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-

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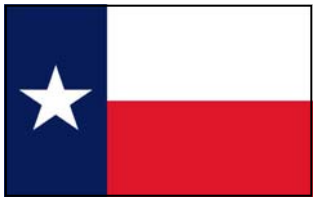


TEXAS 88th Legislative Session

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)

Inside this issue

Did You Know?

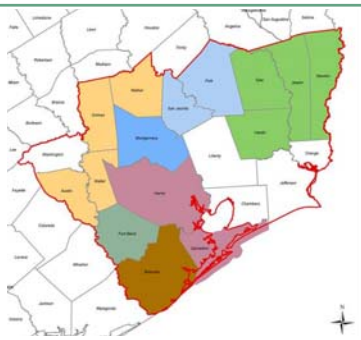
The oceans of the world are a major factor in regulating Earth's temperature.

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.

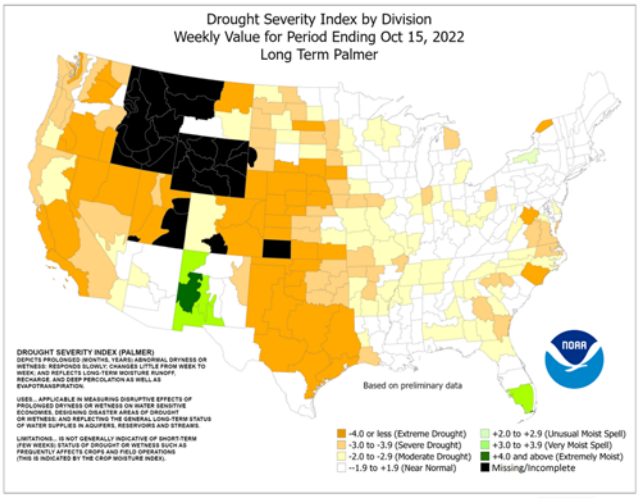
Recently, the District, for the first time since it was created nearly 20 years ago, increased its production fee rate. The increase will take the rate from 7/10th of 1 cent to 1 full cent per 1,000 gallons **(still one of the lowest production fee rates in the state if not the lowest)**. The District 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

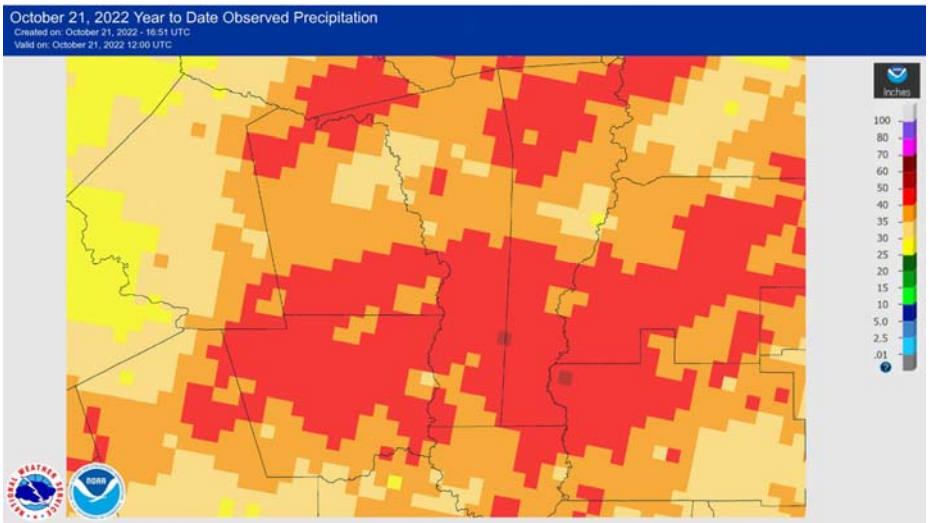
Leonardo Da Vinci

DROUGHT CONDITIONS



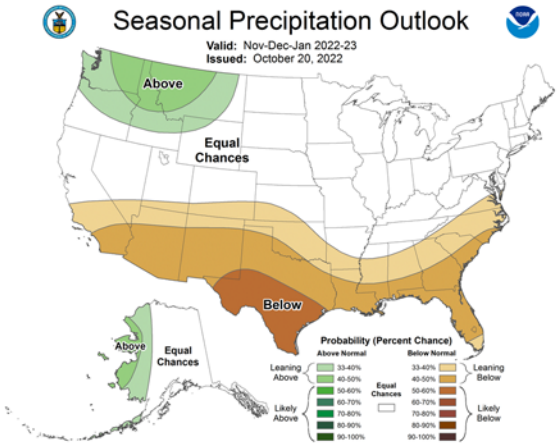
As you can see from the October 15, 2022 U.S. Palmer Drought Severity Index, much of the State (including our District), is experiencing severe to extreme drought conditions. These conditions would be far worse if August had not been as wet as it was with some areas getting 8 inches of rainfall.

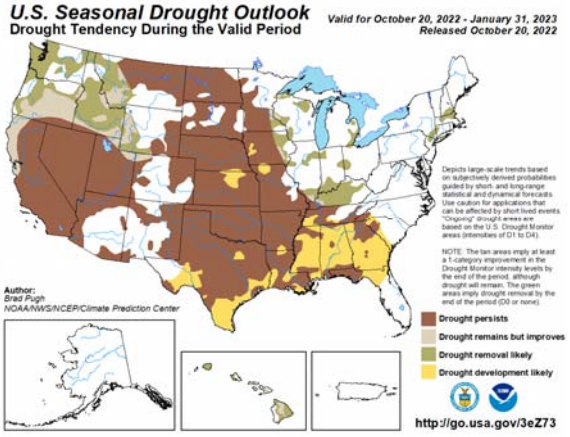
The October 21, 2022 Year to Date Observed Precipitation Map indicates that about half of the District has only received between 30 and 40 inches of rain this year (orange and cream colored areas). The other half of the District shows to have received between 40 and 50 inches which isn't far off of the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

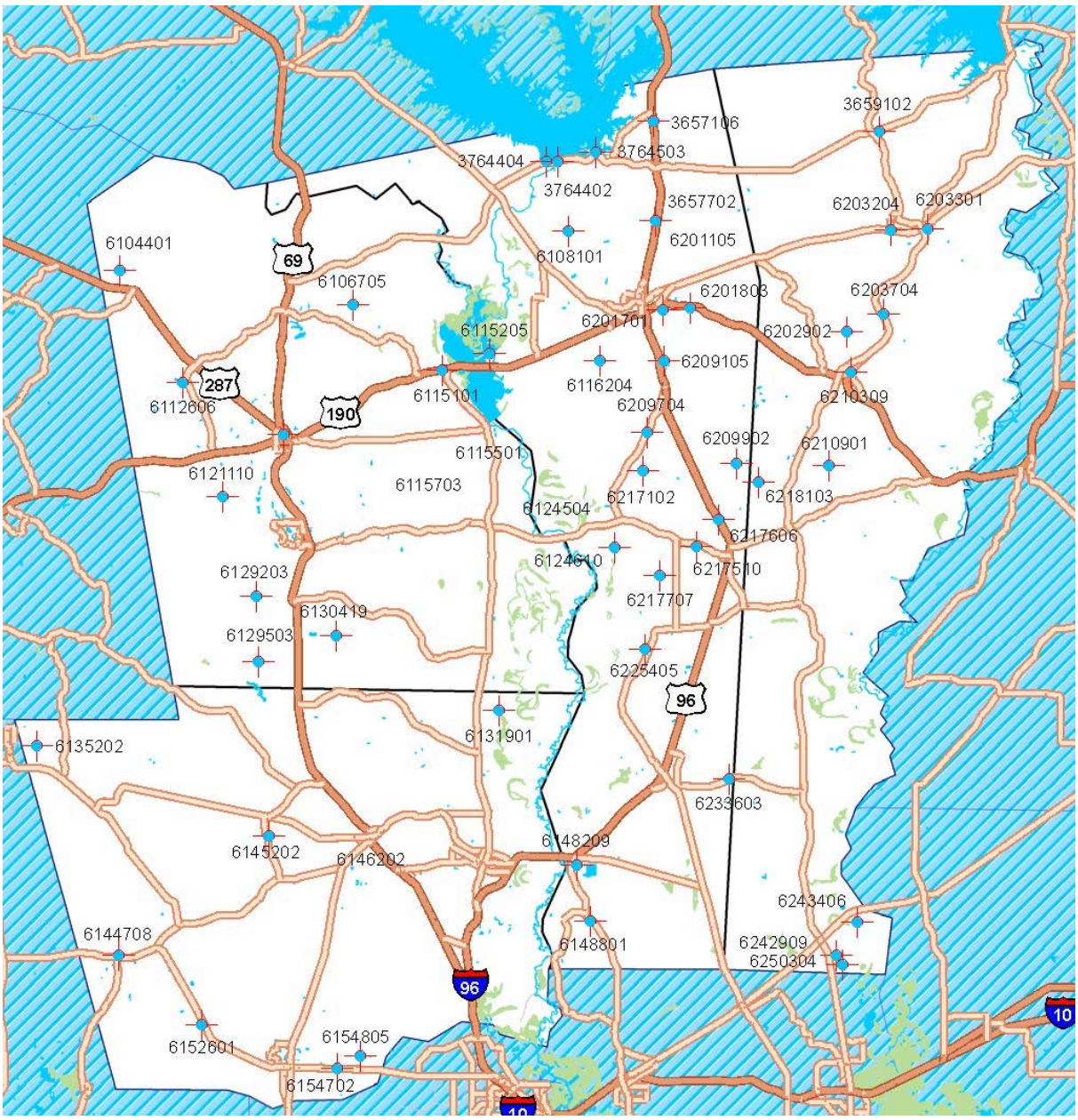
Winter Conservation Tips:

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

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PLEASE
PLACE
STAMP
HERE

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