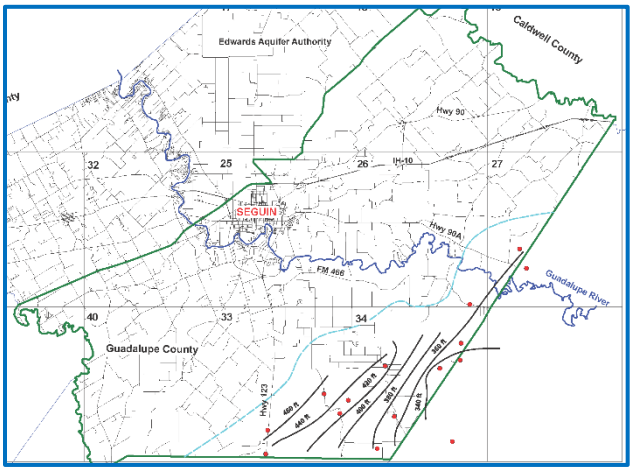

GCGCD NEWS

WINTER 2022-2023 Newsletter

Impact Analysis Study

As directed by TWC §36.0015 to use the 'best available science' in order to protect property rights, balance the conservation and development of groundwater to meet the needs of our District while following our mission to conserve, preserve, protect, & prevent waste of groundwater – GCGCD has engaged the services of Advanced Groundwater Solutions (AGS) to aid the District in developing a methodology for estimating impacts from groundwater production within the boundaries of the District.

The project has been divided into multiple tasks. Task one focused on reviewing the District's permitting database and hydrogeologic data, including pumping records, water level measurements, aquifer structure and hydraulic properties.

Continued on page 4.

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IN THIS ISSUE

Notes from the GM

Happy New Year Everyone!

We are excited to start out 2023 with multiple projects to help us better understand the characteristics of the aquifers we are charged with managing. Our hydrogeologist and consulting experts continue to evaluate areas of recharge potential, water level declines as a result of impacts from production – both historical and anticipated future pumping, and the overall health of the aquifers as we begin the 4th round of Desired Future Conditions.
We look forward to sharing these projects with you! Stay tuned!!

On behalf of all of us at GCGCD – may this new year bring each of you joy, health, and happiness! To a great New Year!!

Kelley Cochran
General Manager

Water Conservation Tip:

When thawing food – don't run water over frozen items – either plan ahead and thaw overnight in the refrigerator or use the defrost feature on your microwave – this could save ~ 50 – 150 gallons a month!

Tip!

Know where your household water shut-off value is located!!

WINTER TIP

If your home loses power – food in your freezer could thaw and refreeze when power is restored – but ***how would you know if you were out of town?***

Here's a cool tip – pun intended 😊

Freeze a small container of water –

then place a coin on top of the frozen block.

If the coin drops below the frozen surface –

then you know you lost power causing the ice to melt and the coin to drop.

If that happens – it's time to clean out the freezer to avoid consuming potentially contaminated food.

GCGCD Management Plan approved by TWDB – December 9, 2022

Administratively complete and in
compliance TWC §36.1071 & 31 TAC 356

Effective December 2022 – December 2027

Management Goals, Methodology for Tracking Progress, Management Objectives & Performance standards established for the following:

1. Providing the Most Efficient Use of Groundwater
2. Controlling and Preventing Waste of Groundwater
3. Controlling and Preventing Subsidence
4. Addressing Conjunctive Surface Water Management
5. Addressing Natural Resource Issues
6. Addressing
   - ❖ Conservation
   - ❖ Recharge Enhancement
   - ❖ Rainwater Harvesting
   - ❖ Precipitation Enhancement
   - ❖ Brush Control
7. Addressing the Desired Future Conditions

Texas Water Development Board

Modeled Available Groundwater (MAG) Values in Acre Feet for the
Carrizo-Wilcox Aquifers in Guadalupe County GCD
Split by aquifer – model layers combined for the Wilcox Aquifer

Values from GAM Run 21-018 MAG: Modeled Available Groundwater for the Carrizo-Wilcox, Queen City, Sparta, and Yegua-Jackson aquifers in Groundwater Management Area 13

Aquifer	2020	2030	2040	2050	2060	2070	2080
Carrizo	28,943	14,834	14,627	14,532	14,224	14,624	14,624
Wilcox	26,694	24,729	27,041	28,783	27,894	27,575	27,035

TWDB Report on the Future of Desalination
The TWDB has issued its report to the 88th Texas legislature on seawater and brackish groundwater desalination in Texas. Read the full report here.

GMA 13 Next Meeting scheduled for

February 17, 2023 @ 10:00 AM

Location: Office of the Evergreen Underground Water Conservation District located at 110 Wyoming Blvd., Pleasanton, TX

James Beach presenting at the November 10th GCGCD Board Meeting.

Continued from cover - Task 1 – completed.

- Review status of GCGCD hydrogeologic data and water level monitoring program
- Refine pumping estimates and hydraulic properties in the TWDB Southern Carrizo Wilcox GAM
- Access GCGCD database of wells in the Carrizo and Wilcox Aquifers

At the January 2023 meeting, the board authorized the next task (2A) – taking an analytical approach to determine impacts from permitted wells.

Task 2 (A) – underway…

For the Carrizo and Wilcox Aquifers, with available transmissivity, storativity, and pumping data, use Theis analytical solution to estimate current impacts (feet of water level decline) by each permittee based on historic pumping. Then, tabulate the magnitude of water level decline from each permittee and the percentage of impact caused by each permittee through 2022.

Once the TWDB finalizes the Groundwater Availability Model (GAM) for the Southern portion of the Carrizo-Wilcox, we will expand on the project to include regional impacts (Task 2B).

Stay tuned for results of study!

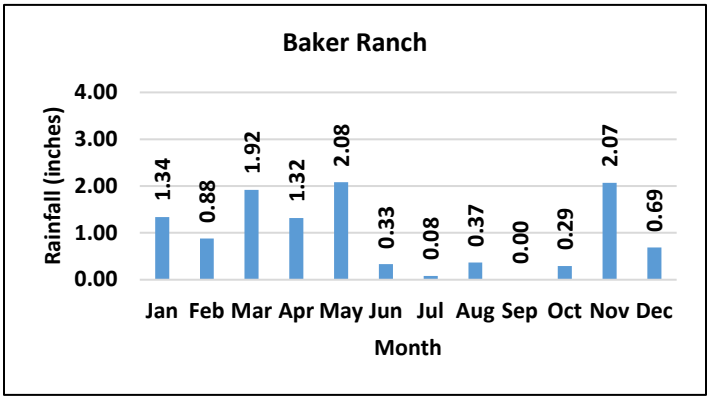
Which would you prefer? Shadow or no shadow?

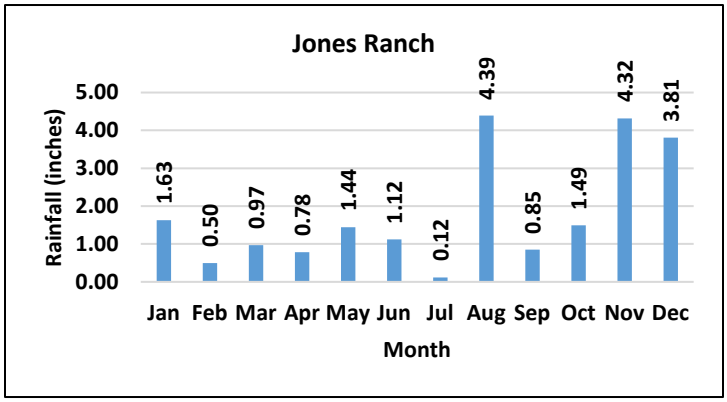
6 more weeks of WINTER or an early SPRING?

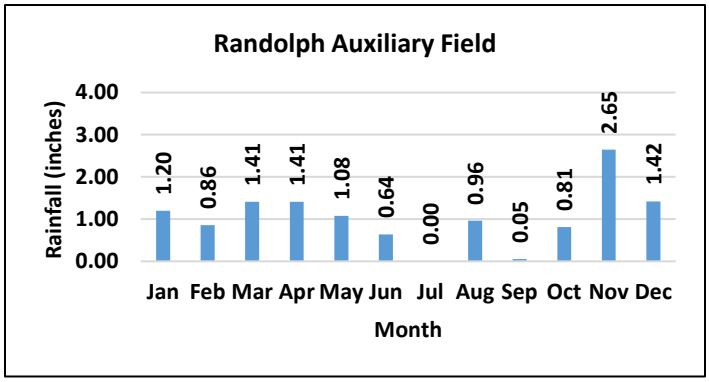
In the past 10 years, Phil has been right 40% of the time!

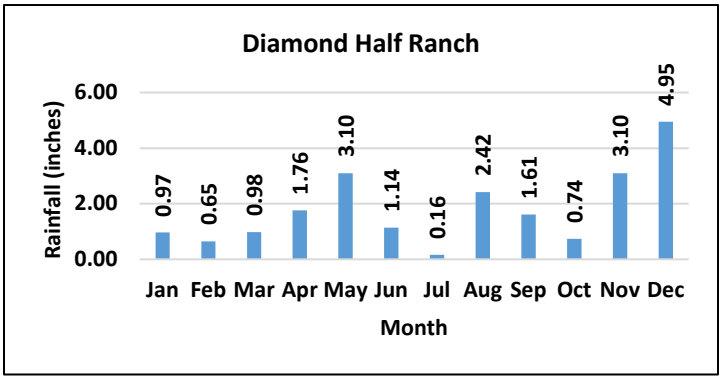
Source: NOAA

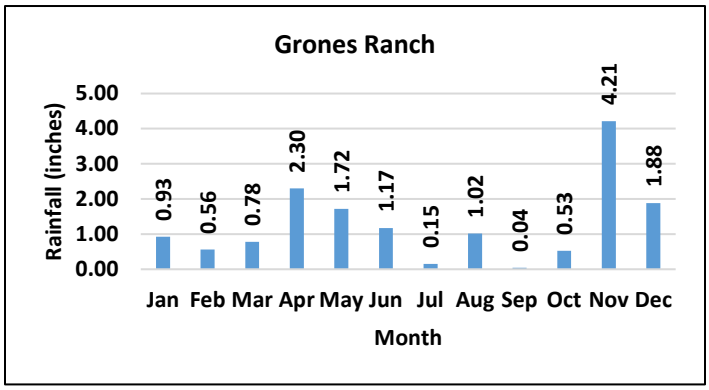
District Rainfall Data by TexMesonet Station for 2022

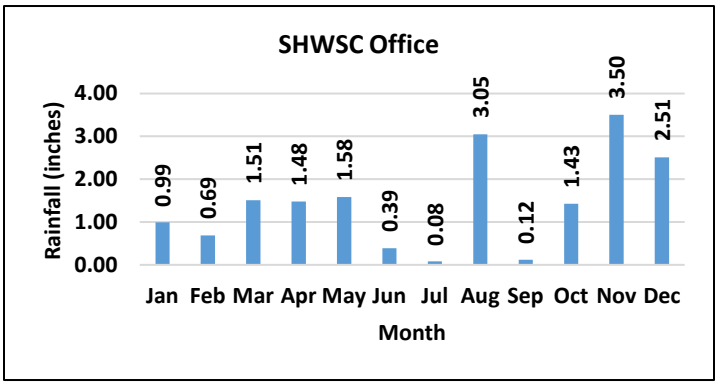


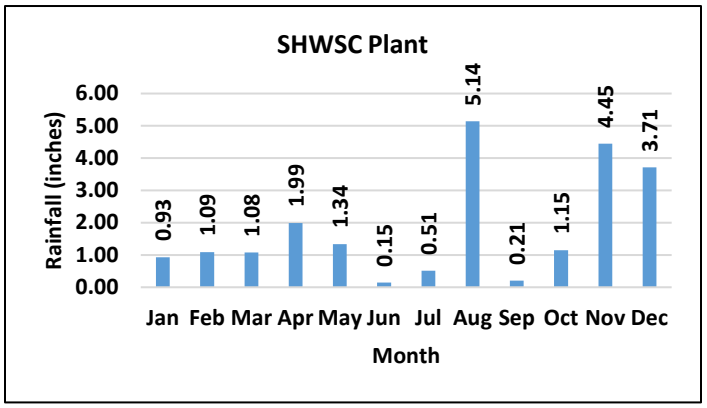


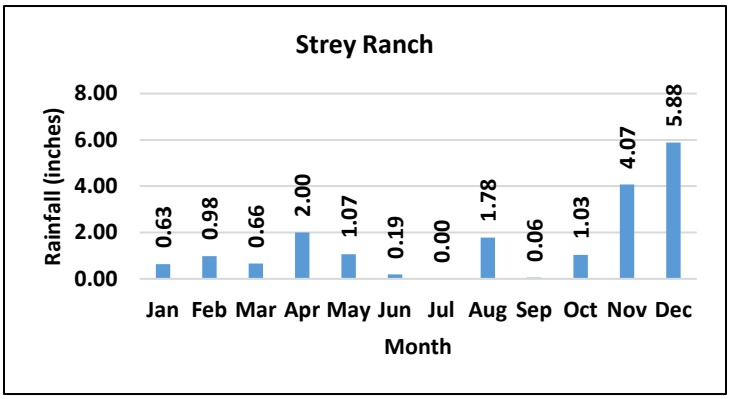








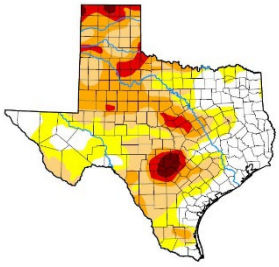




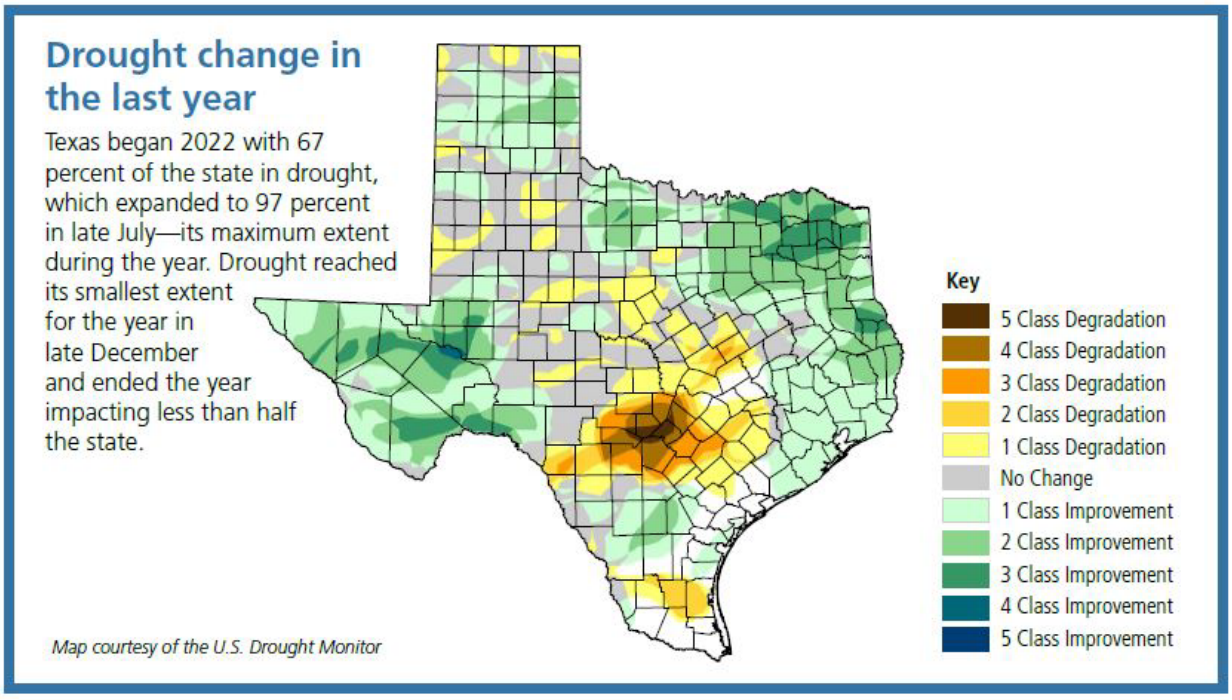
Total Rainfall for 2022 = 17.45”

GCGCD Rainfall 2022													
Location	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual Total By Site
Baker - TexMesonet	1.34	0.88	1.92	1.32	2.08	0.33	0.08	0.37	0.00	0.29	2.07	0.69	**11.37**
Diamond Half Ranch- TexMesonet	0.97	0.65	0.98	1.76	3.10	1.14	0.16	2.42	1.61	0.74	3.10	4.95	**21.58**
Grones - TexMesonet	0.93	0.56	0.78	2.30	1.72	1.17	0.15	1.02	0.04	0.53	4.21	1.88	**15.29**
Jones - TexMesonet	1.63	0.50	0.97	0.78	1.44	1.12	0.12	4.39	0.85	1.49	4.32	3.81	**21.42**
Randolph Auxiliary - TexMesonet	1.20	0.86	1.41	1.41	1.08	0.64	0.00	0.96	0.05	0.81	2.65	1.42	**12.49**
SHWSC Office - TexMesonet	0.99	0.69	1.51	1.48	1.58	0.39	0.08	3.05	0.12	1.43	3.50	2.51	**17.33**
SHWSC Plant - TexMesonet	0.93	1.09	1.08	1.99	1.34	0.15	0.51	5.14	0.21	1.15	4.45	3.71	☆ **21.75**
Strey - TexMesonet	0.63	0.98	0.66	2.00	1.07	0.19	0.00	1.78	0.06	1.03	4.07	5.88	**18.35**
													GCGCD Total Avg
Monthly Avg across GCGCD	1.08	0.78	1.16	1.63	1.68	0.64	0.14	2.39	0.37	0.93	3.55	3.11	**17.45**

Drought map as of January 10, 2023

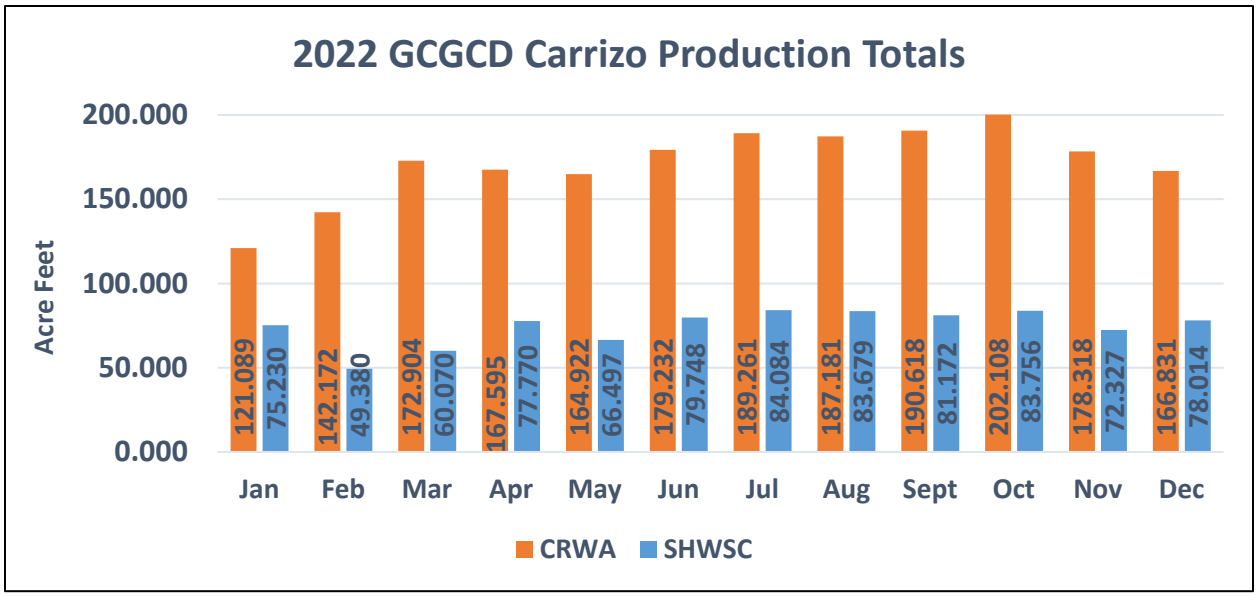


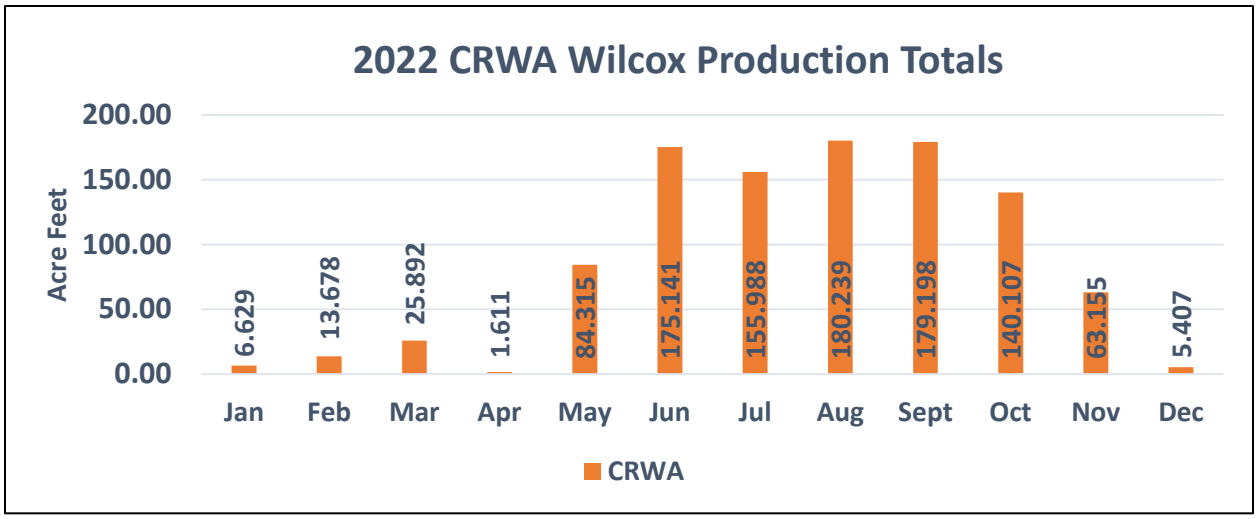
droughtmonitor.unl.edu



Written by Dr. Mark Wentzel *— Dr. Mark Wentzel is a hydrologist in the TWDB’s Office of Water Science and Conservation.*

PRODUCTION TOTALS FOR 2022





Water levels were measured on January 17th & 18th

Look for the

January 2022 - January 2023

Aquifer Levels Report by William B. Klemt

on our website mid-February!

Texas Ground Water Association welcomes new the Executive Director **Bobby Bazan** – formerly Post Oak Savannah Groundwater Conservation District's Water Resource Management Specialist.

Annual Convention was held in San Marcos
January 25-28, 2023
Another great success!!

GCGCD General Manager, Kelley Cochran was awarded the Ground Water Science 'Person of the Year' Award at this year's TGWA Convention.

"I am so incredibly honored to receive this award. It means a great deal to me.

I love this organization –

Thank You!"

Kelley Cochran

Mike Miller of Geo Cam was elected as Chair of the Ground Water Science Division & Amy Bush (RMBJ Geo) joins as the new GWS Vice-Chair for TGWA.

Save the date – **March 31st 8 am – 5 pm**

Geoscience Seminar

Brought to you by the

Ground Water Science Division of TGWA
at the Meadows Center for Water & the Environment in San Marcos, TX

The Meadows Center for Water and the Environment
Texas State University

This year's focus will be on Texas Springs.
*Includes Glass Bottom Boat Tour on the San Marcos River!

Schertz-Seguin Local Government Corporation [SSLGC Water Corporation | Seguin, TX (seguintexas.gov)](#) announced the new General Manager in November - **Welcome Andrew McBride**.

Thank you Andrew for joining us on our water level measuring day!

Jeff Walker, Executive Administrator of the TWDB moderated a panel entitled "What's on Tap: Hot Topics in Texas Water" at the 2023 Water for Texas Conference.

Pictured from left to right: Stacey Steinbach (TWCA); Leah Martinsson (TAGD); and Lara Zent (TRWA) – discussed water challenges in Texas & key issues being faced as Texas begins the 88th Legislative session.

Jackson Swilley posed by the TexMesonet booth at the TWDB Water for Texas 2023 Conference (above).

Jackson also recently worked on one of GCGCD's TexMesonet stations – updating equipment.

GCGCD Board meetings are held the 2nd Thursday of each month at 4:30 PM at our office located on the 3rd floor of the First United Bank in Seguin: 200 N. Austin St., Suite # 301.

February 9, 2023 – GCGCD board meeting
February 17, 2023 – GMA 13 board meeting
March 9, 2023 – GCGCD board meeting
April 13, 2023 – GCGCD board meeting

GCGCD
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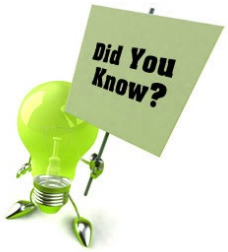
gcgcd@gcgcd.org

Additional ways to reach us at the District
We also have G-mail accounts

GM.GCGCD@gmail.com Kelley

District.GCGCD@gmail.com Omar



GCGCD Board of Directors & Staff

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Omar Maldonado – Field Tech/Admin. Assistant
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District 3 - A. Robert Raetzsch – Director
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District 5 – Mark Gustafson - Director
mark_gustafson@gcgcd.org

District 6 - Hilmar Starcke III - President
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District 7 - Jeff Schuehle - Vice President
jeff_schuehle@gcgcd.org

Have you ever wondered - How much does a cloud weigh?

If clouds are full of water – and water is heavy – How much does a cloud really *weigh*?

The weight of a cloud depends on two factors - the weight of the water droplets, plus the weight of the air (pressure above the cloud pushing down).

Researchers have calculated the average cumulus cloud to weigh 1.1 MILLION POUNDS!

WOW – that's a lot of weight – so why do they *float*?

The answer is similar as to why ice floats.

Air has weight and density. The density of the cloud material is less dense than that of dry air – meaning, the air below the cloud is even heavier than the cloud.

So, no worries that a 1.1 million pound cloud will fall from the sky. The drier air below will hold those fluffy clouds above until they are ready to release the rain!

Source: USGS, Science Alert