Doug Shaw

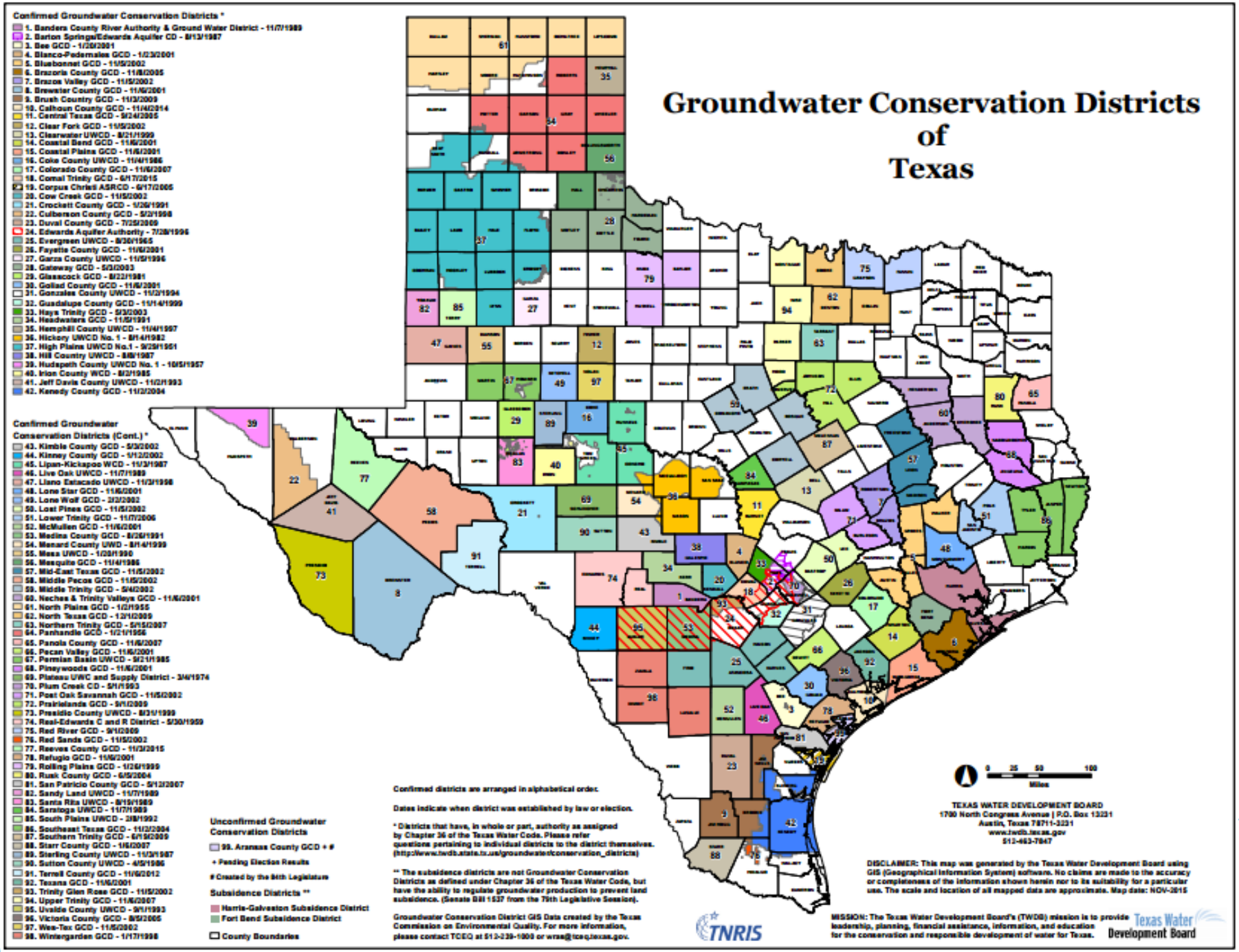
General Manager

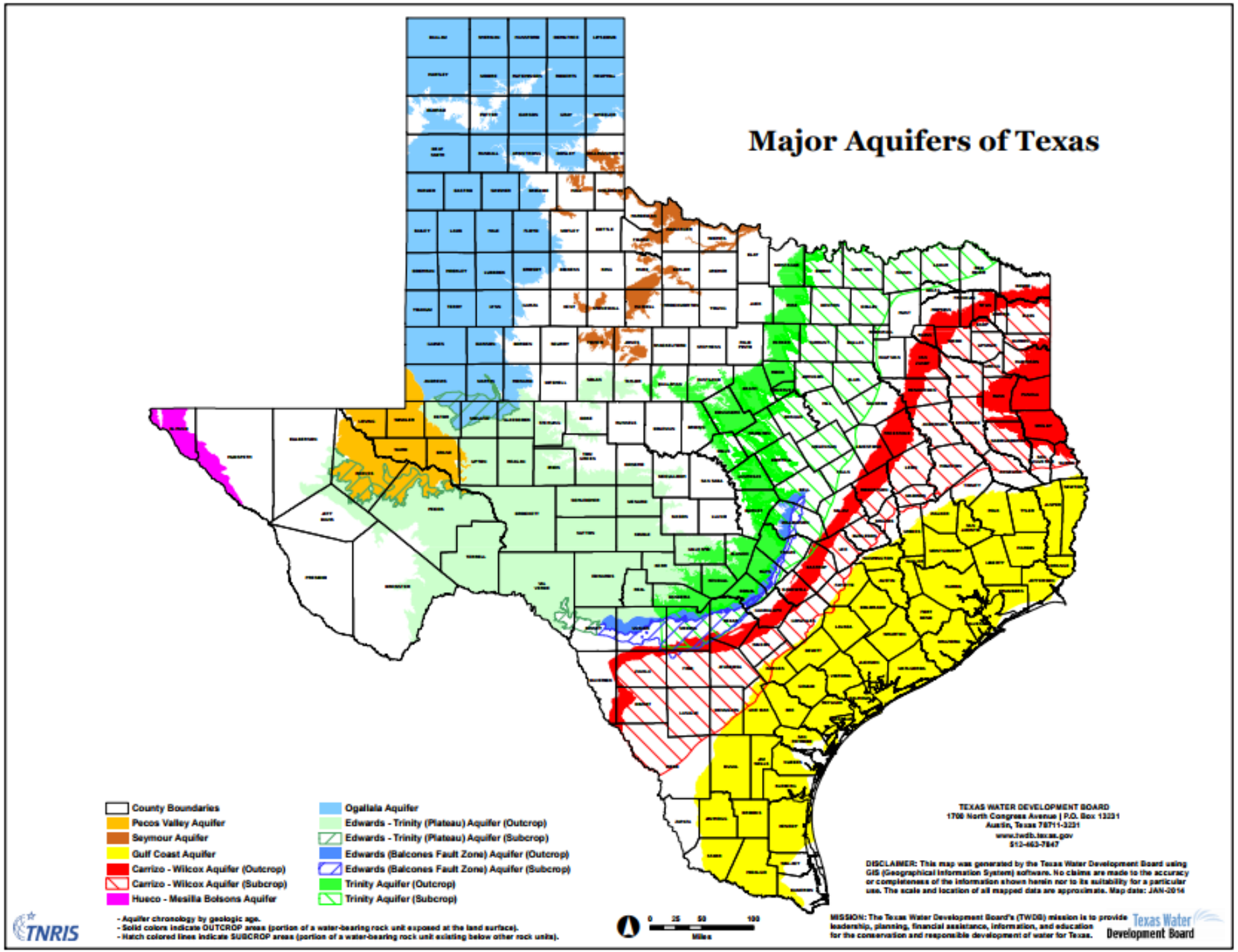
Water Management in Texas

- Texas courts divide water into unrelated legal classes with different rules of law governing the ownership and use of each class:
  - Groundwater – governed by the rule of capture, which grants the landowners the right to capture the water beneath their property.
  - Surface Water – owned by the state of Texas, and can be used by a landowner only with permission from the State (with some exceptions).

Groundwater

- Houston & Texas Central Railroad Co. v. East (1904)
  - The Court was faced with the choice between the rule of capture and the rule of reasonable use; the Court chose the **rule of capture**.
- Conservation Amendment (1917):
  - "The Conservation and development of all of the natural resources of this State…and the preservation and conservation of all such natural resources of the State are each and all hereby declared public rights and duties; and the Legislature shall pass all such laws as may be appropriate thereto."
- In 1949, legislation was passed that allowed for a petition process for designation "underground water reservoir" and for creating groundwater conservation districts (GCDs).
  - Several Acts of the Legislature to refine this process


Groundwater Conservation Districts of Texas
Confirmed Groundwater Conservation Districts *
1. Bandera County River Authority & Ground Water District - 11/7/1989
2. Barton Springs/Edwards Aquifer CD - 8/13/1987
3. Bee GCD - 1/26/2001
4. Blanco-Pedernales GCD - 1/23/2001
5. Bluebonnet GCD - 11/5/2002
6. Brazoria County GCD - 11/8/2005
7. Brazos Valley GCD - 11/5/2002
8. Brewster County GCD - 11/6/2001
9. Brush Country GCD - 11/3/2009
10. Calhoun County GCD - 11/4/2014
11. Central Texas GCD - 9/24/2005
12. Clear Fork GCD - 11/5/2002
13. Clearwater UWCD - 8/21/1999
14. Coastal Bend GCD - 11/6/2001
15. Coastal Plains GCD - 11/6/2001
16. Coke County UWCD - 11/4/1986
17. Colorado County GCD - 11/6/2007
18. Comal Trinity GCD - 6/17/2015
19. Corpus Christi ASRCD - 6/17/2005
20. Cow Creek GCD - 11/5/2002
21. Crockett County GCD - 1/26/1991
22. Culberson County GCD - 5/2/1998
23. Duval County GCD - 7/25/2009
24. Edwards Aquifer Authority - 7/28/1996
25. Evergreen UWCD - 8/30/1965
26. Fayette County GCD - 11/6/2001
27. Garza County UWCD - 11/5/1996
28. Gateway GCD - 5/23/2013
29. Glasscock GCD - 8/22/1981
30. Goliad County GCD - 11/6/2001
31. Gonzales County UWCD - 11/2/1994
32. Guadalupe County GCD - 11/14/1999
33. Hays Trinity GCD - 5/3/2003
34. Headwaters GCD - 11/5/1991
35. Hemphill County UWCD - 11/4/1997
36. Hickory UWCD No. 1 - 8/14/1982
37. High Plains UWCD No.1 - 9/25/1951
38. Hill Country UWCD - 8/8/1987
39. Hudspeth County UWCD No. 1 - 10/5/1957
40. Irion County WCD - 8/2/1985
41. Jeff Davis County UWCD - 11/2/1993
42. Kenedy County GCD - 11/3/2004
Confirmed Groundwater Conservation Districts (Cont.) *
43. Kimble County GCD - 5/3/2002
44. Kinney County GCD - 5/12/2002
45. Lipan-Kickapoo WCD - 11/3/1987
46. Live Oak UWCD - 11/7/1989
47. Llano Estacado UWCD - 11/3/1998
48. Lone Star GCD - 11/6/2001
49. Lone Wolf GCD - 2/2/2002
50. Lost Pines GCD - 11/5/2002
51. Lower Trinity GCD - 11/7/2006
52. McMullen GCD - 11/6/2001
53. Medina County GCD - 8/26/1991
54. Menard County UWD - 8/14/1999
55. Mesa UWCD - 1/28/1990
56. Mesquite GCD - 11/4/1986
57. Mid-East Texas GCD - 11/5/2002
58. Middle Pecos GCD - 11/5/2002
59. Middle Trinity GCD - 5/4/2002
60. Neches & Trinity Valleys GCD - 11/6/2001
61. North Plains GCD - 1/2/1955
62. North Texas GCD - 12/1/2009
63. Northern Trinity GCD - 5/15/2007
64. Panhandle GCD - 1/21/1956
65. Pecos County GCD - 11/8/2007
66. Pecan Valley GCD - 11/6/2001
67. Permian Basin UWCD - 9/21/1985
68. Pineywoods GCD - 11/6/2001
69. Plateau UWC and Supply District - 3/4/1974
70. Plum Creek CD - 5/1/1993
71. Post Oak Savannah GCD - 11/5/2002
72. Prairielands GCD - 5/1/2009
73. Presidio County UWCD - 8/31/1999
74. Real-Edwards C and R District - 5/30/1959
75. Red River GCD - 9/1/2009
76. Red Sands GCD - 11/5/2002
77. Reeves County GCD - 11/3/2015
78. Refugio GCD - 11/6/2001
79. Rolling Plains GCD - 1/26/1999
80. Rusk County GCD - 6/5/2004
81. San Patricio County GCD - 5/12/2007
82. Sandy Land UWCD - 11/7/1989
83. Santa Rita UWCD - 8/15/1989
84. Saratoga UWCD - 11/7/1989
85. South Plains UWCD - 3/8/1992
86. Southeast Texas GCD - 11/2/2004
87. Southern Trinity GCD - 6/15/2009
88. Starr County GCD - 1/6/2007
89. Sterling County UWCD - 11/3/1987
90. Sutton County UWCD - 4/5/1986
91. Terrell County GCD - 11/6/2012
92. Texana GCD - 11/6/2001
93. Trinity Glen Rose GCD - 11/5/2002
94. Upper Trinity GCD - 11/6/2007
95. Uvalde County UWCD - 9/1/1993
96. Victoria County GCD - 8/5/2005
97. Wes-Tex GCD - 11/5/2002
98. Wintergarden GCD - 1/17/1998
Unconfirmed Groundwater Conservation Districts
99. Aransas County GCD + #
+ Pending Election Results
# Created by the 84th Legislature
Subsidence Districts **
Harris-Galveston Subsidence District
Fort Bend Subsidence District
County Boundaries
Confirmed districts are arranged in alphabetical order.
Dates indicate when district was established by law or election.
* Districts that have, in whole or part, authority as assigned by Chapter 36 of the Texas Water Code. Please refer questions pertaining to individual districts to the district themselves. (http://www.twdb.state.tx.us/groundwater/conservation_districts)
** The subsidence districts are not Groundwater Conservation Districts as defined under Chapter 36 of the Texas Water Code, but have the ability to regulate groundwater production to prevent land subsidence. (Senate Bill 1537 from the 79th Legislative Session).
Groundwater Conservation District GIS Data created by the Texas Commission on Environmental Quality. For more information, please contact TCEQ at 512-239-1000 or wras@tceq.texas.gov.
0 25 50 100
Miles
TEXAS WATER DEVELOPMENT BOARD
1700 North Congress Avenue | P.O. Box 13231
Austin, Texas 78711-3231
www.twdb.texas.gov
512-463-7847
DISCLAIMER: This map was generated by the Texas Water Development Board using GIS (Geographical Information System) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate. Map date: NOV-2015
TNRIS
MISSION: The Texas Water Development Board's (TWDB) mission is to provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas.
Texas Water Development Board


Major Aquifers of Texas
County Boundaries
Pecos Valley Aquifer
Seymour Aquifer
Gulf Coast Aquifer
Carrizo - Wilcox Aquifer (Outcrop)
Carrizo - Wilcox Aquifer (Subcrop)
Hueco - Mesilla Bolsons Aquifer
Ogallala Aquifer
Edwards - Trinity (Plateau) Aquifer (Outcrop)
Edwards - Trinity (Plateau) Aquifer (Subcrop)
Edwards (Balcones Fault Zone) Aquifer (Outcrop)
Edwards (Balcones Fault Zone) Aquifer (Subcrop)
Trinity Aquifer (Outcrop)
Trinity Aquifer (Subcrop)
- Aquifer chronology by geologic age.
- Solid colors indicate OUTCROP areas (portion of a water-bearing rock unit exposed at the land surface).
- Hatch colored lines indicate SUBCROP areas (portion of a water-bearing rock unit existing below other rock units).
0 25 50 100
Miles
TEXAS WATER DEVELOPMENT BOARD
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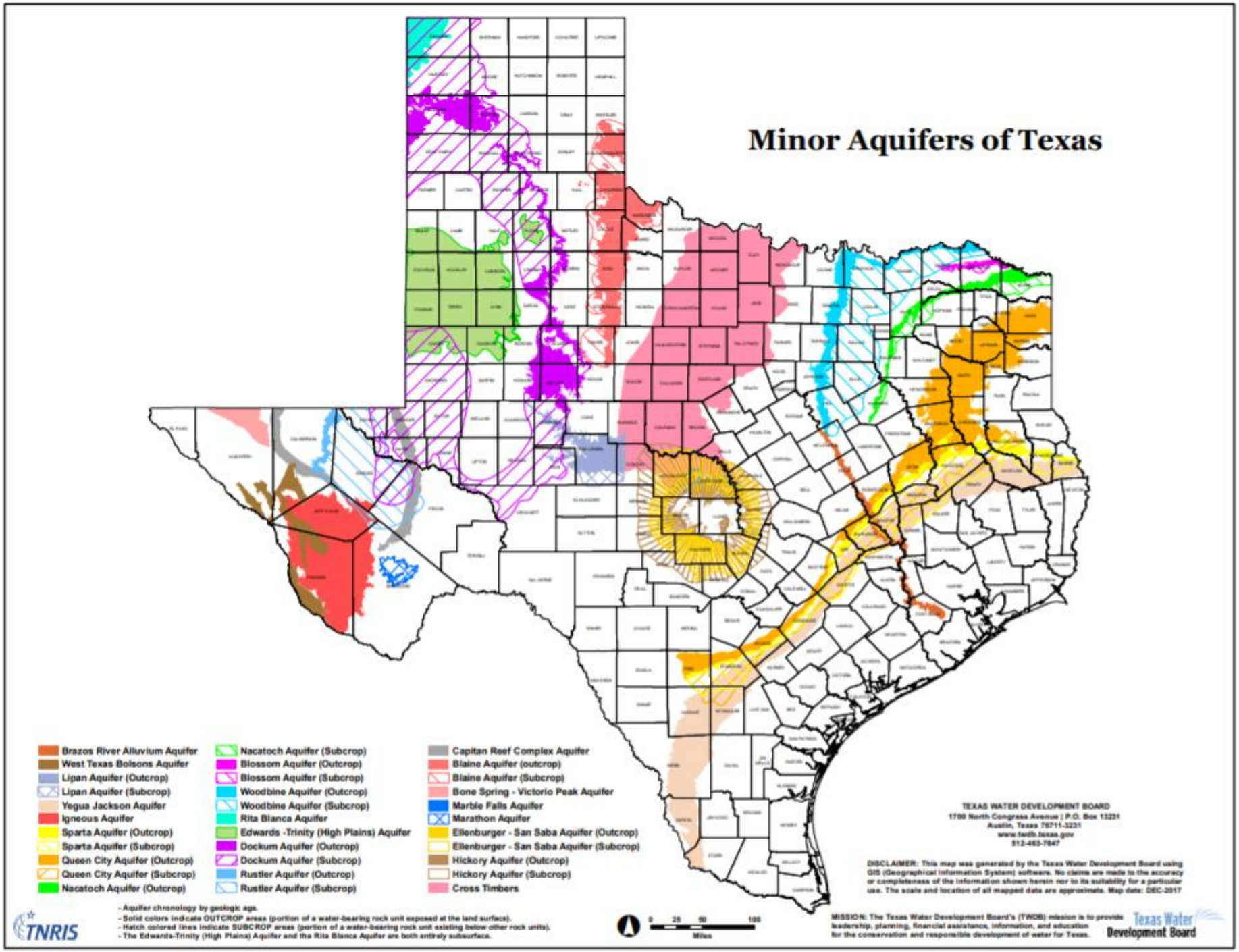
TNRIS
Texas Water Development Board


Minor Aquifers of Texas
Brazos River Alluvium Aquifer
West Texas Bolsons Aquifer
Lipan Aquifer (Outcrop)
Lipan Aquifer (Subcrop)
Yegua Jackson Aquifer
Igneous Aquifer
Sparta Aquifer (Outcrop)
Sparta Aquifer (Subcrop)
Queen City Aquifer (Outcrop)
Queen City Aquifer (Subcrop)
Nacatoch Aquifer (Outcrop)
Nacatoch Aquifer (Subcrop)
Blossom Aquifer (Outcrop)
Blossom Aquifer (Subcrop)
Woodbine Aquifer (Outcrop)
Woodbine Aquifer (Subcrop)
Rita Blanca Aquifer
Edwards -Trinity (High Plains) Aquifer
Dockum Aquifer (Outcrop)
Dockum Aquifer (Subcrop)
Rustler Aquifer (Outcrop)
Rustler Aquifer (Subcrop)
Capitan Reef Complex Aquifer
Blaine Aquifer (outcrop)
Blaine Aquifer (Subcrop)
Bone Spring - Victorio Peak Aquifer
Marble Falls Aquifer
Marathon Aquifer
Ellenburger - San Saba Aquifer (Outcrop)
Ellenburger - San Saba Aquifer (Subcrop)
Hickory Aquifer (Outcrop)
Hickory Aquifer (Subcrop)
Cross Timbers
- Aquifer chronology by geologic age.
- Solid colors indicate OUTCROP areas (portion of a water-bearing rock unit exposed at the land surface).
- Hatch colored lines indicate SUBCROP areas (portion of a water-bearing rock unit existing below other rock units).
- The Edwards-Trinity (High Plains) Aquifer and the Rita Blanca Aquifer are both entirely subsurface.
0 25 50 100
Miles
TEXAS WATER DEVELOPMENT BOARD
1700 North Congress Avenue | P.O. Box 13231
Austin, Texas 78711-3231
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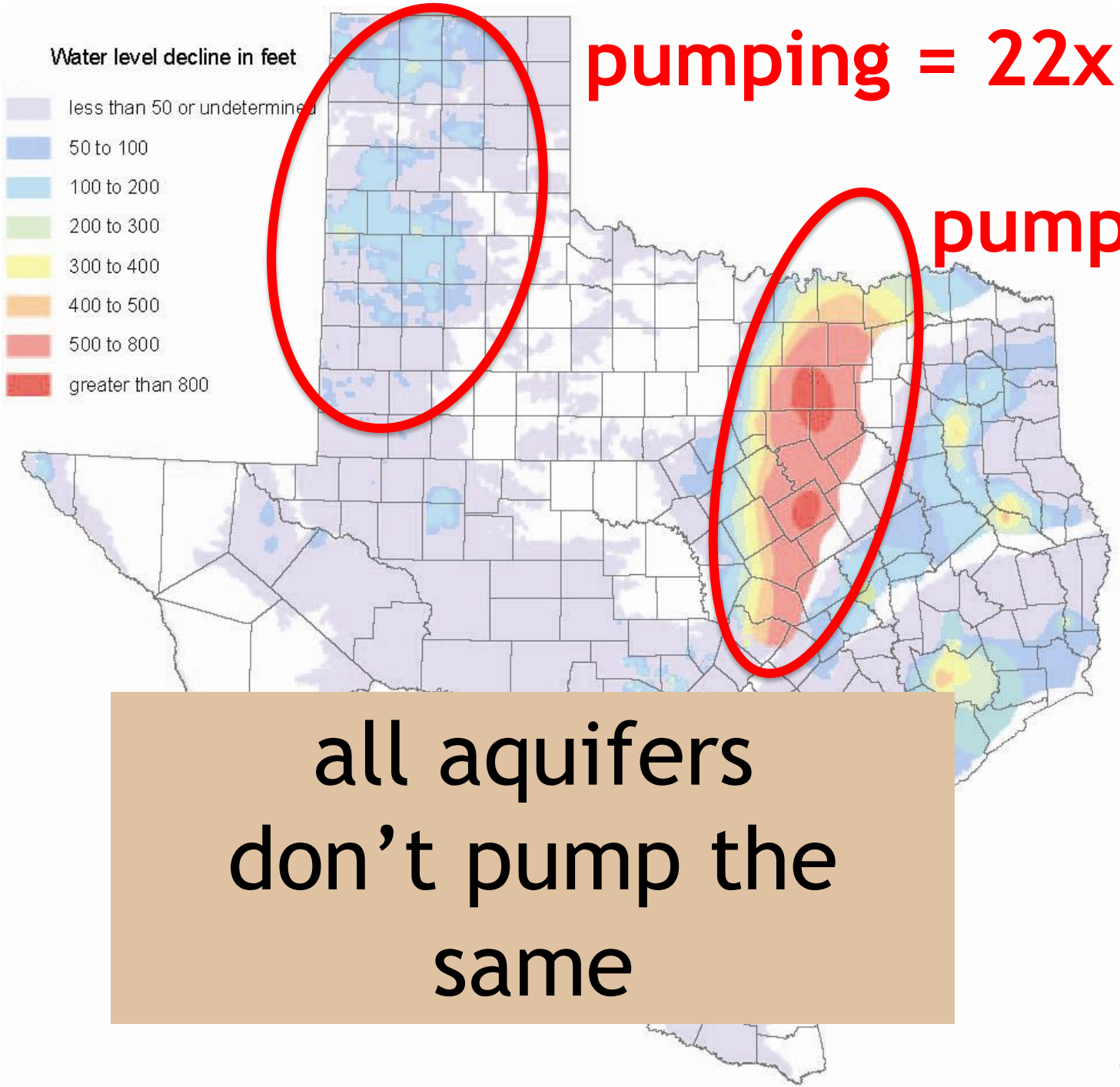
TNRIS
Texas Water Development Board



pumping = 22x

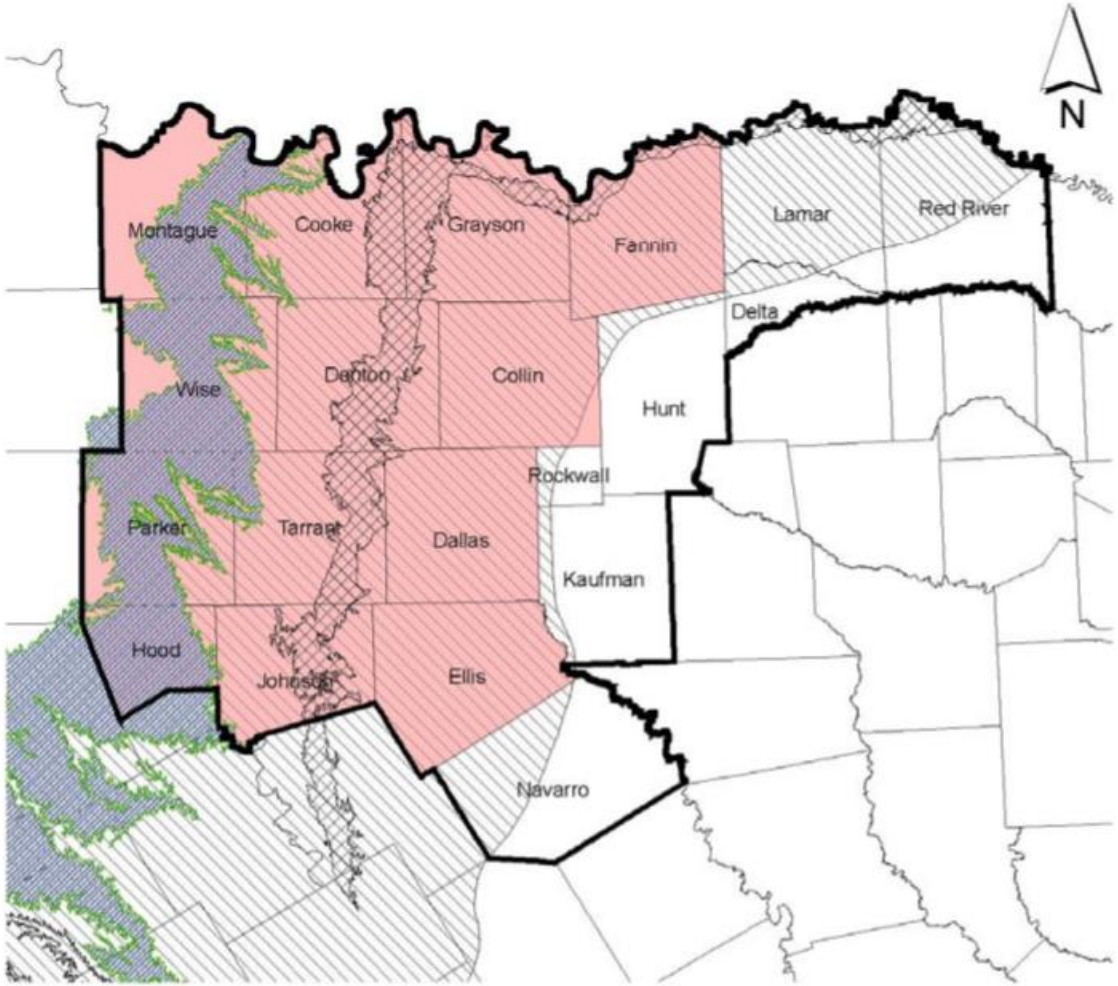
pumping = x

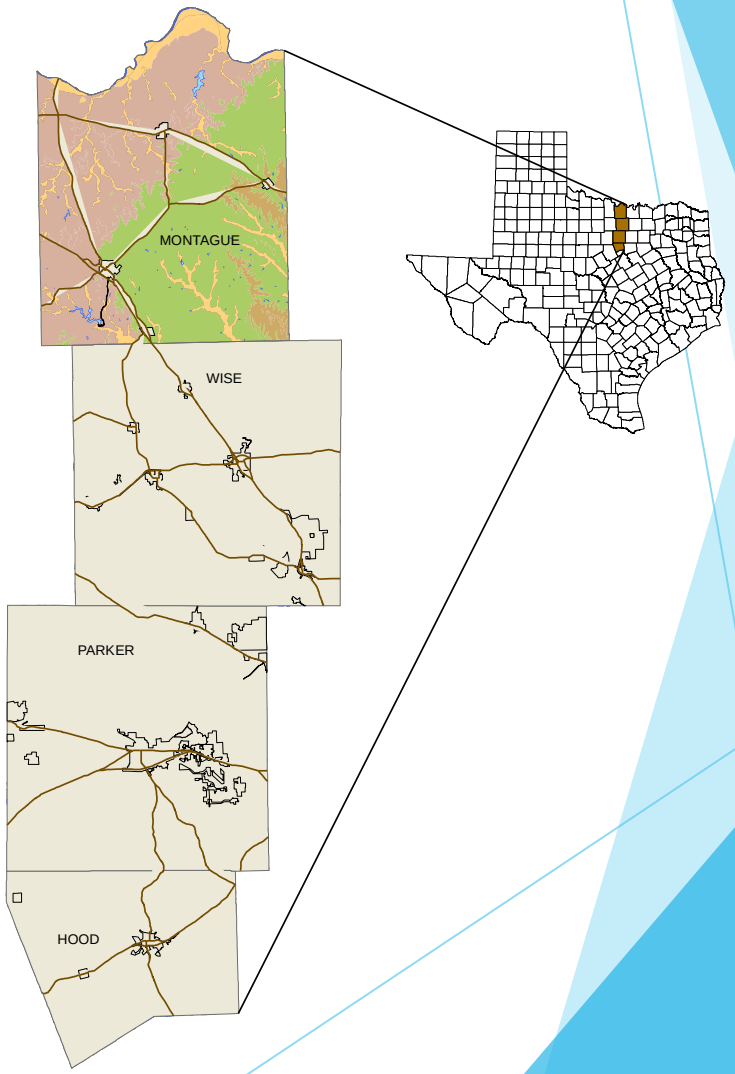
all aquifers don't pump the same

Total water-level declines in the major aquifers

Upper Trinity GCD

Hood, Parker, Wise and Montague Counties

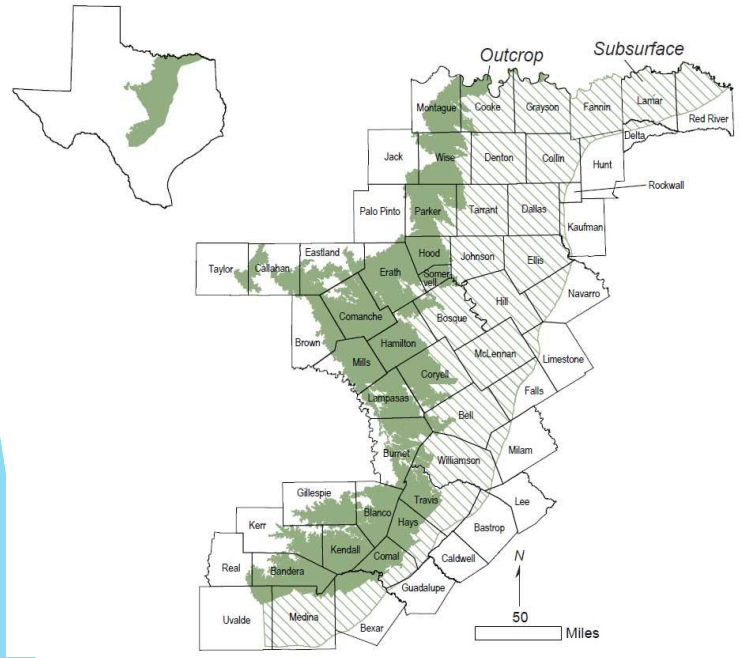




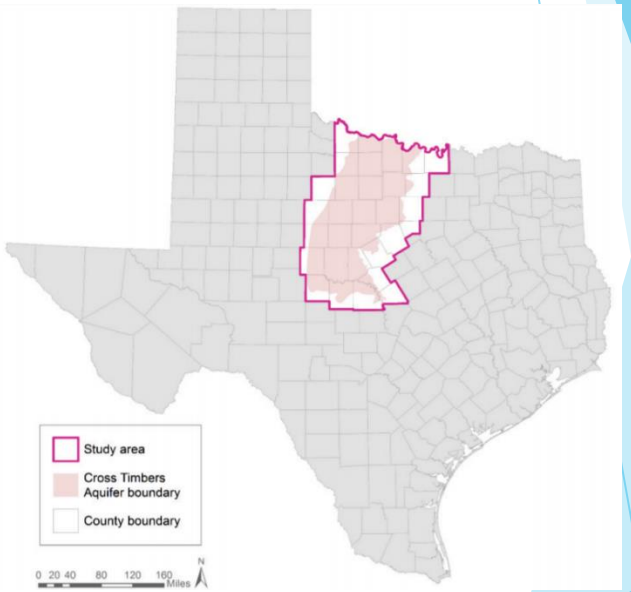
Upper Trinity GCD

Hood, Parker, Wise and Montague Counties

- Actively Manage 2 Aquifer Groups
  - Trinity – Major Aquifer
    - Antlers
    - Paluxy
    - Glen Rose
    - Twin Mountains
  - Cross Timbers – Minor Aquifer
    - Wichita
    - Cisco-Bowie
    - Canyon
    - Strawn

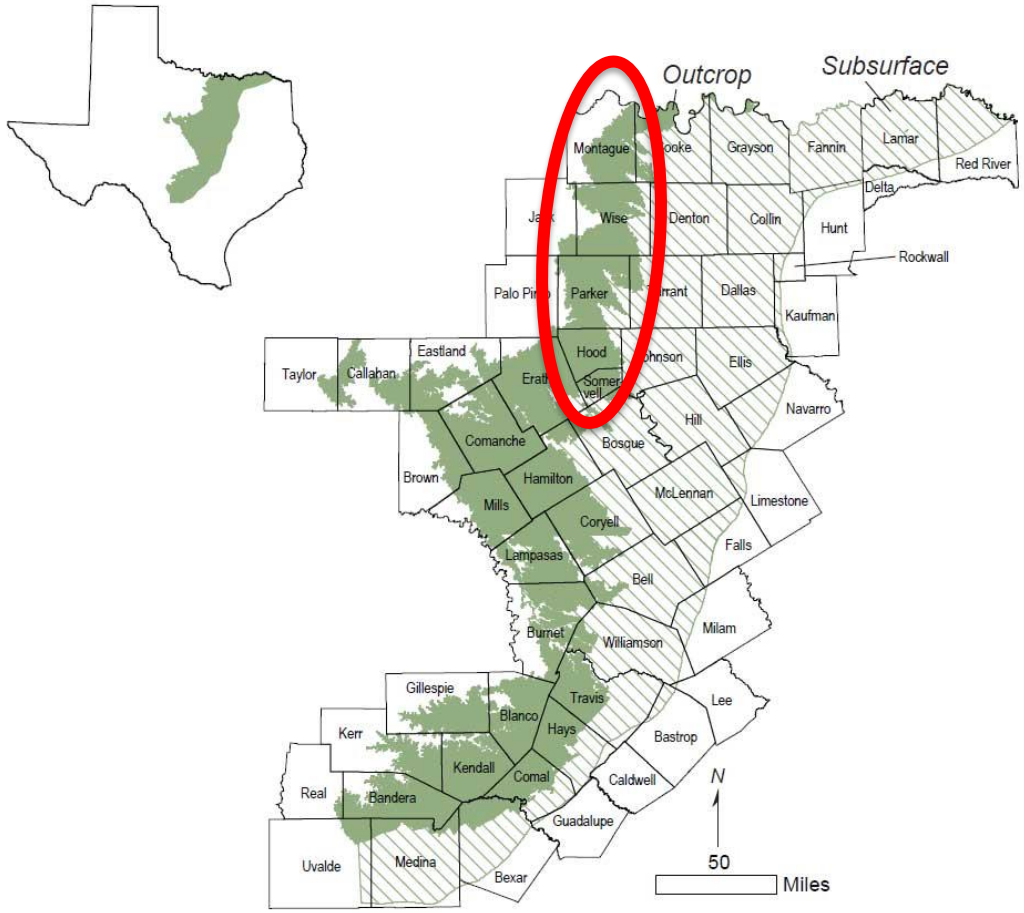


Trinity



Cross Timbers

The Trinity Aquifer



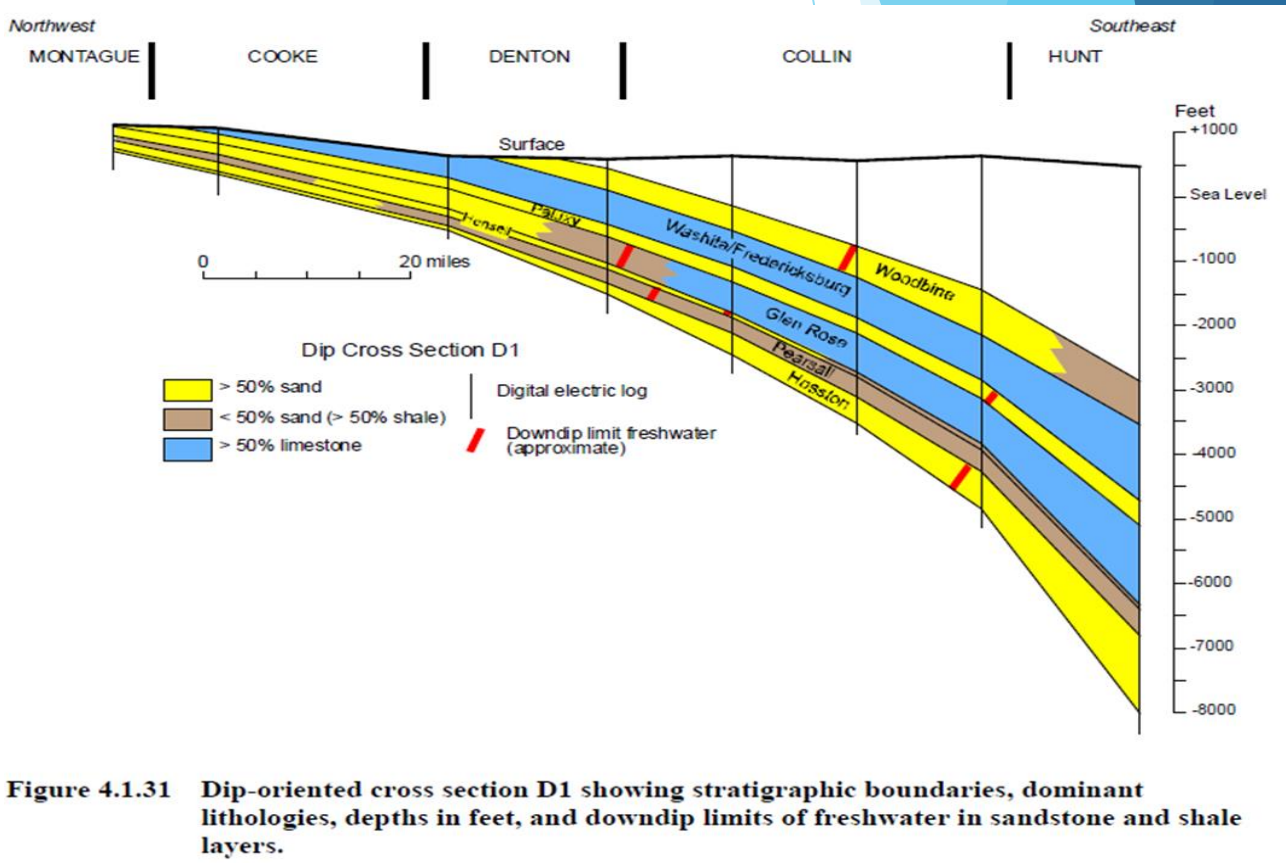
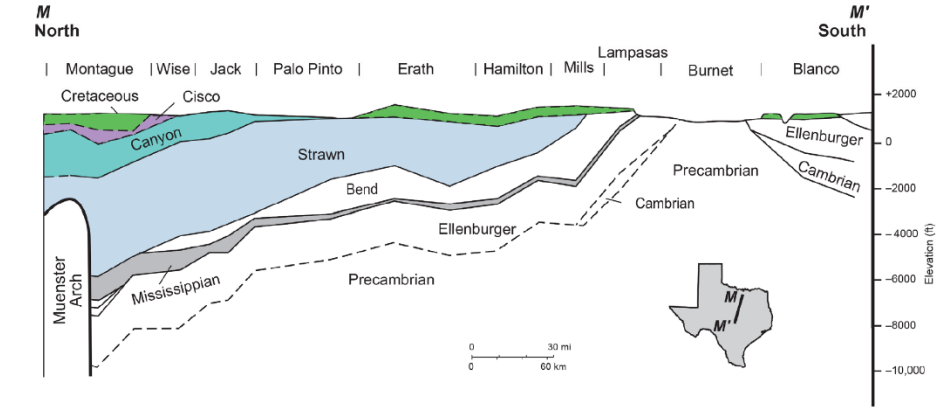
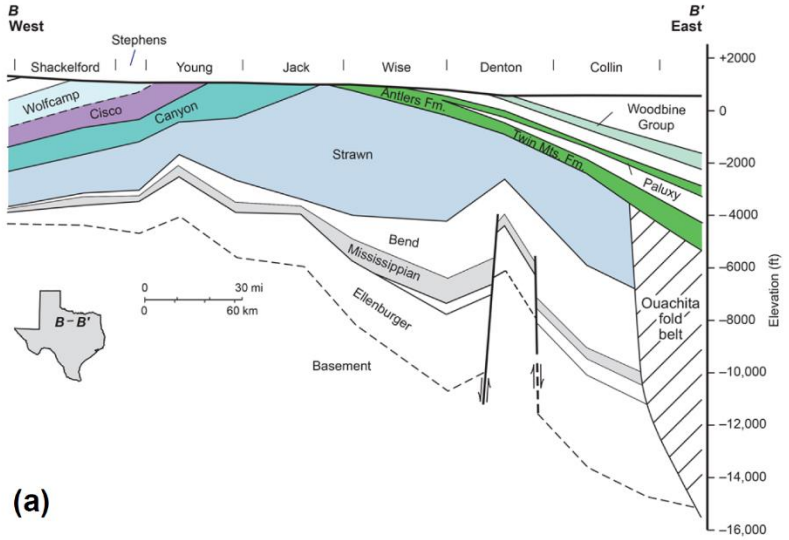


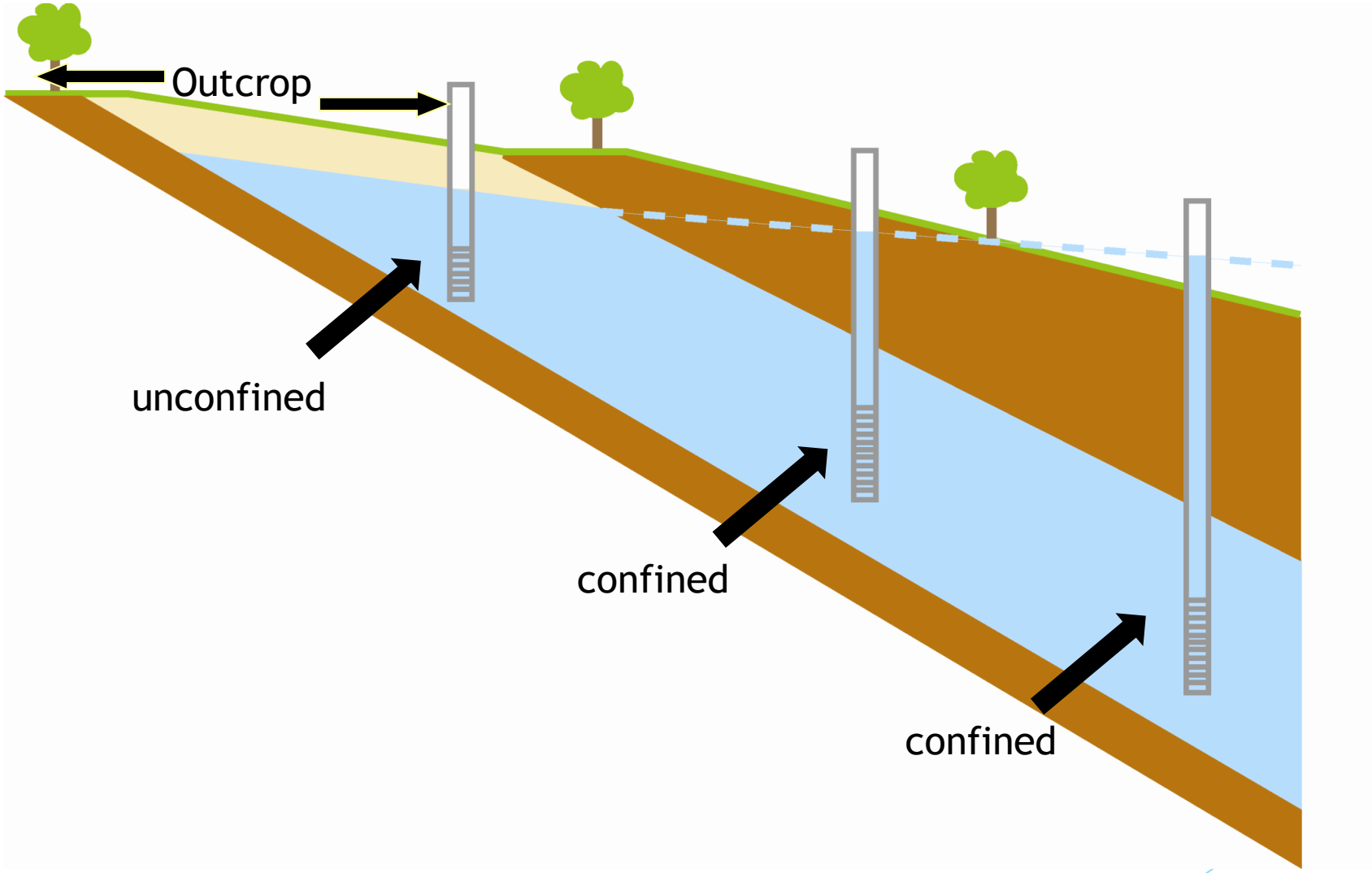
Figure 4.1.31 **Dip-oriented cross section D1 showing stratigraphic boundaries, dominant lithologies, depths in feet, and downdip limits of freshwater in sandstone and shale layers.**

The Cross Timbers Aquifer

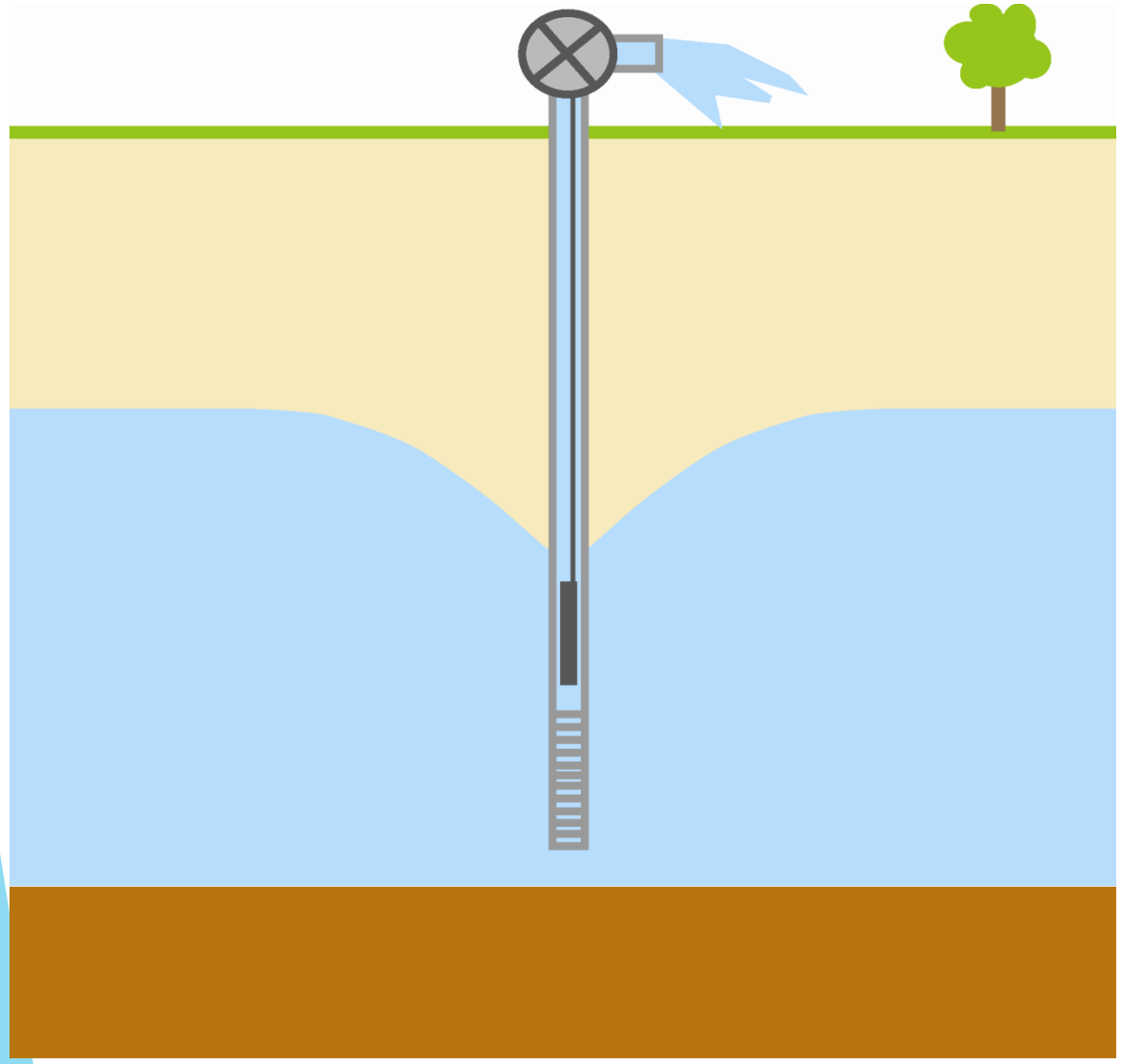




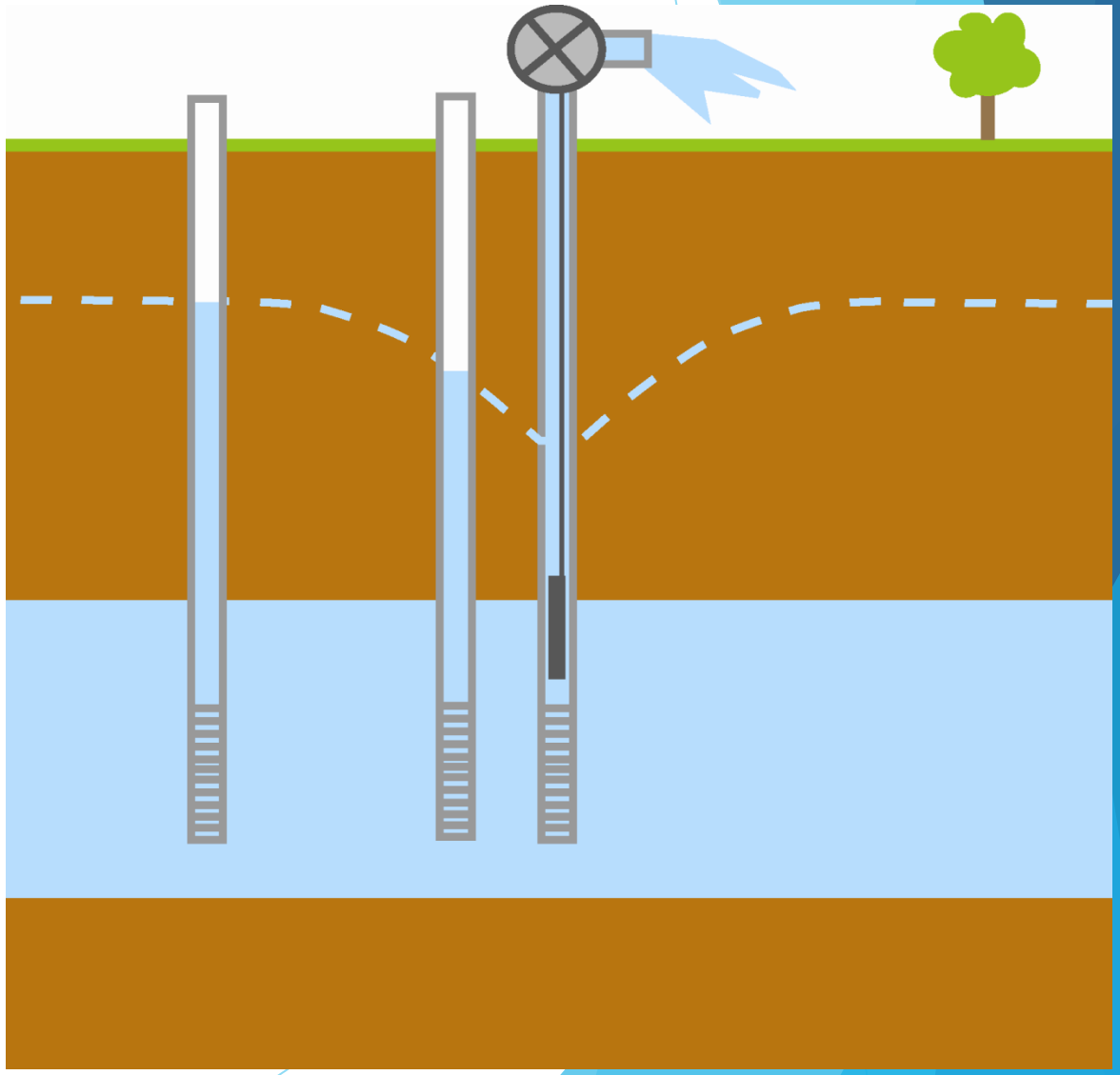
Geology of the Trinity Aquifer
Confined & Unconfined



pumping a well: unconfined

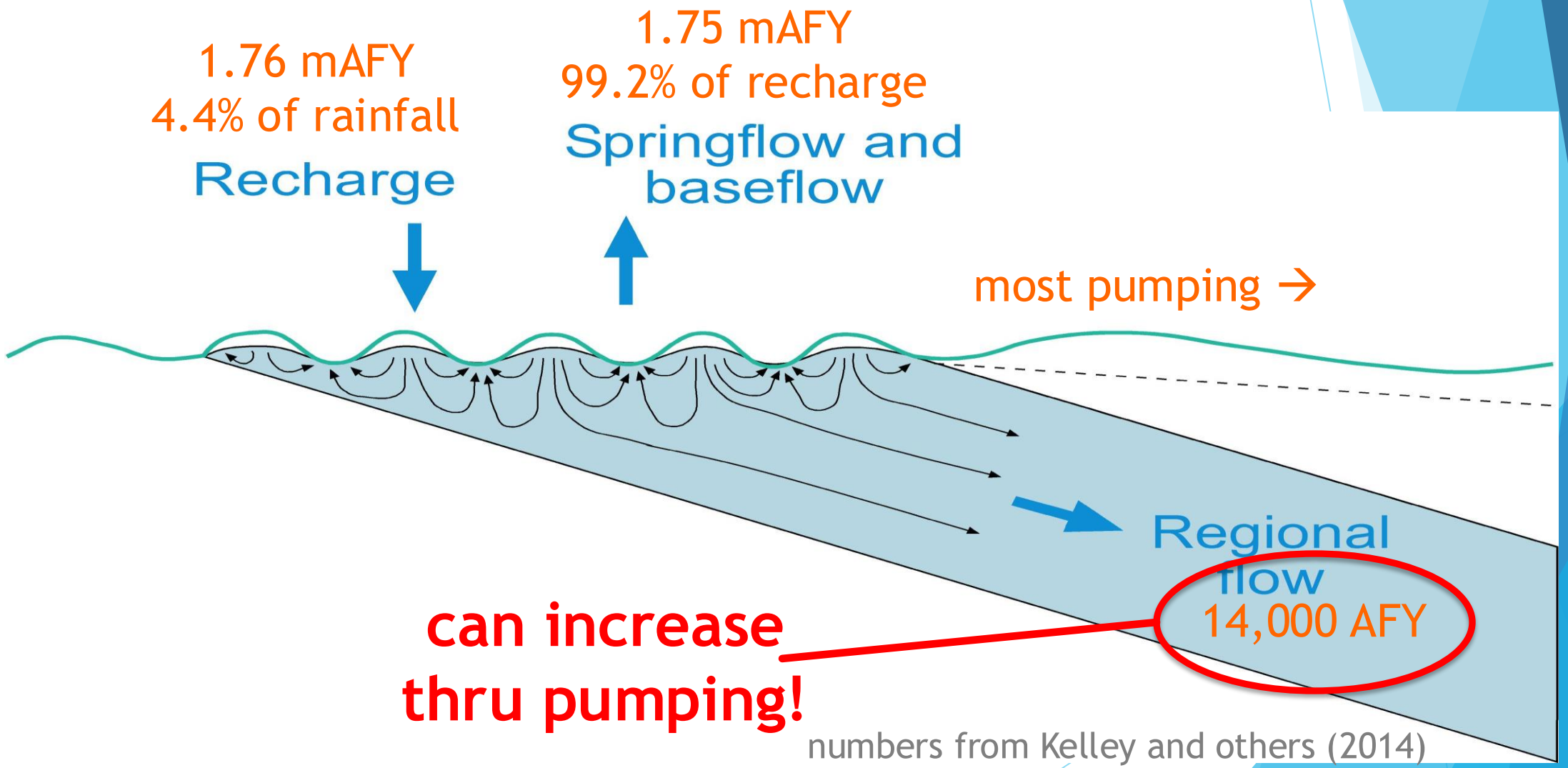


pumping a well: confined



Trinity Aquifer

north of the Colorado



can increase thru pumping!

numbers from Kelley and others (2014)

GCD Powers and Duties

Balancing Act

Conservation, preservation, protection, recharging and prevention of waste of groundwater

Rights of Landowners and the highest practicable level of groundwater production

How GCDs Manage Groundwater

- **GCD Regulation of Wells**
  - Registration requirements
  - Metering & Reporting requirements
  - Construction standards
  - Production limitations
  - Tract Size & Spacing requirements
- **Types of Authorizations Issued:**
  - Well Registration
  - Drilling Permit
  - Operating Permit
  - Transfer Permit

District Rules – Major Points

~22,000 registered exempt wells

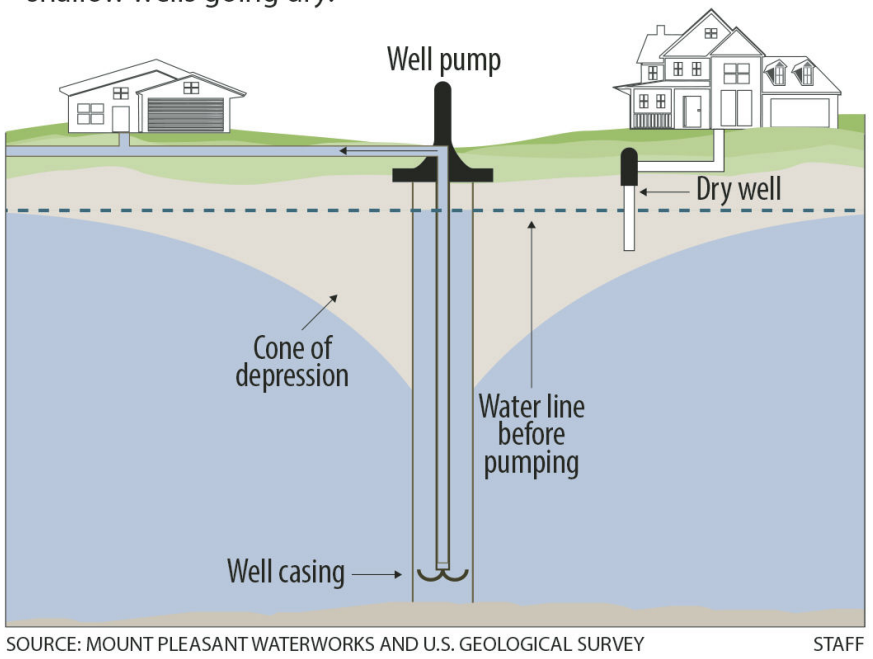
- **All wells drilled after January 1, 2009, in the District must attain an approved registration prior to drilling.**
- **Wells exempt from permitting/metering/reporting include:**
  - All wells that are used solely for domestic, livestock, poultry or agricultural use.
  - Wells that does not have the capacity, as equipped to produce more than 17.36 gallons per minute – and is not a public retail utility well.
  - Minimum 2 acres to drill any new well
    - smaller tracts are acceptable if they were lawfully configured prior to January 1, 2009, as a tract less than 2 acres in size and do not have access to water from a PWS.
  - Subject to spacing requirements, both from other wells and property lines.

How GCDs Manage Groundwater

Well Spacing Requirements:

A district **may require** compliance with the district's well spacing rules for the drilling of any well that is not exempted

- From property lines
- From other wells
- Capacity and size-based
- Combination of the above



District Rules – Spacing Requirements

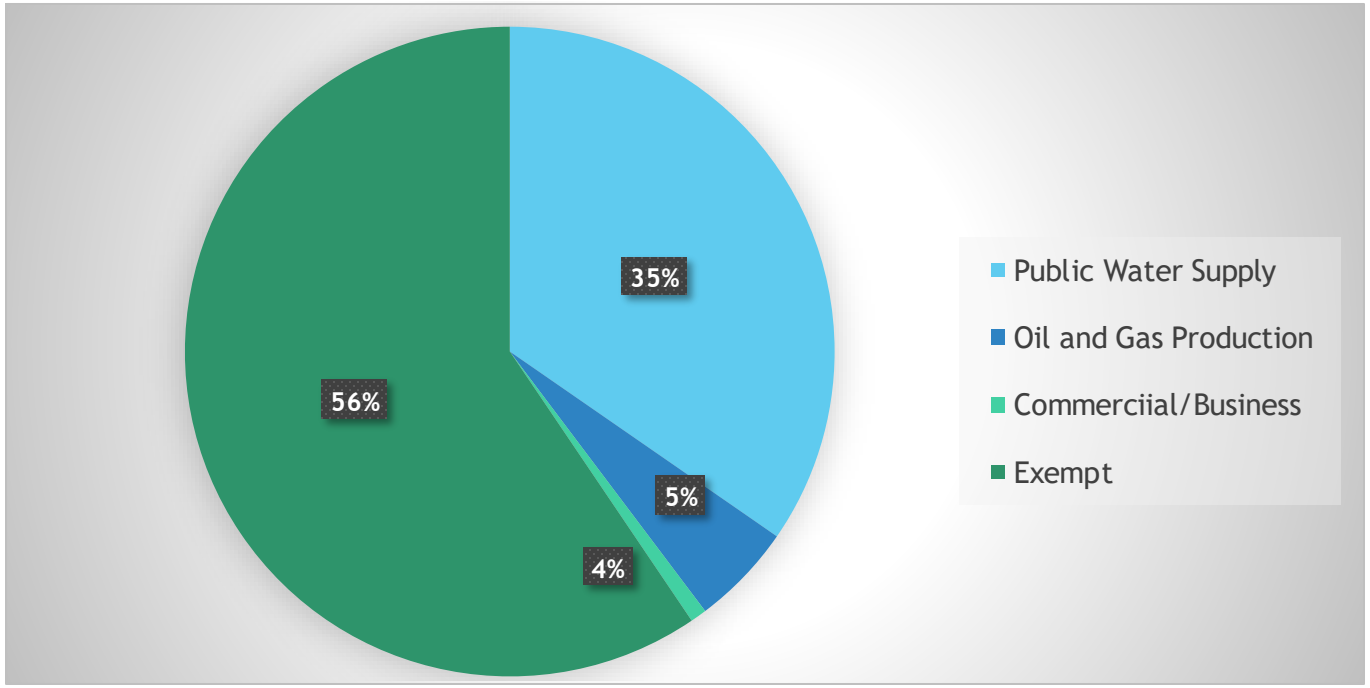
Maximum Allowed Well Production	Minimum Tract Size	Spacing from Other Well Sites	Spacing from Property Line
The maximum amount of groundwater the well can actually produce as equipped in gallons per minute (gpm).	The minimum tract size that may be considered an appropriate site for a well.	The minimum distance, in feet, that a new well or proposed well site may be located from an existing registered or permitted well, existing unregistered well identified by the General Manager under Rule 4.3(b), or approved well site.	The minimum distance, in feet, that a new well or proposed well site may be located from the nearest property line of the tract of land on which it is to be located.
<17.36 gpm	Minimum Tract Size is 2 acres.	150 ft.	50 ft.
17.36 - 30 gpm		500 ft.	150 ft.
30 - 50 gpm		1,000 ft.	250 ft.
50 - 80 gpm		1,750 ft.	500 ft.
80 - 100 gpm		2,500 ft.	750 ft.
>100 gpm		3,250 ft.	1,000 ft.

District Rules – Non-Exempt Wells

- All non-exempt wells must:
  - Register with the District
  - Obtain a permit – adopted August 2019
  - Report monthly production
- Two types of permits:
  - Historic Use Permit
    - Applies to wells that are currently approved or in operation
    - Based on maximum historic use for well or well system
  - Operating Permit
    - Applies to future wells
    - Based on allocation of GW related to surface acreage owned or controlled by the applicant

2022 Groundwater Production

- Exempt use estimates are based on estimates from the TWDB and other local data



- Non-exempt use ("Public Water Systems", "Oil and Gas" and "Commercial/Business") are based on reported pumping.

Category	Groundwater Use (AFY)[1]				
	Hood	Montague	Parker	Wise	Total
Exempt Use	6,661	347	5,705	5,056	**17,769**
Non-Exempt Use	4,967	381	4,736	3,646	**13,731**
Total	**11,628**	**728**	**10,441**	**8,702**	**31,500**

New Wells Drilled in 2022

- The largest user of Groundwater are privately owned domestic wells(exempt use)
- Processed
  - almost 2,000 new well applications in 2021
  - almost 2,300 new well applications in 2022
- Approximately 98% of these new wells are for exempt domestic use – growth in Parker and Wise county is dominated by subdivisions that depend on private wells as the sole source of water.

	New Well Registrations Submitted in 2021	
	Exempt Wells	Non-Exempt Wells
Hood	117	4
Montague	180	0
Parker	1,154	10
Wise	526	4

	New Well Registrations Submitted in 2022	
	Exempt Wells	Non-Exempt Wells
Hood	162	2
Montague	216	2
Parker	1,316	13
Wise	510	13

Senate Bill 2440

- Amends Section 232.0032 of the Local Government Code:
  - …a plat application for the subdivision of a tract of land for which the source of the water supply intended for the subdivision is groundwater under that land **must** have attached to it a statement that:
    - is prepared by an engineer licensed to practice in this state or a geoscientist licensed to practice in this state; and
    - certifies that adequate groundwater is available for the subdivision.

- The bill allows…..a waiver…….if the municipality or county determines, **based on credible evidence, that there is sufficient groundwater available and will continue to be available** and either:
  - (1) the entire tract will be supplied with water from the Gulf Coast Aquifer or the Carrizo Wilcox aquifer, or
  - (2) the proposed subdivision will divide the tract into not more than 10 lots.

Groundwater Certification

- **232.0032(b) states:**
  - The Texas Commission on Environmental Quality by rule shall establish the appropriate form and content of a certification to be attached to a plat application under this section.
  - That rule is codified in Title 30, Part 1, Chapter 230 of the Texas Administrative Code

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 230	GROUNDWATER AVAILABILITY CERTIFICATION FOR PLATTING

Interlocal Agreements

- Authorization & Purpose
- Duties of the Parties
  - Platting Authority Duties
  - Duties of the District
- General Provisions
  - Governing Law
  - Voluntary Removal
  - Prior Agreements Superseded

INTERLOCAL AGREEMENT

This Interlocal Agreement ("Agreement") is made and entered into by and between Ellis County, Texas ("Platting Authority"), and the Prairielands Groundwater Conservation District ("District") (collectively "Parties" and individually "Party" depending upon the context).

RECITALS

WHEREAS, Platting Authority is a body politic and corporate created and operating pursuant to Article IX, Section 1 of the Constitution of Texas; the Texas Local Government Code; and the applicable, general laws of the State of Texas;

WHEREAS, the District is a groundwater conservation district and a body politic and corporate, created by the 81st Texas Legislature under the authority of Article XVI, Section 59 of the Texas Constitution, and in accordance with Chapter 36 of the Texas Water Code, and codified as Chapter 8855 of the Texas Special District Local Laws Code (the "District Act");

WHEREAS, the Parties, each being a political subdivision of the State of Texas, desire to enter this Agreement in accordance with the provisions of the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code;

WHEREAS, the Parties agree that coordinating efforts and expertise in the evaluation of the availability of groundwater as the source of water intended to supply a platted subdivision is mutually advantageous and benefits the public;

WHEREAS, Chapter 232 of the Texas Local Government Code requires applicants to acquire a plat from the Platting Authority prior to subdividing certain tracts of land located outside the limits of a municipality ("Rural Tracts");

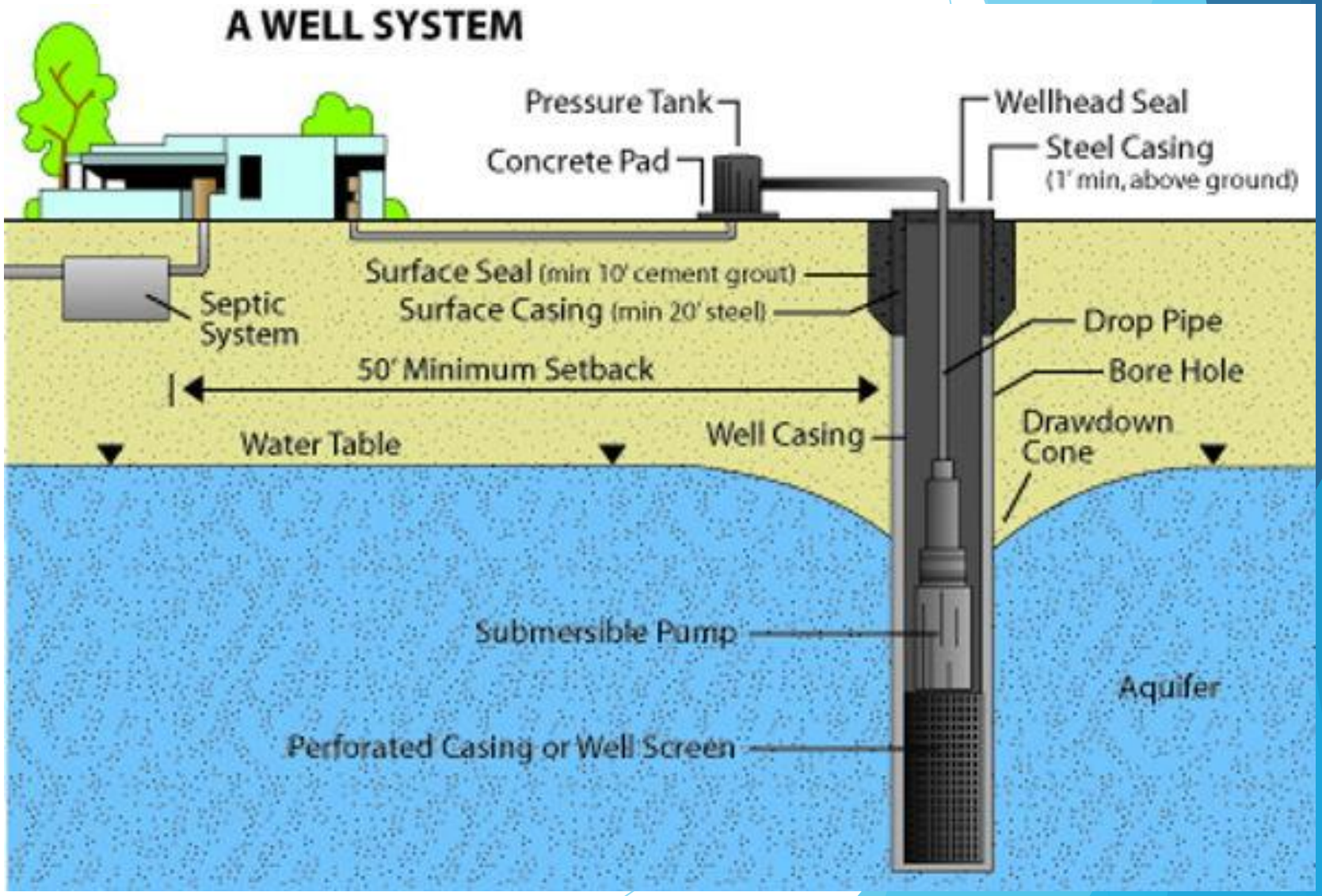
WHEREAS, the Platting Authority, as authorized by Section 232.0032 of the Texas Local Government Code, requires applicants seeking to plat a Rural Tract for which groundwater is intended to be the source of supply to provide a statement prepared by a geoscientist licensed to practice in Texas or an engineer licensed to practice in Texas certifying that adequate groundwater is available for the subdivision in accordance and in compliance with the rules of the Texas Commission on Environmental Quality (TCEQ) set forth in Title 30 of the Texas Administrative Code, Chapter 230 (the "Certification Statement");

WHEREAS, the District, in accordance with Section 59 of Article XVI of the Texas Constitution, Chapter 36 of the Texas Water Code, and the District Act, adopts and implements rules to manage groundwater, protect property rights, and balance the conservation and development ofgroundwater to meet the needs of the citizens of Ellis County and the State of Texas;

Best Practices for New and Established Well Owners

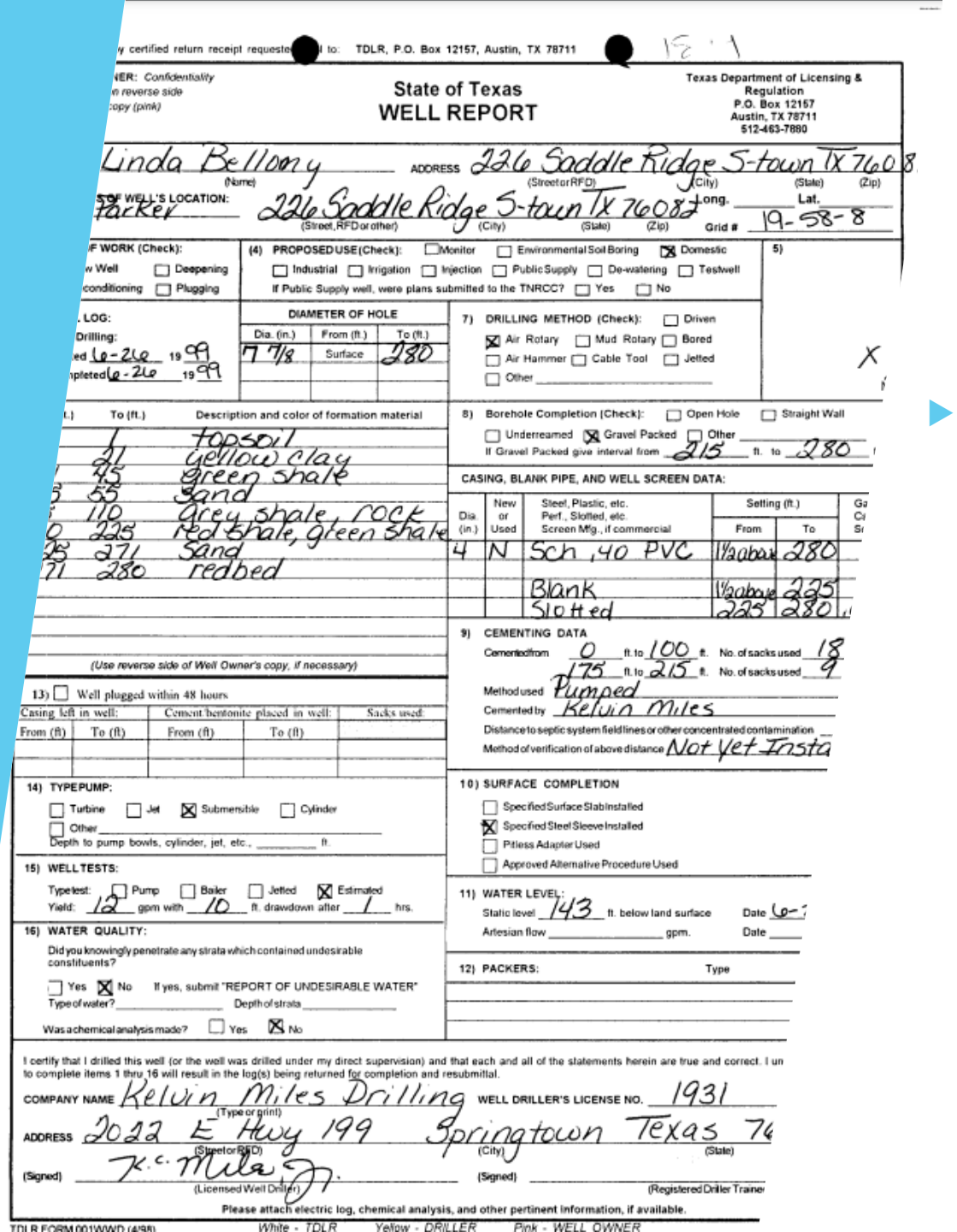
Water Wells Components

- Well components
  - Borehole
  - Surface seal
  - Surface casing
  - Well screen
  - Drop pipe
  - Submersible pump
- Some older wells feature PVC pipes that end at the ground surface, this increase the likelihood of fertilizer or septic contamination.



5 Best Practices for Well Maintenace

1. Knowing key information integral to maintenance of your well system
2. Visually checking the wellhead
3. Visually checking other above-ground well system components and equipment
4. Knowing when to call a Licensed driller/Servicer
5. Recognizing and minimizing groundwater contamination threats



y certified return receipt requeste[redacted] to: TDLR, P.O. Box 12157, Austin, TX 78711

ER: Confidentiality
n reverse side
copy (pink)

State of Texas
WELL REPORT

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
512-463-7880

Linda Bellomy (Name) ADDRESS 226 Saddle Ridge S-town TX 76088 (Street or RFD) (City) (State) (Zip)

OF WELL'S LOCATION: Parker 226 Saddle Ridge S-town TX 76087 (Street, RFD or other) (City) (State) (Zip) Long. Lat. Grid # 19-58-8

F WORK (Check): w Well Deepening conditioning Plugging

(4) PROPOSED USE (Check): Monitor Environmental Soil Boring Domestic Industrial Irrigation Injection Public Supply De-watering Testwell
If Public Supply well, were plans submitted to the TNRCC? Yes No

5)

. LOG:
Drilling:
ed 6-26 19 99
pleted 6-26 19 99

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
7 7/8	Surface	280

7) DRILLING METHOD (Check): Driven
Air Rotary Mud Rotary Bored
Air Hammer Cable Tool Jetted
Other

X

To (ft.)	Description and color of formation material
1	topsoil
21	yellow clay
45	green shale
55	sand
110	grey shale, rock
225	red shale, green shale
271	sand
280	redbed

8) Borehole Completion (Check): Open Hole Straight Wall
Underreamed Gravel Packed Other
If Gravel Packed give interval from 215 ft. to 280

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To
4	N	Sch 40 PVC	1½ above	280
		Blank	1½ above	225
		Slotted	225	280

(Use reverse side of Well Owner's copy, if necessary)

9) CEMENTING DATA
Cemented from 0 ft. to 100 ft. No. of sacks used 18
175 ft. to 215 ft. No. of sacks used 9
Method used Pumped
Cemented by Kelvin Miles
Distance to septic system field lines or other concentrated contamination
Method of verification of above distance Not Yet Insta

13) Well plugged within 48 hours

Casing left in well: From (ft)	Casing left in well: To (ft)	Cement/bentonite placed in well: From (ft)	Cement/bentonite placed in well: To (ft)	Sacks used:

14) TYPE PUMP:
Turbine Jet Submersible Cylinder
Other
Depth to pump bowls, cylinder, jet, etc., ft.

10) SURFACE COMPLETION
Specified Surface Slab Installed
Specified Steel Sleeve Installed
Pitless Adapter Used
Approved Alternative Procedure Used

15) WELL TESTS:
Type test: Pump Bailer Jetted Estimated
Yield: 12 gpm with 10 ft. drawdown after 1 hrs.

11) WATER LEVEL:
Static level 143 ft. below land surface Date 6-
Artesian flow gpm. Date

16) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
Yes No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Was a chemical analysis made? Yes No

12) PACKERS: Type

I certify that I drilled this well (or the well was drilled under my direct supervision) and that each and all of the statements herein are true and correct. I un to complete items 1 thru 16 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Kelvin Miles Drilling (Type or print) WELL DRILLER'S LICENSE NO. 1931

ADDRESS 2022 E Hwy 199 (Street or RFD) Springtown (City) Texas (State) 76

(Signed) K. C. Miles Jr. (Licensed Well Driller) (Signed) (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

TDLR FORM 001WWD (4/98) White - TDLR Yellow - DRILLER Pink - WELL OWNER

Knowing Key Information about your Well

If you cant find your well report, TCEQ has a well report GIS map

- Two key types of information well owners should possess are:
  1. A Well Report
     - This will include date of completion, depth, materials used, and other important information about the construction.
  2. Maintenance and Warranty Information
     - This information can provide important guidance for proactive or reactive well maintenance
     - If getting a new well, ask your driller about key warranty information on specific components. Such as the well pump and the pressure tank.

Inspecting your Well

Texas Well Owners Network is a Great Resource

TWON TEXAS Well Owner NETWORK

- **Well System Components**
  - Check wiring and parts such as pipes, connections, joint seals, gauges, pressure relief valves for damage or leaks.
- **Well Head**
  - **The casing**: This is the pipe in the bore hole that extends vertically out of the well. Check its general condition and whether it extends at least 12 inches above the ground
  - **The well cap**: Check to see whether it's secure, the seals are in good condition, and that it is not loose, cracked, or otherwise broken
  - **The electrical conduit**: Visually verify that all connections are secure

If these components seem to be damaged, call a licensed professional to see what their recommendations are.

Protecting our Aquifer Against Contamination

- Check for potential sources of contamination, flooding, or physical dangers
- Look for any weeds, trees, shrubs, or grasses with root systems within 10 feet of the well, as these should be removed
- Do not mix any chemicals or potential contaminants near your well and do not spill such substances on the ground, since they could infiltrate your groundwater supply
- Do not spray herbicides or pesticide near your well head, best practices is to keep a minimum of 100 feet between your application area and your well head.

TEXAS A&M AGRILIFE EXTENSION

Texas A&M Agrilife is a great resource for proper storage of chemicals and herbicides

1. Water Wells & Texas Aquifers

- TDLR estimated as of April 2022 there are 150,000 abandoned wells across the state .
- TDLR requires wells that are abandoned and deteriorating to be plugged or brought into compliance within 180 days of the landowner being informed the well is on their property and thus under their responsibility.
- Abandoned wells can be plugged by the landowner of the property, or by a licensed well driller/pump installer.

Top Left: Large diameter/hand dug abandoned well, Top Right: Abandoned well open hole, Bottom Left: Abandoned well covered with plywood, Bottom Right: Abandoned well with casing and pump. (Texas Department of Licensing and Regulation)

Abandoned Wells Continued

Report an abandoned well here: →

TCEQ REGULATORY GUIDANCE

Texas Groundwater Protection Committee
RG-347 • Revised April 2021

Landowner's Guide to Plugging Abandoned Water Wells

Introduction ... 2
What Are the Hazards Associated with Abandoned Wells? ... 2
Personal Safety ... 2
Groundwater Contamination ... 3
When Is a Well Considered Abandoned? ... 3
How Can I Report an Abandoned Well? ... 3
What Are My Options if I Have an Abandoned Well? ... 4
Who Should Plug an Abandoned Well? ... 4
How Do I Plug My Own Well? ... 5
Steps to Follow Before Plugging Your Well ... 5
Step 1. Understand the regulations about plugging an abandoned water well. ... 6
Step 2. Obtain the water well report. ... 6
Step 3. Determine the depth of the well and height of the standing water in the well. ... 6
Plugging Materials ... 7
Steps to Follow in Plugging Your Well ... 8
Step 4. Remove all obstructing materials from the well ... 8
Step 5. Disinfect the well by adding household bleach ... 8
Step 6. Remove as much casing from the borehole as possible. ... 9
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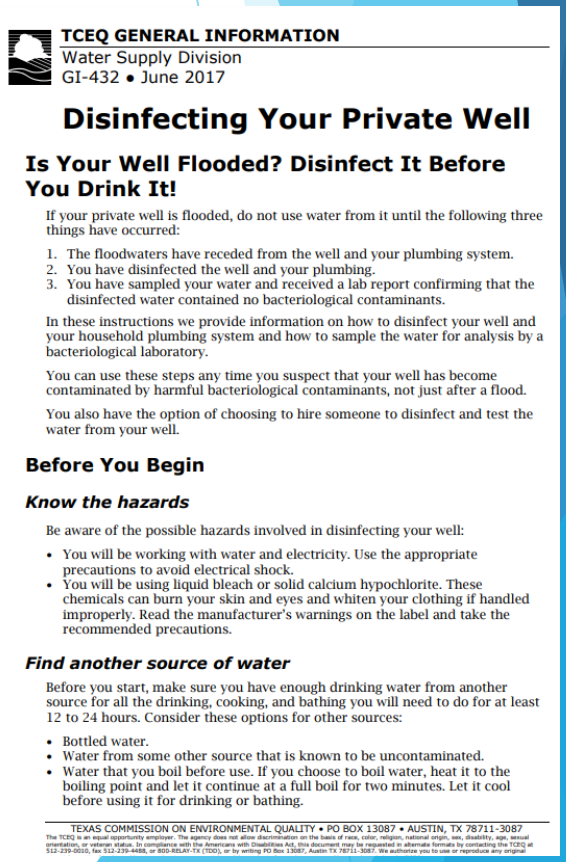
Water Quality Resources

Private Water Well Quality

- **No state regulation exists for private water well quality.**
- State recommends testing water every 1-5 years (depending on local issues)
- Local, regional, and state testing resources available to landowners.
- During floods and droughts, substances, minerals, and elements not normally found in your well water can make their way into the supply. TCEQ provides resources on how landowners can disinfect their wells on their own.
  - Caveat: Before utilizing bleach or chlorine in your well, make sure this will not cause additional harm to your septic system and resident bacteria.



TCEQ GENERAL INFORMATION
Water Supply Division
GI-432 • June 2017

Disinfecting Your Private Well

Is Your Well Flooded? Disinfect It Before You Drink It!

If your private well is flooded, do not use water from it until the following three things have occurred:

1. The floodwaters have receded from the well and your plumbing system.
2. You have disinfected the well and your plumbing.
3. You have sampled your water and received a lab report confirming that the disinfected water contained no bacteriological contaminants.

In these instructions we provide information on how to disinfect your well and your household plumbing system and how to sample the water for analysis by a bacteriological laboratory.

You can use these steps any time you suspect that your well has become contaminated by harmful bacteriological contaminants, not just after a flood.

You also have the option of choosing to hire someone to disinfect and test the water from your well.

Before You Begin

Know the hazards

Be aware of the possible hazards involved in disinfecting your well:

- You will be working with water and electricity. Use the appropriate precautions to avoid electrical shock.
- You will be using liquid bleach or solid calcium hypochlorite. These chemicals can burn your skin and eyes and whiten your clothing if handled improperly. Read the manufacturer's warnings on the label and take the recommended precautions.

Find another source of water

Before you start, make sure you have enough drinking water from another source for all the drinking, cooking, and bathing you will need to do for at least 12 to 24 hours. Consider these options for other sources:

- Bottled water.
- Water from some other source that is known to be uncontaminated.
- Water that you boil before use. If you choose to boil water, heat it to the boiling point and let it continue at a full boil for two minutes. Let it cool before using it for drinking or bathing.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY • PO BOX 13087 • AUSTIN, TX 78711-3087

Common water contaminants

Iron Oxides

Calcium Carbonate/Salts

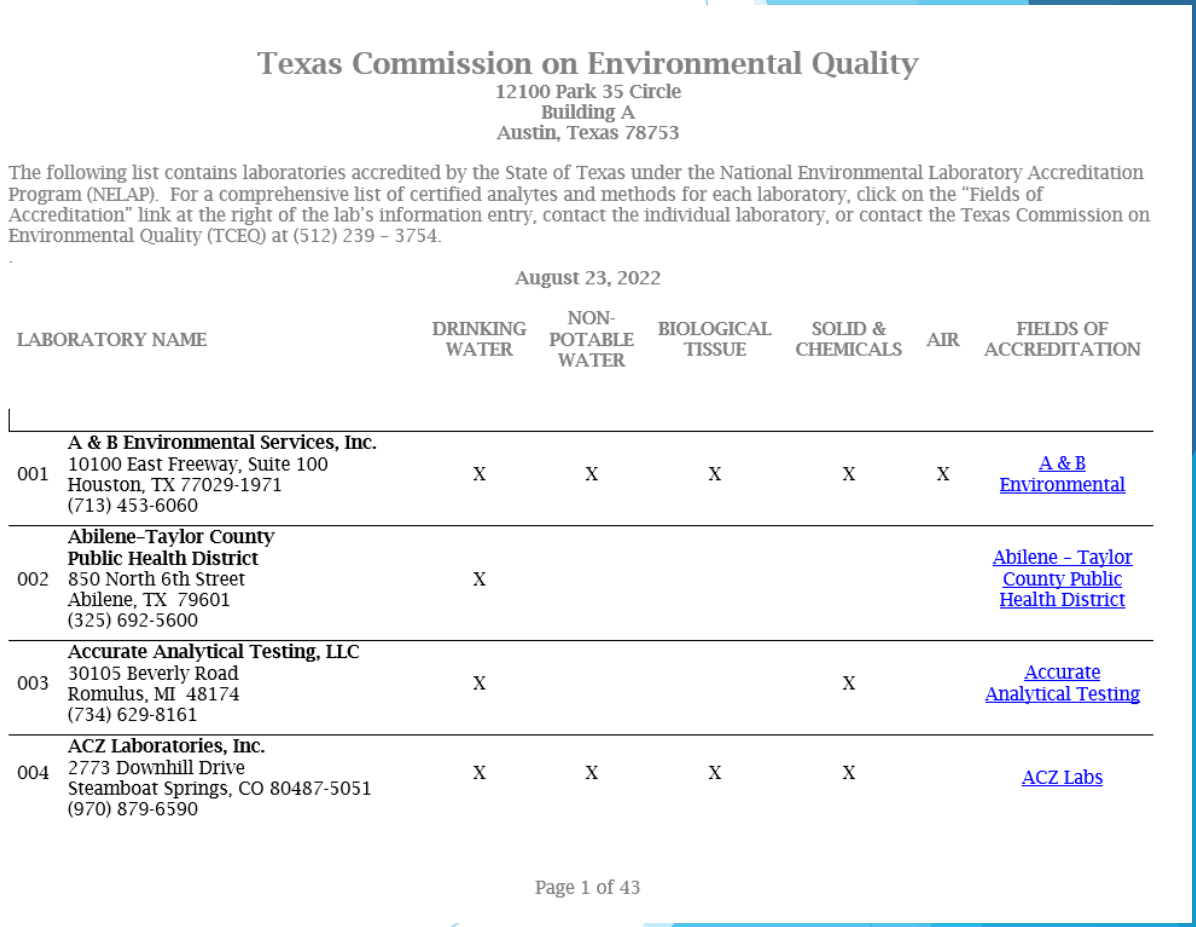
Hydrocarbons

Bacteria & Microorganisms

Fertilizer & Nitrates

4. Water Quality & Conservation Resources

- Well Water Quality Testing Resources
  - NELAP Laboratories/Regional health laboratories
    - National Environmental Laboratory Accreditation Program
    - labprgms@tceq.texas.gov
- ONLY a certified NELAP laboratory can provide a “clean letter of drinkability”.
- ***Visit uppertrinitygcd.com/resources for a map of all nearby water well drillers and labs.***



Texas Commission on Environmental Quality
12100 Park 35 Circle
Building A
Austin, Texas 78753

The following list contains laboratories accredited by the State of Texas under the National Environmental Laboratory Accreditation Program (NELAP). For a comprehensive list of certified analytes and methods for each laboratory, click on the “Fields of Accreditation” link at the right of the lab's information entry, contact the individual laboratory, or contact the Texas Commission on Environmental Quality (TCEQ) at (512) 239 – 3754.

August 23, 2022

	LABORATORY NAME	DRINKING WATER	NON-POTABLE WATER	BIOLOGICAL TISSUE	SOLID & CHEMICALS	AIR	FIELDS OF ACCREDITATION
001	**A & B Environmental Services, Inc.** 10100 East Freeway, Suite 100 Houston, TX 77029-1971 (713) 453-6060	X	X	X	X	X	A & B Environmental
002	**Abilene–Taylor County Public Health District** 850 North 6th Street Abilene, TX 79601 (325) 692-5600	X					Abilene – Taylor County Public Health District
003	**Accurate Analytical Testing, LLC** 30105 Beverly Road Romulus, MI 48174 (734) 629-8161	X			X		Accurate Analytical Testing
004	**ACZ Laboratories, Inc.** 2773 Downhill Drive Steamboat Springs, CO 80487-5051 (970) 879-6590	X	X	X	X		ACZ Labs

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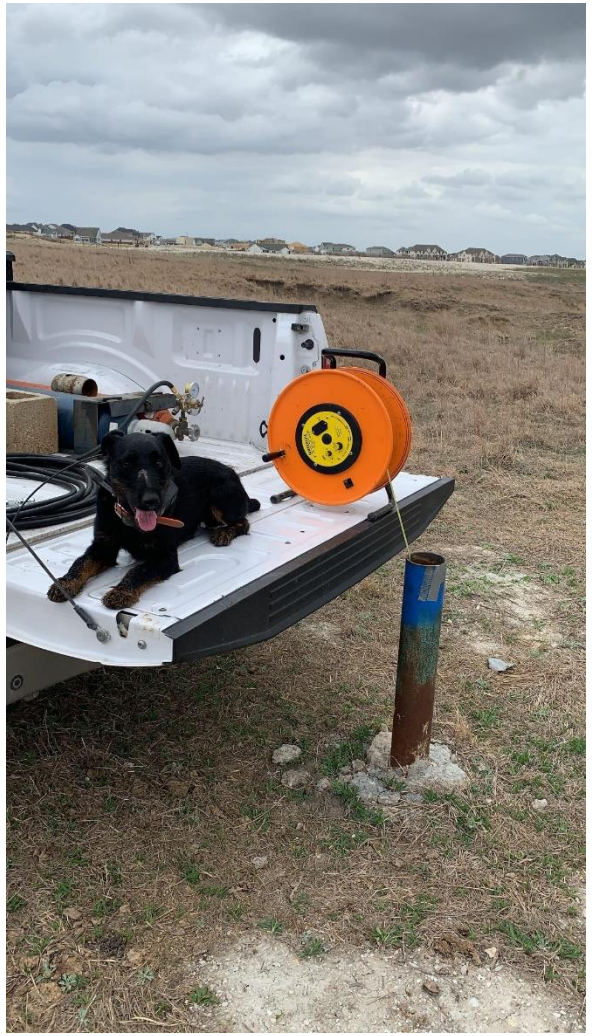
Regional Water Quality & Conservation Resources

- **Groundwater Conservation Districts**
  - **Upper Trinity GCD testing resources**
    - **Water quality testing program**
      - E.coli & coliform (accept samples Monday-Thursday)
  - Regional district resources
    - Prairielands Groundwater Conservation District
      - Educational outreach opportunities
    - Middle Trinity Groundwater Conservation District
      - Well plugging program (exceptions: wells with 100 ft of standing water, and hand dug wells)
      - **Water quality testing program**
    - Northern Trinity Groundwater Conservation District (x)
      - Educational outreach opportunities
    - North Texas Groundwater Conservation District (x)

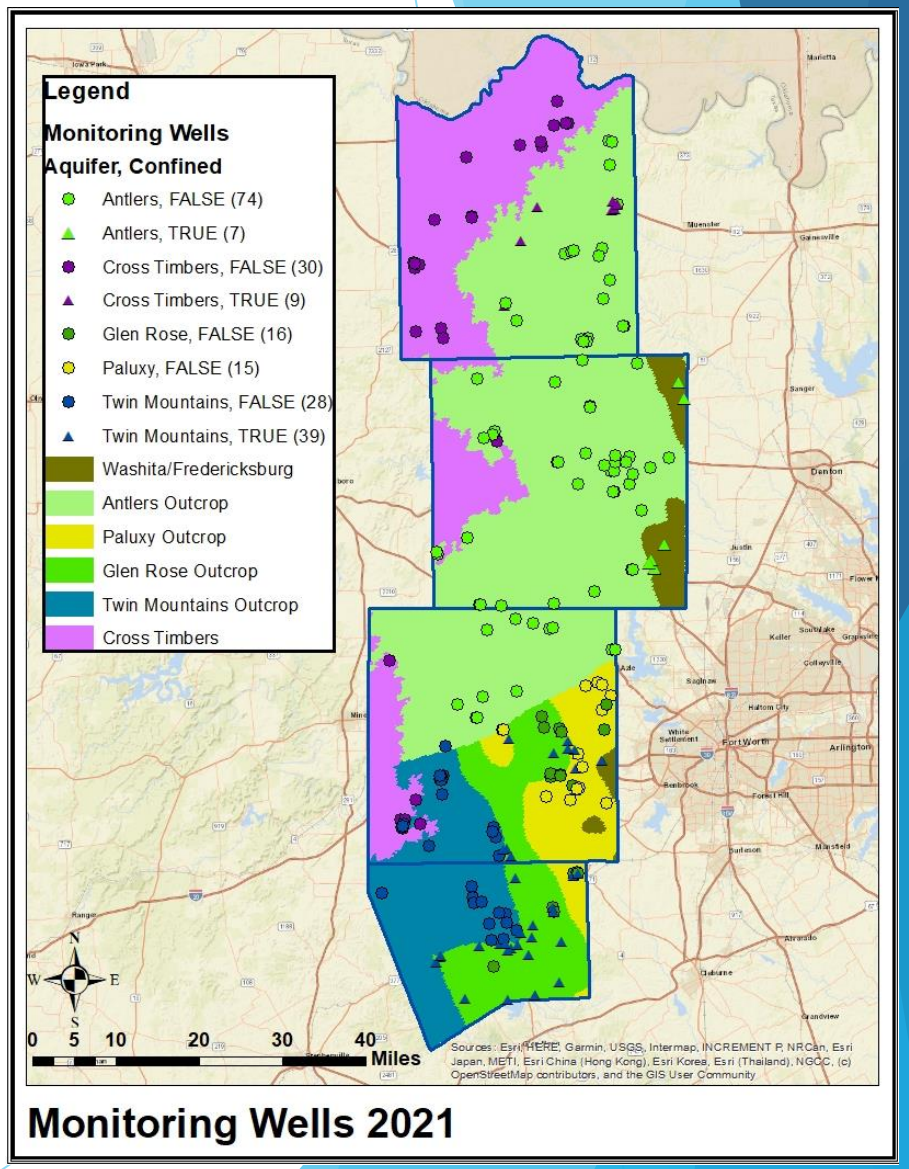
District Programs and Resources

UTGCD Monitoring Well Program

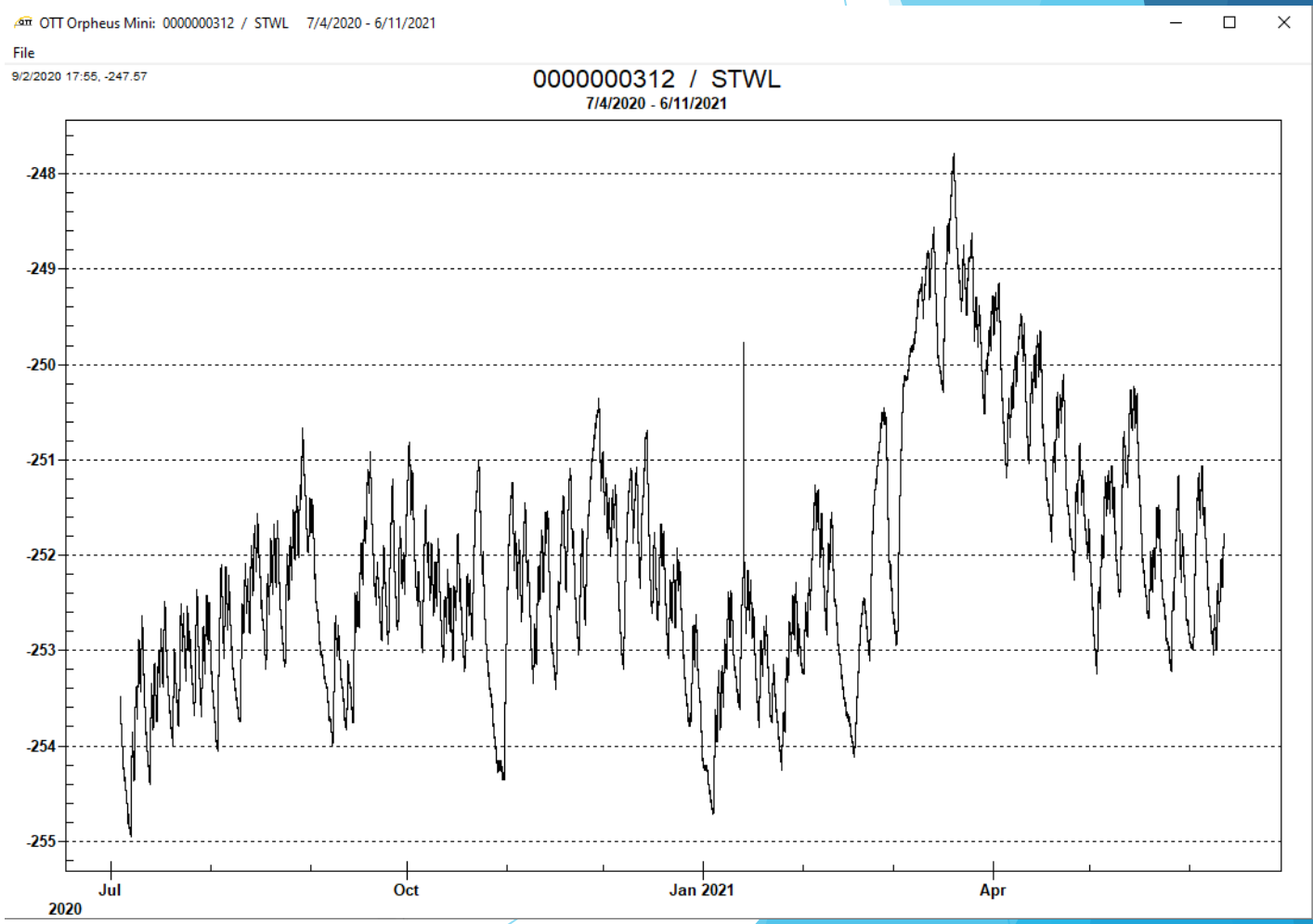


Monitoring Well Program

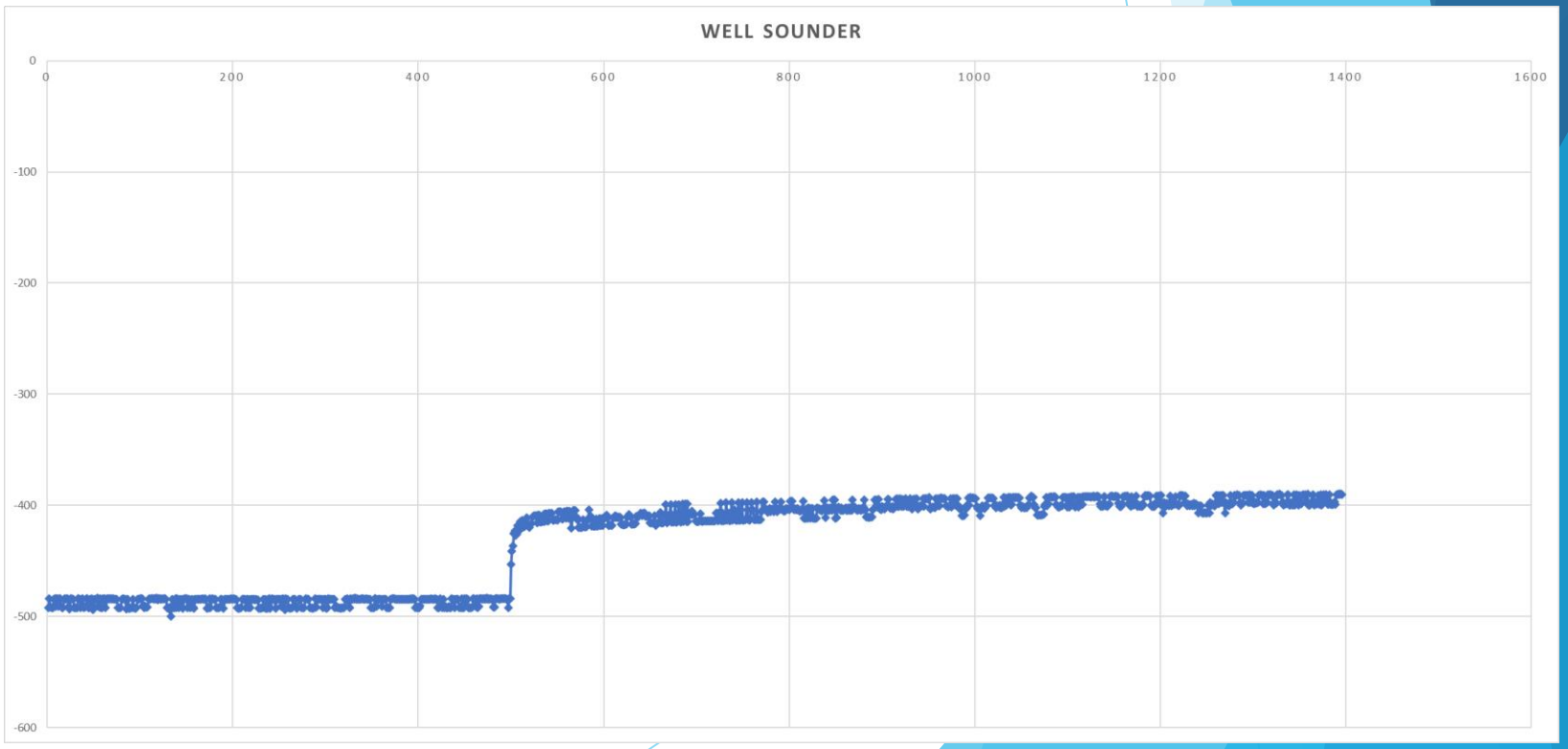
- **District Monitoring Well Program**
  - Several hundred wells in the program
  - Free, no cost service
  - Quarterly monitoring updates on well water levels
  - Receive data to form trends on your local groundwater



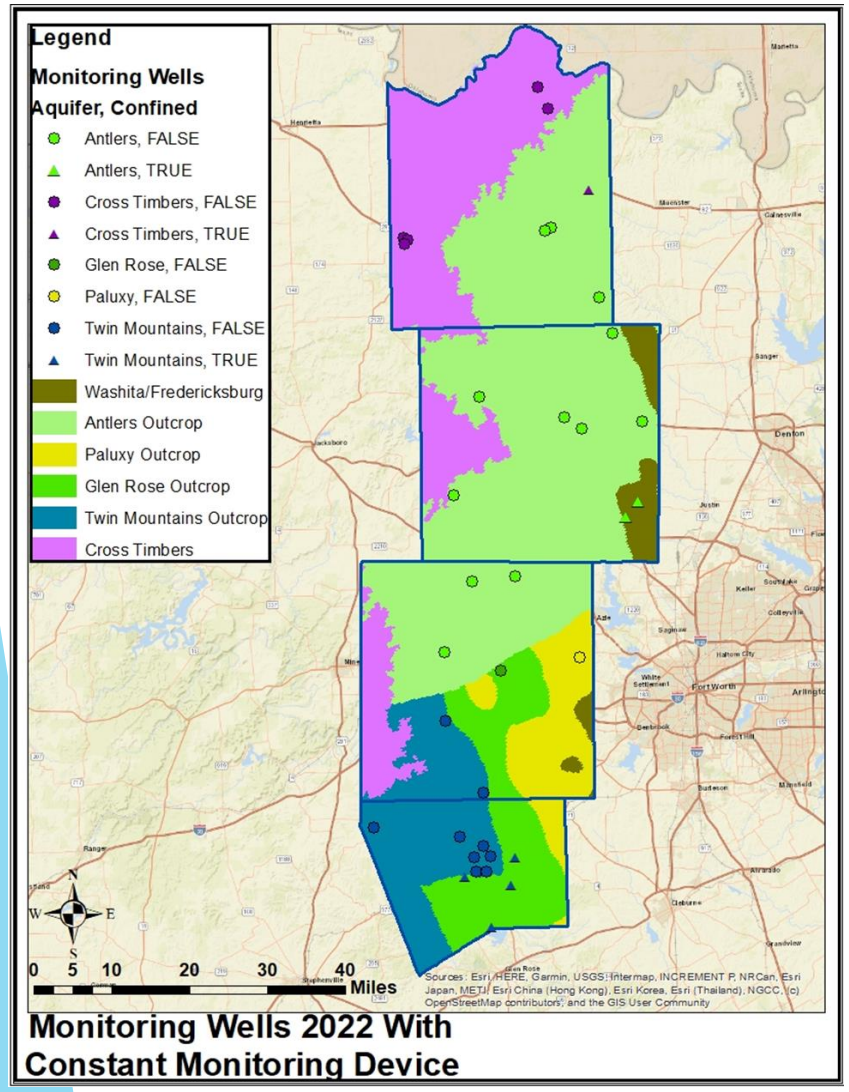
Constant Monitoring Devices
Pressure Transducer



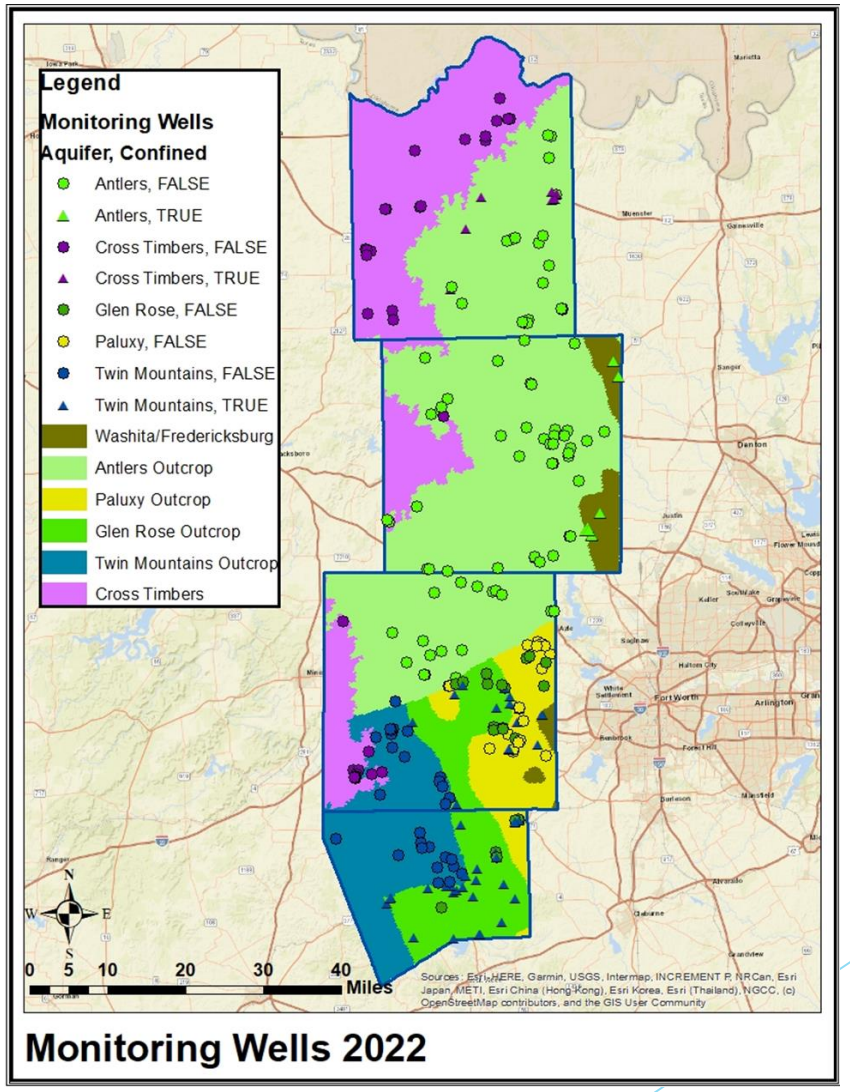
Constant Monitoring Devices
Sounder



UTGCD Monitoring Well Program

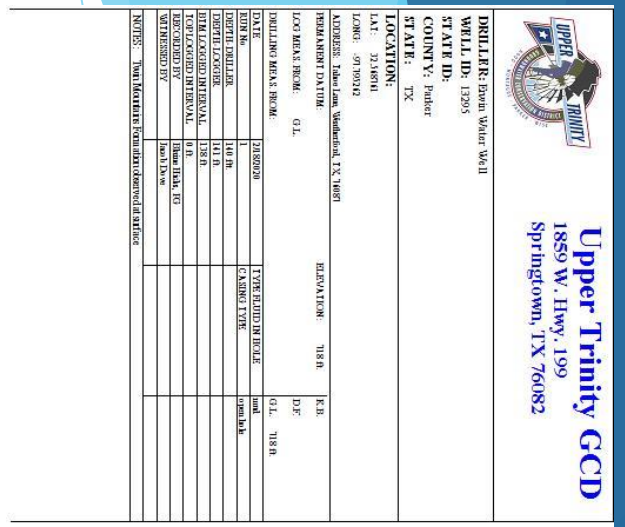


Monitoring Wells 2022 With Constant Monitoring Device



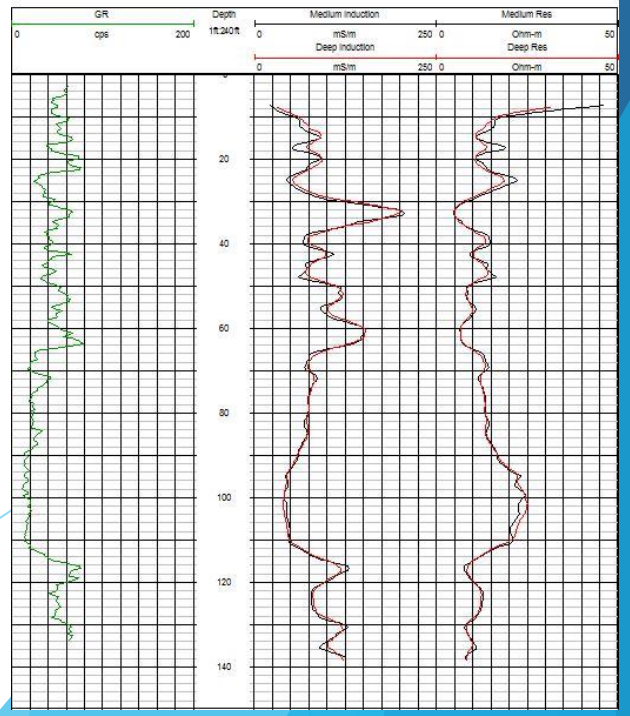
Monitoring Wells 2022

Geophysical Logging



Upper Trinity GCD
1859 W. Hwy. 199
Springtown, TX 76082

DRILLER: Erwin Water Well
WELL ID: 12395
STATE ID:
COUNTY: Parker
STATE: TX
LOCATION:
LAT: 32.946761
LONG: -97.705242
ADDRESS: Tabor Lane, Weatherford, TX, 76085
PERMANENT DATUM: ELEVATION: 718 ft. K.B.
LOG MEAS. FROM: G.L. D.F.
DRILLING MEAS. FROM: G.L. 718 ft.
DATE: 12/18/2020 TYPE FLUID IN HOLE: mud
RUN No. 1 CASING TYPE: open hole
DEPTH DRILLER: 140 ft.
DEPTH LOGGER: 141 ft.
BTM LOGGED INTERVAL: 138 ft.
TOP LOGGED INTERVAL: 0 ft.
RECORDED BY: Blake Hale, EG
WITNESSED BY: Jacob Dove
NOTES: Twin Montblanc formation observed at 84 feet

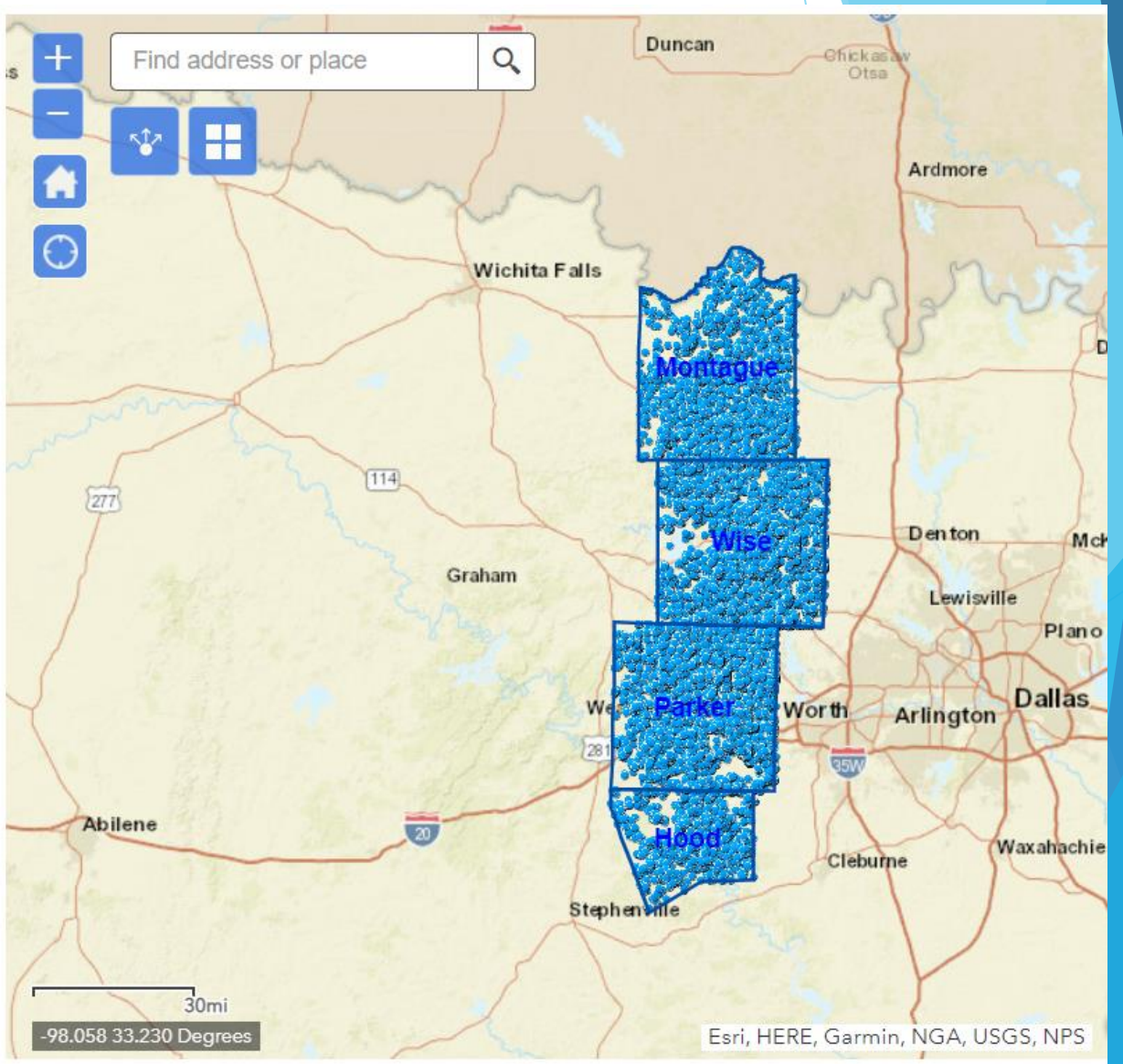


Downhole Well Inspection

Compromised Casing

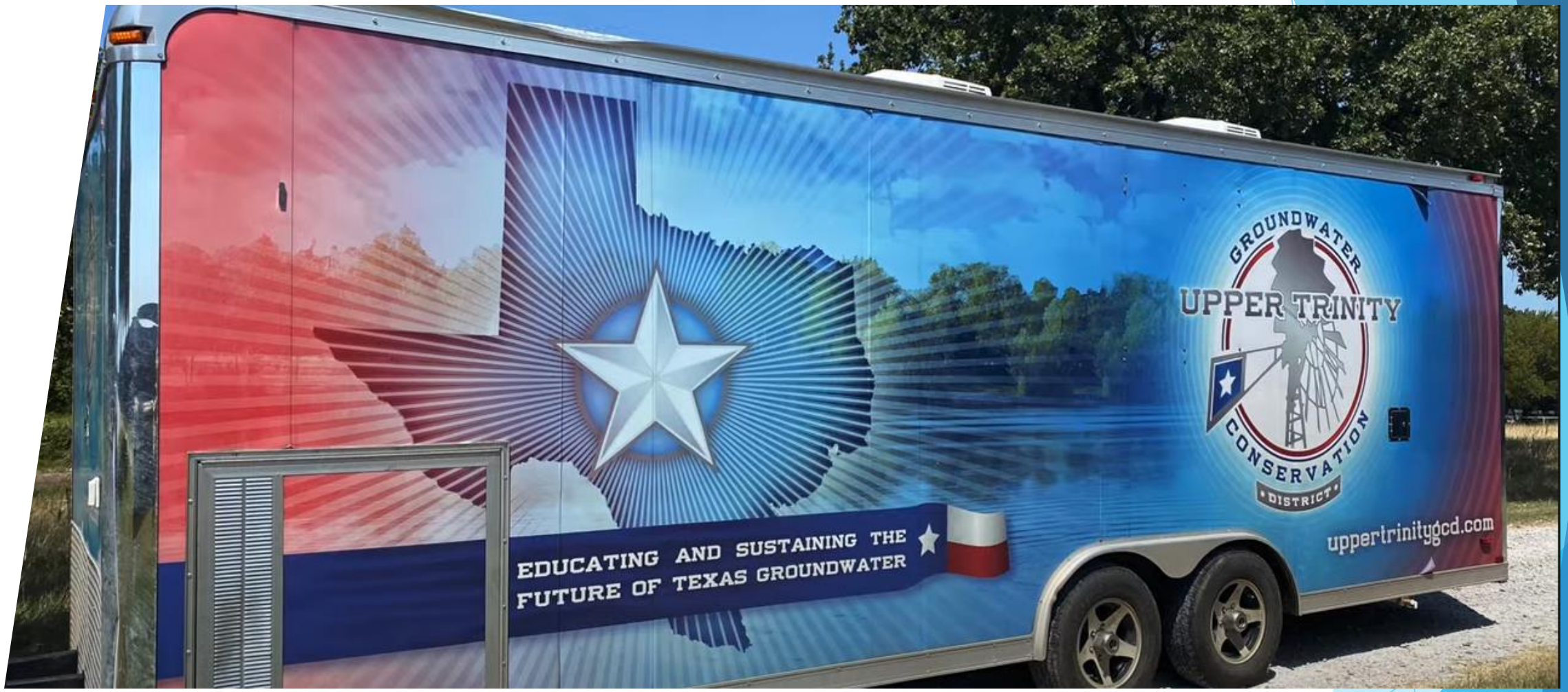
Registered Well Database

- Available online @ uppertrinitygcd.com
- Every registered well in the district boundaries.
  - Groundwater Use
  - Depth
  - GPM
  - Completion date
  - Screen depth
  - Estimated formation



Groundwater Quality in the District

- District testing capabilities
  - In-house
    - Coliform presence testing
    - E.coli presence testing
  - Contract with City of Fort Worth's Lab for all other testing
- Sampling Methods
  - Field geologist responsible for sample transport and analysis.
  - These reports are meant to be informative, and the District encourages full panel testing of all groundwater intended for human consumption.

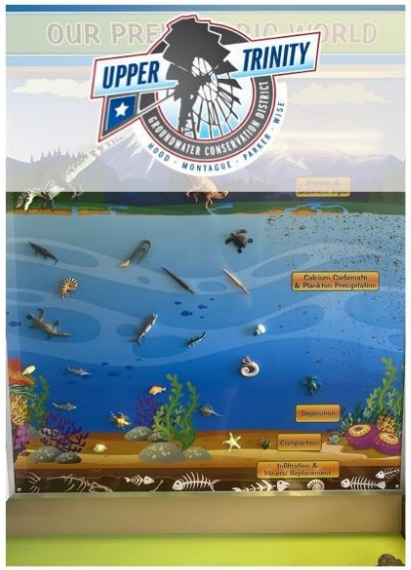


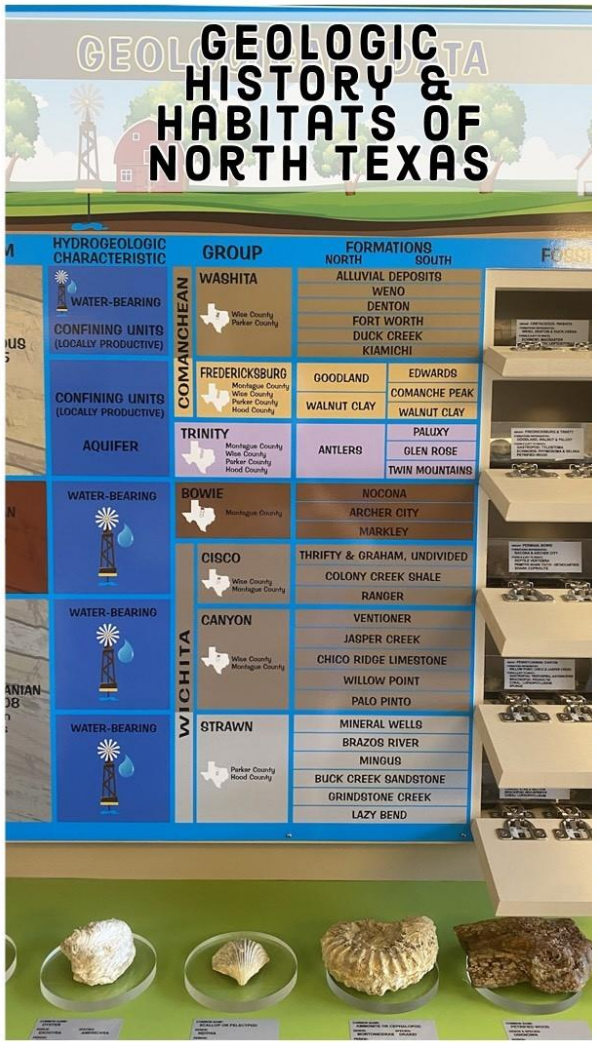
Public Education

Visiting local schools and community events

Public Education

Public Education





Rainwater Harvesting Grant Program

sponsored by the Upper Trinity Groundwater Conservation District

Catch free water for everyday needs - see who qualifies!

- Cities, Counties, and Muncipalities
- MUD's, SUD's, ESD's, VFD's
- Schools & non-profit organizations

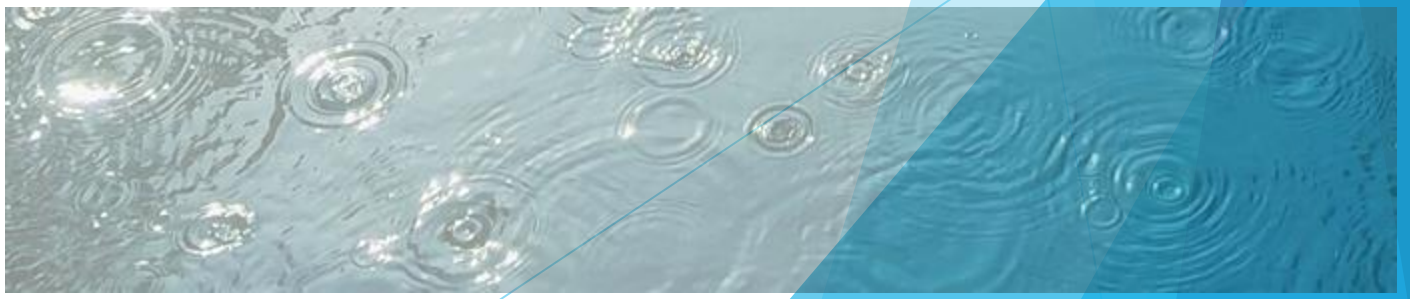
Apply Today!

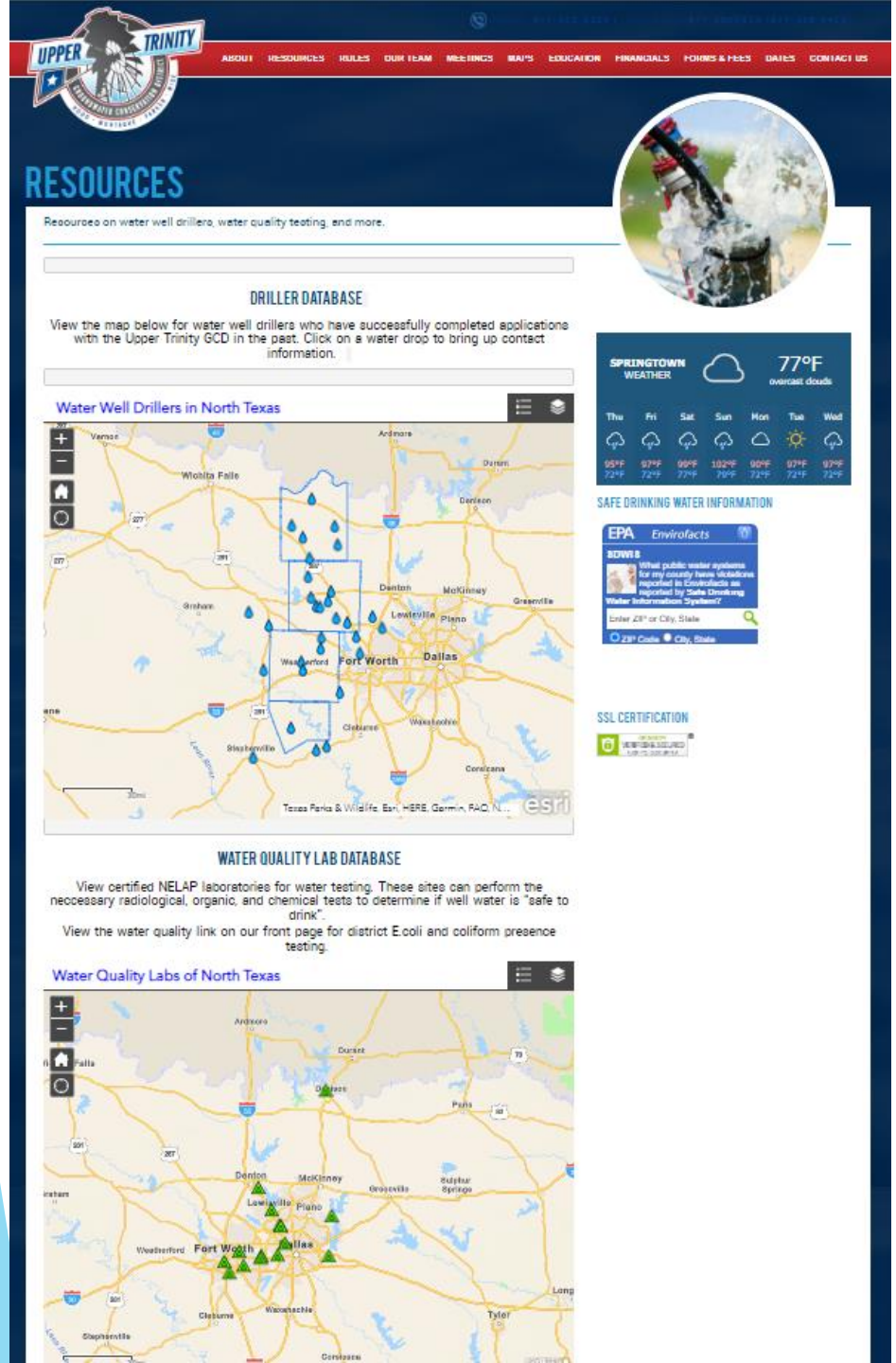
Application Period:
October 1st - February 29th
application online - scan the QR Code

Questions? Chat with us online @ uppertrinitygcd.com

Send applications to jill@uppertrinitygcd.com or to P.O. Box 1749 Springtown, TX 76082.
Call 817-523-5200 for details

UPPER TRINITY GROUNDWATER CONSERVATION DISTRICT
HOOD · MONTAGUE · PARKER · WISE





District Resources Page

- Water Well Driller Database
- Water Quality Labs in North Texas Map
- Notice to Purchasers Document
- Groundwater Rights FAQ Page


WELL-X-TROL

Sometimes…your wellhouse just blows up!!!

Questions?

Doug Shaw

General Manager
Upper Trinity Groundwater Conservation District
PO Box 1749, Springtown, 76082
Phone: 817-523-5200
Fax: 817-523-7687
www.uppertrinitygcd.com
doug@uppertrinitygcd.com

Jill Garcia P.G.

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jill@uppertrinitygcd.com