

# 2019 Annual Report

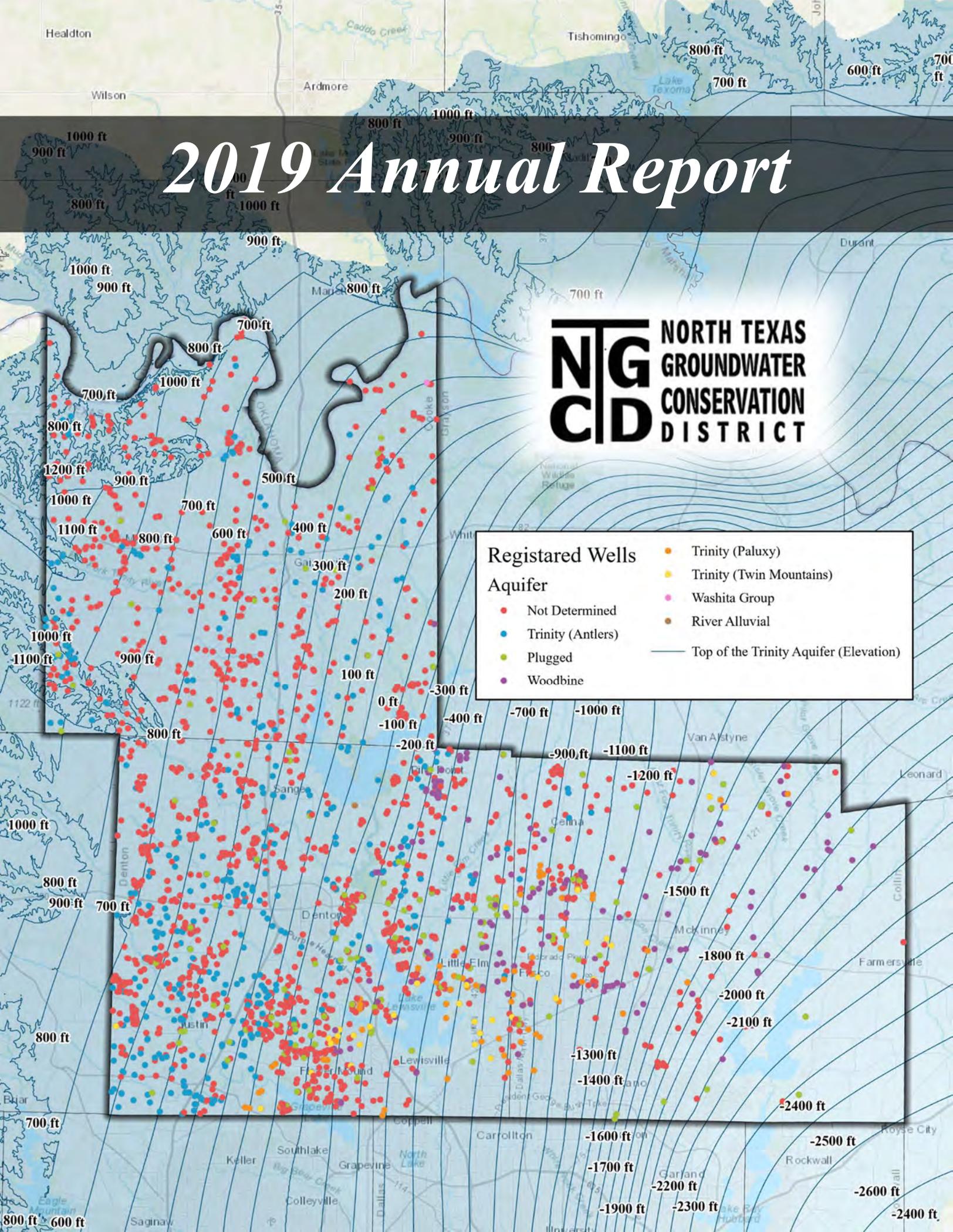


**Registered Wells**

**Aquifer**

- Not Determined
- Trinity (Antlers)
- Plugged
- Woodbine
- Trinity (Paluxy)
- Trinity (Twin Mountains)
- Washita Group
- River Alluvial

— Top of the Trinity Aquifer (Elevation)



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## Board of Directors

### *Collin County*

Allen Knight  
Vice President  
Other Groundwater Producers

Joseph Helmberger, P.E.  
County Representative

Ryan Henderson  
Largest Municipal  
Groundwater Producer

### *Cooke County*

Ron Sellman  
Secretary/Treasurer  
Largest Municipal  
Groundwater Producer

David Flusche, P.E.  
County Representative

Ronny P. Young  
Other Groundwater Producers

### *Denton County*

Thomas L. Smith, P.E.  
President  
County Representative

Lee K. Allison, P.E.  
Other Groundwater Producers

Vacant  
Largest Municipal  
Groundwater Producer

## Staff

Drew Satterwhite, P.E.	General Manager
Paul M. Sigle, EIT	Groundwater Technical Lead
Wayne Parkman	Field Technician
Allen Burks	Field Technician
Theda Anderson	Registration Coordinator
Debi Atkins	Finance Officer
Tasha Hamilton	Accountant
Nichole Sims	Accountant
Carolyn Bennett	Administrative Manager/Project Coordinator
Velma Starks	Administrative Assistant

## **I. Introduction**

In 1997 Senate Bill 1, enacted by the Texas Legislature, confirmed a state policy that “groundwater conservation districts... are the state’s preferred method of groundwater management through rules developed, adopted and promulgated by a district...” Subsequently, the Texas Commission on Environmental Quality issued a report in 2007 advising that one or more groundwater conservation districts would need to be created in the 13-county area of North Central Texas, including the Counties of Collin, Cooke, and Denton. North Texas Groundwater Conservation District (“District”) was created by Senate Bill 2497, May 27, 2009. Creation of the District was confirmed by Commissioners Court of Collin County August 10, 2009, Commissioners Court of Cooke County August 10, 2009, and Commissioners Court of Denton County August 11, 2009.

Temporary Rules were adopted by the Board of Directors October 19, 2010. Permanent Rules were adopted by the Board of Directors December 11, 2018. As required by Chapter 36 of the Texas Water Code, the District provides for conserving, preserving, protecting, recharging, and preventing the waste of groundwater. The adopted Rules provide protection to existing wells, prevent waste, promote conservation, provide a framework to allow availability and accessibility of groundwater for future generations, protect quality of ground water in recharge zone of aquifer, and insure residents of Collin, Cooke and Denton Counties maintain local control over their groundwater. The Rules also ensure the District operates in a fair and equitable manner for all residents of the District.

The District adopted its initial Management Plan April 19, 2012. As required, the District’s Management Plan was updated and readopted March 14, 2017. The Texas Water Development Board approved the updated Plan May 12, 2017. One requirement of the Management Plan is for an Annual Report to be provided to the Board of Directors. This report is presented to the Board of Directors of the North Texas Groundwater Conservation District pursuant to this requirement.

The District is committed to managing and protecting the groundwater resources within its jurisdiction and to working with others to ensure a sustainable, adequate, high quality and cost-effective supply of water, now and in the future. The District will strive to develop, promote, and implement water conservation, augmentation, and management strategies to protect water resources for the benefit of the citizens, economy, and environment of the District. The preservation of this most valuable resource can be managed in a prudent and cost-effective manner through conservation, education, and management. The District will endeavor to consider and respect individual property owner rights when acting on related matters.

## II. General Manager's Report

This annual report has been prepared by District staff for presentation to the Board to keep them informed of the status of goals adopted by the Plan. Wells drilled after April 1, 2011 and all existing non-exempt wells are required to be registered with the District. Monthly briefings are presented in the General Manager's Report at District Board meetings.

During 2019, the North Texas GCD Board of Directors and staff accomplished the following tasks:

- Continued to work with consultants on updating the District's geodatabase including development of a Water Well Management System
- Implemented the new Permanent Rules
- Compiled water use numbers through exporting meter reading data from the current database
- Improved the Hydrogeological Report Guidelines
- Continued meter inspection program, including the meter sealing policy to assure meters stay with the well for which it is assigned
- Well inspection program sustained
- Continued injection/disposal well monitoring program
- Reached agreements with multiple public water systems to add to the current well monitoring program
- Continued public information program – the General Manager gave presentations on the activities and purpose of the District
  - February 18, 2019: Greater Texoma Utility Authority Board of Directors Meeting
  - May 9, 2019: Cooke County Commissioners Court
  - June 25, 2019: TIGA

### III. Management Goals

The District Management Plan provides that an Annual Report be prepared by the General Manager and staff of the District, covering the activities of the District, including information concerning the District’s performance in regard to achieving the District’s management goals and objectives.

#### ***Goal 1: Providing the Most Efficient Use of Water***

##### **Management Objective 1.1**

The District will require that all wells be registered in accordance with its current rules. All new wells drilled after April 1, 2011 and all existing non-exempt wells are required to be registered with the District in accordance with its current rules.

##### **Performance Standard 1.1**

Subsequent to adoption of the Plan, briefings are being provided by the General Manager to the Board of Directors regarding well registration program at the monthly board meetings. In addition, a handout was developed by District staff to be provided annually to local realtor associations detailing the requirement of new property owners to register their existing wells within ninety (90) days of transfer of ownership. The table below list the wells registered with the District in 2019 and the total number of wells registered with the District as of January 1, 2020.

**Table 1: Exempt and Non-Exempt Wells Registered with the District.**

<i>Use</i>	<i>2019</i>			<i>2020</i>		
	<i>Exempt</i>	<i>Non-Exempt</i>	<i>Total</i>	<i>Exempt</i>	<i>Non-Exempt</i>	<i>Total</i>
<i>Agriculture</i>	2	-	2	35	22	57
<i>Commercial/Small Business</i>	2	1	3	40	11	51
<i>Domestic</i>	142	-	142	1,265	-	1,265
<i>Golf Course Irrigation</i>	-	-	-	1	37	38
<i>Industrial/Manufacturing</i>	-	-	-	4	24	28
<i>Irrigation</i>	4	8	12	157	116	273
<i>Livestock</i>	8	-	8	129	1	130
<i>Not Specified</i>	6	-	6	63	8	71
<i>Oil/Gas</i>	-	-	-	7	68	75
<i>Other</i>	4	1	5	44	10	54
<i>Pond(s)/Surface Impoundment(s)</i>	6	2	8	71	87	158
<i>Public Water System</i>	-	11	11	28	313	341
<i>Total</i>	<i>174</i>	<i>23</i>	<i>197</i>	<i>1,844</i>	<i>697</i>	<i>2,541</i>

Aquifers in which the wells have been completed: Trinity and Woodbine Aquifers

##### **Management Objective 1.2**

It is the goal of the District that all non-exempt wells and exempt wells be registered. Beginning in April 2011, the District launched an on-line registration program in order to register and collect important information regarding all non-exempt wells drilled on or after April 1, 2011. The

District’s Field Technicians manage a Field Inspections Program, with the objective of conducting field inspections of at least five (5) wells per month. These inspections confirm that a well has been registered, accuracy of well location, flow tested to ensure the well meets the maximum flow rate requirements of the new well, and accuracy of certain other required well registration information.

**Performance Standard 1.2**

Quarterly briefings are provided by the General Manager to the Board of Directors regarding the number of well sites inspected each month to confirm well registration requirements have been met. Requirement to inspect/audit well sites each month to confirm well registration requirements has been met. This information is reported in Table 2.

**Table 2: Well Inspections During 2019.**

<i>Month</i>	<i>Collin County</i>	<i>Cooke County</i>	<i>Denton County</i>	<i>Total</i>
<i>January</i>	2	2	40	44
<i>February</i>	5	11	29	45
<i>March</i>	5	4	27	36
<i>April</i>	1	10	22	33
<i>May</i>	4	2	31	37
<i>June</i>	1	3	25	29
<i>July</i>	1	1	23	25
<i>August</i>	4	8	12	24
<i>September</i>	6	2	12	20
<i>October</i>	3	5	16	24
<i>November</i>	1	5	7	13
<i>December</i>	5	7	12	24
<i>Total</i>	38	60	256	354

This information is updated and presented monthly to the Board of Directors.

**Management Objective 1.3(a)**

A groundwater monitoring program was launched in 2013, to collect information on the quantity and quality of groundwater resources throughout the District. For the first two years, beginning in 2013, District staff began to work with Texas Water Development Board (“TWDB”) staff to monitor water levels in wells the TWDB staff currently monitors on an annual basis. After the initial two-year period, District staff assumed the responsibility of monitoring these wells at least annually. In addition, at least one additional well will be added in each county, for a total of three wells to the program. District staff is working on agreements with well owners for additional monitoring wells to add wells to the District’s groundwater monitoring program. Throughout 2018 and 2019, the District sent out letters to selected public water systems asking the public water system to participate in the District’s monitoring program. Through this process, the District added 33 new wells to the District’s monitoring program.

For the purpose of water quality sampling, the samples collected for water quality taken by the Texas Commission on Environmental Quality staff every five years will be used for monitoring

purposes initially, and may be supplemented as determined by the Board in the future. All information collected will be entered into the District’s geodatabase.

**Performance Standard 1.3(a)(1)**

Number of wells in Collin, Cooke and Denton Counties for which water levels were measured per year:

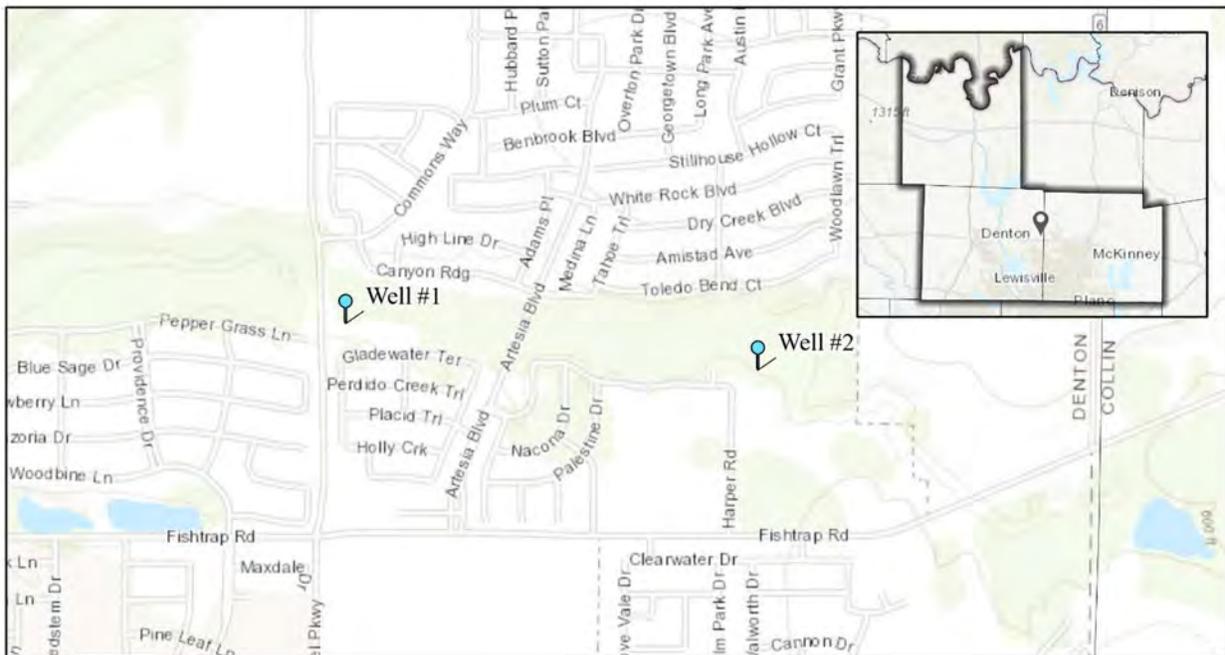
**Table 3: Wells Measured for the District's Monitoring Program.**

<i>Year</i>	<i>Wells Measured</i>
2013	22
2014	31
2015	31
2016	31
2017	24
2018	4
2019	51

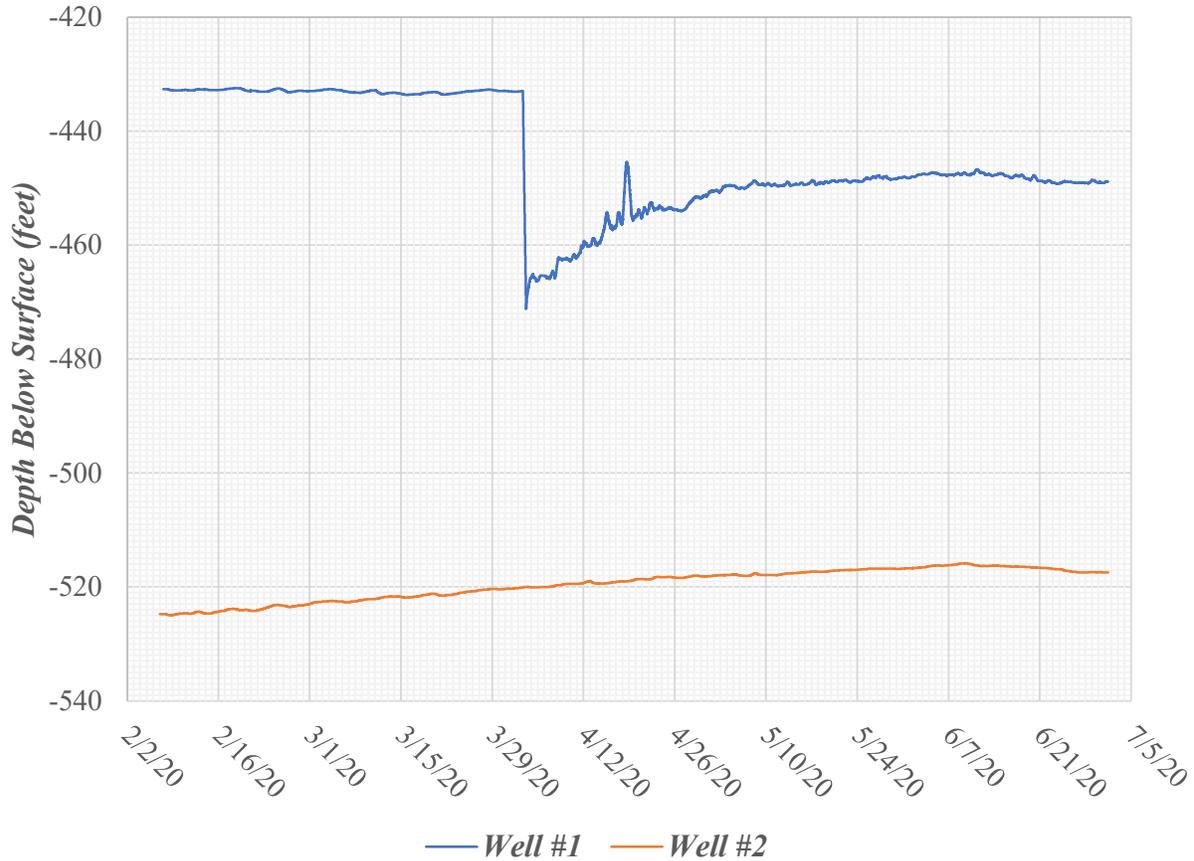
Note: The District Staff moved the timeframe for measuring wells from November to February in 2019/2020 as they felt that was the closest time of year to static conditions. The wells measured for 2019 were actually measured in February of 2020.

In addition to the wells the District measures on an annual basis, the District acquired two wells to measure on a continuous basis. These two wells are screened within the Trinity (Twin Mountains) Aquifer. Figure 1 and 2 show the location and data collected from the continuous monitoring wells.

**Figure 1: Map of the Continuous Monitoring Locations.**



**Figure 2: Chart of the District's Two Continuous Monitoring Wells Data.**



**Performance Standard 1.3(a)(2)**

Number of wells in Collin, Cooke and Denton Counties for which water samples were collected for testing of water quality: The Texas Commission on Environmental Quality provides a Consumer Confidence Report that provides consumers with information about the quality of drinking water. This data may be reviewed at [www.tceq.texas.gov/drinkingwater/ccr/](http://www.tceq.texas.gov/drinkingwater/ccr/) for water systems. TWDB sampled 17 wells for water quality throughout the District in 2019. Below is a summary of the data collected by TWDB. Individual well reports are in Appendix A.

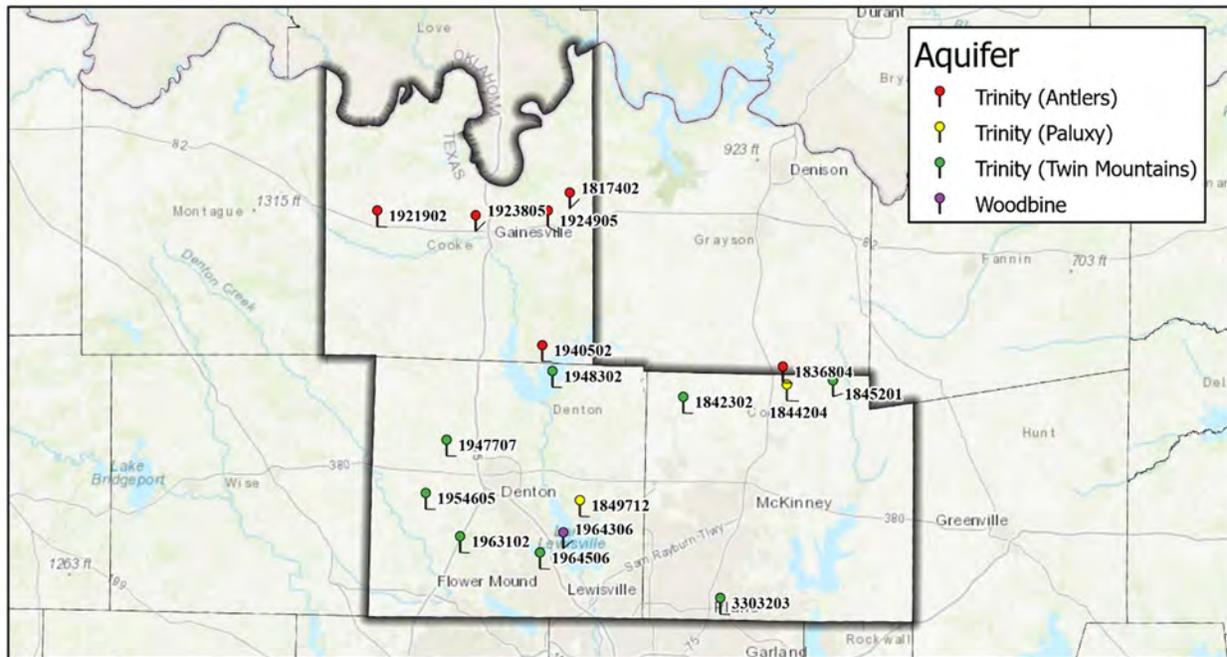
**Table 4: Number of Wells Tested for Water Quality by the TWDB.**

<i>County</i>	<i>Trinity Aquifer</i>	<i>Woodbine Aquifer</i>	<i>Total</i>
<i>Collin</i>	5	0	5
<i>Cooke</i>	5	0	5
<i>Denton</i>	6	1	7
<b><i>Total</i></b>	<b>16</b>	<b>1</b>	<b>17</b>

**Table 5: Water Quality Data Collected by TWDB.**

<i>Parameter Description</i>	<i>Trinity Average Value</i>	<i>Trinity Highest Value</i>	<i>Woodbine Value</i>	<i>Unit</i>
<i>Temperature</i>	28.64	46.70	20.90	C
<i>Specific Conductance</i>	1,058.75	1,752.00	1,068.00	MICR
<i>pH</i>	8.62	9.16	6.89	SU
<i>Alkalinity, Total</i>	355.06	508.00	364.00	mg/L
<i>Alkalinity, Phenolphthalein</i>	15.36	32.60	-	mg/L
<i>Alkalinity, Bicarbonate</i>	324.50	484.00	364.00	mg/L
<i>Alkalinity, Carbonate</i>	30.70	65.10	-	mg/L
<i>Bicarbonate Ion</i>	395.82	590.65	444.21	mg/L
<i>Carbonate Ion</i>	18.43	39.12	-	mg/L
<i>Nitrite Plus Nitrate</i>	0.02	0.02	0.02	mg/L
<i>Phosphorus</i>	0.09	0.69	0.09	mg/L
<i>Hardness, Total</i>	9.95	46.09	94.27	mg/L
<i>Calcium</i>	2.54	9.97	19.60	mg/L
<i>Magnesium</i>	0.85	4.85	10.80	mg/L
<i>Sodium</i>	242.44	470.00	265.00	mg/L
<i>Sodium Adsorption Ration</i>	43.02	71.26	11.93	
<i>Potassium</i>	1.11	2.90	1.98	mg/L
<i>Chloride</i>	72.79	285.00	29.60	mg/L
<i>Sulfate</i>	83.68	390.00	267.00	mg/L
<i>Fluoride</i>	0.73	2.10	2.00	mg/L
<i>Silica</i>	11.92	18.50	8.44	mg/L
<i>Arsenic</i>	1.03	1.46	1.00	ug/L
<i>Barium</i>	26.40	113.00	9.80	ug/L
<i>Boron</i>	491.13	1,350.00	1,710.00	ug/L
<i>Chromium</i>	2.00	2.95	3.83	ug/L
<i>Iron</i>	65.92	287.00	1,100.00	ug/L
<i>Manganese</i>	4.20	9.31	3,100.00	ug/L
<i>Molybdenum</i>	1.13	2.33	1.00	ug/L
<i>Strontium</i>	211.91	1,060.00	737.00	ug/L
<i>Zinc</i>	5.27	9.28	17.00	ug/L
<i>Aluminum</i>	6.57	13.60	21.50	ug/L
<i>Lithium</i>	29.80	126.00	44.90	ug/L
<i>Selenium</i>	5.00	5.00	5.00	ug/L
<i>Total Dissolved Solids</i>	629.29	1,266.48	823.57	mg/L
<i>Nitrate Nitrogen</i>	0.02	0.02	0.02	mg/L
<i>Residual Sodium Carbonate</i>	6.91	10.09	5.41	
<i>Bromide</i>	0.39	1.59	0.11	mg/L
<i>Mercury</i>	0.20	0.20	0.20	ug/L

**Figure 3: Map of Water Quality Sites.**



**Management Objective 1.3(b)**

In order to ensure the efficient use of groundwater, adequate data must be collected to facilitate groundwater availability modeling activities necessary to understand current groundwater resources and the projected availability of those resources in the future. Monitoring wells will be established by the District for continuous time information on water levels in targeted locations on a schedule as determined by the District’s Board of Directors, as funds become available.

**Performance Standard 1.3(b)**

Number of wells for which water level data is available will be accessible online after the current geodatabase improvements project is complete.

**Management Objective 1.4**

A critical component of the District’s goal of ensuring the efficient use of groundwater is the collection of accurate water use information. The District has established by permanent rule a requirement that all non-exempt wells are to be equipped with meters to measure use of groundwater. The well owner/operator is responsible for maintaining a meter log with at least monthly records of water use. Cumulative water uses to be reported by well owner/operator on a quarterly basis. All water use information is entered and maintained in the District’s geodatabase. It is the objective of the District that 95 percent of all registered non-exempt wells will report water use by the reporting deadlines established in the District’s rules.

**Performance Standard 1.4**

Percentage of registered non-exempt wells meeting reporting requirements of water use:

**Table 6: Percentage of Registered Non-Exempt Wells Meeting Reporting Requirements of Water Use.**

<i>Year</i>	<i>Percentage Meeting Reporting Requirements</i>
2012	85%
2013	89%
2014	95%
2015	96%
2016	92%
2017	82%
2018	93%
2019	93%

**Management Objective 1.5**

In order to ensure that registered non-exempt wells have been equipped with District-approved meters and that water use is being accurately reported, a meter inspection program has been implemented by District staff. The District Field Technicians facilitate a meter inspection program to ensure that meters for all registered non-exempt wells will be inspected on at least a five-year cycle by District personnel. These inspections at a minimum verify proper installation and operational status of meters and record the meter reading at the time of inspection. This meter reading is compared to the most recent water use report for the inspected well. Any potential violation of District Rules regarding meter installation and reporting requirements will be reported to the Board of Directors at their next practicable meeting for consideration of possible enforcement actions. Information containing annual water use, by registered well, by county, and by aquifer, will be included in the Annual Report presented by the General Manager. The report will include a comparison of reported water use versus the estimate of modeled available groundwater (the sum of exempt and permitted groundwater) established as a result of the Desired Future Conditions for aquifers in the District.

**Performance Standard 1.5(a)**

Percentage of registered non-exempt wells inspected by District personnel annually to verify meters meet District requirements:

**Table 7: Percentage of Registered Non-Exempt Wells Inspected Annually.**

<i>Year</i>	<i>Percentage of Well Inspected</i>
2012	74%
2013	6%
2014	21%
2015	24%
2016	13%
2017	37%
2018	51%
2019	16%

**Performance Standard 1.5(b)**

The District staff recently compiled the annual water use from exported meter readings from the current District’s database. This data was compiled by county, by aquifer, and by use. The average water use was used to compare the production to the Modeled Available Groundwater. Table 8, 9, and 10 is the non-exempt production for the District from 2012 to 2019. Figure 4 and 5 is the comparison of the non-exempt and exempt production to the Modeled Available Groundwater.

**Table 8: Non-Exempt Production by County (All Production is in Acre-Feet).**

<i>Year</i>	<i>Collin County</i>	<i>Cooke County</i>	<i>Denton County</i>	<i>Total</i>
2012	5,274	6,476	15,295	27,045
2013	4,748	5,224	13,538	23,511
2014	4,353	4,884	14,051	23,288
2015	5,238	4,361	13,610	23,209
2016	4,758	4,312	11,605	20,675
2017	4,739	4,383	13,215	22,338
2018	5,322	4,253	14,579	24,155
2019	5,723	4,046	13,631	23,399
<i>Average</i>	<i>5,019</i>	<i>4,743</i>	<i>13,691</i>	<i>23,452</i>

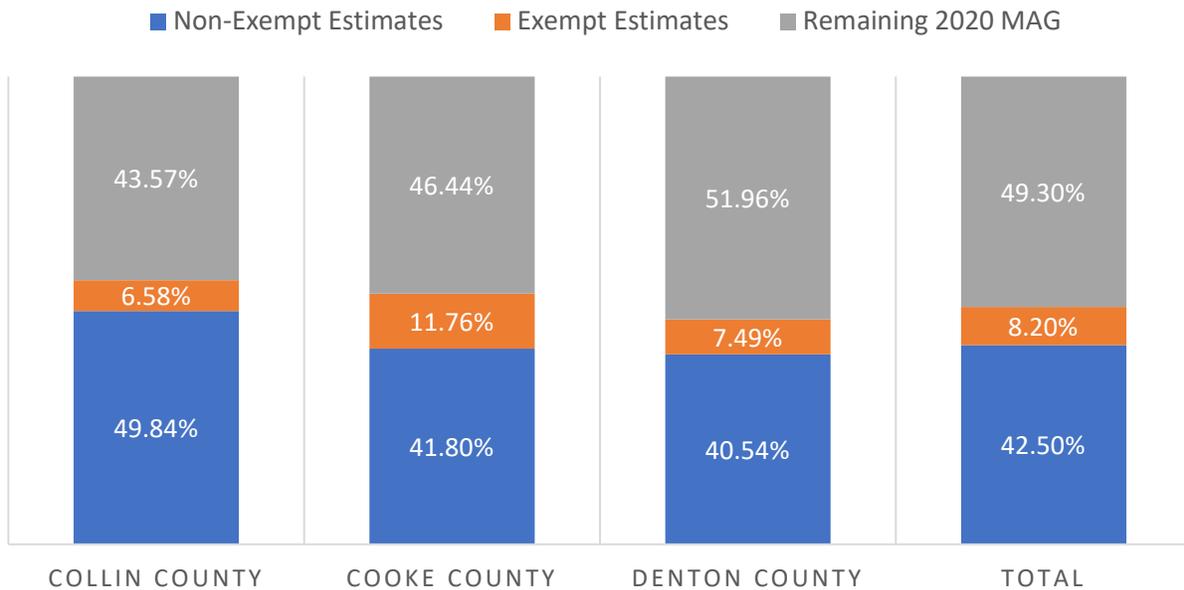
**Table 9: Non-Exempt Production by Aquifer (All Production is in Acre-Feet).**

<i>Year</i>	<i>River Alluvial</i>	<i>Trinity (Antlers)</i>	<i>Trinity (Paluxy)</i>	<i>Trinity (Twin Mountains)</i>	<i>Washita Group</i>	<i>Woodbine</i>
2012	0	16,865	1,838	4,250	0	4,092
2013	0	14,982	1,741	3,302	24	3,461
2014	0	14,684	1,652	3,145	17	3,789
2015	0	13,764	1,848	3,726	13	3,857
2016	0	12,664	1,474	2,970	16	3,551
2017	33	13,045	1,645	3,274	8	4,333
2018	52	14,132	1,668	4,072	4	4,227
2019	60	12,936	1,997	3,639	0	4,768
<i>Average</i>	<i>12</i>	<i>14,305</i>	<i>1,695</i>	<i>3,534</i>	<i>12</i>	<i>3,901</i>

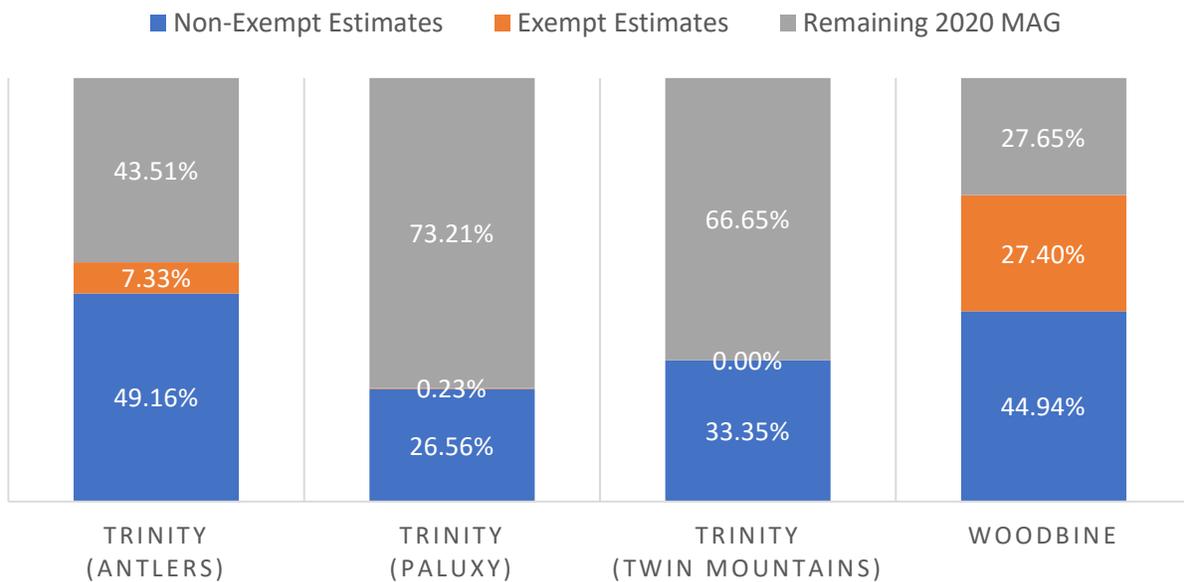
**Table 10: Non-Exempt Production by Use (All Production is in Acre-Feet).**

<i>Use</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>Average</i>
<i>Public Water System</i>	17,401	15,640	15,552	16,217	16,110	16,401	17,239	16,328	16,361
<i>Golf Course Irrigation</i>	3,081	2,819	2,468	2,325	1,661	1,794	2,184	2,241	2,322
<i>Oil/Gas</i>	2,780	1,885	1,552	1,096	212	434	1,097	268	1,165
<i>Agriculture</i>	1,447	1,226	1,619	1,311	948	1,331	1,012	1,279	1,272
<i>Irrigation</i>	686	611	1,099	1,272	1,014	1,175	1,437	1,838	1,142
<i>Pond/Surface Impoundment</i>	821	732	566	522	459	779	721	1,067	708
<i>Industrial/Manufacturing</i>	116	135	192	219	184	228	251	229	194
<i>Livestock</i>	582	456	140	40	0	4	2	2	153
<i>Commercial</i>	122	2	92	198	37	89	111	92	93
<i>Other</i>	9	4	8	9	49	101	100	57	42

**Figure 4: Average Production Compared to 2020 MAG by County.**



**Figure 5: Average Production Compared to 2020 MAG by Aquifer.**



**Management Objective 1.6**

A critical component to accomplishing the District’s mission is to ensure that proper data is being collected and that the data is being utilized to the fullest extent and efficiently. Shortly after the District was created, the District hired a consultant to build an online geodatabase that would make workflows, data entry and data utilization easier and more efficient for well owners, well drillers, general public, District staff and Board of Directors. After several years of utilizing the geodatabase the District had built, the District staff has identified areas in which the existing system can be upgraded.

### **Performance Standard 1.6**

The District has hired a consultant to upgrade the District’s geodatabase. The consultant is in the process of completing an upgraded database to make workflows, data entry and data utilization easier and more efficient.

### **Management Objective 1.7**

The District will develop methodology to quantify current and projected annual groundwater production from exempt wells.

### **Performance Standard 1.7**

The District will provide the Texas Water Development Board with its methodology and estimates of current and projected annual groundwater production from exempt wells. The District will also utilize the information in the future in developing and achieving desired future conditions and in developing and implementing its production allocation and permitting system and rules. Table 11 outlines the District methodology for estimating annual groundwater production from exempt wells.

**Table 11: Estimated Annual Groundwater Production from Exempt Wells.**

<i>Use</i>	<i>Active Wells</i>	<i>Sum Of Capacity (GPM)</i>	<i>Estimated Production (Ac-ft)</i>	<i>Methodology</i>
<i>Agriculture</i>	30	530.0	214	Average time pumping per day of 2 hours
<i>Commercial</i>	36	632.7	18	Assumed average consumption is 150 gallons per day
<i>Domestic Use</i>	1154	18,345.8	582	Assumed average consumption is 150 gallons per day
<i>Industrial/ Manufacturing</i>	2	36.7	15	Average time pumping per day of 2 hours
<i>Irrigation</i>	145	2,643.5	1,066	Average time pumping per day of 2 hours
<i>Livestock</i>	117	3,795.0	1,530	Average time pumping per day of 2 hours
<i>Oil/Gas</i>	6	390.0	157	Average time pumping per day of 2 hours
<i>Other</i>	33	513.6	207	Average time pumping per day of 2 hours
<i>Pond/Surface Impoundments</i>	61	1,253.5	505	Average time pumping per day of 2 hours
<i>Public Water System</i>	11	192.5	233	Average time pumping per day of 6 hours
<b>Total</b>	<b>1,595</b>	<b>28,333</b>	<b>4,528</b>	

*Note: The District assumed the registered exempt wells only accounted for one third of the actual number of exempt wells within the District.*

## ***Goal 2: Controlling and Preventing Waste of Groundwater***

### **Management Objective 2.1**

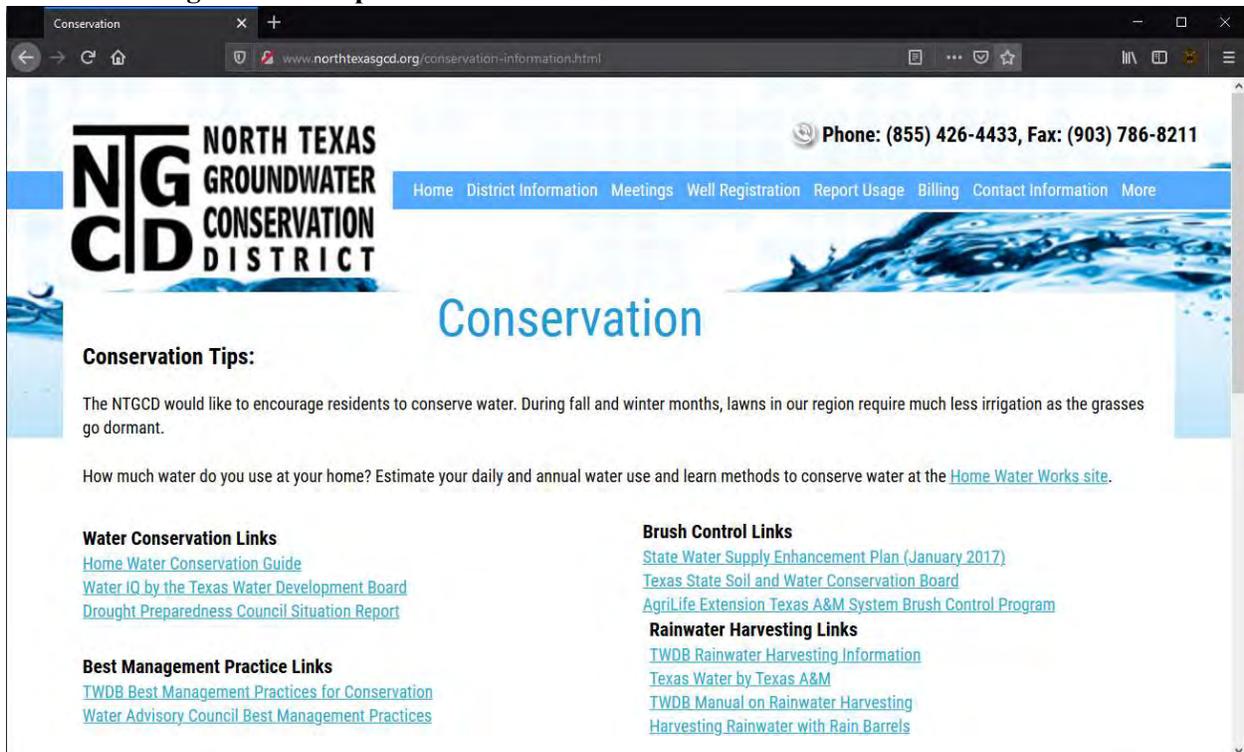
The District will annually provide information to the public on eliminating and reducing wasteful practices in the use of groundwater by publishing information on groundwater waste reduction on the District’s website at least once a year.

### **Performance Standard 2.1**

A link has been provided on the District website to Best Management Practices and helpful hints to control and prevent waste of groundwater.

The following figure is an excerpt of information available on the District website:

**Figure 6: Excerpt of the Conservation Information on the District Website.**



### **Management Objective 2.2**

The District will encourage the elimination and reduction of groundwater waste through a collection of water-use fees for non-exemption production wells within the District.

### **Performance Standard 2.2**

Table 12 list the total fees paid, and the calculated groundwater use based on the fees paid during 2015 through 2019.

**Table 12: Total Fees Paid and Groundwater Usage Based on the Fees Paid.**

<i>Year</i>	<i>Total Fees Paid</i>	<i>Total Groundwater Used (gallons)</i>
2015	\$739,685	7,396,850,000
2016	\$625,978	6,259,780,000
2017	\$625,969	6,259,690,000
2018	\$792,081	7,290,180,000
2019	\$713,307	7,133,070,000
<i>Average</i>	<i>\$699,404</i>	<i>6,867,914,000</i>

**Management Objective 2.3**

The District will identify well owners that are not in compliance with District well registration, reporting, and fee payment requirements, and request they comply.

**Performance Standard 2.3**

Table 13 is a list of violations that occurred during 2019.

**Table 13: Summary of Violations.**

<i>Violator</i>	<i>Violation</i>	<i>Enforcement Action</i>
<i>440 Ranch, Gail Cooper 4381 S. Highway 377 Aubrey, TX 76277</i>	Failure to submit water production report within 60 days of due date (\$500), failure to submit water use fee payments within 60 days of due date (\$500), and failure to timely meter a well when required (\$500)	The Board conducted a Show Cause Hearing on February 12, 2019. The Board decided to present an offer to the present current owner and foreclosure bank with the opportunity to 1) bring the well into compliance and operational within 60 days, provided there is a pump down hole, or 2) have the well capped. Also, the Board authorized the General Counsel to move forward with the standard lawsuit procedures to then file a lien on the property for the \$1,500 fine, attorney fees, additional fees for remaining out of compliance, and 2 years usage fees if the owner or foreclosure bank doesn't bring the well into compliance.
<i>THI Water Well 1620 Hwy 59N Bowie, TX 76230</i>	Failure to register or permit a well (\$500), and two second violation, failure to register or permit a well (\$1000)	\$500 fine for the first violation and \$2000 fine for the second violation
<i>DWW Golf Management Company 3005 N McDonald St. McKinney, TX 75071</i>	Failure to submit water production report within 60 days of due date (\$500)	\$500 fine, submitting meter readings, and paying water use fees.
<i>C. Miller Drilling 7355 E. State Hwy. 154 Winnsboro, TX 75495</i>	Failure to register or permit a well (\$500)	\$500 fine and registering the well according to the District Rules for non-exempt well within 30 days or modifying the well to meet the 17.36 GPM or less requirement for exempt wells within 60 days.

#### **Management Objective 2.4**

The District will investigate instance of potential waste of groundwater.

#### **Performance Standard 2.4**

District staff will report to the Board of Directors as needed regarding potential waste of groundwater and include number of investigations in the Annual Report. The District did not receive or investigate any potential waste of groundwater during 2019.

### ***Goal 3: Controlling and Preventing Subsidence***

Due to the geology of the Northern Trinity/Woodbine Aquifers in the District, problems resulting from water level declines causing subsidence are not technically feasible and as such, a goal addressing subsidence is not applicable. The District's Hydrogeologist presented subsidence information to the Board of Directors in 2019.

### ***Goal 4: Addressing Conjunctive Surface Water Management Issues***

#### **Management Objective 4.1**

Coordinating with surface water management agencies. Designated Board Member or General Manager shall attend a minimum of 75 percent of meetings and events of Region C Water Planning Group. Participation in the regional water planning process will ensure coordination with surface water management agencies that are participating in the regional water planning process.

#### **Performance Standard 4.1**

Report on actions of Region C Water Planning Group shall be provided to the Board as appropriate. General Manager to document meetings attended and significant actions of the planning group in the Annual Report.

Region C Water Planning Group held 3 meetings in 2019, on February 25, June 24, and December 16. General Manager Drew Satterwhite attended all three meetings.

#### **February 25, 2019 Region C Water Planning Group Meeting**

The Group elected the slate of officers for 2019, approved the remaining scope for Task 5A, approved a request to TWDB for a notice-to-proceed, authorizing Trinity River Authority to execute a contract amendment with TWDB, approved Task 8 subcommittee recommendations, approved a letter to TWDB requesting specific hydrologic variances to the water availability models, and approved submitting a written request to the TWDB to perform the socio-economic impact analysis of not meeting identified water needs for inclusion in the 2021 Regional Water Plan. The Group discussed the progress of Bois d'Arc Lake, large water management strategies, recommendations from Region C, Uniform Standards Committee Report from TWDB, TWDB comments on technical memorandum, Chapters one through three, and Task 5B.

#### **June 24, 2019 Region C Water Planning Group Meeting**

The Group authorized Trinity River Authority to amend the Region C contract with TWDB to increase committed funds to the full contracted amount, recognized and appointed replacements

for two members who resigned from their position, approved City of Springtown's request for an amendment to the 2016 Region C Water Plan, and authorized the chairman to convene a meeting of the environmental entities and consultants to determine the list of emergency interconnects to submit to the TWDB separate from the final plan. The Group discussed an update on hydrologic variance request for water management strategies, received a presentation on conservation strategies and water management strategies, and discussed Region C and D coordination.

#### **December 16, 2019 Region C Water Planning Group Meeting**

The Group elected officers for 2020, elected a new member to fill the vacancy for the member representing agricultural interests, and appointed members to a prioritization subcommittee. The Group received an update on Region C and D coordination, chapter 4 (water needs), chapter 5 (water management strategies), chapter 11 (implementation/comparison to 2016 Plan), and Region C website.

Additional information about the Region C Water Planning Group and the 2021 Region C Water Plan can be found at [regioncwater.org](http://regioncwater.org).

#### **Management Objective 4.2**

Designated technical representative of the District will monitor and participate in all stakeholder meetings that concern water resources relevant to the District.

#### **Performance Standard 4.2**

The General Manager of the District will monitor and participate in relevant stakeholder meetings that concern water resources relevant to the District. A report on meetings attended will be included in the Annual Report to the Board of Directors.

Groundwater Management Area 8 (GMA 8) held 3 meetings in 2019, on May 6, July 26, and November 22. General Manager Drew Satterwhite and District Staff attended all three meetings. GMA 8 representative Ronny Young was unable to attend the November 22, 2019 meeting, but attended all others in 2019.

#### **May 6, 2019 GMA 8 Meeting**

The group recognized Eddy Daniel for his service to GMA 8, approved a contract and scope of services with WSP for consulting service for DFC development, approved an interlocal agreement for splitting the funding for WSP services, discussed potential model runs of the Groundwater Availability Model of the Northern Trinity and Woodbine Aquifers (NTWGAM) for this planning cycle, discussed the joint planning schedule, and received an update on pending legislation.

#### **July 6, 2019 GMA 8 Meeting**

The group received an update on the contract and scope of services with WSP for consulting service for DFC development, discussed potential model runs of the NTWGAM for this planning cycle, discussed the plan for consideration of the nine factors required for DFC joint planning, discussed the plan for updated the explanatory report for the third round of DFC joint planning, and received an update on pending legislation.

### November 22, 2019 GMA 8 Meeting

The group discussed the groundwater production inputs for a new model run of the NTWGAM, impacts from three factors (environmental, subsidence, and hydrological conditions) as they relate to the Desired Future Conditions, similar rules surveys, and an update from the TWDB.

Additional information about GMA 8 and the DFC joint planning process can be found at [gma8.org](http://gma8.org).

## ***Goal 5: Addressing Natural Resource Issues***

### ***Management Objective 5.1***

The District has engaged a firm to monitor all injection well applications within the District and notify the General Manager of any potential impacts.

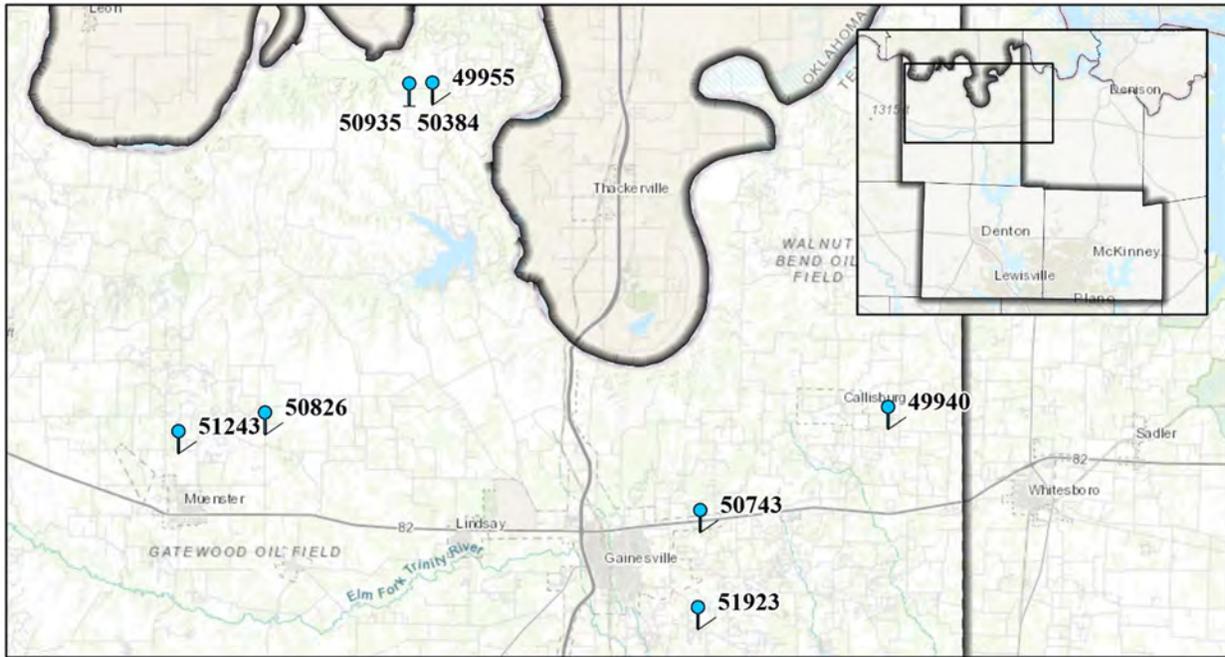
### ***Performance Standard 5.1***

General Manager will report to the Board of Directors on any information provided by the consultant engaged to monitor injection well applications within the District to the Board of Directors and document that information in the Annual Report to the Board of Directors.

**Table 14: Reported Injection Wells.**

<i>ID</i>	<i>Operator</i>	<i>Protested</i>	<i>Conclusion</i>
49940	Taylor & Smith	Protested by the District on December 21, 2019 due to concerns the proposed injection interval were too close to usable quality groundwater. The District withdrew the protest on June 11, 2019 after the applicant agreed to reduce the maximum injection pressure to adequately address the District's concerns.	Permit granted on July 11, 2019
49955	Silver Creek Oil & Gas, LLC	No	Application was withdrawn on March 5, 2019
50384	Silver Creek Oil & Gas, LLC	No	Permit granted on April 13, 2019
50743	BLS Production Co. Inc.	No	Permit granted on May 28, 2019
50826	Glenn J. Miller	No	Permit granted on July 11, 2019
50935	Silver Creek Oil & Gas, LLC	No	Permit granted on August 6, 2019
51243	HWH Production, LLC	No	Permit granted on August 28, 2019
51923	Reed Production, Inc.	No	Permit granted on March 10, 2020

**Figure 7: Map of Reported Injection Well.**



**Management Objective 5.2**

The District will monitor compliance by oil and gas companies of well registration, metering, production reporting, and fee payment requirements of the District’s rules.

**Performance Standard 5.2**

As with other types of wells, instances of non-compliance by owners and operators of water wells for oil and gas activities will be reported to the Board of Directors as appropriate and for enforcement action. A summary of such enforcement activities will be included in the Annual Report to the Board of Directors.

There were no enforcement activities during 2019 concerning noncompliance by owners and operators of water wells for oil and gas activities.

***Goal 6: Addressing Drought Conditions***

**Management Objective 6.1**

The District will make available through the District’s website easily accessible drought information with an emphasis on developing droughts and any current drought conditions.

**Performance Standard 6.1**

The District has made available through the District website easily accessible drought information with an emphasis on developing droughts and on any current drought conditions. Monthly U.S. Drought Monitor maps for Texas are available on the District website. Copies of each month’s report for 2019 are in Appendix B of this report.

***Goal 7: Addressing Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, and Brush Control***

Texas Water Code §36.1071(a)(7) requires that a management plan include a goal that addressed conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective. The District has determined that a goal addressing recharge enhancement and precipitation enhancement would not be appropriate or cost effective, and therefore is not applicable to the District.

**Management Objective 7.1**

Provide for and facilitate the conservation of groundwater resources within the District. The District will include a link on the District’s website to the electronic library of water conservation resources supported by the Water Conservation Advisory Council.

**Performance Standard 7.1**

Link to electronic library of water conservation resources supported by the Water Conservation Advisory Council is available on the District’s website. Figure 6 include the best management practice links located on the District’s website.

**Management Objective 7.2**

The District will submit at least one article regarding water conservation for publication each year to at least one newspaper of general circulation in the District’s Counties.

**Performance Standard 7.2**

Appendix C contains the article published during 2019 regarding water conservation.

**Management Objective 7.3**

The District will provide educational curriculum regarding water conservation offered by the Texas Water Development Board (Major Rivers) to at least one elementary school in each county of the District.

**Performance Standard 7.3**

Major Rivers curriculum purchased from the Texas Water Development Board was not available in 2018 as the Texas Water Development Board was not staffed to provide delivery of the curriculum. Curriculum that was ordered in 2018 was delivered during 2019.

**Table 15: List of Schools Who Participated in the Major Rivers Program.**

<i>Collin County</i>	<i>Cooke County</i>	<i>Denton County</i>
<i>Sue E Ratton Elementary</i>	<i>Callisburg Elementary</i>	<i>Krum ISD</i>
<i>Joe K Bryant Elementary</i>	<i>WE Chalmers Elementary</i>	

**Management Objective 7.4**

Rainwater harvesting is assuming a viable role either as a supplemental water supply or as the primary water supply in both urban and rural areas of Texas. As a result, Texas has become

internationally recognized for the widespread use and innovative technologies that have been developed, primarily through efforts at the Texas Water Development Board. To ensure these educational materials are readily available to citizens in the District, a link to rainwater harvesting materials including system design specifications and water quality requirements will be maintained on the District's website.

#### **Performance Standard 7.4**

Figure 6 include the rainwater harvesting links located on the District's website. The following links are maintained on the District's website:

#### ***Rainwater Harvesting Links***

[TWDB Rainwater Harvesting Information](#)

[Texas Water by Texas A&M](#)

[TWDB Manual on Rainwater Harvesting](#)

[Rainwater Harvesting with Rain Barrels](#)

#### **Management Objective 7.5**

Educate public on importance of brush controls as it related to water table consumption.

#### **Performance Standard 7.5**

Figure 6 includes the brush control links located on the District's website. The following links are maintained on the District's website:

#### ***Brush Control Links***

[State Water Supply Enhancement Plan \(July 2014\)](#)

[Texas State Soil and Water Conservation Board](#)

[AgriLife Extension Texas A&M System Brush Control Program](#)

### ***Goal 8: Achieving Desired Future Conditions of Groundwater Resources***

The Desired Future Conditions of the aquifers of Groundwater Management Area 8 represent average water levels in the various aquifers at the end of 50-years based on meeting current and projected groundwater supply needs. The Board of Directors has adopted a strategic approach that includes adoption of the management plan and rules necessary to achieve the Desired Future Conditions. The management plan and companion rules have been designed as an integrated program that will systematically collect and review water data on water quantity, water quality, and water use, while at the same time, implementing public awareness and public education activities that will result in a better formed constituency.

#### **Management Objective 8.1**

Statute requires GCDs to review, amend as necessary, and readopt management plans at least every five years. The General Manager will annually present a summary report on the status of achieving the adopted desired future conditions.

### **Performance Standard 8.1(a)**

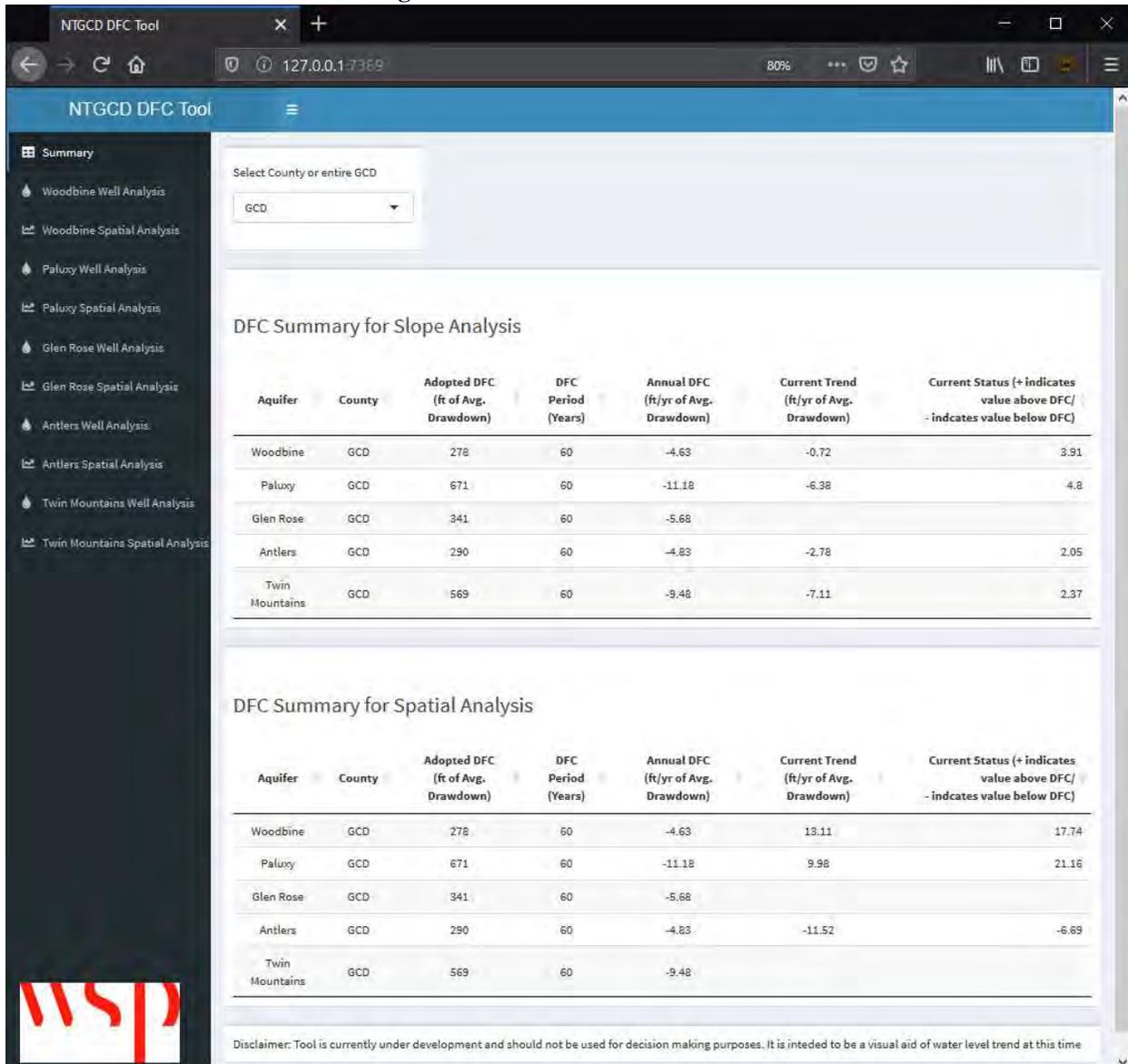
The District's hydrogeologist consultant developed a DFC Tool to evaluate the status of achieving the adopted DFCs. Table 16, 17, and 18 summaries the results from the DFC Tool.

Two methods are used in the DFC tool to calculate what the current water level trends are within the Trinity and Woodbine Aquifers using measured water level data. The trend analysis method (slope analysis) calculates the current water level trend based on water level measurements for every well within each of the aquifers. All the water level trends are then averaged (the slopes of each of the lines) for each aquifer to produce a general water level trend for the entire aquifer. That general trend is then compared to the DFC water level trend (as calculated by dividing the DFC water level decline by the number of years in the MAG simulation). If the current trend is declining at a faster rate than the DFC trend, the value would be negative. If the current trend is decreasing at a slower rate than the DFC trend, then the value is positive. A positive value indicates that the current trend may meet the DFC and a negative value means that the current trend in water level decline may not meet the DFC. One of many potential weaknesses of this averaging approach is that the average is not "spatially weighted" and because the wells are not evenly spaced (i.e., don't necessarily represent equal areas), there may be a bias in the average.

The second method incorporates water level measurements from wells in each aquifer to estimate an average water level decline in each aquifer similar to the way that the average is calculated from the groundwater availability model (GAM). Specifically, the goal is to estimate a water level decline surface across the district by interpolating water level decline in each well onto a regularly spaced grid. That gridded data is then averaged to estimate the average decline across the district. Due to limits of water level measurement data available for previous periods, estimating the starting point for water level decline trends is a challenge. This method first takes a 10-year average of water levels at each well starting in the beginning of 2000 up to the beginning of 2010. The average 10-year water level data at each well is then used as a data point to interpolate water level in the aquifer throughout the entire district using a geostatistical method known as kriging. The interpolation extends across the entire district because the Trinity Aquifer is present throughout the entire district and the interpolation estimates a water level at each location on a regular grid across the district. This produces an estimated water level surface for the entire district. That estimated water level surface is then averaged over the area of the district by averaging all the interpolated data points on the regular grid to produce a single average water level value. After this initial 10-year average, a yearly average at each well is taken until the current year (i.e. from 2011 to 2012, from 2012 to 2013, etc.). These yearly average water levels at each well are interpolated onto a regular grid, and the grid values are averaged to produce an average water level value for each year across the county. These yearly district-wide averages are then subtracted from the initial 10-year average district-wide water level to determine if water levels have increased or decreased with time. A line is fitted through these average district-wide water level difference points to determine water level trend. This trend can then be extrapolated through time to determine when water levels might reach the adopted DFC within its respective Trinity aquifer if the trend remained the same through time. The results of this analysis are reported in a similar fashion as the first method. Currently there are not enough wells with enough water level measurements

between 2000 and 2010 to produce an initial average water level for all aquifers. For an aquifer where sufficient data is not available, this method takes the oldest available surface as the starting average water level to make this comparison for that aquifer. For example, in 2014 if there are enough wells containing water level measurements to do a proper surface, then that average water level surface will be used going forward as the baseline comparison water level. For this analysis, the criteria used to determine if enough wells were available was five wells in the Upper Trinity, and six in the Middle and Lower Trinity.

**Figure 8: The District's DFC Tool.**



**Table 16: DFC Summary Based on Slope Analysis.**

<i>Aquifer</i>	<i>County</i>	<i>Adopted DFC (ft. of Avg. Drawdown)</i>	<i>Annual DFC (ft./yr. of Avg. Drawdown)</i>	<i>Current Trend (ft./yr. of Avg. Drawdown)</i>	<i>Current Status (ft./yr.)</i>
<i>Trinity (Antlers)</i>	Collin	570	-9.5	-	-
	Cooke	176	-2.93	-2.78	0.15
	Denton	395	-6.58	-2.75	3.83
	<b>District</b>	<b>290</b>	<b>-4.83</b>	<b>-2.78</b>	<b>2.05</b>
<i>Trinity (Paluxy)</i>	Collin	705	-11.75	-1.28	10.47
	Denton	552	-9.2	-7.4	1.80
	<b>District</b>	<b>671</b>	<b>-11.18</b>	<b>-6.38</b>	<b>4.80</b>
<i>Trinity (Twin Mountains)</i>	Collin	526	-8.77	-14.25	(5.48)
	Denton	716	-11.93	-5.08	6.85
	<b>District</b>	<b>569</b>	<b>-9.48</b>	<b>-7.11</b>	<b>2.37</b>
<i>Woodbine</i>	Collin	459	-7.65	-1.39	6.26
	Cooke	2	-0.03	0.12	0.15
	Denton	22	-0.37	-0.43	(0.06)
	<b>District</b>	<b>278</b>	<b>-4.63</b>	<b>-0.72</b>	<b>3.91</b>

**Table 17: DFC Summary Based on Spatial Analysis.**

<i>Aquifer</i>	<i>County</i>	<i>Adopted DFC (ft. of Avg. Drawdown)</i>	<i>Annual DFC (ft./yr. of Avg. Drawdown)</i>	<i>Current Trend (ft./yr. of Avg. Drawdown)</i>	<i>Current Status (ft./yr.)</i>
<i>Trinity (Antlers)</i>	Collin	570	-9.5	-26.55	(17.05)
	Cooke	176	-2.93	-10.04	(7.11)
	Denton	395	-6.58	-14.14	(7.56)
	<b>District</b>	<b>290</b>	<b>-4.83</b>	<b>-11.52</b>	<b>(6.69)</b>
<i>Trinity (Paluxy)</i>	Collin	705	-11.75	11.32	23.07
	Denton	552	-9.2	5.31	14.51
	<b>District</b>	<b>671</b>	<b>-11.18</b>	<b>9.98</b>	<b>21.16</b>
<i>Trinity (Twin Mountains)</i>	Collin	526	-8.77	-	-
	Denton	716	-11.93	-	-
	<b>District</b>	<b>569</b>	<b>-9.48</b>	<b>-</b>	<b>-</b>
<i>Woodbine</i>	Collin	459	-7.65	8.83	16.48
	Cooke	2	-0.03	11.61	11.64
	Denton	22	-0.37	22.94	23.31
	<b>District</b>	<b>278</b>	<b>-4.63</b>	<b>13.11</b>	<b>17.74</b>

**Table 18: Slope and Spatial Analysis Comparison**

<i>Aquifer</i>	<i>County</i>	<i>Slope Analysis Current Status</i>	<i>Spatial Analysis Current Status</i>
<i>Trinity (Antlers)</i>	Collin	-	(17.05)
	Cooke	0.15	(7.11)
	Denton	3.83	(7.56)
	<b>District</b>	2.05	(6.69)
<i>Trinity (Paluxy)</i>	Collin	10.47	23.07
	Denton	1.80	14.51
	<b>District</b>	4.80	21.16
<i>Trinity (Twin Mountains)</i>	Collin	(5.48)	-
	Denton	6.85	-
	<b>District</b>	2.37	-
<i>Woodbine</i>	Collin	6.26	16.48
	Cooke	0.15	11.64
	Denton	(0.06)	23.31
	<b>District</b>	3.91	17.74

**Performance Standard 8.1(b)**

Beginning four years after adoption of the Plan, General Manager will work with Board of Directors to conduct a focused review to determine if any elements of this Plan or the District Rules need to be amended to achieve the adopted Desired Future Conditions, or if the Desired Future Conditions need to be reviewed/ revised to better reflect the needs of the District. Possible results of the five-year review: (1) determination that current Plan and Rules are working effectively to achieve Desired Future Conditions, (2) specific amendments need to be made to the Plan and/or Rules to achieve the adopted Desired Future Conditions, (3) amendments are needed to the adopted Desired Future Conditions to better meet the needs of the District, or (4) a combination of (2) and (3). This determination to be made at a regularly scheduled meeting of the Board of Directors no later than five years after adoption of the Plan.

The North Texas Groundwater Conservation District has participated with Upper Trinity Groundwater Conservation District, Northern Trinity Groundwater Conservation District and Prairielands Groundwater Conservation District in updating the Groundwater Availability Model of the Northern Trinity/Woodbine Aquifers.

# Appendix A: TWDB Well Water Quality Report



Texas Water Development Board (TWDB) Groundwater Database (GWDB)

Well Water Quality Report

Aquifer: Woodbine and Trinity

County: Collin, Cooke, and Denton



State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
1836804	33.3863889 -96.5594444	Collin	218ALRS	2398	6/7/2019	Analysis Unbalanced. Field alkalinity not obtained.	00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		422	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		24	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		12	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CaCO3)		446	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)		8.98	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		-7.46	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIIUM, DISSOLVED (UG/L AS BA)		2.35	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		514.986	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		1280	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0998	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		0.97	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		14.4	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		17	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		1.06	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		1.72	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		2.468	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		22.9	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	<	0.2	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		9.31	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1.17	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.86	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.213	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.927	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		8.872		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SiO2)		13.2	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		71.258		
							00932	SODIUM, CALCULATED, PERCENT		99.624	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		295	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1286	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		39.7	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		77.9	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		34.8	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		674.375	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L								
1842302	33.3352778 -96.7611111	Collin	218TWM	2398	6/6/2019	Analysis Unbalanced.	39086	ALKALINITY FIELD DISSOLVED AS CaCO3		348	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		320	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		12.2	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		6.08	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CaCO3)		332	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		6.91	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIIUM, DISSOLVED (UG/L AS BA)		10.2	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		390.315	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		466	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0631	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		4.6	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		7.296	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		11.4	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)	<	1	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L								
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L								
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.822	mg/L								
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		17.778	mg/L								
01046	IRON, DISSOLVED (UG/L AS FE)		65.9	ug/L								
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L								
01130	LITHIUM, DISSOLVED (UG/L AS LI)		27.6	ug/L								
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		1.48	mg/L								
01056	MANGANESE, DISSOLVED (UG/L AS MN)		9.08	ug/L								

State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.38	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.92	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		6.289		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		13.1	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		19.824		
							00932	SODIUM, CALCULATED, PERCENT		95.943	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		191	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1024	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		170	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		144	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		34	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		567.706	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1844204	33.3561111 -96.5513889	Collin	218PLXY	2288	6/7/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3		566	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		460	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		28	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		14	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)		488	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)		9.57	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		0.45	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)		5.19	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		561.359	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		1260	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)	<	0.2	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		0.976	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		16.8	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		19.9	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)	<	1	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		1.9	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		2.49	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		23.3	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	<	0.2	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1.11	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.81	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.0621	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.981	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		9.712		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		13.5	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		66.515		
							00932	SODIUM, CALCULATED, PERCENT		99.596	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		276	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1116	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		46.2	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		84	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		35.2	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		690.123	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1845201	33.3630556 -96.4580556	Collin	218TWMT	2509	4/29/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3		587	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		484	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		24	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		12	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)		508	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)		13.6	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		-2.01	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)		5.69	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		590.647	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		1350	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)	<	0.127	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		1.03	mg/L	

State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		14.4	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		20.6	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)	<	1	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		1.78	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		3.509	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		26.7	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		0.207	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1.39	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.86	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.0606	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.973	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		10.092		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SiO2)		15.8	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		69.374		
							00932	SODIUM, CALCULATED, PERCENT		99.47	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		295	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1328	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		73.2	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		76.5	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		36.5	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		716.785	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
3303203	32.995 -96.6861111	Collin	218TWM	3288	6/6/2019	Analysis Balanced. Conductivity difficult to obtain because sampling point at discharge pipe was partially submerged.	39086	ALKALINITY FIELD DISSOLVED AS CaCO3		432	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		402	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		8.88	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		4.44	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CaCO3)		411	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)		6.4	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		-1.99	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)		1.46	ug/L	
							01005	BARIIUM, DISSOLVED (UG/L AS BA)		34.8	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		490.726	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		827	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.82	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		5.77	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		5.328	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		129	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)	<	1	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		2.1	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		20.003	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		126	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		1.27	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		5.84	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		2.33	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	1842302
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.12	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		2.9	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		7.828		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SiO2)		18.5	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		46.155		
							00932	SODIUM, CALCULATED, PERCENT		98.117	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		470	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1752	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		317	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		390	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		46.7	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		1266.475	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1817402	33.6794444 -96.9908333	Cooke	218ALRS	1400	7/30/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CaCO3		364	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		300	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		46	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		23	mg/L	

State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)			346 mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)			6.24 ug/L	
							50938	ANION/CATION CHG BAL, PERCENT			1.48 PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<		1 ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<		1 ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)			4.19 ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<		1 ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)			366.104 mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)			195 ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)			0.0589 mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<		1 ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)			1.19 mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)			27.6 mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)			10.9 mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)			2.57 ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<		1 ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<		1 ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)			0.21 mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)			4.669 mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<		50 ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<		1 ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)			14.1 ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)			0.396 mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)			2.1 ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<		0.2 ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<		1 ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<		0.02 mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<		0.02 mg/L	
							00400	PH (STANDARD UNITS), FIELD			8.53 SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)			0.0473 mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)			0.862 mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED			6.828	
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<		5 ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)			10.5 mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<		1 ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)			35.094	
							00932	SODIUM, CALCULATED, PERCENT			98.793 PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)			173 mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)			766 MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)			57.6 ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)			30.6 mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)			24.2 C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<		1 ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)			435.329 mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<		1 ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<		1 ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<		5 ug/L	
1921902	33.6494444 -97.3802778	Cooke	218ALRS	683	7/30/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3			320 mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB			279 mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB			25 mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB			0 mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)			12.5 mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)			304 mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<		5 ug/L	
							50938	ANION/CATION CHG BAL, PERCENT			1.97 PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<		1 ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<		1 ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)			53 ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<		1 ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)			340.477 mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)			118 ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)			0.21 mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<		1 ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)			2.19 mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)			15 mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)			42.1 mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)			2.36 ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<		1 ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<		1 ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)			0.0824 mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)			8.491 mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<		50 ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<		1 ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)			31.6 ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)			0.682 mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)			3.84 ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<		0.2 ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<		1 ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<		0.02 mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<		0.02 mg/L	
							00400	PH (STANDARD UNITS), FIELD			8.37 SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<		0.02 mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)			1.2 mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED			5.915	
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<		5 ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)			9.24 mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<		1 ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)			26.471	
							00932	SODIUM, CALCULATED, PERCENT			97.873 PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)			175 mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)			791 MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)			186 ug/L	

State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							00946	SULFATE, DISSOLVED (MG/L AS SO4)			42 mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)			20.3 C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<		1 ug/L	
							70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)			455.093 mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<		1 ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<		1 ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<		5 ug/L	
1923805	33.6413889 -97.1811111	Cooke	218ALRS	927	7/29/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3			356 mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB			295 mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB			49.5 mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB			0 mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)			24.8 mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)			344 mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)			5.72 ug/L	
							50938	ANION/CATION CHG BAL, PERCENT			1.84 PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<		1 ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<		1 ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)			6.94 ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<		1 ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)			359.27 mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)			154 ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)			0.0562 mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<		1 ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)			1.24 mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)			29.76 mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)			10.5 mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)			2.49 ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<		1 ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<		1 ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)			0.15 mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)			5.066 mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<		50 ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<		1 ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)			12.4 ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)			0.448 mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)			1.09 ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<		0.2 ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<		1 ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<		0.02 mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<		0.02 mg/L	
							00400	PH (STANDARD UNITS), FIELD			8.56 SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)			0.0696 mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)			0.641 mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED			6.782	
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<		5 ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)			9.31 mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<		1 ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)			33.477	
							00932	SODIUM, CALCULATED, PERCENT			98.69 PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)			171 mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)			648 MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)			109 ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)			30.7 mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)			21.1 C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<		1 ug/L	
							70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)			430.511 mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<		1 ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<		1 ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<		5 ug/L	
1924905	33.6494444 -97.035	Cooke	218ALRS	1360	7/30/2019	Analysis Unbalanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3			356 mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB			327 mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB			34.6 mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB			0 mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)			17.3 mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)			362 mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<		5 ug/L	
							50938	ANION/CATION CHG BAL, PERCENT			5.34 PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<		1 ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<		1 ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)			5.66 ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<		1 ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)			399.541 mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)			191 ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)			0.0848 mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<		1 ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)			1.46 mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)			20.76 mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)			16.2 mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)			2.95 ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<		1 ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<		1 ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)			0.219 mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)			5.557 mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<		50 ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<		1 ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)			12.9 ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)			0.435 mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)			1.6 ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<		0.2 ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<		1 ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<		0.02 mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<		0.02 mg/L	

State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							00400	PH (STANDARD UNITS), FIELD		8.57	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.03	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.696	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		7.132		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		10.1	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		31.354		
							00932	SODIUM, CALCULATED, PERCENT		98.535	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		168	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		644	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		104	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		28.2	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		24.2	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		442.628	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1940502	33.4225 -97.0463889	Cooke	218ALRS	1509	7/30/2019	Analysis Unbalanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3		286	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		270	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		2.64	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		1.32	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)		272	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		5.74	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)		1	ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)		113	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		328.712	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		186	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		1.59	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		9.97	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		1.584	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		285	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.04	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.208	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		46.085	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)		287	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		29.5	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		4.85	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		5.58	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		7.87	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.0242	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.93	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		4.544		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		9.67	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		17.347		
							00932	SODIUM, CALCULATED, PERCENT		92.833	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		267	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1399	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		1060	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		28.9	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		25	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		771.8	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)		9.28	ug/L	
1849712	33.1605556 -96.9702778	Denton	218PLXY	1100	7/18/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3		324	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		301	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		33.6	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		16.8	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)		334	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		0.11	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)		4.44	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		366.592	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		904	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0891	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		0.436	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		20.16	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		17.7	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.75	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	

State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		1.22	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		1.135	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		11.5	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	<	0.2	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		8.61	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.61	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.686	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.652	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		6.659		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SiO2)		8.9	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		61.995		
							00932	SODIUM, CALCULATED, PERCENT		99.747	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		197	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		816	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		40.3	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		67.1	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		21.2	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		493.462	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1947707	33.2627778 -97.24	Denton	218TWM	900	7/18/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CaCO3		330	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		260	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		50.6	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		25.3	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CaCO3)		310	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)		7.19	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		-0.53	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)		5.79	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		316.558	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		157	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.045	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		0.946	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		30.36	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		8.45	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.27	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.144	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		3.771	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		24.3	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		0.316	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.86	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.548	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		6.127		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SiO2)		10.8	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		40.016		
							00932	SODIUM, CALCULATED, PERCENT		99.053	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		176	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		694	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		93.4	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		57.9	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		24	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		441.209	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1948302	33.3788889 -97.0258333	Denton	218TWM	1346	7/19/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CaCO3		350	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		266	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		65.1	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		32.6	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CaCO3)		331	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		0.33	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	

State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)		9.06	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		324.368	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		169	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0476	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		0.931	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		39.12	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		8.87	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.11	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.164	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		3.495	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		16.8	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		0.266	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		1.1	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		9.16	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.0223	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.575	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		6.552		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		11.7	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		46.122		
							00932	SODIUM, CALCULATED, PERCENT		99.205	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		196	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		885	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		65.2	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		85	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		24.8	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		502.183	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1954605	33.1727778 -97.2822222	Denton	218TWM	1040	7/19/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3		278	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		235	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		26.2	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		13.1	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)		261	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		0.42	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)		41.1	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		286.537	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		177	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.789	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		4.78	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		15.72	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		148	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.11	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.187	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		19.322	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		29.2	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		1.61	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		5.14	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.84	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.05	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		4.849		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		11.3	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		23.431		
							00932	SODIUM, CALCULATED, PERCENT		96.454	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		232	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1095	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		660	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		58.1	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		25.1	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		614.297	mg/L	

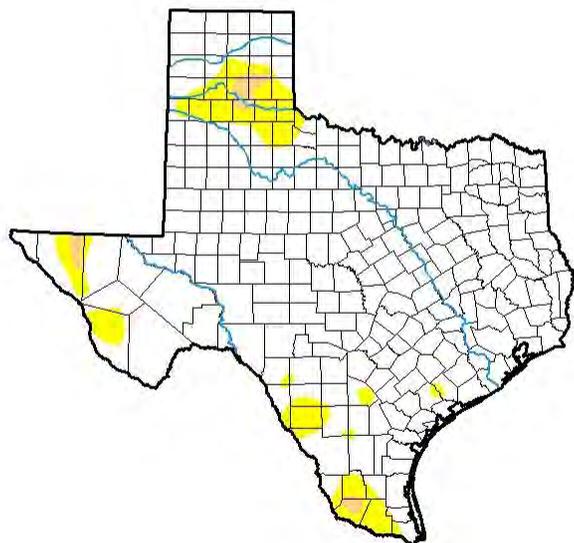
State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1963102	33.0994444 -97.2127778	Denton	218TWMT	1300	7/18/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3		356	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		280	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		42	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		21	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)		322	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)		6.94	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		1.55	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIIUM, DISSOLVED (UG/L AS BA)		57.3	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		341.697	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		163	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.763	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		1.24	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		25.2	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		160	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.58	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.26	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		4.49	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		25.9	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		0.307	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		4.62	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.91	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.0327	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.709	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		6.353		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		12.1	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		55.643		
							00932	SODIUM, CALCULATED, PERCENT		99.255	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		267	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1186	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		113	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		54.6	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		28.4	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		689.541	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1964506	33.0719444 -97.0511111	Denton	218TWMT	1778	7/18/2019	Analysis Balanced.	39086	ALKALINITY FIELD DISSOLVED AS CACO3		344	mg/L	
							00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		291	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		18.9	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		9.44	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CACO3)		310	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)		5.52	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		2.2	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIIUM, DISSOLVED (UG/L AS BA)		63.7	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		355.267	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		261	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		1.21	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		2.93	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		11.328	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		259	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.64	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.541	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		10.806	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)		51.8	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		42.1	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		0.776	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		6.34	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIELD		8.64	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.19	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		5.99		

State Well Number	Coordinates	County	Aquifer Code	Well Depth (ft)	Date	Collection Remarks	Parameter Code	Parameter Description	Flag	Value	Unit	Plus/Minus
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		13	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		44.294		
							00932	SODIUM, CALCULATED, PERCENT		98.558	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		330	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1510	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		256	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		83.4	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		32.7	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		877.106	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	
1964306	33.1061111 -97.0038889	Denton	212WDBN	308	7/18/2019	Analysis Balanced.	00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		364	mg/L	
							00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
							00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
							00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
							00410	ALKALINITY, TOTAL (MG/L AS CaCO3)		364	mg/L	
							01106	ALUMINUM, DISSOLVED (UG/L AS AL)		21.5	ug/L	
							50938	ANION/CATION CHG BAL, PERCENT		1.13	PCT	
							01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
							01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
							01005	BARIUM, DISSOLVED (UG/L AS BA)		9.8	ug/L	
							01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
							00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		444.206	mg/L	
							01020	BORON, DISSOLVED (UG/L AS B)		1710	ug/L	
							71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.106	mg/L	
							01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
							00915	CALCIUM, DISSOLVED (MG/L AS CA)		19.6	mg/L	
							00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
							00941	CHLORIDE, DISSOLVED (MG/L AS CL)		29.6	mg/L	
							01030	CHROMIUM, DISSOLVED (UG/L AS CR)		3.83	ug/L	
							01035	COBALT, DISSOLVED (UG/L AS CO)		4.03	ug/L	
							01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
							00950	FLUORIDE, DISSOLVED (MG/L AS F)		2	mg/L	
							00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		94.273	mg/L	
							01046	IRON, DISSOLVED (UG/L AS FE)		1100	ug/L	
							01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
							01130	LITHIUM, DISSOLVED (UG/L AS LI)		44.9	ug/L	
							00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		10.8	mg/L	
							01056	MANGANESE, DISSOLVED (UG/L AS MN)		3100	ug/L	
							71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
							01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
							71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
							00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
							00400	PH (STANDARD UNITS), FIFI D		6.89	SU	
							00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.0917	mg/L	
							00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.98	mg/L	
							71860	RESIDUAL SODIUM CARBONATE, CALCULATED		5.414		
							01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
							00955	SILICA, DISSOLVED (MG/L AS SI02)		8.44	mg/L	
							01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
							00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		11.932		
							00932	SODIUM, CALCULATED, PERCENT		86.063	PCT	
							00930	SODIUM, DISSOLVED (MG/L AS NA)		265	mg/L	
							00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1068	MICR	
							01080	STRONTIUM, DISSOLVED (UG/L AS SR)		737	ug/L	
							00946	SULFATE, DISSOLVED (MG/L AS SO4)		267	mg/L	
							00010	TEMPERATURE, WATER (CELSIUS)		20.9	C	
							01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
							70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MG/L)		823.573	mg/L	
							22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
							01085	VANADIUM, DISSOLVED (UG/L AS V)		1.24	ug/L	
							01090	ZINC, DISSOLVED (UG/L AS ZN)		17	ug/L	

Aquifer Code	Description
218ALRS	Trinity (Antlers)
218PLXY	Trinity (Paluxy)
218TWMT	Trinity (Twin Mountains)
212WDBN	Woodbine

# Appendix B: 2019 Palmer Drought Index Maps

## U.S. Drought Monitor Texas



**January 29, 2019**

(Released Thursday, Jan. 31, 2019)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	90.22	9.78	1.15	0.00	0.00	0.00
<b>Last Week</b> 01-22-2019	90.39	9.61	2.45	0.00	0.00	0.00
<b>3 Months Ago</b> 10-30-2018	96.15	3.85	1.84	0.43	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> 09-25-2018	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> 01-30-2018	13.27	86.73	56.47	21.98	7.30	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

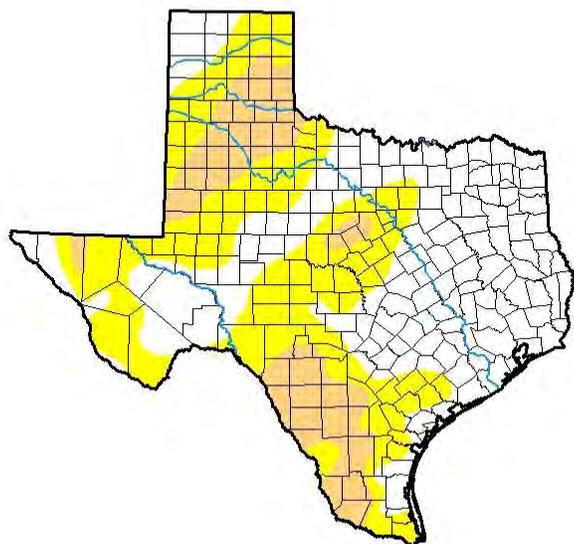
Author:

Brian Fuchs  
National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>

## U.S. Drought Monitor Texas



**February 26, 2019**

(Released Thursday, Feb. 28, 2019)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	48.21	51.79	16.33	0.00	0.00	0.00
<b>Last Week</b> 02-19-2019	59.54	40.46	6.63	0.00	0.00	0.00
<b>3 Months Ago</b> 11-27-2018	97.73	2.27	0.80	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> 09-25-2018	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> 02-27-2018	22.75	77.25	55.19	22.04	11.47	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

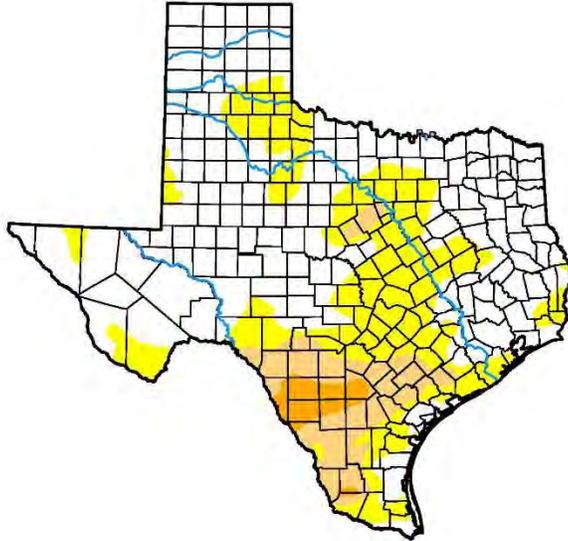
Author:

Brad Rippey  
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

**U.S. Drought Monitor  
Texas**



**March 26, 2019**

(Released Thursday, Mar. 28, 2019)

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	61.92	38.08	11.44	2.38	0.00	0.00
<b>Last Week</b> <i>03-19-2019</i>	69.05	30.95	9.67	0.90	0.00	0.00
<b>3 Months Ago</b> <i>12-25-2018</i>	90.02	9.98	0.80	0.00	0.00	0.00
<b>Start of Calendar Year</b> <i>01-01-2019</i>	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> <i>09-25-2018</i>	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> <i>03-27-2018</i>	26.19	73.81	64.23	28.30	15.08	1.21

**Intensity:**

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

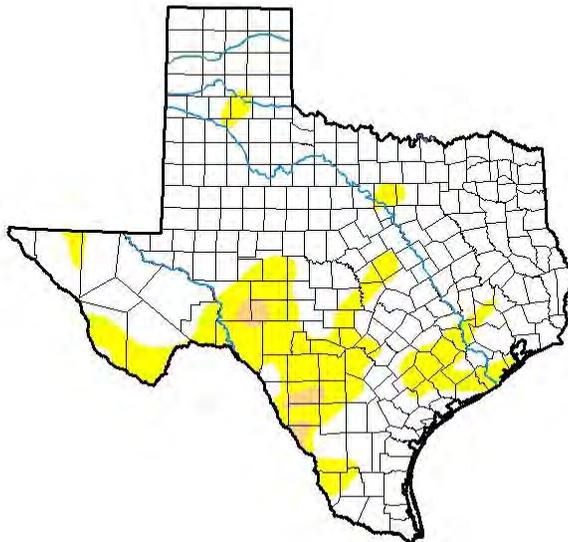
**Author:**

Eric Luebehusen  
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

**U.S. Drought Monitor  
Texas**



**April 23, 2019**

(Released Thursday, Apr. 25, 2019)

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	79.75	20.25	1.29	0.00	0.00	0.00
<b>Last Week</b> <i>04-16-2019</i>	74.85	25.15	5.22	0.00	0.00	0.00
<b>3 Months Ago</b> <i>01-22-2019</i>	90.39	9.61	2.45	0.00	0.00	0.00
<b>Start of Calendar Year</b> <i>01-01-2019</i>	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> <i>09-25-2018</i>	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> <i>04-24-2018</i>	33.36	66.64	53.23	26.26	14.54	3.88

**Intensity:**

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

**Author:**

David Miskus  
NOAA/NWS/NCEP/CPC



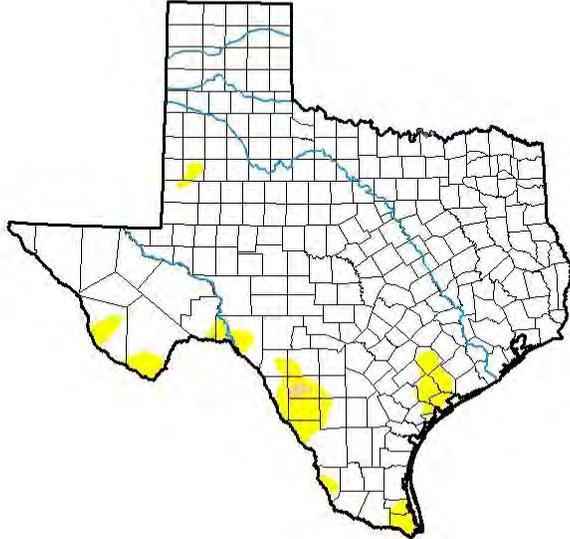
<http://droughtmonitor.unl.edu/>

## U.S. Drought Monitor Texas

**May 28, 2019**

(Released Thursday, May, 30, 2019)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	94.24	5.76	0.20	0.00	0.00	0.00
<b>Last Week</b> 05-21-2019	97.90	2.10	0.00	0.00	0.00	0.00
<b>3 Months Ago</b> 02-26-2019	48.21	51.79	16.33	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> 09-25-2018	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> 05-29-2018	31.26	68.74	40.06	21.93	7.82	1.17

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Richard Heim  
NCEI/NOAA



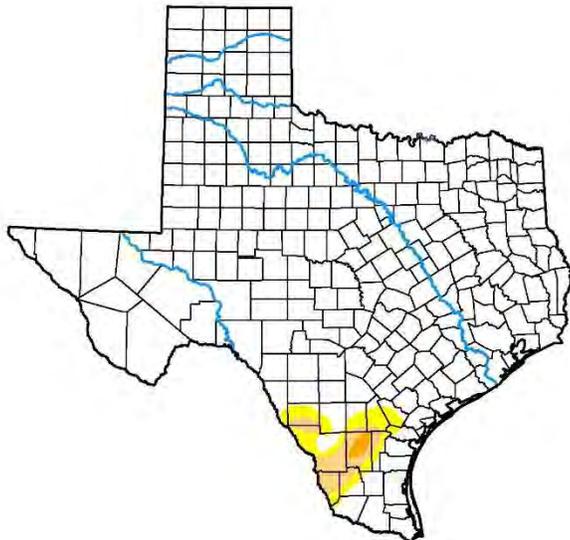
<http://droughtmonitor.unl.edu/>

## U.S. Drought Monitor Texas

**June 25, 2019**

(Released Thursday, Jun. 27, 2019)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	95.84	4.16	1.93	0.23	0.00	0.00
<b>Last Week</b> 06-18-2019	94.17	5.83	1.59	0.00	0.00	0.00
<b>3 Months Ago</b> 03-26-2019	61.92	38.08	11.44	2.38	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> 09-25-2018	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> 06-26-2018	27.33	72.67	47.80	17.91	5.07	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

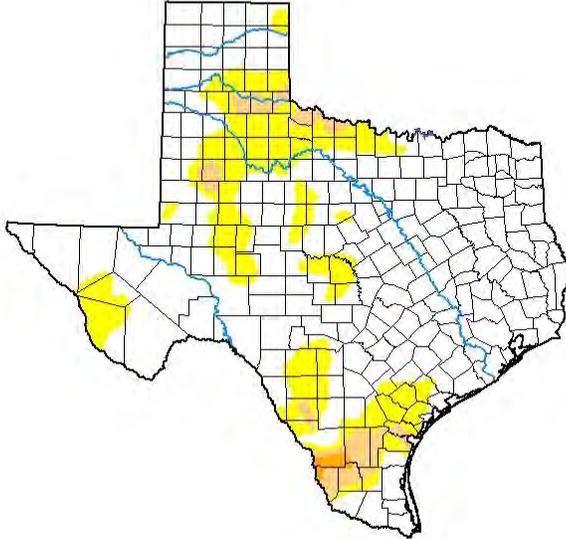
Brad Pugh  
CPC/NOAA



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu/)

## U.S. Drought Monitor Texas

**July 30, 2019**  
(Released Thursday, Aug. 1, 2019)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	76.49	23.51	4.31	0.42	0.00	0.00
<b>Last Week</b> 07-23-2019	89.88	10.12	1.99	0.66	0.00	0.00
<b>3 Months Ago</b> 04-30-2019	87.27	12.73	1.46	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> 09-25-2018	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> 07-31-2018	21.82	78.18	59.26	35.93	8.48	0.00

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

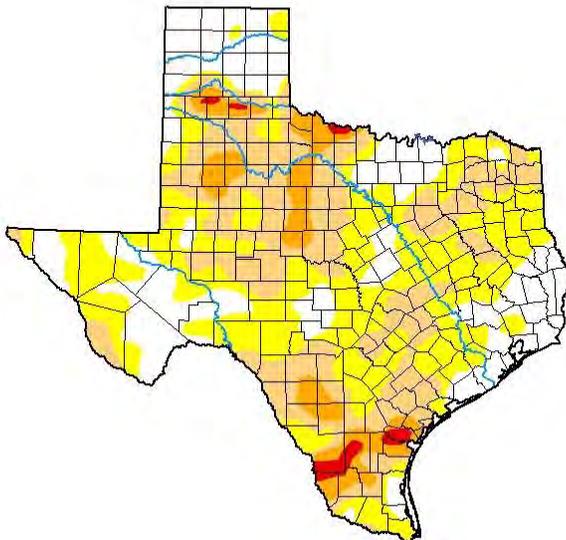
Curtis Riganti  
National Drought Mitigation Center



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

## U.S. Drought Monitor Texas

**August 27, 2019**  
(Released Thursday, Aug. 29, 2019)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	25.90	74.10	37.58	8.75	1.21	0.00
<b>Last Week</b> 08-20-2019	27.48	72.52	32.00	6.75	0.56	0.00
<b>3 Months Ago</b> 05-28-2019	94.24	5.76	0.20	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> 09-25-2018	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> 08-28-2018	18.56	81.44	62.34	30.69	6.78	0.30

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

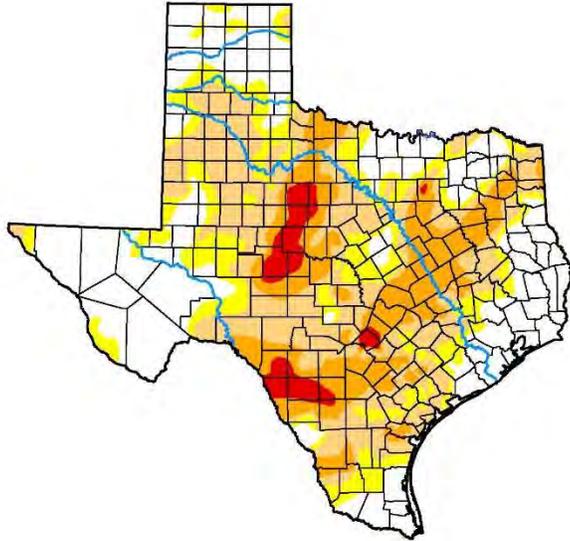
Author:

Jessica Blunden  
NCEI/NOAA



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

**U.S. Drought Monitor  
Texas**



**September 24, 2019**  
(Released Thursday, Sep. 26, 2019)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	34.78	65.22	48.33	19.69	3.50	0.00
<b>Last Week</b> 09-17-2019	27.74	72.26	51.75	21.20	3.07	0.00
<b>3 Months Ago</b> 06-25-2019	96.84	4.16	1.93	0.23	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> 09-25-2018	57.46	42.54	20.19	7.03	0.96	0.00
<b>One Year Ago</b> 09-25-2018	57.46	42.54	20.19	7.03	0.96	0.00

**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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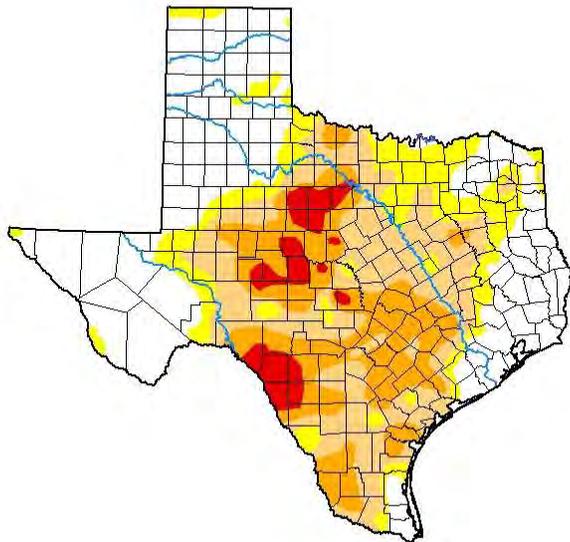
**Author:**

Eric Luebbehusen  
U.S. Department of Agriculture



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

**U.S. Drought Monitor  
Texas**



**October 29, 2019**  
(Released Thursday, Oct. 31, 2019)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	38.98	61.02	46.55	22.40	4.65	0.00
<b>Last Week</b> 10-22-2019	39.30	60.70	48.74	25.85	6.68	0.00
<b>3 Months Ago</b> 07-30-2019	76.49	23.51	4.31	0.42	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> 10-01-2019	31.74	68.26	46.05	22.33	6.32	0.00
<b>One Year Ago</b> 10-30-2018	96.15	3.85	1.84	0.43	0.00	0.00

**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

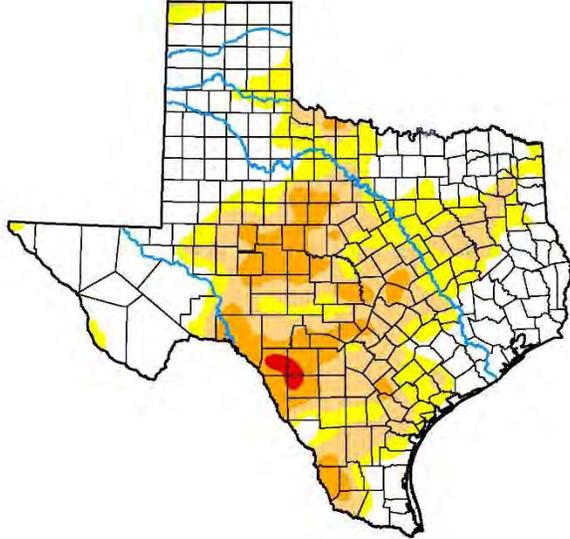
**Author:**

David Simeral  
Western Regional Climate Center



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

**U.S. Drought Monitor  
Texas**



**November 19, 2019**  
(Released Thursday, Nov. 21, 2019)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	47.81	52.19	31.96	10.48	0.53	0.00
<b>Last Week</b> <i>11-12-2019</i>	46.76	53.24	31.97	11.04	0.56	0.00
<b>3 Months Ago</b> <i>08-20-2019</i>	27.48	72.52	32.00	6.75	0.56	0.00
<b>Start of Calendar Year</b> <i>01-01-2019</i>	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> <i>10-01-2019</i>	31.74	68.26	46.05	22.33	6.32	0.00
<b>One Year Ago</b> <i>11-20-2018</i>	97.73	2.27	0.80	0.00	0.00	0.00

**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

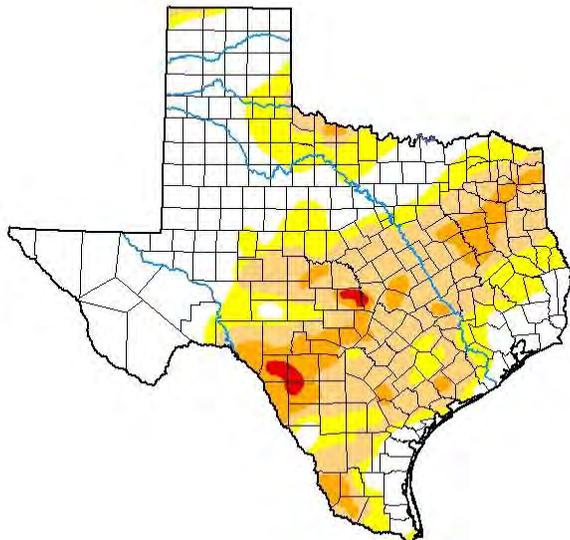
**Author:**

Brad Rippey  
U.S. Department of Agriculture



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

**U.S. Drought Monitor  
Texas**



**December 31, 2019**  
(Released Thursday, Jan. 2, 2020)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	44.69	55.31	36.12	9.19	0.74	0.00
<b>Last Week</b> <i>12-24-2019</i>	44.13	55.87	38.62	9.46	0.67	0.00
<b>3 Months Ago</b> <i>10-01-2019</i>	31.74	68.26	46.05	22.33	6.32	0.00
<b>Start of Calendar Year</b> <i>01-01-2019</i>	92.99	7.01	1.32	0.00	0.00	0.00
<b>Start of Water Year</b> <i>10-01-2019</i>	31.74	68.26	46.05	22.33	6.32	0.00
<b>One Year Ago</b> <i>01-01-2019</i>	92.99	7.01	1.32	0.00	0.00	0.00

**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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**Author:**

Brad Pugh  
CPC/NOAA



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

# Appendix C: Publication Affidavits

**DRC MEDIA COMPANY**  
**NEWS & ADVERTISING SOLUTIONS**  
One company delivers it all.

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Denton, TX 76202  
940-387-3811

Publication(s): Denton Record-Chronicle

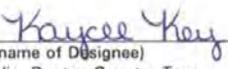
### PROOF OF PUBLICATION

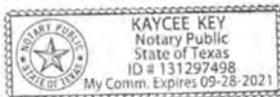
Being duly sworn (s)he is the Publisher/authorized designee of Denton Record-Chronicle, in City of Denton/surrounding areas in Denton County; Newspaper of general circulation which has been continuously and regularly published for a period of not less than one year preceding the date of the attached notice, and that the said notice was published in said newspaper Denton Record-Chronicle on the following dates below:

08/04/2019

  
\_\_\_\_\_  
(signature of Authorized Designee)  
Subscribed and sworn to before me  
this 4th day of August, 2019 by

Bill Patterson  
\_\_\_\_\_  
(printed name of Designee)  
Witness my hand and official seal:

  
\_\_\_\_\_  
(signature name of Designee)  
Notary Public, Denton County, Texas



NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT  
PO BOX 508  
GAINESVILLE TX 76241

Ad Number: 18580

Price: \$480.00



**Water Conservation Tips**

**Indoor Tips**

- Turn water off while brushing teeth or shaving.
- Run only full loads in the washing machine and dishwasher.
- Fix leaky faucets and plumbing.

**Outdoor Tips**

- Water lawns and shrubbery during cooler parts of the day. Avoid watering between 10 a.m. and 6 p.m.
- Water lawns less frequently and for longer duration. This establishes a more drought tolerant lawn as the roots are forced to establish deeper into the soil.
- Set mower blades 2-3 inches high – longer grass shades the soil, improving moisture retention.
- Visually inspect sprinkler systems at least once a month during daylight hours to make sure there are no leaks and that it is spraying the area correctly.
- Leave lawn clippings on grass – this cools the ground and holds moisture.
- Use a broom or blower instead of a hose to clean driveways, sidewalks, and patios.
- Use a pool cover for swimming pools – cuts down on evaporation.

**North Texas Groundwater Conservation District**  
[www.northtexagcd.org](http://www.northtexagcd.org)

08-1908A



McKinney Courier Gazette

AFFIDAVIT OF PUBLICATION

I, Joani Dittrich, Vice President/General Manager of the McKinney Courier Gazette, a newspaper printed in the English language in Collin County, State of Texas, do hereby certify that this notice was Published in the McKinney Courier Gazette on the following dates, to-wit

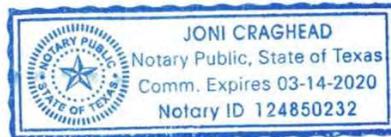
McKinney Courier Gazette 08/04/19 1 Insertion

Water Conservation Tips	\$314.00
(Description)	(Cost)

*Joani Dittrich*  
 Vice President/General Manager of the McKinney Courier Gazette

Subscribed and sworn on this  
5 day of August, 2019

*Joni Craghead*  
 Notary Public, State of Texas



# 9-6A

From PAGE EIGHT

or defense — and possibly both — when all is said and done, even with more personnel question marks than usual. Despite breaking in a brand-new offensive line this season, Allen is still loaded at the skill positions between senior quarterback Raylen Sharpe (committed to SMU), senior running back Celdon Manning (1,201

rushing yards, 16 touchdowns as a junior) and junior receivers Bryson and Blaine Green (both have double-digit Power Five offers), and should continue to pile up points.

Things are less tenured on defense, where senior linebacker Jaden Healy is the only returning starter, but replacing a large graduating class is nothing new for defensive coordinator Cory Cain and his staff. What the Eagles lack in top-of-the-depth-chart experience, they make up for in depth

with seven defensive returners logging at least 200 snaps last season.

The gap between the Eagles and the rest of 9-6A feels closer on that side of the ball, though. McKinney really came into its own on defense as last season progressed, holding three of its final five opponents in the regular season to 14 points or less, and McKinney Boyd, Jesuit and Prosper all return at least five defensive starters.

### 3. Which football players

will claim the 9-6A passing and receiving this season?

Taylor Raglin: With much turnover at the terback position he into 2019, it's difficult to against Allen senior R Sharpe. Though it'll be his full season under center, have a solid crop of wide to throw to, including j brothers Bryson and E Green. With so many No. al-caller spots in flux, S and the talent surrounding figure to lift him to the lea passing title.

Speaking of the Green ther could take home the l of most productive receive the district.

They'll be challenge though, by McKinney Boy nior Kareem Coleman, likely 9-6A's best deep t and should carry a heavy for the Bronco offense.

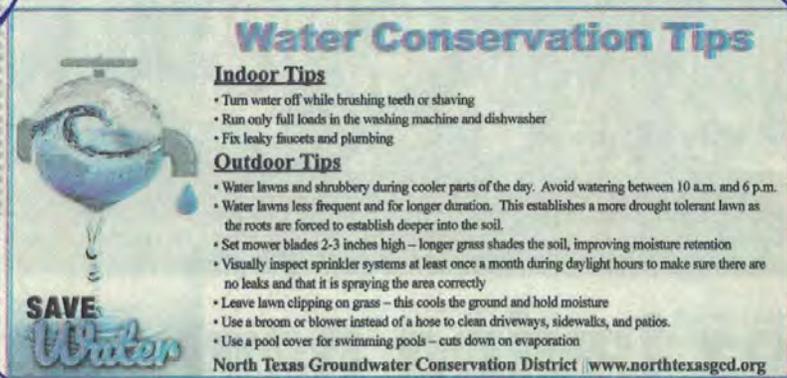
Finally, with a bevy of te ed backs departing the dis seniors EJ Smith of Jesu Trey Jones-Scott of Plano should vie for the rushing though Jones-Scott may h slight edge. He could carr ball more often on average Smith, who's heavily involv the Rangers' aerial attack.

### 4. Who are a few pote breakout candidates in football this fall?

## WORKOU

From PAGE EIGHT

Even in cool, sun temperatures, Rodrig first workout for her prog wasn't for the faint of h as she had her team get five groups to run eight 200-meter dashes around track. Besides getting team into playing shape. driguez, who did this at L ville, uses the season-ope workout as a chemistry b er as well.



### Water Conservation Tips

**Indoor Tips**

- Turn water off while brushing teeth or shaving
- Run only full loads in the washing machine and dishwasher
- Fix leaky faucets and plumbing

**Outdoor Tips**

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North Texas Groundwater Conservation District [www.northtexasgcd.org](http://www.northtexasgcd.org)

## Vitae Foundation's Annual Dallas Pro-Life Event

Monday, September 9, 2019

Featuring Keynote:

# Trey Gowdy

Dinner & Program 7:00 PM

Renaissance Dallas Addison Hotel, 15201 Dallas Parkway | Addison, Texas

Trey Gowdy tackled high-profile investigations representing South Carolina's 4th District during his 8-year tenure in the United States Congress. Gowdy considers himself "pro-life plus," and he is looking forward to helping spotlight Vitae's important work.

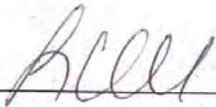
**Register Today!** Dinner Reservations \$125 per person (\$35 is tax-deductible)

Call or visit us online [vitae.org](http://vitae.org)

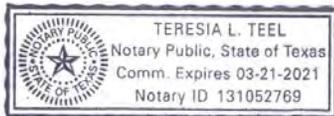
7 8 9 10 11 12

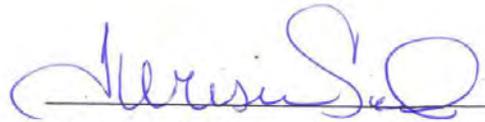
STATE OF TEXAS  
COUNTY OF COOKE

Before me, the undersigned, on this day personally appeared Lisa Chappell, The Publisher of the Gainesville Daily Register, a newspaper having general circulation in Cooke County, Texas, who being by me duly sworn, deposes and says that the foregoing attached notice was published in said newspaper on the following date(s), to wit: Aug. 3, 2019

  
\_\_\_\_\_  
Lisa Chappell, Publisher

Subscribed and sworn to before me this 23 day of June, 2020



  
\_\_\_\_\_  
Notary Public in and for the State of Texas

# Local

Submit local news to editor@gainesvilleregister.com

## TODAY'S WEATHER

### Gainesville Forecast

#### FIVE-DAY FORECAST TEXAS CITIES

**TODAY** HIGH: 91°  
 Partly sunny  
 Time of clouds: 8:55 a.m.

**TONIGHT** LOW: 70°  
 Partly cloudy  
 Period of rain and a thunderstorm: 10:30 p.m.

**SUNDAY** 87°/70°  
 Partly cloudy  
 Showers around in the a.m.; mainly cloudy

**MONDAY** 92°/73°  
 Partly sunny  
 Sun and some clouds

**TUESDAY** 95°/75°  
 Partly sunny  
 Partly sunny

**WEDNESDAY** 98°/75°  
 Partly sunny and very warm

#### REGIONAL FORECAST



Shown is today's weather. Temperatures are today's high and tonight's low.

## CONTACT US

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gainesvilleregister.com

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Gainesville Daily Register

## DRUGS

continued from page 1

substance in Penalty Group 1 more than four grams less than 200 grams, one count of manufacture/delivery of a controlled substance in Penalty Group 2 more than four grams less than 400 grams and two counts of abandonment/engendering a child.

Natalie Diane Gray, a 36-year old from the Woodbine area of eastern Cooke County, faces two counts of manufacture/delivery of a controlled substance in Penalty Group 1 more than four grams less than 200 grams, manufacture/delivery of a controlled substance in Penalty Group 2 more than four grams less than 400 grams and two counts of abandonment/engendering a child.

David Anthony Lovato, a 32-year-old from the Woodbine area of eastern Cooke County, was charged with possession of a controlled substance in Penalty Group 1 more than one gram less than four grams MTWB (motion to withdraw bond), possession of a controlled substance in Penalty Group 1 less than one gram, two counts of abandonment/engendering a child and possession of drug paraphernalia.

Callie Lasha Stevenson, 27, of the Woodbine area of eastern Cooke County, was charged with manufacture/delivery of a controlled substance in Penalty Group 1 less than one gram and two counts of abandonment/engendering a child.

Kaleb Aaron Winner, 18, of Sherman, was arrested on a charge of possession of marijuana less than two ounces.

Kyle Lamar Wilson, a 41-year-old Muenster resident, faces charges of manufacture/delivery of a controlled substance in Penalty Group 1 more than four grams less than 200 grams and manufacture/delivery of a controlled substance in Penalty Group 1 more than one gram less than four grams.

Ashley Nicole Waltrip, 24, of Muenster, was arrested on a charge of possession of a controlled substance in Penalty Group 1 more than four grams less than 200 grams.

Donald Ray Coleman III, a 38-year-old Muenster resident, faces a charge of manufacture/delivery of a controlled substance in Penalty Group 1 more than four grams less than 200 grams.

Renee Michelle Dittfurth, 30, of Muenster, was arrested on a charge of manufacture/delivery of a controlled substance in Penalty Group 1 more than four grams less than 200 grams.

Buckaloo, Coleman, Dittfurth, Hughes, Lovato, Pipkin and Wilson remained in custody at the Cooke County Jail as of Friday afternoon, according to Gilbert.

Dawn Marie Allison, a 48-year-old Gainesville woman, was arrested in Sherman on a charge of manufacture/delivery of a controlled substance in Penalty Group 1 more than four grams less than 200 grams. As of Friday, Allison remained in custody at the Grayson County Jail on a \$20,000 surety bond, according to a Grayson County Sheriff's Office spokeswoman.

In addition to making arrests and confiscating drugs, investigators found an 11-year-old boy and an 8-year-old boy who lived inside one of the homes they were searching on County Road 296 near Woodbine. Gilbert said the children were not injured and



Dawn Allison



Ashley Buckaloo



Donald Coleman



Renee Dittfurth



Natalie Gray



Dillon Hughes



Denise King



David Lovato



Treva McCabe



Calvin Pipkin



Callie Stevenson



Ashley Waltrip



Kyle Wilson



Kaleb Winner

were later placed with a relative by Child Protective Services.

Law enforcement believes the drug rings — including those in the Muenster and Woodbine areas — had been distributing illegal narcotics in Cooke, Montague and Grayson counties.

It was unknown as of press time how many homes in Cooke County were part of the busts. However, Gilbert did say investigators dismantled the drug rings through targeted enforcement and execution of multiple search warrants signed by 235th District Court Judge Janelle Haverkamp.

## BURGER

continued from page 1

to 15 minutes," he said. "Everything is made fresh and prepared when it is ordered."

The Best Burger Barn has a unique menu, offering elk and buffalo burgers that are a half-pound each. Their hamburgers are over a third of a pound. The owners are hoping to begin a delivery service in Gainesville around Aug. 10.

Rose and Rambo are extremely appreciative of the reception they have received in Gainesville and the quality of the staff they have.

"We try to run seven days a week, but we are only open here Monday through Saturday," Rambo said. "We want to be open on Sunday to offer a meal after church but need to find more qualified staff before we can."

Best Burger Barn is focused on suburban and rural locations, Rose said that has helped them grow and Rambo agreed.

"You won't find us in a Fort Worth or Austin location," Rambo said.

The reviews of Best Burger Barn average between four and a half to five stars, Rose said that the reviews come straight to their phone and they read every one. Rambo said their restaurant general managers have a wide span of control that helps their performance, too.

The pair claim their expansion locations are determined by their customers' and vendors' recommendations. Their goal is to find a location that allows them to offer

their food at a competitive price by avoiding high-cost locations.

## Water Conservation Tips

### Indoor Tips

- Turn water off while brushing teeth or shaving
- Run only full loads in the washing machine and dishwasher
- Fix leaky faucets and plumbing

### Outdoor Tips

- Water lawns and shrubbery during cooler parts of the day. Avoid watering between 10 a.m. and 6 p.m.
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- Leave lawn clipping on grass – this cools the ground and hold moisture
- Use a broom or blower instead of a hose to clean driveways, sidewalks, and patios.
- Use a pool cover for swimming pools – cuts down on evaporation

North Texas Groundwater Conservation District  
www.northtexasgcd.org