NO4</b>		Collected: 09/24/19 11:00 by CLIENT Received: 09/24/19 16:00 by Kelly Kukowski						Type Grab	Matrix Drinking Water		C-O-C # 294952	
Lab ID#	C031260-01	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	

<b>Microbiological Analyses</b>												
Total Coliforms	Absent	N/A			N/A	N/A	N/A	Austin	09/24/19 16:35 JLL	SM9223 B 2004	M103821	NEL
Escherichia coli (E.coli)	Absent	N/A			N/A	N/A	N/A	Austin	09/24/19 16:35 JLL	SM9223 B 2004	M103821	NEL

<b>MAJESTIC HILLS II NO10</b>		Collected: 09/24/19 11:30 by CLIENT Received: 09/24/19 16:00 by Kelly Kukowski						Type Grab	Matrix Drinking Water		C-O-C # 294952	
Lab ID#	C031260-02	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	

<b>Microbiological Analyses</b>												
Total Coliforms	Absent	N/A			N/A	N/A	N/A	Austin	09/24/19 16:35 JLL	SM9223 B 2004	M103821	NEL
Escherichia coli (E.coli)	Absent	N/A			N/A	N/A	N/A	Austin	09/24/19 16:35 JLL	SM9223 B 2004	M103821	NEL

Microbiological Analyses - Quality Control											Log10 Comparison Control	
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	Range	Control Limit	Batch
<b>Escherichia coli (E.coli) - SM9223 B 2004</b>												Austin
Blank	Absent	N/A	N/A	N/A	09/24/19 16:35 JLL							M103821
<b>Total Coliforms - SM9223 B 2004</b>												Austin
Blank	Absent	N/A	N/A	N/A	09/24/19 16:35 JLL							M103821

Sample Preparation Summary											External Dilution Factor	Batch
Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units				
<b>C031260-01</b>												
Escherichia coli (E.coli)	SM9223 B 2004	9/24/19 16:34 JLL	Austin	A	100	mL	100	mL	1			M103821
Total Coliforms	SM9223 B 2004	9/24/19 16:34 JLL	Austin	A	100	mL	100	mL	1			M103821
<b>C031260-02</b>												
Escherichia coli (E.coli)	SM9223 B 2004	9/24/19 16:34 JLL	Austin	A	100	mL	100	mL	1			M103821
Total Coliforms	SM9223 B 2004	9/24/19 16:34 JLL	Austin	A	100	mL	100	mL	1			M103821



**Bryan Lab:**   
 635 Phil Gramm Blvd.  
 Bryan, Texas 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193

**Austin Lab:**   
 7500 W. Hwy. 71, Suite 105  
 Austin, Texas 78735  
 Phone: (512) 301-9559  
 Email: corp@aquatechlabs.com

C-O-C # 294952



V-0023 R01

**Chain-of-Custody & Analysis Request**

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken		S - Solid				LAB USE ONLY (Initials <i>KK</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. †	Analysis Requested		Cooler ID	Bottle pH	Sub-contract	Lab ID #				
MHI # 2/			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A									
" # 4/	9-24-19	11:00		DW	1L	P	1	pH Cl Cond Fe Hardness Sec 47 Mn NO3 NO2 SO4 TDS				Cl SO4 Ana	C031243-01A				
MHI # 4/	9-24-19	11:00	<del>Grab</del>	DW	0.12L	STP	1, 5	Bact.					01A C031240				
MHI # 10	9-24-19	11:30		DW	0.12L	STP	1, 5	Bact.					02A C031240				
<i>NFEK</i>																	

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<i>[Signature]</i>	Date: 9-24-19 Time: 16:40	<i>NFEK</i>	
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time:		
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Received in Lab	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good
	Date: Time:	Kelly Kukowski <i>[Signature]</i>	9/24/19 1600

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone # :	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

Sample Pres. †	pH Paper ID#: 1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>CC</i>	Temp °C: 10.6 / 10.6	CT	Therm ID: 0715570	Cooler ID:	Temp °C: /	CT	Therm ID:
----------------------	----------------------	----	-------------------	------------	------------	----	-----------

Email information for report date:

11/6/19 06:01

C031243

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

### Submission forms:

Due to updates by TCEQ, the submission form used for Drinking Water Revised Coliform Rule has been updated. Please contact us if you need a copy of this new Chain of Custody form.

Aqua-Tech values you as a customer and encourages you to speak with our sampling staff at 979-778-3707 option 2 or [samplingbryan@aqua-techlabs.com](mailto:samplingbryan@aqua-techlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

#### The following abbreviations indicate certification status:

NEL	TNI accredited parameter.
ANR	Accreditation not required by the State of Texas.
DWP	Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
INF	Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

#### General Definitions:

NR	Not Reported.
RPD	Relative Percent Difference.
% R	Percent Recovery.
dry	Results with the "dry" unit designation are reported on a "dry weight" basis.
SQL	The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
Adj MDL	The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
MDL	The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

#### Record Retention:

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aqua-techlabs.com](mailto:corp@aqua-techlabs.com)

[www.aqua-techlabs.com](http://www.aqua-techlabs.com)



TCEQ DW Lab ID TX 239



**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 11/6/19 6:01  
**C031243**

**MAJESTIC HILLS II NO4**

Collected: 09/24/19 11:00 by CLIENT  
 Received: 09/24/19 16:00 by Kelly Kukowski

Type: Grab  
 Matrix: Drinking Water  
 C-O-C #: 294952

Lab ID#	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
<b>General Chemistry</b>											
Total Dissolved Solids	1380	mg/L		25.0	50.0	50.0	Bryan	09/25/19 12:46 MRH	SM2540 C 2011	M103859	NEL
Nitrate as N (NO3N)	<0.0200	mg/L			0.0200	0.0200	Austin	10/01/19 13:19 JLL	SM4500-NO3-F 2011	[CALC]	NEL
Nitrite as N	<0.01	mg/L	J (0.002)	0.002	0.002	0.01	Austin	09/25/19 10:14 JLL	SM4500 NO2- B 2011	M103849	NEL
Nitrate/Nitrite as N	<0.02	mg/L		0.02	0.02	0.02	Bryan	10/01/19 13:19 MRB	SM4500-NO3-F 2011	M104095	INF
Total Hardness (EDTA) as CaCO3	980	mg/L		1.00	1.00	1.00	Bryan	10/03/19 10:26 MRH	SM2340 C 2011	M104215	NEL
Fluoride	0.94	mg/L		0.04	0.04	0.10	Bryan	10/01/19 13:42 PNS	SM4500-F C 2011	M104093	NEL
pH, Lab	7.3	S.U.	Hold-03		N/A	N/A	Austin	09/27/19 09:30 MSA	SM4500-H+ B 2011	M103978	DWP
Temperature @ pH Analysis	21.1	Deg. C			N/A	N/A	Austin	09/27/19 09:30 MSA	SM4500-H+ B 2011	M103978	DWP
Specific Conductance (adjusted to 25.0°C)	1610	uS/cm		2.00	2.40	2.40	Bryan	09/26/19 13:24 CJO	SM2510 B 2011	M103944	DWP,NEL
<b>Metals (Total)</b>											
Iron	0.062	mg/L		0.002	0.001	0.005	Bryan	10/01/19 20:47 PNS	EPA 200.7 R4.4	M103946	NEL
Manganese	1.75	ug/L	RPD-01	0.108	0.135	0.625	Bryan	10/02/19 19:32 MRG	EPA 200.8 R5.4	M104100	NEL
<b>General Chemistry</b>											
Sulfate as SO4	624	mg/L		0.01	30	30	Sub	09/27/19 20:59 ANA	EPA 300.0	SUB	NEL
Chloride	14.7	mg/L	D*	0.02		3	Sub	09/26/19 09:59 ANA	EPA 300.0	SUB	NEL

**Explanation of Notes**

- D\* Duplicate RPD was higher than expected
- Hold-03 This parameter was outside of EPA holding at the time the sample was received in the laboratory.
- J Analyte detected below the SQL but above the MDL.
- RPD-01 Duplicate RPD is outside acceptable range. Acceptance of run is not based on matrix QC.

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**11/6/19 6:01**

**C031243**

General Chemistry - Quality Control													
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch	
<b>Fluoride - SM4500-F C 2011</b>													<i>Bryan</i>
Initial Cal Check	0.34	mg/L			10/01/19 13:42 PNS	0.356		95.5	90 - 110			1910003	
Blank	<0.10	mg/L	0.04	0.10	10/01/19 13:42 PNS							M104093	
LCS	0.77	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.798		96.9	90 - 110			M104093	
LCS Dup	0.78	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.798		97.7	90 - 110	0.772	6.23	M104093	
Matrix Spike	3.14	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.798	2.35	98.9	78.1 - 125			M104093	
Matrix Spike Dup	3.14	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.798	2.35	98.9	78.1 - 125	0.00	5.72	M104093	
MRL Check	<0.10	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.0998		90.7	73.4 - 118			M104093	
<b>Nitrate/Nitrite as N - SM4500-NO3-F 2011</b>													<i>Bryan</i>
Initial Cal Check	1.23	mg/L			10/01/19 13:19 MRB	1.15		107	90 - 110			1910005	
Low Cal Check	0.02	mg/L			10/01/19 13:19 MRB	0.0200		118	70 - 130			1910005	
Blank	<0.02	mg/L	0.02	0.02	10/01/19 13:19 MRB							M104095	
LCS	0.50	mg/L	0.02	0.02	10/01/19 13:19 MRB	0.500		99.9	91.3 - 109			M104095	
LCS Dup	0.50	mg/L	0.02	0.02	10/01/19 13:19 MRB	0.500		99.5	91.3 - 109	0.326	6.8	M104095	
Matrix Spike	0.59	mg/L	0.02	0.02	10/01/19 13:19 MRB	0.500	0.06	107	94.1 - 111			M104095	
Matrix Spike Dup	0.58	mg/L	0.02	0.02	10/01/19 13:19 MRB	0.500	0.06	105	94.1 - 111	1.88	8.65	M104095	
<b>Nitrite as N - SM4500 NO2- B 2011</b>													<i>Austin</i>
Initial Cal Check	0.07	mg/L			05/29/19 12:06 KT	0.0725		102	90 - 110			1905274	
Blank	<0.01	mg/L	0.002	0.01	09/25/19 10:14 JLL							M103849	
LCS	0.08	mg/L	0.002	0.01	09/25/19 10:14 JLL	0.0800		106	90 - 110			M103849	
LCS Dup	0.09	mg/L	0.002	0.01	09/25/19 10:14 JLL	0.0800		109	90 - 110	2.45	8.12	M103849	
Matrix Spike	0.08	mg/L	0.002	0.01	09/25/19 10:14 JLL	0.0800	0.002	95.7	70.6 - 117			M103849	
Matrix Spike Dup	0.08	mg/L	0.002	0.01	09/25/19 10:14 JLL	0.0800	0.002	94.8	70.6 - 117	0.924	8.18	M103849	
MRL Check	0.01	mg/L	0.002	0.01	09/25/19 10:14 JLL	0.0100		114	70 - 130			M103849	
<b>pH, Lab - SM4500-H+ B 2011</b>													<i>Austin</i>
Duplicate	7.6	Std Units	<i>Hold-03</i>		09/27/19 09:30 MSA		7.6			0.262	2.05	M103978	
Reference	7.0	Std Units			09/27/19 09:30 MSA	6.86		101	95 - 105			M103978	
Reference	9.0	Std Units			09/27/19 09:30 MSA	9.18		98.6	95 - 105			M103978	
Reference	7.0	Std Units			09/27/19 09:30 MSA	6.86		102	95 - 105			M103978	
Reference	9.2	Std Units			09/27/19 09:30 MSA	9.18		99.8	95 - 105			M103978	
<b>Specific Conductance (adjusted to 25.0°C) - SM2510 B 2011</b>													<i>Bryan</i>
Initial Cal Check	479	uS/cm			09/26/19 13:24 CJO	472		101	85 - 115			1909272	
Blank	<2.00	uS/cm	2.00	2.00	09/26/19 13:24 CJO							M103944	
Duplicate	427	uS/cm	2.00	2.00	09/26/19 13:24 CJO		430			0.700	2	M103944	
LCS	1430	uS/cm	2.00	2.00	09/26/19 13:24 CJO	1410		101	90 - 110			M103944	

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**11/6/19 6:01**

**C031243**

**General Chemistry - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Total Dissolved Solids - SM2540 C 2011</b>												<i>Bryan</i>
Blank	<25.0	mg/L	25.0	25.0	09/25/19 12:46 MRH							M103859
Duplicate	294	mg/L	50.0	50.0	09/25/19 12:46 MRH		292			0.683	9.13	M103859
Reference	560	mg/L	100	100	09/25/19 12:46 MRH	500		112	81 - 121			M103859
<b>Total Hardness (EDTA) as CaCO3 - SM2340 C 2011</b>												<i>Bryan</i>
Blank	<1.00	mg/L	1.00	1.00	10/03/19 10:26 MRH							M104215
Duplicate	980	mg/L	1.00	1.00	10/03/19 10:26 MRH		980			0.00	9.52	M104215
LCS	99.0	mg/L	1.00	1.00	10/03/19 10:26 MRH	100		99.0	90 - 110			M104215
LCS Dup	98.0	mg/L	1.00	1.00	10/03/19 10:26 MRH	100		98.0	90 - 110	1.02	6.47	M104215
Matrix Spike	1080	mg/L	1.00	1.00	10/03/19 10:26 MRH	100	980	100	87.6 - 111			M104215
MRL Check	2.00	mg/L	1.00	1.00	10/03/19 10:26 MRH	4.00		50.0	50 - 150			M104215
Initial Cal Check	60.0	mg/L			10/04/19 08:11 MRH	54.4		110	85 - 115			1910060

**Metals (Total) - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Iron - EPA 200.7 R4.4</b>												<i>Bryan</i>
Blank	<0.005	mg/L	0.001	0.005	10/01/19 20:27 PNS							M103946
LCS	0.466	mg/L	0.001	0.005	10/01/19 20:30 PNS	0.500		93.1	84.5 - 115.4			M103946
LCS Dup	0.486	mg/L	0.001	0.005	10/01/19 20:33 PNS	0.500		97.1	84.5 - 115.4	4.19	20	M103946
Duplicate	0.170	mg/L	0.001	0.005	10/01/19 20:37 PNS		0.186			8.90	20	M103946
Matrix Spike	0.609	mg/L	0.001	0.005	10/01/19 20:40 PNS	0.500	0.186	84.5	69.5 - 130.4			M103946

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**11/6/19 6:01**

**C031243**

**Metals (Total) - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Manganese - EPA 200.8 R5.4</b>												<i>Bryan</i>
Blank	<0.625	ug/L	0.135	0.625	10/08/19 15:03 MRG							M104100
LCS	5.24	ug/L	0.135	0.625	10/08/19 15:14 MRG	5.00		105	84.5 - 115.4			M104100
LCS Dup	4.86	ug/L	0.135	0.625	10/08/19 15:25 MRG	5.00		97.2	84.5 - 115.4	7.48	20	M104100
Duplicate	1.68	ug/L	0.135	0.625	10/08/19 15:36 MRG		1.14			38.3	20	M104100
Matrix Spike	6.73	ug/L	0.135	0.625	10/08/19 15:47 MRG	5.00	1.14	112	69.5 - 130.4			M104100
Blank	This result is not reported.	ug/L	0.135	0.625	10/25/19 14:14 MRG							M105007
LCS	This result is not reported.	ug/L	0.135	0.625	10/25/19 14:24 MRG	5.00		77.9	84.5 - 115.4			M105007
LCS Dup	This result is not reported.	ug/L	0.135	0.625	10/25/19 14:34 MRG	5.00		78.8	84.5 - 115.4	1.06	20	M105007
Duplicate	This result is not reported.	ug/L	1.35	6.25	10/25/19 14:44 MRG		119			51.5	20	M105007
Matrix Spike	This result is not reported.	ug/L	1.35	6.25	10/25/19 15:28 MRG	50.0	119	-3.97	69.5 - 130.4			M105007

**Preparation Procedures - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Turbidity - SM2130 B 2011</b>												<i>Bryan</i>

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**11/6/19 6:01**

**C031243**

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
<b>C031243-01</b>										
Fluoride	SM4500-F C 2011	10/1/19 10:32 PNS	Bryan	A	10.0	mL	10.0	mL	1	M104093
Iron	EPA 200.7 R4.4	9/26/19 14:13 PNS	Bryan	C	50.0	mL	25.0	mL	1	M103946
Manganese	EPA 200.8 R5.4	10/1/19 12:45 AOG	Bryan	C	50.0	mL	25.0	mL	2.5	M104100
Nitrate/Nitrite as N	SM4500-NO3-F 2011	10/1/19 11:09 MRB	Bryan	E	10.0	mL	10.0	mL	1	M104095
Nitrite as N	SM4500 NO2- B 2011	9/25/19 10:14 JLL	Austin	D	25.0	mL	25.0	mL	1	M103849
pH, Lab	SM4500-H+ B 2011	9/27/19 9:30 MSA	Austin	D	50.0	mL	50.0	mL	1	M103978
Sample Acidified to pH<2 in Lab	N/A	9/24/19 16:20 KK	Bryan	E	100	mL	100	mL	1	M103856
Specific Conductance (adjusted to 25.0°C)	SM2510 B 2011	9/26/19 13:24 CJO	Bryan	A	25.0	mL	30.0	mL	1	M103944
Temperature @ pH Analysis	SM4500-H+ B 2011	9/27/19 9:30 MSA	Austin	D	50.0	mL	50.0	mL	1	M103978
Total Dissolved Solids	SM2540 C 2011	9/25/19 12:46 MRH	Bryan	A	50.0	mL	100	mL	1	M103859
Total Hardness (EDTA) as CaCO3	SM2340 C 2011	10/3/19 10:26 AKS	Bryan	C	50.0	mL	50.0	mL	1	M104215
Turbidity	SM2130 B 2011	9/25/19 20:39 RNH	Bryan	C	10.0	mL	10.0	mL	1	M103898
See sub-contract reports for preparation information of subcontracted analyses.										
<b>C031243-01RE1</b>										
Manganese	EPA 200.8 R5.4	10/22/19 15:56 AOG	Bryan	C	50.0	mL	25.0	mL	2.5	M105007
Sample Acidified to pH<2 in Lab	N/A	9/24/19 16:20 KK	Bryan	C	100	mL	100	mL	1	M103855
<b>C031243-01RE2</b>										
Sample Acidified to pH<2 in Lab	N/A	10/1/19 10:16 CRO	Bryan	F	250	mL	250	mL	1	M104090



**Bryan Lab:**   
 635 Phil Gramm Blvd.  
 Bryan, Texas 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193

**Austin Lab:**   
 7500 W. Hwy. 71, Suite 105  
 Austin, Texas 78735  
 Phone: (512) 301-9559  
 Email: corp@aquatechlabs.com

C-O-C # 294952



V-0023 R01

**Chain-of-Custody & Analysis Request**

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken		S - Solid				LAB USE ONLY (Initials <i>KK</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. †	Analysis Requested		Cooler ID	Bottle pH	Sub-contract	Lab ID #				
MHI # 2/			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A									
" # 4/	9-24-19	11:00		DW	1L	P	1	pH Cl Cond Fe Hardness Sec 47 Mn NO3 NO2 SO4 TDS					031243-01A				
MHI # 4/	9-24-19	11:00	<del>Grab</del>	DW	0.12L	STP	1, 5	Bact.					01A 031240				
MHI # 10	9-24-19	11:30		DW	0.12L	STP	1, 5	Bact.					02A				
<i>NFEK</i>																	

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<i>[Signature]</i>	Date: 9-24-19 Time: 16:40	<i>NFEK</i>	
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time:		
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Received in Lab	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good
	Date: Time:	Kelly Kukowski <i>[Signature]</i>	9/24/19 1600

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone # :	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

Sample Pres. †	pH Paper ID#:	1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
		≤ 6 °C (not frozen)				
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>02</i>	Temp °C: 10.6 / 10.6	CT	Therm ID: 0715570	Cooler ID:	Temp °C: /	CT	Therm ID:
----------------------	----------------------	----	-------------------	------------	------------	----	-----------



Ana-Lab Corp.  
 P.O. Box 9000  
 Kilgore, TX 75663  
 903/984-0551

LELAP-accredited #02008

# Report

Table of Contents

Printed 10/02/2019 Page 1 of 1

Aqua-Tech Laboratories (Austin)  
 John Brien  
 635 Phil Gramm Blvd.  
 Bryan, TX 77807-9104

Account

**AQU5-C**

Project

**891353**

## C031243

This report consists of this Table of Contents and the following pages:

<u>Report Name</u>	<u>Description</u>	<u>Pages</u>
891353_r03_03_ProjectResults	Ana-Lab Project P:891353 C:AQU5 Project Results t:304	2
891353_r03_06_ProjectTRRP	Ana-Lab Project P:891353 C:AQU5 Project TRRP Results Report for Class	2
891353_r10_05_ProjectQC	Ana-Lab Project P:891353 C:AQU5 Project Quality Control Groups	1
891353_r99_09_CoC__1_of_1	Ana-Lab CoC AQU5 891353_1_of_1	2
<b>Total Pages:</b>		<b>7</b>



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



NELAP-accredited #T104704201-19-15



# Results

Printed: 10/02/2019 13:04

Page 1 of 2  
891353

**Report To**

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

C031243

Account  
**AQU5-C**

## Results

<b>1822958</b>	<b>C031243-01</b>					<i>Received:</i> 09/25/2019		
Drinking Water	<i>Collected by:</i> Client	Aqua-Tech Laboratori				<i>PO:</i>		
	<i>Taken:</i> 09/24/2019 11:00:00							
<hr/>								
<i>EPA 300.0 2.1</i>	<i>Prepared:</i> 860805	09/26/2019	09:59:00	<i>Analyzed</i> 860805	09/26/2019	09:59:00	ATN	
<i>Parameter</i>	<i>Results</i>	<i>Units</i>	<i>RL</i>	<i>Flag</i>	<i>CAS</i>	<i>Bottle</i>		
N Chloride	14.7	mg/L	3.00	D		01		
<hr/>								
<i>EPA 300.0 2.1</i>	<i>Prepared:</i> 861020	09/27/2019	20:59:00	<i>Analyzed</i> 861020	09/27/2019	20:59:00	AMB	
<i>Parameter</i>	<i>Results</i>	<i>Units</i>	<i>RL</i>	<i>Flag</i>	<i>CAS</i>	<i>Bottle</i>		
N Sulfate	624	mg/L	30.0			01		

Qualifiers:

D - Duplicate RPD was higher than expected

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column.

MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.







# Results

Printed: 10/02/2019 13:04

*Bill Peery*

Bill Peery, MS, VP Technical Services



- 1
- 2
- 3
- 4
- 5



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 10/02/2019

Page 1 of 2

# Results Summary

## Project

**891353**

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

C031243

CAS	Parameter	Results	MDL	SDL	MQL	MQLAdj	Flag	Units	Target	Bottle	Dilute
<b>Drinking Water</b>		<b>Ion Chromatography</b>				<b>EPA 300.0 2.1</b>					
<b>1822958</b>	<b>C031243-01</b>										
		Collection:	09/24/2019		11:00:00	Client			Received:	09/25/2019	
	Prepared:	<b>860805</b>									
	Chloride	14.7	0.0196	0.196	0.300	3.00	D	mg/L	250	01	10.00
									Secondary Standard		
	Prepared:	<b>861020</b>									
	Sulfate	624	0.0109	1.09	0.300	30.0		mg/L	250	01	100.00
									Secondary Standard		

MDL is Method Detection Limit (40 CFR 136 Appendix B)

MQL is the Method Quantitation Limit and corresponds to a low standard

Qualifiers:

D - Duplicate RPD was higher than expected

SDL is Sample Detection Limit and is the adjusted MDL (sample specific dilutions, dry weight)

MQLADJ is the Adjusted Method Quantitation Limit (dilutions, dry weight)

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation. These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 10/02/2019

Page 2 of 2

# Results Summary

## Project

**891353**

C031243

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Bill Peery, MS, VP Technical Services



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15



Quality Control

Printed 10/02/2019

Page 1 of 1

891353

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

Analytical Set **860805** EPA 300.0 2.1

Blank

Parameter	PrepSet	Reading	MDL	SQL	Units	File
Chloride	860805	0.041	0.0196	0.300	mg/L	120424398

CCV

Parameter	Reading	Known	Units	Recover%	Limits%	File
Chloride	9.98	10.0	mg/L	99.8	90.0 - 110	120424394
	9.89	10.0	mg/L	98.9	90.0 - 110	120424408
	9.86	10.0	mg/L	98.6	90.0 - 110	120424419

LCS Dup

Parameter	PrepSet	LCS	LCSD	Known	Limits%	LCS%	LCSD%	Units	RPD	Limit%
Chloride	860805	5.07	5.08	5.00	85.0 - 110	101	102	mg/L	0.197	20.0

MSD

Parameter	Sample	MS	MSD	UNK	Known	Limits	MS%	MSD%	Units	RPD	Limit%
Chloride	1822958	26.5	23.1	14.7	10.0	80.0 - 120	118	84.0	mg/L	33.7 *	20.0
	1822964	48.4	48.2	39.6	10.0	80.0 - 120	88.0	86.0	mg/L	2.30	20.0

Analytical Set **861020** EPA 300.0 2.1

Blank

Parameter	PrepSet	Reading	MDL	SQL	Units	File
Sulfate	861020	ND	0.0109	0.300	mg/L	120431067

CCV

Parameter	Reading	Known	Units	Recover%	Limits%	File
Sulfate	10.5	10.0	mg/L	105	90.0 - 110	120431064
	9.97	10.0	mg/L	99.7	90.0 - 110	120431079
	10.1	10.0	mg/L	101	90.0 - 110	120431091

LCS Dup

Parameter	PrepSet	LCS	LCSD	Known	Limits%	LCS%	LCSD%	Units	RPD	Limit%
Sulfate	861020	5.00	5.02	5.00	88.0 - 110	100	100	mg/L	0.399	20.0

MSD

Parameter	Sample	MS	MSD	UNK	Known	Limits	MS%	MSD%	Units	RPD	Limit%
Sulfate	1822969	32.5	32.3	22.7	10.0	80.0 - 120	98.0	96.0	mg/L	2.06	20.0
	1823917	184	183	138	50.0	80.0 - 120	92.0	90.0	mg/L	2.20	20.0

\* Out RPD is Relative Percent Difference:  $\text{abs}(r1-r2) / \text{mean}(r1,r2) * 100\%$

Recover% is Recovery Percent:  $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification





ATL - Bryan Facility:  
535 Full Gentry Blvd.  
Bryan, TX 77807  
(979) 778-3707  
Fax (979) 778-3193

ATL - Austin Facility:  
7500 Hwy 71 W, Suite 135  
Austin, TX 78735  
(512) 301-9559  
Fax (512) 301-9552

**SHIPPED TO:**  
Ana-Lab Corp. (NELAP Cert. T104704201)  
2600 Dudley Road  
Kilgore, TX 75682  
Phone: (903) 984-0551  
Fax: (903) 984-5914

**C-O-C #**  
**142 - C031243**



**Chain-of-Custody & Analysis Request**

All analyses must be performed by a TNI approved method certified by the TCEQ. Contact ATL's sample custodian via voice and email if your methods do not meet this criteria.

Analysis Request for: **Sample ID: C031243-01** Sampled: 09/24/19 11:00 Matrix: Drinking Water Laboratory ID >> **1827958**  
 Chloride - EPA 300.0 SO4 DW - EPA 300.0  
**CONTAINERS SUPPLIED:** ( ) C031243-01 [B] - CI S04 0.5LP (ATL indicates cooler number in parentheses for each container - only required if more than one cooler listed below.)

Retrieved by: (print & sign) <input checked="" type="checkbox"/> ATL-Austin <input type="checkbox"/> ATL-Bryan <input type="checkbox"/> Sample		Date	Time	Line	Sample info <input type="checkbox"/> Custody Sealed <input type="checkbox"/> Not Chilled	Abbreviations: DW - Drinking Water NP - Non-hazardous Water S - Solid OTU - Custody Transfer Outbreak LG - Liter Glass SIP - Sterile Plastic LP - Liter Plastic LG - Liter Glass
Carrier & Tracking Number: Kelly Kukowski Lone Star		9/24/19	1630	1630	Sample info *X* all req apply Condition Code Not Filled Code	
Received by: (print & sign) <input checked="" type="checkbox"/> Reseller in Lab Kelly Overman 47241314		Date	Time	Aqua-Tech Comments and Special Instructions 5 DAY TAT See Attached for Tracking # and Temp		
Line below documents condition at receipt in lab (shipped to) listed above. Cooler Temperature (C) Temp Rise (F) Corrected Temp (C) Titration ID		Please email reports to: corp@aquatechlabs.com Please return coolers to: Austin Facility				
Cooler 1		N/A				
Cooler 2		N/A				

1  
2  
3  
4  
5

2 of 2

891353 CoC Print Group 001 of 001

9/19/2019

https://www.iso.com/web/labels/?labelSize=0&combinedLabel=1&sessionkey=%7B59618C00-1A00-47DF-B795-5A7FF9321522%7D



Airbill No. ZY014MUH

LSO  
1-800-800-8984  
www.iso.com

SHIP TO:  
RECEIVING  
ANA LAB CORP  
2600 DUDLEY RD  
KILGORE, TX 75662  
9039840551

From:  
K KUKOWSKI  
AQUA-TECH LABORATORIES, INC.  
7509 W HWY 71 SUITE 105  
AUSTIN, TX 78735  
5123019559



LSO GROUND  
END OF BUSINESS DAY DELIVERY

PRINT DATE: 9/19/2019  
QUICKCODE: WEIGHT: 35.00LBS  
REF 1: 1D00V.0000 REF 2:



Therm#: 6444 Corr Fact: 0.1  
Temp: 10/11.5 °C  
Date: 9/25 Time: 08:20 Tech: RW

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

# **Water Quality**

**Well No. 6**

Email information for report date:

10/2/19 11:58

C031486

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)



**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/2/19 11:58  
**C031486**

**MAJESTIC HILLS II NO6**

Collected: 09/26/19 12:00 by CLIENT  
 Received: 09/26/19 15:50 by Kelly Kukowski

Type  
 Grab

Matrix  
 Drinking Water

C-O-C #  
 295032

Lab ID#	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
C031486-01											
<b>Microbiological Analyses</b>											
<b>Total Coliforms</b>	<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	09/26/19 16:21 JLL	SM9223 B 2004	M103953	NEL
<b>Escherichia coli (E.coli)</b>	<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	09/26/19 16:21 JLL	SM9223 B 2004	M103953	NEL

**Microbiological Analyses - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	Log10 Comparison Control Limit	Batch
<b>Escherichia coli (E.coli) - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	09/26/19 15:33 JLL						M103953
<b>Total Coliforms - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	09/26/19 15:33 JLL						M103953

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch	
<b>C031486-01</b>											
Escherichia coli (E.coli)	SM9223 B 2004	9/26/19 16:20 JLL	Austin	A	100	mL	100	mL	1	M103953	
Total Coliforms	SM9223 B 2004	9/26/19 16:20 JLL	Austin	A	100	mL	100	mL	1	M103953	



Chain-of-Custody & Analysis Request

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken	S - Solid	LAB USE ONLY (Initials <i>KL</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. †	Analysis Requested		Cooler ID	Bottle pH	Sub-contract	Lab ID #
<i>MHT # 6</i>	<i>9-26-19 12:00</i>		Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A		<i>cel</i>	-	-	<i>03148601A</i>
<i>MHT # 6</i>	<i>9-26-19 12:00</i>		<i>G</i>	<i>DW</i>	<i>1L</i>	<i>P</i>	<i>1</i>	<i>NO2 NO3 pH Cl Cond F Fe Hardness Mn SO4 TDS</i>			-	<i>Ana</i>	<i>031487-01A</i>
<i>APEX</i>													

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<i>[Signature]</i>	Date: <i>9-26-19</i> Time: <i>15:50</i>	<i>[Signature]</i>	Date: Time:
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time:		Date: Time:
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input checked="" type="checkbox"/> Received in Lab	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good
	Date: Time:	<i>Kelly Kukowski</i>	Date: <i>9/26/19</i> Time: <i>1550</i>

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone #:	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

Sample Pres. †	pH Paper ID#: 1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	≤ 6 °C (not frozen)				
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>cel</i>	Temp °C: <i>11.1</i>	CT: <i>11.1</i>	Therm ID: <i>0715570</i>	Cooler ID:	Temp °C: <i>/</i>	CT:	Therm ID:
-----------------------	----------------------	-----------------	--------------------------	------------	-------------------	-----	-----------

Email information for report date:

10/15/19 09:20

C031487

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

### CORPORATE OFFICE

635 Phil Gramm Boulevard

Bryan, TX 77807

Phone: (979) 778-3707

Fax: (979) 778-3193



### AUSTIN OFFICE

7500 Hwy 71 W, Suite 105

Austin, TX 78735

Phone: (512) 301-9559

Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

#### The following abbreviations indicate certification status:

NEL	TNI accredited parameter.
ANR	Accreditation not required by the State of Texas.
DWP	Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
INF	Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

#### General Definitions:

NR	Not Reported.
RPD	Relative Percent Difference.
% R	Percent Recovery.
dry	Results with the "dry" unit designation are reported on a "dry weight" basis.
SQL	The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
Adj MDL	The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
MDL	The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

#### Record Retention:

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/15/19 9:20  
**C031487**

The following notes apply to Work Order **C031487**

Please see the attached sub-contract report for sub-contracted data and qualifier definitions.

MAJESTIC HILLS II NO6		Collected: 09/26/19 12:00 by CLIENT Received: 09/26/19 15:50 by Kelly Kukowski					Type Grab	Matrix Drinking Water		C-O-C # 295032	
Lab ID#	C031487-01	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch
<b>General Chemistry</b>											
Total Dissolved Solids	474	mg/L			25.0	50.0	50.0	Bryan	10/02/19 14:02 MRH	SM2540 C 2011	M104156 NEL
Nitrate as N (NO3N)	<0.0200	mg/L				0.0200	0.0200	Austin	10/01/19 13:19 AEL	SM4500-NO3-F 2011	[CALC] NEL
Nitrite as N	<0.01	mg/L		J (0.002)	0.002	0.002	0.01	Austin	09/27/19 07:53 AEL	SM4500 NO2- B 2011	M103965 NEL
Nitrate/Nitrite as N	0.02	mg/L			0.02	0.02	0.02	Bryan	10/01/19 13:19 MRB	SM4500-NO3-F 2011	M104095 INF
Total Hardness (EDTA) as CaCO3	400	mg/L			1.00	2.00	2.00	Bryan	10/04/19 08:11 MRH	SM2340 C 2011	M104271 NEL
Fluoride	1.94	mg/L			0.04	0.04	0.10	Bryan	10/01/19 13:42 PNS	SM4500-F C 2011	M104093 NEL
pH, Lab	7.6	S.U.		Hold-03		N/A	N/A	Austin	09/27/19 09:30 MSA	SM4500-H+ B 2011	M103978 DWP
Temperature @ pH Analysis	19.3	Deg. C				N/A	N/A	Austin	09/27/19 09:30 MSA	SM4500-H+ B 2011	M103978 DWP
Specific Conductance (adjusted to 25.0°C)	679	uS/cm			2.00	2.00	2.00	Bryan	10/03/19 12:11 CJO	SM2510 B 2011	M104230 DWP,NEL
<b>Metals (Total)</b>											
Iron	0.149	mg/L			0.002	0.002	0.010	Bryan	10/11/19 15:37 PNS	EPA 200.7 R4.4	M104453 NEL
Manganese	3.57	ug/L		ICP-4X	0.108	0.111	0.515	Bryan	10/03/19 08:26 MRG	EPA 200.8 R5.4	M104061 NEL
<b>General Chemistry</b>											
Sulfate as SO4	127	mg/L		P*, D*	0.01	3	3	Sub	09/28/19 02:20 ANA	EPA 300.0	SUB NEL
Chloride	11.1	mg/L			0.02		3	Sub	09/28/19 02:20 ANA	EPA 300.0	SUB NEL

**Explanation of Notes**

- D\* [Undefined]
- Hold-03 This parameter was outside of EPA holding at the time the sample was received in the laboratory.
- ICP-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- J Analyte detected below the SQL but above the MDL.
- P\* [Undefined]

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed: 10/15/19 9:20**  
**C031487**

General Chemistry - Quality Control													
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch	
<b>Fluoride - SM4500-F C 2011</b>													<i>Bryan</i>
Initial Cal Check	0.34	mg/L			10/01/19 13:42 PNS	0.356		95.5	90 - 110			1910003	
Blank	<0.10	mg/L	0.04	0.10	10/01/19 13:42 PNS							M104093	
LCS	0.77	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.798		96.9	90 - 110			M104093	
LCS Dup	0.78	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.798		97.7	90 - 110	0.772	6.23	M104093	
Matrix Spike	3.14	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.798	2.35	98.9	78.1 - 125			M104093	
Matrix Spike Dup	3.14	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.798	2.35	98.9	78.1 - 125	0.00	5.72	M104093	
MRL Check	<0.10	mg/L	0.04	0.10	10/01/19 13:42 PNS	0.0998		90.7	73.4 - 118			M104093	
<b>Nitrate/Nitrite as N - SM4500-NO3-F 2011</b>													<i>Bryan</i>
Initial Cal Check	1.23	mg/L			10/01/19 13:19 MRB	1.15		107	90 - 110			1910005	
Low Cal Check	0.02	mg/L			10/01/19 13:19 MRB	0.0200		118	70 - 130			1910005	
Blank	<0.02	mg/L	0.02	0.02	10/01/19 13:19 MRB							M104095	
LCS	0.50	mg/L	0.02	0.02	10/01/19 13:19 MRB	0.500		99.9	91.3 - 109			M104095	
LCS Dup	0.50	mg/L	0.02	0.02	10/01/19 13:19 MRB	0.500		99.5	91.3 - 109	0.326	6.8	M104095	
Matrix Spike	0.59	mg/L	0.02	0.02	10/01/19 13:19 MRB	0.500	0.06	107	94.1 - 111			M104095	
Matrix Spike Dup	0.58	mg/L	0.02	0.02	10/01/19 13:19 MRB	0.500	0.06	105	94.1 - 111	1.88	8.65	M104095	
<b>Nitrite as N - SM4500 NO2- B 2011</b>													<i>Austin</i>
Initial Cal Check	0.07	mg/L			05/29/19 12:06 KT	0.0725		102	90 - 110			1905274	
Blank	<0.01	mg/L	0.002	0.01	09/27/19 07:53 AEL							M103965	
LCS	0.08	mg/L	0.002	0.01	09/27/19 07:53 AEL	0.0800		104	90 - 110			M103965	
LCS Dup	0.08	mg/L	0.002	0.01	09/27/19 07:53 AEL	0.0800		99.6	90 - 110	3.90	8.12	M103965	
Matrix Spike	0.08	mg/L	0.002	0.01	09/27/19 07:53 AEL	0.0800	0.002	99.2	70.6 - 117			M103965	
Matrix Spike Dup	0.08	mg/L	0.002	0.01	09/27/19 07:53 AEL	0.0800	0.002	102	70.6 - 117	2.63	8.18	M103965	
MRL Check	0.01	mg/L	0.002	0.01	09/27/19 07:53 AEL	0.0100		111	70 - 130			M103965	
<b>pH, Lab - SM4500-H+ B 2011</b>													<i>Austin</i>
Duplicate	7.6	Std Units	<i>Hold-03</i>		09/27/19 09:30 MSA		7.6			0.262	2.05	M103978	
Reference	7.0	Std Units			09/27/19 09:30 MSA	6.86		101	95 - 105			M103978	
Reference	9.0	Std Units			09/27/19 09:30 MSA	9.18		98.6	95 - 105			M103978	
Reference	7.0	Std Units			09/27/19 09:30 MSA	6.86		102	95 - 105			M103978	
Reference	9.2	Std Units			09/27/19 09:30 MSA	9.18		99.8	95 - 105			M103978	
<b>Specific Conductance (adjusted to 25.0°C) - SM2510 B 2011</b>													<i>Bryan</i>
Initial Cal Check	489	uS/cm			10/03/19 12:11 CJO	472		104	85 - 115			1910049	
Blank	<2.00	uS/cm	2.00	2.00	10/03/19 12:11 CJO							M104230	
Duplicate	673	uS/cm	2.00	2.00	10/03/19 12:11 CJO		679			0.888	2	M104230	
LCS	1400	uS/cm	2.00	2.00	10/03/19 12:11 CJO	1410		99.5	90 - 110			M104230	

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/15/19 9:20**

**C031487**

**General Chemistry - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
--------	-------	-------	-----	-----	----------	--------------	---------------	----	-----------	-----	-----------	-------

<b>Total Dissolved Solids - SM2540 C 2011</b>												
<i>Bryan</i>												
Blank	<25.0	mg/L	25.0	25.0	10/02/19 14:02 MRH							M104156
Duplicate	296	mg/L	50.0	50.0	10/02/19 14:02 MRH		296			0.00	9.13	M104156
Reference	520	mg/L	100	100	10/02/19 14:02 MRH	500		104	81 - 121			M104156

<b>Total Hardness (EDTA) as CaCO3 - SM2340 C 2011</b>												
<i>Bryan</i>												
Initial Cal Check	60.0	mg/L			10/04/19 08:11 MRH	54.4		110	85 - 115			1910060
Blank	<1.00	mg/L	1.00	1.00	10/04/19 08:11 MRH							M104271
Duplicate	400	mg/L	2.00	2.00	10/04/19 08:11 MRH		400			0.00	9.52	M104271
LCS	100	mg/L	1.00	1.00	10/04/19 08:11 MRH	100		100	90 - 110			M104271
LCS Dup	100	mg/L	1.00	1.00	10/04/19 08:11 MRH	100		100	90 - 110	0.00	6.47	M104271
Matrix Spike	600	mg/L	2.00	2.00	10/04/19 08:11 MRH	200	400	100	87.6 - 111			M104271
MRL Check	3.00	mg/L	1.00	1.00	10/04/19 08:11 MRH	4.00		75.0	70 - 130			M104271

**Metals (Total) - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
--------	-------	-------	-----	-----	----------	--------------	---------------	----	-----------	-----	-----------	-------

<b>Iron - EPA 200.7 R4.4</b>												
<i>Bryan</i>												
Blank	<0.010	mg/L	0.002	0.010	10/10/19 16:25 PNS							M104453
LCS	0.933	mg/L	0.002	0.010	10/10/19 16:28 PNS	1.00		93.3	84.5 - 115.4			M104453
LCS Dup	0.929	mg/L	0.002	0.010	10/10/19 16:31 PNS	1.00		92.9	84.5 - 115.4	0.394	20	M104453
Duplicate	0.232	mg/L	0.002	0.010	10/10/19 16:35 PNS		0.235			1.37	20	M104453
Matrix Spike	1.15	mg/L	0.002	0.010	10/10/19 16:38 PNS	1.00	0.235	91.8	69.5 - 130.4			M104453

<b>Manganese - EPA 200.8 R5.4</b>												
<i>Bryan</i>												
Blank	<0.515	ug/L	0.111	0.515	10/03/19 05:54 MRG							M104061
LCS	9.92	ug/L	0.112	0.520	10/03/19 06:04 MRG	10.0		99.2	84.5 - 115.4			M104061
LCS Dup	9.87	ug/L	0.112	0.520	10/03/19 06:14 MRG	10.0		98.7	84.5 - 115.4	0.533	20	M104061
Duplicate	558	ug/L	0.111	0.515	10/03/19 06:24 MRG		457			19.8	20	M104061
Matrix Spike	565	ug/L	0.112	0.520	10/03/19 06:34 MRG	10.0	457	1070	69.5 - 130.4			M104061

**Preparation Procedures - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
--------	-------	-------	-----	-----	----------	--------------	---------------	----	-----------	-----	-----------	-------

<b>Turbidity - SM2130 B 2011</b>												
<i>Bryan</i>												

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/15/19 9:20  
**C031487**

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
<b>C031487-01</b>										
Fluoride	SM4500-F C 2011	10/1/19 10:32 PNS	Bryan	A	10.0	mL	10.0	mL	1	M104093
Iron	EPA 200.7 R4.4	10/9/19 10:03 AKS	Bryan	C	10.0	mL	10.2	mL	1	M104453
Manganese	EPA 200.8 R5.4	9/30/19 13:13 AKS	Bryan	C	10.0	mL	10.3	mL	1	M104061
Nitrate/Nitrite as N	SM4500-NO3-F 2011	10/1/19 11:09 MRB	Bryan	E	10.0	mL	10.0	mL	1	M104095
Nitrite as N	SM4500 NO2- B 2011	9/27/19 7:53 AEL	Austin	D	25.0	mL	25.0	mL	1	M103965
pH, Lab	SM4500-H+ B 2011	9/27/19 9:30 MSA	Austin	D	50.0	mL	50.0	mL	1	M103978
Sample Acidified to pH<2 in Lab	N/A	9/26/19 16:40 KK	Bryan	C	100	mL	100	mL	1	M103991
Specific Conductance (adjusted to 25.0°C)	SM2510 B 2011	10/3/19 12:11 CJO	Bryan	A	25.0	mL	25.0	mL	1	M104230
Temperature @ pH Analysis	SM4500-H+ B 2011	9/27/19 9:30 MSA	Austin	D	50.0	mL	50.0	mL	1	M103978
Total Dissolved Solids	SM2540 C 2011	10/2/19 14:02 MRH	Bryan	A	50.0	mL	100	mL	1	M104156
Total Hardness (EDTA) as CaCO3	SM2340 C 2011	10/4/19 8:11 MRH	Bryan	C	25.0	mL	50.0	mL	1	M104271
Turbidity	SM2130 B 2011	10/1/19 10:59 RNH	Bryan	C	10.0	mL	10.0	mL	1	M104094
See sub-contract reports for preparation information of subcontracted analyses.										
<b>C031487-01RE1</b>										
Sample Acidified to pH<2 in Lab	N/A	9/26/19 16:40 KK	Bryan	E	100	mL	100	mL	1	M103993



Chain-of-Custody & Analysis Request

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken	S - Solid	LAB USE ONLY (Initials <i>KL</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. †	Analysis Requested		Cooler ID	Bottle pH	Sub-contract	Lab ID #
<i>MHT # 6</i>	<i>9-26-19 12:00</i>		Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A		<i>act</i>	-	-	<i>03148601A</i>
<i>MHT # 6</i>	<i>9-26-19 12:00</i>		<i>G</i>	<i>DW</i>	<i>1L</i>	<i>P</i>	<i>1</i>	<i>NO2 NO3 pH Cl Cond F Fe Hardness Mn SO4 TDS</i>		<i>act</i>	-	<i>Ana</i>	<i>031487-01A</i>
<i>APEX</i>													

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply
<i>[Signature]</i>	Date: <i>9-26-19</i> Time: <i>15:50</i> <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	<i>[Signature]</i>	Date: Time: <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time: <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled		Date: Time: <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time: <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input checked="" type="checkbox"/> Received in Lab <i>Kelly Kukowski</i>	Date: <i>9/26/19</i> Time: <i>1550</i> <input checked="" type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone #:	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

Sample Pres. †	pH Paper ID#:	1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
		≤ 6 °C (not frozen)				
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID:	Temp °C:	CT	Therm ID:	Cooler ID:	Temp °C:	CT	Therm ID:
<i>act</i>	<i>11.1</i>	<i>11.1</i>	<i>0715570</i>		<i>/</i>		





Ana-Lab Corp.  
 P.O. Box 9000  
 Kilgore, TX 75663  
 903/984-0551

LELAP-accredited #02008

# Report

Table of Contents

Printed 10/04/2019 Page 1 of 1

Aqua-Tech Laboratories (Austin)  
 John Brien  
 635 Phil Gramm Blvd.  
 Bryan, TX 77807-9104

Account

**AQU5-C**

Project

**891774**

This report consists of this Table of Contents and the following pages:

<u>Report Name</u>	<u>Description</u>	<u>Pages</u>
891774_r03_03_ProjectResults	Ana-Lab Project P:891774 C:AQU5 Project Results t:304	2
891774_r03_06_ProjectTRRP	Ana-Lab Project P:891774 C:AQU5 Project TRRP Results Report for Class	2
891774_r10_05_ProjectQC	Ana-Lab Project P:891774 C:AQU5 Project Quality Control Groups	1
891774_r99_09_CoC__1_of_1	Ana-Lab CoC AQU5 891774_1_of_1	2
<b>Total Pages:</b>		<b>7</b>



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



NELAP-accredited #T104704201-19-15



# Results

Printed: 10/04/2019 9:59

Page 1 of 2  
891774

### Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

## Results

<b>1823901</b>	<b>C031487-01</b>					Received:	09/27/2019	
Drinking Water	Collected by: Client	Aqua-Tech Laboratori		PO:				
	Taken: 09/26/2019 12:00:00							
EPA 300.0 2.1	Prepared: 861031	09/28/2019	02:20:00	Analyzed	861031	09/28/2019	02:20:00	ATN
Parameter	Results	Units	RL	Flag	CAS	Bottle		
N Chloride	11.1	mg/L	3.00			01		
N Sulfate	127	mg/L	3.00	PD		01		

## Sample Preparation

<b>1823901</b>	<b>C031487-01</b>					Received:	09/27/2019
Cooler Return	Prepared:	10/01/2019	17:00:00	Analyzed	10/01/2019	17:00:00	WTS
z Return Cooler/No bottles Require	Returned						





# Results

Printed: 10/04/2019 9:59

Page 2 of 2  
891774

Qualifiers:

D - Duplicate RPD was higher than expected P - Spike recovery outside control limits due to matrix effects.

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column.

MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.

Bill Peery, MS, VP Technical Services





Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 10/04/2019

Page 1 of 2

# Results Summary

Project

**891774**

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

DW

CAS	Parameter	Results	MDL	SDL	MQL	MQLAdj	Flag	Units	Target	Bottle	Dilute
<b>Drinking Water</b>		<b>Ion Chromatography</b>				<b>EPA 300.0 2.1</b>					
<b>1823901</b>	<b>C031487-01</b>										
		Collection:	09/26/2019		12:00:00	Client			Received:	09/27/2019	
	Prepared:	<b>861031</b>									
				Analyzed:		<b>861031</b>	9/28/19	02:20:00			
	Chloride	11.1	0.0196	0.196	0.300	3.00		mg/L	250	01	10.00
									Secondary Standard		
	Sulfate	127	0.0109	0.109	0.300	3.00	PD	mg/L	250	01	10.00
									Secondary Standard		

MDL is Method Detection Limit (40 CFR 136 Appendix B)

SDL is Sample Detection Limit and is the adjusted MDL (sample specific dilutions, dry weight)

MQL is the Method Quantitation Limit and corresponds to a low standard

MQLADJ is the Adjusted Method Quantitation Limit (dilutions, dry weight)

Qualifiers:

D - Duplicate RPD was higher than expected

P - Spike recovery outside control limits due to matrix effects.

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation. These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 10/04/2019

Page 2 of 2

# Results Summary

## Project

**891774**

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

DW

Bill Peery, MS, VP Technical Services



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15



# Quality Control

Printed 10/04/2019

Page 1 of 1

891774

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

Analytical Set **861031** EPA 300.0 2.1

**Blank**

<u>Parameter</u>	<u>PrepSet</u>	<u>Reading</u>	<u>MDL</u>	<u>SQL</u>	<u>Units</u>	<u>File</u>
Chloride	861031	0.021	0.0196	0.300	mg/L	120431298
Sulfate	861031	ND	0.0109	0.300	mg/L	120431298

**CCV**

<u>Parameter</u>	<u>Reading</u>	<u>Known</u>	<u>Units</u>	<u>Recover%</u>	<u>Limits%</u>	<u>File</u>
Chloride	9.94	10.0	mg/L	99.4	90.0 - 110	120431295
	9.84	10.0	mg/L	98.4	90.0 - 110	120431310
	9.75	10.0	mg/L	97.5	90.0 - 110	120431320
Sulfate	10.1	10.0	mg/L	101	90.0 - 110	120431295
	9.96	10.0	mg/L	99.6	90.0 - 110	120431310
	9.89	10.0	mg/L	98.9	90.0 - 110	120431320

**LCS Dup**

<u>Parameter</u>	<u>PrepSet</u>	<u>LCS</u>	<u>LCSD</u>	<u>Known</u>	<u>Limits%</u>	<u>LCS%</u>	<u>LCSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Chloride	861031	5.06	5.05	5.00	85.0 - 110	101	101	mg/L	0.198	20.0
Sulfate	861031	5.16	5.16	5.00	88.0 - 110	103	103	mg/L	0	20.0

**MSD**

<u>Parameter</u>	<u>Sample</u>	<u>MS</u>	<u>MSD</u>	<u>UNK</u>	<u>Known</u>	<u>Limits</u>	<u>MS%</u>	<u>MSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Chloride	1823901	19.9	20.4	11.1	10.0	80.0 - 120	88.0	93.0	mg/L	5.52	20.0
Sulfate	1823901	130	134	127	10.0	80.0 - 120	30.0 *	70.0 *	mg/L	80.0 *	20.0
Chloride	1823960	1090	1090	1020	100	80.0 - 120	70.0 *	70.0 *	mg/L	0	20.0
Sulfate	1823960	121	121	26.3	100	80.0 - 120	94.7	94.7	mg/L	0	20.0

\* Out RPD is Relative Percent Difference:  $\text{abs}(r1-r2) / \text{mean}(r1,r2) * 100\%$

Recover% is Recovery Percent:  $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification





ATL - Hvar Facility:  
635 Phil Gierlach Blvd.  
Baytown, TX 77807  
(979) 778-3707  
Fax: (979) 778-3193

ATL - Austin Facility:  
7800 Hwy 71 W, Suite 105  
Austin, TX 78735  
(512) 301 9559  
Fax: (512) 301-9552

Chain-of-Custody & Analysis Request

SHIPPED TO:

Ana-Lab Corp. (NELAP Cert: T104704201)  
2800 Dudley Road  
Kilgore, TX 75662  
Phone: (903) 984-0551  
Fax: (903) 984-5914

C-O-C #

21 - C031487



T194704371

All analyses must be performed by a TNI approved method certified by the TCEQ. Contact ATL's sample custodian via voice and email if your methods do not meet this criteria.

Analysis Request for:

Sample ID: C031487-01 Sampled: 09/26/19 12:00

Matrix: Drinking Water

Laboratory ID >>

183901

Chloride - EPA 300.0

SO4 DW - EPA 300.0

CONTAINERS SUPPLIED:

( ) C031487-01 [B] - CI SO4 0.5LP (ATL indicates cooler number in parentheses for each container - only required if more than one cooler listed below.)

Requisitioned by: (print & sign) <input checked="" type="checkbox"/> ATL-Austin Kelly Kukowski		ATL - Baytown <input type="checkbox"/> Sample		Date: 9/26/19 Time: 1655		Sample type: <input checked="" type="checkbox"/> Tap <input type="checkbox"/> Groundwater <input type="checkbox"/> Not chilled		Abbreviations: DW - Drinking Water NP - Non-Portable Water S - Solid CTU - Custody Transfer Unbroken LG - Lead Glass	
Carrier & Tracking Number Lone Star		Cooler 1: aqu5 - ZY0157D9		Date: 9/27/19 Time: 0810		Sample type: <input checked="" type="checkbox"/> X - all the stuff <input type="checkbox"/> CTU <input type="checkbox"/> Conclude - Good <input type="checkbox"/> Not Rec'd food		Aqua-Tech Comments and Special Instructions 5 DAY TAT	
Requisitioned by: (print & sign) <input checked="" type="checkbox"/> Ana-Lab Elisa Tucker Ana-Lab		Signature: <i>Elisa Tucker</i>		Date: 9/27/19 Time: 0810		Please email reports to: corp@aquatechlabs.com		Please return cooler(s) to: Austin Facility	
Line below documents condition at receipt in lab (fill per lot) listed above.		Cooler Temperature (°C)		Temp. Rec'd (°F)		Corroded Temp. (CT)		Thermometer ID	
Cooler 1		N/A		N/A		N/A		N/A	

See Attached for Tracking # and Temp

BRET

1  
2  
3  
4  
5

2 of 2

891774 CoC Print Group 001 of 001

9/25/2019 https://www2.iso.com/wcorder.asp?labelsize=0&combinedlabel=1&sessionkey=%7B520B03D1-9B2C-4FDE-94E2-06A732DF40EA%7D



Airbill No. ZY0157D9

LSO  
1-800-800-8984  
www.iso.com

SHIP TO:  
RECEIVING  
ANA LAB CORP  
2600 DUDLEY RD  
KILGORE, TX 75662  
9039840551

From:  
KELLY KUKOWSKI  
AQUA-TECH LABORATORIES, INC.  
7500 W HWY 71 SUITE 105  
AUSTIN, TX 78735  
5123019559



LSO GROUND  
END OF BUSINESS DAY DELIVERY

PRINT DATE: 9/25/2019  
QUICKCODE: WEIGHT: 35.00LBS  
REF 1: 1D00V.0000 REF 2:

Therm#: 6205 Corr Fact: 0.0  
Temp: 2.5/2.5 °C

Date: 9/27 Time: 0820 Tech: ET

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.



# **Water Quality**

**Well No. 8**

Email information for report date:

10/14/19 08:48

C032981

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/14/19 8:48  
**C032981**

**MAJESTIC HILLS II NO8**

Collected: 10/08/19 17:00 by CLIENT  
 Received: 10/09/19 12:00 by Kelly Kukowski

Type  
 Grab

Matrix  
 Drinking Water

C-O-C #  
 295190

Lab ID#	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
C032981-01											
<b>Microbiological Analyses</b>											
<b>Total Coliforms</b>	<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	10/09/19 12:19 JLL	SM9223 B 2004	M104477	NEL
<b>Escherichia coli (E.coli)</b>	<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	10/09/19 12:19 JLL	SM9223 B 2004	M104477	NEL

**Microbiological Analyses - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	Log10 Comparison Control Limit	Batch
<b>Escherichia coli (E.coli) - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	10/09/19 12:19 JLL						M104477
<b>Total Coliforms - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	10/09/19 12:19 JLL						M104477

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch	
<b>C032981-01</b>											
Escherichia coli (E.coli)	SM9223 B 2004	10/9/19 12:16 JLL	Austin	A	100	mL	100	mL	1	M104477	
Total Coliforms	SM9223 B 2004	10/9/19 12:16 JLL	Austin	A	100	mL	100	mL	1	M104477	



Chain-of-Custody & Analysis Request

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken	S - Solid	LAB USE ONLY (Initials <i>KL</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. +	Analysis Requested	Cooler ID	Bottle pH	Sub-contract	Lab ID #	
			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A	<i>cut</i>	-	-	C032981-01A	
<i>MHI #8</i>	<i>10-8-19 17:00</i>	-	<i>B</i>	<i>DW</i>	<i>2X12</i>	<i>P</i>	<i>1</i>	<i>NO2 NO3 pH Cl Cond F Fe</i>	<i>/</i>	-	<i>Anu</i>	<i>C032980-01A</i>	
<i>MHI #8</i>	<i>10-8-19 17:00</i>							<i>Hardness Mn Sol TDS</i>					
								<i>MEKUS</i>					

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<i>KL</i>	Date: <i>10-9-19</i> Time: <i>12:00</i>	<i>MEKUS</i>	
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time:		
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input checked="" type="checkbox"/> Received in Lab	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good
	Date: Time:	<i>Kelly Kukowski</i>	Date: <i>10/9/19</i> Time: <i>1200</i>

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone #:	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

Sample Pres. +	pH Paper ID#: 1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	≤ 6 °C (not frozen)				
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>CL</i>	Temp °C: <i>7.1 / 7.1</i>	CT	Therm ID: <i>0715570</i>	Cooler ID:	Temp °C: <i>/</i>	CT	Therm ID:
----------------------	---------------------------	----	--------------------------	------------	-------------------	----	-----------

Email information for report date:

11/1/19 09:18

C032980

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

### Submission forms:

Due to updates by TCEQ, the submission form used for Drinking Water Revised Coliform Rule has been updated. Please contact us if you need a copy of this new Chain of Custody form.

Aqua-Tech values you as a customer and encourages you to speak with our sampling staff at 979-778-3707 option 2 or [samplingbryan@aqua-techlabs.com](mailto:samplingbryan@aqua-techlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

#### The following abbreviations indicate certification status:

NEL	TNI accredited parameter.
ANR	Accreditation not required by the State of Texas.
DWP	Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
INF	Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

#### General Definitions:

NR	Not Reported.
RPD	Relative Percent Difference.
% R	Percent Recovery.
dry	Results with the "dry" unit designation are reported on a "dry weight" basis.
SQL	The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
Adj MDL	The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
MDL	The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

#### Record Retention:

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aqua-techlabs.com](mailto:corp@aqua-techlabs.com)

[www.aqua-techlabs.com](http://www.aqua-techlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**11/1/19 9:18**

**C032980**

MAJESTIC HILLS II NO8		Collected: 10/08/19 17:00 by CLIENT Received: 10/09/19 12:00 by Kelly Kukowski					Type	Matrix		C-O-C #		
Lab ID#	C032980-01	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
<b>General Chemistry</b>												
Total Dissolved Solids	516	mg/L			25.0	50.0	50.0	Bryan	10/11/19 15:15 MRH	SM2540 C 2011	M104623	NEL
Nitrate as N (NO3N)	<0.0200	mg/L				0.0200	0.0200	Austin	10/14/19 14:26 JLL	SM4500-NO3-F 2011	[CALC]	NEL
Nitrite as N	<0.01	mg/L		J (0.007)	0.002	0.002	0.01	Austin	10/10/19 10:33 JLL	SM4500 NO2- B 2011	M104538	NEL
Nitrate/Nitrite as N	<0.02	mg/L			0.02	0.02	0.02	Bryan	10/14/19 14:26 MRB	SM4500-NO3-F 2011	M104654	INF
Fluoride	1.01	mg/L			0.04	0.04	0.10	Bryan	10/17/19 13:30 PNS	SM4500-F C 2011	M104809	NEL
pH, Lab	7.4	S.U.		Hold-03		N/A	N/A	Austin	10/11/19 10:50 MSA	SM4500-H+ B 2011	M104612	DWP
Temperature @ pH Analysis	19.6	Deg. C				N/A	N/A	Austin	10/11/19 10:50 MSA	SM4500-H+ B 2011	M104612	DWP
Specific Conductance (adjusted to 25.0°C)	693	uS/cm			2.00	2.00	2.00	Bryan	10/18/19 08:35 CJO	SM2510 B 2011	M104874	DWP,NEL
<b>Metals (Total)</b>												
Iron	0.577	mg/L			0.002	0.001	0.005	Bryan	10/21/19 15:49 PNS	EPA 200.7 R4.4	M104818	NEL
Manganese	11.7	ug/L			0.108	0.135	0.625	Bryan	10/17/19 22:14 MRG	EPA 200.8 R5.4	M104675	NEL
<b>General Chemistry</b>												
Sulfate as SO4	154	mg/L		P*	0.01	3	3	Sub	10/11/19 21:01 ANA	EPA 300.0	SUB	NEL
Chloride	10.7	mg/L			0.01		3	Sub	10/11/19 21:01 ANA	EPA 300.0	SUB	NEL
<b>C032980-01 - re-analysis</b>												
<b>General Chemistry</b>												
Total Hardness (EDTA) as CaCO3	500	mg/L		C-02	1.00	1.00	1.00	Bryan	10/31/19 11:30 MRH	SM2340 C 2011	M104995	NEL

**Explanation of Notes**

- A-01 Optional LCS was outside expected range, causing RPD to be greater than expected. Results accepted on one required passing LCSD and sample matrix RPD.
- C-02 Result confirmed by re-analysis.
- Hold-03 This parameter was outside of EPA holding at the time the sample was received in the laboratory.
- J Analyte detected below the SQL but above the MDL.
- P\* Spike recovery outside control limits due to matrix effects

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**11/1/19 9:18**

**C032980**

General Chemistry - Quality Control													
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch	
<b>Fluoride - SM4500-F C 2011</b>													<i>Bryan</i>
Initial Cal Check	0.33	mg/L			10/17/19 13:30 PNS	0.356		91.9	90 - 110			1910193	
Blank	<0.10	mg/L	0.04	0.10	10/17/19 13:30 PNS							M104809	
LCS	0.80	mg/L	0.04	0.10	10/17/19 13:30 PNS	0.798		99.6	90 - 110			M104809	
LCS Dup	0.79	mg/L	0.04	0.10	10/17/19 13:30 PNS	0.798		98.7	90 - 110	0.884	6.23	M104809	
Matrix Spike	4.65	mg/L	0.04	0.10	10/17/19 13:30 PNS	0.798	3.89	95.2	78.1 - 125			M104809	
Matrix Spike Dup	4.71	mg/L	0.04	0.10	10/17/19 13:30 PNS	0.798	3.89	103	78.1 - 125	7.59	10	M104809	
MRL Check	<0.10	mg/L	0.04	0.10	10/17/19 13:30 PNS	0.0998		93.2	73.4 - 118			M104809	
<b>Nitrate/Nitrite as N - SM4500-NO3-F 2011</b>													<i>Bryan</i>
Initial Cal Check	1.21	mg/L			10/14/19 14:26 MRB	1.15		106	90 - 110			1910149	
Low Cal Check	0.02	mg/L			10/14/19 14:26 MRB	0.0200		82.1	70 - 130			1910149	
Blank	<0.02	mg/L	0.02	0.02	10/14/19 14:26 MRB							M104654	
LCS	0.49	mg/L	0.02	0.02	10/14/19 14:26 MRB	0.500		97.7	91.3 - 109			M104654	
LCS Dup	0.49	mg/L	0.02	0.02	10/14/19 14:26 MRB	0.500		98.8	91.3 - 109	1.16	6.8	M104654	
Matrix Spike	0.56	mg/L	0.02	0.02	10/14/19 14:26 MRB	0.500	<0.02	111	94.1 - 111			M104654	
Matrix Spike Dup	0.52	mg/L	0.02	0.02	10/14/19 14:26 MRB	0.500	<0.02	104	94.1 - 111	6.56	8.65	M104654	
<b>Nitrite as N - SM4500 NO2- B 2011</b>													<i>Austin</i>
Initial Cal Check	0.07	mg/L			05/29/19 12:06 KT	0.0725		102	90 - 110			1905274	
Blank	<0.01	mg/L	0.002	0.01	10/10/19 10:33 JLL							M104538	
LCS	0.08	mg/L	0.002	0.01	10/10/19 10:33 JLL	0.0800		102	90 - 110			M104538	
LCS Dup	0.09	mg/L	0.002	0.01	10/10/19 10:33 JLL	0.0800		108	90 - 110	5.44	8.12	M104538	
Matrix Spike	0.09	mg/L	0.002	0.01	10/10/19 10:33 JLL	0.0800	0.01	95.9	70.6 - 117			M104538	
Matrix Spike Dup	0.09	mg/L	0.002	0.01	10/10/19 10:33 JLL	0.0800	0.01	95.0	70.6 - 117	0.922	8.18	M104538	
MRL Check	0.01	mg/L	0.002	0.01	10/10/19 10:33 JLL	0.0100		122	70 - 130			M104538	
<b>pH, Lab - SM4500-H+ B 2011</b>													<i>Austin</i>
Duplicate	7.4	Std Units	<i>Hold-03</i>		10/11/19 10:50 MSA		7.4			0.136	2.05	M104612	
Reference	6.9	Std Units			10/11/19 10:50 MSA	6.86		101	95 - 105			M104612	
Reference	9.1	Std Units			10/11/19 10:50 MSA	9.18		98.8	95 - 105			M104612	
Reference	6.9	Std Units			10/11/19 10:50 MSA	6.86		101	95 - 105			M104612	
Reference	9.1	Std Units			10/11/19 10:50 MSA	9.18		99.5	95 - 105			M104612	
<b>Specific Conductance (adjusted to 25.0°C) - SM2510 B 2011</b>													<i>Bryan</i>
Initial Cal Check	487	uS/cm			10/18/19 08:35 CJO	472		103	85 - 115			1910211	
Blank	<2.00	uS/cm	2.00	2.00	10/18/19 08:35 CJO							M104874	
Duplicate	694	uS/cm	2.00	2.00	10/18/19 08:35 CJO		693			0.144	2	M104874	
LCS	1410	uS/cm	2.00	2.00	10/18/19 08:35 CJO	1410		100	90 - 110			M104874	

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**11/1/19 9:18**

**C032980**

**General Chemistry - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Total Dissolved Solids - SM2540 C 2011</b>												<i>Bryan</i>
Blank	<25.0	mg/L	25.0	25.0	10/11/19 15:15 MRH							M104623
Duplicate	526	mg/L	50.0	50.0	10/11/19 15:15 MRH		516			1.92	9.13	M104623
Reference	508	mg/L	100	100	10/11/19 15:15 MRH	500		102	81 - 121			M104623

**Total Hardness (EDTA) as CaCO3 - SM2340 C 2011**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Total Hardness (EDTA) as CaCO3 - SM2340 C 2011</b>												<i>Bryan</i>
Blank	<1.00	mg/L	1.00	1.00	10/17/19 11:54 MRH							M104817
Duplicate	184	mg/L	1.00	1.00	10/17/19 11:54 MRH		186			1.08	9.52	M104817
LCS	98.0	mg/L	1.00	1.00	10/17/19 11:54 MRH				90 - 110			M104817
LCS Dup	98.0	mg/L	1.00	1.00	10/17/19 11:54 MRH				90 - 110		6.47	M104817
Matrix Spike	284	mg/L	1.00	1.00	10/17/19 11:54 MRH		186		87.6 - 111			M104817
MRL Check	4.00	mg/L	1.00	1.00	10/17/19 11:54 MRH				70 - 130			M104817
Initial Cal Check	56.0	mg/L			10/22/19 10:11 MRH	54.4		103	85 - 115			1910241
Initial Cal Check	54.0	mg/L			10/31/19 11:30 MRH	54.4		99.3	85 - 115			1910341
Blank	<1.00	mg/L	1.00	1.00	10/31/19 11:30 MRH							M104995
Duplicate	40.0	mg/L	1.00	1.00	10/31/19 11:30 MRH		40.0			0.00	9.52	M104995
LCS	98.0	mg/L	1.00	1.00	10/31/19 11:30 MRH	100		98.0	90 - 110			M104995
LCS Dup	100	mg/L	1.00	1.00	10/31/19 11:30 MRH	100		100	90 - 110	2.02	6.47	M104995
Matrix Spike	140	mg/L	1.00	1.00	10/31/19 11:30 MRH	100	40.0	100	87.6 - 111			M104995
MRL Check	4.00	mg/L	1.00	1.00	10/31/19 11:30 MRH	4.00		100	70 - 130			M104995

**Metals (Total) - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Iron - EPA 200.7 R4.4</b>												<i>Bryan</i>
Blank	<0.005	mg/L	0.001	0.005	10/21/19 15:29 PNS							M104818
LCS	1.70	mg/L	0.001	0.005	10/21/19 15:32 PNS	0.500		339	84.5 - 115.4			M104818
LCS Dup	0.501	mg/L	0.001	0.005	10/21/19 15:35 PNS	0.500		100	84.5 - 115.4	109	20	M104818
Duplicate	<0.100	mg/L	0.020	0.100	10/21/19 15:39 PNS		<0.100			1.07	20	M104818
Matrix Spike	9.48	mg/L	0.020	0.100	10/21/19 15:42 PNS	10.0	0.067	94.1	69.5 - 130.4			M104818

**Manganese - EPA 200.8 R5.4**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Manganese - EPA 200.8 R5.4</b>												<i>Bryan</i>
Blank	<0.625	ug/L	0.135	0.625	10/17/19 20:23 MRG							M104675
LCS	5.04	ug/L	0.135	0.625	10/17/19 20:34 MRG	5.00		101	84.5 - 115.4			M104675
LCS Dup	4.94	ug/L	0.135	0.625	10/17/19 20:45 MRG	5.00		98.8	84.5 - 115.4	1.98	20	M104675
Duplicate	4.83	ug/L	0.135	0.625	10/17/19 20:55 MRG		4.65			3.79	20	M104675
Matrix Spike	8.13	ug/L	0.135	0.625	10/17/19 21:06 MRG	5.00	4.65	69.6	69.5 - 130.4			M104675



**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 11/1/19 9:18  
**C032980**

**Preparation Procedures - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Turbidity - SM2130 B 2011</b>												<i>Bryan</i>
Initial Cal Check	6.1	NTU			10/02/19 10:00 MRH	6.55		92.8	90 - 110			1910020
Low Cal Check	1.1	NTU			10/02/19 10:00 MRH	1.02		110	70 - 130			1910020

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
<b>C032980-01</b>										
Fluoride	SM4500-F C 2011	10/17/19 10:09 PNS	Bryan	A	25.0	mL	25.0	mL	1	M104809
Iron	EPA 200.7 R4.4	10/17/19 12:03 PNS	Bryan	B	50.0	mL	25.0	mL	1	M104818
Manganese	EPA 200.8 R5.4	10/14/19 15:01 AOG	Bryan	B	50.0	mL	25.0	mL	2.5	M104675
Nitrate/Nitrite as N	SM4500-NO3-F 2011	10/14/19 9:15 MRB	Bryan	D	10.0	mL	10.0	mL	1	M104654
Nitrite as N	SM4500 NO2- B 2011	10/10/19 10:33 JLL	Austin	C	25.0	mL	25.0	mL	1	M104538
pH, Lab	SM4500-H+ B 2011	10/11/19 10:50 MSA	Austin	C	50.0	mL	50.0	mL	1	M104612
Sample Acidified to pH<2 in Lab	N/A	10/9/19 12:10 KK	Bryan	D	100	mL	100	mL	1	M104533
Specific Conductance (adjusted to 25.0°C)	SM2510 B 2011	10/18/19 8:35 CJO	Bryan	A	25.0	mL	25.0	mL	1	M104874
Temperature @ pH Analysis	SM4500-H+ B 2011	10/11/19 10:50 MSA	Austin	C	50.0	mL	50.0	mL	1	M104612
Total Dissolved Solids	SM2540 C 2011	10/11/19 15:15 MRH	Bryan	A	50.0	mL	100	mL	1	M104623
Turbidity	SM2130 B 2011	10/14/19 13:35 AOG	Bryan	B	10.0	mL	10.0	mL	1	M104670

See sub-contract reports for preparation information of subcontracted analyses.

<b>C032980-01RE1</b>										
Sample Acidified to pH<2 in Lab	N/A	10/9/19 12:10 KK	Bryan	B	100	mL	100	mL	1	M104531
Total Hardness (EDTA) as CaCO3	SM2340 C 2011	10/31/19 11:30 AOG	Bryan	B	50.0	mL	50.0	mL	1	M104995



Chain-of-Custody & Analysis Request

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken	S - Solid	LAB USE ONLY (Initials <i>KL</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. +	Analysis Requested	Cooler ID	Bottle pH	Sub-contract	Lab ID #	
			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A		-	-	C032981-01A	
MHI #8	10-8-19 17:00	-	B	DW	2X12	P	1	NO2 NO3 pH Cl Cond F Fe	cut	-	Anu	C032980-01A	
MHI #8	10-8-19 17:00							Hardness Mn SO4 TDS					
								MEFMS					

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAP fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply
<i>KL</i>	Date: 10-9-19 Time: 12:00 <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	<i>MEFMS</i>	<input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Date: Time:	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Date: Time:
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Date: Time:	Rec'd by: (print & sign) <input checked="" type="checkbox"/> Received in Lab	Date: 10/9/19 Time: 1200

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone #:	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

Sample Pres. +	pH Paper ID#: 1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	≤ 6 °C (not frozen)				
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	9 =

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>CL</i>	Temp °C: 7.1 / 7.1	CT	Therm ID: 0715570	Cooler ID:	Temp °C: /	CT	Therm ID:
----------------------	--------------------	----	-------------------	------------	------------	----	-----------



Ana-Lab Corp.  
 P.O. Box 9000  
 Kilgore, TX 75663  
 903/984-0551

LELAP-accredited #02008

# Report

Table of Contents

Printed 10/18/2019 Page 1 of 1

Aqua-Tech Laboratories (Austin)  
 John Brien  
 635 Phil Gramm Blvd.  
 Bryan, TX 77807-9104

Account

**AQU5-C**

Project

**893651**

This report consists of this Table of Contents and the following pages:

<u>Report Name</u>	<u>Description</u>	<u>Pages</u>
893651_r03_03_ProjectResults	Ana-Lab Project P:893651 C:AQU5 Project Results t:304	2
893651_r03_06_ProjectTRRP	Ana-Lab Project P:893651 C:AQU5 Project TRRP Results Report for Class	2
893651_r10_05_ProjectQC	Ana-Lab Project P:893651 C:AQU5 Project Quality Control Groups	1
893651_r99_09_CoC__1_of_1	Ana-Lab CoC AQU5 893651_1_of_1	2
<b>Total Pages:</b>		<b>7</b>



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



NELAP-accredited #T104704201-19-15



# Results

Printed: 10/18/2019 9:31

Page 1 of 2  
893651

### Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

## Results

<b>1828377</b>	<b>C032980-01</b>					Received:	10/11/2019		
Drinking Water	Collected by: Client	Aqua-Tech Laboratori		PO:					
	Taken: 10/08/2019 17:00:00								
<hr/>									
EPA 300.0 2.1	Prepared:	863540	10/11/2019	21:01:00	Analyzed	863540	10/11/2019	21:01:00	ATN
Parameter	Results	Units	RL	Flag	CAS	Bottle			
N Chloride	10.7	mg/L	3.00			01			
N Sulfate	154	mg/L	3.00	P		01			

## Sample Preparation

<b>1828377</b>	<b>C032980-01</b>					Received:	10/11/2019
Cooler Return	Prepared:	10/16/2019	17:00:00	Analyzed	10/16/2019	17:00:00	WTS
z Return Cooler/No bottles Require	RETURNED						





# Results

Printed: 10/18/2019 9:31

Page 2 of 2  
893651

Qualifiers:

P - Spike recovery outside control limits due to matrix effects.

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column.

MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.

Bill Peery, MS, VP Technical Services





Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 10/18/2019

Page 1 of 2

# Results Summary

Project **893651**

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

DW

CAS	Parameter	Results	MDL	SDL	MQL	MQLAdj	Flag	Units	Target	Bottle	Dilute
<b>Drinking Water</b>		<b>Ion Chromatography</b>				<b>EPA 300.0 2.1</b>					
<b>1828377</b>	<b>C032980-01</b>										
		Collection:	10/08/2019		17:00:00	Client			Received:	10/11/2019	
	Prepared:	<b>863540</b>									
				Analyzed:	<b>863540</b>	10/11/19		21:01:00			
	Chloride	<b>10.7</b>	0.0053	0.053	0.300	3.00		mg/L	250	01	10.00
									Secondary Standard		
	Sulfate	<b>154</b>	0.00775	0.0775	0.300	3.00	P	mg/L	250	01	10.00
									Secondary Standard		

MDL is Method Detection Limit (40 CFR 136 Appendix B)

SDL is Sample Detection Limit and is the adjusted MDL (sample specific dilutions, dry weight)

MQL is the Method Quantitation Limit and corresponds to a low standard

MQLADJ is the Adjusted Method Quantitation Limit (dilutions, dry weight)

Qualifiers:

P - Spike recovery outside control limits due to matrix effects.

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation. These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 10/18/2019

Page 2 of 2

# Results Summary

## Project

**893651**

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

DW

Bill Peery, MS, VP Technical Services



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15



Quality Control

Printed 10/18/2019

Page 1 of 1

893651

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

Analytical Set **863540**

EPA 300.0 2.1

Blank

<u>Parameter</u>	<u>PrepSet</u>	<u>Reading</u>	<u>MDL</u>	<u>MDL</u>	<u>Units</u>	<u>File</u>
Chloride	863540	0.226	0.0053	0.300	mg/L	120491628
Sulfate	863540	ND	0.00775	0.300	mg/L	120491628

CCV

<u>Parameter</u>	<u>Reading</u>	<u>Known</u>	<u>Units</u>	<u>Recover%</u>	<u>Limits%</u>	<u>File</u>
Chloride	10.1	10.0	mg/L	101	90.0 - 110	120491624
	10.3	10.0	mg/L	103	90.0 - 110	120491639
Sulfate	10.1	10.0	mg/L	101	90.0 - 110	120491624
	10.1	10.0	mg/L	101	90.0 - 110	120491639

LCS Dup

<u>Parameter</u>	<u>PrepSet</u>	<u>LCS</u>	<u>LCSD</u>	<u>Known</u>	<u>Limits%</u>	<u>LCS%</u>	<u>LCSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Chloride	863540	4.93	5.02	5.00	85.0 - 110	98.6	100	mg/L	1.81	20.0
Sulfate	863540	5.05	5.13	5.00	88.0 - 110	101	103	mg/L	1.57	20.0

MSD

<u>Parameter</u>	<u>Sample</u>	<u>MS</u>	<u>MSD</u>	<u>UNK</u>	<u>Known</u>	<u>Limits</u>	<u>MS%</u>	<u>MSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Chloride	1828377	20.2	19.7	10.7	10.0	80.0 - 120	95.0	90.0	mg/L	5.41	20.0
Sulfate	1828377	160	159	154	10.0	80.0 - 120	60.0 *	50.0 *	mg/L	18.2	20.0

\* Out RPD is Relative Percent Difference:  $\text{abs}(r1-r2) / \text{mean}(r1,r2) * 100\%$

Recover% is Recovery Percent:  $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification







ATL - Bryan Facility:  
635 Phil Gamm Blvd  
Bryan, TX 77807  
(979) 778-3727  
Fax (979) 778-3193

ATL - Austin Facility:  
7500 Hwy 71 W, Suite 108  
Austin, TX 78738  
(512) 301-9556  
Fax (512) 301-9552

Chain-of-Custody & Analysis Request

SHIPPED TO:  
Aqua-Lab Corp. (NELAP Cert. T104704201)  
2800 Dudley Road  
Kilgore, TX 75662  
Phone: (903) 984-0551  
Fax: (903) 984-5914

C-O-C #

638 - C032980

T104704201



All analyses must be performed by a TNI approved method certified by the TCEQ. Contact ATL's sample custodian via voice and email if your methods do not meet this criteria.

Analysis Request for: **Sample ID: C032980-01** Sampled: 10/08/19 17:00 Matrix: Drinking Water

Chloride - EPA 300.0 SO4 DW - EPA 300.0 Laboratory ID >> 1828377

CONTAINERS SUPPLIED: ( ) C032980-01 [E] - CI S04 0.5LP (ATL indicates cooler number in parentheses for each container - only required if more than one cooler listed below.)

Submitted by (print & sign) <input checked="" type="checkbox"/> ATL - Austin <input type="checkbox"/> ATL - Bryan <input type="checkbox"/> Sample		Date: 10/16/19 Time: 1:00		Test: <input type="checkbox"/> Laboratory Balance <input type="checkbox"/> Not Chilled		Sample Info: *X - all that apply Received load: <input type="checkbox"/> CTU <input type="checkbox"/> Non Rec'd load		Abbreviations: DW - Drinking Water, NP - Non-Potable Water, S - Solid, CTU - Custody Transfer Unbroken, SIP - Sealed Plastic, LP - Luer Plastic, CG - Luer Glass	
Carrier & Tracking Number: Kelly Kukowski		Cooler 1: aqua - zy0167kh		Date: 10/11/19 Time: 0840		Received load: <input type="checkbox"/> CTU <input type="checkbox"/> Non Rec'd load		Aqua-Tech Comments and Special Instructions: 5 DAY TAT See Attached for Tracking & Signaling	
Received by (print & sign) Kerry Taylor		Received in use <input checked="" type="checkbox"/>		Date: 10/11/19 Time: 0840		Received load: <input type="checkbox"/> CTU <input type="checkbox"/> Non Rec'd load		Aqua-Tech Comments and Special Instructions: 5 DAY TAT See Attached for Tracking & Signaling	
Line below documents condition of receipt in lab (shipped to) listed above.		Temp: Room (75) Corrected Temp: (C/T)		Thermometer ID		Please email reports to: corp@aqua-techlabs.com		Please return cooler(s) to: Austin Facility	
Cooler Temperature (C)		Cooler 1		N/A		N/A		N/A	

1  
2  
3  
4  
5

2 of 2

893651 CoC Print Group 001 of 001

10/17/2019

https://www.lso.com/web/labels/?labelsize=us&combinedlabel=1&sessionkey=%7B763343CA-27F1-472b-bbE3-7F514B585536%7D



Airbill No. ZY0167KH

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
**RECEIVING**  
**ANA LAB CORP**  
**2600 DUDLEY RD**  
**KILGORE, TX 75662**  
**9039840551**

**From:**  
**KELLY KUKOWSKI**  
**AQUA-TECH LABORATORIES, INC.**  
**7500 W HWY 71 SUITE 108**  
**AUSTIN, TX 78735**  
**5123019550**



**W GGG**

**LSO GROUND**  
**END OF BUSINESS DAY DELIVERY**

PRINT DATE: 10/17/2019  
QUICKCODE: WEIGHT: 40.00LBS  
REF 1: 1D00V.0000 REF 2:

**Therm#: 6205 Corr Fact: 0.0**  
**Temp: 0.2 / 0.2 °C**  
**Date: 10/11 Time: 0850 Tech: CP**

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

**WARNING:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. **LIMIT**

**OF LIABILITY:** We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. **NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.**

# **Water Quality**

**Well No. 9**

Email information for report date:

10/2/19 11:58

C031485

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations.
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads "June M. Brien".

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/2/19 11:58  
**C031485**

**MAJESTIC HILLS II NO9**

Collected: 09/26/19 12:30 by CLIENT  
 Received: 09/26/19 15:50 by Kelly Kukowski

Type  
 Grab

Matrix  
 Drinking Water

C-O-C #  
 295031

Lab ID#	C031485-01	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch
<b>Microbiological Analyses</b>											
<b>Total Coliforms</b>		<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	09/26/19 16:21 JLL	SM9223 B 2004	M103953
<b>Escherichia coli (E.coli)</b>		<b>Absent</b>	N/A		N/A	N/A	N/A	Austin	09/26/19 16:21 JLL	SM9223 B 2004	M103953

**Microbiological Analyses - Quality Control**

Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	Log10 Comparison Control Limit	Batch
<b>Escherichia coli (E.coli) - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	09/26/19 15:33 JLL						M103953
<b>Total Coliforms - SM9223 B 2004</b>											
Blank	Absent	N/A	N/A	N/A	09/26/19 15:33 JLL						M103953

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
<b>C031485-01</b>										
Escherichia coli (E.coli)	SM9223 B 2004	9/26/19 16:20 JLL	Austin	A	100	mL	100	mL	1	M103953
Total Coliforms	SM9223 B 2004	9/26/19 16:20 JLL	Austin	A	100	mL	100	mL	1	M103953

**Bryan Lab:**   
 635 Phil Gramm Blvd.  
 Bryan, Texas 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193

**Austin Lab:**   
 7500 W. Hwy. 71, Suite 105  
 Austin, Texas 78735  
 Phone: (512) 301-9559  
 Email: corp@aquatechlabs.com

C-O-C #

295031



V-0023 R01

Chain-of-Custody & Analysis Request

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken	S - Solid	LAB USE ONLY (Initials <i>JK</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. †	Analysis Requested	Cooler ID	Bottle pH	Sub-contract	Lab ID #	
			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A	CLT	-	-	0031485-01A	
MHI 169	9-26-19	12:30						Bacteria P/A					
<i>MTECH</i>													

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply
<i>JK</i>	Date: 9-26-19 Time: 15:50 <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	<i>MTECH</i>	Date: Time: <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time: <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled		Date: Time: <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
	Date: Time: <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Kelly Kukowski <i>JK</i>	Date: 9/26/19 Time: 1550 <input type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone #:	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

Sample Pres.	pH Paper ID#:	1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
		≤ 6 °C (not frozen)				
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID:	Temp °C:	CT	Therm ID:	Cooler ID:	Temp °C:	CT	Therm ID:
CLT	11.1 / 11.1		0715570		/		

Email information for report date:

10/3/19 07:32

C030744

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations.
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



**TCEQ DW Lab ID TX 239**

This report was approved by:

A handwritten signature in black ink that reads "June M. Brien".

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/3/19 7:32**

**C030744**

**MAJESTIC HILLS II NO9**

Collected: 09/19/19 12:30 by CLIENT  
 Received: 09/19/19 15:20 by Kelly Kukowski

Type  
 Grab

Matrix  
 Drinking Water

C-O-C #  
 294873

Lab ID#	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
<b>General Chemistry</b>											
Total Dissolved Solids	694	mg/L		25.0	50.0	50.0	Bryan	09/25/19 12:46 MRH	SM2540 C 2011	M103858	NEL
Nitrate as N (NO3N)	<0.0200	mg/L			0.0200	0.0200	Austin	09/24/19 11:23 JLL	SM4500-NO3-F 2011	[CALC]	NEL
Nitrite as N	<0.01	mg/L	J (0.002)	0.002	0.002	0.01	Austin	09/20/19 09:13 JLL	SM4500 NO2- B 2011	M103683	NEL
Nitrate/Nitrite as N	<0.02	mg/L		0.02	0.02	0.02	Bryan	09/24/19 11:23 MRB	SM4500-NO3-F 2011	M103792	INF
Total Hardness (EDTA) as CaCO3	525	mg/L		1.00	1.00	2.50	Bryan	09/27/19 09:08 MRH	SM2340 C 2011	M103870	NEL
Fluoride	3.42	mg/L		0.04	0.04	0.10	Bryan	09/24/19 14:03 PNS	SM4500-F C 2011	M103801	NEL
pH, Lab	7.3	S.U.	Hold-03		N/A	N/A	Austin	09/23/19 08:40 MSA	SM4500-H+ B 2011	M103743	DWP
Temperature @ pH Analysis	22.4	Deg. C			N/A	N/A	Austin	09/23/19 08:40 MSA	SM4500-H+ B 2011	M103743	DWP
Specific Conductance (adjusted to 25.0°C)	961	uS/cm		2.00	2.00	2.00	Bryan	09/26/19 13:24 CJO	SM2510 B 2011	M103943	DWP,NEL
<b>Metals (Total)</b>											
Iron	0.186	mg/L		0.002	0.001	0.005	Bryan	10/01/19 20:43 PNS	EPA 200.7 R4.4	M103946	NEL
Manganese	2.23	ug/L		0.108	0.135	0.625	Bryan	09/26/19 19:29 MRG	EPA 200.8 R5.4	M103867	NEL
<b>General Chemistry</b>											
Sulfate as SO4	<3	mg/L	J* (1.35)	0.01	3	3	Sub	09/20/19 16:04 ANA	EPA 300.0	SUB	NEL
Chloride	<3.00	mg/L		0.02		3	Sub	09/20/19 16:04 ANA	EPA 300.0	SUB	NEL

**Explanation of Notes**

- Hold-03 This parameter was outside of EPA holding at the time the sample was received in the laboratory.
- J Analyte detected below the SQL but above the MDL.
- J\* Analyte detected below quantitation limit



**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/3/19 7:32**

**C030744**

General Chemistry - Quality Control													
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch	
<b>Fluoride - SM4500-F C 2011</b>													<i>Bryan</i>
Initial Cal Check	0.34	mg/L			09/24/19 14:03 PNS	0.356		95.2	90 - 110			1909230	
Blank	<0.10	mg/L	0.04	0.10	09/24/19 14:03 PNS							M103801	
LCS	0.82	mg/L	0.04	0.10	09/24/19 14:03 PNS	0.798		102	90 - 110			M103801	
LCS Dup	0.84	mg/L	0.04	0.10	09/24/19 14:03 PNS	0.798		105	90 - 110	2.42	6.23	M103801	
Matrix Spike	5.33	mg/L	0.04	0.10	09/24/19 14:03 PNS	0.798	4.43	113	78.1 - 125			M103801	
Matrix Spike Dup	5.35	mg/L	0.04	0.10	09/24/19 14:03 PNS	0.798	4.43	115	78.1 - 125	2.20	5.72	M103801	
MRL Check	0.11	mg/L	0.04	0.10	09/24/19 14:03 PNS	0.0998		106	73.4 - 118			M103801	
<b>Nitrate/Nitrite as N - SM4500-NO3-F 2011</b>													<i>Bryan</i>
Initial Cal Check	1.23	mg/L			09/24/19 11:23 MRB	1.15		107	90 - 110			1909228	
Low Cal Check	0.02	mg/L			09/24/19 11:23 MRB	0.0200		117	70 - 130			1909228	
Blank	<0.02	mg/L	0.02	0.02	09/24/19 11:23 MRB							M103792	
LCS	0.47	mg/L	0.02	0.02	09/24/19 11:23 MRB	0.500		94.6	90 - 110			M103792	
LCS Dup	0.46	mg/L	0.02	0.02	09/24/19 11:23 MRB	0.500		91.0	90 - 110	3.85	6.8	M103792	
Matrix Spike	1.09	mg/L	0.02	0.02	09/24/19 11:23 MRB	0.500	0.56	107	94.1 - 111			M103792	
Matrix Spike Dup	1.09	mg/L	0.02	0.02	09/24/19 11:23 MRB	0.500	0.56	106	94.1 - 111	1.04	8.65	M103792	
<b>Nitrite as N - SM4500 NO2- B 2011</b>													<i>Austin</i>
Initial Cal Check	0.07	mg/L			05/29/19 12:06 KT	0.0725		102	90 - 110			1905274	
Blank	<0.01	mg/L	0.002	0.01	09/20/19 09:13 JLL							M103683	
LCS	0.08	mg/L	0.002	0.01	09/20/19 09:13 JLL	0.0800		101	90 - 110			M103683	
LCS Dup	0.08	mg/L	0.002	0.01	09/20/19 09:13 JLL	0.0800		105	90 - 110	3.41	8.12	M103683	
Matrix Spike	0.07	mg/L	0.002	0.01	09/20/19 09:13 JLL	0.0800	0.002	92.1	70.6 - 117			M103683	
Matrix Spike Dup	0.07	mg/L	0.002	0.01	09/20/19 09:13 JLL	0.0800	0.002	93.5	70.6 - 117	1.42	8.18	M103683	
MRL Check	0.01	mg/L	0.002	0.01	09/20/19 09:13 JLL	0.0100		100	70 - 130			M103683	
<b>pH, Lab - SM4500-H+ B 2011</b>													<i>Austin</i>
Duplicate	7.0	Std Units	<i>Hold-03</i>		09/23/19 08:40 MSA		6.9			0.288	2.05	M103743	
Reference	7.0	Std Units			09/23/19 08:40 MSA	6.86		103	95 - 105			M103743	
Reference	9.2	Std Units			09/23/19 08:40 MSA	9.18		100	95 - 105			M103743	
Reference	7.0	Std Units			09/23/19 08:40 MSA	6.86		102	95 - 105			M103743	
Reference	9.2	Std Units			09/23/19 08:40 MSA	9.18		99.8	95 - 105			M103743	
<b>Specific Conductance (adjusted to 25.0°C) - SM2510 B 2011</b>													<i>Bryan</i>
Initial Cal Check	479	uS/cm			09/26/19 13:24 CJO	472		101	85 - 115			1909272	
Blank	<2.00	uS/cm	2.00	2.00	09/26/19 13:24 CJO							M103943	
Duplicate	425	uS/cm	2.00	2.00	09/26/19 13:24 CJO		424			0.236	2	M103943	
LCS	1430	uS/cm	2.00	2.00	09/26/19 13:24 CJO	1410		101	90 - 110			M103943	

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/3/19 7:32**

**C030744**

General Chemistry - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Total Dissolved Solids - SM2540 C 2011</b>												Bryan
Blank	<25.0	mg/L	25.0	25.0	09/25/19 12:46 MRH							M103858
Duplicate	110	mg/L	25.0	25.0	09/25/19 12:46 MRH		111			0.905	9.13	M103858
Reference	560	mg/L	100	100	09/25/19 12:46 MRH	500		112	81 - 121			M103858
<b>Total Hardness (EDTA) as CaCO3 - SM2340 C 2011</b>												Bryan
Initial Cal Check	58.0	mg/L			09/27/19 09:08 MRH	54.4		107	85 - 115			1909282
Low Cal Check	3.00	mg/L			09/27/19 09:08 MRH	4.00		75.0	70 - 130			1909282
Blank	<1.00	mg/L	1.00	1.00	09/27/19 09:08 MRH							M103870
Duplicate	530	mg/L	1.00	2.50	09/27/19 09:08 MRH		525			0.948	9.52	M103870
LCS	98.0	mg/L	1.00	1.00	09/27/19 09:08 MRH	100		98.0	90 - 110			M103870
LCS Dup	98.0	mg/L	1.00	1.00	09/27/19 09:08 MRH	100		98.0	90 - 110	0.00	6.47	M103870
Matrix Spike	618	mg/L	1.00	2.50	09/27/19 09:08 MRH	100	525	92.5	87.6 - 111			M103870
MRL Check	3.00	mg/L	1.00	1.00	09/27/19 09:08 MRH	4.00		75.0	70 - 130			M103870
Metals (Total) - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Iron - EPA 200.7 R4.4</b>												Bryan
Blank	<0.005	mg/L	0.001	0.005	10/01/19 20:27 PNS							M103946
LCS	0.466	mg/L	0.001	0.005	10/01/19 20:30 PNS	0.500		93.1	84.5 - 115.4			M103946
LCS Dup	0.486	mg/L	0.001	0.005	10/01/19 20:33 PNS	0.500		97.1	84.5 - 115.4	4.19	20	M103946
Duplicate	0.170	mg/L	0.001	0.005	10/01/19 20:37 PNS		0.186			8.90	20	M103946
Matrix Spike	0.609	mg/L	0.001	0.005	10/01/19 20:40 PNS	0.500	0.186	84.5	69.5 - 130.4			M103946
<b>Manganese - EPA 200.8 R5.4</b>												Bryan
Blank	<0.625	ug/L	0.135	0.625	09/26/19 18:05 MRG							M103867
LCS	5.06	ug/L	0.135	0.625	09/26/19 18:48 MRG	5.00		101	84.5 - 115.4			M103867
LCS Dup	4.70	ug/L	0.135	0.625	09/26/19 18:58 MRG	5.00		94.0	84.5 - 115.4	7.31	20	M103867
Duplicate	2.39	ug/L	0.135	0.625	09/26/19 19:08 MRG		2.23			7.28	20	M103867
Matrix Spike	7.44	ug/L	0.135	0.625	09/26/19 19:18 MRG	5.00	2.23	104	69.5 - 130.4			M103867
Preparation Procedures - Quality Control												
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
<b>Turbidity - SM2130 B 2011</b>												Bryan

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:**

**10/3/19 7:32**

**C030744**

**Sample Preparation Summary**

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
<b>C030744-01</b>										
Fluoride	SM4500-F C 2011	9/24/19 10:01 PNS	Bryan	I	25.0	mL	25.0	mL	1	M103801
Iron	EPA 200.7 R4.4	9/26/19 14:13 PNS	Bryan	F	50.0	mL	25.0	mL	1	M103946
Manganese	EPA 200.8 R5.4	9/25/19 12:24 AKS	Bryan	F	50.0	mL	25.0	mL	2.5	M103867
Nitrate/Nitrite as N	SM4500-NO3-F 2011	9/24/19 9:17 MRB	Bryan	H	10.0	mL	10.0	mL	1	M103792
Nitrite as N	SM4500 NO2- B 2011	9/20/19 9:13 JLL	Austin	G	25.0	mL	25.0	mL	1	M103683
pH, Lab	SM4500-H+ B 2011	9/23/19 8:40 MSA	Austin	G	50.0	mL	50.0	mL	1	M103743
Sample Acidified to pH<2 in Lab	N/A	9/19/19 16:20 KK	Bryan	H	100	mL	100	mL	1	M103695
Specific Conductance (adjusted to 25.0°C)	SM2510 B 2011	9/26/19 13:24 CJO	Bryan	I	25.0	mL	25.0	mL	1	M103943
Temperature @ pH Analysis	SM4500-H+ B 2011	9/23/19 8:40 MSA	Austin	G	50.0	mL	50.0	mL	1	M103743
Total Dissolved Solids	SM2540 C 2011	9/25/19 12:46 MRH	Bryan	I	50.0	mL	100	mL	1	M103858
Total Hardness (EDTA) as CaCO3	SM2340 C 2011	9/25/19 12:36 AKS	Bryan	F	50.0	mL	50.0	mL	1	M103870
Turbidity	SM2130 B 2011	9/24/19 15:09 RNH	Bryan	F	10.0	mL	10.0	mL	1	M103816
See sub-contract reports for preparation information of subcontracted analyses.										
<b>C030744-01RE1</b>										
Sample Acidified to pH<2 in Lab	N/A	9/19/19 16:20 KK	Bryan	F	100	mL	100	mL	1	M103696



Chain-of-Custody & Analysis Request

Client / Project Name: <u>MAJESTIC Hills II</u>				* DEFINITIONS: DW - Drinking Water CM - Custody Maintained				NP - Non-Potable Water CTU - Custody Transfer Unbroken		S - Solid		LAB USE ONLY (initials <u>W</u> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. +	Analysis Requested			Cooler ID	Bottle pH	Sub-contract	Lab ID #	
<u>MHI 49</u>	<u>9-19-19</u> <u>12:30 PM</u>	-	<u>G</u>	<u>DW</u>	<u>1x 0.5L</u>	<u>P</u>	<u>1</u>	<u>Cl Cond F Fe NO3 NO2</u>			<u>let</u>	-	-	<u>030744-0</u> <u>A,B,C,D</u>	
			<u>G</u>		<u>0.12L</u>	<u>STP</u>	<u>1.5</u>	<u>Total Coliform P/A</u>				-	-	<u>030763-01A</u>	
<u>AFB</u>															

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<u>W. BECKER</u>	Date: <u>9/19/19</u> Time: <u>15:20</u>	<u>MFEA</u>	Date: _____ Time: _____
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Received in Lab	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good
	Date: _____ Time: _____	<u>Kelly Kukowski</u>	Date: <u>9/19/19</u> Time: <u>1520</u>

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone # :	Client Comments:
						<u>Apex Drilling</u>	

+ Sample Pres.	pH Paper ID#:	1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
		≤ 6 °C (not frozen)				
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	8 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <u>let</u>	Temp °C: <u>4.5 / 4.5</u>	CT	Therm ID: <u>0715520</u>	Cooler ID:	Temp °C: <u>/</u>	CT	Therm ID:
-----------------------	---------------------------	----	--------------------------	------------	-------------------	----	-----------



Ana-Lab Corp.  
 P.O. Box 9000  
 Kilgore, TX 75663  
 903/984-0551

LELAP-accredited #02008

# Report

Table of Contents

Printed 09/23/2019 Page 1 of 1

Aqua-Tech Laboratories (Austin)  
 John Brien  
 635 Phil Gramm Blvd.  
 Bryan, TX 77807-9104

Account

**AQU5-C**

Project

**890916**

This report consists of this Table of Contents and the following pages:

<u>Report Name</u>	<u>Description</u>	<u>Pages</u>
890916_r03_03_ProjectResults	Ana-Lab Project P:890916 C:AQU5 Project Results t:304	1
890916_r03_06_ProjectTRRP	Ana-Lab Project P:890916 C:AQU5 Project TRRP Results Report for Class	2
890916_r10_05_ProjectQC	Ana-Lab Project P:890916 C:AQU5 Project Quality Control Groups	1
890916_r99_09_CoC__1_of_1	Ana-Lab CoC AQU5 890916_1_of_1	2

**Total Pages: 6**



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



NELAP-accredited #T104704201-19-15



# Results

Printed: 09/23/2019 17:57

Page 1 of 1  
890916

### Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

## Results

<b>1821951</b>	<b>C030744-01</b>					Received: 09/20/2019		
Drinking Water	Collected by: Client	Aqua-Tech Laboratori		PO:				
	Taken: 09/19/2019 12:30:00							
EPA 300.0 2.1		Prepared: 859788	09/20/2019	16:04:00	Analyzed 859788	09/20/2019	16:04:00	AMB
Parameter	Results	Units	RL	Flag	CAS	Bottle		
N Chloride	<3.00	mg/L	3.00			01		
N Sulfate	1.35	mg/L	3.00	J		01		

### Qualifiers:

J - Analyte detected below quantitation limit

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column.

MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.

Bill Peery, MS, VP Technical Services





Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 09/23/2019

Page 1 of 2

# Results Summary

Project

**890916**

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

DW

CAS	Parameter	Results	MDL	SDL	MQL	MQLAdj	Flag	Units	Target	Bottle	Dilute
<b>Drinking Water</b>		<b>Ion Chromatography</b>				<b>EPA 300.0 2.1</b>					
<b>1821951</b>	<b>C030744-01</b>										
		Collection:	09/19/2019		12:30:00	Client			Received:	09/20/2019	
	Prepared:	<b>859788</b>									
				Analyzed:		<b>859788</b>	9/20/19	16:04:00			
	Chloride	ND	0.0196	0.196	0.300	3.00		mg/L	250	01	10.00
									Secondary Standard		
	Sulfate	1.35	0.0109	0.109	0.300	3.00	J	mg/L	250	01	10.00
									Secondary Standard		

MDL is Method Detection Limit (40 CFR 136 Appendix B)

SDL is Sample Detection Limit and is the adjusted MDL (sample specific dilutions, dry weight)

MQL is the Method Quantitation Limit and corresponds to a low standard

MQLADJ is the Adjusted Method Quantitation Limit (dilutions, dry weight)

Qualifiers:

J - Analyte detected below quantitation limit

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation. These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Central TX Region: 6448 Hwy 290 E STE A-106 Austin TX 78723



NELAP-accredited #T104704201-19-15



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com

LELAP-accredited #02008

Printed 09/23/2019

Page 2 of 2

# Results Summary

## Project

**890916**

DW

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Bill Peery, MS, VP Technical Services







# Quality Control

Printed 09/23/2019

Page 1 of 1

890916

Report To

Aqua-Tech Laboratories (Austin)  
John Brien  
635 Phil Gramm Blvd.  
Bryan, TX 77807-9104

Account  
**AQU5-C**

Analytical Set **859788** EPA 300.0 2.1

**Blank**

<u>Parameter</u>	<u>PrepSet</u>	<u>Reading</u>	<u>MDL</u>	<u>SQL</u>	<u>Units</u>	<u>File</u>
Chloride	859788	ND	0.0196	0.300	mg/L	120401226
Sulfate	859788	ND	0.0109	0.300	mg/L	120401226

**CCV**

<u>Parameter</u>	<u>Reading</u>	<u>Known</u>	<u>Units</u>	<u>Recover%</u>	<u>Limits%</u>	<u>File</u>
Chloride	9.69	10.0	mg/L	96.9	90.0 - 110	120401223
	9.61	10.0	mg/L	96.1	90.0 - 110	120401240
	9.70	10.0	mg/L	97.0	90.0 - 110	120401251
Sulfate	9.89	10.0	mg/L	98.9	90.0 - 110	120401223
	9.78	10.0	mg/L	97.8	90.0 - 110	120401240
	9.80	10.0	mg/L	98.0	90.0 - 110	120401251

**LCS Dup**

<u>Parameter</u>	<u>PrepSet</u>	<u>LCS</u>	<u>LCSD</u>	<u>Known</u>	<u>Limits%</u>	<u>LCS%</u>	<u>LCSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Chloride	859788	5.05	5.04	5.00	85.0 - 110	101	101	mg/L	0.198	20.0
Sulfate	859788	5.20	5.20	5.00	88.0 - 110	104	104	mg/L	0	20.0

**MSD**

<u>Parameter</u>	<u>Sample</u>	<u>MS</u>	<u>MSD</u>	<u>UNK</u>	<u>Known</u>	<u>Limits</u>	<u>MS%</u>	<u>MSD%</u>	<u>Units</u>	<u>RPD</u>	<u>Limit%</u>
Chloride	1821233	56.8	57.2	48.2	10.0	80.0 - 120	86.0	90.0	mg/L	4.55	20.0
Sulfate	1821233	21.8	22.0	13.0	10.0	80.0 - 120	88.0	90.0	mg/L	2.25	20.0
Chloride	1821238	56.7	56.4	48.3	10.0	80.0 - 120	84.0	81.0	mg/L	3.64	20.0
Sulfate	1821238	21.2	21.2	13.6	10.0	80.0 - 120	76.0 *	76.0 *	mg/L	0	20.0

\* Out RPD is Relative Percent Difference:  $\text{abs}(r1-r2) / \text{mean}(r1,r2) * 100\%$

Recover% is Recovery Percent:  $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification



890916 CoC Print Group 001 of 001

1  
2  
3  
4  
5



ATL - Bryan Facility:  
635 Phil Gramm Blvd.  
Bryan, TX 77807  
(979) 778-5107  
Fax (979) 778-5193

ATL - Austin Facility:  
7500 Hwy 71 W, Suite 135  
Austin, TX 78735  
(512) 301-9599  
Fax (512) 301-9552

**SHIPPED TO:**  
Aqua-Lab Corp. (NELAP Cert. T104704201)  
2600 Dudley Road  
Kilgore, TX 75662  
Phone: (903) 984-0551  
Fax: (903) 984-5914

C-O-C #

709 - C030744

T104704371



Chain-of-Custody & Analysis Request

All analyses must be performed by a TMI approved method certified by the TCEQ. Contact ATL's sample custodian via voice and email if your methods do not meet this criteria.

Analysis Request for: Chloride - EPA 300.0

Sample ID: C030744-01

Sampled: 09/19/19 12:30

Matrix: Drinking Water

Laboratory ID >>> 1821957

CONTAINERS SHIPPED: ( ) C030744+01 [E] - CI S040.5LP

SO4 DW - EPA 300.0

( ATL indicates cooler number in parentheses for each container - only required if more than one cooler listed below. )

See Attached for Tracking # and Temp

Relinquished by (print & sign) <input checked="" type="checkbox"/> ATL-Austin <input type="checkbox"/> ATL-Bryan <input type="checkbox"/> Sampler		Date	Time	<input checked="" type="checkbox"/> Ziegler Custody Sealed <input type="checkbox"/> Not Sealed	
Kelly Kukowski		9/19/19	1650		
Carrier & Tracking Number: Lone Star		Cooler 1: aqu5 - ZY014MUG			
Received by (print & sign)	Received (ATL)	Date	Time	Sample to: *X* all that apply <input checked="" type="checkbox"/> Received lead <input type="checkbox"/> CTU <input type="checkbox"/> Container Good <input type="checkbox"/> Not Rec'd final	
Elisa Tucker Analab	<i>[Signature]</i>	9-20-19	0826		
Line below documents condition at receipt in lab (shipped to) listed above.					
Cooler Temperature (C)	Temp. Read (TR)	Corrected Temp. (CT)	Thermometer ID	Please email reports to: corp@aquatechlabs.com	
				Please return coolers to: Austin Facility	
Abbreviations: DW - Drinking Water NP - Non-Portable Water S - Solid CTU - Custody Transfer Unbroken LG - User Class SIP - Single Plastic LF - User Plastic LG - User Class					
Aqua-Tech Comments and Special Instructions 5 DAY TAT BRET					

890916 CoC Print Group 001 of 001

9/19/2019

https://www2.lso.com/weblabels/?labelsize=0&combinedlabel=1&sessionkey=%7B5D9019C00-7AC0-47D0-B7BB-5ACFE9341572%7D



Airbill No. ZY014MUG

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
**RECEIVING**  
**ANA LAB CORP**  
**2600 DUDLEY RD**  
**KILGORE, TX 75662**  
**9039840551**

From:  
K KUKOWSKI  
AQUA-TECH LABORATORIES, INC.  
7500 WILLOW 74 SUITE 105  
AUSTIN, TX 78735  
5123019559



PRINT DATE: 9/19/2019  
QUICKCODE: WEIGHT: 35.00LBS  
REF 1: 1D00V.0000 REF 2:

Therm#: 6205 Corr Fact: -0.1  
Temp: 1.9 / 1.7 °C  
Date: 9/20 Time: 0555 Tech: ET

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

# **Water Quality**

**Well No. 10**

Email information for report date:

10/2/19 12:44

C031260

## Apex Drilling

Attn: Michael Becker

apexdrilling.becker@yahoo.com

PO Box 867

Marble Falls, TX 78654

Due to the increase in operational costs, Aqua-Tech Laboratories will be implementing a slight price increase. The new price list will be effective June 1, 2019.

Aqua-Tech values you as a customer and encourages you to speak with accounting staff at 979-778-3707 ext. 4 or [accounting@aquatechlabs.com](mailto:accounting@aquatechlabs.com) if you have questions.

Thank you for your business,  
June M. Brien  
Executive Technical Director

**CORPORATE OFFICE**  
635 Phil Gramm Boulevard  
Bryan, TX 77807  
Phone: (979) 778-3707  
Fax: (979) 778-3193



**AUSTIN OFFICE**  
7500 Hwy 71 W, Suite 105  
Austin, TX 78735  
Phone: (512) 301-9559  
Fax: (512) 301-9552

The analyses summarized in this report were performed by Aqua-Tech Laboratories, Inc. unless otherwise noted. Aqua-Tech Laboratories, Inc. holds accreditation from the State of Texas in accordance with TNI and/or through the TCEQ Drinking Water Commercial Laboratory Approval Program.

**The following abbreviations indicate certification status:**

- NEL TNI accredited parameter.
- ANR Accreditation not required by the State of Texas.
- DWP Accreditation through the TCEQ Drinking Water Commercial Laboratory Approval Program.
- INF Aqua-Tech Laboratories, Inc. is not accredited for this parameter. It is reported on an informational basis only.

Subcontracted data summarized in this report is indicated by "Sub" in the Lab column.

**General Definitions:**

- NR Not Reported.
- RPD Relative Percent Difference.
- % R Percent Recovery.
- dry Results with the "dry" unit designation are reported on a "dry weight" basis.
- SQL The Sample Quantitation Limit is the value below which the parameter cannot reliably be detected. The SQL includes all sample preparations, dilutions and / or concentrations.
- Adj MDL The Adjusted Method Detection Limit is the MDL value adjusted for any sample dilutions or concentrations .
- MDL The Method Detection Limit is the lowest theoretical value that is statistically different from zero for a specific method, taking into account all preparation steps and instrument settings.

All samples are reported on an "as received" basis unless the designation "dry" is added to the reported unit.

Copies of Aqua-Tech Laboratories, Inc. procedures and individual sampling plans are available upon request. Note that samples are collected by Aqua-Tech Laboratories, Inc. personnel unless otherwise noted in the "Sample Collected" field of this report as "Client" or "CLT".

Samples included in this report were received in acceptable condition according to Aqua-Tech Laboratories, Inc. procedures and 40 CFR, Chapter I, Subchapter D, Part 136.3, TABLE II. - *Required containers, preservation techniques, and holding times*, unless otherwise noted in this report.

**Record Retention:**

All reports, raw data, and associated quality control data are kept on file for 10 years before being destroyed. Any client that would like copies of records must contact Aqua-Tech Laboratories, Inc. no later than six months prior to the scheduled disposal. An administrative fee for retrieval and distribution will apply.



TCEQ DW Lab ID TX 239

This report was approved by:

A handwritten signature in black ink that reads 'June M. Brien'.

June M. Brien, Technical Director

The results in this report apply only to the samples analyzed. This analytical report must be reproduced in its entirety unless written permission is granted by Aqua-Tech Laboratories, Inc.

[corp@aquatechlabs.com](mailto:corp@aquatechlabs.com)

[www.aquatechlabs.com](http://www.aquatechlabs.com)

**CORPORATE OFFICE**  
 635 Phil Gramm Boulevard  
 Bryan, TX 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193



**AUSTIN OFFICE**  
 7500 Hwy 71 W, Suite 105  
 Austin, TX 78735  
 Phone: (512) 301-9559  
 Fax: (512) 301-9552

**Analytical Report**

**Apex Drilling**

**Report Printed:** 10/2/19 12:44  
**C031260**

<b>MAJESTIC HILLS II NO4</b>		Collected: 09/24/19 11:00 by CLIENT Received: 09/24/19 16:00 by Kelly Kukowski						Type Grab	Matrix Drinking Water	C-O-C # 294952		
Lab ID#	C031260-01	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	

<b>Microbiological Analyses</b>												
Total Coliforms	Absent	N/A			N/A	N/A	N/A	Austin	09/24/19 16:35 JLL	SM9223 B 2004	M103821	NEL
Escherichia coli (E.coli)	Absent	N/A			N/A	N/A	N/A	Austin	09/24/19 16:35 JLL	SM9223 B 2004	M103821	NEL

<b>MAJESTIC HILLS II NO10</b>		Collected: 09/24/19 11:30 by CLIENT Received: 09/24/19 16:00 by Kelly Kukowski						Type Grab	Matrix Drinking Water	C-O-C # 294952		
Lab ID#	C031260-02	Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	

<b>Microbiological Analyses</b>												
Total Coliforms	Absent	N/A			N/A	N/A	N/A	Austin	09/24/19 16:35 JLL	SM9223 B 2004	M103821	NEL
Escherichia coli (E.coli)	Absent	N/A			N/A	N/A	N/A	Austin	09/24/19 16:35 JLL	SM9223 B 2004	M103821	NEL

Microbiological Analyses - Quality Control											Log10 Comparison Control	
Result	Units	Notes	MDL	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	Range	Control Limit	Batch
<b>Escherichia coli (E.coli) - SM9223 B 2004</b>												Austin
Blank	Absent	N/A	N/A	N/A	09/24/19 16:35 JLL							M103821
<b>Total Coliforms - SM9223 B 2004</b>												Austin
Blank	Absent	N/A	N/A	N/A	09/24/19 16:35 JLL							M103821

Sample Preparation Summary											External Dilution Factor	Batch
Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units				
<b>C031260-01</b>												
Escherichia coli (E.coli)	SM9223 B 2004	9/24/19 16:34 JLL	Austin	A	100	mL	100	mL	1			M103821
Total Coliforms	SM9223 B 2004	9/24/19 16:34 JLL	Austin	A	100	mL	100	mL	1			M103821
<b>C031260-02</b>												
Escherichia coli (E.coli)	SM9223 B 2004	9/24/19 16:34 JLL	Austin	A	100	mL	100	mL	1			M103821
Total Coliforms	SM9223 B 2004	9/24/19 16:34 JLL	Austin	A	100	mL	100	mL	1			M103821



**Bryan Lab:**   
 635 Phil Gramm Blvd.  
 Bryan, Texas 77807  
 Phone: (979) 778-3707  
 Fax: (979) 778-3193

**Austin Lab:**   
 7500 W. Hwy. 71, Suite 105  
 Austin, Texas 78735  
 Phone: (512) 301-9559  
 Email: corp@aquatechlabs.com

C-O-C # 294952



V-0023 R01

**Chain-of-Custody & Analysis Request**

Client / Project Name:					* DEFINITIONS: DW - Drinking Water CM - Custody Maintained			NP - Non-Potable Water CTU - Custody Transfer Unbroken		S - Solid				LAB USE ONLY (Initials <i>KK</i> )			
Field Sample ID	Start Date / Time	End Date / Time	Composite Type	Sample Matrix*	Container Volume	Container Type	Sample Pres. †	Analysis Requested				Cooler ID	Bottle pH	Sub-contract	Lab ID #		
MHI # 2/			Grab	DW	0.12L	St P	1, 5	Total Coliform & E.coli P/A									
" # 4/	9-24-19	11:00		DW	1L	P	1	pH Cl Cond Fe Hardness Sec 47 Mn NO3 NO2 SO4 TDS							031243-01A		
MHI # 4/	9-24-19	11:00	<del>Grab</del>	DW	0.12L	STP	1, 5	Bact.							01A 031240		
MHI # 10	9-24-19	11:30		DW	0.12L	STP	1, 5	Bact.							02A		
<i>NFEK</i>																	

By relinquishing the above samples to Aqua-Tech, the client agrees to the following terms. Samples will be analyzed by a method that is within Aqua-Tech Laboratories' NELAC fields of accreditation. Analytes requiring a certified method that is not within Aqua-Tech's fields of accreditation will be subcontracted to a NELAC certified lab that is certified for that method. Clients will be notified of the subcontract lab's details. Other analytes not requiring accreditation will be analyzed by a compendial method. If a specific method is required, the client will note the method in the "Analysis Requested" column. The client approves all method modifications documented by Aqua-Tech or the subcontract lab. A current list of Aqua-Tech's NELAC fields of accreditation and other methods are available on request.

Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field <input type="checkbox"/> Sampler	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> Cust. Sealed <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
<i>[Signature]</i>	Date: 9-24-19 Time: 16:40	<i>NFEK</i>	
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Chilled <input type="checkbox"/> Cond Good <input type="checkbox"/> CTU * <input type="checkbox"/> Iced in Transit
Relinquished by: (print & sign) <input type="checkbox"/> Client <input type="checkbox"/> ATL Field arrival in Lab	Sample Info "X" all that apply <input type="checkbox"/> Iced <input type="checkbox"/> Chilled/Refrig <input type="checkbox"/> CM * <input type="checkbox"/> Not Chilled	Rec'd by: (print & sign) <input type="checkbox"/> Received in Lab	Sample Info "X" all that apply <input type="checkbox"/> Rec'd Iced <input type="checkbox"/> Not Rec'd Iced <input type="checkbox"/> CTU * <input type="checkbox"/> Cond Good
		Kelly Kukowski <i>[Signature]</i>	Date: 9/24/19 Time: 1600

Field Sample ID	Time	pH	D.O.	Cl <sub>2</sub>	Flow	Client Address and Phone # :	Client Comments:
						Apex Drilling PO Box 867 Marble Falls, TX 78654  Phone: 830-798-2739 Fax: 830-798-2703	

Sample Pres. †	pH Paper ID#: 1	2 = H <sub>2</sub> SO <sub>4</sub>	3 = HCl	4 = HNO <sub>3</sub>	Laboratory Comments:
	5 = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 = NaOH	7 =	9 =	

(Line below documents condition at receipt in Laboratory by Sample Custodian. Lab location noted by check box at top of C-O-C.)

Cooler ID: <i>02</i>	Temp °C: 10.6 / 10.6	CT	Therm ID: 0715570	Cooler ID:	Temp °C: /	CT	Therm ID:
----------------------	----------------------	----	-------------------	------------	------------	----	-----------



LCRA Environmental Laboratory Services  
3505 Montopolis Drive  
Austin, TX 78744  
Phone: (512) 730-6022  
Fax: (512) 730-6021

October 8, 2019

MICHAEL BECKER  
APEX DRILLING  
PO BOX 867  
Marble Falls, TX 78654  
apexdrilling.becker@yahoo.com

RE: Final Analytical Report Q1963233

Attn: MICHAEL BECKER

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 730-6022. We look forward to assisting you again.

Authorized for release by:

Ariana Dean  
Account Manager  
ariana.dean@lcra.org



Enclosures:





LCRA Environmental Laboratory Services  
 3505 Montopolis Drive  
 Austin, TX 78744  
 Phone: (512) 730-6022  
 Fax: (512) 730-6021

## Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q1963233001	MAJESTIC II 10	DW	E200.7 Metals, Trace Elements	9/10/2019 11:30	9/11/2019 08:00
Q1963233001	MAJESTIC II 10	DW	E200.8, ICP-MS	9/10/2019 11:30	9/11/2019 08:00
Q1963233001	MAJESTIC II 10	DW	E2340B, Hardness Calc.	9/10/2019 11:30	9/11/2019 08:00
Q1963233001	MAJESTIC II 10	DW	E300.0, Anions	9/10/2019 11:30	9/11/2019 08:00
Q1963233001	MAJESTIC II 10	DW	SM2540C, TDS	9/10/2019 11:30	9/11/2019 08:00
Q1963233001	MAJESTIC II 10	DW	SM4500-H+B, pH @ 25&ordm;C	9/10/2019 11:30	9/11/2019 08:00
Q1963233001	MAJESTIC II 10	DW	SM9223, IDEXX	9/10/2019 11:30	9/11/2019 08:00

## Report Definitions

- MRL - Minimum Reporting Limit**
- LOD - Limit of Detection**
- ML - Maximum Limit - Client Specified**
- MCL - Maximum Contaminant Level**
- MDL - Method Detection Limit**
- LOQ - Limit of Quantitation - Client Specified**
- DF - Dilution Factor**
- Qual - Qualifier**
- (S) - Surrogate Spike**
- QC Qual - red font indicates Result Value outside acceptable range**
- B- Analyte detected in method blank**
- S - Spike recovery outside limit**
- R - RPD outside duplicate precision limit**
- J - Analyte detected below quantitation limit**
- RPD - Relative Percent Difference**



LCRA Environmental Laboratory Services  
3505 Montopolis Drive  
Austin, TX 78744  
Phone: (512) 730-6022  
Fax: (512) 730-6021

## Project Summary

---

### Sample Analysis Comments

**Lab ID:** Q1963233001

**Sample ID:** MAJESTIC II 10

- Not Accredited - Hardness
- Not Accredited - Residual Chlorine
- Not Accredited - Temperature
- Not Accredited - pH



LCRA Environmental Laboratory Services  
 3505 Montopolis Drive  
 Austin, TX 78744  
 Phone: (512) 730-6022  
 Fax: (512) 730-6021

## Analytical Results

<b>Lab ID:</b> Q1963233001	<b>Date Received:</b> 9/11/2019 08:00	<b>Matrix:</b> Drinking Water
<b>Sample ID:</b> MAJESTIC II 10	<b>Date Collected:</b> 9/10/2019 11:30	<b>Sample Type:</b> SAMPLE
<b>Project ID:</b> APEX SAMPLES		

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
<b>INORGANICS (E200.7 Prep/E200.7 Metals, Trace Elements)</b>											
Iron Total	<0.0500	mg/L	0.0500	0.0200		1	09/16/19 10:03	ME	09/16/19 19:22		FM
<b>INORGANICS (E200.8, ICP-MS Prep/E200.8, ICP-MS)</b>											
Manganese Total	0.00214	mg/L	0.00100	0.0004		1	09/16/19 10:08	ME	09/20/19 13:49		FO
<b>INORGANICS (E2340B, Hardness Calc.)</b>											
Hardness	524	mg/L				1			10/08/19 09:38		CW *
<b>INORGANICS (E300.0, Anions)</b>											
Chloride	11.5	mg/L	1.00	0.500		1			09/11/19 09:15		ML
Fluoride	3.91	mg/L	0.0500	0.0250	4	5			09/11/19 10:50		ML
Nitrate (as N)	0.0159	mg/L	0.0100	0.0050	10	1			09/11/19 09:15		ML
Sulfate	231	mg/L	5.00	2.50		5			09/11/19 10:50		ML
<b>TOTAL DISSOLVED SOLIDS (SM2540C, TDS)</b>											
Total Dissolved Solids(TDS)	654	mg/L	25.0	10.0		10			09/13/19 11:10		ML
<b>Total Coliform by Colilert (SM9223, IDEXX)</b>											
Residual Chlorine	<0.5	mg/L				1			09/11/19 16:23		ME *
Total Coliform	Present	P/A	1.00	1.00		1			09/11/19 16:23		ME
Ecoli	Absent	P/A	1.00	1.00		1			09/11/19 16:23		ME
<b>pH (SM4500-H+B, pH @ 25°C)</b>											
pH	7.67	pH	0.00	0.00		1			09/19/19 15:25		ME *
Temperature	20.2	c				1			09/19/19 15:25		ME *

### Sample Comments

**Sample Type:** SAMPLE

- General Comments for METHOD SM4500-H+B, pH - Defined as a field parameter, measurement must be taken within 15 minutes of collection. Results are provided for information purposes only.



LCRA Environmental Laboratory Services  
3505 Montopolis Drive  
Austin, TX 78744  
Phone: (512) 730-6022  
Fax: (512) 730-6021

## Quality Control

**Preparation Batch:** MET / 7385      **Analysis Method:** E200.8, ICP-MS  
**Preparation Method:** E200.8, ICP-MS  
**Associated Lab IDs:** Q1963233001

### Method Reporting Limit Check (1341030)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Manganese Total	mg/L	.001	0	103	50 - 150



LCRA Environmental Laboratory Services  
3505 Montopolis Drive  
Austin, TX 78744  
Phone: (512) 730-6022  
Fax: (512) 730-6021

## Quality Control (cont.)

<b>Preparation Batch:</b> MET / 7376	<b>Analysis Method:</b> E200.7 Metals, Trace Elements
<b>Preparation Method:</b> E200.7 Metals, Trace Elements	
<b>Associated Lab IDs:</b> Q1963233001	

### Method Reporting Limit Check (1335952)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Iron Total	mg/L	.05	.05	106	50 - 150



LCRA Environmental Laboratory Services  
 3505 Montopolis Drive  
 Austin, TX 78744  
 Phone: (512) 730-6022  
 Fax: (512) 730-6021

## Quality Control (cont.)

<b>Preparation Batch:</b> MEP / 9594	<b>Analysis Method:</b> E200.7 Metals, Trace Elements
<b>Preparation Method:</b> E200.7 Prep	
<b>Associated Lab IDs:</b> Q1963233001	

### Laboratory Reagent Blank (1335753)

Parameter	Results	Units	MRL	LOD	Qualifier
Iron Total	<0.0500	mg/L	0.0500	0.0200	

### Laboratory Fortified Blank (1335754)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Iron Total	mg/L	1	1	100	85 - 115

### Laboratory Fortified Matrix (1335758) Original: Q1962882004

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Iron Total	mg/L	1	.97	97	70 - 130



## Quality Control (cont.)

<b>Preparation Batch:</b> WET / 20456	<b>Analysis Method:</b> E300.0, Anions
<b>Preparation Method:</b> E300.0, Anions	
<b>Associated Lab IDs:</b> Q1963233001	

### Laboratory Reagent Blank (1332931)

Parameter	Results	Units	MRL	LOD	Qualifier
Chloride	<1.00	mg/L	1.00	0.500	
Fluoride	<0.0100	mg/L	0.0100	0.00500	
Nitrate (as N)	<0.0100	mg/L	0.0100	0.00500	
Sulfate	<1.00	mg/L	1.00	0.500	

### Method Reporting Limit Check (1332933)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Chloride	mg/L	1	.76	76	50 - 150
Fluoride	mg/L	.01	.01	115	50 - 150
Nitrate (as N)	mg/L	.01	.01	65	50 - 150
Sulfate	mg/L	1	.94	94.1	50 - 150

### Laboratory Fortified Blank (1332934)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Chloride	mg/L	30	31	103	90 - 110
Fluoride	mg/L	1	.99	99.4	90 - 110
Nitrate (as N)	mg/L	1	1.07	107	90 - 110
Sulfate	mg/L	30	30.9	103	90 - 110

### Limit of Quantitation Check (1332935)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Chloride	mg/L	5	4.17	83.3	70 - 130
Fluoride	mg/L	.02	.02	96	70 - 130
Nitrate (as N)	mg/L	.02	.02	94	70 - 130
Sulfate	mg/L	5	4.54	90.8	70 - 130

### Laboratory Fortified Matrix (1333186) Original: Q1963233001

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Chloride	mg/L	20	33.1	108	80 - 120
Fluoride	mg/L	1	4.59	67.8	80 - 120
Nitrate (as N)	mg/L	1	1.62	161	80 - 120
Sulfate	mg/L	20	211	-100	80 - 120



LCRA Environmental Laboratory Services  
 3505 Montopolis Drive  
 Austin, TX 78744  
 Phone: (512) 730-6022  
 Fax: (512) 730-6021

## Quality Control (cont.)

<b>Preparation Batch:</b> WET / 20474	<b>Analysis Method:</b> SM2540C, TDS
<b>Preparation Method:</b> SM2540C, TDS	
<b>Associated Lab IDs:</b> Q1963233001	

### Method Blank (1335309)

Parameter	Results	Units	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	10.0	

### Lab Control Sample (1335310)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Total Dissolved Solids(TDS)	mg/L	400	413	103	80 - 120

### Duplicate (1335312); Original: Q1963100009

Parameter	Original	Duplicate	Units	RPD %	Limit
Total Dissolved Solids(TDS)	201	221	mg/L	9.48	20

### Matrix Spike (1335311) Original: Q1963100009

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Total Dissolved Solids(TDS)	mg/L	400	660	115	70 - 130





LCRA Environmental Laboratory Services  
 3505 Montopolis Drive  
 Austin, TX 78744  
 Phone: (512) 730-6022  
 Fax: (512) 730-6021

**Quality Control (cont.)**

<b>Preparation Batch:</b> MEP / 9595	<b>Analysis Method:</b> E200.8, ICP-MS
<b>Preparation Method:</b> E200.8, ICP-MS Prep	
<b>Associated Lab IDs:</b> Q1963233001	

**Laboratory Reagent Blank (1335770)**

Parameter	Results	Units	MRL	LOD	Qualifier
Manganese Total	<0.00100	mg/L	0.00100	0.000400	

**Laboratory Fortified Blank (1335771); Lab Fortified Blank Duplicate (1335772)**

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit
Manganese Total	mg/L	.05	.05	101	85 - 115	.05	101	0	20

**Laboratory Fortified Matrix (1335775) Original: Q1962884005; Lab Fortified Matrix Duplicate (1335776)**

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit
Manganese Total	mg/L	.05	.05	99.7	70 - 130	.05	99.4	.184	20



LCRA Environmental Laboratory Services  
3505 Montopolis Drive  
Austin, TX 78744  
Phone: (512) 730-6022  
Fax: (512) 730-6021

## Quality Control (cont.)

**Preparation Batch:** WET / 20511      **Analysis Method:** SM4500-H+B, pH @ 25°C  
**Preparation Method:** SM4500-H+B, pH @ 25°C  
**Associated Lab IDs:** Q1963233001

*Duplicate (1339858); Original: Q1963233001*

Parameter	Original	Duplicate	Units	RPD %	Limit
pH	7.67	7.7	pH	.39	20
Temperature	20.2	20.5	C	1.47	

### QC Sample Comments

**Sample Type:** Duplicate

- General Comments for METHOD SM4500-H+B, pH - Defined as a field parameter, measurement must be taken within 15 minutes of collection. Results are provided for information purposes only.



LCRA Environmental Laboratory Services  
 3505 Montopolis Drive  
 Austin, TX 78744  
 Phone: (512) 730-6022  
 Fax: (512) 730-6021

## Quality Control Cross Reference

### *MET/7376 - E200.7 Metals, Trace Elements*

Lab ID	Sample ID	Prep Batch	Prep Method
Q1963233001	MAJESTIC II 10	MEP/9594	E200.7 Prep

### *MET/7385 - E200.8, ICP-MS*

Lab ID	Sample ID	Prep Batch	Prep Method
Q1963233001	MAJESTIC II 10	MEP/9595	E200.8, ICP-MS Prep

### *MIC/5462 - SM9223, IDEXX*

Lab ID	Sample ID	Prep Batch	Prep Method
Q1963233001	MAJESTIC II 10		

### *WET/20456 - E300.0, Anions*

Lab ID	Sample ID	Prep Batch	Prep Method
Q1963233001	MAJESTIC II 10		

### *WET/20474 - SM2540C, TDS*

Lab ID	Sample ID	Prep Batch	Prep Method
Q1963233001	MAJESTIC II 10		

### *WET/20511 - SM4500-H+B, pH @ 25°C*

Lab ID	Sample ID	Prep Batch	Prep Method
Q1963233001	MAJESTIC II 10		

01963233



# LCRA Environmental Laboratory Services Request for Analysis Chain-of-Custody Record



Phone: (512) 730-6022 or 1-800-776-5272  
Fax: (512) 730-6021  
https://elis.lcra.org

LCRA - Environmental Lab  
3505 Montopolis Dr.  
Austin, TX 78744

Lab ID#: \_\_\_\_\_  
 Client PO: \_\_\_\_\_  
 Invoice To: **APEX**

Project: **MAJESTIC HILLS II** Client: **APEX**  
 Collector: \_\_\_\_\_ Contact: \_\_\_\_\_  
 Event#: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Report To: **APEX**

LAB USE ONLY	Sample ID *	Collected *		Matrix*	Container(s) Type/Preservative/Number *		Requested Analysis *
		Date*	Time * HH:MM		COMPOSITE Y/N	FILTERED Y/N	
1	MAJESTIC II #10	9-10-19	11:30	AQ = Aqueous S = Solid T = Tissue DW = Drinking Water		SEE ATTACHED	
2							
3							
4							
5							
6							
7							
8							
9							
10							

Transfers	Relinquished By	Date/Time	Received By	Date/Time	Cooler Temp (°C)			Client Special Instructions:
					#	Obs.	Corr.	
1	M BELKUP	9-11-19 / 8:00	[Signature]	9/11/19 8:00	1	7.7	1.7	
2					2			
3								

Lab Use \_\_\_\_\_



01963233 425236

Note: Relinquishing sample(s) and signing the COC, client agrees to accept and is bound by the ELS Standard Terms and Conditions. All fields with an asterisk (\*) are required to be completed.

NO. 1

NO. 3

No. 8

No. 7

*Well numbers correspond to Attachment 1*

---

The water quality from each well will need to be assessed to determine if the aquifer can provide adequate drinking water. Upon completion, a water sample will need to be collected and analyzed for the following:

- Chloride
- Conductivity
- Fluoride
- Iron
- Nitrate (as nitrogen)
- Manganese
- pH
- Sulfate
- Total hardness
- Total Dissolved Solids (TDS)
- Presence/absence of total coliform bacteria

have any questions please feel free to call me at 512-773-3