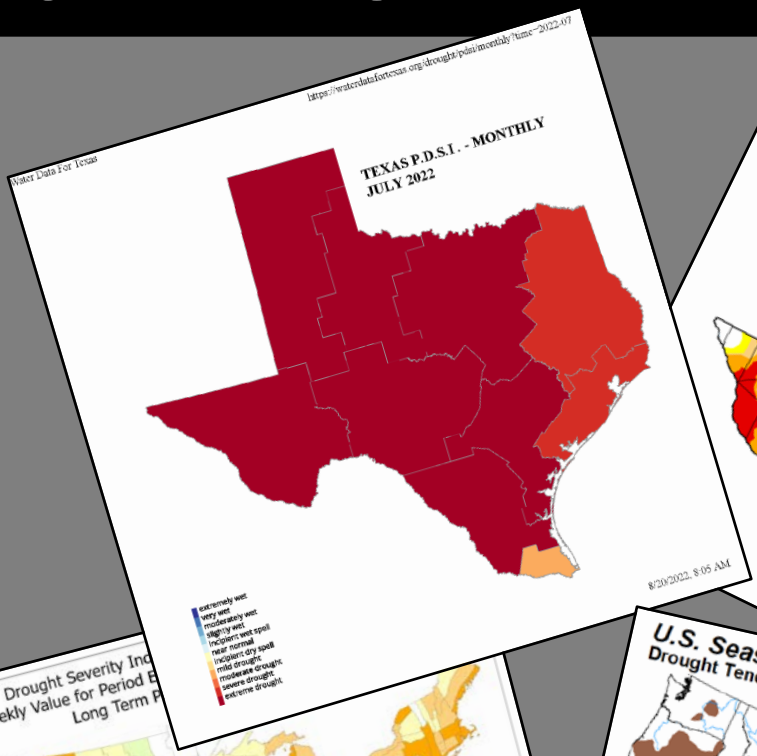
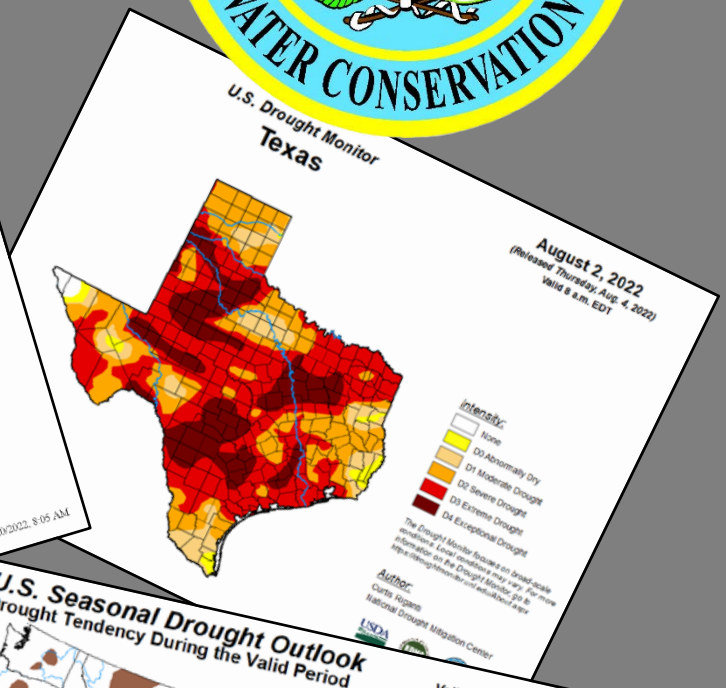
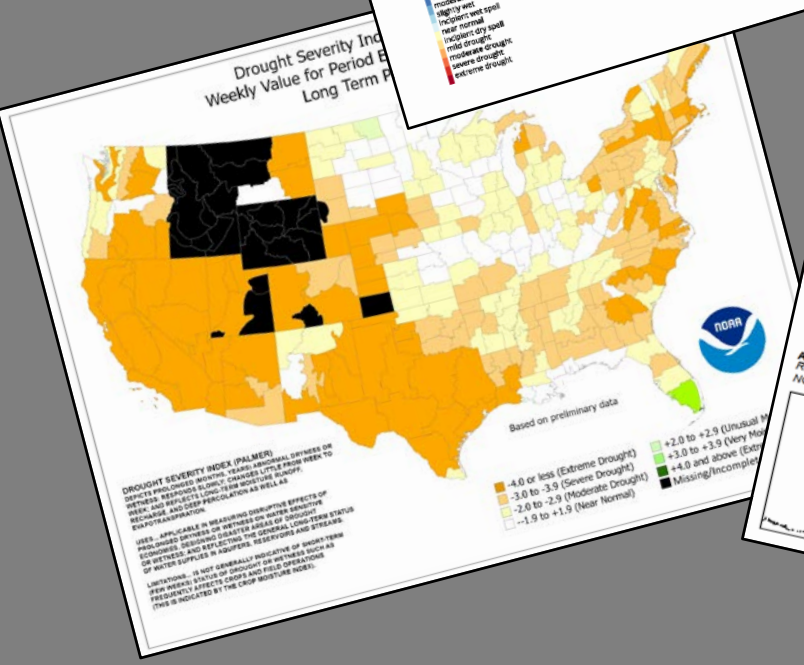
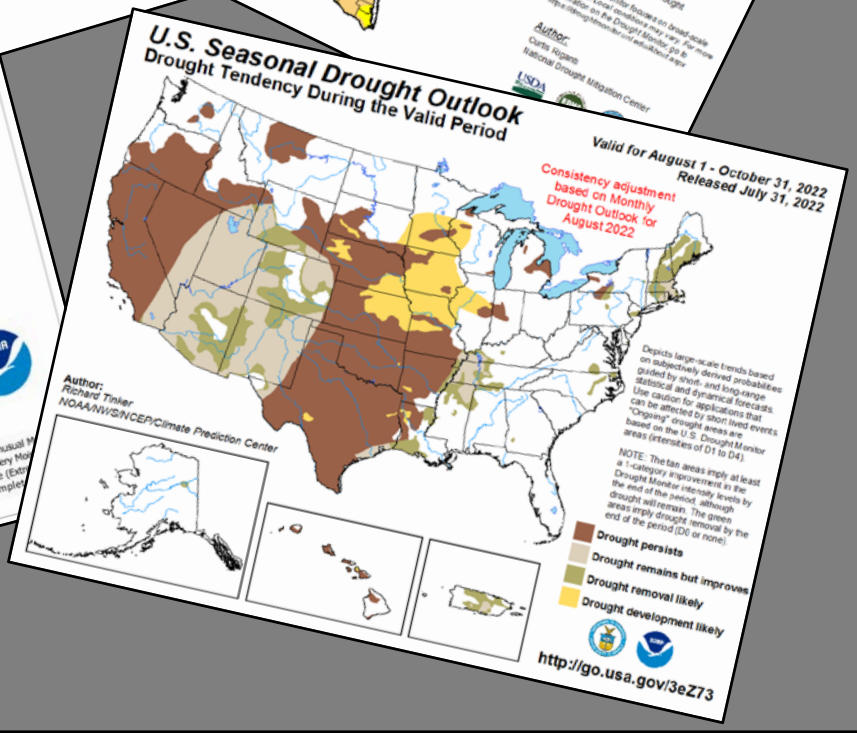
2022
ANNUAL REPORT









SOUTHEAST TEXAS GOUNDWATER CONSERVATION DISTRICT

TABLE OF CONTENTS

DISTRICT INFORMATION

CREATION OF THE DISTRICT

In 2003, the creation of the District was authorized by the 78th Texas Legislature through Senate Bill 1888. On November 2, 2004, the voters of Jasper and Newton Counties confirmed creation of the District. In 2005, the Commissioner's Courts of Hardin and Tyler Counties adopted a resolution requesting that Hardin and Tyler Counties be included in the District. On November 8, 2005, the voters of Hardin and Tyler Counties voted to become members of the Southeast Texas Groundwater Conservation District.

PURPOSE

The Southeast Texas Groundwater Conservation District was created to conserve, preserve, protect, recharge, and prevent waste of groundwater, and to control subsidence caused by withdrawal of groundwater within its boundaries. As part of the process of accomplishing its purpose, the District has adopted a Management Plan, which has been reviewed and approved by the Texas Water Development Board.

DISTRICT INFORMATION

The District encompasses in their entirety, Jasper, Newton, Hardin and Tyler Counties, which comprise an area of approximately 3,685 square miles with an estimated population of 121,226 people (U.S. Census Bureau 2020 data).

The District is included in two regional water planning groups: Region I, Regional Water Planning Group and Groundwater Management Area 14 (GMA 14). The District's General Manager, John Martin, is the current chairman of both the Region I Water Planning Group and Groundwater Management Area 14. Additionally, President Fussell and Director Starr have also been nominated and approved as voting members of the Region I Water Planning Group.

District Office

271 East Lamar • P.O. Box 1407
Jasper, TX 75951
Phone: (409) 383-1577 • Fax: (409) 383-0799
www.setgcd.org

BOARD OF DIRECTORS & STAFF

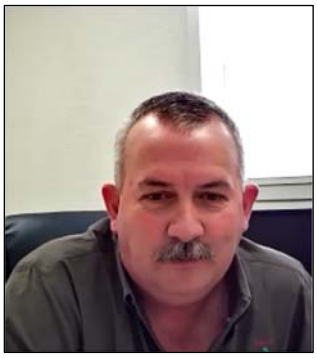
EXECUTIVE COMMITTEE:

Roger Fussell
President

Olen Bean
Vice President

Bobby Rogers
Secretary/Treasurer

JASPER COUNTY REPRESENTATIVES:



Greg Kelley, Director
Appointed by City of Jasper
Large Municipal Water Utility
Term: 2022 – 2024

Billy Ted Smith, Director
Appointed by Jasper County
Rural Water Utility
Term: 2023 – 2025

Wendy Turner, Director
Appointed by Jasper County
Large Industrial
Term: 2021 – 2023

NEWTON COUNTY REPRESENTATIVES:

Cody Jones, Director
Appointed by City of Newton
Large Municipal Utility
Term: 2022 – 2024

Olen Bean, Director
Appointed by Newton County
Rural Water Utility
Term: 2023 – 2025

Thomas Hawthorne, Director
Appointed by Newton County
Forestry, Agriculture, Industry
Term: 2021 – 2023

BOARD OF DIRECTORS & STAFF

HARDIN COUNTY REPRESENTATIVES:

Sam Ashworth, Director
Appointed by Hardin County
Agricultural, Industrial
Term: 2022 – 2024

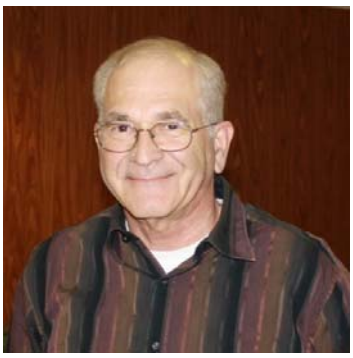
Bobby Rogers, Sec./Tres
Appointed by Hardin County
Rural, Small Water Utility
Term: 2023 – 2025

Robb Starr, Director
Appointed by Hardin County
Large Municipal Utility
Term: 2021 – 2023

TYLER COUNTY REPRESENTATIVES:

Ken Jobe, Director
Appointed by Tyler
County Rural, Small
Water Utility Term: 2022 –
2024

Rick Russler, Director
Appointed by Tyler County
Large Municipal Utility
Term: 2023 – 2025



Charles Zimmerman, Director
Appointed by Tyler County
Forestry, Agricultural, Industry
Term: 2021 – 2023

STAFF:

John Martin, General Manager

GENERAL COUNSEL:

John D. Stover, General Counsel

STATEMENT FROM THE GENERAL MANAGER

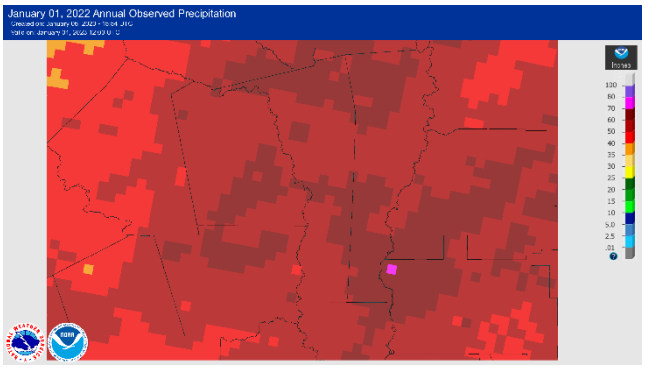
2022 was a rather quiet year, relatively speaking. The District, as well as the majority of the state, had a stretch of drought conditions that brought back memories of the 2010 – 2012 drought. Fortunately, the drought conditions were alleviated by rainfalls for a good portion of the state, and by year end the U.S. Palmer Drought Severity Index Map showed that East Texas was no longer experiencing drought conditions and was "near normal".

With the close of 2022 the District had five board members' three-year appointments come to an end. President Fussell, Vice President Bean, Treasurer Rogers, Director Russler, and Director Smith all had their current appointments end as of December 31, 2022. All five were re-appointed to the Board, including the re-appointment of Roger Fussell as the Chairman/President. The appointment of the Chairman/President is done a little differently than the other 12 members. The Chairman/President must be chosen and agreed upon by all four County Commissioner's Courts.

One significant item of note this year was that the District, for the first time in 19 years, increased the production fee for non-exempt water pumped within the District. The driving factor for this increase was twofold. First, the Board determined that it was time to bring a second employee on board. The second employee will start as a part-time employee, with the possibility of full-time employment in the future. The second factor in the decision to increase the production fee is to cover the increased costs of operating the District. The District has been operating on a budget with revenues trending downward over the past 15 years yet costs, especially over the past 2 years due to the high inflation rates, have increased and the District's revenue has not kept pace with those increases. The Fee increase was literally a fraction of a penny per 1,000 gallons of water pumped, going from 0.007 cents per 1,000 gallons to 1 full cent per 1,000 gallons (the increase being 0.003 cents per 1,000 gallons).

Related to the fee increase is a project the District has undertaken to get its legislatively capped maximum production fee increased. With the District increasing the production fee to 1 cent per 1,000 gallons, it is now at its maximum allowable. The request to raise the maximum allowable is not primarily to allow the District to simply raise its production fee rate, but to be available should one of the District's larger producers reduce their production or cease it completely. The increase of the maximum allowable would provide the District the ability to replace the lost revenues. The District has garnered support from all four County Commissioners' Courts, as well as the District two largest producers the WestRock papermill and the City of Beaumont. The District has until

March 10, 2023 to get a bill filed and the goal is to have as much support as possible behind it before formally requesting Senator Nichols' office to sponsor the bill.



As previously mentioned, we experienced some very dry months in 2022, even reaching the "extreme drought" designation on the October 15, 2022 U.S. Palmer Drought Severity Index; however, as you can see by the January 1 2022 – January 1, 2023 NOAA Observed Precipitation map, the majority of the District received near normal amounts of rainfall (between 50 – 60 inches) and a significant portion of the District received above average rainfall (between 60 – 70 inches). Early projections for 2023 are that the La Nina weather pattern that gave Texas the dry conditions in 2022 is expected to flip in the spring to El Nino conditions which are conducive to wetter than normal precipitation patterns.

In 2022 the District continued to see an increase in the number of new wells being registered within the District. 2022 was the closest the District has gotten to the historic number of wells drilled in 2010 and 2011 (377 and 452 respectively) and that difference is even closer considering the high number of temporary wells drilled in 2010 and 2011 for the oil and gas industry (49 and 71 respectively). In 2022 the District saw an overall increase in the number of registered wells of approximately 3.75% over 2021 and nearly an 15.7% increase over the average number for the previous five years.

Overall, in 2022 the District registered 340 exempt wells as follows: 297 exempt domestic wells, 17 exempt other wells (livestock, agriculture, and wells capable of less than 25,000 gpd), and 26 exempt oil/gas related wells. The 340 wells registered in 2022 is approximately 16.5% above the average number of wells drilled over the previous 10 years. The District also saw two new non-exempt wells permitted in 2022. Both fall into the Non-Exempt Industrial/Commercial Category (one in Hardin County and one in Tyler County). The non-exempt well permitted in Hardin County, located in Village Mills, is for an RV Park in the amount of 1.06 acre feet per year. The second non-exempt well, located in the Colmesneil area, is not a "new well", but a well that was in existence prior to the creation of the District that hadn't been in our system nor issued an operating permit. This well is for a mobile home park and is permitted for 10.75 acre feet per year.

The District saw a marked increase in the number of wells plugged in 2022. The number is up from 55 wells having been plugged in 2021, to 78 wells in 2022, which is about 23% of the total number of new wells being drilled. 75% of the wells that were plugged in 2022 were wells related to the oil and gas industry.

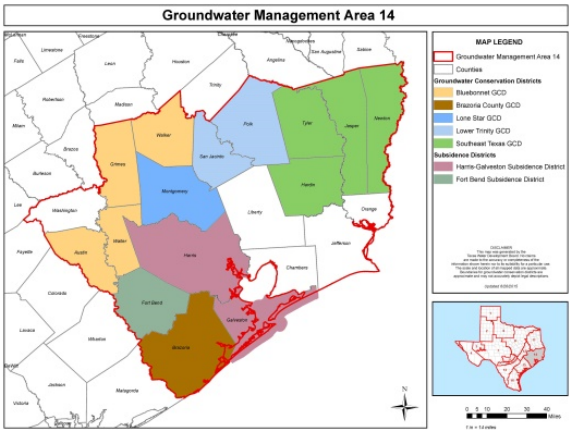
On a regional planning basis, things were quiet. Groundwater Management Area 14 (GMA 14) met only twice in 2022. The Region I Water Planning Group (RWPG) scheduled and tried to meet three times in 2022, but the first meeting of the year in March did not have a quorum so no business was conducted. The RWPG is slowly beginning the process of the 6th cycle of the Regional Water Plan. An item of note regarding the RWPG Executive Committee is that Kelley Holcomb, after serving as the RWPG Chairman for over 10 years, stepped down from his roll leading the Group. On October 19, the Group appointed yours truly as the Chairman of the Region I Water Planning Group.

Groundwater Management Area 14 (GMA 14) met twice at the beginning of the year to take care of tasks necessary to complete the third round of Desired Future Conditions (DFC) planning. The DFCs were officially adopted on January 5, 2022 and at the February 23, 2022 meeting the Explanatory Report was finalized and approved for submittal with the adopted DFCs. Once both items were approved, the DFCs were submitted to the Texas Water Development Board for approval on March 4, 2022 and deemed administratively complete on June 15, 2022.

The DFCs adopted are:

> *In each county in Groundwater Management Area 14, no less than 70 percent median available drawdown remaining in 2080* ***or*** *no more than an average of 1.0 additional foot of subsidence between 2009 and 2080.*

Recently, the 120-day period allowing for a concerned party to file a petition contesting the "reasonableness" of the DFCs has closed for all five member districts of GMA 14. This means that the DFCs were not contested this cycle. All that remains to be done is for the District to incorporate the approved data provided by the TWDB by way of GAM GR21-019 into the District's Management Plan.



Addressing and tracking the DFCs will be a little more complex than it has been in the past, however, Dr. William Hutchison, upon request of

the Bluebonnet GCD has developed a report to assist the GMA 14 members and can simply be updated and modified in the future as needed.

The District has also been working with Ashley Greuter of the Harris-Galveston Subsidence District (HGSD) to bring existing subsidence collecting data sites into their program. This will allow the District to monitor subsidence relatively simply. Currently the HGSD only has one station in their system located in our District that is up to date, known as Continuously Operating Reference Station (CORS) TXKO, which is located in Kountze, TX (Hardin County). The site is on the property of the local TxDot station. Ms. Greuter has stated that the other three TxDot stations within our District (Jasper, Newton, and Tyler) all have CORS stations on site and those stations will be incorporated into the HGSD network.

In 2022 the Southeast Texas Groundwater Conservation District continued to provide excellent service to the four counties of our District.

This Annual Report is the wrap-up for 2022. The District's Management Plan requires that the report discuss each of the Management Plan Goals and provide evidence that the goals have been met. As you will see in the following pages, the District has not only met all Management Plan Goals but, as always, has exceeded most of them. By meeting and exceeding the goals that are laid out in the Management Plan, the Southeast Texas Groundwater Conservation District continues to meet its purpose "to conserve, preserve, protect, recharge, and prevent the waste of groundwater and to control subsidence caused by the withdrawal of groundwater within its boundaries…" and will ensure that the groundwater resources of the District remain, for future generations, the abundant resources they are today.

GOAL 4.1

PROVIDING THE MOST EFFICIENT USE OF GROUNDWATER

Objective

1. *Each year, the District will require all new exempt or permitted wells that are constructed within the boundaries of the District to be registered or permitted with the District in accordance with the District's Rules.*

Performance Standard

1. *The number of exempt and non-exempt wells registered or permitted by the District for the year will be incorporated into the District's Annual Report.*

OBJECTIVE 1

The District enters all registered and permitted wells into its ArcMap Database. The database not only provides the District with the number and types of wells being drilled, but also their specific location, and after receipt of the driller's Well Report, the well depth and static water level. The following tables show a breakdown of the number of new exempt and non-exempt wells registered and/or permitted by county and type, followed by two tables with totals for the entire District. Additional tables are included comparing previous years with the 2022 data.

As you can see, the District had a total of 340 exempt wells registered in 2022. The District also had two non-exempt wells permitted in 2022 (only one of which was a new well). Overall, the 340 exempt wells registered in 2022 was a 3.75% increase from 2021. An even larger percentage increase is seen if we look at all wells registered and permitted over the past 5 and 10 year time periods. The total number of wells registered and permitted is up 15.7% compared to the previous 5-year average, and up 16.5% compared to the previous 10-year average. The oil & gas related well category was up again in 2022, with a 61.55% increase (16 wells to 26 wells). The number of oil and gas related wells is still far below what they were 10 years ago (averaging over 50 wells per year for 2011 – 2014).

Included in this section are ArcMap GIS location maps for each county. These maps show the location of each exempt well registered in 2022, information regarding ownership, date of registration, and the identity of the driller. A map showing the locations of all the water wells that were plugged within the District in 2022 is also included. The number of wells plugged in 2022 was 78, a 40% increase from 2021 and a 52.5% increase over the average number of wells plugged each of the previous 5 years.

GOAL 4.1

Also included in this section is a table showing how many wells were drilled into each layer of the Gulf Coast Aquifer. In the far northern portions of the District the data is incomplete as it is likely that it is the Catahoula layer of the aquifer that is being utilized. When reviewing the new well data for each county these wells are categorized as N/A or U/K for the Aquifer Layer and Geologic Layer. The following is a breakdown of which layer is being utilized, the number of wells drilled and the overall percentage:

AQUIFER LAYER	TOTAL NUMBER OF WELLS DRILLED	PERCENT
Chicot	247	72.65%
Evangeline	2	0.6%
Burkeville	1	0.3%
Jasper	40	11.75%
N/A	50	14.70%

Note: this table is not inclusive of all wells drilled in 2022 as several State Well Reports have not yet been submitted for wells registered in November and December. These numbers are very similar to the past several years in that the vast majority of wells are drilled into the Chicot layer of the Gulf Coast Aquifer, with the Jasper layer making up the majority of the remaining percentage.

GOAL 4.1

COUNTY TOTALS

Jasper County	Number of Wells - 2022
Exempt/Registered Wells - Domestic	91
Exempt/Registered Wells - Other	5
Exempt/Registered Wells - Oil and Gas Related	7
Non-Exempt Wells – Industrial / Commercial	0
Non Exempt Wells – Public Water Supply	0
Plugged Wells	*45*
TOTAL REGISTERED/PERMITTED WELLS	**103**

Newton County	Number of Wells - 2022
Exempt/Registered Wells - Domestic	46
Exempt/Registered Wells - Other	0
Exempt/Registered Wells - Oil and Gas Related	3
Non-Exempt Wells – Industrial / Commercial	0
Non Exempt Wells – Public Water Supply	0
Plugged Wells	*8*
TOTAL REGISTERED/PERMITTED WELLS	**49**

Hardin County	Number of Wells - 2022
Exempt/Registered Wells - Domestic	87
Exempt/Registered Wells - Other	10
Exempt/Registered Wells - Oil and Gas Related	1
Non Exempt Wells – Industrial/Commercial	1
Non Exempt Wells – Public Water Supply	0
Plugged Wells	*4*
TOTAL REGISTERED/PERMITTED WELLS	**98 / 1**

Tyler County	Number of Wells - 2022
Exempt/Registered Wells - Domestic	73
Exempt/Registered Wells - Other	2
Exempt/Registered Wells - Oil and Gas Related	15
Non Exempt Wells – Industrial/Commercial	01
Non Exempt Wells – Public Water Supply	0
Plugged Wells	*21*
TOTAL REGISTERED/PERMITTED WELLS	**90 / 1**

GOAL 4.1

DISTRICT WIDE TOTALS

Total	Number of Wells – 2022
Exempt/Registered Wells – Domestic	297
Exempt/Registered Wells – Other	17
Exempt/Registered Wells – Oil and Gas Related	26
Non Exempt/Permitted – Industrial/Commercial	2
Non Exempt/Permitted – Public Water Supply	0
Plugged Wells	*78*
TOTAL REGISTERED/PERMITTED WELLS	**340 / 2**

TOTAL EXEMPT-REGISTERED / NON-EXEMPT-PERMITTED

Total	Number of Wells - 2022
Exempt/Registered Wells	**340**
Non Exempt/Permitted Wells	**2**

GOAL 4.1 – Multi Year Comparison

Registered & Permitted Wells
Annual Comparison 2012 – 2022

Jasper County	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Exempt/Registered Wells - Domestic	91	109	98	82	84	71	76	82	73	72	88
Exempt/Registered Wells - Other	5	1	4	4	1	0	0	1	2	6	7
Exempt/Registered Wells - Oil Gas Related	7	2	4	7	2	8	5	1	22	8	10
Non-Exempt Wells – Industrial/Commercial	0	0	0	0	0	0	1	3	0	1	2
Non-Exempt – Public Water Supply	0	0	0	0	0	0	0	1	1	0	0
TOTAL REGISTERED/PERMITTED	**103**	**112**	**106**	**93**	**87**	**79**	**82**	**88**	**98**	**87**	**107**

Newton County	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Exempt/Registered Wells - Domestic	46	53	49	35	42	47	36	37	40	24	32
Exempt/Registered Wells - Other	0	1	1	1	2	1	0	7	2	4	2
Exempt/Registered Wells - Oil Gas Related	3	1	3	2	2	6	4	3	9	8	9
Non-Exempt Wells – Industrial/Commercial	0	0	0	0	0	0	0	0	0	0	0
Non-Exempt – Public Water Supply	0	1	0	0	0	0	0	1	0	0	0
TOTAL REGISTERED/PERMITTED	**49**	**56**	**53**	**38**	**46**	**54**	**40**	**48**	**51**	**36**	**43**

Hardin County	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Exempt/Registered Wells - Domestic	87	70	84	73	84	92	71	79	66	87	64
Exempt/Registered Wells - Other	10	2	7	5	4	3	2	0	7	7	7
Exempt/Registered Wells - Oil Gas Related	1	0	0	6	3	3	2	5	7	6	6
Non-Exempt Wells – Industrial/Commercial	1	2	0	0	0	0	0	0	0	0	2
Non-Exempt – Public Water Supply	0	0	0	0	0	0	0	0	2		0
TOTAL REGISTERED/PERMITTED	**99**	**74**	**91**	**84**	**91**	**98**	**75**	**84**	**82**	**100**	**79**

GOAL 4.1 – Multi Year Comparison

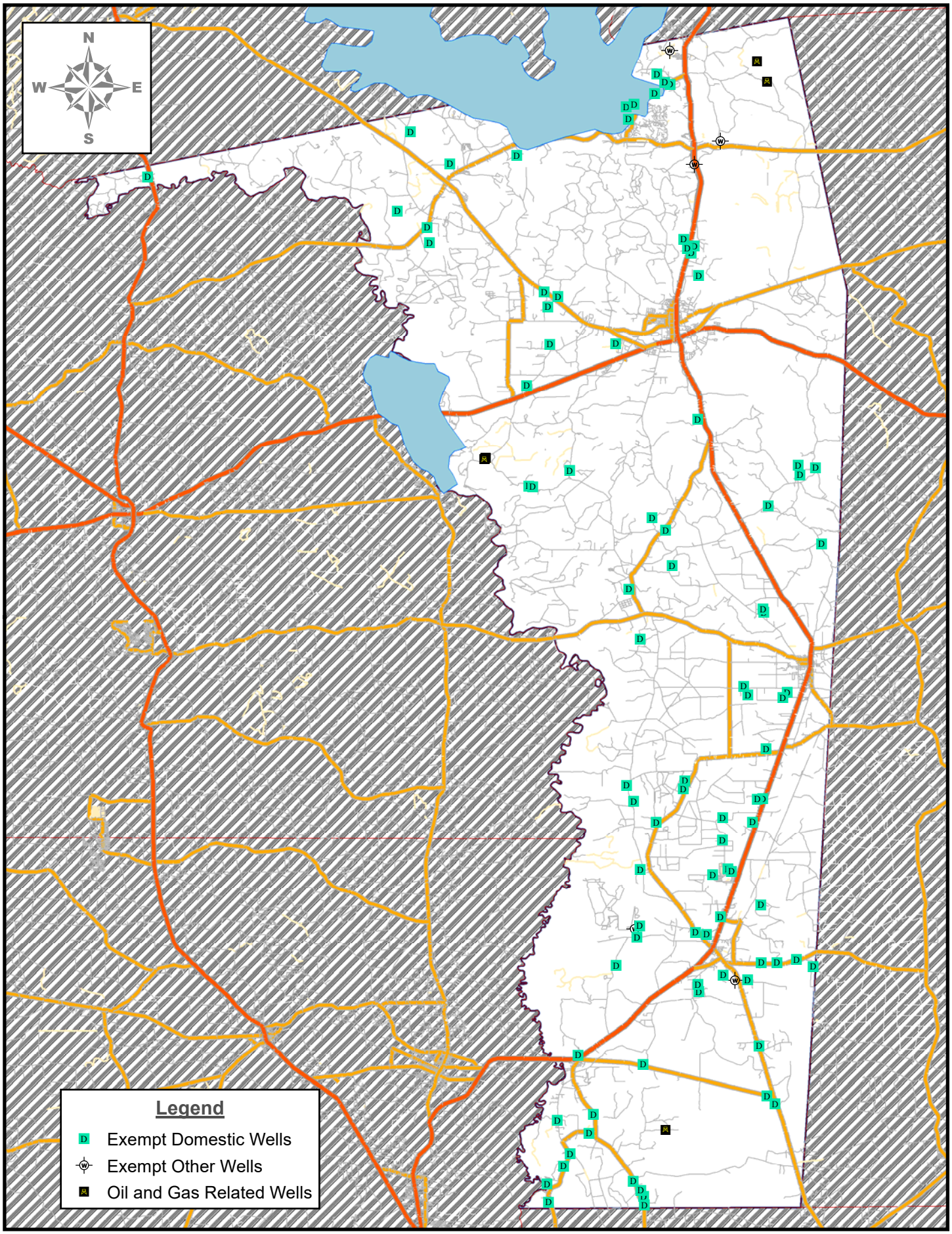
Tyler County	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Exempt/Registered Wells - Domestic	73	71	55	45	48	47	51	62	57	47	60
Exempt/Registered Wells - Other	2	5	3	3	0	2	1	1	2	2	3
Exempt/Registered Wells - Oil Gas Related	15	13	0	4	3	8	5	3	17	11	24
Non Exempt Wells – Industrial/Commercial	1	0	0	0	0	0	0	0	0	0	0
Non Exempt Wells – Public Water Supply	0	0	1	0	0	0	1	0	2	0	0
TOTAL REGISTERED/PERMITTED	**91**	**89**	**59**	**52**	**51**	**57**	**58**	**66**	**78**	**60**	**87**

DISTRICT WIDE TOTALS

Total	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Exempt/Registered Wells - Domestic	297	303	286	235	258	257	234	260	236	230	244
Exempt/Registered Wells - Other	17	9	15	13	7	6	3	9	13	19	19
Exempt/Registered Wells - Oil Gas Related	26	16	7	19	10	25	16	12	55	33	49
Non Exempt Wells – Industrial/Commercial	2	2	0	0	0	0	1	3	0	0	4
Non Exempt Wells – Public Water Supply	0	1	1	0	0	0	1	2	5	1	0
TOTAL REGISTERED/PERMITTED	**342**	**331**	**309**	**267**	**275**	**288**	**255**	**286**	**309**	**283**	**316**

Average number of Exempt/Registered wells for the previous 10-year period 2012 – 2021 is 291.9
Average number of Exempt/Registered wells for the previous 5-year period 2017 – 2021 is 294.0

Wells Registered in Jasper County - 2022



Jasper County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5277	New Well		C.J.	Bishop	Nathan	01/08/2022	Chicot	Willis
5279	New Well - Not Drilled by Bishop		Tammie	Bishop	Nathan	01/12/2022	<null>	<null>
5295	New Well		Nick	Jones	B. J.	01/25/2022	Chicot	Lissie
5304	New Well		Kourtney	Paskell	Keith	01/28/2022	Chicot	Lissie
5305	New Well		Phillip	Jones	B. J.	01/31/2022	U/K	U/K
5308	New Well		Chance	Bishop	Nathan	02/01/2022	U/K	U/K
5309	New Well		Joe / Tommy	Bishop	Nathan	02/01/2022	U/K	U/K
5310	New Well		Joe	Bishop	Nathan	02/02/2022	Jasper	Lower Lag / Oakville
5311	New Well		Ramona	Gore	Dale	02/02/2022	Chicot	Lissie
5326	New Well		Jonathan	Bishop	Nathan	02/07/2022	U/K	U/K
5315	New Well		Stephen	Paskell	Keith	02/08/2022	Chicot	Lissie
5330	New Well		Thomas	Gore	Dale	02/15/2022	Chicot	Willis
5332	New Well		Ronald	Jones	Whit	02/16/2022	Chicot	Lissie
5333	New Well		Adrian	Willoughby	Matt	02/17/2022	Chicot	Lissie
5340	New Well		Robert	Bishop	Nathan	02/21/2022	U/K	U/K
5339	Replacement		Katheryn	Jones	Whit	02/28/2022	Chicot	Lissie
5341	Replacement		Roy	Gore	Dale	02/28/2022	Chicot	Lissie
5345	New Well		Justin	Willoughby	Matt	03/09/2022	Chicot	Lissie
5349	New Well		Michael	Jones	B. J.	03/15/2022	Chicot / Jasper	Willis / Oakville
5347	New Well		Terri	Jones	B. J.	03/16/2022	U/K	U/K
5351	New Well		Laura	Jones	Whit	03/16/2022	Chicot	Lissie
5356	New Well		Rhoda	Gore	Dale	03/18/2022	Chicot	Lissie
5359	New Well		T.J.	Paskell	Keith	03/18/2022	Chicot	Willis
5364	New Well		Nancy	Gore	Dale	04/01/2022	Chicot	Lissie

Jasper County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5368	New Well		Dylan	Jones	Whit	04/01/2022	Chicot	Lissie
5372	New Well		Dalton	Bishop	Nathan	04/05/2022	Chicot	Willis
5375	New Well		Clint	Bishop	Nathan	04/13/2022	Chicot	Willis
5376	New Well		Schwanda	Gore	Dale	04/13/2022	Chicot	Willis
5379	New Well		Karen	Jones	Whit	04/13/2022	Chicot	Lissie
5382	New Well		Beaver	Bishop	Nathan	04/15/2022	Chicot	Lissie
5384	Replacement Well		Dorothy	Gore	Dale	04/18/2022	Jasper	Lower Lagarto
5385	New Well		Blair	Jones	B. J.	04/19/2022	U/K	U/K
5388	New Well		Rick	Jones	Dale	04/21/2022	Chicot	Lissie
5389	New Well		Shea	Paskell	Keith	04/22/2022	Chicot	Lissie
5394	New Well		Beaver	Bishop	Nathan	04/22/2022	Chicot	Lissie
5395	New WEll		William	Jones	B. J.	04/22/2022	U/K	U/K
5396	New Well		Harlan	Turk	Mitch	04/24/2022	Chicot	Lissie
5398	New Well		Jesse	Gore	Dale	04/25/2022	Chicot	Willis
5404	New Well		James	Jones	Dale	04/26/2022	Chicot	Lissie
5406	New Well		Brittney	Bishop	Nathan	04/27/2022	Chicot	Lissie
5414	New Well		Dustin	Jones	Whit	04/27/2022	Chicot	Lissie
5413	New Well		Kristina	Gore	Dale	04/28/2022	Chicot	Lissie
5411	New Well		Kirk	Jones	B. J.	04/29/2022	U/K	U/K
5420	New Well		Paul	Bishop	Nathan	05/02/2022	Chicot	Willis
5421	New Well		Randy	Bishop	Nathan	05/02/2022	Jasper/Catahoula	Oakville
5419	New Well		David	Jones	Whit	05/03/2022	Chicot	Lissie
5425	New Well - Dry Hole		Justin	Bishop	Nathan	05/05/2022		
5430	New Well		Hayden	Jones	Dale	05/09/2022	Chicot	Lissie
5437	New Well		Justin	Jones	B.J.	05/13/2022	U/K	U/K
5447	New Well		Caleb and Allyson	Jones	B.J.	05/20/2022	U/K	U/K
5453	New Well		Kathryn	Gore	Dale	05/27/2022	Chicot	Lissie

Jasper County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5457	Replacement Well		Theophilus	Gore	Dale	06/02/2022	Jasper / Catahoula	Oakville
5461	New Well		Terry	Gore	Dale	06/05/2022	U/K	U/K
5466	New Well		Denise	Gore	Dale	06/07/2022	Jasper	Oakville / Catahoula
5471	New Well		Russell	Bishop	Nathan	06/13/2022	Chicot	Willis
5475	New Well		Stuart	Jones	B.J.	06/15/2022	Chicot	Willis
5480	New Well		Thomas and Traci	Bishop	Nathan	06/23/2022	Chicot	Lissie
5488	New Well		Edward	Jones	Whit	06/28/2022	Chicot	Lissie
5489	New Well		Jacob	Jones	B. J.	06/28/2022	U/K	U/K
5501	New Well		Cliff	Bishop	Nathan	07/06/2022	U/K	U/K
5504	New Well		Troy	Turk	Mitch	07/15/2022	Chicot	Lissie
5508	New Well		Keith	Gore	Dale	07/18/2022	Chicot	Lissie
5522	New Well		Caleb	Jones	Dale	07/25/2022	Chicot	Lissie
5524	New Well		Donald	Jones	Dale	07/27/2022	Chicot	Lissie
5527	New Well		Dwane	Gore	Dale	07/29/2022	Chicot	Lissie
5528	New Well / Pond		Grant	Gore	Dale	07/30/2022	Jasper	Oakville
5530	Transfered from RKI Energy / no well report avail		Bryan	UnKnown	UnKnown	08/01/2022		
5536	New Well		Jordan	Jones	Whit	08/03/2022	Chicot	Lissie
5548	New Well		Paul	Paskell	Keith	08/17/2022	Chicot	Lissie
5550	New Well		Robert and Karen	Bishop	Nathan	08/18/2022	U/K	U/K
5561	New Well		Daniel	Paskell	Keith	09/01/2022	Chicot	Lissie
5567	New Well		Dan	Gore	Dale	09/04/2022	U/K	U/K
5578	New Well		David	Paskell	Keith	09/16/2022	Chicot	Lissie
5659	New Well		Joe	Paskell	Keith	09/16/2022	Chicot	Lissie
5585	New Well		Justin	Gore	Dale	09/24/2022	Chicot	Willis
5589	New Well		Robert	Paskell	Keith	09/28/2022	Chicot	Lissie
5592	New Well		Larry	Gore	Dale	10/02/2022	Chicot	Lissie

Jasper County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5599	New Well		Jaybo	Jones	Whit	10/05/2022	Chicot	Lissie
5603	New Well		Mike	Jones	Whit	10/11/2022	Chicot	Lissie
5608	New Well		Jace	Paskell	Keith	10/12/2022	U/K	U/K
5607	New Well		Kim	Turk	Mitch	10/13/2022	Chicot	Lissie
5611	New Well		Michael	Gore	Dale	10/17/2022	Chicot	Willis
5630	New Well		Wade	Bishop	Nathan	11/11/2022	Chicot	Willis
5631	New Well		Connie	Bishop	Nathan	11/14/2022	Chicot	Lissie
5632	New Well		Decorian	Jones	B.J.	11/18/2022	Chicot	Lissie
5635	New Well		Kevin	Paskell	Keith	11/22/2022	Chicot	Lissie
5641	New Well		Cecile	Paskell	Keith	11/28/2022	Chicot	Lissie
5642	New Well		Connor	Turk	Mitch	11/28/2022	Chicot	Lissie
5648	New Well		Jeffrey	Bishop	Nathan	12/06/2022	Chicot	Willis
5651	New Well		Bryce	Paskell	Keith	12/18/2022	Chicot	Lissie
5652	New Well		Ron	Paskell	Keith	12/31/2022	Chicot	Lissie

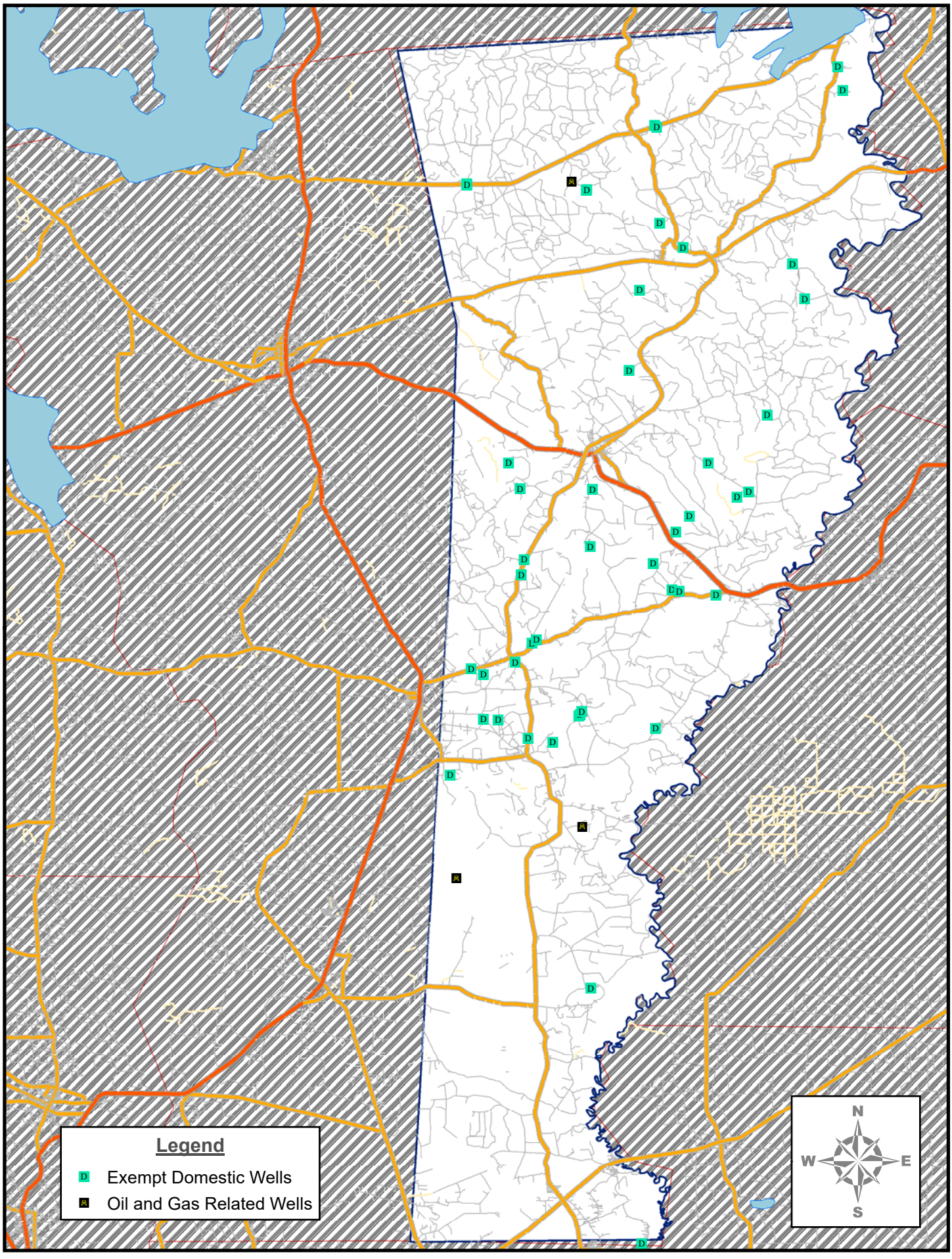
Jasper County - Exempt Other Wells 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE DRILLED	AQUIFER	GEOLOGIC LAYER
384	New Well/Less than 25,000 gpd	Transfer	Energy	Bishop	Nathan	03/18/2022	U/K	U/K
391	Replacement Well / Livestock		Lee	Turk	Mitch	07/12/2022	Chicot	Lissie
394	New Well / Less than 25,000 per day		Ronald	Jones	B.J.	07/21/2022	U/K	U/K
399	New Well / Agriculture		Karen	Paskell	Keith	09/23/2022	Chicot	Lissie
403	New Well / Less than 25,000 capable		Kaleb	Jones	B.J.	11/3/2022	<null>	<null>

Jasper County Oil & Gas Related Wells - 2022

	WELL NAME	DRILLING CO.	DATE ENTERED	PLUGGED	FRACKED?	AQUIFER	GEOLOGIC LAYER
BPX Energy	Tostada 1H	Pinnergy LTD	01/07/2022	N		U/K	U/K
BPX Operating	Tostada 1H	BJ's Water Well	05/20/2022	N	Y		
BPX Operating	BP America 469 #1	Pinnergy LTD	05/26/2022	N	N	Chicot	Lissie
Zarvona Energy	Younger UT 2H #1	J&S Water Wells	08/09/2022	Y	Y	Jasper	Lower Lagarto
Zarvona Energy	Younger UT 2H #2	J&S Water Wells	08/09/2022	Y	Y	Jasper	Lower Lag / Oakville
Zarvona Energy	Younger UT 2H #3	J&S Water Wells	08/09/2022	N	Y	Jasper	Lower Lag / Oakville
Zarvona Energy	Younger UT 2H #4	J&S Water Wells	08/09/2022	Y	Y	Jasper	Lower Lag / Oakville

Wells Registered - Newton County - 2022



Newton County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5273	New Well		Clarence	Bishop	Nathan	01/05/2022	Chicot	Willis
5292	Replacement Well		Elmer	Gore	Dale	01/18/2022	Chicot	Lissie
5294	New Well		Stephen and Elizabeth	Jones	B. J.	01/25/2022	Jasper	Lower Lagarto / Oak
5301	New Well		Jill	Bishop	Nathan	01/26/2022	Chicot	Willis
5302	New Well		Don	Bishop	Nathan	01/26/2022	Chicot	Willis
5317	New Well		Kalandra	Gore	Dale	02/09/2022	Chicot	Lissie
5323	New Well		Donald	Willoughby	Matt	02/10/2022	Chicot	Willis
5337	New Well		Roger	Gore	Dale	02/18/2022	Chicot	Lissie
5350	New Well		Roger	Jones	B. J.	03/17/2022	U/K	U/K
5360	Replacement Well		Jeffrey	Bishop	Nathan	03/18/2022	Chicot	Willis
5354	New Well		Hugo	Turk	Mitch	03/19/2022	Chicot	Lissie
5365	New Well		Dalton	Bishop	Nathan	04/04/2022	Chicot	Lissie
5370	New Well		Will	Gore	Dale	04/07/2022	Chicot	Willis
5434	New Well		George	Bishop	Nathan	05/12/2022	Evangeline	Upper Goliad
5435	New Well		Delton	Paskell	Keith	05/13/2022	Chicot	Lissie
5439	New Well		James	Bishop	Nathan	05/17/2022	Chicot	Willis
5441	New Well		Brittany	Holmes	Kenneth	05/17/2022	Chicot	Lissie
5440	New Well		Derrick	Bishop	Nathan	05/18/2022	Evangeline	Upper Goliad
5448	New Well		Susan	Jones	B.J.	05/20/2022	Chicot	Lissie
5451	New Well		Mike	Turk	Mitch	05/26/2022	Chicot	Beaumont
5452	New Well		N.H.	Jones	B.J.	05/26/2022	Jasper	Lower Lag / Oakville
5485	New Well		Eric	Gore	Dale	06/25/2022	Chicot	Lissie
5647	New Well		Ashley	Gore	Dale	06/27/2022	Chicot	Lissie
5491	New Well - Dry Hole		Buddy	Bishop	Nathan	06/28/2022	<null>	<null>

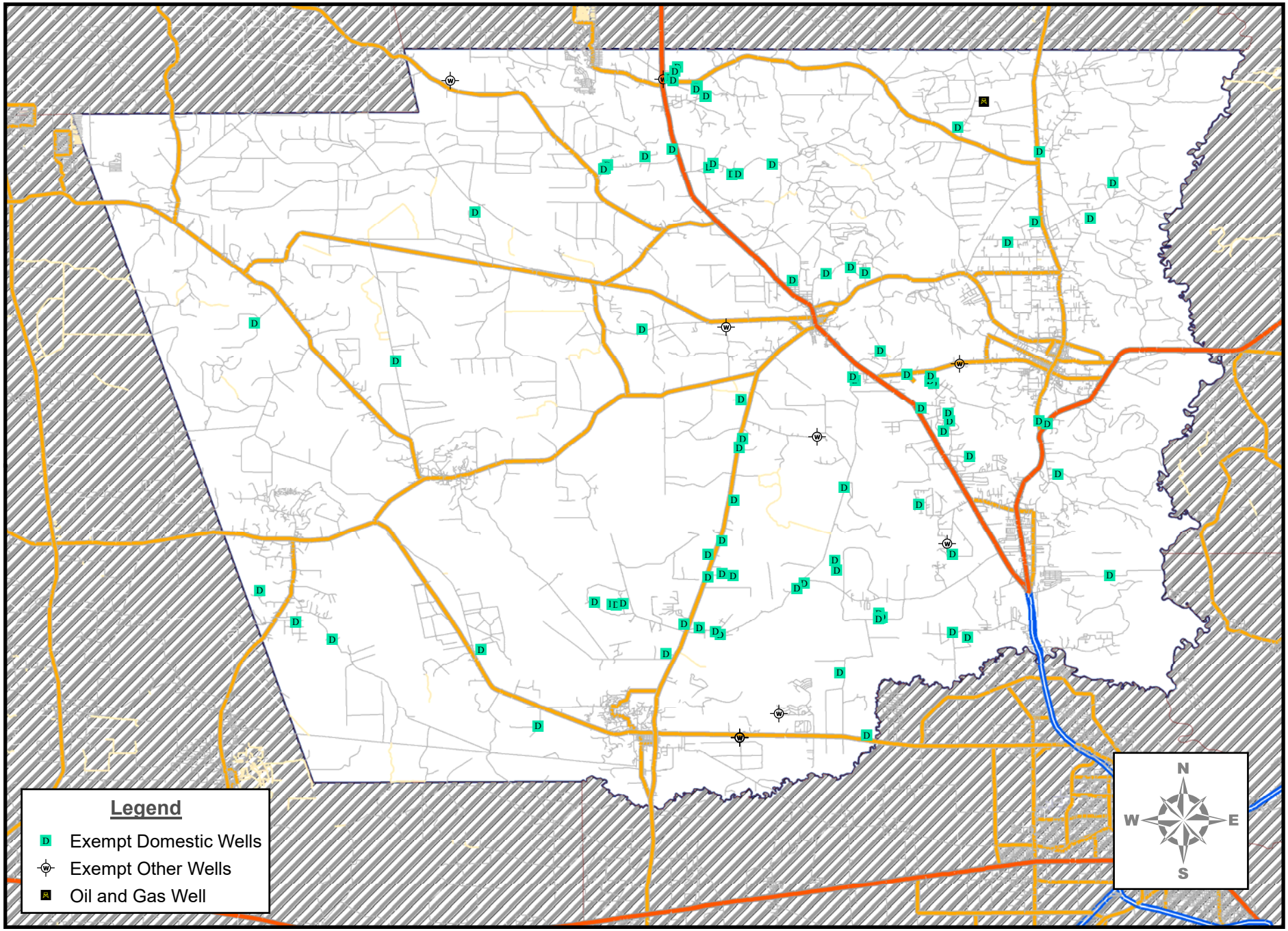
Newton County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5493	New Well		Jose	Bishop	Nathan	06/28/2022	Chicot	Willis
5507	Replacement Well	Robinson	Lenard	Bishop	Nathan	07/15/2022	U/K	U/K
5534	New Well		Don and Lillie	Jones	Whit	08/01/2022	Chicot	Lissie
5535	New Well		Traci	Turk	Mitch	08/08/2022	Chicot	Lissie
5538	New Well		Dusty	Bishop	Nathan	08/08/2022	Chicot	Willis
5540	New Well		Dan	Bishop	Nathan	08/10/2022	Chicot	Willis
5546	New Well		Melvin and Arlene	Bishop	Nathan	08/15/2022	Chicot	Willis
5559	New Well / Artesian Flowing		Deannesha	Bishop	Nathan	08/29/2022	Jasper	Lower Lagarto
5564	Replacement Well		Bruce	Gore	Dale	08/30/2022	Chicot	Lissie
5560	New Well		Jessie	Bishop	Nathan	09/01/2022	Jasper	Oakville
5569	New Well		Samuel	Bishop	Nathan	09/06/2022	Burkeville	Middle Lagarto
5574	New Well		Thomas	Bishop	Nathan	09/12/2022	Jasper	Lower Lagarto
5581	New Well		David	Bishop	Nathan	09/19/2022	Chicot	Willis
5612	Replacement Well		Dennis	Jones	B. J.	10/17/2022	Chicot	Willis
5623	New Well		John	Bishop	Nathan	10/31/2022	Chicot	Willis
5626	New Well		Clint and Rachel	Jones	B.J.	11/03/2022	Chicot	Willis
5633	New Well		Mike	Jones	B.J.	11/18/2022	Jasper	Lower Lagarto
5634	New Well		Mike	Jones	B.J.	11/18/2022	Jasper	Lower Lagarto
5636	New Well		Steven	Bishop	Nathan	11/23/2022	Chicot	Willis
5637	New Well		James	Bishop	Nathan	11/23/2022	Chicot	Willis
5638	New Well		Holdings	Bishop	Nathan	11/25/2022	Chicot	Willis
5650	New Well		Kenneth	White	Spencer	12/14/2022	<null>	<null>

Newton County Oil & Gas Related Wells - 2022

WELL OWNER	WELL NAME	DRILLING CO.	DATE ENTERED	PLUGGED	FRACKED?	AQUIFER	GEOLOGIC LAYER
Prize Exploration / RKI	Brown Donner 1166 #2	Pinnergy LTD	03/18/2022	N	N	Jasper	Oakville
Foundation Energy	Kurth II	Guichard Operating, Co.	06/22/2022	N	N	Chicot	Lissie
Texakoma E & P	Hankamer #1	Guichard Operating Co.	12/05/2022	N	N	<null>	<null>

Wells Registered in Hardin County - 2022



Hardin County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5274	New Well - Developer		Wilco Custom	Paskell	Keith	01/06/2022	Chicot	Lissie
5275	New Well		Valerie	Turk	Mitch	01/07/2022	Chicot	Willis
5276	New Well		Taylor	Holmes	Kenneth	01/10/2022	Chicot	Lissie
5283	New Well		Ryan	West	Randy	01/16/2022	Chicot	Lissie
5284	New Well		Bob	Holmes	Kenneth	01/17/2022	Chicot	Lissie
5285	New Well		Blake	Jones	Dale	01/18/2022	Chicot	Lissie
5291	New Well		Rosemary	Gore	Dale	01/19/2022	Chicot	Lissie
5297	New Well		Kevin and Leslie	Jones	Dale	01/26/2022	Chicot	Lissie
5299	New Well		Bill	Paskell	Keith	01/27/2022	Chicot	Lissie
5300	New Well		Kristen	Turk	Mitch	01/27/2022	Chicot	Lissie
5314	New Well		Mark	Ballard	Samuel	02/06/2022	Chicot	Willis
5320	New Well		Sonja	Turk	Mitch	02/08/2022	Chicot	Lissie - Willis
5316	New Well		Joe	Paskell	Keith	02/09/2022	Chicot	Lissie
5318	New Well		Jarrell	Gore	Dale	02/10/2022	Chicot	Lissie
5334	New Well		Jake	Jones	Dale	02/18/2022	Chicot	Lissie / Willis
5352	New Well		Brach	Holmes	Kenneth	03/14/2022	Chicot	Lissie
5355	New Well		Jose	Turk	Mitch	03/28/2022	Chicot	Lissie
5357	New Well		Rick	Gore	Dale	03/28/2022	Chicot	Lissie
5361	New Well		Mike	Turk	Mitch	03/29/2022	Chicot	Lissie
5362	New Well		Jered	Jones	Dale	03/29/2022	Chicot	Lissie
5366	New Well		Chaz	Turk	Mitch	04/04/2022	Chicot	Lissie
5373	New Well		Jashua	Jones	Whit	04/08/2022	Chicot	Lissie
5383	New Well		Dean	Turk	Mitch	04/18/2022	Chicot	Lissie / Willis
5390	Replacement Well		Thomas	Turk	Mitch	04/22/2022	Chicot	Willis
5422	New Well		Gregory & Harriet	Turk	Mithc	05/04/2022	Chicot	Willis

Hardin County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5426	New Well		Joshua	Holmes	Kenneth	05/05/2022	Chicot	Willis
5429	New Well		Kent	Gore	Dale	05/07/2022	Chicot	Lissie / Willis
5431	New Well		Cash	Gore	Dale	05/10/2022	Chicot	Willis
5433	New Well		Sheryl	Gore	Dale	05/12/2022	Chicot	Lissie
5443	New Well		Carl	West	Randy	05/16/2022	Chicot	Lissie
5442	New Well		Lorri	Holmes	Kenneth	05/18/2022	Chicot	Willis
5456	New Well		Anthony	Turk	Mitch	06/02/2022	Chicot	Lissie
5458	New Well		Carl	Turk	Mitch	06/03/2022	Chicot	Willis
5459			Terrell	Gore	Dale	06/03/2022	Chicot	Lissie
5467	New Well		Tristan	Turk	Mitch	06/09/2022	Chicot	Lissie
5468	New Well		Alexis	Gore	Dale	06/11/2022	Chicot	Lissie
5470	New Well		Rick	Gore	Dale	06/13/2022	Chicot	Willis
5472	New Well		Jerry	Turk	Mitch	06/14/2022	Chicot	Lissie
5474	New Well		Mandy	Paskell	Keith	06/17/2022	Chicot	Lissie
5477	New Well		Michael	Gore	Dale	06/17/2022	Chicot	Lissie
5478	New Well		Jason	Paskell	Keith	06/18/2022	Chicot	Lissie
5479	New Well		Matt	Paskell	Keith	06/21/2022	Chicot	Lissie / Willis
5494	New Well		Bobbie	Holmes	Kenneth	06/27/2022	Chicot	Lissie
5498	New Well		Richard	Turk	Mitch	07/06/2022	Chicot	Lissie
5500	Replacement Well		Marvin	Turk	Mitch	07/08/2022	Chicot	Willis
5503	New Well		David	Holmes	Kenneth	07/12/2022	Chicot	Lissie
5509	Replacement Well		Jorge	Jones	Whit	07/18/2022	Chicot	Lissie
5513	New Well		Casey	Turk	Mitch	07/19/2022	Chicot	Lissie
5514	New Well / Developer		S&C	Paskell	Keith	07/21/2022	Chicot	Lissie
5525	New Well		David	Bell	Evan	07/27/2022	Chicot	Lissie
5526	New Well		Bobby	Turk	Mitch	07/28/2022	Chicot	Lissie
5532	New Well		Suzanne	Turk	Mitch	08/01/2022	Chicot	Lissie

Hardin County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5539	New Well		Rebecca	Paskell	Keith	08/10/2022	Chicot	Lissie
5542	New Well		Jerald	Gore	Dale	08/11/2022	Chicot	Lissie
5545	New Well		Deac	West	Randy	08/12/2022	Chicot	Lissie
5547	New Well		Clay	Turk	Mitch	08/16/2022	Chicot	Lissie
5551	New Well		William	Turk	Mitch	08/20/2022	Chicot	Lissie
5554	New Well		Larry	Gore	Dale	08/24/2022	Chicot	Beaumont
5557	New Well		Marshall	Turk	Mitch	08/27/2022	Chicot	Lissie
5558	New Well		Shannon and Monica	Jones	Dale	08/29/2022	Chicot	Willis
5562	New Well / Mortgage Co.			Turk	Mitch	08/31/2022	Chicot	Willis
5565	New Well		Amy	Paskell	Keith	09/04/2022	Chicot	Lissie / Willis
5570	New Well		Chris	Turk	Mitch	09/07/2022	Chicot	Lissie
5571	New Well		Michael	Jones	Dale	09/07/2022	Chicot	Willis
5572	New Well		Terry	Paskell	Keith	09/09/2022	Chicot	Lissie
5576	New Well		Clint	Gore	Dale	09/15/2022	Chicot	Lissie
5582	<null>		Kerry	West	Randy	09/19/2022	Chicot	Lissie
5579	New Well		Griffin	Turk	Mitch	09/20/2022	Chicot	Willis
5580	New Well		Darren and Genia	Paskell	Keith	09/20/2022	Chicot	Lissie
5583	New Well / Developer		Knight	Paskell	Keith	09/21/2022	Chicot	Lissie
5591	New Well		Michelle	Bell	Even	09/28/2022	Chicot	Lissie
5594	New Well		Vickie	Gore	Dale	10/03/2022	Chicot	Lissie
5596	New Well		David	Turk	Mitch	10/05/2022	Chicot	Lissie
5601	Replacement Well		Jeremy	Turk	Mitch	10/07/2022	Chicot	Lissie
5605	New Well		Bobby	Gore	Dale	10/10/2022	Chicot	Lissie
5602	New Well		Ron	Turk	Mitch	10/11/2022	Chicot	Lissie / Willis
5609	New Well		Susan	Gore	Dale	10/13/2022	Chicot	Lissie
5610	New Well		Andrew	Paskell	Keith	10/14/2022	Chicot	Lissie

Hardin County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5613	New Well		Jonathan	Turk	Mitch	10/19/2022	Chicot	Lissie
5614	New Well		Paul	Holmes	Kenneth	10/19/2022	Chicot	LIssie
5615	New Well		Brandon	Gore	Dale	10/19/2022	Chicot	Lissie
5617	New Well		Amy	Turk	Mitch	10/21/2022	Chicot	Willis
5618	New Well		Carolyn	Paskell	Keith	10/23/2022	Chicot	Lissie
5624	New Well		Dale	Gore	Dale	11/01/2022	Chicot	Lissie
5628	New Well		Scott	Paskell	Keith	11/04/2022	Chicot	Lissie
5629	New Well		Martha	Turk	Mitch	11/10/2022	Chicot	Lissie
5649	New Well		Amanda	Gore	Dale	12/06/2022	Chicot	Lissie

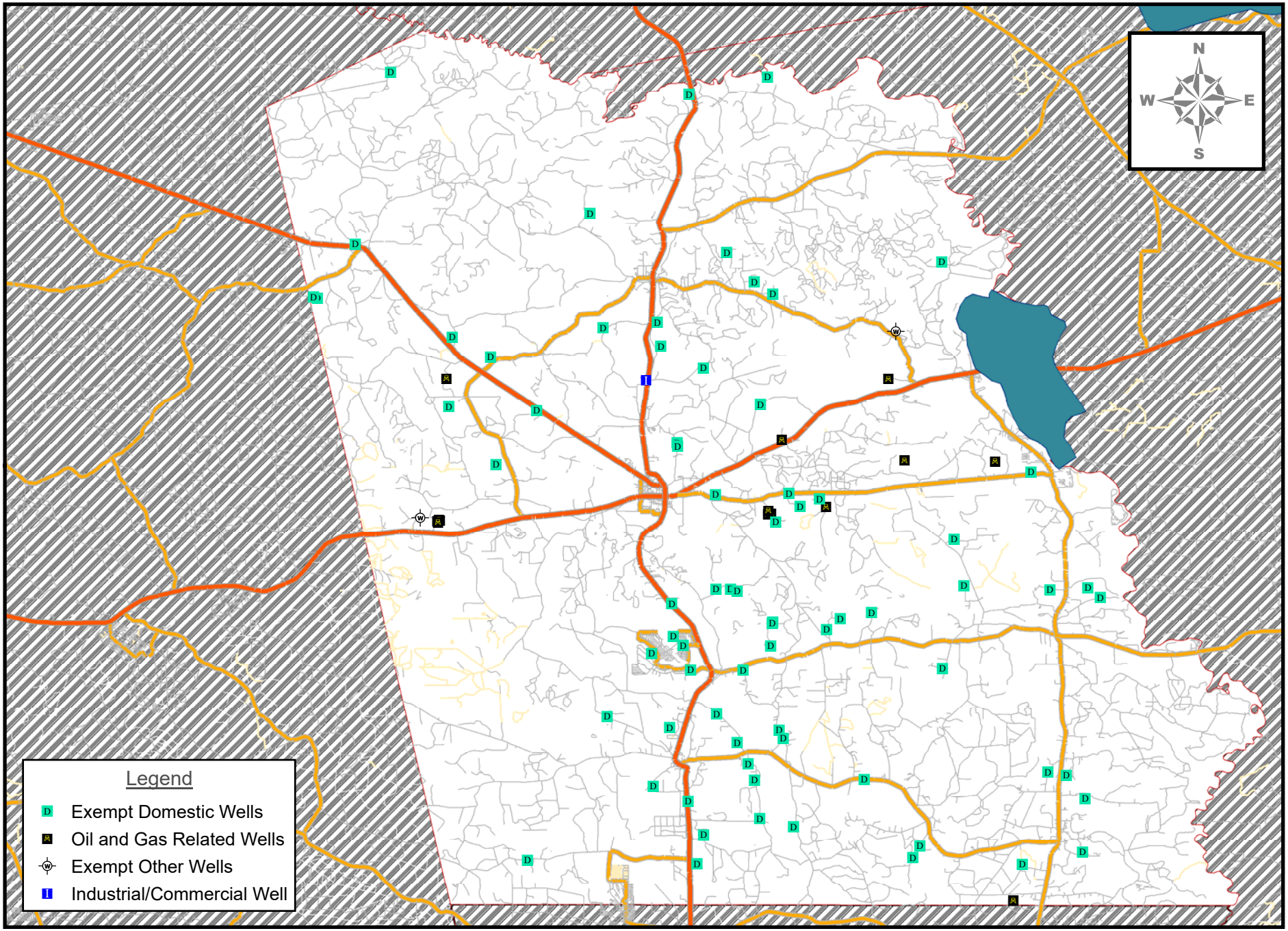
Hardin County - Exempt Other Wells 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE DRILLED	AQUIFER	GEOLOGIC LAYER
382	New Well / Agricultural / Freeze Protection		Kevin	Holmes	Kenneth	02/09/2022	Chicot	Lissie
385	Livestock / Corrected Flowers		Mike	Flowers	?	04/05/2022	<null>	<null>
390	New Well / Less than 25,000 gpd		Devin	Holmes	Kenneth	06/02/2022	Chicot	Lissie
398	Test Well - Deep	Sour Lake	City of	J&S Water Well	Tomas	07/22/2022	<null>	<null>
395	New / Agriculture		Mike	Gore	Dale	07/23/2022	Chicot	Lissie
393	New Well / Livestock		Chance	Holmes	Kenneth	08/02/2022	Chicot	Lissie
400	New Well / Agriculture		Byron	Gore	Dale	10/15/2022	Chicot	Beaumont
401	Test Well - Shallow	Sour Lake	City of	J&S Water Well		10/25/2022	<null>	<null>
402	Test Well - Mid	Sour Lake	City of	J&S Water Well		10/25/2022	<null>	<null>
404	New Well / Less than 25,000 capable		Justin	Gore	Dale	11/3/2022	Chicot	Lissie / Willis

Hardin County Oil & Gas Related Wells - 2022

WELL OWNER	WELL NAME	DRILLING CO.	DATE ENTERED	PLUGGED	FRACKED?	AQUIFER	GEOLOGIC LAYER
Atlas Operating, LLC	Beech Creek 4W	Dale's Water Wells	08/16/2022	N	Y	<null>	<null>

Wells Registered/Permitted in Tyler County - 2022



Tyler County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5278	New Well		Rebecca	Gore	Dale	01/12/2022	Chicot	Willis
5280	New Well		Mike	Bell	Evan	01/12/2022	U/K	U/K
5282	New Well		Cindy	Gore	Dale	01/14/2022	Chicot	Willis
5298	New Well		Janeann	Gore	Dale	01/23/2022	Chicot	Lissie
5327	New Well		William	Turk	Mitch	02/11/2022	Chicot	Lissie
5329	New WEll		Chuck	Gore	Dale	02/14/2022	Jasper	Lower Lagarto
5331	New Well		Blake	Turk	Mitch	02/16/2022	Chicot	Lissie
5338	New Well		Bela	Gore	Dale	02/19/2022	Jasper	Lower Lagarto
5342	New Well		Bryant	Gore	Dale	02/28/2022	Chicot	Willis
5343	New WEll		James	Holmes	Kenneth	02/28/2022	Jasper	Lower Lagarto
5344	New Well		John Phillip	Jones	Whit	03/10/2022	Chicot	Wilson
5346	New Well		J.T.	Gore	Dale	03/14/2022	Chicot	Lissie
5358	New Well		Labron	Gore	Dale	03/28/2022	U/K	U/K
5363	NewWell		Jason	Gore	Dale	03/29/2022	Chicot	Willis
5367	New Well		Mike	Paskell	Keith	04/02/2022	Chicot	Willis
5369	New Well		Jeff	Gore	Dale	04/04/2022	Chicot	Willis
5371	New Well		Alex	Holmes	Kenneth	04/06/2022	Chicot	Willis
5386	New Well		Dorris	Gore	Dale	04/20/2022	Chicot	Lissie
5387	New Well		Clinton	Gore	Dale	04/21/2022	Chicot	Lissie
5397	New Well		Ramiro	Gore	Dale	04/23/2022	Jasper	Oakville
5399	New Well		Fred	Bell	Evan	04/23/2022	Jasper	Oakville
5412	New Well		Sessile	Gore	Dale	04/27/2022	Chicot	Willis
5415	Developer - Text Well	Lakeland Ranch, LLC		Bell	Evan	04/28/2022	Chicot	Willis
5416	Developer - Observation Well	Lakeland Ranch, LLC		Bell	Evan	04/28/2022	Chicot	Willis

Tyler County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5428	New Well		Mark	Jones	B. J.	05/06/2022	Jasper	Oakville
5432	New Well		Charles	Paskell	Keith	05/12/2022	Chicot	Willis
5438	Replacement Well		Clint	Turk	Mitch	05/16/2022	Chicot	Willis
5449	New Well		Jeremiah	Turk	Mitch	05/20/2022	Chicot	Lissie
5450	New Well		Brennan	Gore	Dale	05/23/2022	Chicot	Lissie & Willis
5454	New Well		Chris	Gore	Dale	05/30/2022	Chicot	Lissie
5460	New Well		Travis	Paskell	Keith	06/06/2022	Chicot	Willis
5462	New Well		Tammy	Gore	Dale	06/06/2022	Chicot	Lissie / Willis
5463	New Well		Steve	Gore	Dale	06/06/2022	Chicot	Willis
5465	Replacement Well		Ramon	Gore	Dale	06/07/2022	Chicot	Willis
5481	New Well		Patricia	Gore	Dale	06/23/2022	Chicot	Lissie
5484	New Well		Blake	Turk	Mitch	06/24/2022	Chicot	Willis
5487	New Well		K. W.	Turk	Mitch	06/27/2022	Chicot	Willis
5490	New Well		Malcolm	Jones	B. J.	06/27/2022	Chicot	Willis
5495	New Well		Jacob	Gore	Dale	06/29/2022	Chicot	Willis
5496	New Well		Jennifer	Gore	Dale	07/04/2022	Chicot	Lissie
5497	New Well		William	Jones	Whit	07/05/2022	Jasper	Lower Lagarto
5499	New Well		Jeffrey	Bell	Evan	07/06/2022	Jasper	Lower Lagarto
5502	NEw Well		Paul	Gore	Dale	07/11/2022	Chicot	Lissie
5505	New Well		Joe	Gore	Dale	07/15/2022	U/K	U/K
5516	New Well		Robert	Paskell	Keith	07/22/2022	Chicot	Willis
5523	New Well		Larry & Kim	Gore	Dale	07/25/2022	Chicot	Willis
5529	New Well / Pond		Christopher	Gore	Dale	07/29/2022	Jasper	Oakville
5537	New Well		Kathy	Gore	Dale	08/05/2022	Jasper	Lower Lagarto
5541	New Well		Kevin	Turk	Mitch	08/10/2022	Chicot	Willis
5543	New Well		James	Gore	Dale	08/13/2022	U/K	U/K
5552	New Well		Brandon	Ballard	Sam	08/22/2022	U/K	U/K
5555	New Well		Shane	Turk	Mitch	08/26/2022	Chicot	Willis

Tyler County Exempt Domestic Wells - 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE REG.	AQUIFER	GEOLOGIC LAYER
5556	New Well		Robert	Gore	Dale	08/26/2022	U/K	U/K
5563	New Well		Clayton	Gore	Dale	08/30/2022	Jasper	Lower Lagarto
5566	New Well		Mike	Gore	Dale	09/04/2022	Chicot	Willis
5568	New Well		David	Bell	Evan	09/06/2022	Chicot	Lissie
5573	Replacement Well		Jamie	Jones	B. J.	09/08/2022	U/K	U/K
5575	New Well		Jason	Gore	Dale	09/12/2022	U/K	U/K
5577	Replacement Well		Brandon	Turk	Mitch	09/15/2022	Chicot	Willis
5584	New Well		Cindy and Lyle	Gore	Dale	09/24/2022	Chicot	Lissie
5588	New Well		Robert	Jones	B.J.	09/26/2022	U/K	U/K
5590	New Well		River	Gore	Dale	09/27/2022	Chicot	Willis
5593	New Well		Taylor	Jones	B. J.	09/30/2022	Chicot	Willis
5595	New Well		Jay	Gore	Dale	09/30/2022	Chicot	Lissie
5598	New Well		Francisco	Holmes	Kenneth	10/04/2022	Chicot	Willis
5597	New Well		Barbara	Holmes	Kenneth	10/05/2022	Chicot	Willis
5604	New Well		Jennifer	Gore	Dale	10/08/2022	<null>	<null>
5606	New Well		George	Gore	Dale	10/13/2022	Jasper	Lower Lag / Oakville
5620	New Well		Charles	Turk	Mitch	10/26/2022	Chicot	Lissie
5621	New Well		Kevin	Gore	Dale	10/31/2022	U/K	U/K
5622	New Well		Munirat	Gore	Dale	10/31/2022	Jasper	Oakville
5643	New Well		Alex	Gore	Dale	11/28/2022	<null>	<null>
5645	New Well		John	Jones	B. J.	11/30/2022	<null>	<null>

Tyler County Oil & Gas Related Wells - 2022

WELL OWNER	WELL NAME	DRILLING CO.	DATE ENTERED	PLUGGED	FRACKED?	AQUIFER	GEOLOGIC LAYER
Zarvona Energy	BS Wilburn 2H	J & S Water Wells	02/07/2022	Y	Y	Jasper	L.L. / Oakville
Zarvona Energy	BS Clark A2H #1	J&S Water Wells	04/04/2022	Y	N	Jasper	Lower Lagarto
Zarvona Energy	BS Clark A2H #2	J&S Water Wells	04/04/2022	Y	N	Jasper	Lower Lagarto
Zarvona Energy	BS Clark A2H #3	J&S Water Wells	04/04/2022	Y	N	Jasper	Lower Lagarto
Zarvona Energy	BS Clark A2H #4	J&S Water Wells	04/06/2022	Y	N	Jasper	Lower Lagarto
Navidad Operating	Middle Earth 1H East	Pinnergy LTD	05/03/2022	N	Y	Chicot	Willis
Navidad Operating	Middle Earth 1H West	Pinnergy LTD	05/03/2022	N	Y	Chicot	Willis
Ergon Energy Partners	Angelina #2H	Hydroline Drilling, LLC	06/17/2022	Y	Y		
Ergon Energy Partners	Tucker 2H	Hydroline Drilling, LLC	07/11/2022	N	N	Japser	Lower Lagarto
Ergon Energy Partners	Fish Camp #1H	Hydroline Drilling, LLC	09/09/2022	N	N	Jasper	Oakville
Mosman Operating	Arco Fee G-3	George Bellenger WWS	09/13/2022	Y	N	<null>	<null>
Navidad Operating	Hancock 3H	Pinnergy LTD	09/15/2022	N	Y	Chicot	Willis
Ergon Energy Partners	Carter #2H	Hydroline Drilling LLC	11/14/2022	N	N	Jasper	Lower Lagarto
Navidad Operating	Rivendell 1H	Pinnergy, LTD	12/13/2022	N	Y	Chicot	Willis
Geo Southern Operating	Cassidy Sundance	J&S Water Wells	12/28/2022	N	N	<null>	<null>

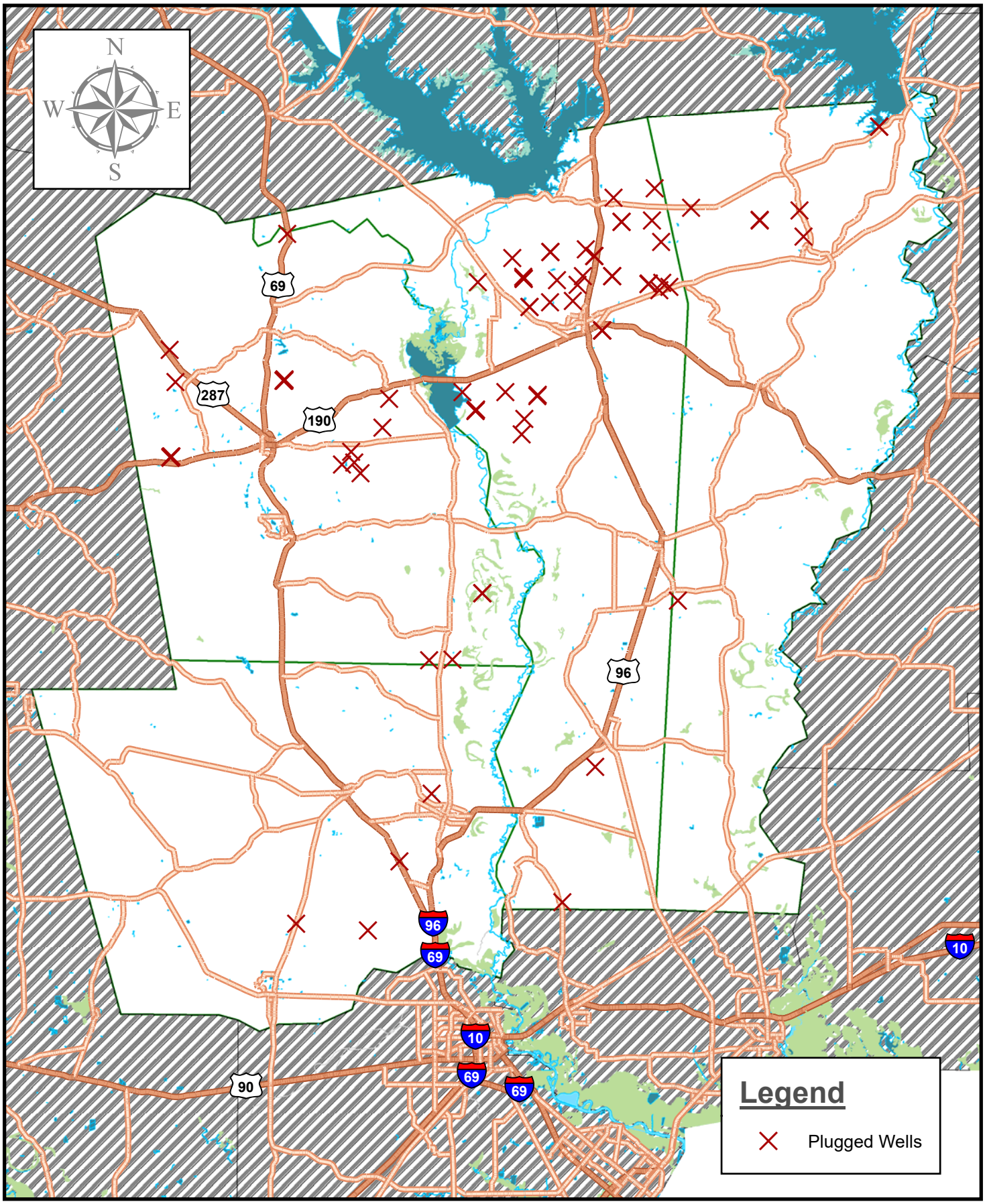
Tyler County - Exempt Other Wells 2022

ID NO.	COMMENT	OWNER LAST	OWNER FIRST	DRILLER LAST	DRILLER FIRST	DATE DRILLED	AQUIFER	GEOLOGIC LAYER
392	New Well / Agri.		Tim and Angie	Gore	Dale	07/17/2022	U/K	U/K
406	New Well / Livestock - Agr.	Shore	Jon	Gore	Dale	12/01/2022	<null>	<null>

Permitted wells - Tyler County Industrial/Commercial Well - 2022

IDENT	COMMENT	COMPANY NAME	DRILLER LAST	DRILLER FIRST	DATE PERMITTED
Windmill Estates MHP	Existing Well / recently permitted	Windmill Estates MHP	UK	UK	08/08/2022

Plugged Wells - 2022



Plugged Wells - District Wide - 2022

IDENT	OWNER LAST	OWNER FIRST	COMPANY	DATE PLUGGED
Angelina #2H			Ergon Energy Partners	01/04/2022
BS Mann A-24 #2 W3			Zarvona Energy	01/28/2022
BS Mann A-24 #2			Zarvona Energy	01/28/2022
BS Mann A-24 #2 W2			Zarvona Energy	01/28/2022
BS Mann A-24 #2 W4			Zarvona Energy	01/28/2022
East Beech BP #1			Forza Operating	01/31/2022
Fred BP #1			Forza Operating	02/21/2022
Fred BP #1			Forza Operating	02/21/2022
Rawls E		Elmer		02/23/2022
Lacouture K		Kathryn		02/25/2022
Worsham R		Roy Lee		02/27/2022
Martin A		Adam		02/28/2022
TEC Deep - Track 222601			Texas Electric Co-op	03/10/2022
TEC 2 - Tracking 222602			Texas Electric Co-op	03/10/2022
TEC 1 - Tracking 222603			Texas Electric Co-op	03/10/2022
Allar 2H			Ergon Exploration	03/11/2022
Gibbs Bro #2			RKI Energy Res	03/15/2022
Jorgensen N		Noah		04/27/2022
Jonston T				05/09/2022
Tri-Con			Tri-Con, Inc.	05/12/2022
Jonston T				05/19/2022
Diggles D		Dorothy		05/23/2022
SWD - Energy Transfer			RKI Energy	06/01/2022
Vastar Fee 910			RKI Energy	06/01/2022
Vastar Fee Unit A-15-1			RKI Energy	06/01/2022
Temple Inland A41-2 W#2			RKI Energy	06/02/2022
Temple Inland A41-2 W#1			RKI Energy	06/02/2022
Temple Inland A41-2 W#4			RKI Energy	06/02/2022
Temple Inland A41-2 W#3			RKI Energy	06/02/2022
Sutton #1			RKI Energy	06/02/2022
Reid O'brien			RKI Energy	06/02/2022

IDENT	OWNER LAST	OWNER FIRST	COMPANY	DATE PLUGGED
RSMC Goode #1			RKI Energy	06/02/2022
BP America 214			RKI Energy	06/02/2022
Martindale A 115 #2 WW1			RKI Energy	06/03/2022
Martindale A 115 #2 WW2			RKI Energy	06/03/2022
BS A342			RKI Energy	06/03/2022
Arco Fee A-222 #1			RKI Energy	06/06/2022
Arco Fee A-222 #2			RKI Energy	06/06/2022
Blackstone 979-1			RKI Energy	06/06/2022
Blackstone 982-1			RKI Energy	06/06/2022
Blackstone 982-2			RKI Energy	06/06/2022
Donner Brown 1006			RKI Energy	06/06/2022
Vastar Fee A-121			RKI Energy	06/06/2022
Hally #2			RKI Energy	06/06/2022
Arco 215			RKI Energy	06/06/2022
Arco Fee 252 #1			RKI Energy	06/07/2022
Arco Fee 252 #2			RKI Energy	06/07/2022
Barrow A-928			RKI Energy	06/07/2022
Arco Fee A920 #2			RKI Energy	06/08/2022
Arco Fee A580			RKI Energy	06/08/2022
Arco Fee A241 WW1			RKI Energy	06/08/2022
Arco Fee A241 WW2			RKI Energy	06/08/2022
Temple Indust. 3H #1			RKI Energy	06/09/2022
Temple Indust. 3H #2			RKI Energy	06/09/2022
Vistar 913			RKI Energy	06/09/2022
Tonahill MT Unit A41			RKI Energy	06/10/2022
Matthews Estate Unit			RKI Energy	06/10/2022
Robinson L		Lenard		07/14/2022
David Glen 3H			Zarvona Energy	07/19/2022
Pica_J		Jamie		09/07/2022
Arco Fee G-3			Mosman Operating	09/15/2022
BS Wilburn 2H			Zarvona Energy	09/26/2022
BP BS A520-1			Zarvona Energy	09/27/2022
Gran Torina S. #1			Zarvona Energy	09/27/2022
BS A-32 WL 2			Zarvona Energy	09/29/2022
BS A-32 WL 1			Zarvona Energy	09/29/2022
BS Clark A2H #2			Zarvona Energy	10/04/2022
BS Clark A2H #3			Zarvona Energy	10/04/2022

IDENT	OWNER LAST	OWNER FIRST	COMPANY	DATE PLUGGED
BS Clark A2H #4			Zarvona Energy	10/04/2022
Smith Unity A-531			RKI Energy	10/11/2022
Arco Fee A580 #2			RKI Energy	10/11/2022
Barrow A-928			RKI Energy	10/11/2022
Younger UT 2H #4			Zarvona Energy	10/13/2022
BSM Kirby A-3 #1			Walter Oil & Gas Corp	11/16/2022
BS Clark A2H #1			Zarvona Energy	11/16/2022
Boulos G		George		11/16/2022
Younger UT 2H #1			Zarvona Energy	12/19/2022
Younger UT 2H #2			Zarvona Energy	12/19/2022

GOAL 4.2

CONTROLLING AND PREVENTING THE WASTE OF GROUNDWATER IN THE DISTRICT

Objectives

1. *Each year, the District will make an evaluation of the District Rules to determine whether any amendments are recommended to decrease the amount of waste of groundwater within the District.*

2. *Each year, the District will provide information to the public on eliminating and reducing wasteful practices in the use of groundwater by posting an article or newsletter on groundwater waste reduction on the District's website.*

Performance Standard

1. *The District will include a copy of the meeting notice/agenda as well as the minutes of the meeting at which the District Rules were discussed and the determination of whether any amendments to the rules are recommended to prevent the waste of groundwater in the District's Annual Report.*

2. *Each year, a copy of the information provided in the groundwater waste reduction article or newsletter on the District's website will be included in the District's Annual Report.*

OBJECTIVE 1

Attached is a copy of the District's July 14, 2022 meeting notice/agenda as well as the minutes of that meeting at which the District's Rules were discussed and evaluated (Agenda Item 6), specifically considering any changes that would reduce the amount of waste of groundwater within the District. After discussing potential rule changes, no changes to the District Rules were recommended or made.

OBJECTIVE 2

A copy of the article titled "Drought Preparedness - Conserve Now Before You Have To" was posted on the District's "Conservation" webpage and was also submitted to seven local newspapers for publication on October 28, 2022. The article was published by the East Texas Banner (f/k/a Kirbyville Banner) on November 2, 2022. The article was also published in the Fall 2022 SETGCD Well Monitor Newsletter, which provides information

on water conservation and waste reduction practices and was posted on the District's website to assist the public in eliminating or reducing wasteful practices. A copy of the article is included in this section as well as in Goal 4.7, and is also included in the SETGCD Well Monitor newsletter in Appendix A (Tab 12).

The District continues to provide electronic copies of three informative water conservation pamphlets on the District's "Conservation" webpage: *Household Water Use and Ways to Save, Water is Limited. Save Some Today, and Conserving Water Outdoors.* These pamphlets are designed by the Texas Water Development Board in conjunction with its Water IQ program. In addition to being available on the District's website, these pamphlets are provided to the owner of each new well registered within the District.

Southeast Texas Groundwater Conservation District

NOTICE is given that the Board of Directors of the Southeast Texas Groundwater Conservation District will hold a monthly board meeting on Thursday July 14, 2022 starting at 10:00 a.m., at the Jasper County Courthouse Annex Building, Emergency Operations Center (2nd floor), at 271 East Lamar, Jasper, Texas 75951 in accordance with the Texas Open Meeting Act, Chapter 551 of the Texas Government Code or (as amended).

Regular Board Meeting:

The items of business to be considered and transacted during the meeting are as follows:

1. Call to order;
2. Public comment;
3. Discussion and possible action to approve the minutes of the June 9, 2022 Board meeting;
4. Discussion and possible action on the monthly Treasurer's Report and approval of payables presented;
5. Presentation of the District's 2nd Quarter 2022 Investment Report
6. Discussion and possible action regarding potential changes to the District's Rules and specifically as they relate to Management Plan item 4.2(1) – "Evaluation of the District's Rules to determine whether any amendments are recommended to decrease the amount of waste of groundwater within the District;
7. Discussion and possible action regarding SB 1888's (the District's enacting legislation);
8. Discussion and possible action regarding GMA 14 and the Desired Future Conditions (DFCs), to include consideration of resolution 22-04 adopting DFCs relevant to the Southeast Texas GCD and the Explanatory Report as required by Chapter 36.108 (d-4) Texas Water Code;
9. Manager's Report to include: update regarding Chris Tyre wells and District Rule Violation, Dennis Holmes District Rule violations, RKI Energy plugging project; subsidence monitoring stations, and drought conditions;
10. Establish date, time and place of next meeting; and;
11. Meeting adjourned;

These public meetings are available to all persons regardless of disability. If you require special assistance to attend the meeting please contact the Southeast Texas Groundwater Conservation District, (409) 383-1577, at least three working days prior to the meeting so that appropriate arrangements can be made.

Southeast Texas Groundwater Conservation District
July 14, 2022, Meeting Minutes
Jasper County Courthouse Annex Building
Emergency Operations Center 2nd Floor
Jasper, Texas

Directors Present:
Roger Fussell, President
Olen Bean, Vice President
Bobby Rogers, Sec. / Treasurer
Thomas Hawthorne
Greg Kelley
Rick Russler
Billy Ted Smith
Charles Zimmerman

Directors Absent:
Sam Ashworth
Ken Jobe
Cody Jones
Robb Starr
Wendy Turner

John Martin, General Manager

Regular Board Meeting:

1. Call to order: At 10:01 a.m. President Fussell brought to order the regular meeting of the Southeast Texas Groundwater Conservation District and then asked Treasurer Rogers to give an invocation. President Fussell then asked Manager Martin to conduct roll call, and a quorum was confirmed with 8 Directors present and 5 Directors absent.

2. Public comment (Comments are restricted to 5 minutes with a total of all comments limited to 30 minutes): President Fussell noted that no members of the public were present.

3. Discussion and possible action to approve the minutes of the June 9, 2022 Board meeting: Director Smith made motion to approve the minutes of the June 9, 2022 Board meeting. Director Kelley seconded the motion. The motion passed unanimously.

4. Discussion and possible action on the monthly Treasurer's Report and approval of payables presented: Treasurer Rogers reviewed the District's July 2022 Treasurer's Report. He reviewed the District's account balances, the monthly payables, and the expected FNB operating account balances after July payables have been disbursed. Director Smith made motion to approve the Treasurer's Report and monthly payables. Director Russler seconded the motion. The motion passed unanimously.

5. Presentation of the District's 2nd Quarter 2022 Investment Report: Manager Martin presented the 2nd Quarter 2022 Investment Report. He reviewed all deposits and withdrawals, interest earned and deposited, ending balances, interest rates for each of the accounts, and the total investment balance. Manager Martin pointed out that the WAM calculation was 79.33 days. He then noted Meeting Material Items 5b – 5d, which included the WAM calculation form, the State Comptrollers Lists and the latest Texpool S&P ratings.

President Fussell noted that this is a presentation item only and requires no action.

6. Discussion and possible action regarding potential changes to the District's Rules and specifically as they relate to Management Plan item 4.2(1) – "Evaluation of the District's Rules to determine whether any amendments are recommended to decrease the amount of waste of groundwater within the District: Manager Martin briefly explained for the newer members that this item is a requirement of the District's Management Plan. He noted that although the Board made changes to the District Rules in April none of the changes were specifically meant to decrease the amount of waste. He stated that the last time changes were made to the District Rules that were meant to address waste were made in 2020. He explained that the change made in 2020 was regarding the change in status to exempt wells, specifically meant to prevent wells drilled for the oil and gas industry from being forgotten, abandoned, and left to potentially become a source of waste.

Manager Martin noted that he had no recommendation for changes this year. After a brief discussion regarding the District's Rules and recommendations for changes to decrease the amount of waste, no changes were recommended.

7. Discussion and possible action regarding SB 1888's (the District's enacting legislation): Manager Martin began the discussion by informing the group that after speaking with Attorney Stover the Board would be requesting an amendment to Special District Code (SDC) Chapter 8868. Manager Martin noted that six or eight years ago the District's enacting legislation was codified and that since it was codified, we will need to amend the SDC rather than the enacting legislation.

Manager Martin stated that he had asked Attorney Stover for his opinion on the best way to proceed to get the SDC amended and that Attorney Stover highly recommended that we go through Senator Nichols' office. Manager Martin stated that Attorney Stover and Senator Nichols have had a longstanding working relationship, and he recalled his first trip to Austin on District business where Attorney Stover took him to meet several people at the Capitol – Senator Nichols being the first one. Manager Martin recommended taking Attorney Stover's advice as it would be easier to work with one senator than with four representatives.

Manager Martin noted that the reason he included this item again on the agenda was because the motion made at the previous meeting specifically included working with Representative White. Both President Fussell and Director Smith commented on positive interactions with Senator Nichols' aides. After discussion Director Kelley made motion to allow Manager Martin to proceed as needed to move forward with getting SDC Chapter 8868 amended. Treasurer Rogers seconded the motion. The motion passed unanimously.

8. Discussion and possible action regarding GMA 14 and the Desired Future Conditions (DFCs), to include consideration of resolution 22-04 adopting DFCs relevant to the Southeast Texas GCD and the Explanatory Report as required by Chapter 36.108 (d-4) Texas Water Code: Manger Martin briefly reviewed his written Manager's Report and stated that the District was simply required to adopt the "relevant" portions of the DFCs . He pointed out Meeting Material Item 8b, Resolution 22-04 for formally adopting the relevant DFCs. Manager Martin also noted that the adoption of the DFCs would start the 120 day time period allowing for the

DFC to be contested. He noted that as each of the groundwater conservation districts within GMA 14 adopted their relevant DFCs, there would be separate 120 periods. Manager Martin stated that he believed Brazoria County had already adopted their relevant DFCs, and that Lower Trinity GCD was expected to do so tomorrow (July15, 2022). He stated that he was unsure of the exact dates but expect Lone Star GCD to adopt their relevant DFCs in August; Bluebonnet GCVCD will likely be the last as they only meet quarterly.

After a short discussion Director Russler moved to approve the Resolution adopting relevant DFCs. Director Hawthorne seconded the motion. The motion passed unanimously.

9. Manager's Report to include: update regarding Chris Tyre wells and District Rule Violation, Dennis Holmes District Rule violations, RKI Energy plugging project; subsidence monitoring stations, and drought conditions: Manager Martin briefly reviewed the information in his written Manager's Report and asked if anyone had questions.

Manager Martin also added information regarding Dennis Holmes, stating that Attorney Stover not only filed the petition against Mr. Holmes but that it had also been successfully served over the weekend. Manager Martin stated that Chapter 36 did provide for expediency for GCDs and that Attorney Stover hoped to get a hearing date within the next several weeks.

11. Establish date, time and place of next meeting: Manager Martin noted that he would be out of town attending the TAGD summer conference the week prior to the next regularly scheduled meeting (Sept. 8) and asked to change the September meeting to September 15. President Fussell noted no objections and set the next meeting date for September 15, 2022.

12. Meeting adjourned at 10:43

Roger Fussell – President

Bobby Rogers – Secretary/Treasurer

Date: September 15, 2022

Drought Preparedness – Conserve Now Before You Have To

Sometimes it is difficult to "preach" to people about conserving water. Here in Southeast Texas, we typically have an overabundance of it with an average annual rainfall total of 54 inches. Look back a few years and we recall several flooding events, one of which was Hurricane Harvey that gave the area nearly the entire year's average rainfall in just a few days. How quick things can change though. Except for August, this summer has been very dry and predictions are that the remainder of 2022 will continue that trend until at least early 2023. These predictions are based on the fact that La Nina is the current prevailing weather pattern which is expected to continue through early next. La Nina conditions mean the Pacific Ocean is a little cooler than normal which leads to a drier weather pattern for the southern half of the U.S.

The last time our area experienced a prolonged La Nina was in 2010 - 2012 which was one of the driest periods in Texas history. Most areas within the Southeast Texas Groundwater Conservation District saw 30% - 35% less rain during that period. The northwestern portion (Woodville area) saw closer to 50% less rainfall.

Current predictions are that the La Nina conditions should dissipate between February and April of next year and bring us back to a more neutral weather pattern. Nonetheless, long term predictions are often wrong and we should try to conserve as much as we can and reduce waste as much as possible. After all, it best to have and not need, than to need and not have. There are innumerable ways to conserve water, these are just a few.

Conserving Water Indoors:

- Using efficient showerheads and aerators on your faucets can significantly reduce the amount of water you use. In fact, installing an efficient showerhead is one of the most effective water saving steps you can take inside your house. You can save a little more water by getting into the shower as soon as possible - don't let the water run too long while warming it up.
- When possible, update and replace old toilets, washing machines, and dishwashers. New efficient models can save you thousands of gallons per year.
- An older clothes washer will use up to 23 gallons per load, whereas a new energy efficient model may use as little as 13 gallons. Considering that the average household washes about 300 loads per year, the numbers add up quickly. Another thing to keep in mind is that if you wash with hot water, up to 90% of the cost to wash those clothes is simply for heating the water. Only use hot water when necessary so you'll save on your electrical bill and reduce the impact on the water-energy nexus (a complex relationship between the production of electricity and water).
- In the kitchen, a water efficient dishwasher can save over 1,000 gallons per year. Keep in mind that 1,000 gallons per home may not seem significant but multiply that by a neighborhood and 1,000 gallons per home will add up to quite a lot very quickly.
- Newer water efficient toilets will use only about 1—1.5 gallons of water per flush. Be sure that you keep an eye out for any leaks in your toilet. A leaking toilet can waste quite a bit of water, possibly thousands of gallons a month in extreme cases. It is estimated that 10% of all homes in the U.S. have water leaks wasting 90+ gallons of water per day.

Winter Conservation Tips:

Frozen and burst pipes can waste hundreds of gallons of water in a short period of time. Be prepared for cold weather.

- Disconnect and drain outdoor hoses. Detaching a hose allows water to drain from the faucet and will reduce the possibility of the faucet freezing and bursting.
- Insulate pipes or faucets in unheated areas.
- Consider using electrical "heat tape".
- Seal off access doors, air vents and cracks. Winter winds whistling through overlooked openings can quickly freeze exposed water pipes.
- Don't forget any water lines you may have running to the garden or livestock troughs. Be sure that these pipes get extra attention.

For more information on water conservation ideas visit the Southeast Texas Groundwater Conservation District's Website at https://setgcd.org/ or the Texas Water Development Board's site at https://www.twdb.texas.gov/conservation/

Conservation

Water Conservation Tips

- Turn Off That Light
- Drip Irrigation
- Winter Conservation TIps
- 20 Ways to be Water Smart
- Outdoor Water Conservation Tips
- Water Conservation Tips 2016
- Summertime Water Saving
- Winter Conservation Tips
- How Not To Waste Water
- Every Drop Counts

+ Water Footprint - You're Using More Than You Think

− Drought Preparedness - Conserve Now Before You Have To

CONSERVATION CORNER

Groundwater Waste Reduction—Drought Preparedness

Conserve Now Before You Have To

Sometimes it is difficult to "preach" to people about conserving water. Here in Southeast Texas we typically have an over abundance of it with an average annual rainfall total of 54 inches. Look back a few years and we recall several flooding events, one of which was Hurricane Harvey that gave the area nearly the entire year's average rainfall in just a few days. How quick things can change though. Except for August, this summer has been very dry and predictions are that the remainder of 2022 will continue that trend until at least early 2023. These predictions are based on the fact that La Nina is the current prevailing weather pattern which is expected to continue through early next. La Nina conditions mean the Pacific Ocean is a little cooler than nor-

pattern for the

olonged La Nina
ıe driest periods
: Southeast Tex-
saw 30% - 35%
western portion
rainfall.

Current predictions are that the La Nina conditions should dissipate between February and April of next year and bring us back to a more neutral weather pattern. Nonetheless, predictions can be wrong and we should try to conserve as much as we can and reduce waste as much as possible. Afterall, it is best to have and not need, than to need and not have. There are innumerable ways to conserve water, and here are just a few.

Conserving Water Indoors:

- Using efficient showerheads and aerators on your faucets can significantly reduce the amount of water you use. In fact, installing an efficient showerhead is one of the most effective water saving steps you can take inside your house. AYou can save a little more water by getting into the shower as soon as possible—don't let the water run too long while warming it up.
- When possible, update and replace old toilets, washing machines, and dishwashers. New efficient models can save you thousands of gallons per year.
- An older clothes washer will use up to 23 gallons per load, whereas a new energy efficient model may use as little as 13 gallons. Considering that the average household washes about 300 loads per year, the numbers add up quickly. Another thing to keep in mind is that if you wash with hot water, up to 90% of the cost to wash those clothes is simply for heating the water. Only use hot water when necessary so you'll save on your electrical bill and reduce the impact on the water-energy nexus (a complex relationship between the production of electricity and water).
- In the kitchen, a water efficient dishwasher can save over 1,000 gallons of water per year. Keep in mind that 1,000 gallons per month may not seem significant, but when you add your neighborhood and 1,000 gallons per home will add up quickly.
- Newer, water efficient toilets will use only about 1—1.5 gallons of water per flush. Be sure that you keep an eye out for any leaks in your toilet. A leaking toilet can waste quite a bit of water, possibly thousands of gallons a month in extreme cases. It is estimated that 10% of all homes in the U.S. have water leaks wasting 90+ gallons of water per day.

Winter Conservation Tips:

Frozen and burst pipes can waste hundreds of gallons of water in a short period of time. Be prepared for cold weather.

- Disconnect and drain outdoor hoses. Detaching a hose allows water to drain from the faucet and will reduce the possibility of the faucet freezing and bursting.
- Insulate pipes or faucets in unheated areas.
- Consider using electrical "heat tape".
- Seal off access doors, air vents and cracks. Winter winds whistling through overlooked openings can quickly freeze exposed water pipes.
- Don't forget any water lines you may have running to the garden or livestock troughs. Be sure that these pipes get extra attention.

For more information on water conservation ideas visit

Board Meetings

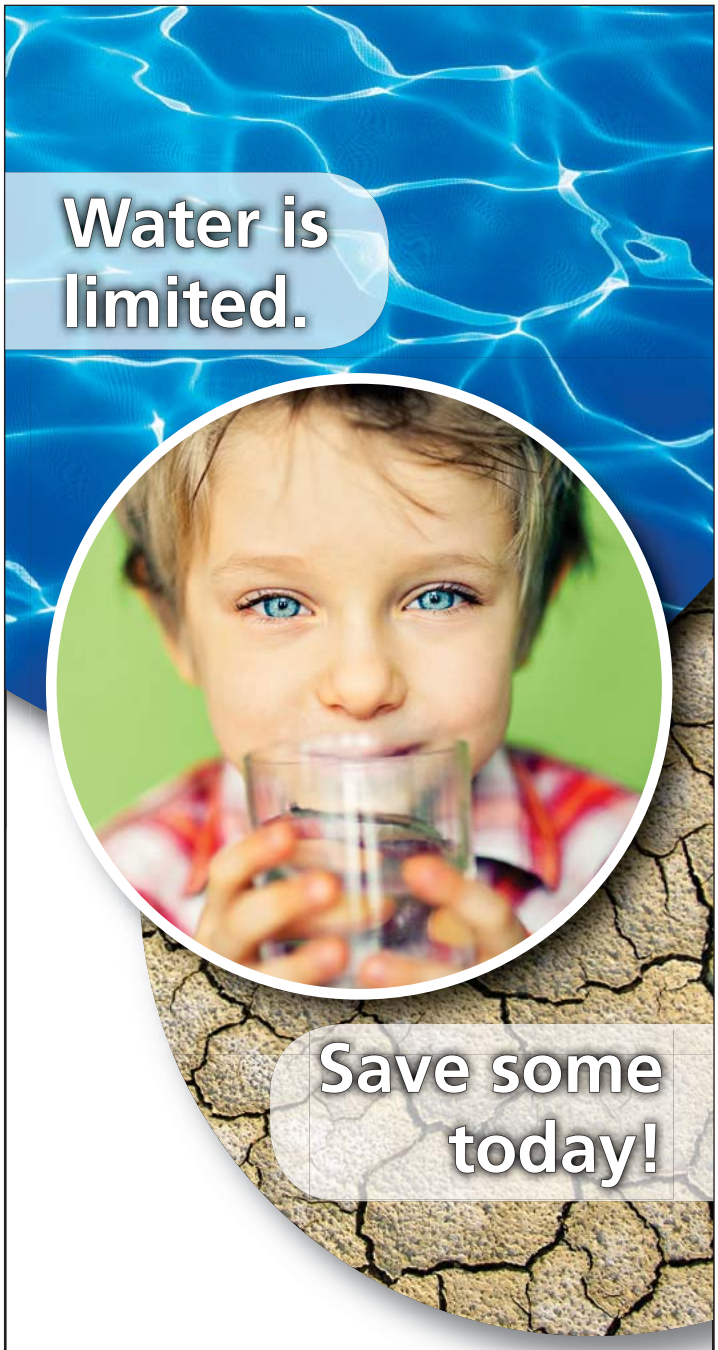
2nd Thursday of each month beginning at 10:00 AM unless otherwise noticed.

No Board meetings scheduled for August or December unless otherwise noticed.

Meetings are held at the
Jasper County Courthouse Annex Building
271 E. Lamar, Suite 202, 2nd Floor –
Emergence Operations Center Offices
Jasper, TX 75951

Important links

Meeting and Hearing Notes
Groundwater Management Area 14 Region I
Water Planning Group
Conservation
Drought Information
Newsletters
Reports / DFCs
Source Water Protection
Understanding Texas Aquifers



Texas Water Development Board

www.twdb.texas.gov

The Future of Texas Water

Water is our state's most precious and limited resource. With a growing population and an increasing need for water, we must be especially vigilant about how we use the water we already have. For years, Texas has experienced regularly recurring droughts, and more are inevitable in the future.

If Texans don't take steps to reduce water use, we could face serious water shortages over the next 50 years. If a drought of record occurs in the immediate future, it has been estimated that Texas could lose more than 400,000 jobs and over $70 billion in annual economic activity. And those impacts increase each decade if the state water plan is not implemented.

Water conservation is often the least expensive and most cost-effective way to ensure adequate water supplies. Individual conservation practices can make a big difference in our overall water use.

We need your help to save water, starting today!

Help Conserve Today

Inside your home, toilets consume the most water, followed by washing machines and showers. Outdoor use can account for more than 30 percent of total home water use.

Here are a few easy things you can start doing today to save water.*

- **Fix leaks** – Leaks waste both water and energy and can account for 10 percent or more of your water bill. Frequently check for leaks in your toilets, washing machines, and sinks. A slow drip adds up.

- **Shorten shower time** – Reducing your shower time from 10 to 5 minutes could save at least 12.5 gallons per shower with efficient showerheads. That's over 4,500 gallons a year.

- **Turn off the faucet** – Don't let water run when you wash your hands, brush your teeth, and shave. Turn it off until you need it again.

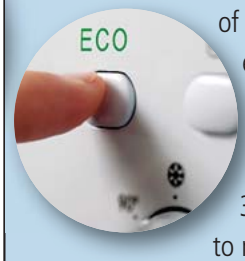
- **Lower washing machine water level** – Use the lowest water level setting on your washing machine whenever possible.

- **Water more efficiently** – Limit your yard watering to no more than once a week, and prevent water evaporation by watering early in the morning—and never on windy days. Also, adjust sprinklers so they don't water the pavement or other unnecessary areas.

Take water conservation one step further.

Replace some of your household appliances with more energy-efficient models, and add rain sensors to your irrigation system.

- **Washing machines** – High-efficiency washing machines can save almost 25 gallons of water per load, and they save energy.



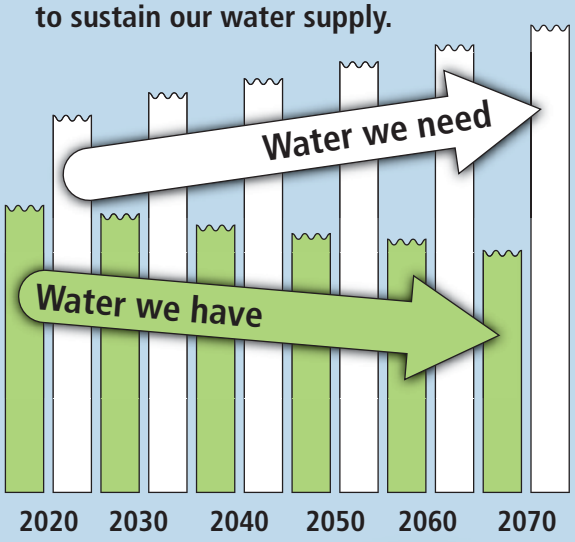
- **Toilets** – The average flush of an older toilet uses about 3.6 gallons of water, compared to newer, high efficiency toilets that use just 1.3 gallons per flush.

- **Sprinklers** – Install rain shut-off devices so you don't water the yard unnecessarily during or after a rain.

** Indoor water use numbers are from the Alliance for Water Efficiency: www.allianceforwaterefficiency.org*

Texas Water Development Board

Our need for water is growing, but our current water supply will decline over time. More and more water conservation efforts will be necessary to sustain our water supply.



Conservation efforts are estimated to make up approximately 27 percent of the water generated through recommended water supply strategies in 2030.

Texas Water Development Board

www.twdb.texas.gov

1700 North Congress Avenue
Austin, TX 78701

Tel: 512-463-7847 • Fax: 512-475-2053

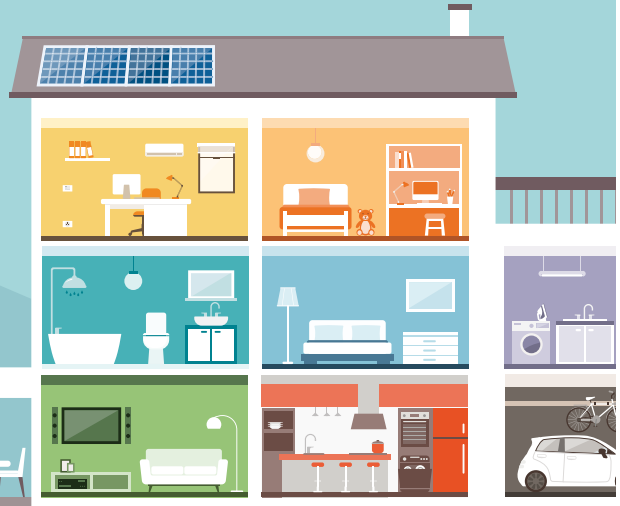
Stay connected:

WATER IQ
Know your water.

www.WaterIQ.org

rev. 07/19

Household Water Use and Ways to Save



Texas Water Development Board

Install Water-Efficient Appliances and Fixtures

Toilets

- Toilets account for approximately 24 percent of indoor water use. They also happen to be a major source of leaks and/or inefficiency.
- Over the course of your lifetime, you will likely flush the toilet nearly 140,000 times. A high-efficiency toilet can save you 4,000 gallons per year.
- A leaky toilet can waste 200 gallons of water per day.

- Test toilets for leaks. Add a few drops of food coloring or a dye tablet to the water in the tank, but do not flush the toilet. If the coloring appears in the bowl within a few minutes, the toilet has a leak that needs to be repaired (usually the flapper or rubber washer).

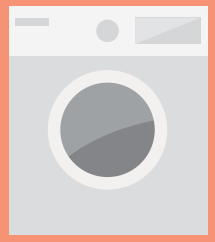
Showers

- A water-efficient showerhead is one of the single most effective water-saving steps you can take inside your home.
- Take shorter showers. A full bathtub can use up to 70 gallons of water versus a 5-minute shower that uses as little as 10 gallons.

Sinks

- Install faucet aerators on sinks for a simple, cost-effective way to save water. The faucet's efficiency can double without sacrificing performance.

Washing Machines



- High-efficiency washers use 35 to 55 percent less water and 50 percent less energy.
- They also require less detergent, rinse more thoroughly, are less abrasive on clothes, and can fit larger capacity loads in the same size drum.

Dishwashers

- High-efficiency dishwashers use 2.1 to 7 gallons of water per load.
- Replacing older, inefficient models can cut dishwasher water use in half.

Don't Wait to Fix Leaks!

Leaks waste both water and energy and can account for 14 percent or more of your water bill.

Use your water meter to check for invisible leaks.

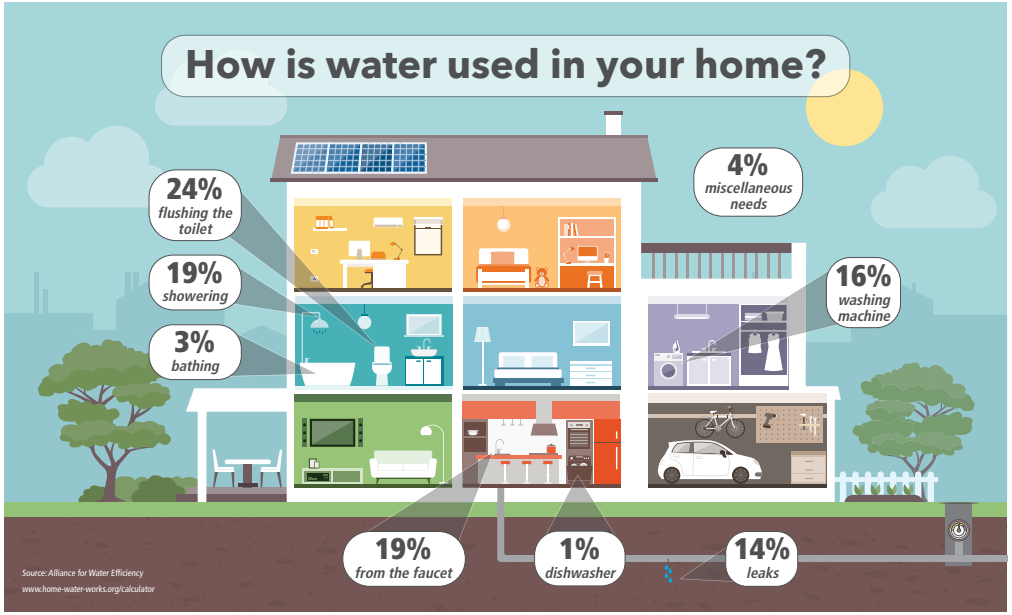
- Turn off all faucets and any water-using appliances.
- Read the dial on the water meter and record the numbers. (It is often located along the property line near the street.)
- Recheck the meter after 15 to 20 minutes.

If the numbers on the meter changed while no water was used, you have a leak!

If your utility offers customer dashboards, regularly check your usage throughout the month and watch for abnormally high readings, which may indicate a leak.

How much water do you use?

Alliance for Water Efficiency's Water Calculator
www.home-water-works.org/calculator



Texas Water Development Board

Texas Water Development Board
1700 North Congress Avenue
Austin, TX 78701

512-463-7847

www.twdb.texas.gov

Stay connected:

WATER IQ
Know your water.

www.wateriq.org

OUTDOOR TIPS

One inch of water per week in the summer will keep most Texas grasses healthy. To determine how long you should run your sprinklers, place straight-edged cans at different distances away from the sprinkler and time how long it takes to fill an average of 1 inch of water in each can.

Don't abuse the benefits of an automatic sprinkler system by over-watering. Set it to provide thorough but infrequent watering. Check sprinkler heads regularly to make sure they are working properly. Install rain shut-off devices and adjust sprinklers to eliminate coverage on pavement.

Prevent evaporation of water. Water lawns early in the morning or in the evening during the hotter summer months. Never water on windy days. Use drip irrigation systems for bedded plants, trees, or shrubs and use low-angle sprinklers for lawns. Cover pools and spas. This can save the equivalent of your pool volume each year!

Plant water-efficient, well-adapted, and/or native shrubs, trees, and grasses. Choose plants that are drought and heat tolerant and can survive the minimum winter temperatures in your area. In odd-shaped areas, use drought-tolerant groundcover instead of grass. Many cities provide lists of water-efficient plants.

Harvest the rain. Buy a rain barrel or a cistern and collect the water from your gutters to water your plants.

Use your water efficiently. Don't waste water by cleaning patios or sidewalks with it; use a broom. For plants that need more water, use a hose or watering can to give them additional water.

Keep grass 3 inches tall during the summer and don't cut more than one-third of its length at one time. Don't scalp lawns when mowing during hot weather. Taller grass holds moisture better. Leave lawn clippings on the lawn instead of bagging.

Use lots of mulch around your shrubs and trees. It will retain moisture, reduce run-off, moderate soil temperatures, and help with weed control.

Don't over-fertilize! Get a soil kit to determine what nutrients your soil needs. If you apply fertilizer only in the spring and fall, your grass will be healthy, use less water, and require less mowing.

Use a car wash that recycles water. If you are washing your car at home, use a bucket of soapy water and a hose nozzle that shuts off the water while you scrub.

Printed on recycled-content paper

Texas Water Development Board

www.twdb.texas.gov

P.O. Box 13231
Austin, Texas 78711-3231

WATER IQ℠
Know your water.
www.wateriq.org

Visit the following Web site for additional information.

www.epa.gov/watersense

rev. 05/12

WATER CONSERVING TIPS

USING WATER MORE EFFICIENTLY will not only save money but, more importantly, will also help protect the quality of life of future Texans.

With the vastness of Texas, it's easy to forget two important facts about our state: we are subject to frequent droughts, and our population is projected to double in the next 50 years. The cost of developing new or additional supplies in that same time period is estimated to be $30.7 billion.

To ensure that we have enough cost-effective water for current and future Texans, we need to reduce the amount of water we waste.

POSSIBLE WATER SAVINGS

- High-efficiency toilets, water-efficient washing machines, rainwater harvesting systems, and water-efficient landscaping can all help reduce water use.
- Water-efficient showerheads and aerators for faucets can significantly reduce the amount of water you use. In fact, installing a water-efficient showerhead is one of the most effective water-saving steps you can take inside your house.
- Leaky faucets and toilets can waste thousands of gallons of water monthly, and they are inexpensive to fix. A few small changes in your water use habits can make a huge difference in water savings.
- In the summer, outdoor water use can account for 50 percent or more of total water use. With proper management, you can have a beautiful, healthy landscape and reduce your water use significantly. This can amount to hundreds of dollars in savings a year in water and often wastewater costs.

INDOOR TIPS

Bathroom

- Replace your showerhead with a water-efficient model.
- Get in the shower as soon as the water becomes warm enough.
- Take short showers.
- Take a shower instead of a bath. A shower with a water-efficient showerhead often uses less water than a bath.
- Reduce the level of water used in a bathtub by 1 or 2 inches if a shower is not available.
- Turn off the water while you are shaving. Fill the sink with hot water instead of letting the water run continuously.
- Replace your old toilet with a high-efficiency toilet that uses 1.3 gallons per flush.
- Test toilets for leaks. Once in awhile, take the top off of your toilet tank and watch it flush. Do you notice any leaks? Yes? Replace the flapper or rubber washer. Don't forget about those less obvious leaks. Add a few drops of food coloring or a dye tablet to the water in the tank, but do not flush the toilet. If the coloring appears in the bowl within a few minutes, the toilet has a leak that needs to be repaired.
- Never use the toilet to dispose of trash.
- Don't waste water when brushing your teeth or washing your hands. Shut off the water until it's time to rinse.

Kitchen

- Run the dishwasher only when full. This practice will save water, energy, detergent, and money. If your dishes are not very dirty, use the short wash cycle. You can spend less money on water and energy by installing a high-efficiency dishwasher.
- Install faucet aerators. You'll never notice the difference, and you'll cut your sink water consumption in half! Also, don't ignore leaky faucets; they waste lots of water.
- Keep a container of water in the refrigerator. It will be refreshingly cool and won't waste water.
- Dry scrape dishes instead of rinsing. Your dishwasher will take care of the rest.
- Use garbage disposals sparingly. They can waste water unnecessarily.
- Soak pans rather than scrubbing them while the water is running.
- Rinse your vegetables in a pan of cold water; it doesn't take gallons of water to get the dirt off.

Laundry room

- Conventional washing machines use 32 to 59 gallons of water per load.
- Wash only full loads.
- Use the lowest water level setting on the washing machine for light or partial loads whenever possible.
- Use cold water as often as possible to save energy and conserve hot water for uses that cold water cannot serve.

Additional tips

- Don't ignore leaky faucets; they are usually easy and inexpensive to repair. Turn off the valve under the sink until you get around to repairing the leak. A slow drip can waste as much as 170 gallons of water each day and will add to the water bill.
- Know where your master water shut-off valve is in case a pipe bursts. Insulate hot water pipes. You won't waste water waiting for it to get hot, and you will save energy too.
- Install water-softening systems only when necessary, and if you have one, save water and salt by running the minimum amount of regenerations necessary to maintain water softness.
- Replace water-to-air heat pumps and air conditioners with air-to-air if you are purchasing new units. They are just as efficient and do not waste water.
- Find other uses for water rather than letting it go down the drain, such as watering house plants with fish tank water.

GOAL 4.3

CONTROLLING AND PREVENTING SUBSIDENCE

Objectives

1 *The District has reviewed the pertinent portions (Section 4.1.1 and 4.2.4) of the Texas Water Development Board's subsidence risk report: **I**dentification of the Vulnerability of the Major and Minor Aquifers of Texas to Subsidence with Regard to Groundwater Pumping, – as well as other sources for applicability to the Southeast Texas Groundwater Conservation District in an effort to better proactively manage subsidence.*

At this time, there are no known occurrences of subsidence within the District. The District proactively strives to prevent subsidence from occurring by applying its Rules, meeting the goals of its management plan, and participating in joint planning efforts in both GMA 14 and the Region I Water Planning Group. Subsidence is one of the main considerations in groundwater management area planning and must be taken into consideration in the desired future conditions process prior to adopting new desired future conditions. ***The District will participate in this process by attending at least one Groundwater Management Area 14 meeting each year.***

2. *Each year, the District will review the data from subsidence monitoring locations within the District boundaries and may pursue installation of additional PAM or CORs subsidence monitoring locations.*

Performance Standard

1 *A copy of the Groundwater Management Area 14's meeting notice/agenda and sign-in sheets (or any other available evidence of attendance) will be included in the District's annual report.*

2. *Each year, a summary of the data related to subsidence monitoring stations within the District and installation of additional sites will be included in the Annual Report submitted to the Board of Directors of the District.*

GOAL 4.3

OBJECTIVE 1

Groundwater Management Area 14 (GMA 14) met twice in 2022, on January 5, 2022 and February 23, 2022. The notices/agendas for the 2022 meetings, as well as the sign-in sheets, are attached.

OBJECTIVE 2

GMA 14 (of which the District is a member), adopted new Desired Future Conditions (DFCs) on February 23, 2022. On June 15, 2022 the Texas Water Development Board deemed the DFC submittal to be administratively complete and on July 14, 2022 the District adopted the DFCs specific and relevant to the District.

The new DFCs include "multiple metrics", one of which is subsidence based. The subsidence based metric is "…no more than an average of 1.0 additional foot of subsidence between 2009 and 2080".

To track and monitor subsidence within the District, the District will utilize data made available by the Harris-Galveston Subsidence District (HGSD). The HGSD operates a network of their own subsidence monitoring stations and collects data from other sites throughout the greater Houston area, and makes this data available to the public. At the time of this report, data from only one subsidence monitoring device is readily available. The District has been working with HGSD to make available the data from the other TxDot Continuously Operating Reference Stations (CORS) within the District. Attached is an email from Ms. Ashely Greuter, P.G., Director of Research and Water Conservation at the HGSD confirming that the data from the other TxDot sites within the District will be added to their network and made readily available to the public.

The site with data currently available is identified as CORS TXKO. The station is located in Kountze, Texas at the TxDot facility at 1942 US Hwy. 69. Attached is a location map for the site, a site summary, and graphs showing 5 Year Subsidence Rate and Change in Ellipsoid Height. The Data provided from this site shows a very nominal change in surface elevation, the change being a rise in the elevation and not a drop. The summary indicates a Vertical Displacement Rate of 0.11 cm/yr and a Total Displacement of 0.7 cm.

GROUNDWATER MANAGEMENT AREA 14
JOINT PLANNING COMMITTEE MEETING

NOTICE OF OPEN MEETING

As required by Section 36.108(e), Texas Water Code, a meeting of the **Groundwater Management Area 14 Joint Planning Committee**, comprised of representatives from the following groundwater conservation districts located wholly or partially within Groundwater Management Area 14: Bluebonnet GCD, Brazoria County GCD, Lone Star GCD, Lower Trinity GCD, and Southeast Texas GCD—will be held on **Wednesday, January 5, 2022 at 9:30 A.M. at the offices of the Harris-Galveston Subsidence District, located at 1660 W. Bay Area Blvd., Friendswood, Texas 77546.**

The items of business to be considered and transacted during the meeting are as follows:

1. Call to order;
2. Confirmation of receipt of posted notices;
3. Welcome and Introductions;
4. Public comment;
5. Discussion and possible action to approve minutes of the October 5, 2021 GMA 14 Joint Planning Meetings;
6. Update from Texas Water Development Board and discussion of any related items of interest to GMA 14;

Meeting will be convened as a meeting of the GMA 14 Joint Planning Interlocal Agreement Participants.

7. Discussion and possible action regarding joint planning, the DFCs, and the path forward for GMA 14 to accomplish statutory mandates of Chapter 36.108;

GMA 14 Interlocal Agreement Participants meeting will be adjourned, and the meeting of the GMA 14 District Representatives will reconvene.

8. Discussion, consideration, and possible action to revise and/or adopt DFCs for GMA 14;
9. Discussion, consideration and possible action regarding the draft Explanatory Report;
10. Review, discuss and consider member district management plans as required by Chapter 36.108(c);
11. Discussion and possible action regarding next meeting date, location, and agenda items;
12. Meeting Adjourned.

Comments concerning any aspect of this meeting should be directed to Mr. John Martin of the Southeast Texas Groundwater Conservation District, P.O. Box 1407, Jasper, TX 75951; jmartin@setgcd.org, or (409) 383-1577.

Come to hand and posted on a Bulletin Board in the Courthouse, _____ County, Texas, on this, the _____day of November/December 2021.

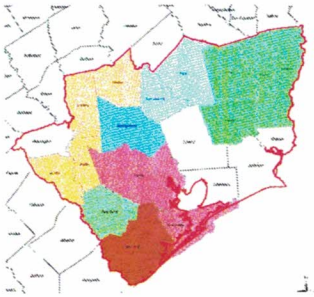
John M Martin

John Martin, Chairman
GMA 14 Planning Group

_____ Deputy Clerk

_____ County, Texas

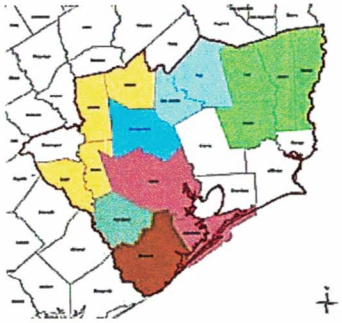
These public meetings are available to all persons regardless of disability. If you require special assistance to attend the meeting please contact the Southeast Texas Groundwater Conservation District, (409) 383-1577, at least three working days prior to the meeting, so that appropriate arrangements can be made.



GMA 14
MEMBER AND INTERLOCAL SIGN IN SHEET

January 5, 2022
9:30

Member District	District Representative	Date	Signature
Bluebonnet GCD	Zach Holland		Zach Holland
Brazoria County GCD	Beverly Hopkins	1-5-22	BH
Lone Star GCD	~~Harry Hardman~~ Samantha Reiter	1.5.22	SReiter
Lower Trinity GCD	Gary Ashmore	" "	
Southeast Texas GCD	John Martin	1-5-22	
Interlocal Participant	**Representative**	**Date**	**Signature**
Harris-Galveston Subsidence District	Michael Turco	1-5-2022	
Fort Bend Subsidence District	Robert Thompson	1/5/22	
Washington County	Kirk Hanatt	1.5.22	
Chambers County			



GMA 14 SIGN IN SHEET

January 5, 2022

9:30 AM

Request to Speak? Yes / No	NAME	AFFILIATION	CITY, STATE, ZIP	E-MAIL
No	Jishnu Nair	Community Impact Newspaper	Houston TX 77060	jnair@ci.news
No	Ed Shackelford	SJRA	Conroe Tx 77304	EShackelford@SJRA.NET
No	Wade Oliver	INTERA	Sugar Land, TX 77479	woliver@intera.com
No	Bill Hutchison	Consultant	Jamaica Beach TX	
No	John Supt	Washington County	Brenham TX 77833	jdunnenberger@WA County.com
NO	Beverly Hopkins	Brazoria GCD	Angleton TX 77515	Bhopkins@brazoria-county.com
NO	Michael White	Brazoria GCD	Angleton, TX 77515	MichaelW@brazoria-county.com

Attachment "A"

GROUNDWATER MANAGEMENT AREA 14
JOINT PLANNING COMMITTEE MEETING

NOTICE OF OPEN MEETING

As required by Section 36.108(e), Texas Water Code, a meeting of the **Groundwater Management Area 14 Joint Planning Committee**, comprised of representatives from the following groundwater conservation districts located wholly or partially within Groundwater Management Area 14: Bluebonnet GCD, Brazoria County GCD, Lone Star GCD, Lower Trinity GCD, and Southeast Texas GCD—will be held on **Wednesday, February 23, 2022 at 10:00 A.M. at the offices of the Harris-Galveston Subsidence District, located at 1660 W. Bay Area Blvd., Friendswood, Texas 77546.**

The items of business to be considered and transacted during the meeting are as follows:

1. Call to order;
2. Confirmation of receipt of posted notices;
3. Welcome and Introductions;
4. Public comment;
5. Discussion and possible action to approve minutes of the January 5, 2022 GMA 14 Joint Planning Meetings;
6. Update from Texas Water Development Board and discussion of any related items of interest to GMA 14;

Meeting will be convened as a meeting of the GMA 14 Joint Planning Interlocal Agreement Participants.

7. Discussion and possible action regarding joint planning, the DFCs, and the path forward for GMA 14 to accomplish statutory mandates of Chapter 36.108;

GMA 14 Interlocal Agreement Participants meeting will be adjourned, and the meeting of the GMA 14 District Representatives will reconvene.

8. Discussion, consideration and possible action regarding the draft Explanatory Report;
9. Review, discuss and consider member district management plans as required by Chapter 36.108(c);
10. Discussion and possible action regarding next meeting date, location, and agenda items;
11. Meeting Adjourned.

Comments concerning any aspect of this meeting should be directed to Mr. John Martin of the Southeast Texas Groundwater Conservation District, P.O. Box 1407, Jasper, TX 75951; jmartin@setgcd.org, or (409) 383-1577.

Come to hand and posted on a Bulletin Board in the Courthouse, _____ County, Texas, on this, the _____day of January/February 2022.

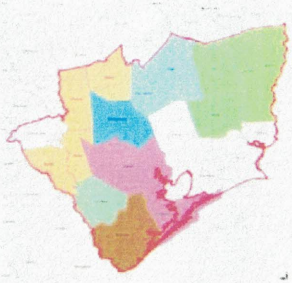
John M Martin

John Martin, Chairman
GMA 14 Planning Group

_____ Deputy Clerk

_____ County, Texas

These public meetings are available to all persons regardless of disability. If you require special assistance to attend the meeting please contact the Southeast Texas Groundwater Conservation District, (409) 383-1577, at least three working days prior to the meeting, so that appropriate arrangements can be made.

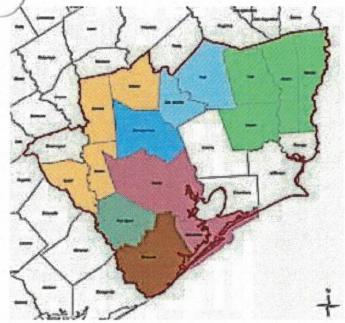


GMA 14
MEMBER AND INTERLOCAL SIGN IN SHEET

February 23, 2022
10:00 AM

Member District	District Representative	Date	Signature
Bluebonnet GCD	Zach Holland	1/	Zach Holland
Brazoria County GCD	Beverly Hopkins	1/	BH
Lone Star GCD	Samantha Reiter	1/	SReiter
Lower Trinity GCD	Gary Ashmore	2-23-22	
Southeast Texas GCD	John Martin	2-23-22	
Interlocal Participant	**Representative**	**Date**	**Signature**
Harris-Galveston Subsidence District	Michael Turco	2/23/22	
Fort Bend Subsidence District	Robert Thompson	2/23/22	
Washington County	Kirk Haynath	2/23/22	Kirk Haynath
Chambers County	Judge Willcox	2-23-22	Judge Willcox

Attachment "A"



GMA 14 SIGN IN SHEET

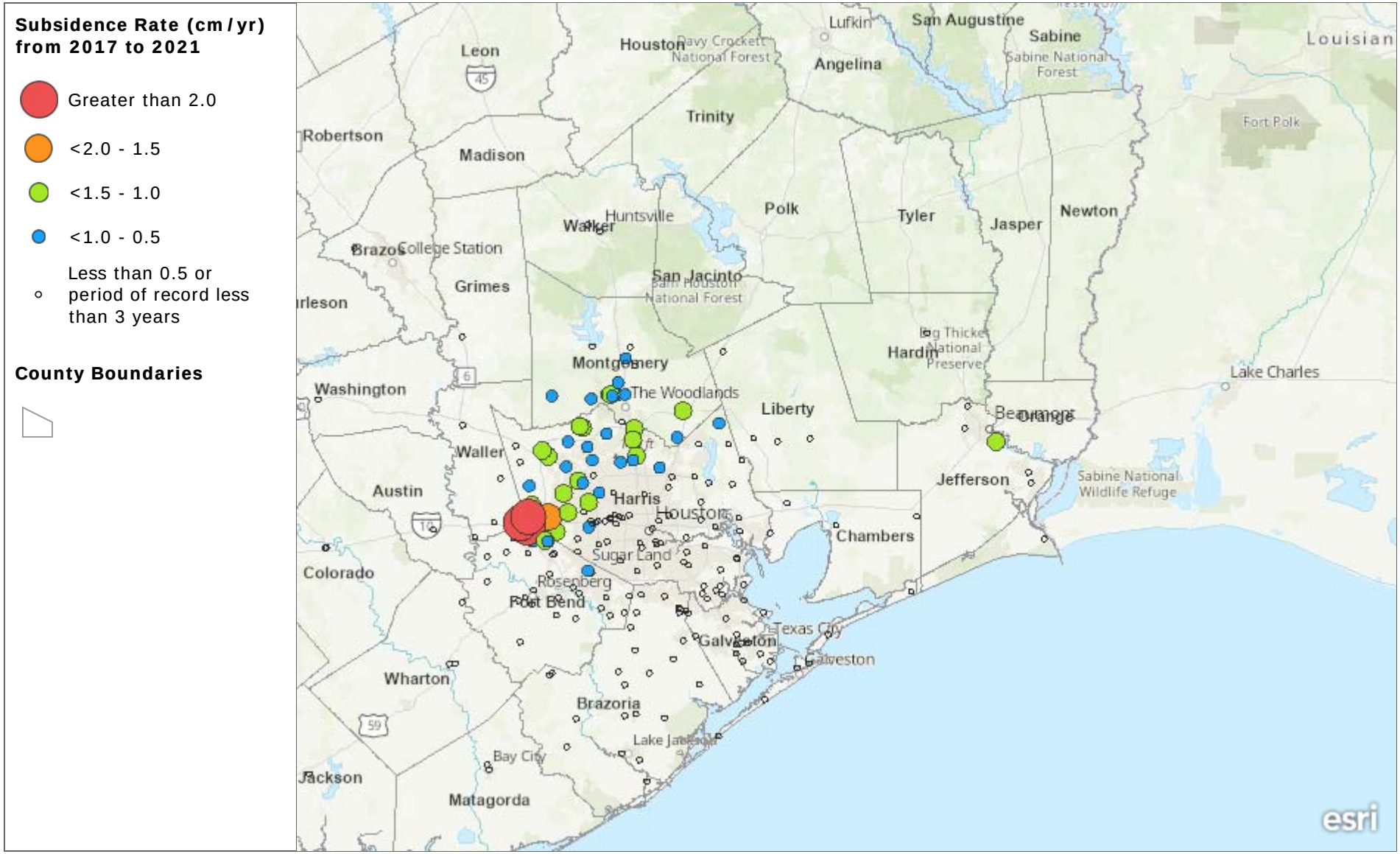
February 23, 2022

10:00 AM

Request to Speak? Yes / No	NAME	AFFILIATION	CITY, STATE, ZIP	E-MAIL
N	Wade Oliver	INTERA	Sugar Land, TX 77478	[redacted]
N	Bill Hutchison	Consultant	Jamaica Beach TX 77554	billhutch@texasgw.com
N	Stacey Reese	Consultant	Austin, TX	Stacey@staceyreese.law
N	Philip Tauer	FNI	Houston, TX 77024	philip.tauer@fnisc.com
N	Beverly Hopkins	BCGCD	Angleton, TX 77515	BeverlyH@brazoria-county.com
N	Michael White	BCGCD	Angleton, TX 77515	MichaelW@brazoria-county.com

Attachment "A"

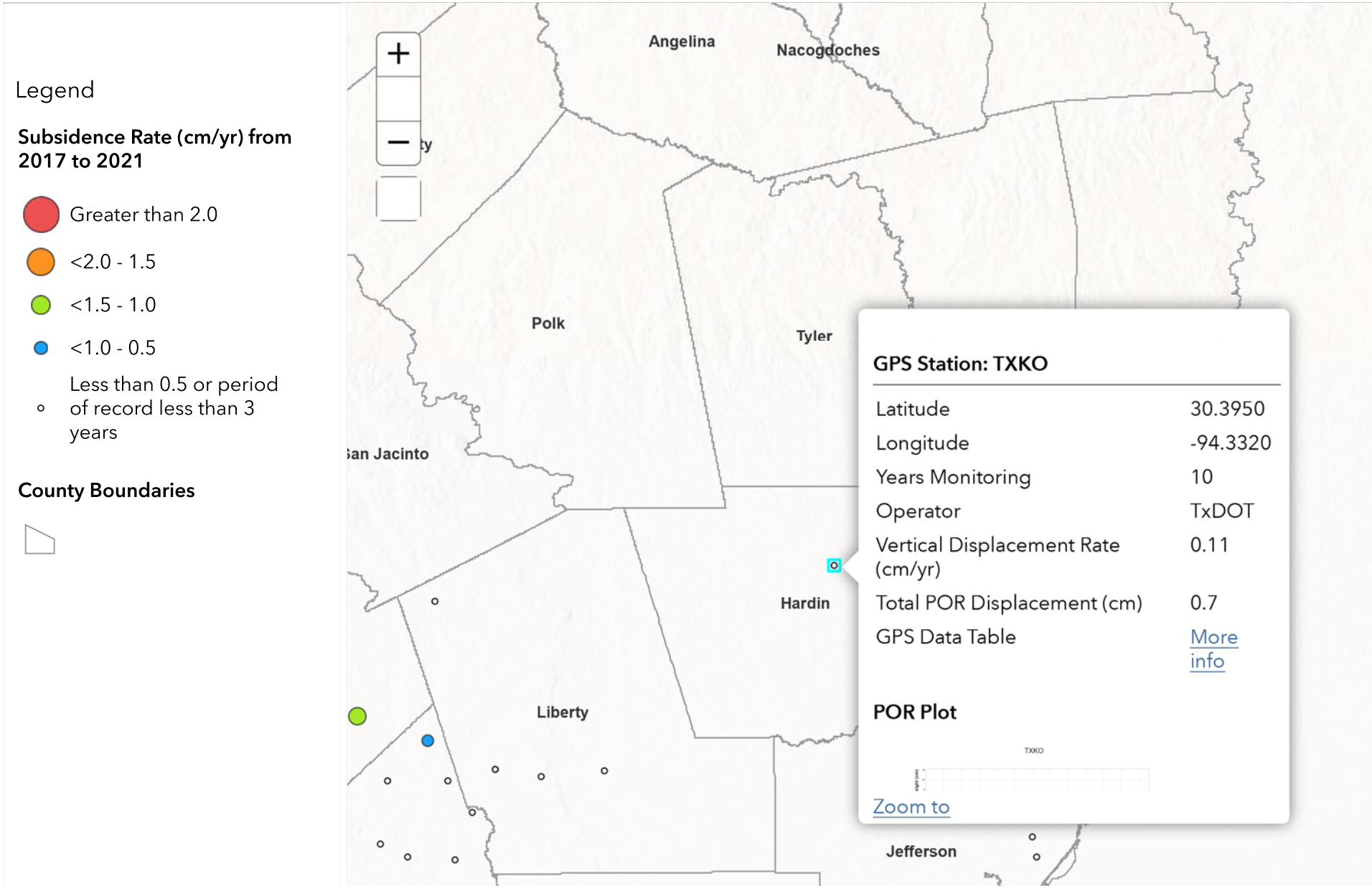
Subsidence Rates in Harris and Surrounding Counties, 2017-2021



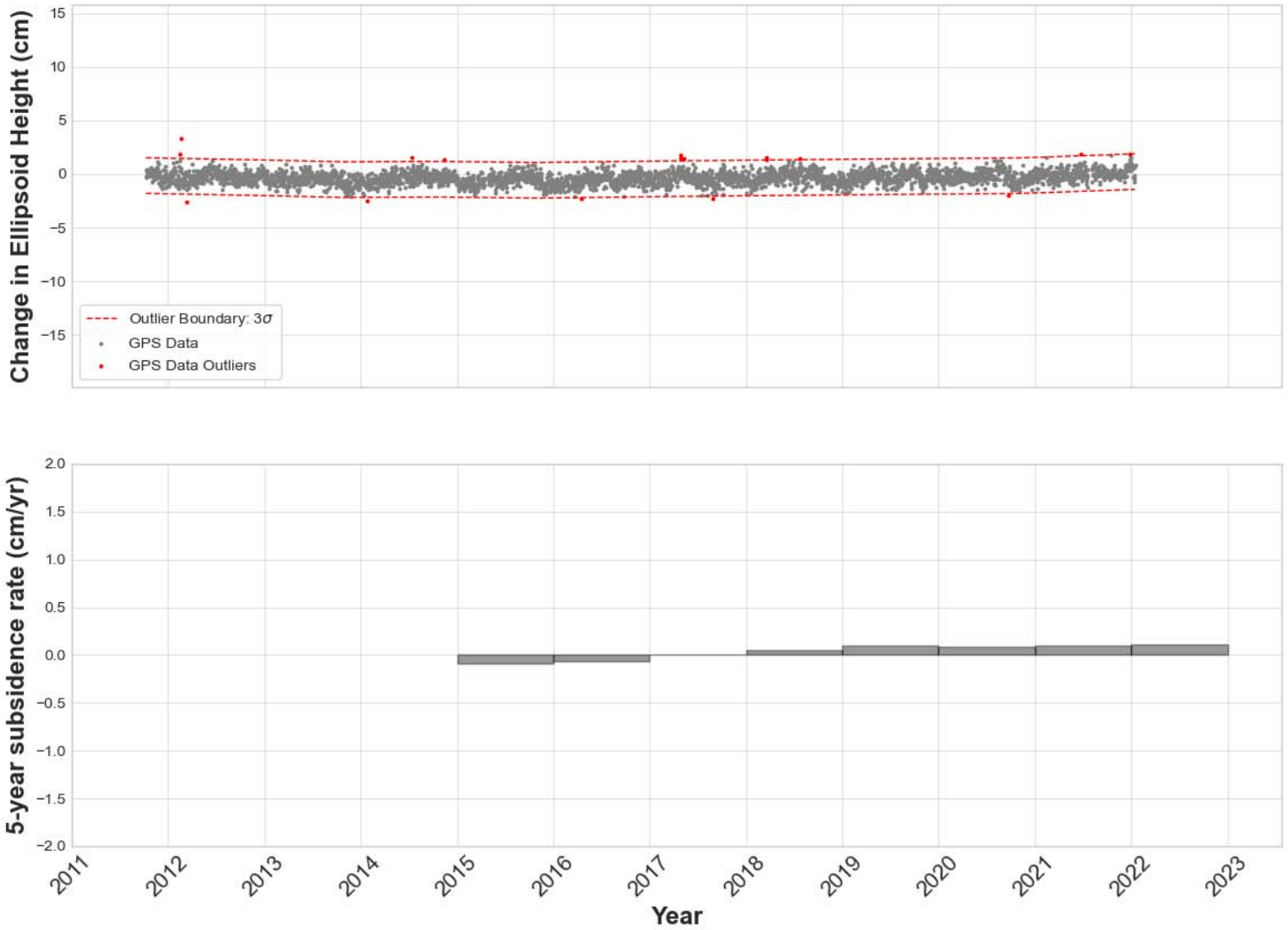
Subsidence rates in Harris, Galveston, and surrounding counties, Texas, USA. Annual rate of change in ellipsoidal height (vertical displacement rate) measured in centimeters per year from GPS data collected from 2017 to 2021. Period of record (POR) plots for each station are included in the link provided in the station popup.

ArcGIS ▾ Subsidence Rates in Harris and Surrounding Counties, 2017-2021 Open in Map Viewer

Details | Basemap | Share Print | Measure Find address or place



TXKO



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

Decimal-Year	NS(cm)	EW(cm)	UD(cm)	sigma-NS(cm)	sigma-EW(cm)	sigma-UD(cm)
2011.7700	-0.1492	-0.1503	-0.2544	0.0437	0.0173	0.0470
2011.7728	0.0296	0.1325	-0.2629	0.0449	0.0185	0.0486
2011.7755	-0.0411	0.1748	-0.2126	0.0480	0.0193	0.0517
2011.7782	-0.1086	-0.1027	0.3462	0.0438	0.0171	0.0471
2011.7810	0.2693	-0.0543	0.3837	0.0489	0.0201	0.0529
2011.7837	0.0751	-0.0087	0.4516	0.0465	0.0176	0.0497
2011.7864	-0.1530	-0.1218	0.3240	0.0449	0.0172	0.0481
2011.7892	0.0398	-0.1849	0.0443	0.0447	0.0177	0.0481
2011.7919	0.0657	-0.0777	0.0723	0.0469	0.0186	0.0505
2011.7947	0.0357	-0.2450	0.2671	0.0496	0.0197	0.0534
2011.7974	-0.0431	-0.0751	0.0577	0.0450	0.0175	0.0483
2011.8001	-0.1628	-0.1998	0.1609	0.0431	0.0168	0.0462
2011.8029	0.0579	-0.2394	0.0067	0.0439	0.0171	0.0471
2011.8056	0.1504	-0.0391	0.0426	0.0442	0.0170	0.0474
2011.8084	-0.0892	0.1282	0.3760	0.0422	0.0163	0.0453
2011.8111	-0.0493	-0.0864	-0.1883	0.0436	0.0162	0.0465
2011.8138	0.0490	-0.0308	0.1988	0.0448	0.0176	0.0481
2011.8166	-0.0747	-0.2350	0.5098	0.0435	0.0164	0.0464
2011.8193	0.0751	-0.0062	0.5742	0.0448	0.0175	0.0481
2011.8220	0.0783	0.0855	0.2304	0.0474	0.0182	0.0508
2011.8248	0.1584	-0.1110	0.1353	0.0443	0.0168	0.0474
2011.8275	0.1051	-0.1215	0.3238	0.0470	0.0184	0.0504
2011.8303	0.0618	0.0048	0.0688	0.0453	0.0173	0.0485
2011.8330	0.1554	0.0251	-0.6804	0.0452	0.0170	0.0483
2011.8357	0.1147	-0.0114	0.1534	0.0463	0.0178	0.0496
2011.8385	0.2320	-0.1807	0.3807	0.0438	0.0172	0.0470
2011.8412	0.0963	-0.0275	-0.0528	0.0450	0.0177	0.0484
2011.8439	-0.0067	0.2499	0.3207	0.0452	0.0173	0.0484
2011.8467	-0.0438	0.1547	-0.6344	0.0440	0.0165	0.0470
2011.8494	-0.0169	0.0479	-0.1759	0.0460	0.0180	0.0494
2011.8522	0.0583	0.0425	0.3836	0.0417	0.0160	0.0446
2011.8549	0.0859	0.2217	0.3159	0.0458	0.0175	0.0490
2011.8576	0.4008	0.0831	-0.3921	0.0467	0.0192	0.0505
2011.8604	0.4136	-0.1195	-0.4685	0.0462	0.0175	0.0494
2011.8631	0.2886	-0.1217	-0.0743	0.0431	0.0158	0.0460
2011.8658	0.0749	-0.0100	0.0540	0.0444	0.0173	0.0477
2011.8686	0.1243	-0.0224	0.3792	0.0462	0.0181	0.0497
2011.8713	0.0913	-0.1473	0.4428	0.0421	0.0155	0.0448
2011.8741	0.0865	-0.1619	0.0424	0.0468	0.0179	0.0501
2011.8768	0.3099	-0.1196	0.3087	0.0449	0.0172	0.0481
2011.8795	0.2835	0.1829	-0.4216	0.0450	0.0167	0.0480
2011.8823	0.0273	0.2524	-0.1007	0.0457	0.0172	0.0489
2011.8850	0.0885	0.0971	0.6221	0.0428	0.0162	0.0458
2011.8877	0.2022	0.1259	0.4834	0.0455	0.0177	0.0488
2011.8905	0.2525	0.1303	1.1302	0.0443	0.0174	0.0476

2021.9685	1.0750	-0.2706	0.3299	0.0472	0.0166	0.0500
2021.9713	1.3016	-0.4300	0.3738	0.0463	0.0157	0.0489
2021.9740	1.0720	-0.2955	0.4694	0.0436	0.0145	0.0459
2021.9767	1.1289	-0.1544	0.4279	0.0444	0.0150	0.0469
2021.9795	1.1591	-0.1282	0.8990	0.0457	0.0153	0.0482
2021.9822	1.2023	-0.3295	1.9073	0.0467	0.0161	0.0494
2021.9849	1.0854	-0.5071	0.8903	0.0462	0.0158	0.0489
2021.9877	1.0073	-0.5543	1.3284	0.0444	0.0149	0.0469
2021.9904	1.0041	-0.1763	1.3687	0.0445	0.0147	0.0468
2021.9932	1.0164	-0.2019	1.5123	0.0473	0.0150	0.0496
2021.9959	1.0030	-0.2738	0.6566	0.0460	0.0156	0.0486
2021.9986	1.0650	-0.3081	1.0697	0.0452	0.0155	0.0477
2022.0014	1.0015	-0.2618	1.0507	0.0445	0.0143	0.0467
2022.0041	1.1721	-0.2390	0.3148	0.0481	0.0168	0.0509
2022.0068	1.3372	-0.2628	0.4990	0.0461	0.0155	0.0486
2022.0096	1.3160	-0.1107	0.4825	0.0457	0.0152	0.0482
2022.0123	1.2200	0.0500	0.6402	0.0445	0.0143	0.0467
2022.0151	1.2387	-0.4043	0.7298	0.0460	0.0154	0.0485
2022.0178	1.4194	-0.0155	0.6312	0.0464	0.0156	0.0490
2022.0205	1.0527	-0.0852	0.7162	0.0447	0.0151	0.0472

John Martin

From: AGreuter@subsidence.org
Sent: Friday, October 14, 2022 9:39 AM
To: John Martin
Subject: RE: Subsidence Monitor Stations in Southeast Texas GCD

You're most welcome! I'm happy to help and yes, the Annual Groundwater Report is released the same time. We provide preliminary data at the Hearing which is usually the last week of April and then present to our Board in the May meeting. Once the Board approves, we post the content to our website which is usually the same week as the Board meeting (mid-May). And thank you for your offer to help. I don't believe there's anything at this time but I'll keep that in mind. 😊

If you need data sooner, I can try to work something out for the TxDOT CORS. Just let me know.

Hope you enjoy the upcoming weekend!

Truly,

Ashley Greuter, P.G.
Director of Research and Water Conservation
Harris-Galveston Subsidence District
Direct: 281-956-2184
Visit smarteraboutwater.org to learn more about ways you can conserve water!

From: John Martin <jmartin@setgcd.org>
Sent: Friday, October 14, 2022 9:20 AM
To: Ashley Greuter <AGreuter@subsidence.org>
Subject: RE: Subsidence Monitor Stations in Southeast Texas GCD

Thanks Ashely,

You guys are awesome. Is the annual report released about the same time each year?
And if there is anything our District can do, just le me know.

-John Martin
Southeast Texas GCD
(409) 383-1577

From: AGreuter@subsidence.org <AGreuter@subsidence.org>
Sent: Thursday, October 13, 2022 9:30 AM
To: John Martin <jmartin@setgcd.org>
Subject: RE: Subsidence Monitor Stations in Southeast Texas GCD

Greetings John,

All is good here, thanks! Hope you're doing well too. Yes, we have added those extra TxDOT CORS but the data won't become available until next year. We have to wait until our Board approves the Annual Groundwater Report before we release the prior year data. You can access the raw data directly from TxDOT ftp; however, you would need someone to process it.

Let me check and see what I can do since those sites are owned and operated by TxDOT.

Truly,

Ashley Greuter, P.G.
Director of Research and Water Conservation
Harris-Galveston Subsidence District
Direct: 281-956-2184
Visit smarteraboutwater.org to learn more about ways you can conserve water!

From: John Martin <jmartin@setgcd.org>
Sent: Wednesday, October 12, 2022 9:35 AM
To: Ashley Greuter <AGreuter@subsidence.org>
Subject: Subsidence Monitor Stations in Southeast Texas GCD

Hi Ashley,

I hope all is well down your way. Last we spoke you had confirmed that you would be able to get the subsidence station data from the TXDot sites for our District. I was wondering where we are with that (and I use "we" very loosely as I know I'm not of any help – sorry). I had just checked your website and the interactive map and it is only showing the Hardin County site on it. Will the other sites/data be added to your interactive map or will the data only be made available upon request or is there some other place that I can find the data?

John Martin
Southeast Texas Groundwater
Conservation District
(409) 383-1577

GOAL 4.4

ADDRESSING CONJUNCTIVE SURFACE WATER MANAGEMENT ISSUES

OBJECTIVE

1. *The District will coordinate conjunctive surface water issues with the Angelina and Neches River Authority (ANRA), Lower Neches Valley Authority (LNVA), the Sabine River Authority (SRA), and the East Texas Regional Water Planning Group (also known as Region I), by either inviting the officials from the Planning Group to attend a District meeting at least once a year or by attending at least one of the East Texas Regional Water Planning Group meeting each year.*

PERFORMANCE STANDARD

1. *A copy of the invitation letters to the Planning Group and the surface water providers, as well as evidence that the letters have been sent, via either U.S. Postal Service (registered/return receipt) or email, will be included in the District's Annual Report, or a copy of the East Texas Regional Water Planning Group meeting notice(s) and sign in sheet(s) indicating a representative of the District was present will be included in the District's Annual Report.*

OBJECTIVE 1

In 2018 GMA 14 re-appointed Manager Martin as its representative to the East Texas Regional Water Planning Group ("Region I") and he served as Secretary until March of 2021 when the Region I Group appointed him Vice Chair. At the April 7, 2022 meeting the Chairman of the Region I, Kelley Holcomb, stepped down as the chairman elevating Manager Martin from Vice Chairman position to Interim Chairman, and subsequently at the October 19, 2022 meeting was unanimously approved to be Chairman. The District's President, Roger Fussell, is also a voting member of Region I, appointed on December 11, 2017. More recently, at the April 7, 2022 Region I meeting Director Starr was appointed to Region I as a voting member.

Although the Region I scheduled and posted three meetings in 2022, the March 23, 2022 meeting did not meet the required number of members needed for a quorum and therefore did not technically meet that day. The Region I Group met two other times in 2022 and each meeting was attended by either or both Manager Martin, President Fussell or Director Starr.

GOAL 4.4

In addition to being an active participant of the Region I Water Planning Group, the District is also a member of Groundwater Management Area 14. This group's goal is the regional planning for the shared groundwater resources within GMA 14 which is made up of 20 counties located over the northeastern portion of the Gulf Coast Aquifer.

The Desired Future Conditions ("DFCs") and associated Managed Available Groundwater data are integral parts of the regional water planning process and are developed wholly by the Groundwater Management Areas. Once DFC's are developed and approved by the TWDB, the TWDB issues a Managed Amount of Groundwater (MAG) report. GMA 14 finalized and approved new DFCs in 2022 and susequently a new MAG was made available (MAG GR 21-019). The Regional Water Planning Groups are then required to utilize the data contained in the MAGs in the development of the regional water plans.

The table below shows each water planning group, the date of the meeting and the District's representative(s) in attendance. A District representative was in attendance at 100% of both Region I and GMA 14 meetings; copies of the notices/agendas and sign-in sheets are attached. Sign-in sheets may not be available or may show that a member "signed in" virtually as Region I now allows for virtual attendance. Because of this, the meeting minutes for each meeting are included as they are the official record of the meeting and indicate all members who were "present".

Planning Group	Date of Meeting	Attendees
Region I Water Planning Group	March 23, 2022 No Official Actions Taken – Lack of Quorum	John Martin Roger Fussell
Region I Water Planning Group	April 7, 2022	John Martin Roger Fussell Robb Starr
Region I Water Planning Group	October 19, 2022	John Martin Roger Fussell Robb Starr
Groundwater Management Area 14	February 23, 2022	John Martin
Groundwater Management Area 14	January 5, 2022	John Martin

Additionally, all regular meeting notices/agendas of the Southeast Texas Groundwater Conservation District were provided via email to the surface water entities within the District, as well as to the Regional Water Planning Group, which then emails the notice to all Region I Members in an effort to encourage their attendance at our District meetings.

Region I
East Texas Regional Water Planning Group

Wednesday, March 23, 2022 • 10:00 AM
Nacogdoches Recreation Center
1112 North Street
Nacogdoches, Texas 75961
AGENDA

https://www.etexwaterplan.org/meetings/

1. Call to Order
2. Invocation & Pledge of Allegiance
3. Roll Call/Determination of Quorum
4. Consideration and Approval of the minutes of the August 18, 2021 meeting
5. Report from City of Nacogdoches – Stacy Corley
6. Reports of adjoining regions activity:
    a. Region C – Vacant
    b. Region D – John McFarland
    c. Region H – Scott Hall
7. Reports from Standing Committees:
    a. Executive Committee – Kelley Holcomb
    b. Finance Committee – Mark Dunn
    c. Bylaws Committee – David Alders
    d. Technical Committee – Scott Hall
    e. Nominations Committee – Monty Shank
8. Report from consultant team
    a. Review of 6th Cycle Water Planning schedule – Cynthia Syvarth
    b. Review of available Draft Projections & Methodology – Cynthia Syvarth
9. Reports from other state agencies, as necessary:
    a. Texas Water Development Board – Lann Bookout
    b. Texas Department of Parks & Wildlife – Stephen Lange
    c. Texas Department of Agriculture – Manual Martinez
    d. Texas Soil and Water Conservation Board – Rusty Ray
10. Consideration and Approval of nominations of planning group members to serve as a member and alternate to the Interregional Planning Council; and formally appoint liaisons for adjoining regions.
11. Consideration and Approval of blanket certification of administrative expenses for the 6th planning cycle contract No. 2148302561; and approve submission to the Texas Water Development Board as needed for reimbursement.
12. Consideration and Approval to authorize the City of Nacogdoches to negotiate and execute an amendment to the TWDB contract to incorporate the full scope of work and total project cost for the 2026 Regional Water Plans.
13. Consideration and Approval of Executive Committee appointments – Monty Shank

Region I
East Texas Regional
Water Planning Group

14. Public Comments (limited to 3 minutes)
15. General Discussion
16. Set Next Meeting Date –
17. Adjourn

Region I
East Texas Regional
Water Planning Group

Standing Committees
Wednesday, March 23, 2022 • 9:30 AM
AGENDA

The Region I East Texas Regional Water Planning Group has four standing committees. These committees function under the direction of the Region I East Texas Regional Water Planning Group as defined in the approved By-Laws. Committee meetings are held on an as needed basis. These Committees are:

Executive Committee (no meeting)

Nominations Committee

1) Discussion regarding Executive Committee appointments
2) Discussion regarding voting member vacancies
3) Discussion regarding adjoining region liaison appointments

By-Laws Committee (no meeting)

Finance Committee (no meeting)

Technical Committee (no meeting)

REGISTRATION ~~~ VOTING MEMBERS PLEASE INITIAL BY YOUR NAME 3-23-2022

NAME	ORGANIZATION	PHONE	EMAIL
Alders, David	Agriculture	936-569-1284	alders.david@gmail.com
Davis, Chris	Counties	903-683-2324	cojudge@cocherokee.org
Dietz, Kate	Municipalities	903-330-1421	Kdietz@tylertexas.com
Dunn, Mark	Small Business	936-699-3866	mdunn@dunnsinc.com
Fussell, Roger	Water Utilities	409-755-1559	rogerfussell2020@gmail.com RF
Gelwick, Stevan	Public	903-854-2490	S8PT@aol.com
Gorsich, David	Industries	409-239-4514	dgorsich@gmail.com david.m.gorsich@exxonmobil.com
Hall, Scott Yassin Gallardo	River Authorities	409-892-4011	scott.hall@lnva.org
Holcomb, Kelley	River Authorities	936-633-7543	kholcomb@anra.org
Jackson, Fred L.	Counties	409-835-8466	fjackson@co.jefferson.tx.us
Martin, John	GMA-14	409-383-0799	jmartin@setgcd.org
McBroom, Matthew	Environmental	936-468-2313	mcbroommatth@sfasu.edu
McFarland, John	GMA-11	936-568-9292	jmcfarland@pgcd.org
Montagne, David	River Authorities	409-746-2192	dmontagne@sratx.org
Shank, Monty	River Authorities	903-876-2237	mdsunra@dctexas.net
Stanton, Randy	Electric Power	409-347-5060	rstanto@entergy.com
Stelly, Terry	Public	409-728-0268	TerrySsmxd@Aol.com
Whitworth, Emily	Water District	903-330-1220	Ewhitowrth@ydhoo.com
Snyder, Mike	Electric Power	409-313-7595	msnyder@entergy.com
Vann, Mary - Alternate - Montagne			

Region I ETRWPG Public Meeting
Date: March 23, 2022

1112 North Street (2)
Nacogdoches Texas

REGISTRATION ~~~ PLEASE SIGN IN

NAME	ORGANIZATION	PHONE	EMAIL
Stacy Corley	City of Nac	936-559-2528	corleys@nactx.us
Lann Bookout	TWDB		Lann.bookout@texas.gov.com
Monty ~~D~~ SHANK	UNRMWA	903-876-2237	mdsunra@dctexas.net
Terry D. Stelly	Public	409-729-0268	TerrySsmxd@aol.com
Cynthia Syvarth	Plummer	512-687-2105	csyvarth@plummer.com
Chang Lee	Dallas Water utilities	214-670-5239	Chang.Lee@dallascityhall.com
Gary Ashmore	LTGCD	936-252-0911	Groundwater@Livingston.net
Robet Thornton	Rusk Co. GCD	903-657-1400	robert@rcgcd.org
April Sease	TSSWCB	936-462-7020	asease@tsswcb.texas.gov
David Albers			

Region I
East Texas Regional Water Planning Group

Thursday, April 7, 2022 • 10:00 AM
Nacogdoches Recreation Center
1112 North Street
Nacogdoches, Texas 75961
AGENDA

Click on link below to join meeing.

https://meet.google.com/pfz-zqkx-syo?hs=224

1. Call to Order
2. Invocation & Pledge of Allegiance
3. Roll Call/Determination of Quorum
4. Consideration and Approval of the minutes of the August 18, 2021 meeting
5. Consideration and Approval of Items related to East Texas Regional Water Planning Group Membership:
   a. Resignation of Voting Members
   b. Appointment of New Voting Members
6. Report from City of Nacogdoches – Stacy Corley
7. Reports of adjoining regions activity:
   a. Region C – Vacant
   b. Region D – John McFarland
   c. Region H – Scott Hall
8. Reports from Standing Committees:
   a. Executive Committee – Kelley Holcomb
   b. Finance Committee – Mark Dunn
   c. Bylaws Committee – David Alders
   d. Technical Committee – Scott Hall
   e. Nominations Committee – Monty Shank
9. Report from consultant team
   a. Review of 6th Cycle Water Planning schedule – Cynthia Syvarth
   b. Review of available Draft Projections & Methodology – Cynthia Syvarth
10. Reports from other state agencies, as necessary:
    a. Texas Water Development Board – Lann Bookout
    b. Texas Department of Parks & Wildlife – Stephen Lange
    c. Texas Department of Agriculture – Manual Martinez
    d. Texas Soil and Water Conservation Board –Trey Watson
11. Consideration and Approval of nominations of planning group members to serve as a member and alternate to the Interregional Planning Council; and formally appoint liaisons for adjoining regions.
12. Consideration and Approval of blanket certification of administrative expenses for the 6th planning cycle contract No. 2148302561; and approve submission to the Texas Water Development Board for reimbursement.

Region I
East Texas Regional
Water Planning Group

13. Consideration and Approval to authorize the City of Nacogdoches to negotiate and execute an amendment to the TWDB contract to incorporate the full scope of work and total project cost for the 2026 Regional Water Plans.
14. Consideration and Approval of Executive Committee appointments – Monty Shank
15. Public Comments (limited to 3 minutes)
16. General Discussion
17. Set Next Meeting Date –
18. Adjourn

Region I
East Texas Regional
Water Planning Group

Standing Committees
Thursday, April 7, 2022 • 9:30 AM
AGENDA

The Region I East Texas Regional Water Planning Group has four standing committees. These committees function under the direction of the Region I East Texas Regional Water Planning Group as defined in the approved By-Laws. Committee meetings are held on an as needed basis. These Committees are:

Executive Committee (no meeting)

Nominations Committee

1) Discussion regarding Executive Committee appointments
2) Discussion regarding voting member vacancies
3) Discussion regarding adjoining region liaison appointments

By-Laws Committee (no meeting)

Finance Committee (no meeting)

Technical Committee (no meeting)

Region I ETRWPG Public Meeting
Date: April 7, 2022

(1) **VIRTUAL MEETING**

REGISTRATION ~~~ VOTING MEMBERS PLEASE INITIAL BY YOUR NAME 4-7-2022

NAME	ORGANIZATION	PHONE	EMAIL
Alders, David present	Agriculture	936-569-1284	alders.david@gmail.com
Davis, Chris - virtually	Counties	903-683-2324	cojudge@cocherokee.org
Dietz, Kate – virtually	Municipalities	903-330-1421	kdietz@tylertexas.com
Dunn, Mark – virtually	Small Business	936-699-3866	mdunn@dunnsinc.com RJD
Fussell, Roger present	Water Utilities	409-755-1559	rogerfussell2020@gmail.com
Gelwicks, Stevan - Absent	Public	903-854-2490	S8PT@aol.com
Gorsich, David – virtually	Industries	409-239-4514	david.m.gorsich@exxonmobil.com
Hall, Scott – virtually	River Authorities	409-892-4011	scott.hall@lnva.org
Holcomb, Kelley present	River Authorities	936-633-7543	kholcomb@anra.org
Jackson, Fred L. present	Counties	409-835-8466	fred.jackson@jeffcotx.us fjackson@co.jefferson.tx.us
Martin, John present	GMA-14	409-383-0799	jmartin@setgcd.org
McBroom, Matthew present	Environmental	936-468-2313	mcbroommatth@sfasu.edu
McFarland, John present	GMA-11	936-568-9292	jmcfarland@pgcd.org
Montagne, David – Absent	River Authorities	409-746-2192	dmontagne@sratx.org
Shank, Monty D. – present	River Authorities	903-876-2237	mdsunra@dctexas.net
Stanton, Randy – Virtually	Electric Power		
Stelly, Terry D. - present	Public	409-728-0268	TerrySsmxd@Aol.com
Whitworth, Emily – Absent	Water District	903-330-1220	Ewhitowrth@yahoo.com
Snyder, Mike			
Mettauer, Matt			
Starr, Robb			
Wiesinger, Chris			

Region I ETRWPG Public Meeting
Date: April 7, 2022

(2)

1112 North Street
Nacogdoches Texas

REGISTRATION ~~~ PLEASE SIGN IN

NAME	ORGANIZATION	PHONE	EMAIL
Stacy Corley	City of Nacogdoches	936-559-2528	corleys@nactx.us
Cynthia Syvarth	Plummer	512.687.2185	csyvarth@plummer.com

Region I
East Texas Regional Water Planning Group

Wednesday, October 19, 2022 – 10:00 AM
Nacogdoches Recreation Center
1112 North Street
Nacogdoches, TX 75961
AGENDA

Meeting Details and Documents can be found at: https://www.etexwaterplan.org/meetings/
Remote Meeting Connection Information: https://meet.google.com/wxj-bpwb-cfk?hs=224

1. Call to Order
2. Invocation & Pledge of Allegiance
3. Roll Call/Determination of Quorum
4. Consideration and Approval of the minutes of the April 7, 2022 meeting
5. Consideration and Approval of items related to East Texas Regional Water Planning Group Membership:
    a. Resignation of Voting Members
    b. Appointment of New Voting Members
6. Reports from City of Nacogdoches – Cheryl Bartlett
7. Reports of adjoining regions' activity:
    a. Region C – John Martin
    b. Region D – John McFarland
    c. Region H – Scott Hall
8. Reports from Standing Committees:
    a. Executive Committee – John Martin
    b. Finance Committee – Mark Dunn
    c. Bylaws Committee – David Alders
    d. Technical Committee – Scott Hall
    e. Nominations Committee – Monty Shank
9. Report from consultant team:
    a. Review of 6th Cycle Water Planning schedule – Cynthia Syvarth
    b. Review of available Draft Projections & Methodology – Cynthia Syvarth
10. Reports from other state agencies, as necessary:
    a. Texas Water Development Board – Lann Bookout
    b. Texas Department of Parks & Wildlife – Stephen Lange
    c. Texas Department of Agriculture – Manual Martinez
    d. Texas Soil and Water Conservation Board – Trey Watson
11. Consideration and Approval of nominations of planning group members to serve as a member and alternate to the Inter-Regional Water Planning Group Committee

Region I
East Texas Regional
Water Planning Group

12. Consideration and Approval of Committee appointments
13. Discussion of Budget preparation for FY 22-23
14. Public Comments (limited to 3 minutes)
15. General Discussion
16. Set Next Meeting Date – January 18, 2023
17. Adjourn

Comments from members and the public will be accepted by the Planning Group as listed in the agenda items above. For questions, requests, or additional information outside of the general meeting, please visit the Planning Group website or contact the Planning Group Administrative Contact:

Website: https://www.etexwaterplan.org/

c/o City of Nacogdoches
PO Box 635030
Nacogdoches, Texas 75963-3030
Attn: Cheryl Bartlett
Region I Administrative Contact

936-559-2525
regioniwater@gmail.com

Wednesday, October 19, 2022
Nacogdoches Recreation Center
1112 North Street
Nacogdoches, TX 75961
AGENDA

The Region I East Texas Regional Water Planning Group has an Executive Committee and four additional standing committees. These committees function under the direction of the Region I East Texas Regional Water Planning Group as defined in the approved By-Laws. Committee meetings are held on an as needed basis. These Committees and their meeting times and agenda items are as follows:

Executive Committee – No Meeting

Nominations Committee – 9:30 AM

1. Discussion regarding Executive Committee appointments
2. Discussion regarding voting member vacancies

By-Laws Committee - No Meeting

Finance Committee - No Meeting

Technical Committee - No Meeting

Region I Water User Group Meeting, Oct 19, 2022

(1)

Sign -in	Name	Organization	Phone	Email
VOTING MEMBERS			*Please check your contact information*	
	X Alders, David	Agriculture	936-569-1284	alders.david@gmail.com
	✓ Davis, Chris 903-541-6079 cell	Counties	903-683-2324	cojudge@cocherokee.org
Virtual	✓ Dietz, Kate ✓	Municipalities	903-330-1421	kdietz@tylertexas.com
	✓ Fussell, Roger o	Water Utilities	409-755-1559	rogerfussell2020@gmail.com
	X Gorsich, David	Industries	409-239-4514	david.m.gorsich@exxonmobil.com
	✓ Hall, Scott o	River Authorities	409-892-4011	scott.hall@lnva.org
Virtual	✓ Gallardo, Yassin ✓	*(proxy for Scott Hall)*		
	✓ Holcomb, Kelley o	River Authorities	936-633-7543	kholcomb@anra.org
Virtual	✓ Jackson, Fred L. ✓ o	Counties	409-835-8466	fjackson@co.jefferson.tx.us
	✓ Martin, John	GMA-14	409-383-0799	jmartin@setgcd.org
	✓ McBroom, Matthew o	Environmental	936-468-2313	mcbroommatth@sfasu.edu
	✓ McFarland, John	GMA-11	936-568-9292	jmcfarland@pgcd.org
	X Mettauer, Matthew	Agriculture	936-598-9400	matthew@mettauerlaw.com
Virtual	✓ Montagne, David ✓	River Authorities	409-746-2192	dmontagne@sratx.org
	✓ Shank, Monty o	River Authorities	903-876-2237	mdsunra@dctexas.net
Virtual	✓ Snyder, Mike ✓ o	Industries	409-981-2114	msnyder@entergy.com
Virtual	✓ Starr, Robb ✓	Water Utilities	409-755-1559	robbs@lumbertonmud.com
	✓ Stelly, Terry	Public	409-728-0268	TerrySsmxd@Aol.com
	X Whitworth, Emily o	Water District	903-330-1220	Ewhitowrth@yahoo.com
	✓ Wiesinger, Christopher	Small Business	214-683-0567 cell	cwiesinger@gmail.com

Region I Water User Group Meeting, Oct 19, 2022

Sign -in	Name	Organization	Phone	Email
NON VOTING MEMBERS / GUESTS				
	Bookout, Lann	TWDB	512-936-9439	lann.bookout@twdb.texas.gov
	Martinez, Manuel	Tx Dept of Agriculture	713-677-9814	manuel.martinez@texasagriculture.gov
	Watson, Trey	Tx State Soil & Water Conserv Bd		twatson@tsswcb.texas.gov
	Adams, Bill	TPWD	936-569-8547	robert.adams@tpwd.texas.gov
	Syvarth, Cynthia, PE	Plummer	512-687-2185	csyvarth@plummer.com
	Bartlett, Cheryl	City of Nacogdoches	936-554-7839	regioniwater@gmail.com
	McCann, Cody	Plummer	—	cmccann@plummer.com
	David Miley	Rusk County GCD	903 657-1900	david@rcgcd.org
	Skipwith, Jordan	Freese and Nichols	832-696-0963	~~Skipwi~~ jordan.skipwith@freese.com
	Teresa Griffin	Panola GCD	903-690 0473	tgriffin@pcgcd.org
	Penny Hanson	NTVGCD	903-541-4845	manager@ntvgcd.org

GOAL 4.5

NATURAL RESOURCE ISSUES AFFECTING THE USE AND AVAILABILITY OF GROUNDWATER OR AFFECTED BY THE USE OF GROUNDWATER

Objectives

1 The District requires that all water wells used in conjunction with the exploration of hydrocarbons be registered with the District.

Performance Standard

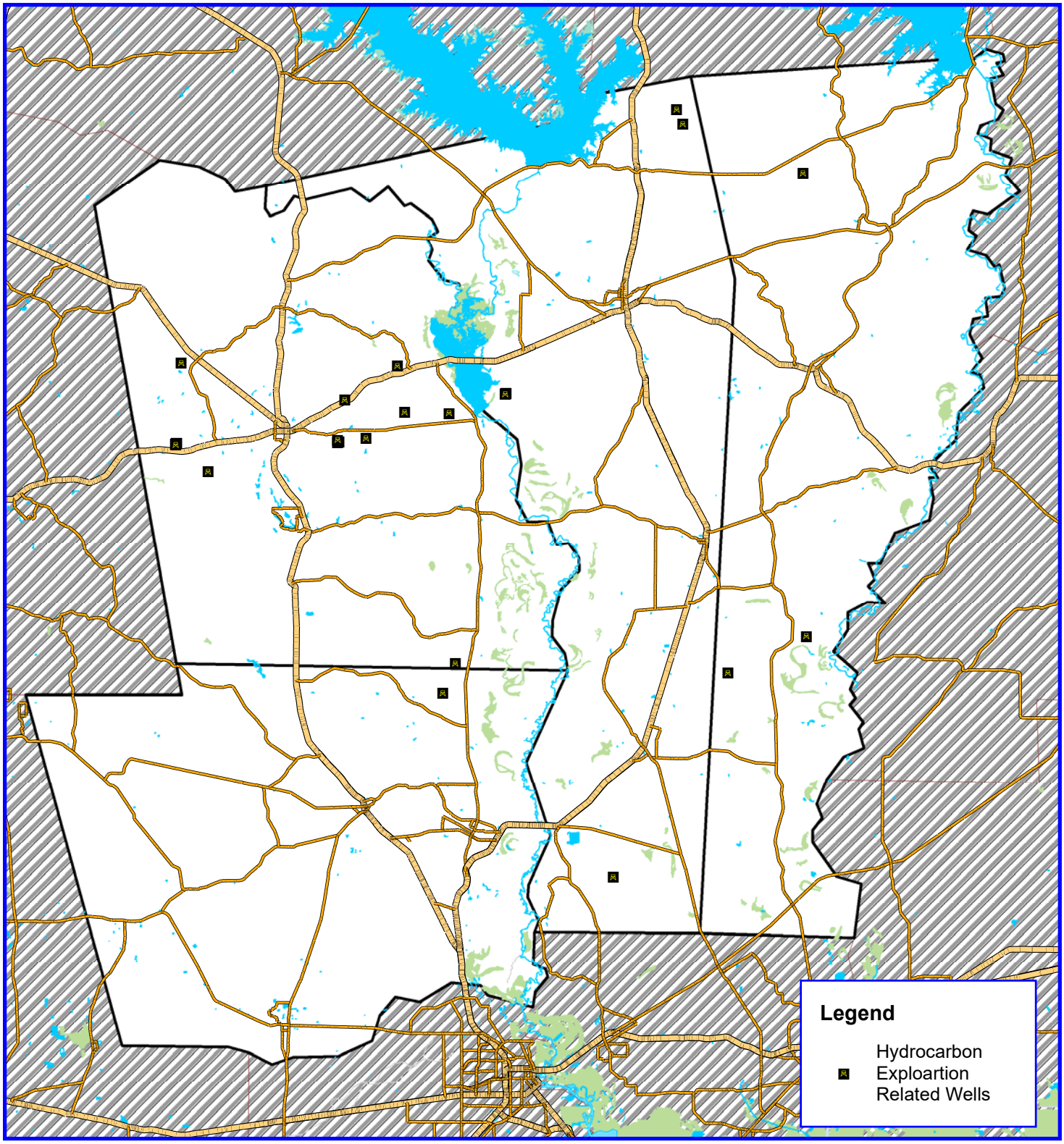
1 Each month the Board will be provided information pertaining to any new water well registered and drilled for the purpose of hydrocarbon exploration and a summary of all these wells will be included in the District's Annual Report.

OBJECTIVE 1

Each month (whether a board meeting is held or not) the Directors are provided information regarding the water wells registered within the District for the purpose of hydrocarbon exploration (oil and gas well drilling and fracking). Newly registered water wells drilled for the purpose of hydrocarbon exploration are entered into the District's Geographic Information Software (GIS) database, which is ESRI – ArcMap. Each month the Directors are provided a location map showing the locations of the newly registered wells along with a data sheet that includes the well site/lease name, the well owner, the date the well was entered into the District's database, as well as the name of the water well driller/water well company. Copies of the monthly maps are included along with a summary map and data for the entire year.

The District received 26 registrations in 2022 for new water wells that were to be used in conjunction with the exploration of hydrocarbons; 1 in Hardin County, 3 in Newton County, 7 in Jasper County, and 15 in Tyler County. Several of the leases had multiple wells drilled on them so the total number of water wells registered is not indicative of the total number of new oil/gas wells within the District.

Hydrocabon Exploration Related Water Wells - 2022



N
W E
S

0 4.75 9.5 Miles

Drafted By:
John Martin, Southeast Texas GCD

Date
January 25, 2022

Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Hydrocarbon Exploration Related Wells - 2022 - District Wide

WELL OWNER	WELL NAME	DRILLING CO.	DATE ENTERED	PLUGGED	FRACKED?	AQUIFER	GEOLOGIC LAYER
BPX Energy	Tostada 1H	Pinnergy LTD	01/07/2022	N		U/K	U/K
Zarvona Energy	BS Wilburn 2H	J & S Water Wells	02/07/2022	Y	Y	Jasper	L.L. / Oakville
Prize Exploration / RKI	Brown Donner 1166 #2	Pinnergy LTD	03/18/2022	N	N	Jasper	Oakville
Zarvona Energy	BS Clark A2H #1	J&S Water Wells	04/04/2022	Y	N	Jasper	Lower Lagarto
Zarvona Energy	BS Clark A2H #2	J&S Water Wells	04/04/2022	Y	N	Jasper	Lower Lagarto
Zarvona Energy	BS Clark A2H #3	J&S Water Wells	04/04/2022	Y	N	Jasper	Lower Lagarto
Zarvona Energy	BS Clark A2H #4	J&S Water Wells	04/06/2022	Y	N	Jasper	Lower Lagarto
Navidad Operating	Middle Earth 1H East	Pinnergy LTD	05/03/2022	N	Y	Chicot	Willis
Navidad Operating	Middle Earth 1H West	Pinnergy LTD	05/03/2022	N	Y	Chicot	Willis
BPX Operating	Tostada 1H	BJ's Water Well	05/20/2022	N	Y		
BPX Operating	BP America 469 #1	Pinnergy LTD	05/26/2022	N	N	Chicot	Lissie
Ergon Energy Partners	Angelina #2H	Hydroline Drilling, LLC	06/17/2022	Y	Y		
Foundation Energy	Kurth II	Guichard Operating, Co.	06/22/2022	N	N	Chicot	Lissie
Ergon Energy Partners	Tucker 2H	Hydroline Drilling, LLC	07/11/2022	N	N	Japser	Lower Lagarto
Zarvona Energy	Younger UT 2H #1	J&S Water Wells	08/09/2022	Y	Y	Jasper	Lower Lagarto
Zarvona Energy	Younger UT 2H #2	J&S Water Wells	08/09/2022	Y	Y	Jasper	Lower Lag / Oakville
Zarvona Energy	Younger UT 2H #3	J&S Water Wells	08/09/2022	N	Y	Jasper	Lower Lag / Oakville
Zarvona Energy	Younger UT 2H #4	J&S Water Wells	08/09/2022	Y	Y	Jasper	Lower Lag / Oakville
Atlas Operating, LLC	Beech Creek 4W	Dale's Water Wells	08/16/2022	N	Y	<null>	<null>
Ergon Energy Partners	Fish Camp #1H	Hydroline Drilling, LLC	09/09/2022	N	N	Jasper	Oakville
Mosman Operating	Arco Fee G-3	George Bellenger WWS	09/13/2022	Y	N	<null>	<null>
Navidad Operating	Hancock 3H	Pinnergy LTD	09/15/2022	N	Y	Chicot	Willis
Ergon Energy	Carter #2H	Hydroline Drilling	11/14/2022	N	N	Jasper	Lower Lagarto

WELL OWNER	WELL NAME	DRILLING CO.	DATE ENTERED	PLUGGED	FRACKED?	AQUIFER	GEOLOGIC LAYER
Partners		LLC					
Texakoma E & P	Hankamer #1	Guichard Operating Co.	12/05/2022	N	N	<null>	<null>
Navidad Operating	Rivendell 1H	Pinnergy, LTD	12/13/2022	N	Y	Chicot	Willis
Geo Southern Operating	Cassidy Sundance	J&S Water Wells	12/28/2022	N	N	<null>	<null>

Oil & Gas Related Wells - January 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	DATE DRILLED
Tostada 1H	N	BPX Energy	Pinnergy LTD	Jason Bowers	

Registered Wells - January 2022

N
W E
S

Miles
0 4.75 9.5

Drafted By:
John Martin, Southeast Texas GCD

Date
January 31, 2022

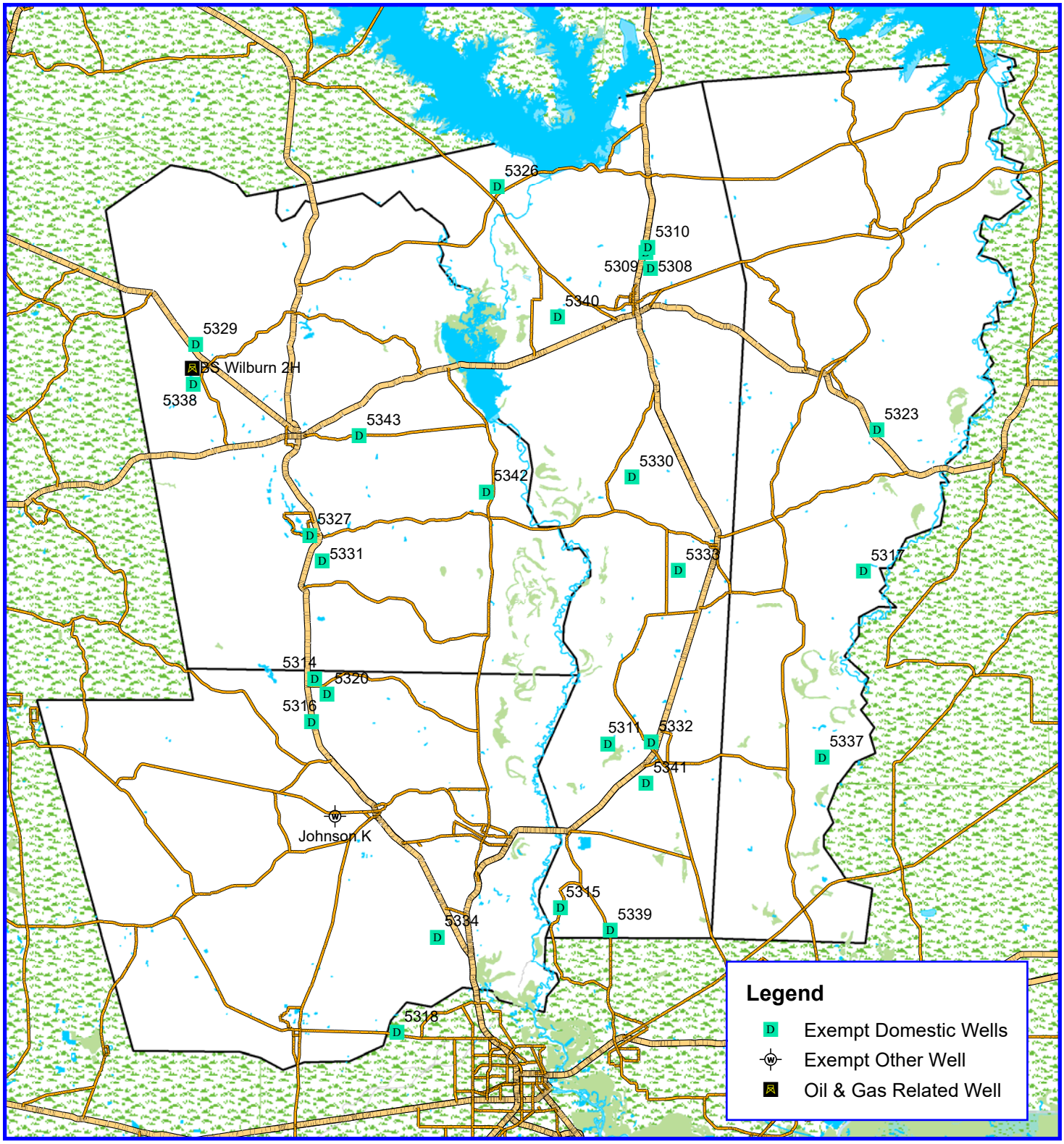
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Wells - February 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	DATE DRILLED
BS Wilburn 2H	N	Zarvona Energy	J & S Water Wells	Shaun Grell	

Registered Wells - February 2022



N
W E
S

Miles
0 4.75 9.5

Drafted By:
John Martin, Southeast Texas GCD

Date
February 28, 2022

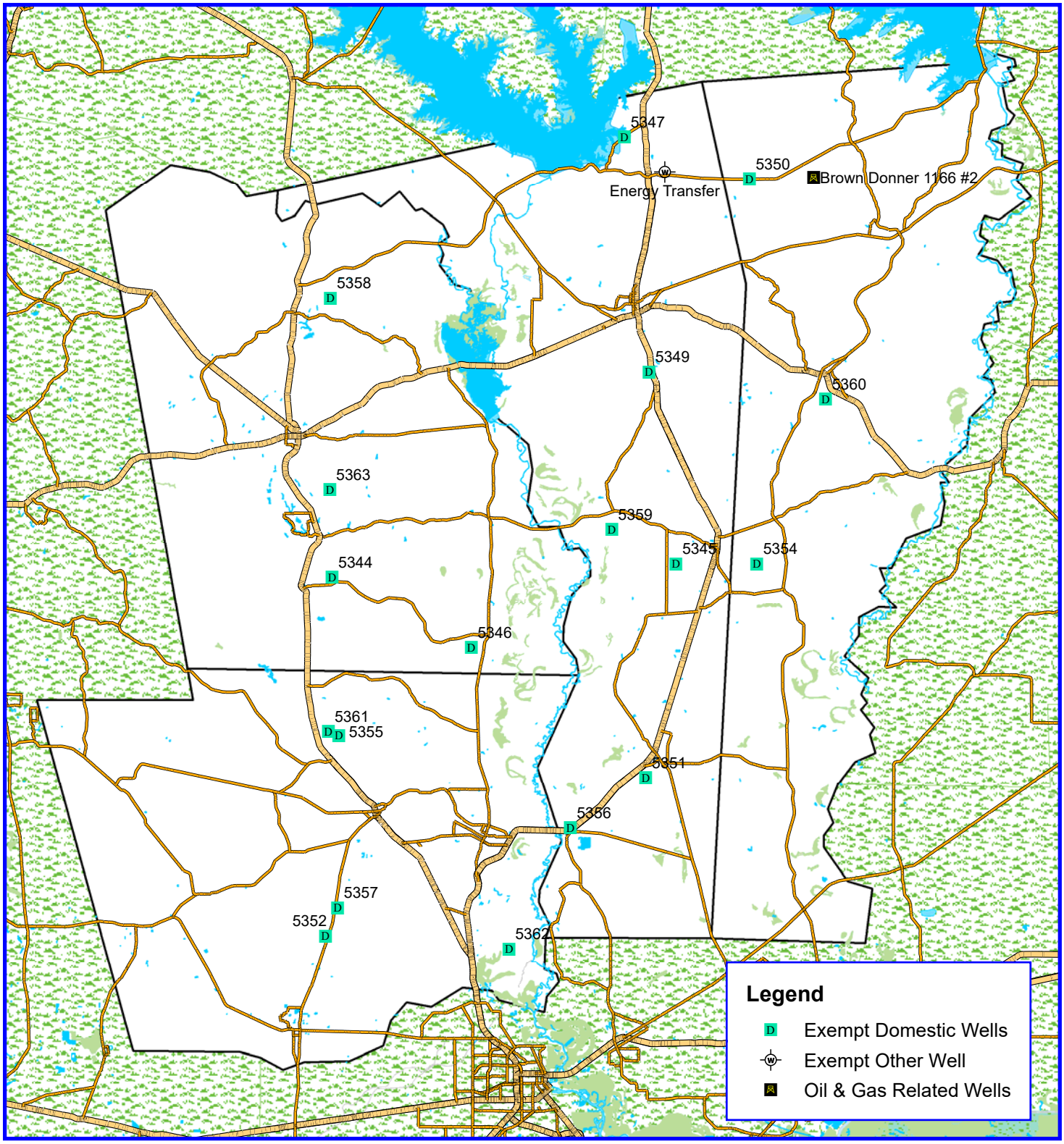
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Wells - March 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	DATE DRILLED
Brown Donner 1166 #2	N	Prize Exploration / RKI	Pinnergy LTD	Jason Bowers	<null>

Registered Wells - March 2022



N
W E
S

Miles
0 4.75 9.5

Drafted By:
John Martin, Southeast Texas GCD

Date
April 1, 2022

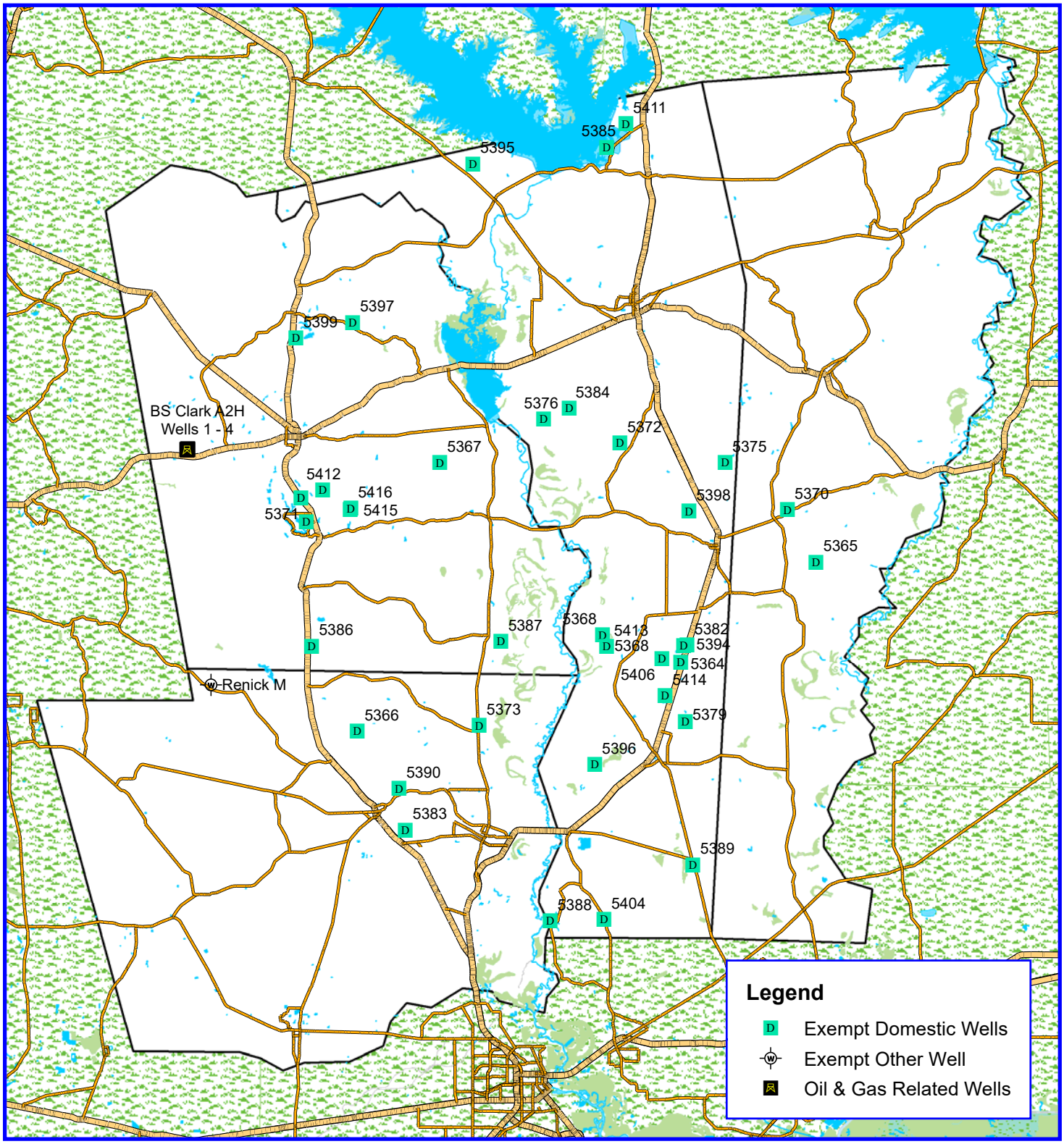
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Wells - April 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	DATE DRILLED
BS Clark A2H #1	N	Zarvona Energy	J&S Water Wells	Primo Trejo	
BS Clark A2H #2	N	Zarvona Energy	J&S Water Wells	Primo Trejo	
BS Clark A2H #3	N	Zarvona Energy	J&S Water Wells	Primo Trejo	
BS Clark A2H #3	N	Zarvona Energy	J&S Water Wells	Primo Trejo	

Registered Wells - April 2022



N
W E
S

Miles
0 4.75 9.5

Drafted By:
John Martin, Southeast Texas GCD

Date
May 1, 2022

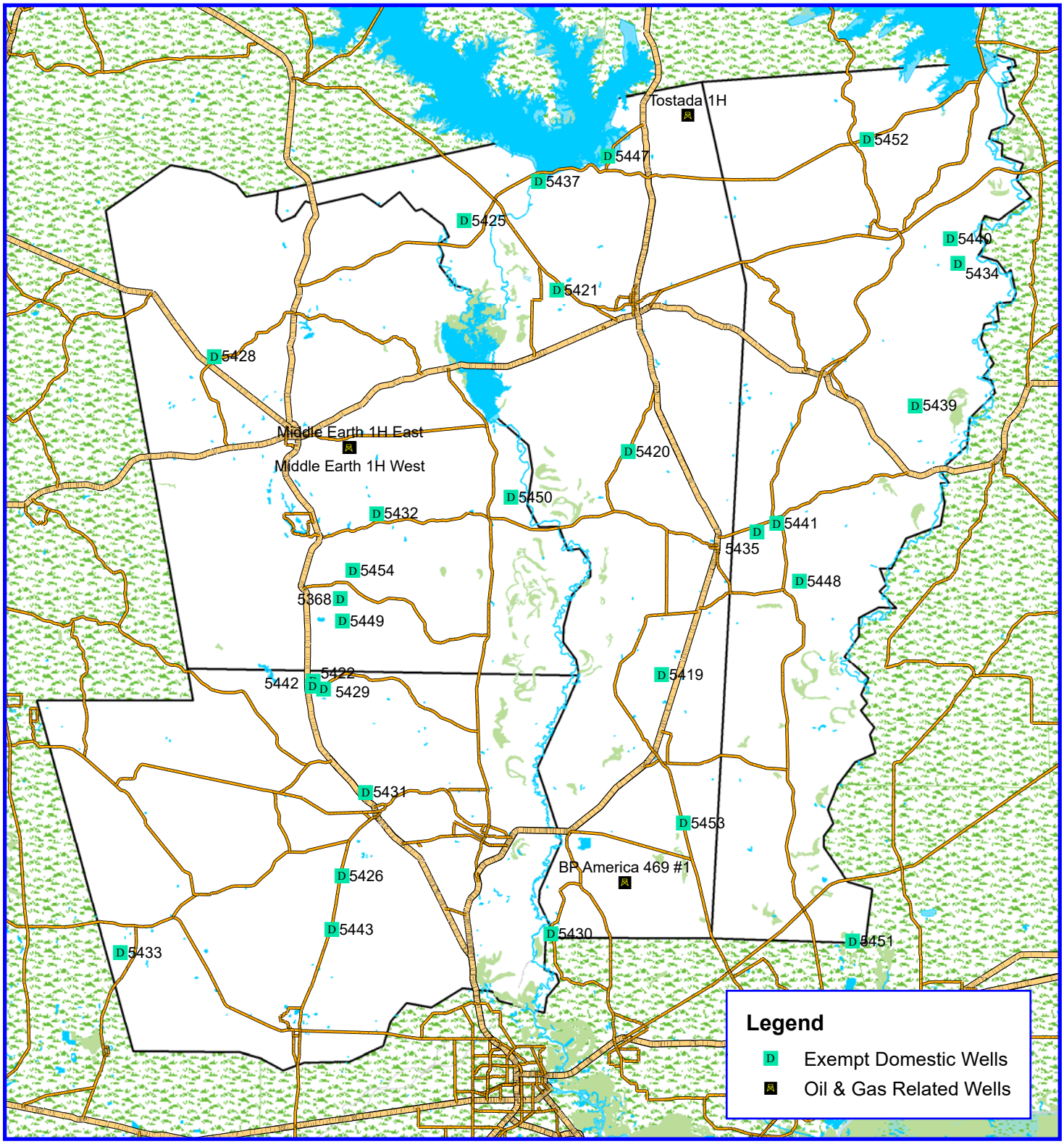
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Wells - May 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	DATE DRILLED
Middle Earth 1H East	Y	Navidad Operating	Pinnergy LTD	Jason Bowers	05/09/2022
Middle Earth 1H West	Y	Navidad Operating	Pinnergy LTD	Jason Bowers	
Tostada 1H	Y	BPX Operating	BJ's Water Well	Bobby Jones	
BP America 469 #1	N	BPX Operating	Pinnergy LTD	Skipper Hagler	

Registered Wells - May 2022



N
W E
S

Miles
0 4.75 9.5

Drafted By:
John Martin, Southeast Texas GCD

Date
June 1, 2022

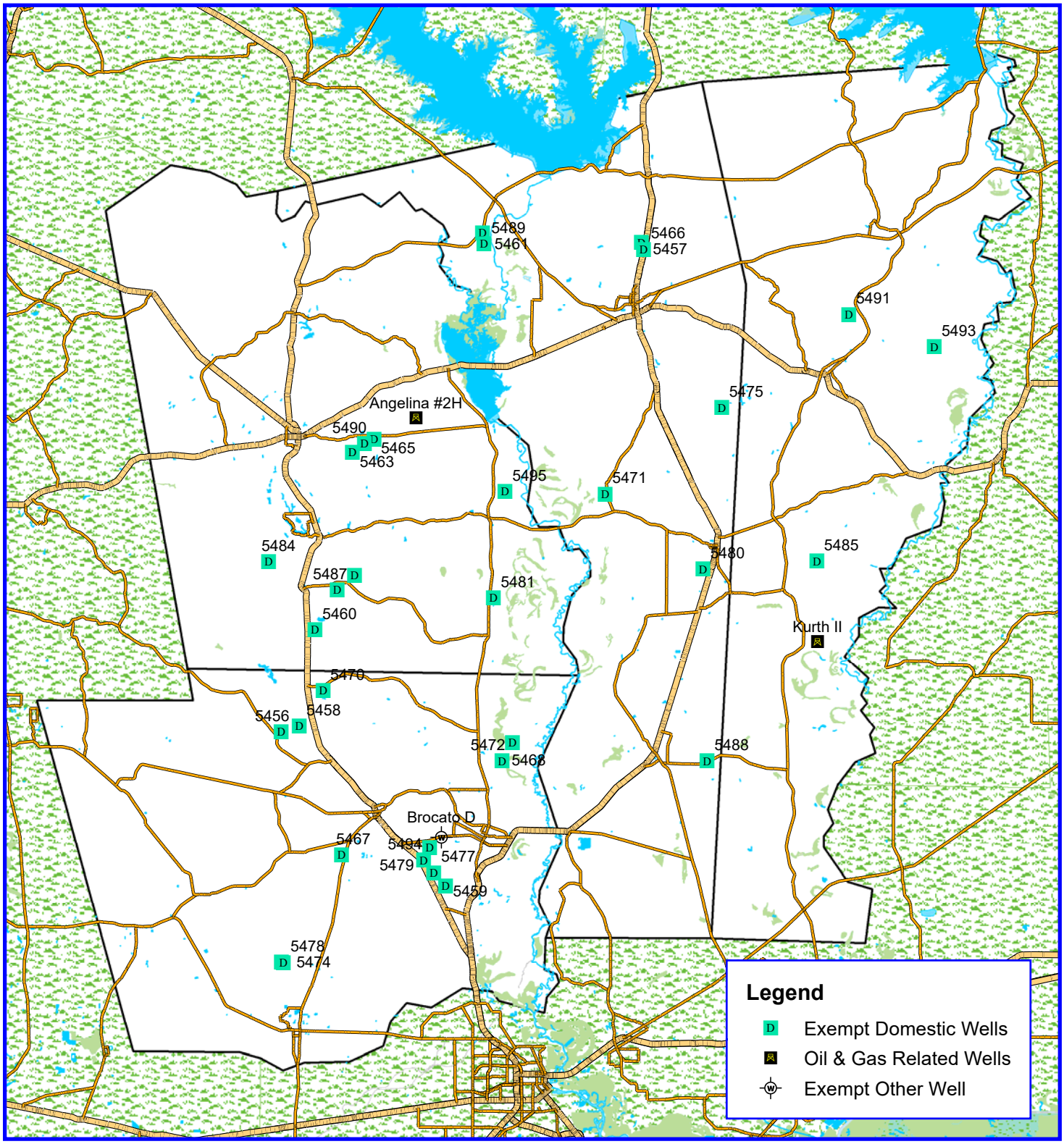
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Wells - June 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	DATE REGISTERED
Angelina #2H	N	Ergon Energy Partners	Hydroline Drilling, LLC	Spencer White	06/17/2022
Kurth II	N	Foundation Energy	Guichard Operating, Co.	Lance Guichard	06/22/2022

Registered Wells - June 2022



N
W E
S

Miles
0 4.75 9.5

Drafted By:
John Martin, Southeast Texas GCD

Date
July 1, 2022

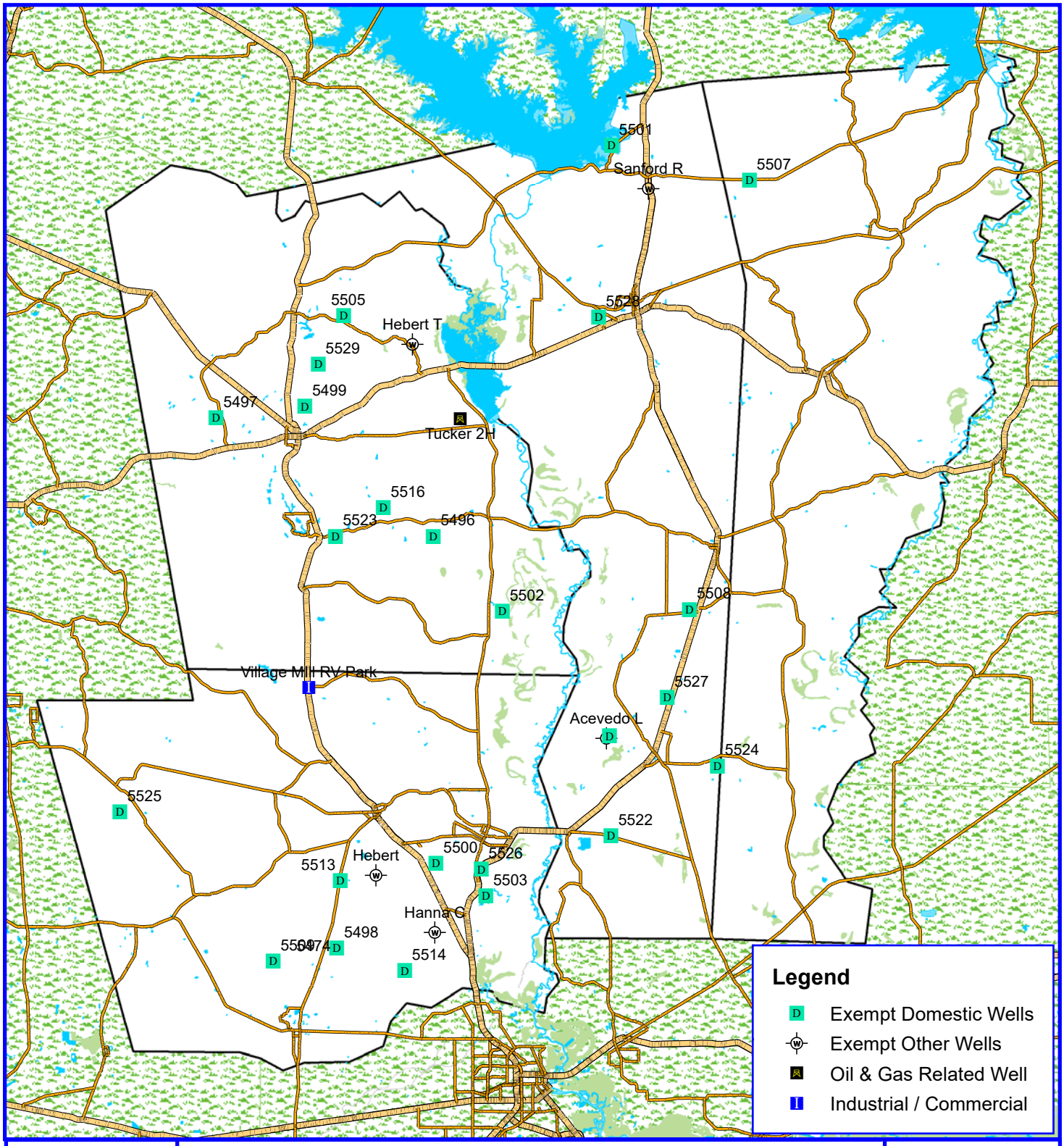
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Well - July 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLER NAME	DRILLING CO.	Date_Entered
Tucker 2H	N	Ergon Partners, L.P.	Whit	Hydroline Drilling, LLC	07/11/2022

Registered / Permitted Wells - July 2022



N W E S

0 4.75 9.5 Miles

Drafted By:
John Martin, Southeast Texas GCD

Date
July 31, 2022

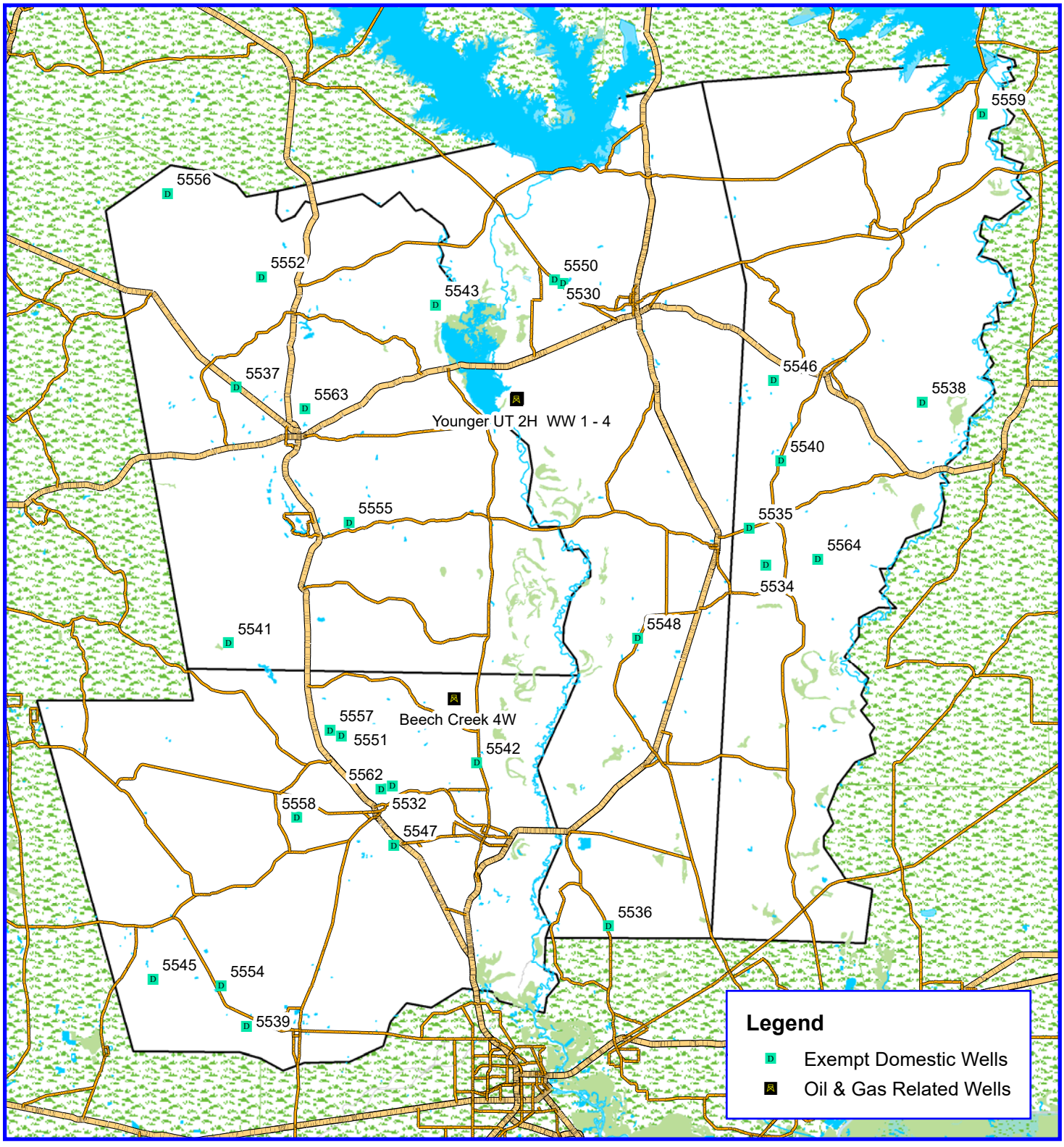
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Wells - August 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	DATE REGISTERED
Younger UT 2H #1	Y	Zarvona Energy	J&S Water Wells	Primo Trejo	08/09/2022
Younger UT 2H #2	Y	Zarvona Energy	J&S Water Wells	Primo Trejo	08/09/2022
Younger UT 2H #3	Y	Zarvona Energy	J&S Water Wells	Primo Trejo	08/09/2022
Younger UT 2H #4	Y	Zarvona Energy	J&S Water Wells	Primo Trejo	08/09/2022
Beech Creek 4W	Y	Atlas Operating, LLC	Dale's Water Wells	Dale Gore	08/16/2022

Registered Wells - August 2022



N
W E
S

Miles
0 4.5 9

Drafted By:
John Martin, Southeast Texas GCD

Date
September 3, 2022

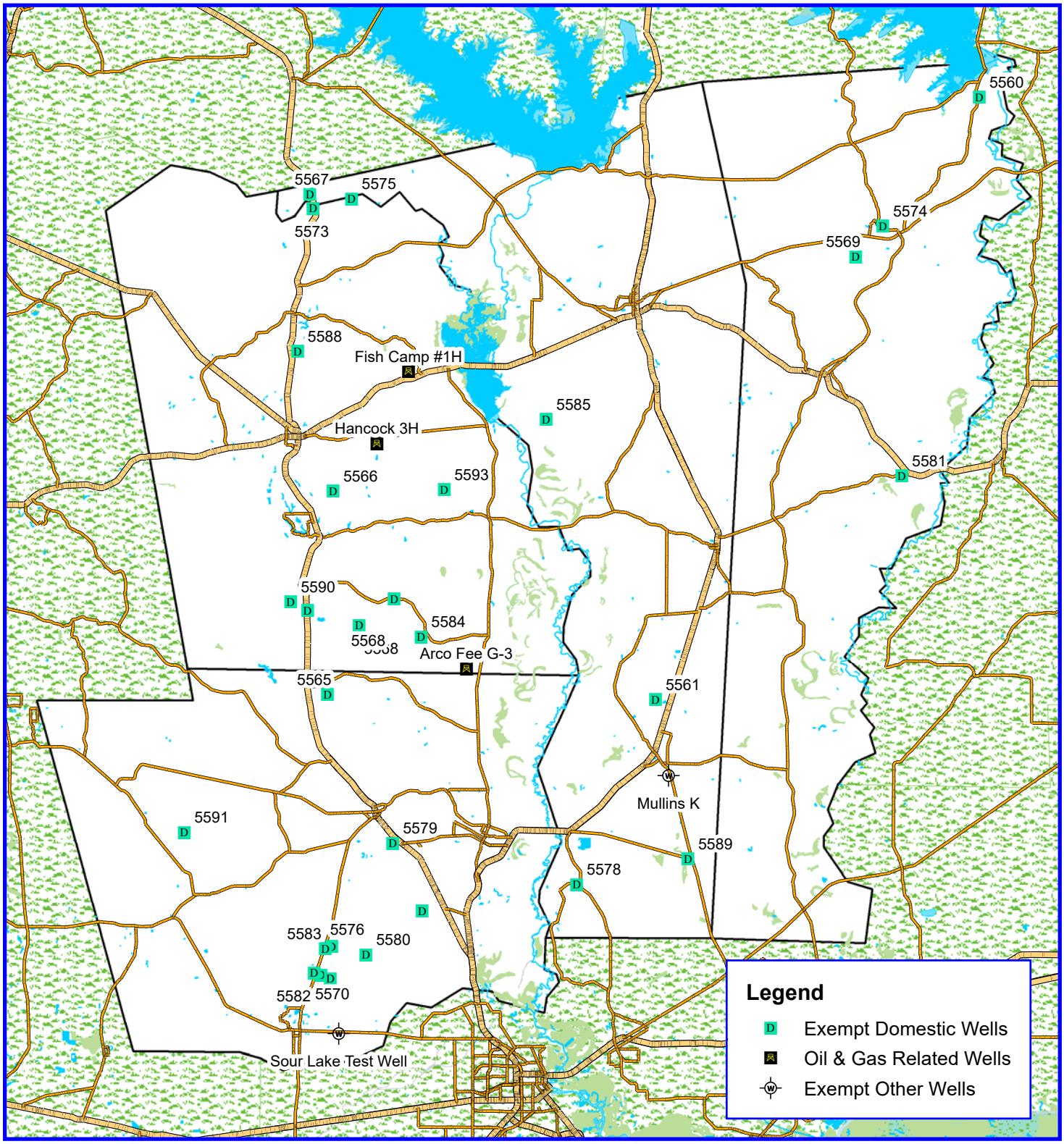
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Wells - September 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	DATE REGISTERED
Fish Camp #1H	N	Ergon Energy Partners	Hydroline Drilling, LLC	Spencer White	09/09/2022
Arco Fee G-3	N	Mosman Operating	George Bellenger WWS	Mitch Turk	09/13/2022
Hancock 3H	Y	Navidad Operating	Pinnergy LTD	Blake Ritter	09/15/2022

Registered Wells - September 2022



N
W E
S

Miles
0 4.75 9.5

Drafted By:
John Martin, Southeast Texas GCD

Date
October 3, 2022

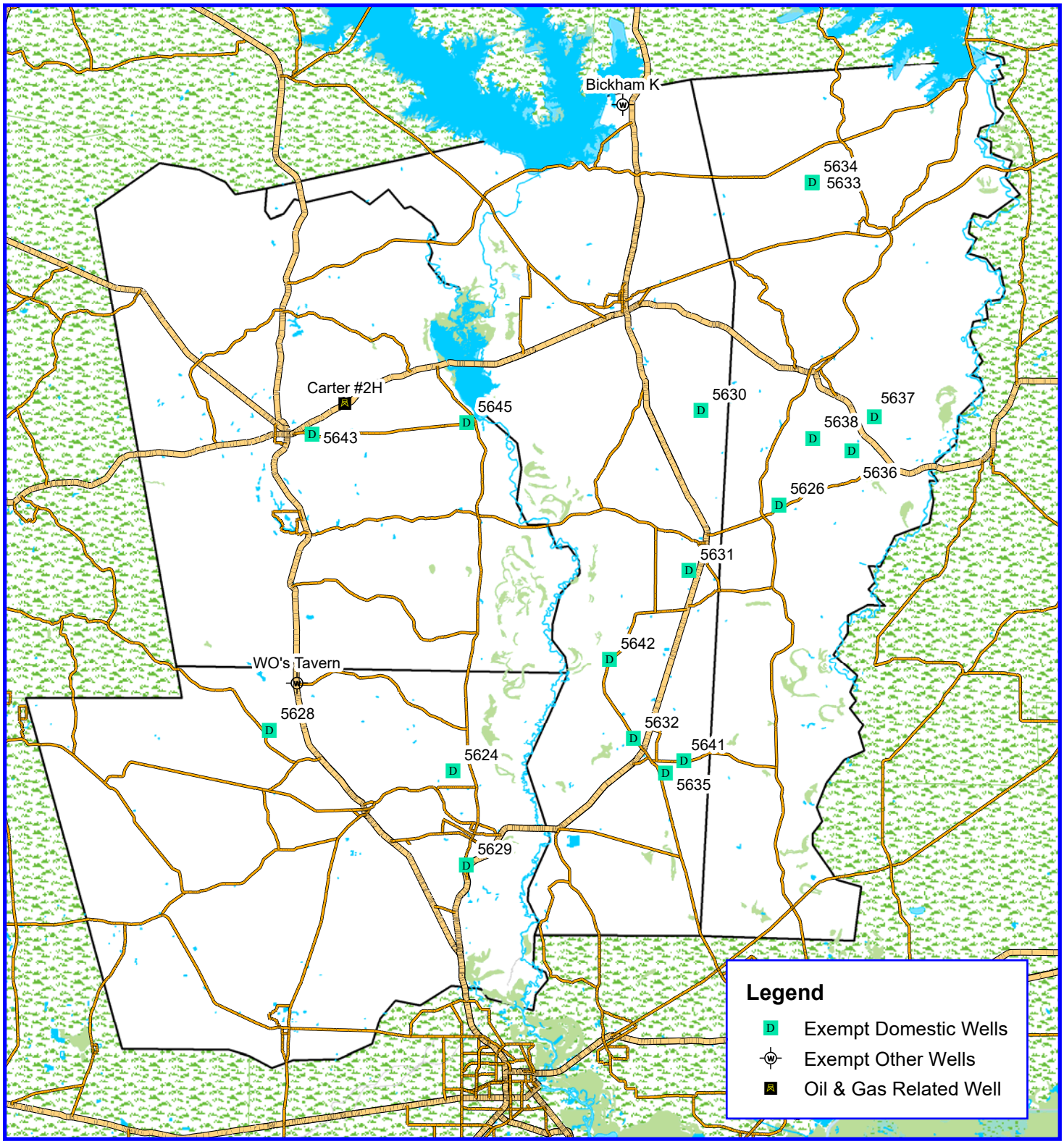
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Well - November 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	Date_Entered
Carter #2H	N	Ergon Energy Partners	Hydroline Drilling LLC	Spencer White	11/14/2022

Registered Wells - November 2022



N
W E
S

Miles
0 4.5 9

Drafted By:
John Martin, Southeast Texas GCD

Date
December 1, 2022

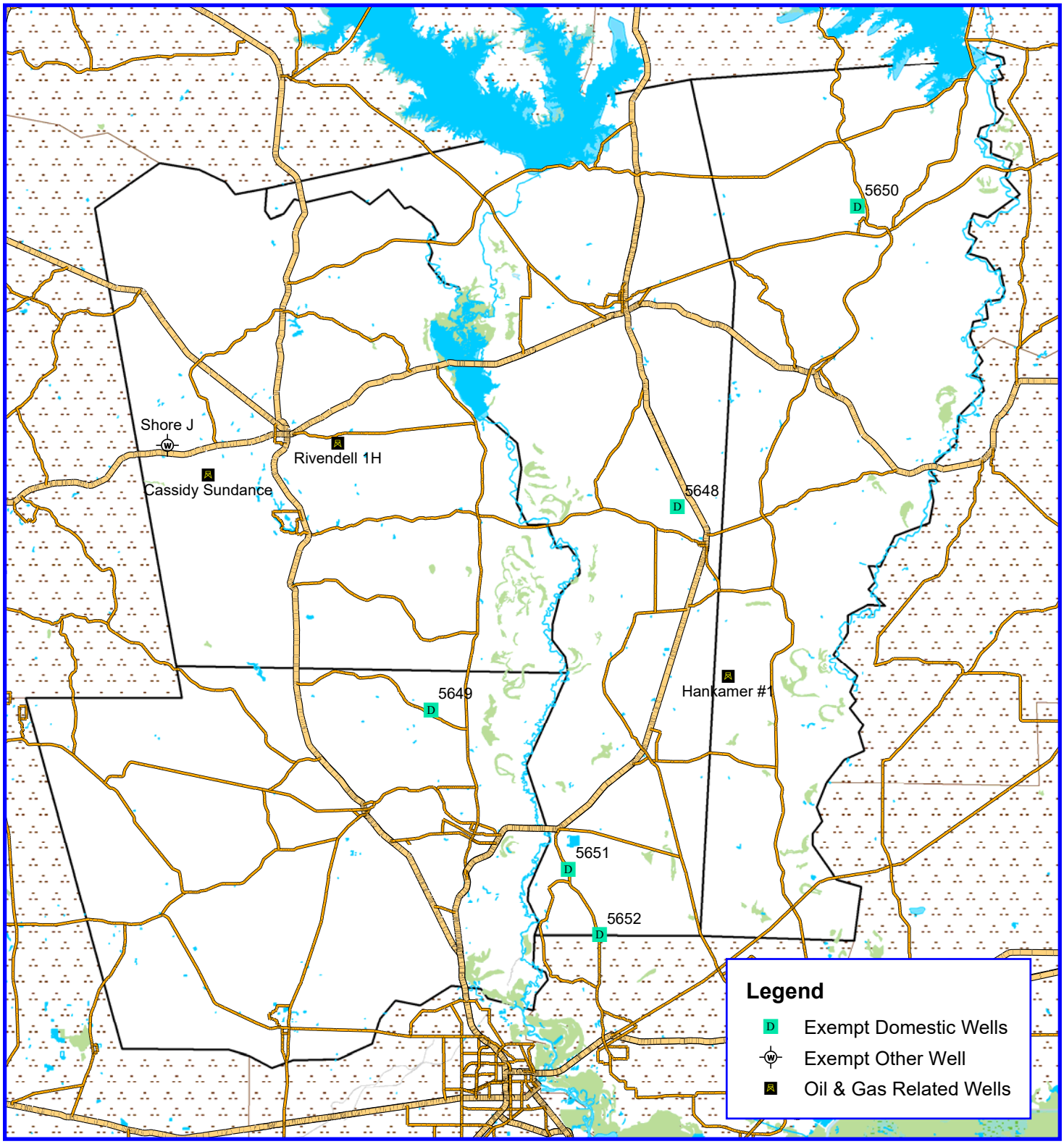
Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Oil & Gas Related Well - December 2022

WELL NAME	FRACKED?	WELL OWNER	DRILLING CO.	DRILLER NAME	Date_Entered
Hankamer #1	N	Texakoma E & P	Guichard Operating Co.	Lance Guichard	12/05/2022
Rivendell 1H	Y	Navidad Operating	Pinnergy, LTD	Skipper Hagler	12/13/2022
Cassidy Sundance	N	Geo Southern Operating	J&S Water Wells	Tomas Salinas	12/28/2022

Registered Wells - December 2022



N
W E
S

Miles
0 4.5 9

Drafted By:
John Martin, Southeast Texas GCD

Date
January 3, 2023

Data Source
ESRI Street Map USA 2006
SETGCD ArcView GIS Database

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

GOAL 4.6

ADDRESSING DROUGHT CONDITIONS

(Conservation is the only practice which is practicable in the District.)

Objectives

1. *The District will post an article and/or drought index maps, regarding drought conditions in the District at least annually on the District's website.*

Performance Standard

1. *A copy of the article or and/or drought index maps posted on the District's website regarding drought conditions will be included in the District's Annual Report.*

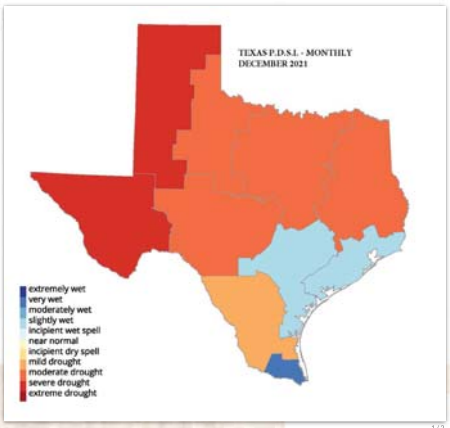
OBJECTIVE 1

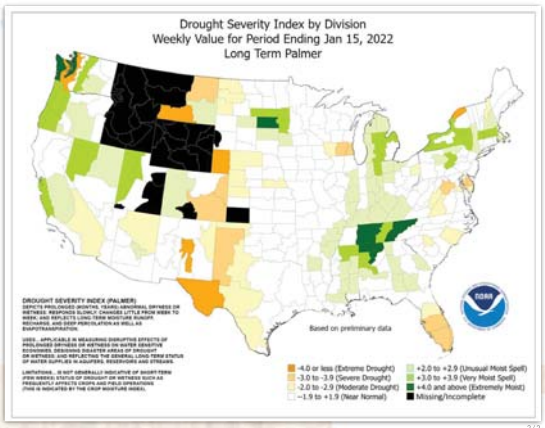
An article addressing drought conditions within the Southeast Texas Groundwater Conservation District was published in the Fall 2022 issue of the SETGCD Well Monitor Newsletter and posted on the District's website on November 7, 2022 (see Appendix A – Tab 12).

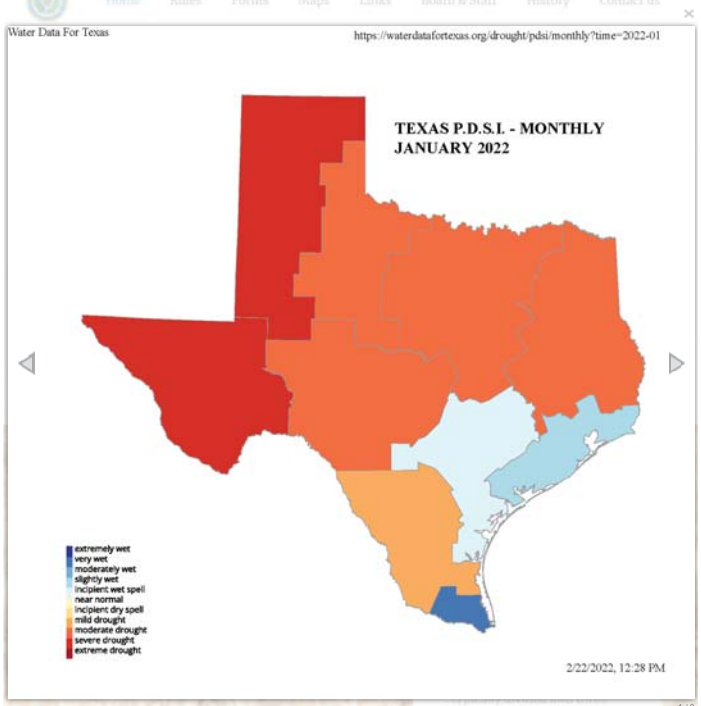
Each month the District posts the current Palmer Drought Severity Index (PDSI) maps (both U.S. and Texas) on the District's website and at the District office (copies attached). These maps, as well as the NOAA Precipitation Probability maps and the U.S. Seasonal Drought Outlook maps, are included in the District's Manager's Report and are provided to the Board of Directors each month (whether or not a meeting is held). These maps give the public easy access to current drought conditions within the District and keep the District's Directors well apprised of the current drought situation.

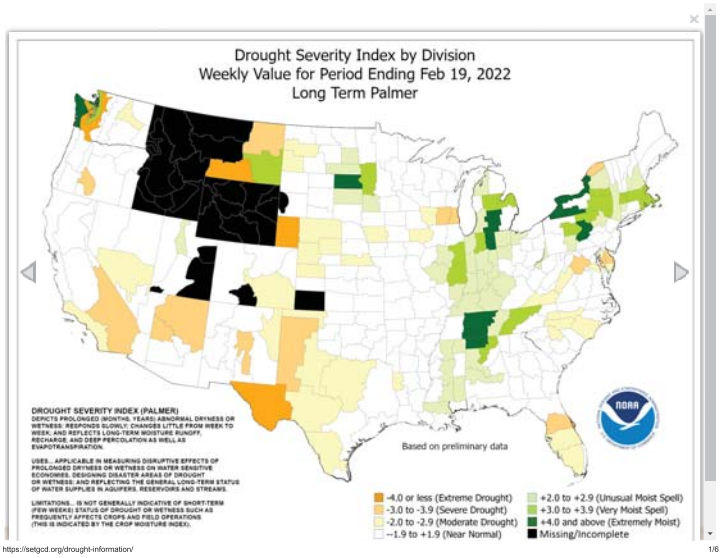
The District continues to maintain a webpage dedicated to drought information and drought conditions. Included on this page are links to the Texas Drought Preparedness Council's website with the most up-to-date Statewide Drought Situation Reports. These reports give a concise overview of current drought conditions regionally as well as statewide.

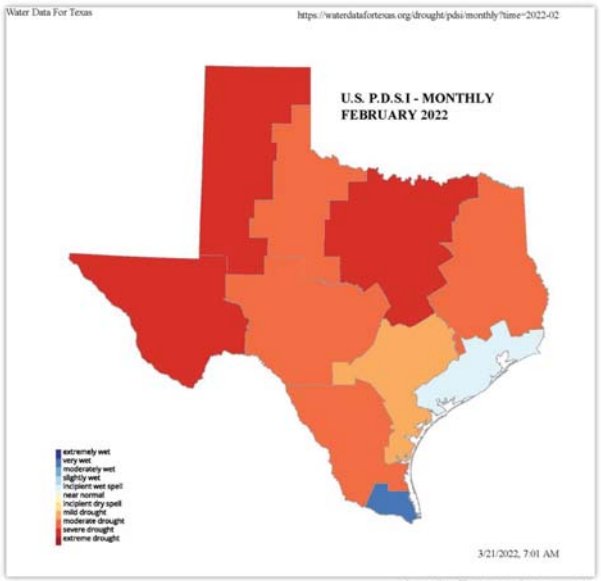
The drought information webpage also includes a link to the Texas Water Development Board's drought information webpage which has up-to-date drought monitoring and outlook information. It includes numerous drought condition maps, real-time remote static water level monitoring for nearly 200 water wells across the state, reservoir levels that are updated daily, and many other useful tools and datasets.


TEXAS P.D.S.I. - MONTHLY
DECEMBER 2021
extremely wet
very wet
moderately wet
slightly wet
incipient wet spell
near normal
incipient dry spell
mild drought
moderate drought
severe drought
extreme drought


Drought Severity Index by Division
Weekly Value for Period Ending Jan 15, 2022
Long Term Palmer
DROUGHT SEVERITY INDEX (PALMER):
Based on preliminary data
-4.0 or less (Extreme Drought)
-3.0 to -3.9 (Severe Drought)
-2.0 to -2.9 (Moderate Drought)
-1.9 to +1.9 (Near Normal)
+2.0 to +2.9 (Unusual Moist Spell)
+3.0 to +3.9 (Very Moist Spell)
+4.0 and above (Extremely Moist)
Missing/Incomplete

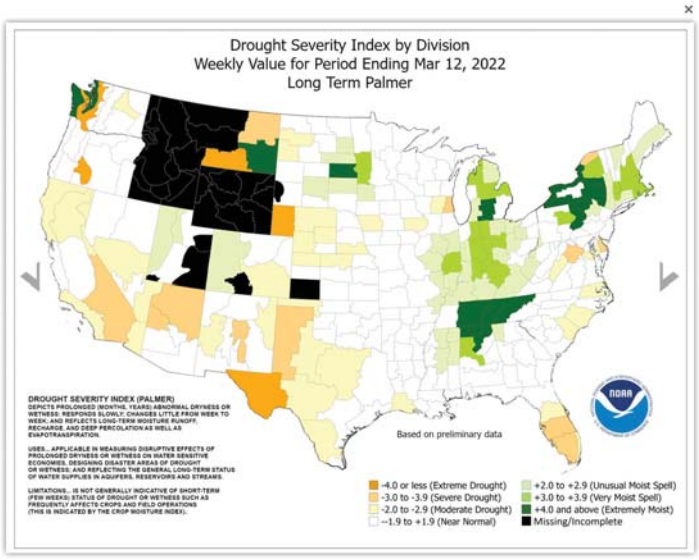

Water Data For Texas
https://waterdatafortexas.org/drought/pdsi/monthly?time=2022-01
TEXAS P.D.S.I. - MONTHLY
JANUARY 2022
extremely wet
very wet
moderately wet
slightly wet
incipient wet spell
near normal
incipient dry spell
mild drought
moderate drought
severe drought
extreme drought
2/22/2022, 12:28 PM

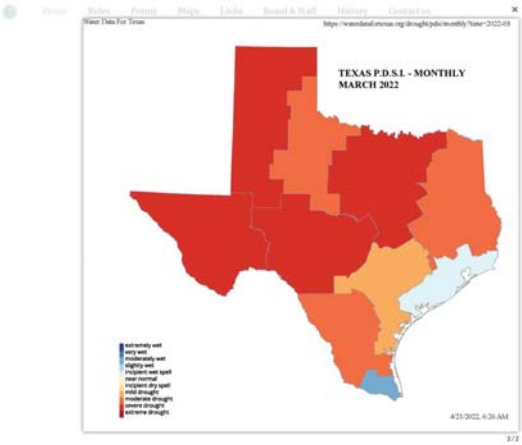

Drought Severity Index by Division
Weekly Value for Period Ending Feb 19, 2022
Long Term Palmer
DROUGHT SEVERITY INDEX (PALMER)
Based on preliminary data
-4.0 or less (Extreme Drought)
-3.0 to -3.9 (Severe Drought)
-2.0 to -2.9 (Moderate Drought)
-1.9 to +1.9 (Near Normal)
+2.0 to +2.9 (Unusual Moist Spell)
+3.0 to +3.9 (Very Moist Spell)
+4.0 and above (Extremely Moist)
Missing/Incomplete



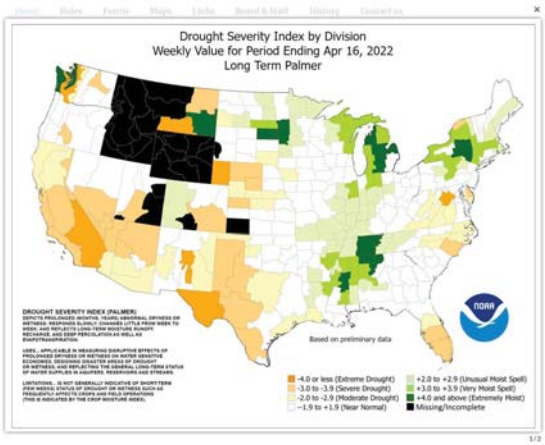
Drought is defined as "a long period of abnormally low rainfall, especially one that adversely affects growing or living conditions". Drought is actually a very common event, but the extent of drought conditions can very dramatically.

The impacts of a drought are typically divided into three categories:

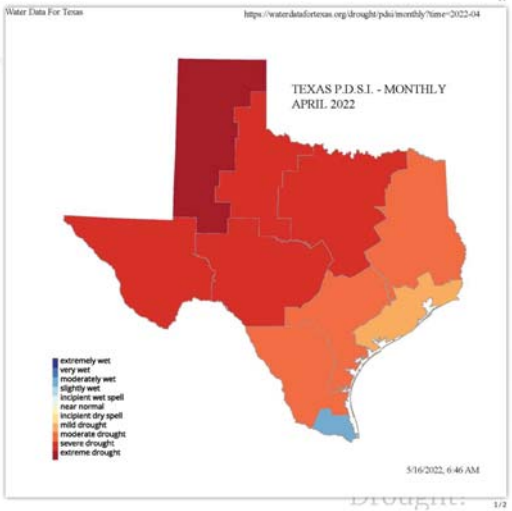


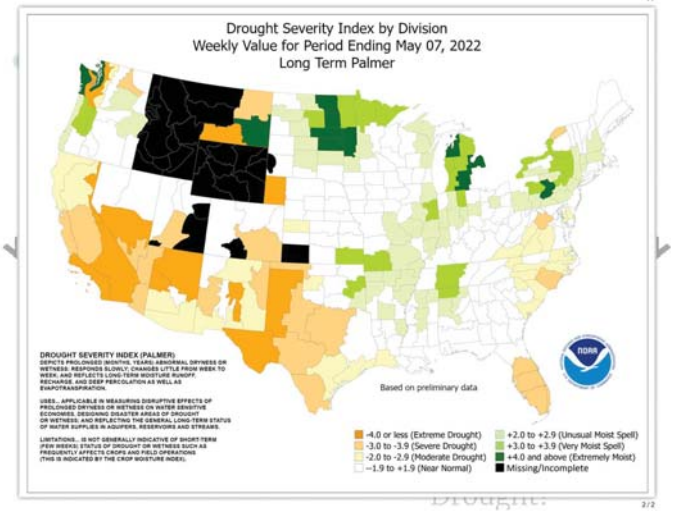


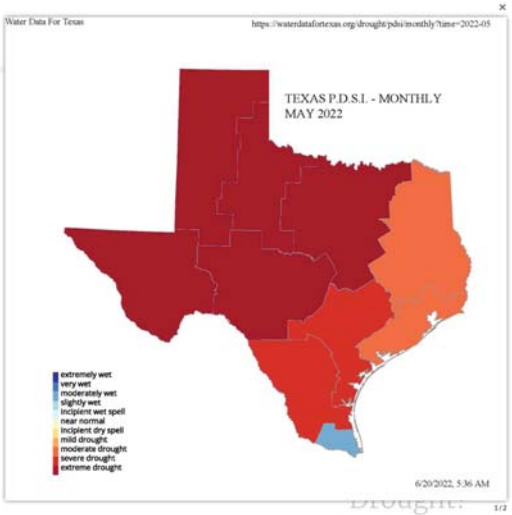
Drought is defined as "a long period of abnormally low rainfall, especially one that adversely affects growing or living conditions". Drought is actually a very common event, but

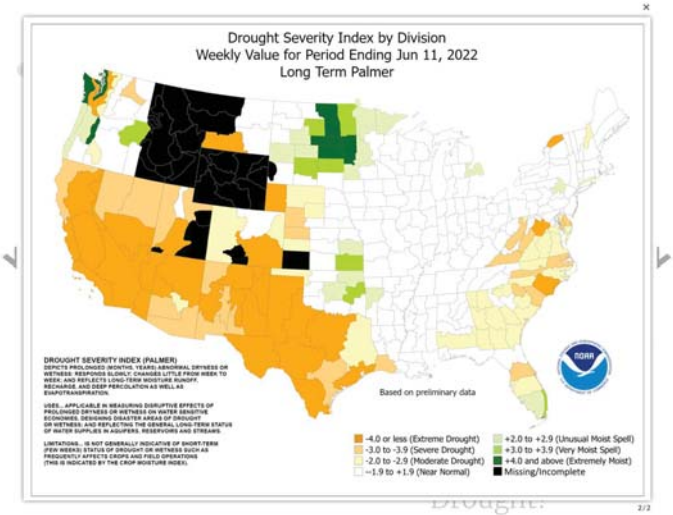


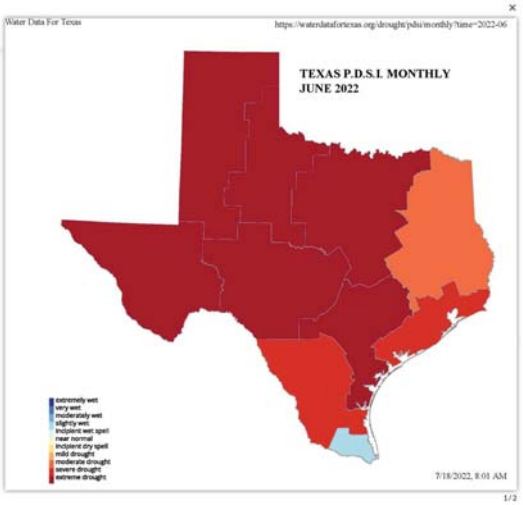
Drought is defined as "a long period of abnormally low rainfall, especially one that adversely affects growing or living conditions". Drought is actually a very common event, but


Water Data For Texas
https://waterdatafortexas.org/drought/pdsi/monthly?time=2022-04
TEXAS P.D.S.I. - MONTHLY
APRIL 2022
extremely wet
very wet
moderately wet
slightly wet
incipient wet spell
near normal
incipient dry spell
mild drought
moderate drought
severe drought
extreme drought
5/16/2022, 6:46 AM
1/2

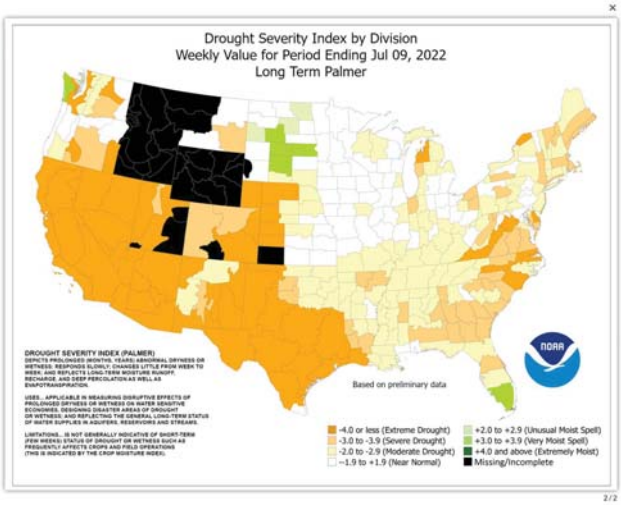

Drought Severity Index by Division
Weekly Value for Period Ending May 07, 2022
Long Term Palmer
DROUGHT SEVERITY INDEX (PALMER)
Based on preliminary data
-4.0 or less (Extreme Drought)
-3.0 to -3.9 (Severe Drought)
-2.0 to -2.9 (Moderate Drought)
-1.9 to +1.9 (Near Normal)
+2.0 to +2.9 (Unusual Moist Spell)
+3.0 to +3.9 (Very Moist Spell)
+4.0 and above (Extremely Moist)
Missing/Incomplete
2/2


Water Data For Texas
https://waterdatafortexas.org/drought/pdsi/monthly?time=2022-05
TEXAS P.D.S.I. - MONTHLY
MAY 2022
extremely wet
very wet
moderately wet
slightly wet
incipient wet spell
near normal
incipient dry spell
mild drought
moderate drought
severe drought
extreme drought
6/20/2022, 5:36 AM
1/2


Drought Severity Index by Division
Weekly Value for Period Ending Jun 11, 2022
Long Term Palmer
DROUGHT SEVERITY INDEX (PALMER)
Based on preliminary data
-4.0 or less (Extreme Drought)
-3.0 to -3.9 (Severe Drought)
-2.0 to -2.9 (Moderate Drought)
-1.9 to +1.9 (Near Normal)
+2.0 to +2.9 (Unusual Moist Spell)
+3.0 to +3.9 (Very Moist Spell)
+4.0 and above (Extremely Moist)
Missing/Incomplete
2/2

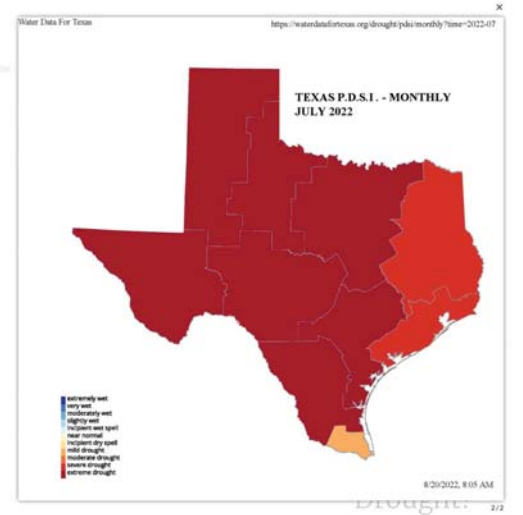


Drought Information - Southeast Texas Groundwater Conservation District https://setgcd.org/drought-information

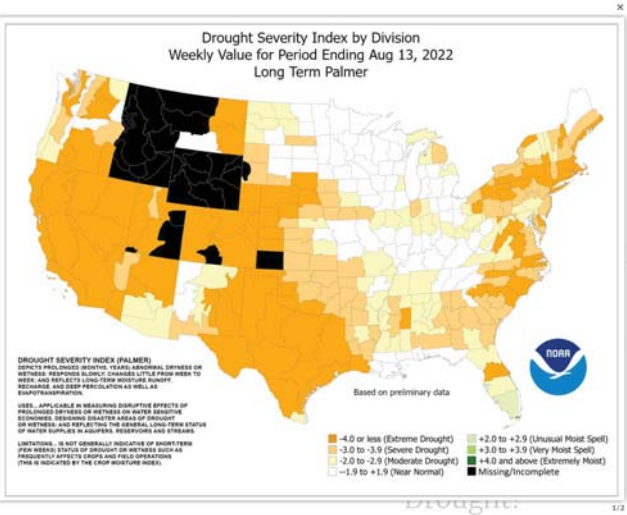


1 of 5 7/18/2022, 8:16 AM

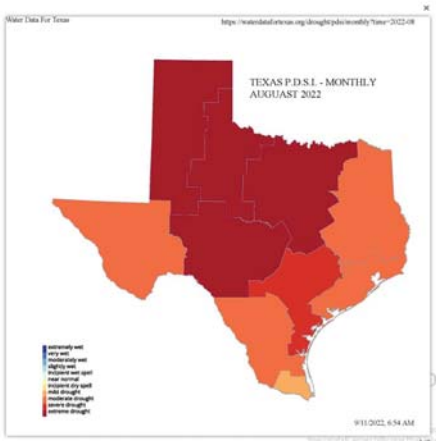
Drought Information - Southeast Texas Groundwater Conservation District https://setgcd.org/drought-information



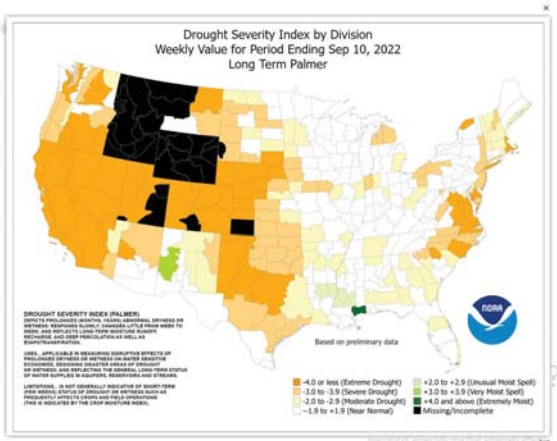
Drought Information - Southeast Texas Groundwater Conservation District https://setgcd.org/drought-information



1 of 5 8/20/2022, 8:15 AM

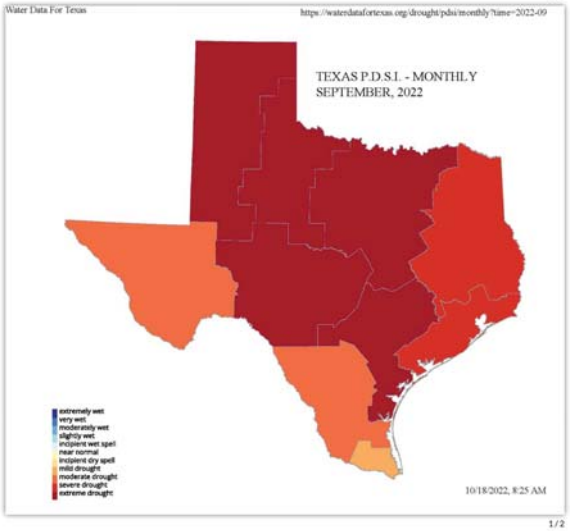


Drought Information - Southeast Texas Groundwater Conservation District https://setgcd.org/drought-information

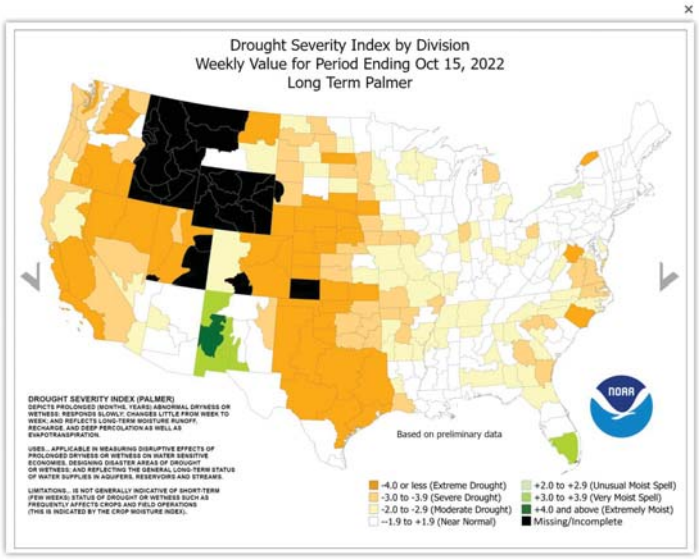


1 of 4 9/18/2022, 7:35 AM

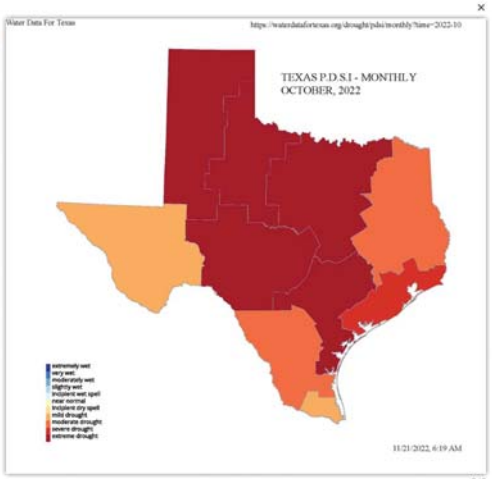
Drought Information - Southeast Texas Groundwater Conservation District https://setgcd.org/drought-information

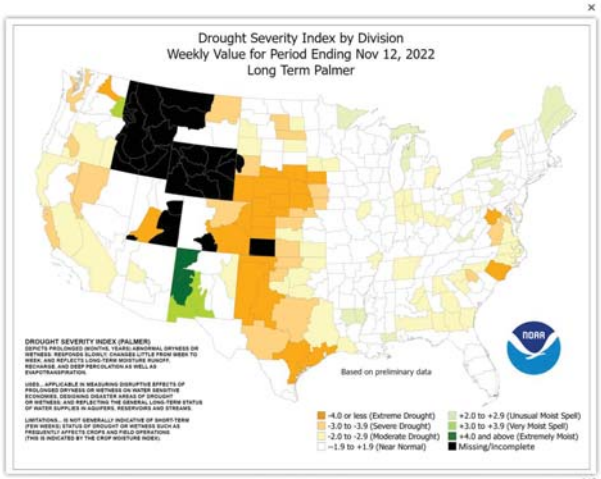


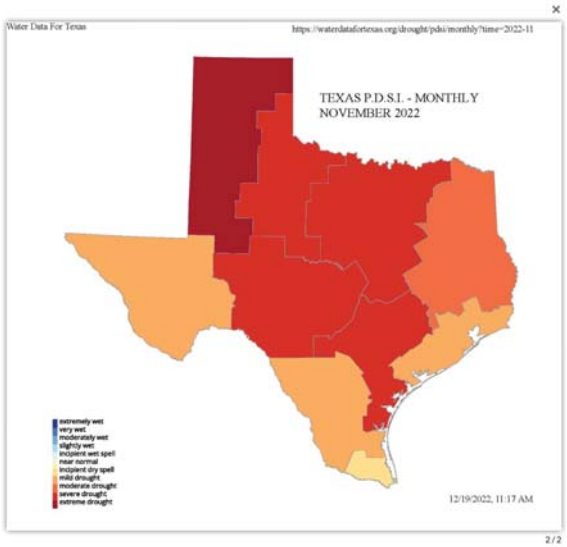
Drought Information - Southeast Texas Groundwater Conservation District https://setgcd.org/drought-information

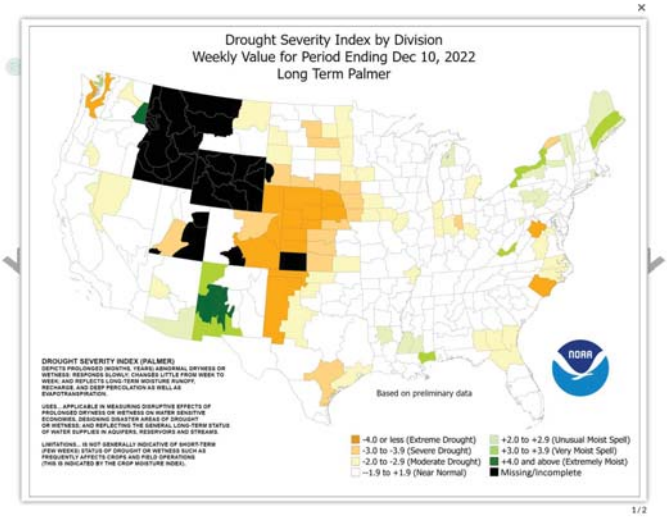


1 of 6 10/18/2022, 8:40 AM


Water Data For Texas
https://waterdatafortexas.org/drought/pdsi/monthly?time=2022-10
TEXAS P.D.S.I. - MONTHLY
OCTOBER, 2022
extremely wet
very wet
moderately wet
slightly wet
incipient wet spell
near normal
incipient dry spell
mild drought
moderate drought
severe drought
extreme drought
11/21/2022, 6:19 AM
2 / 2


Drought Severity Index by Division
Weekly Value for Period Ending Nov 12, 2022
Long Term Palmer
DROUGHT SEVERITY INDEX (PALMER)
Based on preliminary data
-4.0 or less (Extreme Drought)
-3.0 to -3.9 (Severe Drought)
-2.0 to -2.9 (Moderate Drought)
-1.9 to +1.9 (Near Normal)
+2.0 to +2.9 (Unusual Moist Spell)
+3.0 to +3.9 (Very Moist Spell)
+4.0 and above (Extremely Moist)
Missing/Incomplete
1 / 2


Water Data For Texas
https://waterdatafortexas.org/drought/pdsi/monthly?time=2022-11
TEXAS P.D.S.I. - MONTHLY
NOVEMBER 2022
extremely wet
very wet
moderately wet
slightly wet
incipient wet spell
near normal
incipient dry spell
mild drought
moderate drought
severe drought
extreme drought
12/19/2022, 11:17 AM
2 / 2


Drought Severity Index by Division
Weekly Value for Period Ending Dec 10, 2022
Long Term Palmer
DROUGHT SEVERITY INDEX (PALMER)
Based on preliminary data
-4.0 or less (Extreme Drought)
-3.0 to -3.9 (Severe Drought)
-2.0 to -2.9 (Moderate Drought)
-1.9 to +1.9 (Near Normal)
+2.0 to +2.9 (Unusual Moist Spell)
+3.0 to +3.9 (Very Moist Spell)
+4.0 and above (Extremely Moist)
Missing/Incomplete
1 / 2

GOAL 4.7

ADDRESSING CONSERVATION, RECHARGE ENHANCEMENT, RAINWATER HARVESTING, PRECIPITATION ENHANCEMENT, OR BRUSH CONTROL

(Conservation is the only practice which is practicable in the District.)

Objectives

1. *The District will annually submit an article regarding water conservation for publication to at least one newspaper of general circulation in Jasper, Newton, Hardin, and Tyler Counties.*

2. *The District will publish and mail or email, at least once annually, an informative flier or newsletter on water conservation and related issues, to groundwater use permit holders. A copy of the flier or newsletter shall also be made available on the District's website.*

Performance Standard

1. *A copy of the article submitted by the District for publication to a newspaper of general circulation in Jasper, Newton, Hardin, and Tyler Counties regarding water conservation will be included in the District's Annual Report.*

2. *A copy of the flier or newsletter, on water conservation and related issues, along with the mailing/emailing list of the permit holders to whom it was provided, shall be included in the District's Annual Report.*

OBJECTIVE 1

An article titled "Drought Preparedness – Conserve Now Before You Have To" was posted to the District's website and was submitted to the following newspapers on October 28, 2022: the *Beaumont Enterprise,* the *Buna Beacon*, the *Jasper Newsboy,* the *East Texas Banner (f/k/a the Kirbyville Banner), the Newton County News*, the *Silsbee Bee*, and the *Tyler County Booster.* In an effort to assist the newspapers, the article was provided electronically, via email, in two formats (PDF and Microsoft Word). The article was published by the East Texas Banner on November 2, 2022.

GOAL 4.7

OBJECTIVE 2

This objective was met by the publication of the Fall 2022 SETGCD Well Monitor Newsletter (see Appendix A). The newsletter was emailed or mailed to permit holders on November 3, 2022. The newsletter was also mailed to well drillers and public officials throughout the District on December 13, 2022. Copies of the mailing address databases are included in Appendix A. The Fall 2022 SETGCD Well Monitor Newsletter was also posted on the District website on November 7, 2022 for easy access by the general public.

Drought Preparedness – Conserve Now Before You Have To

Sometimes it is difficult to "preach" to people about conserving water. Here in Southeast Texas, we typically have an overabundance of it with an average annual rainfall total of 54 inches. Look back a few years and we recall several flooding events, one of which was Hurricane Harvey that gave the area nearly the entire year's average rainfall in just a few days. How quick things can change though. Except for August, this summer has been very dry and predictions are that the remainder of 2022 will continue that trend until at least early 2023. These predictions are based on the fact that La Nina is the current prevailing weather pattern which is expected to continue through early next. La Nina conditions mean the Pacific Ocean is a little cooler than normal which leads to a drier weather pattern for the southern half of the U.S.

The last time our area experienced a prolonged La Nina was in 2010 - 2012 which was one of the driest periods in Texas history. Most areas within the Southeast Texas Groundwater Conservation District saw 30% - 35% less rain during that period. The northwestern portion (Woodville area) saw closer to 50% less rainfall.

Current predictions are that the La Nina conditions should dissipate between February and April of next year and bring us back to a more neutral weather pattern. Nonetheless, long term predictions are often wrong and we should try to conserve as much as we can and reduce waste as much as possible. After all, it best to have and not need, than to need and not have. There are innumerable ways to conserve water, these are just a few.

Conserving Water Indoors:

- Using efficient showerheads and aerators on your faucets can significantly reduce the amount of water you use. In fact, installing an efficient showerhead is one of the most effective water saving steps you can take inside your house. You can save a little more water by getting into the shower as soon as possible - don't let the water run too long while warming it up.
- When possible, update and replace old toilets, washing machines, and dishwashers. New efficient models can save you thousands of gallons per year.
- An older clothes washer will use up to 23 gallons per load, whereas a new energy efficient model may use as little as 13 gallons. Considering that the average household washes about 300 loads per year, the numbers add up quickly. Another thing to keep in mind is that if you wash with hot water, up to 90% of the cost to wash those clothes is simply for heating the water. Only use hot water when necessary so you'll save on your electrical bill and reduce the impact on the water-energy nexus (a complex relationship between the production of electricity and water).
- In the kitchen, a water efficient dishwasher can save over 1,000 gallons per year. Keep in mind that 1,000 gallons per home may not seem significant but multiply that by a neighborhood and 1,000 gallons per home will add up to quite a lot very quickly.
- Newer water efficient toilets will use only about 1—1.5 gallons of water per flush. Be sure that you keep an eye out for any leaks in your toilet. A leaking toilet can waste quite a bit of water, possibly thousands of gallons a month in extreme cases. It is estimated that 10% of all homes in the U.S. have water leaks wasting 90+ gallons of water per day.

Winter Conservation Tips:

Frozen and burst pipes can waste hundreds of gallons of water in a short period of time. Be prepared for cold weather.

- Disconnect and drain outdoor hoses. Detaching a hose allows water to drain from the faucet and will reduce the possibility of the faucet freezing and bursting.
- Insulate pipes or faucets in unheated areas.
- Consider using electrical "heat tape".
- Seal off access doors, air vents and cracks. Winter winds whistling through overlooked openings can quickly freeze exposed water pipes.
- Don't forget any water lines you may have running to the garden or livestock troughs. Be sure that these pipes get extra attention.

For more information on water conservation ideas visit the Southeast Texas Groundwater Conservation District's Website at https://setgcd.org/ or the Texas Water Development Board's site at https://www.twdb.texas.gov/conservation/

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 1407
JASPER, TEXAS 75951

October 28, 2022

Beaumont Enterprise / Jasper Newsboy
Attn: Editor
380 Main Street
Beaumont, TX 77701
VIA –E-Mail – Localnews@beaumontenterprise.com

Re: Water Conservation Article "Drought Preparedness – Conserve Now Before You Have To"

I would appreciate it if you would consider publishing the attached conservation article in one format or another in your paper (i.e. a news story or op-ed piece). I understand that you are not obligated to print the article; I only ask that you consider it. Please feel free to make minor modifications to the article to meet any formatting guidelines necessary for publication or to correct grammatical or typographic errors.

I have attached the article in PDF format as well as a Microsoft Word file, for your convenience. If you do publish the article, I ask that you please notify me so that I may obtain a copy of the published article for our file.

If I can be of any assistance, please do not hesitate to call me.

Sincerely,

John M Martin

John Martin
General Manager

John Martin

From: John Martin
Sent: Friday, October 28, 2022 6:39 AM
To: 'localnews@beaumontenterprise.com'
Subject: Water Conservation Article - For Beaumont Enterprise and Jasper Newsboy
Attachments: Beaumont Enterprise.pdf; Conservation Article (for newspapers).pdf

Dear Editor,

Please se the attached and consider publishing the water conservation article.

John Martin
Southeast Texas Groundwater
Conservation District
(409) 383-1577

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 1407
JASPER, TEXAS 75951

October 28, 2022

Jasper Newsboy
Attn: Andrea Whitney
702 S. Wheeler
Jasper, TX 75951
VIA E-Mail – awhitney@Jaspernewsboy.com

Re: Water Conservation Article "Drought Preparedness – Conserve Now Before You Have To"

Dear Ms. Whitney:

I would appreciate it if you would consider publishing the attached conservation article in one format or another in your paper (i.e. a news story or op-ed piece). I understand that you are not obligated to print the article; I only ask that you consider it. Please feel free to make minor modifications to the article to meet any formatting guidelines necessary for publication or to correct grammatical errors.

I have attached the article in PDF format as well as a Microsoft Word file, for your convenience. If you do publish the article, I ask that you please notify me so that I may obtain a copy of the published article for our file.

If I can be of any assistance, please do not hesitate to call me.

Sincerely,

John M Martin

John Martin
General Manager

John Martin

From: John Martin
Sent: Friday, October 28, 2022 6:34 AM
To: awhitney@jaspernewsboy.com
Subject: Water Conservation Article
Attachments: Jasper Newsboy.pdf; Conservation Article to Newspapers (need email confirmations).pdf

Hello Jasper Newsboy,

Please see attached. Should you have any questions, please do not hesitate to contact me.

John Martin
Southeast Texas Groundwater
Conservation District
(409) 383-1577

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 1407
JASPER, TEXAS 75951

October 28, 2022

Kirbyville Banner
Attn: Amanda
104 N. Kellie
Kirbyville, TX 75956
VIA E-Mail – Kbanner@sbcglobal.net

Re: Water Conservation Article "Drought Preparedness – Conserve Now Before You Have To"

Dear Amanda:

I would appreciate it if you would consider publishing the attached conservation article in one format or another in your paper (i.e. a news story or op-ed piece). I understand that you are not obligated to print the article; I only ask that you consider it. Please feel free to make minor modifications to the article to meet any formatting guidelines necessary for publication or to correct grammatical errors.

I have attached the article in PDF format as well as a Microsoft Word file, for your convenience. If you do publish the article, I ask that you please notify me so that I may obtain a copy of the published article for our file.

If I can be of any assistance, please do not hesitate to call me.

Sincerely,

John M Martin

John Martin
General Manager

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 1407
JASPER, TEXAS 75951

October 31, 2022

East Texas Banner
Attn: Amanda Rodrigues
104 N. Kellie
Kirbyville, TX 75956
VIA E-Mail – Editor@easttexasbanner.com

Re: Water Conservation Article "Drought Preparedness – Conserve Now Before You Have To"

Dear Amanda:

I would appreciate it if you would consider publishing the attached conservation article in one format or another in your paper (i.e. a news story or op-ed piece). I understand that you are not obligated to print the article; I only ask that you consider it. Please feel free to make minor modifications to the article to meet any formatting guidelines necessary for publication or to correct grammatical errors.

I have attached the article in PDF format as well as a Microsoft Word file, for your convenience. If you do publish the article, I ask that you please notify me so that I may obtain a copy of the published article for our file.

If I can be of any assistance, please do not hesitate to call me.

Sincerely,

John M Martin

John Martin
General Manager

John Martin

From: John Martin
Sent: Friday, October 28, 2022 6:40 AM
To: Kirbyville Banner - Amanda (Kbanner@sbcglobal.net)
Subject: Water Conservation Article
Attachments: Kirbyville Banner.pdf; Conservation Article (for newspapers).pdf

Hi Amanda,

Please see attached and consider publishing the water conservation article.

John Martin
Southeast Texas Groundwater
Conservation District
(409) 383-1577

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 1407
JASPER, TEXAS 75951

October 28, 2022

Newton County News
Attn: Shawn Wilkerson
211 Glover Dr.
Newton, TX 75966
VIA E-Mail – Newtonnews@valornet.com

Re: Water Conservation Article "Drought Preparedness – Conserver Now Before You Have To"

Dear Mr. Wilkerson:

I would appreciate it if you would consider publishing the attached conservation article in one format or another in your paper (i.e. a news story or op-ed piece). I understand that you are not obligated to print the article; I only ask that you consider it. Please feel free to make minor modifications to the article to meet any formatting guidelines necessary for publication or to correct grammatical errors.

I have attached the article in PDF format as well as a Microsoft Word file, for your convenience. If you do publish the article, I ask that you please notify me so that I may obtain a copy of the published article for our file.

If I can be of any assistance, please do not hesitate to call me.

Sincerely,

John M Martin

John Martin
General Manager

John Martin

From: John Martin
Sent: Friday, October 28, 2022 6:41 AM
To: Newton County News
Subject: Water Conservation Article
Attachments: Newton County News.pdf; Conservation Article (for newspapers).pdf

Hello Mr. Wilkerson,

Please see attached and consider publishing the water conservation article.

John Martin
Southeast Texas Groundwater
Conservation District
(409) 383-1577

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 1407
JASPER, TEXAS 75951

October 28, 2022

Silsbee Bee
Attn: Daniel Oliveaux, Editor
410 Hwy. 96 South
Silsbee, TX 77656
VIA E-Mail – Editor@Silsbeebee.com

Re: Water Conservation Article "Drought Preparedness – Conserver Now Before You Have To"

Dear Mr. Oliveaux:

I would appreciate it if you would consider publishing the attached conservation article in one format or another in your paper (i.e. a news story or op-ed piece). I understand that you are not obligated to print the article; I only ask that you consider it. Please feel free to make minor modifications to the article to meet any formatting guidelines necessary for publication or to correct grammatical errors.

I have attached the article in PDF format as well as a Microsoft Word file, for your convenience. If you do publish the article, I ask that you please notify me so that I may obtain a copy of the published article for our file.

If I can be of any assistance, please do not hesitate to call me.

Sincerely,

John M Martin

John Martin
General Manager

John Martin

From: John Martin
Sent: Friday, October 28, 2022 6:43 AM
To: 'editor@silsbeebee.com'
Subject: Water Conservation Article
Attachments: Silsbee Bee.pdf; Conservation Article (for newspapers).pdf

Dear Mr. Oliveaux,

Please see the attached and consider publishing the water conservation article.

John Martin
Southeast Texas Groundwater
Conservation District
(409) 383-1577

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 1407
JASPER, TEXAS 75951

October 28, 2022

Tyler County Booster
Attn: Jim Powers, Editor
205 W. Bluff
Woodville, TX 75979
VIA E-Mail – news@TylerCountyBooster.com

Re: Water Conservation Article "Drought Preparedness – Conserver Now Before You Have To"

Dear Mr. Powers:

I would appreciate it if you would consider publishing the attached conservation article in one format or another in your paper (i.e. a news story or op-ed piece). I understand that you are not obligated to print the article; I only ask that you consider it. Please feel free to make minor modifications to the article to meet any formatting guidelines necessary for publication or to correct grammatical errors.

I have attached the article in PDF format as well as a Microsoft Word file, for your convenience. If you do publish the article, I ask that you please notify me so that I may obtain a copy of the published article for our file.

If I can be of any assistance, please do not hesitate to call me.

Sincerely,

John M Martin

John Martin
General Manager

John Martin

From: John Martin
Sent: Friday, October 28, 2022 6:44 AM
To: News@tylercountybooster.com
Subject: Water Conservation Article
Attachments: Tyler County Booster.pdf; Conservation Article (for newspapers).pdf

Dear Mr. Powers,

Please see the attached and consider publishing the water conservation article.

John Martin
Southeast Texas Groundwater
Conservation District
(409) 383-1577

Drought Preparedness – Conserve Now Before You Have To

Sometimes it is difficult to "preach" to people about conserving water. Here in Southeast Texas, we typically have an overabundance of it, with an average annual rainfall total of 54 inches. Looking back a few years, we recall several flooding events, one of which was Hurricane Harvey, which gave the area nearly the entire year's average rainfall in just a few days. How quickly things can change, though. Except for August, this summer has been very dry, and predictions are that the remainder of 2022 will continue that trend until at least early 2023. These predictions are based on the fact that La Nina is the current prevailing weather pattern expected to continue through early next. La Nina conditions mean the Pacific Ocean is a little cooler than normal, which leads to a drier weather pattern for the southern half of the U.S.

The last time our area experienced a prolonged La Nina was in 2010 - 2012, one of the driest periods in Texas history. Most Southeast Texas Groundwater Conservation District areas saw 30% - 35% less rain during that period. The northwestern portion (Woodville area) saw closer to 50% less rainfall.

Current predictions are that the La Nina conditions should dissipate between February and April of next year and bring us back to a more neutral weather pattern. Nonetheless, long-term predictions are often wrong, and we should try to conserve as much as we can and reduce waste as much as possible. After all, it is better to have and not need than to need and not. There are innumerable ways to conserve water. These are just a few.

Conserving Water Indoors:

Using efficient showerheads and aerators on your faucets can significantly reduce your water. Installing an efficient showerhead is one of the most effective water-saving steps you can take inside your house. You can save a little more water by getting into the shower as soon as possible - don't let the water run too long while warming it up.

When possible, update and replace old toilets, washing machines, and dishwashers. New efficient models can save you thousands of gallons per year.

An older clothes washer will use up to 23 gallons per load, whereas a new energy-efficient model may use as little as 13 gallons. Considering the average household washes about 300 loads per year, the numbers increase quickly.

Another thing to keep in mind is that if you wash with hot water, up to 90% of the cost to wash those clothes is simply for heating the water. Only use hot water when necessary to save on your electrical bill and reduce the impact on the water-energy nexus (a complex relationship between electricity production and water).

In the kitchen, a water-efficient dishwasher can save over 1,000 gallons per year. Remember that 1,000 gallons per home may not seem significant but multiply that by a neighborhood, and 1,000 gallons per home will add up to quite a lot very quickly.

Newer water-efficient toilets will use only about 1—1.5 gallons of water per flush. Be sure to keep an eye out for leaks in your toilet. In extreme cases, a leaking toilet can waste quite a bit of water, possibly thousands of gallons a month. It is estimated that 10% of all homes in the U.S. have water leaks wasting 90+ gallons of water per day.

Winter Conservation Tips:

Frozen and burst pipes can waste hundreds of gallons of water in a short period. Be prepared for cold weather. Disconnect and drain outdoor hoses. Detaching a hose allows water to drain from the faucet and will reduce the possibility of the faucet freezing and bursting.

Insulate pipes or faucets in unheated areas.

Consider using electrical "heat tape."

Seal off access doors, air vents, and cracks. Winter winds whistling through overlooked openings can quickly freeze exposed water pipes.

Don't forget any water lines you may have running to the garden or livestock troughs. Be sure that these pipes get extra attention.

For more information on water conservation ideas, visit the Southeast Texas Groundwater Conservation District's Website.

COURT

From pg. 1

dential subdivision would be comprised of twelve lots and that the subdivision plat had been reviewed and approved by LJA Engineering out of Beaumont to ensure that the development met Jasper County's subdivision requirements.

Next, the Court voted to appoint Judy Bean, Craig Horn, and Nancy Horn as the newest members on the Jasper County Historical Commission board of directors and expressed its appreciation to these volunteers who work to preserve our local history.

The Court then voted to appoint Ray Beck of the Sam Rayburn community to replace Gary Collins on the Jasper County Economic Development District #1 board of directors. The Court expressed its sorrow for the loss of Mr. Collins and was thankful for his many years of service to the Rayburn community.

The Court then heard from Sheriff's Office Chief Deputy Scott Duncan, who provided the monthly Jail report, advising that Jasper County had invoiced a total of $28,160.00 for housing inmates from Newton, Sabine, Tyler, and Nacogdoches Counties, which the Court approved.

Concluding business, the Court voted to renew Jasper County's memorandum of understanding with the Region 5 Prevention Resource Center for Alcohol & Drug Abuse Council for counseling and prevention services, then voted to authorize each Commissioner with a garbage compactor transfer station in Jasper County to establish fees as needed.

BUSINESS AND SERVICE

Conservation

Water Conservation Tips

- Turn Off That Light
- Drip Irrigation
- Winter Conservation TIps
- 20 Ways to be Water Smart
- Outdoor Water Conservation Tips
- Water Conservation Tips 2016
- Summertime Water Saving
- Winter Conservation Tips
- How Not To Waste Water
- Every Drop Counts

+ Water Footprint - You're Using More Than You Think

− Drought Preparedness - Conserve Now Before You Have To

CONSERVATION CORNER

Groundwater Waste Reduction—Drought Preparedness

Conserve Now Before You Have To

Sometimes it is difficult to "preach" to people about conserving water. Here in Southeast Texas we typically have an over abundance of it with an average annual rainfall total of 54 inches. Look back a few years and we recall several flooding events, one of which was Hurricane Harvey that gave the area nearly the entire year's average rainfall in just a few days. How quick things can change though. Except for August, this summer has been very dry and predictions are that the remainder of 2022 will continue that trend until at least early 2023. These predictions are based on the fact that La Nina is the current prevailing weather pattern which is expected to continue through early next. La Nina conditions mean the Pacific Ocean is a little cooler than nor-

pattern for the

olonged La Nina
ıe driest periods
: Southeast Tex-
saw 30% - 35%
western portion
rainfall.

Current predictions are that the La Nina conditions should dissipate between February and April of next year and bring us back to a more neutral weather pattern. Nonetheless, predictions can be wrong and we should try to conserve as much as we can and reduce waste as much as possible. Afterall, it is best to have and not need, than to need and not have. There are innumerable ways to conserve water, and here are just a few.

Conserving Water Indoors:

- Using efficient showerheads and aerators on your faucets can significantly reduce the amount of water you use. In fact, installing an efficient showerhead is one of the most effective water saving steps you can take inside your house. AYou can save a little more water by getting into the shower as soon as possible—don't let the water run too long while warming it up.
- When possible, update and replace old toilets, washing machines, and dishwashers. New efficient models can save you thousands of gallons per year.
- An older clothes washer will use up to 23 gallons per load, whereas a new energy efficient model may use as little as 13 gallons. Considering that the average household washes about 300 loads per year, the numbers add up quickly. Another thing to keep in mind is that if you wash with hot water, up to 90% of the cost to wash those clothes is simply for heating the water. Only use hot water when necessary so you'll save on your electrical bill and reduce the impact on the water-energy nexus (a complex relationship between the production of electricity and water).
- In the kitchen, a water efficient dishwasher can save over 1,000 gallons of water per year. Keep in mind that 1,000 gallons per month may not seem significant, but when you add your neighborhood and 1,000 gallons per home will add up quickly.
- Newer, water efficient toilets will use only about 1—1.5 gallons of water per flush. Be sure that you keep an eye out for any leaks in your toilet. A leaking toilet can waste quite a bit of water, possibly thousands of gallons a month in extreme cases. It is estimated that 10% of all homes in the U.S. have water leaks wasting 90+ gallons of water per day.

Winter Conservation Tips:

Frozen and burst pipes can waste hundreds of gallons of water in a short period of time. Be prepared for cold weather.

- Disconnect and drain outdoor hoses. Detaching a hose allows water to drain from the faucet and will reduce the possibility of the faucet freezing and bursting.
- Insulate pipes or faucets in unheated areas.
- Consider using electrical "heat tape".
- Seal off access doors, air vents and cracks. Winter winds whistling through overlooked openings can quickly freeze exposed water pipes.
- Don't forget any water lines you may have running to the garden or livestock troughs. Be sure that these pipes get extra attention.

For more information on water conservation ideas visit

Board Meetings

2nd Thursday of each month beginning at 10:00 AM unless otherwise noticed.

No Board meetings scheduled for August or December unless otherwise noticed.

Meetings are held at the
Jasper County Courthouse Annex Building
271 E. Lamar, Suite 202, 2nd Floor –
Emergence Operations Center Offices
Jasper, TX 75951

Important links

Meeting and Hearing Notes
Groundwater Management Area 14 Region I
Water Planning Group
Conservation
Drought Information
Newsletters
Reports / DFCs
Source Water Protection
Understanding Texas Aquifers

GOAL 4.8

ADDRESSING IN A QUANTITATIVE MANNER THE DESIRED FUTURE CONDITIONS

Objective

1. *The District will monitor groundwater conditions within the District by measuring the static water level in at least fifteen (15) monitor wells annually.*

Performance Standard

1. *The recorded static water levels of the fifteen (15) monitor wells will be included in the District's Annual Report.*

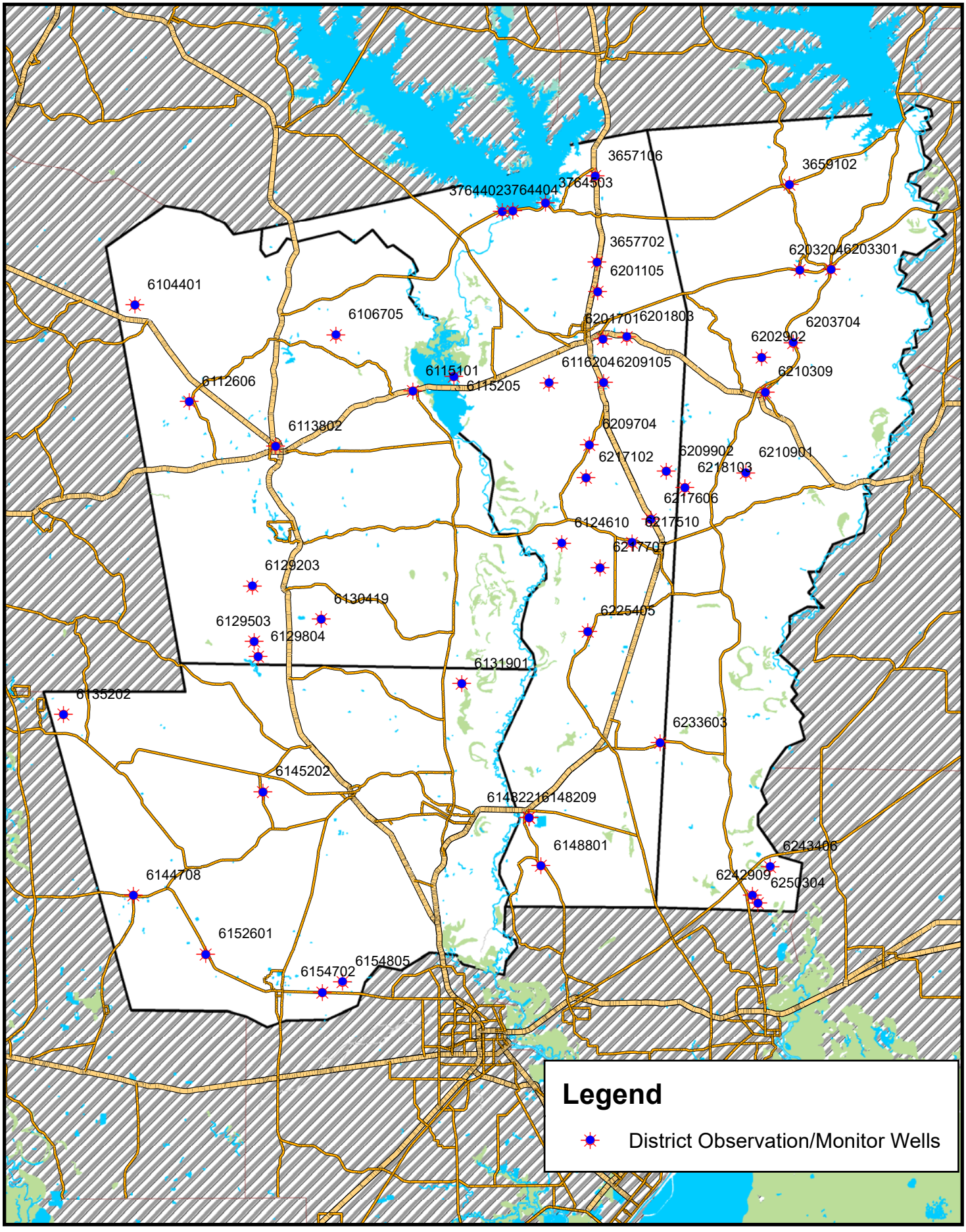
OBJECTIVE 1

Objective 1 has been met by the monitoring of approximately fifty (50) wells on two separate occasions in 2022 (Spring and Fall – reports attached). The static water level data collected is shared with the Texas Water Development Board, providing the agency with current data for groundwater modeling and planning purposes. The Texas Water Development Board continues to maintain a transducer in monitor well 6148209 allowing for static water levels to be obtained from this well via the internet at: http://www.twdb.state.tx.us/gwrd/waterlevels/waterlevels.html.

Additionally, the District continues joint planning within Groundwater Management Area 14 ("GMA 14") to set, as statutorily required, the Desired Future Conditions of the GMA (our current DFCs are based on a sixty-year groundwater planning period). The Groundwater Availability Models, Modeled Available Groundwater, and associated data that is compiled in this process will be used by the District in its efforts to address the future conditions of the Gulf Coast Aquifer in the Southeast Texas Groundwater Conservation District.

A report prepared by William R. Hutchison, Ph.D, P.E., P.G., titled *"Comparison of Measured Drawdown with Simulated Drawdowns from the Desired Future Conditions Adopted in 2021 in Groundwater Management Area 14"* is included. This report is to provide the GMA 14 Members with information on how static water levels are comparing to the DFCs within GMA 14 and each District. A summary of the results states that the comparison of actual drawdown data and simulated drawdown data from the HAGM simulation used as part of the joint planning process shows that current actual drawdowns **are consistent with the 2021 desired future condition statement.**

Water Level Observation Wells - 2022



STATIC WATER LEVEL READINGS - FALL 2022

State Well ID No.	County	Date	Current Depth from MP	MP	Current Depth from Land Surface	Method	Remarks	Technician
3657106	Jasper	11/9/2022	-12.27	4.00	-8.27	E-Line		John Martin
3657702	Jasper	11/9/2022	-118.50	1.40	-117.10	Steel Tape		John Martin
3764402	Jasper	11/9/2022	-113.15	1.50	-111.65	E-Line		John Martin
3764404	Jasper	11/9/2022	-51.80	2.00	-49.80	Steel Tape		John Martin
3764503	Jasper	11/9/2022	-41.20	3.08	-38.12	E-Line		John Martin
6108101	Jasper						Plugged by landowner	John Martin
6115205	Jasper	11/15/2022	36.96	2.55	39.51	Pressure Gauge	16 PSI / New MP	John Martin
6116204	Jasper	11/15/2022	-55.97	3.50	-52.47	E-Line		John Martin
6124504	Jasper		0.00	0.00	0.00			John Martin
6124610	Jasper	11/15/2022	-33.63	0.66	-32.97	E-Line		John Martin
6148221	Jasper	11/2/2022	-32.80	1.00	-31.80	E-Line		John Martin
6148209	Jasper	12/14/2022	-192.35	0.00	-192.35	E-Line	TWDB Satelite uplink	John Martin
6148801	Jasper	11/2/2022	-11.62	1.00	-10.62	E-Line	No change in level	John Martin
6201105	Jasper				0.00			
6201701	Jasper						Plugged by landowner	John Martin
6201803	Jasper	11/30/2022	-88.47	3.50	-84.97	Steel Tape		John Martin
6209105	Jasper	11/15/2022	-4.95	2.00	-2.95	E-Line		John Martin
6209704	Jasper	11/15/2022	-39.73	2.00	-37.73	E-Line		John Martin
6209902	Jasper	11/15/2022	-30.23	2.50	-27.73	E-Line		John Martin
6217102	Jasper	11/15/2022	Dry	1.00	Dry	E-Line	Dry	John Martin
6217510	Jasper	11/15/2022	-19.23	0.50	-18.73	E-Line		John Martin
6217606	Jasper	11/15/2022	-4.17	2.50	-1.67	E-Line		John Martin
6217707	Jasper	11/15/2022	-13.50	1.50	-12.00	E-Line		John Martin
6225405	Jasper	11/15/2022	-58.98	1.00	-57.98	E-Line		John Martin
6233603	Jasper	11/2/2022	-14.30	1.00	-13.30	E-Line		John Martin
6131901	Hardin	11/2/2022	-43.70	3.40	-40.30	E-Line		John Martin
6135202	Hardin	11/16/2022	-60.63	2.60	-58.03	Steel Tape		
6144708	Hardin	11/16/2022	-26.40	0.00	-26.40	E-Line		John Martin
6145202	Hardin	12/5/2022	-13.05	2.00	-11.05	E-Line		John Martin
6146202	Hardin			0.00	0.00	E-Line	Closed	John Martin
6152601	Hardin	11/16/2022	-23.68	0.66	-23.02	Steel Tape		John Martin
6154702	Hardin	11/16/2022	-29.80	0.90	-28.90	Steel Tape		John Martin
6154805	Hardin	11/16/2022	-31.65	2.10	-29.55	E-Line		John Martin

FALL 2022

6104401	Tyler	11/9/2022	-164.97	0.00	-164.97	E-Line		John Martin
6106705	Tyler	11/16/2022	-151.20	2.20	-149.00	Steel Tape		John Martin
6112606	Tyler	11/9/2022	-124.10	0.30	-123.80	E-Line		John Martin
6113802	Tyler	12/20/2022	-164.85	1.50	-163.35	E-Line		John Martin
6115101	Tyler	11/9/2022	-33.90	0.50	-33.40	E-Line		John Martin
6115501	Tyler			2.00	2.00		no longer recording	John Martin
6115703	Tyler			0.00			no longer in program	John Martin
6121110	Tyler			0.33		E-Line	well appares to have silted in	John Martin
6129203	Tyler	11/9/2022	-28.28	3.00	-25.28	E-Line		John Martin
6129503	Tyler	11/9/2022	-27.90	2.50	-25.40	E-Line		John Martin
6129804	Tyler	11/16/2022	-31.58	1.55	-30.03	Steel Tape		John Martin
6130419	Tyler	11/9/2022	-17.30	3.50	-13.80	E-Line		John Martin
3659102	Newton	11/2/2022	-94.05	2.33	-91.72	E-Line		John Martin
6202902	Newton	11/2/2022	-15.60	1.65	-13.95	E-Line		John Martin
6203204	Newton	11/2/2022	-67.60	1.70	-65.90	Steel Tape		John Martin
6203301	Newton	11/2/2022	-39.58	2.30	-37.28	E-Line		John Martin
6203704	Newton	11/2/2022	-173.58	1.30	-172.28	E-Line		John Martin
6210309	Newton	11/2/2022	-66.38	2.95	-63.43	E-Line		John Martin
6210901	Newton	11/1/2022	-18.90	0.50	-18.40	E-Line		John Martin
6218103	Newton	11/1/2022	-40.58	1.25	-39.33	E-Line		John Martin
6242909	Newton	11/2/2022	-39.58	1.60	-37.98	E-Line		John Martin
6243406	Newton	11/2/2022	-29.05	1.60	-27.45	E-Line		John Martin
6250304	Newton	11/2/2022	-38.75	1.00	-37.75	E-Line		John Martin

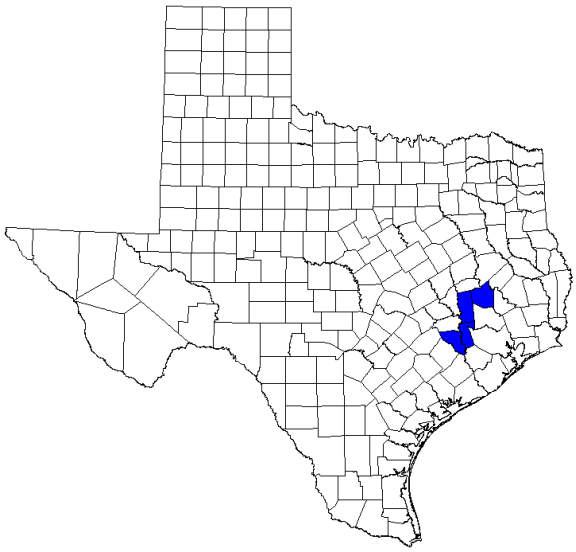
STATIC WATER LEVEL READINGS - SPRING 2022

State Well ID No.	County	Date	Current Depth from MP	MP	Current Depth from Land Surface	Method	Remarks	Technician
3657106	Jasper	5/9/2022	-11.87	4.00	-7.87	E-Line		John Martin
3657702	Jasper	5/9/2022	-116.80	1.40	-115.40	Steel Tape	New MP	John Martin
3764402	Jasper	5/9/2022	-111.66	1.50	-110.16	E-Line		John Martin
3764404	Jasper	5/9/2022	-48.90	2.00	-46.90	Steel Tape		John Martin
3764503	Jasper	5/9/2022	-34.02	3.08	-30.94	E-Line		John Martin
6108101	Jasper						Plugged by landowner	John Martin
6115205	Jasper	5/9/2022	36.96	2.55	39.51	Pressure Gauge	16 PSI / New MP	John Martin
6116204	Jasper	5/4/2022	-54.75	3.50	-51.25	E-Line		John Martin
6124504	Jasper		0.00	0.00	0.00			John Martin
6124610	Jasper	5/4/2022	-32.14	0.66	-31.48	E-Line		John Martin
6148221	Jasper	5/10/2022	-30.47	1.00	-29.47	E-Line		John Martin
6148209	Jasper	5/10/2022	-210.23	4.60	-205.63	E-Line	Satellite uplink is down	John Martin
6148801	Jasper	5/10/2022	-7.95	1.00	-6.95	E-Line	No change in level	John Martin
6201105	Jasper				0.00			
6201701	Jasper						To be plugged	John Martin
6201803	Jasper	5/12/2022	-87.13	3.50	-83.63	Steel Tape		John Martin
6209105	Jasper	5/4/2022	-5.08	2.00	-3.08	E-Line		John Martin
6209704	Jasper	5/4/2022	-39.25	2.00	-37.25	E-Line		John Martin
6209902	Jasper	5/10/2022	-26.60	2.50	-24.10	E-Line		John Martin
6217102	Jasper	5/4/2022	Dry	1.00	Dry	E-Line	Dry	John Martin
6217510	Jasper	5/10/2022	-15.61	0.50	-15.11	E-Line		John Martin
6217606	Jasper	5/10/2022	-4.50	2.50	-2.00	E-Line		John Martin
6217707	Jasper	5/4/2022	-9.75	1.50	-8.25	E-Line		John Martin
6225405	Jasper	5/4/2022	-56.38	1.00	-55.38	E-Line		John Martin
6233603	Jasper	5/10/2022	-12.47	1.00	-11.47	E-Line		John Martin
6131901	Hardin	5/11/2022	-37.26	3.40	-33.86	E-Line		John Martin
6135202	Hardin	5/11/2022	-60.12	2.60	-57.52	Steel Tape	Well off at least 10 min.	
6144708	Hardin	5/11/2022	-24.91	0.00	-24.91	E-Line		John Martin
6145202	Hardin	5/9/2022	-9.20	2.00	-7.20	E-Line		John Martin
6146202	Hardin			0.00	0.00	E-Line	Closed	John Martin
6152601	Hardin	5/11/2022	-23.25	0.66	-22.59	Steel Tape		John Martin
6154702	Hardin	5/11/2022	-28.50	0.90	-27.60	Steel Tape		John Martin
6154805	Hardin	5/11/2022	-30.08	2.10	-27.98	E-Line		John Martin

SPRING 2022

6104401	Tyler	5/9/2022	-164.57	0.00	-164.57	E-Line		John Martin
6106705	Tyler	5/9/2022	-149.40	2.20	-147.20	Steel Tape		John Martin
6112606	Tyler	5/9/2022	-123.30	0.30	-123.00	E-Line		John Martin
6113802	Tyler	5/9/2022	-165.16	1.50	-163.66	E-Line		John Martin
6115101	Tyler	5/9/2022	-33.35	0.50	-32.85	E-Line		John Martin
6115501	Tyler			2.00	2.00		no longer recording	John Martin
6115703	Tyler			0.00			no longer in program	John Martin
6121110	Tyler	11/8/2021		0.33		E-Line	well appares to have silted in	John Martin
6129203	Tyler	5/9/2022	-22.33	3.00	-19.33	E-Line		John Martin
6129503	Tyler	5/11/2022	-22.75	2.50	-20.25	E-Line		John Martin
6129804	Tyler	5/11/2022	-28.78	1.55	-27.23	Steel Tape		John Martin
6130419	Tyler	5/9/2022	-11.15	3.50	-7.65	E-Line		John Martin
3659102	Newton	5/5/2022	-90.10	2.33	-87.77	E-Line		John Martin
6202902	Newton	5/5/2022	-11.90	1.65	-10.25	E-Line		John Martin
6203204	Newton	5/5/2022	-67.22	1.70	-65.52	Steel Tape		John Martin
6203301	Newton	5/5/2022	-38.77	2.30	-36.47	E-Line		John Martin
6203704	Newton	5/5/2022	-172.45	1.30	-171.15	E-Line		John Martin
6210309	Newton	5/5/2022	-65.53	2.95	-62.58	E-Line		John Martin
6210901	Newton	5/5/2022	-16.60	0.50	-16.10	E-Line		John Martin
6218103	Newton	5/5/2022	-37.25	1.25	-36.00	E-Line		John Martin
6242909	Newton	5/5/2022	-36.68	1.60	-35.08	E-Line		John Martin
6243406	Newton	5/5/2022	-26.36	1.60	-24.76	E-Line		John Martin
6250304	Newton	5/5/2022	-36.89	1.00	-35.89	E-Line		John Martin

Comparison of Measured Drawdown with Simulated Drawdowns from the Desired Future Conditions Adopted in 2021 in Groundwater Management Area 14



Prepared for:

Zach Holland
General Manager
Bluebonnet Groundwater Conservation District
P.O. Box 269
Navasota, TX 77868-0269

Prepared by:

William R. Hutchison, Ph.D., P.E., P.G.
Independent Groundwater Consultant
9305 Jamaica Beach
Jamaica Beach, TX 77554
512-745-0599
billhutch@texasgw.com

February 11, 2022

Professional Engineer and Professional Geoscientist Seals

This report was prepared by William R. Hutchison, Ph.D., P.E., P.G., who is licensed in the State of Texas as follows:

- Professional Engineer (Geological and Civil) No. 96287
- Engineering Firm Registration No. 14526
- Professional Geoscientist (Geology) No. 286

Table of Contents

List of Tables

List of Figures

1.0 Introduction and Summary of Results

1.1 Introduction

On January 5, 2022, the groundwater management district in Groundwater Management Area 14 adopted desired future conditions as follows:

> ***In each county in GMA 14, no less than 70 percent median available drawdown remaining in 2080 or no more than an average of 1.0 additional foot of subsidence between 2009 and 2080.***

This desired future condition statement was adopted after reviewing the results of a multi-metric simulation using the Houston Area Groundwater Model (HAGM) documented in Oliver (2021). The HAGM was adopted as the Groundwater Availability Model for the area by the Texas Water Development Board in 2013. The specific model run files were obtained from the folder named:

32_PEST_ConsFac_Base16_30kLim_1.0-70_2080

The output from the specific simulation that was used in the development of the desired future condition (DFC simulation) was used in this analysis. Specifically, the DFC simulation output was processed to calculate drawdown from the end of 2009 on an annual basis for each model cell. Thus, actual drawdown data from a monitoring well located in the model grid can be compared with the simulated drawdown data. Monitoring well latitude and longitude coordinates and well depth can be used to locate the well in the model grid system of layer, row, and column. In any particular well, if data were collected during the base year (end of 2009), that groundwater elevation can be used to calculate drawdowns in subsequent years for comparison with the simulated data at that location.

The objective of this comparison is to assist the groundwater conservation districts in preparing any needed modifications to their District Management Plans in response to the updated desired future conditions, and to prepare for the next round of joint planning.

All files referenced in this report and all FORTRAN programs used to process TWDB data and model results are included in the GMA 14 Drop Box folder that is accessible.

1.2 Summary of Results

Overall, the comparison of actual drawdown data and simulated drawdown data from the HAGM simulation used as part of the joint planning process shows that current actual drawdowns are consistent with the 2021 desired future condition statement.

The analysis demonstrated limitations with the HAGM and with the specific simulation used in the joint planning process. Specific limitations and the methods to account for them are discussed in this report.

2.0 Measured Drawdowns

2.1 TWDB Groundwater Database

The full groundwater database was downloaded from the TWDB website on February 4, 2022:

http://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp

Files for groundwater level data (*WaterLevelsMajor.txt*) and well locations (*WellMain.txt*) were used in this analysis.

2.2 GMA 14 Groundwater Levels

The groundwater level data (*WaterLevelsMajor.txt*) were saved in two Excel files (*GWDB1.xlsx* and *GWDB2.xlsx*). There were too many records to save the entire database in a single Excel file. The files were edited to remove some columns and saved as two *csv* files (*GWDB1short.csv* and *GWDB2short.csv*). Records from GMA 14 counties were then extracted from the *csv* files and saved in a single Excel file (*GMA14CountiesGWDB.xlsx*). GMA 14 counties are listed in Table 1.

Table 1. GMA 14 Counties

Austin	Liberty
Brazoria	Montgomery
Chambers	Newton
Fort Bend	Orange
Galveston	Polk
Grimes	San Jacinto
Hardin	Tyler
Harris	Walker
Jasper	Waller
Jefferson	Washington

2.3 Well Locations

The well location file downloaded from TWDB (*WellMain.txt*) was edited to remove some columns and saved as a *csv* file (*TWDBWellCoord.csv*). The location of the well as provided by TWDB are in decimal degrees. Two new columns were added (xc and yc) for the x- and y-coordinates in the GAM coordinate system. The x- and y-coordinates were calculated based on the latitude and longitude data using Surfer, a commercial software package.

2.4 Dates for Analysis

The objective of this analysis focuses on comparison of actual data with simulated data associated with desired future condition GAM simulations. The 2021 DFCs form the basis for selecting the actual data for comparison with GAM simulations. The 2021 DFC used the end of 2009 as a base year. Thus, the GAM simulation can be used to calculate drawdowns from 2010 to 2080.

2.5 Processing GMA 14 Groundwater Level Data

A total of 142,763 groundwater level records in GMA 14 counties are present in the TWDB groundwater database. This number was 133,857 groundwater levels about a year ago (Hutchison, 2021a). Dates of measurement range from 1895 to 2022. There are no groundwater elevation data in 1,660 records. These missing records were removed, leaving a total of 141,104 records for further processing.

As noted above, the "base year" for the current DFC is 2009. Thus, only records from 2009 to 2022 were used in this analysis. Records before 2009 could be used to assess model calibration, but that is beyond the scope of this analysis. The resulting file was saved as *GMA14CountiesGWDB2009-2022.csv* and contains 32,459 records.

Because the GAM simulations run in support of the development of the DFCs were run using annual stress periods, it is appropriate to use end-of-year measured data. Thus, only data collected from January to March and October to December were saved for further use. The resulting selections were saved as *GMA14CountiesGWDB2009-2022EOY.xlsx* and contains 20,087 records (up from 14,073 records for the analysis about a year ago).

2.5.1 List of Wells with Data

The end-of-year data file (*GMA14CountiesGWDB2008-2022EOY.csv*) was used in a FORTRAN program (*listwells.exe*) to generate a list of wells that contain data (*GMA14EOYlist.dat*). The output file contains the well number and the county and contains 1,069 records (up from 1,053 records for the analysis about a year ago).

The output from the program was saved as an csv and an Excel file (*GMA14EOYList.csv* and *GMA14EOYList.xlsx*). The Excel file was used to develop a summary list of the number of wells in each county as shown in Table 2.

Table 2. Number of Wells in Each GMA 14 County (end-of-year data)

County	Number of Wells		County	Number of Wells
Austin	11		Liberty	28
Brazoria	41		Montgomery	229
Chambers	11		Newton	11
FortBend	96		Orange	21
Galveston	33		Polk	22
Grimes	16		SanJacinto	20
Hardin	11		Tyler	12
Harris	411		Walker	18
Jasper	24		Waller	20
Jefferson	11		Washington	23

2.5.2 Well Locations

The FORTRAN program *WellLocation.*exe was written to read the output file from *listwells.exe* (*GMA14EOYlist.dat*) and the TWDB location file (*TWDBWellCoord.csv*) to write a file with location data for the 1,033 wells with end-of-year data in GMA 14, and a provided well depth. Please note that the original input file had 1,053 wells, but the final output file has only 1,033 wells because there were 20 wells with no well depth information. The output file with the results is named *gma14WellLocations.dat*.

2.5.3 HAGM Grid Row, Column, and Layer

The FORTRAN program *getrc.exe*:

- Reads the HAGM grid file (*nglfcgrid3.csv*) that has been modified to include only relevant spreadsheet columns
- Reads the cell top and bottom elevations of the HAGM (*hagmtopbot.dat*)
- Reads the x- and y-coordinates of the GMA 14 wells from *WellLocation.exe* (*gma14WellLocations.dat*)
- Finds the row, column, and layer for each GMA 14 well
- Counts the number of wells in each county-layer unit
- Writes three output files:
    - *GMA14wellloc.dat* includes 1,006 wells for which a row, column, and layer can be identified.
    - *GMA14nolayers.dat* includes 43 wells that are deeper than the bottom of layer 4 in the HAGM
    - *GMA14countylayercount.dat* includes the well counts for each county-layer unit

A summary of the number of wells in each county-model layer unit is presented in Table 3.

Table 3. Number of Wells with Data in Each County-Model Layer Unit

County	Layer 1	Layer 2	Layer 3	Layer 4	Total
Austin	1	9	1	0	11
Brazoria	34	7	0	0	41
Chambers	9	2	0	0	11
FortBend	29	66	0	1	96
Galveston	19	14	0	0	33
Grimes	0	3	0	11	14
Hardin	3	8	0	0	11
Harris	98	291	9	11	409
Jasper	4	10	0	5	19
Jefferson	11	0	0	0	11
Liberty	3	22	2	1	28
Montgomery	21	66	22	103	212
Newton	3	3	0	2	8
Orange	20	1	0	0	21
Polk	0	1	4	13	18
SanJacinto	0	3	7	7	17
Tyler	1	4	1	5	11
Walker	0	0	0	5	5
Waller	0	15	1	1	17
Washington	0	3	3	7	13
Total	256	528	50	172	1,006

2.5.4 Annual Groundwater Levels

The FORTRAN program *AnnGWE.exe* was written to read the GMA 14 groundwater levels (*GMA14CountiesGWDB2009-2022EOY.csv*) and write annual groundwater levels and pertinent location data for each well listed in *GMA14wellloc.dat*. The priority for the assignment is:

1. December of the current year
2. January of the following year
3. November of the current year
4. February of the following year
5. October of the current year
6. March of the following year

The output from *AnnGWE.exe* includes the following files:

- Data count, minimum and maximum years of data, groundwater elevation for base year:
    - *awc2009.dat*: All GMA 14 counties from 2010 to 2021 (805 wells)

- Base groundwater elevation, annual groundwater elevation, annual drawdown:
  - *agwe2009base.dat*: All GMA 14 counties from 2010 to 2021 (7,085 annual drawdown data points)

The number of actual drawdown data points for the current DFC (base year of 2009 – data from 2010 to 2021) for each county-model layer unit are summarized in Table 4.

Table 4. Number of Actual Drawdown Data Points for Current DFC for Each County-Model Layer Unit

County	Layer 1	Layer 2	Layer 3	Layer 4	Total
Austin	12	24	11	0	47
Brazoria	202	36	0	0	238
Chambers	70	9	0	0	79
FortBend	206	430	0	0	636
Galveston	185	137	0	0	322
Grimes	0	26	0	89	115
Hardin	23	21	0	0	44
Harris	690	2,171	41	92	2,994
Jasper	48	93	0	59	200
Jefferson	59	0	0	0	59
Liberty	20	170	19	0	209
Montgomery	116	459	185	730	1,490
Newton	34	36	0	24	94
Orange	105	0	0	0	105
Polk	0	10	3	56	69
SanJacinto	0	7	40	40	87
Tyler	12	26	8	40	86
Walker	0	0	0	46	46
Waller	0	111	6	10	127
Washington	0	13	0	25	38
Total	1,782	3,779	313	1,211	7,085

3.0 Simulated Drawdowns

The FORTRAN post-processor *getdd.exe* was written to extract simulated drawdown from the GAM simulation that was the basis for the 2021 DFC . The program reads the saved head file (HAGM_BT_base_2080.*hds*), calculates drawdowns based on a 2009 base year. The actual data file from *AnnGWE.exe* (*agwe2009base.dat*) was then read and an output file (*actsim20092021.dat*) is written with data on model grid well location (layer, row, and column) actual drawdown, simulated drawdown, and county location.

The number of comparisons total 6,280 and breakdown by year as follows:

- 2010 to 2018: 768 comparisons in 2010 declining to 613 comparisons in 2018
- 2019: 94 comparisons
- 2020: 75 comparisons
- 2021: 24 comparisons

Data for 2019, 2020, and 2021 may have been collected and not yet entered into the TWDB groundwater database. However, results of more recent years are based on a smaller sample size than results from 2010 to 2018.

4.0 Results

The purpose of this analysis was to provide a high-level evaluation of the comparison of actual drawdown data and the simulated drawdown data from the HAGM simulation that was used to develop the 2021 DFCs. The analyses presented in this report are largely based on evaluating the difference between the simulated drawdowns and the actual drawdowns. Thus, a positive difference means that the simulated drawdown is greater than the actual drawdown, and a negative difference means that the actual drawdown is greater than the simulated drawdown.

For purposes of evaluating if the actual drawdowns are generally consistent with the DFC, positive differences suggest that actual drawdowns are higher than the simulated drawdowns associated with the DFC statements. A prevalence of positive differences, therefore, would suggest that actual groundwater level conditions are consistent with DFCs. In contrast, a prevalence of negative differences would suggest that actual groundwater level conditions are not consistent with DFCs.

The Excel file with the results is named *GMA14actsim.xlsx.* This file has multiple tabs associated with the various analyses that were completed as part of this report. In general, the simulated drawdowns are higher than the actual drawdowns, which suggests general consistency with the adopted DFCs. Evaluation of these differences included overall summary statistics, frequency histograms, time series plots of simulated and actual drawdown, and evaluations on a county and annual level. However, there were some outliers that warranted further evaluation.

4.1 Summary of Results

The overall frequency of the differences are summarized below in Table 5. The overall summary is presented for all GMA 14 counties as well as for all GMA 14 counties excluding Fort Bend, Galveston, and Harris (counties with a subsidence district). Please note that about 80 percent of the differences for all of GMA 14 are between 0 and 100 ft, and about 71 percent of the differences are between 0 and 100 ft for the counties without a subsidence district. These results suggest general consistency with the DFCs from 2010 to 2021. However, within the non-subsidence district counties, there are 20 differences less than -100 ft, and there are 193 differences more than 100 ft.

Table 5. Overall Frequency of Differences, 2010 to 2021 - All GMA 14 Counties

Difference Range (Simulated Drawdown minus Actual Drawdown) in ft	All GMA 14 Counties		All GMA 14 Counties (Excluding Fort Bend, Galveston, and Harris Counties	
	Number of Data Points	Frequency (%)	Number of Data Points	Frequency (%)
< -100	21	0	20	1
-100 to 0	954	15	593	21
0 to 100	5,045	80	1,993	71
> 100	260	4	193	7

While these outliers represent less than five percent of all the differences calculated, they warrant additional discussion because they offer insights to the limitations of the HAGM as a planning tool and insights to the limitations of the specific HAGM simulation that was completed in support of the joint planning process. HAGM limitations and limitations associated with the application of this specific HAGM simulation are less problematic if the DFC and associated modeled available groundwater (MAG) numbers are used solely for planning. Hutchison (2021b) documents the DFC implementation approach of the Bluebonnet Groundwater Conservation District.

4.2 Evaluation of Outliers

The Excel file with the results (*GMA14actsim.xlsx*) can be sorted by the differences to better understand the comparisons with the most extreme negative difference (actual drawdown is more than simulated drawdown) and the most extreme positive difference (actual drawdown less than simulated drawdown). For purposes of this analysis for GMA 14, the counties regulated by subsidence districts (Fort Bend, Galveston, and Harris) are excluded.

4.2.1 Jasper County

The 20 comparisons that have a difference less than -100 ft are in Jasper County, occur in one Evangeline Aquifer model cell, and are monitored by two wells: Well 61-48-209, Well 61-14-221. For these 20 comparisons, average actual drawdown is 6.81 ft, and average simulated drawdown is -113.75 ft (average groundwater rise of about 114 feet since the end of 2009). There is also a nearby cell that is monitored by Well 61-48-801 where the average actual drawdown is about 0.65 ft, and the average simulated drawdown is -60.19 ft.

Interpretation of these anomalous results is clear when the specified pumping of the joint planning simulation of the HAGM is evaluated. The pumping in Jasper County from each model layer (aquifer unit) is presented in Figure 1 and is contained in a pumping summary for each county-model layer unit in the Excel file named *DFCPump.xlsx*.

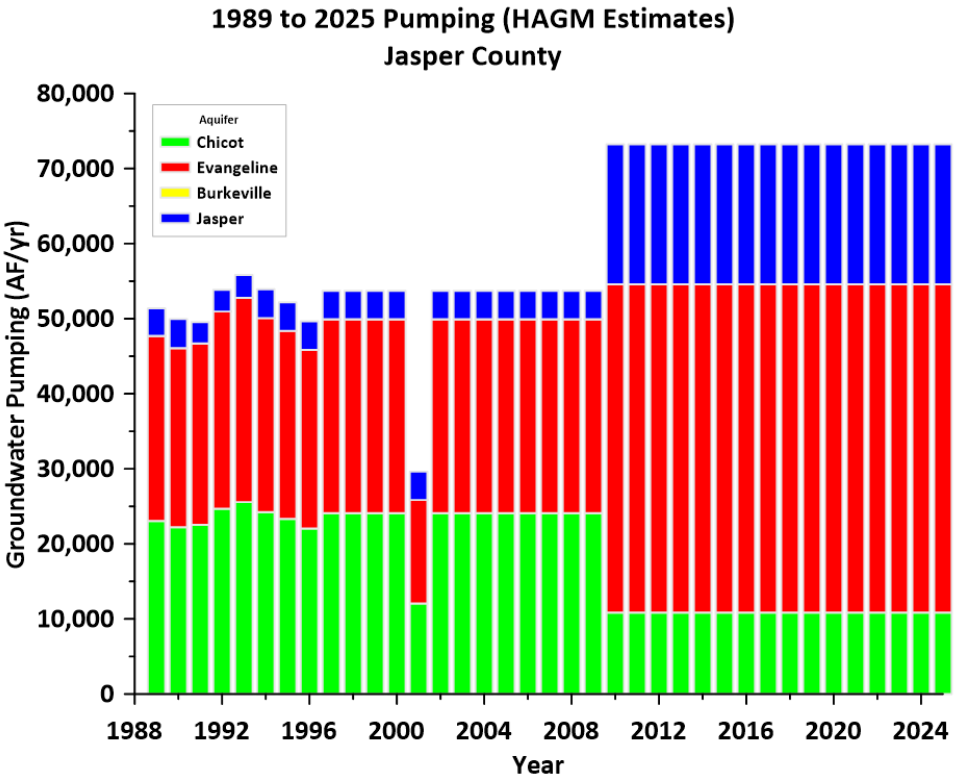


Figure 1. Simulated Jasper County Pumping – 1988 to 2025

Please note that the calibrated model estimates of pumping in Figure 1 are represented from the years 1989 to 2009. Pumping estimates for the joint planning simulated that were adjusted as part of the multi-metric approach are represented in Figure 1 for the years 2010 to 2025. Please note that in Jasper County, Chicot Aquifer pumping decreased after 2009. Also, Evangeline and Jasper aquifer pumping increased after 2009. These changes resulted in an overall increase in pumping after 2009.

The Excel file that summarizes the pumping from each county-model layer unit from 1989 to 2080 for the HAGM simulation used to develop the DFC includes a tab that sums the pumping in a 12-

square mile are in Jasper County defined by the cells with the anomalous drawdown differences. From 2002 to 2009, the simulated pumping from this 12-square mile area in Jasper County was:

- Constant pumping specified from 2002 to 2009:
  - 24,090 AF/yr from the Chicot Aquifer
  - 24,088 AF/yr from the Evangeline Aquifer

These pumping values are part of the calibrated model and were not adjusted during the joint planning simulation. However, they represent a baseline pumping that becomes significant: if pumping after 2009 increases, a drawdown in groundwater levels is expected; if pumping after 2009 decreases, a recovery in groundwater levels (a negative drawdown) is expected. In this case, simulated pumping in both the Chicot and Evangeline aquifers decreased from the 2002 to 2009 amounts, and was held constant from 2010 to 2080:

- Constant pumping specified from 2010 to 2080:
  - 2,310 AF/yr in the Chicot Aquifer
  - 3,037 AF/yr in the Evangeline Aquifer

Thus, the recovery of simulated groundwater levels in this area is expected given the reductions in nearby pumping specified in the simulation.

The conclusion is that these three wells are not useful for evaluating the consistency of actual drawdown and simulated drawdown, and these cells should be eliminated in any summary analysis of Jasper County.

4.2.2 Liberty County, San Jacinto County, and Pumping in the Burkeville Formation

The 22 comparisons that have the highest positive difference (actual drawdown less than simulated drawdown) are in Liberty and San Jacinto counties, and all are associated with monitoring wells that are designated as Burkeville Formation wells. The Burkeville Formation is considered a confining layer, and the HAGM specified low hydraulic conductivity to this formation. The well depths are located in this layer, so the wells are designated as layer 3 wells. The anomalous drawdowns are due to the specification of pumping.

As documented in the Excel file named *DFCPumping.xlsx*, Burkeville pumping was treated differently in different counties. For the Burkeville Formation, in Austin, Hardin, Montgomery, and Tyler counties:

- The calibrated model had pumping in 1989 (ranged from 12 AF/yr in Tyler County to 274 AF/yr in Austin County)
- The calibrated model had zero pumping from 1990 to 2009
- The HAGM simulation used for the joint planning process assumed zero no pumping from 2010 to 2080

However, for the Burkeville Formation in Liberty, Polk, San Jacinto, and Washington counties:

- The calibrated model had pumping in 1989 (ranged from 59 AF/yr in Polk County to 346 AF/yr in San Jacinto County)
- The calibrated model had zero pumping from 1990 to 2009
- The HAGM simulation used for the joint planning process specified some pumping from 2010 to 2080. Pumping in each county was constant and ranged from 243 AF/yr in Liberty County to 2,760 AF/yr in San Jacinto County.

This simulated pumping in a formation with low hydraulic conductivity results in high drawdowns. The conclusion is that these wells are not useful for evaluating the consistency of actual drawdown and simulated drawdown, and these cells should be eliminated in any summary analysis of Liberty and San Jacinto counties.

4.3 Frequency Analysis of Differences

The frequency of the differences (simulated drawdown minus actual drawdown) for each data point for the 2021 DFCs is summarized in Figures 2 and 3. Figure 2 shows the distribution for all GMA 14 counties. Figure 3 shows the distribution for all counties except those with a subsidence district (Fort Bend, Galveston, and Harris). The histograms are limited to differences of +/- 100 feet. Please note that most of the differences are positive, which means that, in general, the actual groundwater conditions are consistent with the 2016 DFC (2009 base year).

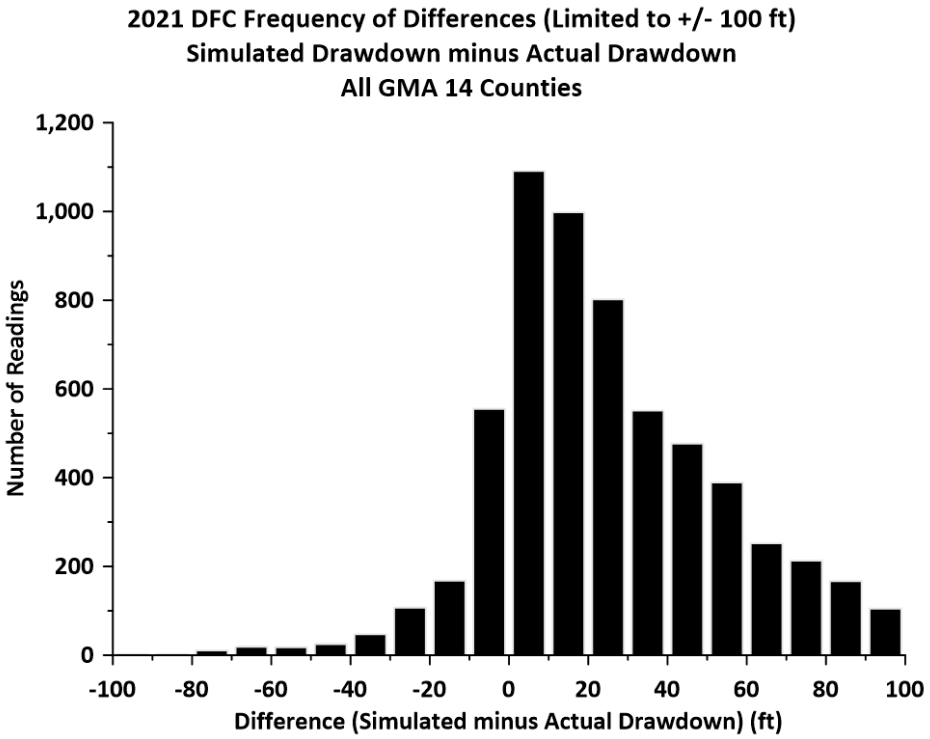


Figure 2. Frequency of Differences - 2021 DFC - All GMA 14 Counties

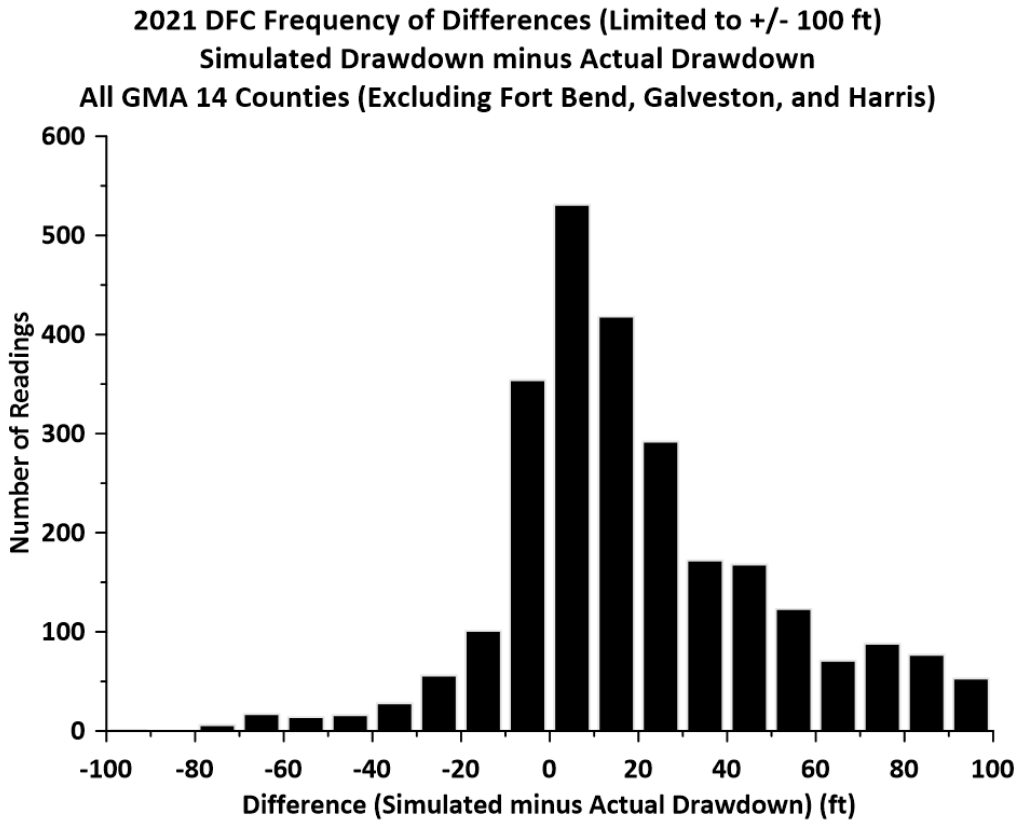


Figure 3. Frequency of Differences - 2021 DFC - GMA 14 Counties (Excluding Subsidence District Counties)

4.4 Average Difference by County

Table 6 presents a summary of the average simulated minus actual drawdown (using all data) for each county in GMA 14 from 2010 to 2021 on the left side of the table. On the right side of the table, a summary of the average simulated minus actual drawdown (excluding the outliers discussed above) for each county in GMA 14 is presented.

Table 6. Average Drawdown Difference by County (2010 to 2021)

County	2010 to 2021			2010 to 2021 (outliers deleted)		
	Average Actual Drawdown (ft)	Average Simulated Drawdown (ft)	Average Simulated minus Actual Drawdown (ft)	Average Actual Drawdown (ft)	Average Simulated Drawdown (ft)	Average Simulated minus Actual Drawdown (ft)
Austin	1.88	27.20	25.31	1.88	27.20	25.31
Brazoria	-0.70	9.59	10.29	-0.70	9.59	10.29
Chambers	-0.26	21.05	21.32	-0.26	21.05	21.32
FortBend	-5.23	12.44	17.67	-5.23	12.44	17.67
Galveston	-0.01	12.06	12.07	-0.01	12.06	12.07
Grimes	6.70	19.25	12.55	6.70	19.25	12.55
Hardin	-4.22	13.97	18.19	-4.22	13.97	18.19
Harris	-4.90	28.81	33.71	-4.98	28.82	33.80
Jasper	1.22	-10.45	-11.67	0.53	2.30	1.77
Jefferson	-1.43	17.11	18.54	-1.43	17.11	18.54
Liberty	-1.55	49.95	51.50	-1.77	15.06	16.83
Montgomery	11.74	47.00	35.26	11.74	47.00	35.26
Newton	1.42	9.17	7.74	1.42	9.17	7.74
Orange	-1.40	11.78	13.19	-1.40	11.78	13.19
Polk	1.43	21.10	19.67	1.43	21.10	19.67
SanJacinto	21.81	109.51	87.70	27.81	67.11	39.30
Tyler	0.66	11.12	10.46	0.66	11.12	10.46
Walker	9.28	88.88	79.60	9.28	88.88	79.60
Waller	9.72	41.39	31.67	9.72	41.39	31.67
Washington	4.77	18.88	14.12	4.77	18.88	14.12

Figure 4 presents the summary of differences for all data, and Figure 5 presents a summary of the differences with the outliers discussed above excluded.

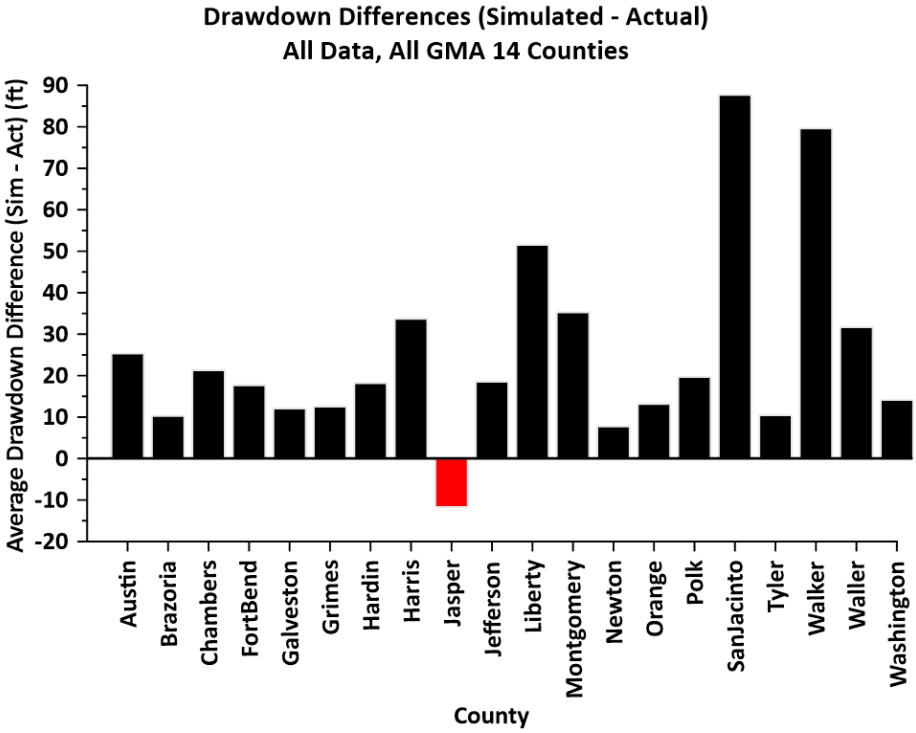


Figure 4. Average Drawdown Differences by County (All Data)

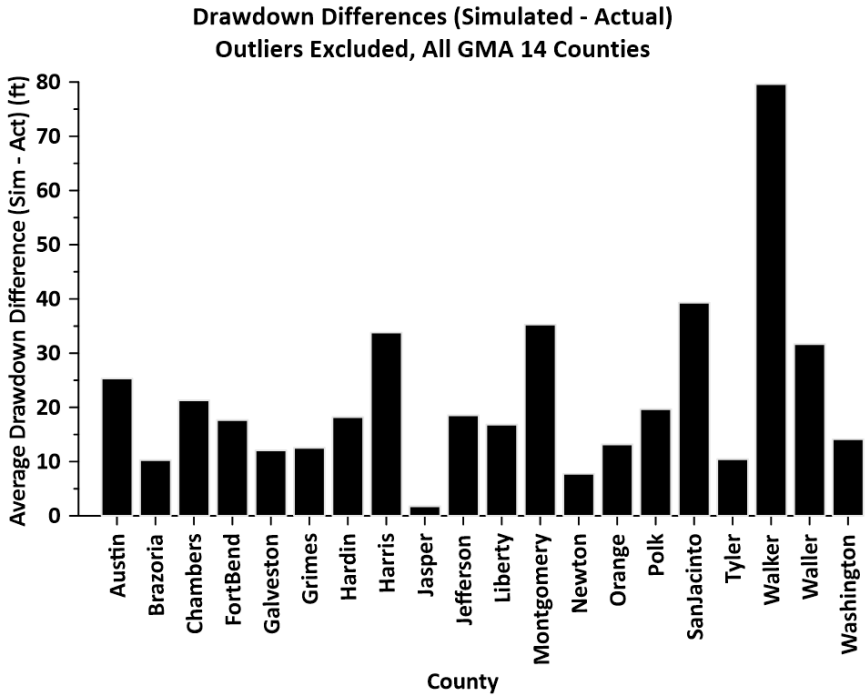


Figure 5. Average Drawdown Differences by County (Outliers Excluded)

4.5 Average Difference by Model Layer

The HAGM has four layers that generally correspond to the recognized aquifer/aquitard layering of the Gulf Coast Aquifer:

- Layer 1: Chicot Aquifer
- Layer 2: Evangeline Aquifer
- Layer 3: Burkeville Confining Unit
- Layer 4: Jasper Aquifer

Table 7 summarizes the average actual drawdown, average simulated drawdown, and average difference (simulated drawdown minus actual drawdown) for each model layer. The full data set are presented on the left side of the table, and the data set with the outliers removed are on the right side of the table. The effect of removing the outliers is evident in the results in Layers 2 and 3.

Table 7. Summary of Differences, Model Layer

Layer	All Data			Excludes Outliers		
	Average Actual Drawdown (ft)	Average Simulated Drawdown (ft)	Average Difference (Simulated - Actual) (ft)	Average Actual Drawdown (ft)	Average Simulated Drawdown (ft)	Average Difference (Simulated - Actual) (ft)
1	0.36	10.12	9.75	0.36	10.12	9.75
2	0.52	10.40	9.87	0.38	13.14	12.75
3	4.52	51.71	47.19	5.21	7.53	2.32
4	17.50	70.79	53.29	17.50	70.79	53.29

4.6 Time Series of Average Drawdown (2010 to 2021)

Time series plots of average actual drawdown and average simulated drawdown for each year from 2010 to 2021 were developed to evaluate trends during the comparison period. The graph of all non-outlier data for all GMA 14 counties excluding the counties with subsidence districts exhibited an unusual and unexpected feature that was further investigated by developing a plot for Montgomery County and comparing it to average drawdowns in Jasper County.

4.6.1 All GMA 14 Counties (Excluding Counties with Subsidence Districts)

Figure 6 is a time series graph of the average actual drawdown and average simulated drawdown for each year from 2010 to 2021 for all GMA 14 counties without a subsidence district (Fort Bend, Galveston, and Harris). The averaging was limited to the data that were not considered outliers as described earlier.

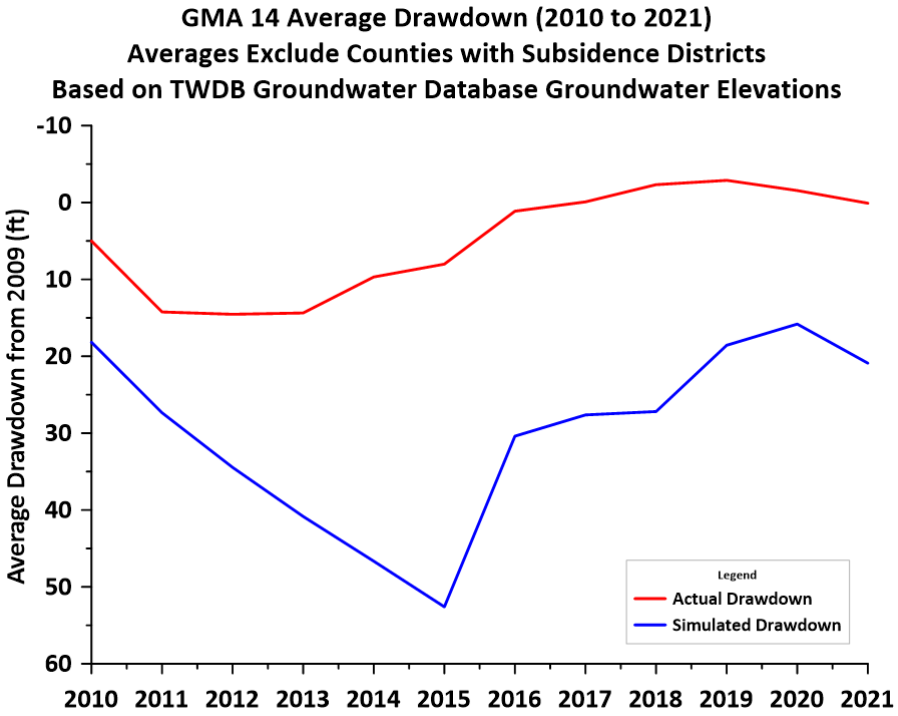


Figure 6. Average Drawdown (Actual and Simulated) - GMA 14 Counties without Subsidence District

Please note that actual drawdown initially increases from 2010 to 2011, essentially levels off from 2011 to 2013 then recovers from 2013 to 2019. The initial increase in drawdown and leveling off is consistent with significant drought conditions in the region during those years. The recovery after 2013 is also expected since drought conditions ended after 2013.

In contrast, the average simulated drawdown increases from 2010 to 2015 then decreases from 2015 to 2020. Conceptually, the HAGM simulation used for the joint planning process adjusted pumping from 2010 to 2080 as part of a multi-metric approach to achieve certain targets (in this case no less than 70 percent median available drawdown remaining in 2080 or no more than an average of 1.0 additional foot of subsidence between 2009 and 2080). The pumping in Montgomery County appears to explain the increase and decrease in drawdown.

4.6.2 Montgomery County

An inspection of the annual pumping by county and model layer contained in the Excel file *DFCPump.xlsx* yields the conclusion that pumping in Montgomery County from 2000 to 2009 increased from 32,222 AF/yr to 74,051 AF/yr. This time period is part of the calibrated model. The HAGM simulation that was used as part of the joint planning process specified pumping from 2010 to 2080. Simulated pumping in Montgomery County from 2010 to 2015 increased from 2009 levels to 138,060 AF/yr, then dropped to 96,948 AF/yr from 2016 to 2080. Figure 7 presents a bar graph of the Montgomery County data.

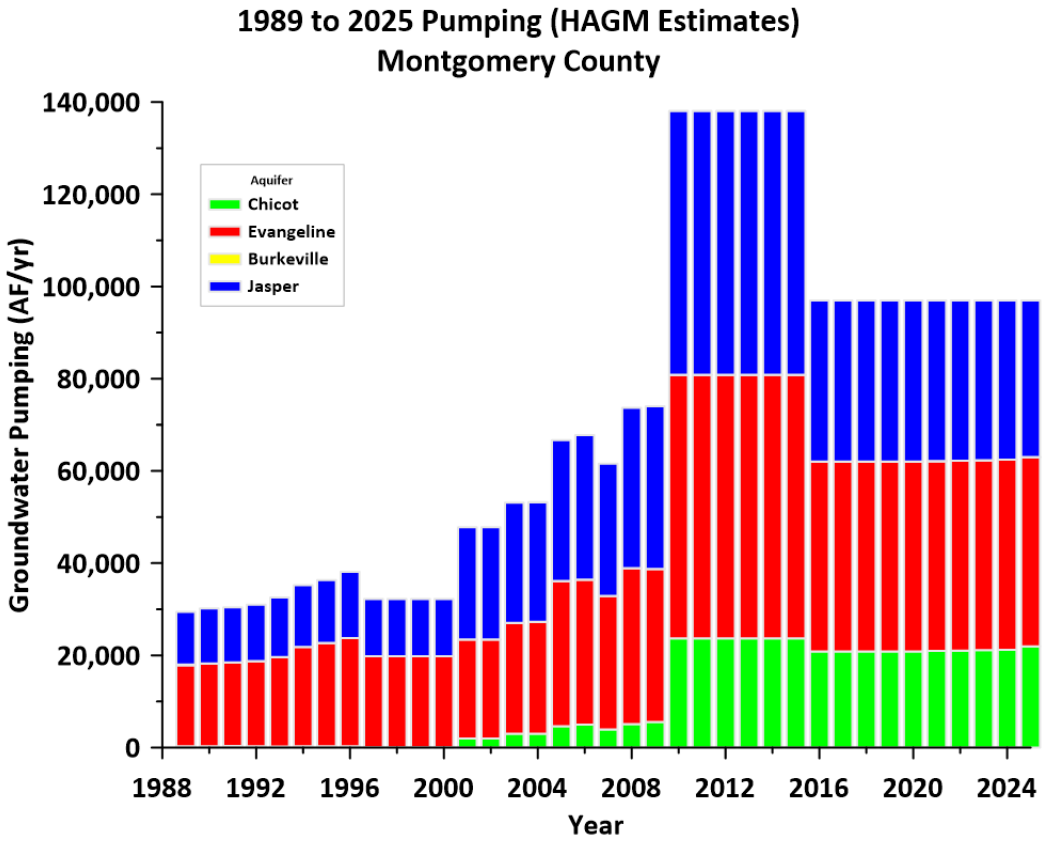


Figure 7. Simulated Montgomery County Pumping - 1989 to 2025

This increase from 2010 to 2015 results in the calculated increase in simulated drawdown. The reduction in pumping after 2015 results in the calculated recovery of groundwater levels.

The increase and decrease in drawdown is observable in the overall GMA 14 average (non-subsidence district counties) simulated drawdowns but is more pronounced and significant in Montgomery County. Figure 8 presents the average actual drawdown and average simulated drawdown for Montgomery County only.

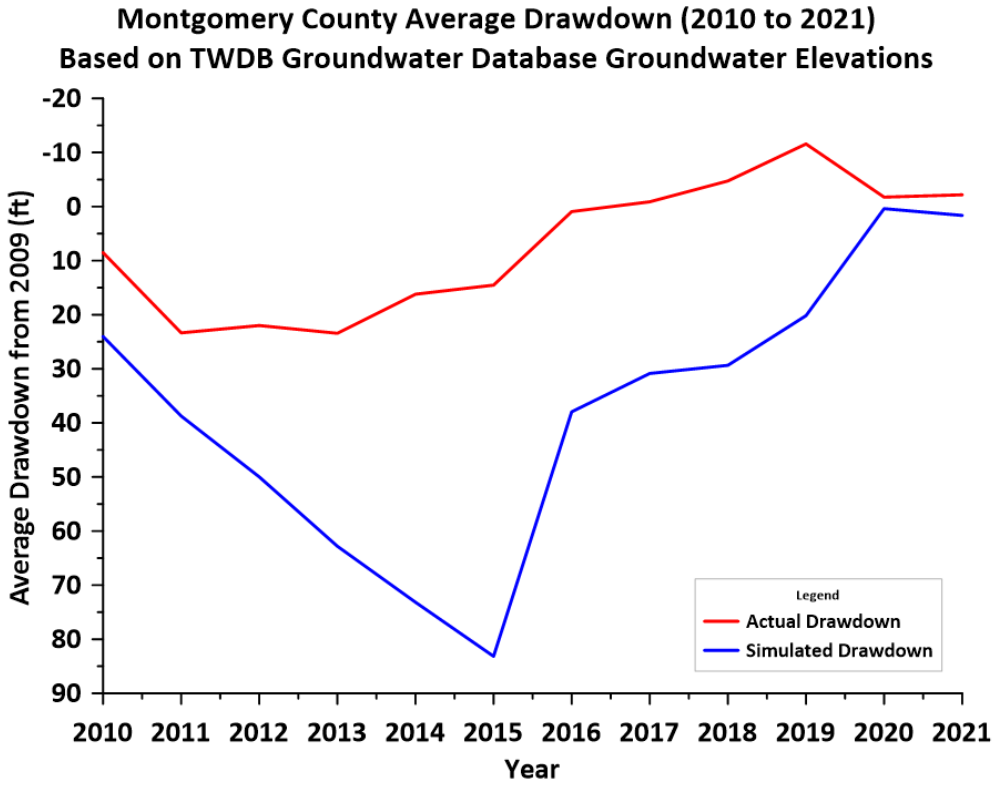


Figure 8. Montgomery County Average Drawdown (2010 to 2021)

The effect of the temporary increase in pumping from 2010 to 2015 is evident in the average simulated drawdown. However, the recovery and the observation that the average actual drawdown and average simulated drawdown in more recent years may not be as significant as depicted due to a decline in available actual drawdown measurements.

Data points available for this analysis in Montgomery County are as follows:

- 2010 to 2018: decreasing every year from 161 in 2010 to 120 in 2018
- 2019: 12 data points
- 2020: 8 data points
- 2021: 8 data points

Data in 2019 to 2021 may have been collected and is not yet available in the TWDB groundwater database. However, based on the available data, the average of the difference between simulated and actual drawdown in 2020 is 2.12 ft, and is 3.82 ft in 2021. Although these values suggest consistency with the DFC, they could be interpreted differently than the average for the entire period previously presented in Table 4 (35.26 ft). The temporary increase in pumping from 2010 to 2015 provided an unreliable comparison for that period, and the limited number of actual drawdown data points available for this analysis introduces a limitation to interpretation.

4.6.3 Jasper County

Jasper County was chosen to contrast the Montgomery County findings presented above. The choice was made based on two factors:

- The impacts of the temporary increase in simulated pumping in Montgomery County did not appear to impact simulated drawdowns in Jasper County
- The average difference in actual and simulated drawdowns in Jasper County for the entire period (2010 to 2021) previously presented in Table 4 demonstrate that the difference in average actual and average simulated drawdowns are relatively small (1.77 ft) compared to other counties and is positive only when the outlier data were removed from the analysis.

Figure 9 presents the time series graph of average actual and average simulated drawdown in Jasper County. From 2010 to 2020, there are between 14 and 15 comparisons in Jasper County. There are no comparisons in 2021.

Please note that simulated drawdown increases each year due to the increased simulated pumping in Jasper County (previously presented in Figure 1). Actual drawdown in Jasper County demonstrates the impact of the drought conditions in 2011, and groundwater level recovery in more recent years is evident. Thus, in the early years of this analysis period, actual drawdown was about the same or more than simulated drawdown. However, in later years of this analysis period, actual drawdown is much less than simulated drawdown. The small value of the difference between actual and simulated drawdown for Jasper County previously presented in Table 4 is of less concern given the trends seen in the time series graph.

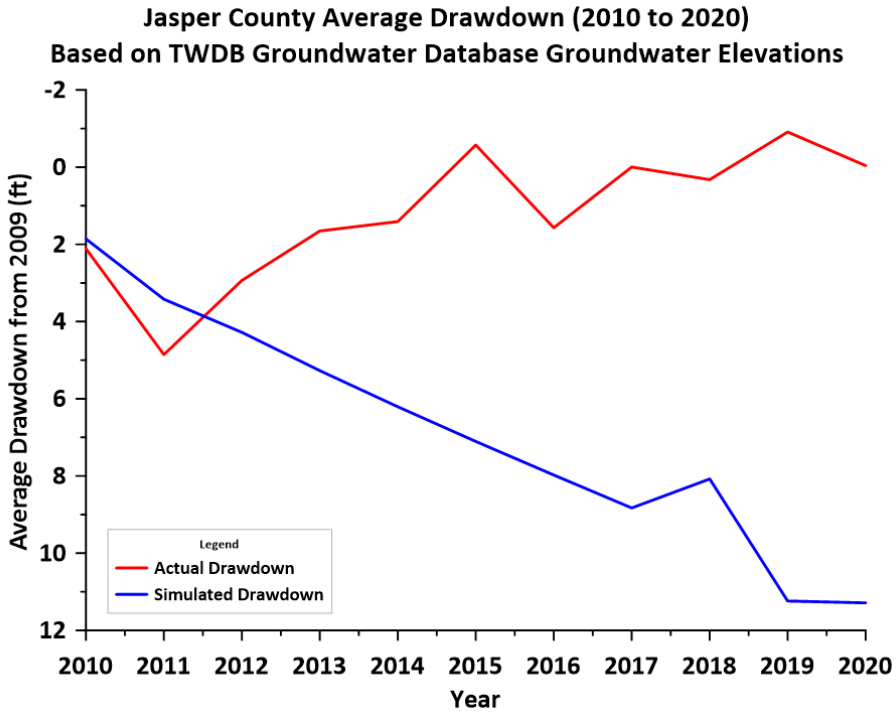


Figure 9. Jasper County Average Drawdown (2010 to 2020)

5.0 References

Hutchison, W.R., 2021a. Comparison of Measured and Simulated Drawdowns in Groundwater Management Area 14. Draft Report prepared for Bluebonnet Groundwater Conservation District, January 14, 2021, 14p.

Hutchison, W.R., 2021b. Implementation of GMA 14 Desired Future Condition based on Multi-Metric Simulation (70% Available Drawdown, 1 Foot Subsidence, 30K Pumping Limit, 2016 Pumping Distribution). Report to Bluebonnet Groundwater Conservation District, April 27, 2021, 54p.

Oliver, W., 2021. Documentation of GMA 14 Groundwater Availability Model Runs, Draft Technical Memorandum. Prepared for GMA 14 District Representatives (Appendix R of Draft Explanatory Report). October 4, 2021. 357p.

APPENDIX “A”

- SETGCD Well Monitor Newsletter - Fall 2022
- District Permit Holder Email / Mailing List
- District V.I.P. Mailing List
- Drillers – District and Surrounding Counties Mailing List
- Website Posting Evidence - Newsletter Posted to Website on November 7, 2022

Volume 15, Issue 1
Fall 2022

The SETGCD Well Monitor

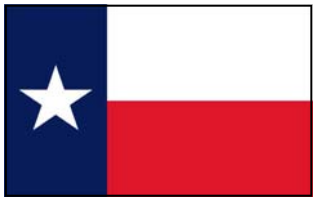
Groundwater Management Area 14 Adopts DFCs

For those of you who regularly read our newsletter you are aware that the 3rd round of the Desired Future Conditions (DFCs) planning process has been underway for quite some time (it is a five year planning cycle). In January, the GMA Members approved a resoluton adopting DFCs for the 17 counties of Groundwater Management Area 14 (GMA 14). The DFCs and the required Explanatory Report (2,000+ pages) were submitted to the Texas Water Development Board and were subsequently deemed administratively complete on June 15, 2022.

After the Texas Water Development Board deems a DFC submittal complete, it then utilizes the information and data provided in the DFC Resolution and the Explanatory Report to develop what is known as the "MAG". The MAG is a groundwater availability model specific to the data provided and is very useful in that it also provides data on how much groundwater can be pumped from the aquifer each year and still meet the Desired Future Conditions that have been set (a water "budget" of sorts).

The DFCs for GMA 14 were developed in a very different manner relative to the two previous DFC planning cycles. Previously the DFCs were very straightforward and based on static water level declines. Each county and each layer of the aqui-

(Continued on page 2)



TEXAS 88th Legislative Session

As 2023 nears, we prepare for the 88th Texas Legislative Session. One of the more interesting aspects of the upcoming session is that the four counties that make up the Southeast Texas Groundwater Conservation District, which had previously been represented by one State Representative, James White, will now have four different representatives due to the recent redistricting. Jasper County will be represented by Dade Phelan, Hardin County by Earnest Bailes, and Newton County by Travis Clardy as they are all running unopposed. Tyler County will be represented by either Trent Ashby (incumbent) or Jason Rogers.

Each session I try to assess what topics are going to be focused on, especially those related to water. Anytime drought conditions are present and the residents of the State are experiencing the effects of a drought, the legislative session tends to be active for water related bills. Although most of the State is currently experiencing drought conditions, we have also seen wet periods this summer. I'm unsure as to how the legislators will address our water resources this year, but I did attend a conference this summer at which Senator Perry was providing the keynote address and he very specifically stated that he believed the State should be looking at groundwater resources as a literal part of the State's infrastructure. What this means exactly, I'm not sure, however, when it comes to

(Continued on page 3)

Board of Directors:

Inside this issue

Did You Know?

The oceans of the world are a major factor in regulating Earth's temperature.

It is estimated the Americans drink 1 billion glasses of water each day.

A camel can survive nearly 7 months without drinking water (fun fact—the hump does not hold water).

GMA 14 Adopts DFCs

(Continued from page 1 - GMA 14 Adopts DFCs)

fer had different expected declines which was one of the reasons the DFCs were developed differently this planning cycle; however, some thought that a DFC should not change just because of a county line. In an effort to address those concerns, the GMA 14 Members, with the assistance of Intera, Inc., developed a way to set DFCs that are the "same" from one county to the next. The DFCs this cycle were developed with not just one limiting metric in the modeling, as in the previous planning cycles (static water level declines), but with 3 limiting metrics. The first of those is similar to the static water level decline used previously but takes into account previous use, current static water levels, and a percentage of the water column that is to remain through the planning period. The first DFC limiting metric "is no less than 70% median available drawdown remaining in 2080". More simply put, if a well is 130 feet deep, has a static water level of -30 feet (the water level being 30 feet below the surface) then there is a water column of 100 feet in that well. 70% remaining of 100 feet means that there is expected to be no less than 70 feet of water column still available in 2080 and this particular well should not have the static water level drop below –60 feet.

The second limiting factor is a subsidence related metric. Unfortunately, the Gulf Coast Aquifer System is susceptible to subsidence, which is the lowering of the ground level due to excessive groundwater withdrawals. In the greater Houston area, subsidence can be measured in places at a loss of elevation of 10 feet or more in some areas. Some data indicates that areas of The Woodlands have seen subsidence of nearly 1 foot since 2000. Because of the potential for subsidence, a second limiting metric was included in the development of the DFCs that would limit groundwater production if the model indicated more than an average of 1 additional foot of subsidence between 2009 and 2080.

The third limiting metric is simply a volume not to exceed 30,000 acre feet above the current use in the State Water Plan for any individual county. This will allow a significant amount of water to be made available for growth in rural counties, far above what is currently being used, but will not unjustly skew the groundwater modeling.

When the groundwater model is run, each county will "run into" one of the three limiting metrics first which is then used to develop a water budget (or Managed Available Groundwater). Overall, the amount of water "available" within the District has increased by approximately 4.5% compared to the previous planning cycle. The limiting metrics for our District are: Newton and Tyler Counties are limited by the "not to exceed 30,000 acre feet above the State Water Plan" as both counties are very rural with nominal groundwater use. Jasper and Hardin Counties are limited by the no less than 70% median available drawdown remaining in 2080. None of the District's four counties are limited due to the subsidence metric.

There is one more step the GMA must take before the planning cycle is completed. After the Texas Water Development Board deems the DFC submittal administratively complete each individual groundwater conservation district within the GMA must adopt the "relevant" DFCs for their district. Once the groundwater district adopts the relevant DFCs a 120 day clock starts to allow for any affected person to file a petition appealing the "reasonableness" of the DFCs. Since each groundwater district officially adopts the relevant DFCs on it's own timeline, and since there are five groundwater conservation districts within GMA 14, there are essentially five different 120 day clocks running. The Southeast Texas Groundwater Conservation District's 120 day appeal window will run through November 11, 2022. The Lone Star Groundwater Conservation District was the last of the five districts in GMA 14 to adopt relevant DFCs and their 120 day appeal window will run through January 11, 2023. If there are no petitions filed appealing the "reasonableness" of the DFCs, the planning cycle will be compete.

The element of the Desired Future Conditions planning process that I like the most is that the process and the Managed Available Groundwater Model that is developed is not written in stone. Once one planning cycle ends, the next begins. This allows for change: growth in the area, fluctuations up or down in groundwater use, groundwater model improvements, or any other new/relevant data to be taken into consideration and used to develop an updated DFC every five years. This allows for the Desired Future Conditions to evolve as needed when new

88th Legislative Session, cont. (Continued from page 1)

the State's aquifers, I believe Senator Perry is correct in his assessment that the water resources of the State are truly part of our infrastructure. After all, every public water supply system within the four counties of our groundwater conservation district utilize water from the Gulf Coast Aquifer System. It is imperative that the aquifer be managed wisely to prevent overuse and associated problems such as dramatic water level drops and subsidence.

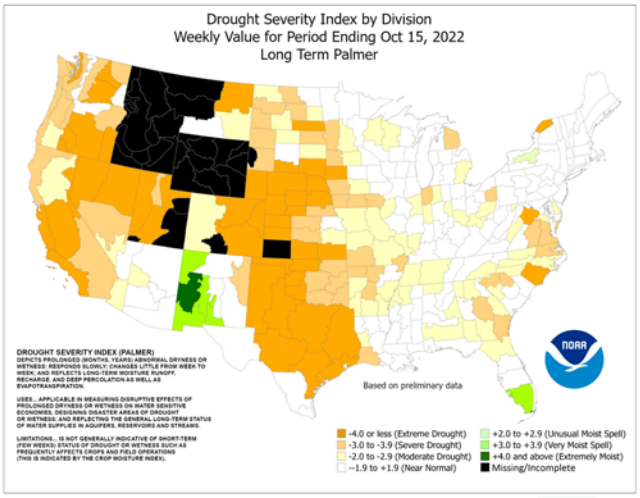
Current expectations for the upcoming legislative session are that the main issues the legislators will be looking at will be items related to property taxes, the State budget, education/parental rights, border security, and elections. As for groundwater related legislation, it is unclear at this time what may be introduced, but I can tell you that our District will be introducing a bill to allow the District to increase its maximum production fee.

Recently, the District, for the first time since it was created nearly 20 years ago, increased its production fee rate. The increase will take the rate from 7/10th of 1 cent to 1 full cent per 1,000 gallons **(still one of the lowest production fee rates in the state if not the lowest)**. The District has been able to manage at this minimal production fee rate because of its conservative fiscal practices and two large volume groundwater producers. One of the main conservative fiscal "practices" is that the District has been operating with only 1 full time employee to keep costs down. Over the years, the District has had to take on many new tasks, including unfunded mandates from the legislature, hence the reason for the District's production fee increase. With the increase the District will be able to hire a part-time administrative assistant and to allot funds for scientific studies and reviews.

There is one issue that arises with the increase of the production fee to 1 cent per 1,000 gallons. When the District was created, it was done so with a maximum production fee limit in the enacting legislation of 1 cent per 1,000 gallons (unlike other groundwater districts which have much higher production fee limits). Should the District lose one of it's larger producers, it will be unable to balance the revenue from that loss because of the 1 cent maximum limitation. While the District has no intention of raising the production fee again any time soon **(after all, the District did go nearly 20 years without a fee increase),** the District does rely on two large volume users (Westrock paper mill being the largest) and if their groundwater production is reduced or ceases, the District would lose as much as 70% of it annual revenues. Without being able to increase the production fee above the current 1 cent rate, the District would be unable to accomplish all of its required tasks. Many of the groundwater conservation districts throughout the state have maximum rates that exceed 15 cents per 1,000 gallons, however, the District will only request that the maximum rate be raised to no more than 7 cents per 1,000 gallons (the request may be as low as 5 cents per 1,000 gallons). This increase will allow the District to balance any significant groundwater reductions by the large volume users and continue to accomplish all of it goals as well as meet the legislatively required unfunded mandates.

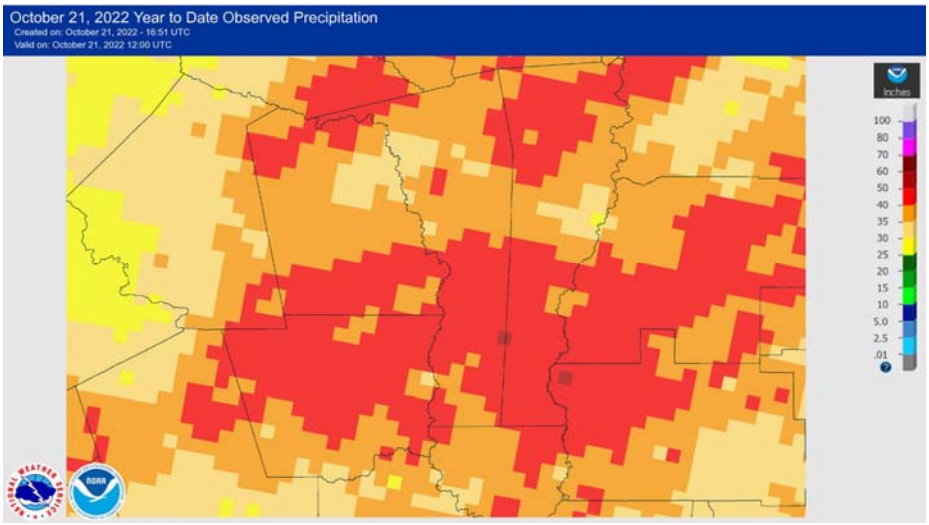
WATER IS THE DRIVING FORCE OF ALL NATURE
Leonardo Da Vinci

DROUGHT CONDITIONS



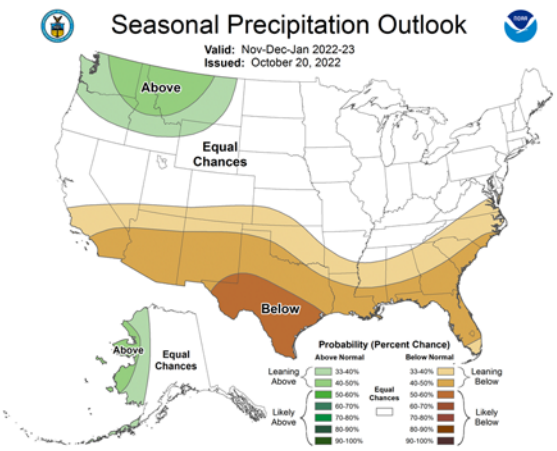
As you can see from the October 15, 2022 U.S. Palmer Drought Severity Index, much of the State (including our District), is experiencing severe to extreme drought conditions. These conditions would be far worse if August had not been as wet as it was with some areas getting 8 inches of rainfall.

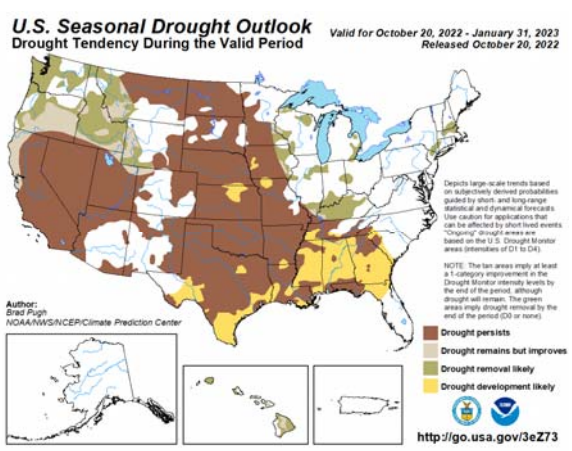
The October 21, 2022 Year to Date Observed Precipitation Map indicates that about half of the District has only received between 30 and 40 inches of rain this year (orange and cream colored areas). The other half of the District shows to have received between 40 and 50 inches which isn't far off of the normal annual rainfall, of approximately 54 inches each year.



U.S. SEASONAL DROUGHT OUTLOOK

The U.S. Seasonal Drought Outlook, valid October 20, 2022—January 31, 2023, indicates that drought conditions within the District will persist or develop over the next several months. The expected continued dry conditions are backed up by the October 20, 2022 90-day Precipitation Probability map which indicates that we are very likely to have a dry 3 month period ahead of us. This continued dry spell/ drought is expected to carry through at least the end of the year and possibly longer due to the prevailing La Nina weather pattern.





CONSERVATION CORNER

Groundwater Waste Reduction—Drought Preparedness
Conserve Now Before You Have To

Sometimes it is difficult to "preach" to people about conserving water. Here in Southeast Texas we typically have an over abundance of it with an average annual rainfall total of 54 inches. Look back a few years and we recall several flooding events, one of which was Hurricane Harvey that gave the area nearly the entire year's average rainfall in just a few days. How quick things can change though. Except for August, this summer has been very dry and predictions are that the remainder of 2022 will continue that trend until at least early 2023. These predictions are based on the fact that La Nina is the current prevailing weather pattern which is expected to continue through early next year. La Nina conditions mean the Pacific Ocean is a little cooler than normal which leads to a drier weather pattern for the southern half of the U.S.

The last time our area experienced a prolonged La Nina was in 2010—2012 which was one of the driest periods in Texas history. Most areas within the Southeast Texas Groundwater Conservation District saw 30% - 35% less rain during that period. The northwestern portion (Woodville area) saw closer to 50% less rainfall.

Current predictions are that the La Nina conditions should dissipate between February and April of next year and bring us back to a more neutral weather pattern. Nonetheless, predictions can be wrong and we should try to conserve as much as we can and reduce waste as much as possible. Afterall, it is best to have and not need, than to need and not have. There are innumerable ways to conserve water, and here are just a few.

Conserving Water Indoors:

- Using efficient showerheads and aerators on your faucets can significantly reduce the amount of water you use. In fact, installing an efficient showerhead is one of the most effective water saving steps you can take inside your house. You can save a little more water by getting into the shower as soon as possible—don't let the water run too long while warming it up.
- When possible, update and replace old toilets, washing machines, and dishwashers. New efficient models can save you thousands of gallons per year.
- An older clothes washer will use up to 23 gallons per load, whereas a new energy efficient model may use as little as 13 gallons. Considering that the average household washes about 300 loads of laundry per year, the numbers add up quickly. Another thing to keep in mind is that if you wash with hot water, up to 90% of the cost to wash those clothes is simply for heating the water. Only use hot water when necessary so you'll save on your electrical bill and reduce the impact on the water-energy nexus (a complex relationship between the production of electricity and water).
- In the kitchen, a water efficient dishwasher can save over 1,000 gallons of water per year. Keep in mind that 1,000 gallons per home may not seem significant, but multiply that by a neighborhood and 1,000 gallons per home will add up quickly.
- Newer water efficient toilets will use only about 1—1.5 gallons of water per flush. Be sure that you keep an eye out for any leaks in your toilet. A leaking toilet can waste quite a bit of water, possibly thousands of gallons a month in extreme cases. It is estimated that 10% of all homes in the U.S. have water leaks wasting 90+ gallons of water per day.

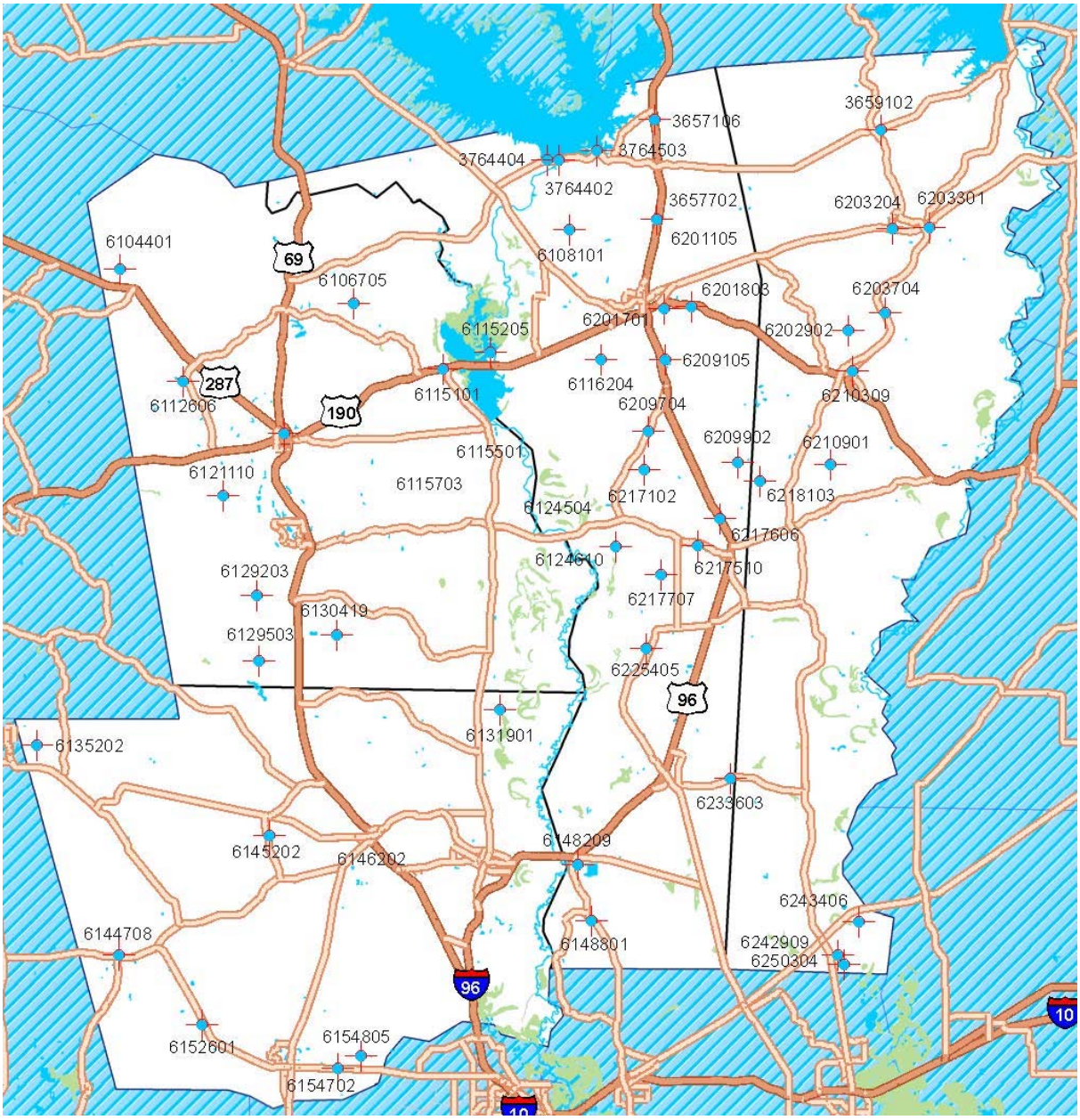
Winter Conservation Tips:

Frozen and burst pipes can waste hundreds of gallons of water in a short period of time. Be prepared for cold weather.

- Disconnect and drain outdoor hoses. Detaching a hose allows water to drain from the faucet and will reduce the possibility of the faucet freezing and bursting.
- Insulate pipes or faucets in unheated areas.
- Consider using electrical "heat tape".
- Seal off access doors, air vents and cracks. Winter winds whistling through overlooked openings can quickly freeze exposed water pipes.
- Don't forget any water lines you may have running to the garden or livestock troughs. Be sure that these pipes get extra attention.

For more information on water conservation ideas visit the Southeast Texas Groundwater Conservation District's website at https://setgcd.org/ or the Texas Water Development Board's site at https://www.twdb.texas.gov/conservation/

Static Water Level Observation Well Locations & State ID



What Is A Static Water Level?

The Static Water Level is the distance from the surface of the ground down to the water table when a well is not being pumped. This is sometimes called the resting water level. For example, a static water level reading of –25 feet means that the distance from the ground down to the water table is 25 feet.

In the data on the following page, I have included a column indicating the amount of static water level change from the previous year. If the number is positive, it means that the water level has dropped in that particular well. If the change is a negative number, as most of them are, it means that the water level is higher than the previous year. Typically large drops or rises are indicative of shallow wells that are susceptible and reactive to wet and dry periods. Conversely, deep wells are very stable and often show little change in static water level even after long periods of drought or periods of excessive precipitation.

STATIC WATER LEVEL READINGS

State Well ID	County	Date Drilled	Well Depth	Early W.L. Reading / Year of W.L.		Spring 2009	Spring 2021	Spring 2022		1 year change
6131901	Hardin	1940	53	-38.79	1942	-25.35	-4.92	-33.86		-28.94
6135202	Hardin	2003	363	-64	2003		-56.52	-57.52		-1.00
6144708	Hardin	1957	72	-24.12	1942	-24.21	-25.05	-24.90		0.15
6145202	Hardin	2009	220	-12	2009		-6.72	-7.20		-0.48
6152601	Hardin	1948	764	-21	1948	-29.67	-21.54	-22.59		-1.05
6154702	Hardin	1951	1027	-23.94	1966	-25.2	-26.45	-27.68		-1.23
6154805	Hardin	1998	618	-60	1998		-25.72	-27.98		-2.26
3657106	Jasper	1938	20	-8.7	1997	-4.69	-2.90	-7.87		-4.97
3657702	Jasper	1994	378	-117.7	1997	-117.61	-115.10	-115.40		-0.30
3764402	Jasper	1962	300	-114.3	-114	-113.27	-109.40	-110.16		-0.76
3764404	Jasper	1982	260	-66	1982	-46.83	-45.98	-46.90		-0.92
3764503	Jasper	1981	260	-33.2	1997	-32.33	-31.47	-30.94		0.53
6115205	Jasper	1984	442	39.96	1984	28.18	39.96	39.51		-0.45
6116204	Jasper	1965	220	-51.7	1997	-51.61	-50.20	-51.25		-1.05
6124610	Jasper	1998	200	-33.16	2008	-30.59	-29.79	-31.48		-1.69
6148209	Jasper	1947	1295	-66.79	1956	-177.09	-198.12	-205.63		-7.51
6148221	Jasper	pre 1956	671	-22.47	1956	-28.92	-28.22	-29.47		-1.25
6148801	Jasper	1903	1084	-6.85	1960	-5.38	-5.85	-6.95		-1.10
6201803	Jasper	1995	884	-85.1	1997	-85.54	-81.40	-83.63		-2.23
6209105	Jasper	1967	15	-4.15	1997	-1.38	-0.63	-3.08		-2.45
6209704	Jasper	1952	40	-35.84	1997	-34.4	-34.40	-37.25		-2.85
6209902	Jasper	pre 1997	40	22.8	1997	-16.13	-16.52	-24.10		-7.58
6217510	Jasper	pre 1997	140	-15.9	1997	-14.7	-12.80	-15.11		-2.31
6217606	Jasper	1964	70	-7.8	1997	-1.09	-1.25	-2.00		-0.75
6217707	Jasper	1950	28	-9.35	1997	-4.15	-3.37	-8.25		-4.88
6225405	Jasper	1983	120	-58	1997	-57.5	-54.70	-55.38		-0.68
6233603	Jasper	1940	18	-14.7	1997	-10.92	-10.25	-11.47		-1.22
3659102	Newton	2000	170	-98.76	2009		-89.77	-87.77		2.00
6202902	Newton	pre 1999	24	-13.03	1999	-11.65	-7.25	-10.25		-3.00
6203204	Newton	1979	645	-65.4	1994	-68.15	-65.30	-65.52		-0.22
6203301	Newton	1964	1050	-38.75	1992	-45.42	-36.82	-36.47		0.35
6203704	Newton	1989	640	-169	1989	-172.78	-170.78	-171.15		-0.37
6210309	Newton	1964	1218	-61.38	1993	-65.93	-62.75	-62.58		0.17
6210901	Newton	1951	300	-13.68	1964	-16.48	-14.28	-16.10		-1.82
6218103	Newton	1980	208	-32.3	1992	-33.99	-33.50	-36.00		-2.50
6242909	Newton	1981	590	-39.15	1992	-36.03	-35.32	-35.08		0.24
6243406	Newton	1981	598	-30	1981	-26.29	-23.70	-24.76		-1.06
6250304	Newton	1983	420	-40	1989	-35.58	-35.13	-35.89		-0.76
6104401	Tyler	1935	860	-169.39	1960	-168.71	-164.30	-164.87		-0.57
6106705	Tyler	1984	288	-145	1984		-147.00	-147.20		-0.20
6112606	Tyler	1960	250	-121.64	1964		-122.80	-123.00		-0.20
6113802	Tyler	1951	582	-155	1953	-174.13	-162.94	-163.66		-0.72
6115101	Tyler	1964	68	-31.66	1964	-33.09	-32.23	-32.85		-0.62
6129203	Tyler	pre 1953	30	-22.73	1953	-15.38	-18.95	-19.33		-0.38
6129503	Tyler	2008	250	-20	2008		-19.69	-20.25		-0.56
6130419	Tyler	pre 1965	22	-13.01	1965	-3.62	-4.20	-7.65		-3.45
6129804	Tyler		580				-27.15	-27.23		-0.08

Water Facts

- According to NASA water is in EVERY living thing on Earth. It's in all living things, whether they live in the ocean or in the driest desert.
- 68 percent of the Earth's freshwater is locked up in ice and glaciers.
- A newborn baby is made up of approximately 78 percent water; adults are between 55 and 60 percent water.
- At one drop per second, a leaky faucet can leak 3,000 gallons in one year.
- Leaks in the New York City water system account for between 33 and 37 million gallons per day.
- There are around 1 million miles of water pipelines and aqueducts in the U.S. and Canada.
- On average, a resident of the United States uses about 100 gallons of water per day.
- On average, a resident of Europe uses about 50 gallons of water per day.
- The average cost of water delivered to a home in the U.S. is approximately 1 cent per 5 gallons.

CALENDAR OF EVENTS

November 10, 2022	SETGCD—Regular meeting of the Board
November 11, 2022	Veterans Day—District office closed
November 24 & 25, 2022	Thanksgiving Break—District office closed
December 2022	SETGCD — Board Holiday, No Regular Meeting
December 26—30, 2022	Christmas Break—District office closed
January 2, 2023	New Years Day—District office closed
January 12, 2023	SETGCD—Regular meeting of the Board
January 16, 2023	Martin Luther King Jr. Day— District office closed
February 9, 2023	SETGCD—Regular meeting of the Board
February 20, 2023	Presidents Day—District office closed
March 9, 2023	SETGCD—Regular meeting of the Board
April 7, 2023	Good Friday—District office closed
April 13, 2023	SETGCD—Regular meeting of the Board

"Better to have and not need, than to need and not have"

-Unknown-

Please Conserve When You Can - Even Though It Seems We Have Plenty!

Southeast Texas Groundwater
Conservation District

P.O. Box 1407
Jasper, TX 75951

Phone: (409) 383-1577
E-mail: Jmartin@setgcd.org

PLEASE
PLACE
STAMP
HERE

«Mr#/Mrs/Ms#» «First» «Last»
«Water System»
«Street»
«City», «State» «ZIP»

District Permit Holders

Fall 2022 Newsletter - Emailed/Mailed 11/3/2022

Water System	Street	City	Contact First	Contact Last	Email Address			
A-Bar Properties, LLC		Willis	Martin	Arriola				
Angelina and Neches River Authority		Lufkin	Chris	Key				
Artesian Springs		Newton	Brian	Carroll				
Batson Lumber Co.		Batson	Ryan	Leloux				
Bon Wier W.S.C.		Bon Wier	Jim	DuBose				
Brookeland Fresh Water Supply District		Jasper	Joshua	Culbert				
Buck Springs Bottled Water Co.		Jasper	Todd	Shellhammer				
Bullock's Mobile Home Park		Silsbee	Kevin	Wilson				
Burkeville W.S.C.		Burkeville	Pat	Gooch				
Cartwright Springs, LTD		Terrell	Robert	Rodgers				
Chester W.S.C.		Chester	Dale	Clamon				
City of Beaumont		Beaumont	Troy	Pierce				
City of Browndell		Brookeland	Tyncie	Brooks				
City of Colmesneil		Colmesneil	Keith	Barnes				
City of Jasper		Jasper	Eric	Rogers				
City of Kirbyville		Kirbyville	Robert	Byerly				
City of Kountze		Kountze	Tim	Drake				
City of Newton		Newton	Donnie	Meek				
City of Silsbee		Silsbee	Russell	Hutto				
City of Sour Lake		Sour Lake	Joey	Keel				
City of Woodville		Woodville	Charles	Odom				
Cooper, William - Windmill Estates		Colmesneil	Marci	Cooper				
Cougar Country W.S.C		Buna	Edna	Humble		Amber Deal (office admin)		
Crown Pine Timber 1, L.P.		Jasper	John	Hamilton				
Cypress Creek W.S.C.		Woodville	Elmer	May				
Doucette Water System		Colmesneil	Thomas & Danasa	Rawls				
East Texas Electric Cooperative, Inc		Nacogdoches	Edd	Hargett				
Entergy Texas, Inc. - f/k/a East Texas Electric Coop	1	The Woodlands	Tory	Theriot		Hardin County Peakin Facility		
Evadale W.C. & I.D. #1		Evadale	Kenny	Gibson				
ExxonMobil Oil Corporation		Houston	Carl/Ryan	Cox/Magruder				
Hardin County W.C. & I.D. #1		Sour Lake	Wayne	Turk				
Harrisburg WSC		Jasper	John	Cole				
Harrisburg WSC		Jasper	Joshua	Culbert		Christina (office admin)		
H & H Timber Comapany, LLC		Jasper	Ronald / Donna	Hughes / Meek				
Holly-Huff W.S.C.		Jasper	Joshua	Culbert				
Andrew and Idania Cure (fka Hydro Farms, Inc.)		Sour Lake	Andrew and Idani	Cure				
Jamestown W.S.C.		Jasper	Joshua	Culbert		Christina (office admin)		
Jasper County W.C. & I.D. #1		Buna	Henry	Ogden				
JBD Burkeville, LLC (fka Runyan Rock)		Orange	Danny	Brian				
Lake Livingston W.S. & S.S.		Livingston	Boyd	McDaniel				
Lakeside Water System		Colmesneil	Thomas & Danasa	Rawls				
Leoffler Springs, Inc.		Kirbyville	Linda	Taylor				
Little Big Horn Services		Silsbee	Dolores	Luke				
Little Hawks Early Childhood Center, Inc.		Sour Lake	Christie	Gieseke				
Louisiana-Pacific Corp		Jasper	Susan	Adcock				

District Permit Holders

Fall 2022 Newsletter - Emailed/Mailed 11/3/2022

Lumberton M.U.D.		Lumberton	Robb	Starr				
Mauriceville M.U.D.		Orange	Brad	Haeggquist				
MeadWestvaco		Silsbee	Wendy	Turner				
Merziere, James - Village Mills RV Park		Neederland	James	Merziere				
Monach Utilities			Tim	Williford				
Ghost Road, LLC (fka Murphy Energy Services)		Saratoga	Diane	Murphy				
North Hardin W.S.C.		Silsbee	Bobby	Rogers				
Net-Mar, LLC		Jasper	Hugh	Hamilton		Angie Parks - Admin		
Sislbee Holdings - dba Pine Meadow M.H.P.		Rolling Hills Esta	David	Asemanfar				
Manfield Properties (Quail Valley Estates)		Silsbee	Charles	Adams, Jr.				
See City of Kountze - Ranchland POA		Kountze	Sandy	Elms				
Rayburn Country M.U.D.		Sam Rayburn	Charles	Manicom		Admin - Charlotte		
Rural W.S.C.		Jasper	Jimmy	Hensarling		James Dougharty		
Seneca W.S.C.		Woodville	James	MacGinnis				
Southern Forest Products		Bon Wier	Vicki	Hall				
South Hampton Resources, Inc.		Silsbee	Patrick	Sayles				
South Jasper County W.S.C.		Buna	Gaylon	Chesser				
South Kirbyville Rural W.S.C.		Call	Shane	Mitchell				
South Newton W.S.C.		Deweyville	Brandy	Lane				
South Sabine W.S.C.		Hemphill	R.J.	Wells				
Tall Timbers W.S.C.		Burkeville	Jim	Hebert				
Georgia-Pacific WF & S, LLC		Diboll	Patrick	Miller				
Terry Johnson		Silsbee	Terry	Johnson				
Texas Electric Cooperative, Inc.		Jasper	Billy	Caldwell				
One Floral Group - Timberline		Hillister	Jill	Dinger				
Timberline Opportunity Fund		Tyler	Chris	Boone				
Transcontinental Gas Pipe Line, LLC.		Sour Lake	Craig	Bonner				
Tyler County S.U.D.		Spurger	Jerry	Lovelady				
UFP Retail, LLC (Universal Forest Products)		Silsbee	Michael	Newsom				
See Timberline Opportunity - Umphrey Land & Cat		Hillister	Sidney/Jill	Allison/Dinger				
Undine Texas, LLC (formerly Pure Utility wells)		Cypress	Sarah	Carlock				
Undine Texas, LLC (formerly Pure Utility wells)			Eric	Martin				
Upper Jasper County Water Authority		Jasper	Shelley	Vaught				
Warren W.S.C.		Warren	Heather	Brown				
Wapiti Energy, LLC		Houston	Charles	Nye				
Water Necissities, Inc.		Vidor	Kelley	Brewer				
West Hardin W.S.C.		Saratoga	Robert	Ryan				
Westview Investments, Inc.		Spring	Nizarali	Momin				
Westwood W.S.C.		Jasper	Becky	West				
Wildwood Property Owners Assoc.		Village Mills	Carla	McKee				
Woodville Hardwoods		Woodville	Cody	Anthony				
Woodville Pellets, LLC		Woodville	Mary	Martin				
John Martin		Jasper	John	Martin				

District V.I.P.s
Fall 2022 Newsletter - Mailed 12/13/2022

	B	C	E	F	G	H	J	K	L
1	**First Name**	**Last Name**	**Courtesy Title**	**Position**	**Entity**	**Address 1**	**City**	**State**	**Zip**
2	Randy	Sayers	The Honorable	Mayor	City of Jasper	465 South Main	Jasper	TX	75951
3	Anderson	Land	Mr.	Council Member	City of Jasper	465 South Main	Jasper	TX	75951
4	Michael	Daniel	Mr.	Council Member	City of Jasper	465 South Main	Jasper	TX	75951
5	DeMarcus	Holmes	Mr.	Council Member	City of Jasper	465 South Main	Jasper	TX	75951
6	David	Shultz	Mr.	Council Member	City of Jasper	465 South Main	Jasper	TX	75951
7	Rashad	Lewis	Mr.	Council Member	City of Jasper	465 South Main	Jasper	TX	75951
8	Fred	Williams	The Honorable	Mayor	City of Kountze	P.O. Box 188	Kountze	TX	77625
9	Mary	Adams	Ms.	Mayor Pro-Tem	City of Kountze	P.O. Box 188	Kountze	TX	77625
10	Andrea	Cutwright	Mr.	Councilman	City of Kountze	P.O. Box 188	Kountze	TX	77625
11	Jack	Darden	Mr.	Councilman	City of Kountze	P.O. Box 188	Kountze	TX	77625
12	Kimberly	Price	Ms.	Councilman	City of Kountze	P.O. Box 188	Kountze	TX	77625
13	Glenn	Matthews	Mr.	Councilman	City of Kountze	P.O. Box 188	Kountze	TX	77625
14	Tim	Drake	Mr.	Public Works Director	City of Kountze	P.O. Box 188	Kountze	TX	77625
15	Rod	Hutto	Mr.	City Manager	City of Kountze	P.O. Box 188	Kountze	TX	77625
16	Don	Surratt	The Honorable	Mayor	City of Lumberton	836 N. Main	Lumberton	TX	77657
17	Lynette	Barks	Ms.	Councilman	City of Lumberton	836 N. Main	Lumberton	TX	77657
18	Kenneth	Wahl	Mr.	Councilman	City of Lumberton	836 N. Main	Lumberton	TX	77657
19	Kimberly	Cline	Ms.	Councilman	City of Lumberton	836 N. Main	Lumberton	TX	77657
20	David	Maniscalco	Mr.	Mayor Pro-Tem	City of Lumberton	836 N. Main	Lumberton	TX	77657
21	Ken	Burkhalter	Mr.	Councilman	City of Lumberton	836 N. Main	Lumberton	TX	77657
22	Dan	Bell	Mr.	Councilman	City of Lumberton	836 N. Main	Lumberton	TX	77657
23	Steve	Clark	Mr.	City Manager	City of Lumberton	836 N. Main	Lumberton	TX	77657
24	Mark	Whiteley	Mr.	City Engineer	City of Lumberton	836 N. Main	Lumberton	TX	77657
25	Joe	Blacksher	Mr.	Commissioner Pct #1	Tyler County Commis	100 W. Bluff	Woodville	TX	75979
26	Steven	Sturrokc	Mr.	Commissioner Pct #2	Tyler County Commis	100 W. Bluff	Woodville	TX	75979
27	Mike	Marshall	Mr.	Commissioner Pct #3	Tyler County Commis	100 W. Bluff	Woodville	TX	75979
28	Buck	Hudson	Mr.	Commissioner PCt #4	Tyler County Commis	100 W. Bluff	Woodville	TX	75979
29	Jacques	Blanchette	The Honorable	County Judge	Tyler County	100 W. Bluff St., Room	Woodville	TX	75979
30	Mark	Allen	The Honorable	County Judge	Jasper County	121 N. Austin, Room 1(	Jasper	TX	75951
31	Seth	Martindale	Mr.	Commissioner	Jasper County Comm	146 C.R. 80	Jasper	TX	75951
32	Roy	Parker	Mr.	Commissioner	Jasper County Comm	1867 FM 777	Jasper	TX	75951
33	Willie	Stark	Mr.	Commissioner	Jasper County Comm	191 CR 411	Kirbyville	TX	75956
34	Vance	Moss	Mr.	Commissioner	Jasper County Comm	P.O. Box 597	Evadale	TX	77615
35	Kenneth	Weeks	The Honorable	County Judge	Newton County	110 Court Street	Newton	TX	75966
36	Danny	Bentsen	Mr.	Commissioner	Newton County Comn	129 C.R. 3073	Kirbyville	TX	75956

District V.I.P.s
Fall 2022 Newsletter - Mailed 12/13/2022

	B	C	E	F	G	H	J	K	L
37	Phillip	White	Mr.	Commissioner	Newton County Comn	210 C.R. 2094	Wiergate	TX	75977
38	Gary	Fomby	Mr.	Commissioner	Newton County Comn	P.O. Box 188	Burkeville	TX	75932
39	Wesley	Thompson	Mr.	Commissioner	Newton County Comn	P.O. Box 1205	Deweyville	TX	77614
40	Wayne	McDaniel	The Honorable	County Judge	Hardin County	300 Monroe Street	Kountze	TX	77625
41	L. W.	Cooper, Jr.	Mr.	Commissioner	Hardin County Comm	P.O. Box 1757	Silsbee	TX	77656
42	Chris	Kirkendall	Mr.	Commissioner	Hardin County Comm	P.O. Box 1436	Kountze	TX	77625
43	Amanda	Young	Ms.	Commissioner	Hardin County Comm	P.O. Box 225	Saratoga	TX	77585
44	Alvin	Roberts	Mr.	Commissioner	Hardin County Comm	P.O. Box 8166	Lumberton	TX	77657
45	Paula	Jones	The Honorable	Mayor	City of Woodville	400 West Bluff	Woodville	TX	75979
46	Herbert	Branch	Mr.	Alderman	City of Woodville	400 North Nellius	Woodville	TX	75979
47	Mandy	Risinger	Ms.	City Administrator	City of Woodville	400 West Bluff	Woodville	TX	75979
48	Joyce	Wilson	Ms.	Mayor Pro-Tem	City of Woodville	400 West Bluff	Woodville	TX	75979
49	Kelly	Dillard	Ms.	Alderman	City of Woodville	400 West Bluff	Woodville	TX	75979
50	Clifton	Wright	Mr.	Alderman	City of Woodville	400 West Bluff	Woodville	TX	75979
51	Robert	Greer	Mr.	Alderman	City of Woodville	408 W. Bluff	Woodville	TX	75979
52	Cathy	Bennett	Ms.	Mayor	City of Ivanhoe	870 Charmaine Dr. E.	Woodville	TX	75979
53	Tommy	Morris	Mr.	Mayor Pro-Tem	City of Ivanhoe	870 Charmaine Dr. E.	Woodville	TX	75979
54	John	Craven	Mr.	Councilman	City of Ivanhoe	870 Charmaine Dr. E.	Woodville	TX	75979
55	Skip	Blackstone	Mr.	Councilman	City of Ivanhoe	870 Charmaine Dr. E.	Woodville	TX	75979
56	David	Herrington	Mr.	Councilman	City of Ivanhoe	870 Charmaine Dr. E.	Woodville	TX	75979
57	Will	Warren	Mr.	Councilman	City of Ivanhoe	870 Charmaine Dr. E.	Woodville	TX	75979
58	Mark	Muckleroy	Mr.	Mayor Pro-Tem	City of Silsbee	105 S. Third Street	Silsbee	TX	77656
59	Thomas	Tyler	Mr.	Councilman	City of Silsbee	105 S. Third Street	Silsbee	TX	77656
60	William	Bass	Mr.	Councilman	City of Silsbee	105 S. Third Street	Silsbee	TX	77656
61	Paul	Davis	Mr.	Councilman	City of Silsbee	105 S. Third Street	Silsbee	TX	77656
62	Adalaide	Balaban	Ms.	Councilman	City of Silsbee	105 S. Third Street	Silsbee	TX	77656
63	Kevin	Garner	Mr.	Mayor	City of Silsbee	105 S. Third Street	Silsbee	TX	77656
64	Roy	Gravis	Mr.	Councilman	City of Silsbee	105 S. Third Street	Silsbee	TX	77656
65	DeeAnn	Zimmerman	Ms.	City Manager	Ciity of Silsbee	105 S. Third Street	Silsbee	TX	77656
66	Mark	Bean	The Honorable	Mayor	City of Newton	101 North Street	Newton	TX	75966
67	Donnie	Meek	Mr.	City Administrator	City of Newton	101 North Street	Newton	TX	75966
68	John	Jefferson	Mr.	Councilman	City of Newton	101 North Street	Newton	TX	75966
69	John	Pollock	Mr.	Councilman	City of Newton	101 North Street	Newton	TX	75966
70	Joni	Miller	Mr.	Councilman	City of Newton	101 North Street	Newton	TX	75966
71	Tommy	Westbrook	Mr.	Councilman	City of Newton	101 North Street	Newton	TX	75966
72	James	Bean	Mr.	Councilman	City of Newton	101 North Street	Newton	TX	75966

District V.I.P.s
Fall 2022 Newsletter - Mailed 12/13/2022

	B	C	E	F	G	H	J	K	L
73	Frank	George	The Honorable	Mayor	City of Kirbyville	107 S. Elizabeth	Kirbyville	TX	75956
74	Robert	Byerly	Mr.		City of Kirbyville	107 S. Elizabeth	Kirbyville	TX	75956
75	Laura	Adams	Ms.	Mayor Pro-Tem	City of Kirbyville	107 S. Elizabeth	Kirbyville	TX	75956
76	Andra	Grant	Ms.	Councilman	City of Kirbyville	107 S. Elizabeth	Kirbyville	TX	75956
77	Vondol	Bailey	Ms.	Councilman	City of Kirbyville	107 S. Elizabeth	Kirbyville	TX	75956
78	Wayne	Love	Mr.	Councilman	City of Kirbyville	107 S. Elizabeth	Kirbyville	TX	75956
79	Amanda	Gates	Ms.	Councilman	City of Kirbyville	107 S. Elizabeth	Kirbyville	TX	75956
80	Duane	Crews	The Honorable	Mayor	City of Colmesneil	P.O. Box 31	Colmesneil	TX	75938
81	Bubba	Sheffield	Mr.	Mayor Pro-Tem	City of Colmesneil	501 Hickory	Colmesneil	TX	75938
82	Dennis	Moffett	Mr.	Alderman	City of Colmesneil	1009 Shirley Lane	Colmesneil	TX	75938
83	Gene	Allen	Mr.	Alderman	City of Colmesneil	505 Ogden Dr.	Colmesneil	TX	75938
84	Billy	Andrus	Mr.	Alderman	City of Colmesneil	408 Oak St.	Colmesneil	TX	75938
85	Virgie	Sullivan	Mr.	Alderman	City of Colmesneil	P.O. 1012	Colmesneil	TX	75938
86	Sam	Ashworth	Mr.	Director	SETGCD	954 Tucker Hill Rd.	Silsbee	TX	77656
87	Wendy	Turner	Ms.	Director	SETGCD	P.O. Box 816	Silsbee	TX	77656
88	Olen	Bean	Mr.	Director	SETGCD	156 Private Rd. 8031	Newton	TX	75966
89	Charles	Hughes	Mr.		SETGCD	P.O. Box 337	Bon Wier	TX	75928
90	Mike	Adams	Mr.		SETGCD	3507 Highway 87 North	Newton	TX	75966
91	Robert C.	Woods	Mr.		SETGCD	Rt. 1, Box 1546	Newton	TX	75966
92	Jon	Meek	Mr.	Director	SETGCD	101 North Street	Newton	TX	75966
93	Julie	Simmons-Carr	Ms.		SETGCD	101 North Street	Newton	TX	75966
94	Herbert	Branch	Mr.		SETGCD	1404 West Bluff	Woodville	TX	75979
95	J.D.	Keefer	Mr.		SETGCD	4767 FM 256 East	Colmesneil	TX	75938
96	Bobby	Rogers	Mr.	Treasurer/Secretary	SETGCD	P.O. Box 55	Silsbee	TX	77656
97	Roger	Fussell	Mr.	Vice President	SETGCD	P.O. Box 8065	Lumberton	TX	77657
98	Charles	Zimmerman	Mr.	Director	SETGCD	298 CR 2152	Woodville	TX	75979
99	Jim	Boone	Mr.	Director	SETGCD	1930 CR 2570	Colmesneil	TX	75938
100	Greg	Wobbe	Mr.	Director	SETGCD	103 Court Street	Newton	TX	75966
101	Robert	Nichols	The Honorable	Senator		329 Neches Street	Jacksonville	TX	75766
102	James	White	The Honorable	Representative		2915 Atkinson Dr.	Lufkin	TX	75901
103	Newton County News					211 Glover Dr.	Newton	TX	75966
104	Kirbyville Banner					104 N. Kellie Avenue	Kirbyville	TX	75956
105	Silsbee Bee					404 Hwy. 96 South	Silsbee	TX	77656
106	Tyler County Booster					P.O. Box 339	Woodville	TX	75979
107									
108									

Drillers - Distirct Surrounding Counties

Fall 2022 Newsletter - Mailed 12/13/2022

	A	B	C	D	E	F	G	H
1	Suffix	**LAST NAME**	**FIRST NAME**	**ADDRESS 1**	**CITY**	**STATE**	**ZIP**	**COUNTY**
2								
3	Mr.		Evan		Beaumont	TX	77705	Jefferson
4	Mr.		Nathan		Newton	TX	75966	Newton
5	Mr.		David		Newton	TX	75966	Newton
6	Mr.		Harold		Vidor	TX	77662	Orange
7	Mr.		Daniel		Pollok	TX	75969	Angelina
8	Mr.		Claude		Beaumont	TX	77726	Jefferson
9	Mr.		Steven		Beaumont	TX	77726	Jefferson
10	Mr.		Harry		Winnie	TX	77665	
11	Mr.		Stephen		Bronson	TX	75930	Sabine
12	Mr.		Patrick		Cleveland	TX	77327	Liberty
13	Mr.		Keith		Broaddus	TX	75929	San Augustine
14	Mr.		Graham		Newton	TX	75966	Newton
15	Mr.		Keith		Lufkin	TX	75901	Angelina
16	Mr.		Thomas		Beaumont	TX	77726	Jefferson
17	Mr.		James			TX	75904	Angelina
18	Mr.		Ronald		Lufkin	TX	75904	Angelina
19	Mr.		Marvin		Cleveland	TX	77328	Liberty
20	Mr.		Dale		Silsbee	TX	77656	Hardin
21	Mr.		James		Liberty	TX	77575	Liberty
22	Mr.		Donald		Livingston	TX	77351	Polk
23	Mr.		Lance		Crowley	LA	70527	
24	Mr.		Kenneth		Kountze	TX	77625	Hardin
25	Ms.		Geneva		Jasper	TX	75951	Jasper
26	Mr.		Dale		Vidor	TX	77662	Orange
27	Mr.		Wes		Vidor	TX	77662	Orange
28	Mr.		Terry		Vidor	TX	77662	Orange
29	Mr.		Whit		Vidor	TX	77662	Orange
30	Mr.		Bobby		Jasper	TX	75951	Jasper
31	Mr.		Boyd		Livingston	TX	77351	Polk
32	Mr.		Ronald		Dayton	TX	77535	Liberty
33	Mr.		Mitchell		Jasper	TX	75951	Jasper
34	Mr.		Michael		Orange	TX	77630	Orange

Drillers - Distirct Surrounding Counties

Fall 2022 Newsletter - Mailed 12/13/2022

	A	B	C	D	E	F	G	H
35	Mr.		Albert		Vidor	TX	77662	Orange
36	Mr.		Fred		Vidor	TX	77662	Orange
37	Mr.		Keith		Vidor	TX	77662	Orange
38	Mr.		Dillin		Jasper	TX	75951	Jasper
39	Mr.		Jason		Dayton	TX	77535	Liberty
40	Mr.		Danny		Kirbyville	TX	75956	Jasper
41	Mr.		Norman		Vidor	TX	77662	Orange
42	Mr.		Trejo		Belleville	TX	77418	
43	Mr.		Jason		Vidor	TX	77662	Orange
44	Mr.		Mitch		Silsbee	TX	77656	Hardin
45	Mr.		David		Livingston	TX	77351	Polk
46	Mr.		John		Livingston	TX	77351	Polk
47	Mr.		Randy		Batson	TX	77519	Hardin
48	Mr.		Jon		Livingston	TX	77351	Polk
49	Mr.		Matthew		Beaumont	TX	77705	Jefferson
50	Mr.		Jackie		Jasper	TX	75951	Jasper
51	Mr.		Curtis		Diboll	TX	75941	Angelina

Newsletters

Fall 2022

Fall 2021

Fall 2020

Fall 2019

Winter 2018

Summer 2017

Spring 2016

Fall 2014

Winter 2013

Summer 2013

Fall 2012

Spring 2012

Summer 2011

Fall 2010

Spring 2010

Board Meetings

2nd Thursday of each month beginning at 10:00 AM unless otherwise noticed.

No Board meetings scheduled for August or December unless otherwise noticed.

Meetings are held at the
Jasper County Courthouse Annex Building
271 E. Lamar, Suite 202, 2nd Floor – Emergence Operations Center Offices
Jasper, TX 75951

Important links

Meeting and Hearing Notes
Groundwater Management Area 14 Region I
Water Planning Group
Conservation
Drought Information
Newsletters
Reports / DFCs
Source Water Protection
Understanding Texas Aquifers