



Drilling GCGCD MWCZ-1B

GCGCD NEWS



SUMMER 2020 Newsletter

CARRIZO OUTCROP MONITOR WELL

GeoProjects International began drilling mid-July a groundwater monitoring well in the Carrizo Aquifer to be included in the District’s program. The primary goal of this project is to identify impacts of production in the Carrizo Aquifer as they relate to the GCGCD’s Desired Future Conditions. A secondary purpose of the project is to collect hydrogeologic data (aquifer thickness, transmissivity, permeability, specific yield, and water quality) on the Carrizo Aquifer outcrop. Data from the project will be made available to the Texas Water Development Board for possible updates to the Groundwater Availability Model (GAM). The well (MWCZ-1B) is located in the middle of the Carrizo outcrop. The project is being funded by the Schertz/Seguin Local Government Corporation (SSLGC) in accordance with a special condition of production permit held with the GCGCD.



[WWW.GCGCD.ORG](http://www.gcgcd.org)

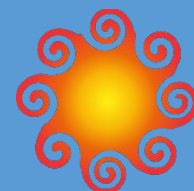


Visit our website for more information!

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Happy Summer Everyone! – Texas' triple digits have not slowed us down. GCGCD has been busy over the past few months. We have been in the field obtaining water level measurements, installing transducers on the DFC Monitor wells, doing maintenance on our weather stations, and even drilling an additional monitoring well.

OK, No more spoilers! I'll let you learn the rest on your own. Find some air conditioning, sit down & relax and enjoy our Summer Newsletter 😊 Stay safe, mask up!

Kelley



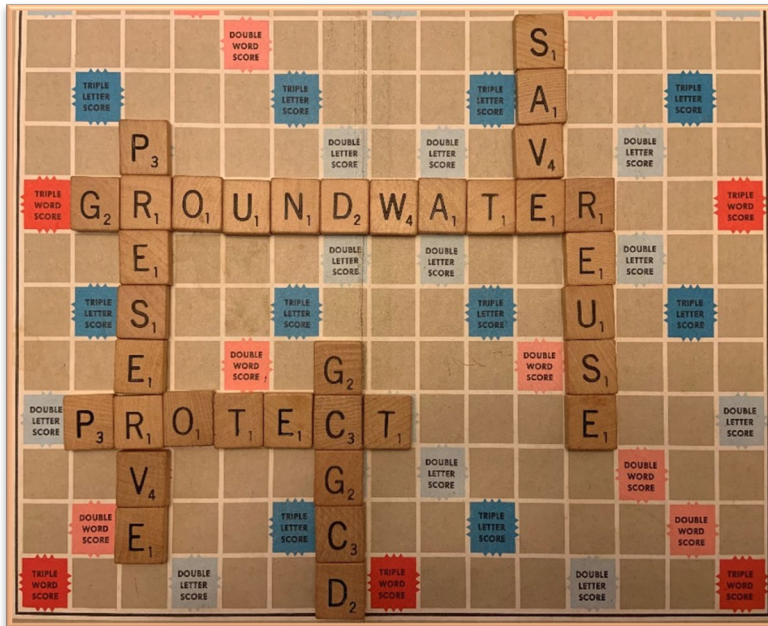
Kelley Vickers
General Manager

The COVID-19 pandemic, as everyone knows, is still impacting the globe. Here in Guadalupe County, our office doors remain closed to the public for the time being. We are conducting business remotely and following safety recommendations. Keep checking our website for updates www.gcgcd.org

Here are some links to help keep you informed, safe and healthy Give us a call or e-mail us – we are here for you, virtually.



CONSERVATION – Every individual CAN make a difference!



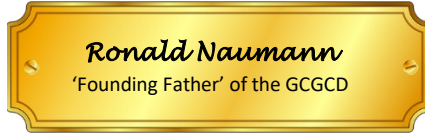
As temperatures rise this summer, and rainfall is less frequent - it's important to keep water conservation a priority.

If your water source comes from a utility, check in with their websites to learn about stage restrictions for your area and additional conservation tips.

If your home is dependent on well water, be especially mindful of your consumption. Only water your yard during early morning or late evening hours, check your plumbing for potential leaks, turn off the tap when brushing your teeth or doing the dishes and reuse grey water when possible.

Please do your part to protect this precious resource!

thank you!



This May marked the official retirement of former GCGCD President Ron Naumann.

All of us at the Guadalupe County Groundwater Conservation District want to thank you for your years of devoted service in **Establishing, Managing and Presiding over the District for over 20 years!**

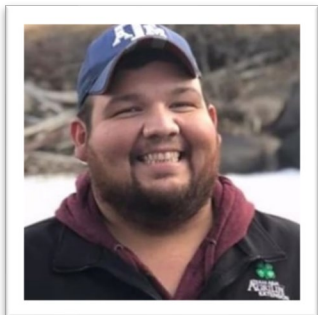
Over those years, you have worn many hats – even hard hats! Volunteer, First board member, President, General Manager and yes, Field Tech.

You recognized the importance and need for a GCD in this region and your efforts led to the creation of the District - which is now my privilege to manage.

Your passion for conservation and dedication to the protection of groundwater has inspired me and so many others. Thank you for everything!

We all wish you the Very Best in your Retirement!

 Kelley



WELCOME MATT MIRANDA

In May of this year, the GCGCD board of directors appointed Matt Miranda to fill the vacancy for Director of District 1. Matt holds a Bachelors of Science in Ag Communications and Journalism and a Master of Education in Ag Leadership, Education and Communications from Texas A&M University.

Matt specializes in youth education, program development & implementation, technical communication & leadership and currently works as the 4-H Youth Development Extension Agent in Guadalupe County, Texas for the Texas A&M AgriLife Extension Service.

We are so excited to welcome Matt to 'Team Groundwater'! Thank you for your interest and your dedication to protecting and conserving groundwater! We look forward to working with you!!

Latest update

Collecting data in the field just got easier!



Greg Sengelmann and Jim Benedict, GCUWCD setting transducer at monitoring well

DFC Monitor wells



MWCZ-7

[GCGCD](#) & [GCUWCD](#) are installing water level data loggers at all of the DFC Monitoring Wells.

The Bluetooth enabled mobile app allows us to view and share data files and graph images right from our mobile devices in the field. This new system will help us collect and manage data in a much faster and easier way. No internet connection is required.

Funds provided by stakeholders: SSLGC, CRWA, SAWS, HCPUA & TWA/GBRA – *Thank you!*

Pics from MWCZ-1B

Continued from cover...



Bill Klemt recording soil characteristics as samples are collected, washed, laid out & bagged in 10' increments for analysis.



Evan Scheafer, driller for GeoProjects & Bill Klemt, GCGCD geologist discussing progress at wellsite MWCZ-1B

Looking for a way to add Beauty to your yard while also conserving water?

Try constructing a **Rain Garden!**

Collect runoff rainfall from roofs, sidewalks and driveways into a depressed area and allow the soil to filter the pollutants as water permeates the ground.

Help reduce flooding and erosion.

Plant native, colorful plants that attract and provide a habitat for insects and birds.



Photo: EPA

AustinTexas.gov "Rain Gardens: Keeping Water on the Land"

TIPS

Rain gardens can be created naturally (on a slope) or man-made (dig a hole if ground is level). If built on a slope, the slope should be less than ten percent and placed in a location that receives full or partial sunlight. Establish a berm on the side facing downward on the slope to avoid excess runoff. For rain gardens built on level ground, dig to a depth of six inches. To assist roof runoff to flow to your rain garden, create a path where the runoff flows from the gutter pipe to the rain garden or add an extension that reaches the rain garden. Adding gravel will aid the filtration process.

2020 List of Hurricane Names

- Arthur
- Bertha
- Cristobal
- Dolly
- Edouard
- Fay
- Gonzalo
- Hanna
- Isaias
- Josephine
- Kyle
- Laura
- Marco
- Nana
- Omar
- Paulette
- Rene
- Sally
- Teddy
- Vicky
- Wilfred



Where was the highest recorded 24-hour rainfall event in the US?

Kauai, Hawaii. In 2018 a record **49 inches of rain** fell within a single 24-hour period. Alvin, Texas previously held the record for the highest 24-hour rainfall total in the United States after 42 inches of rain fell during Tropical Storm Claudette in 1979. Other parts of Texas including Freeport and Sargent at the time recorded 30 inches of rainfall during landfall.

Hurricane Season Is Here
Are you ready?

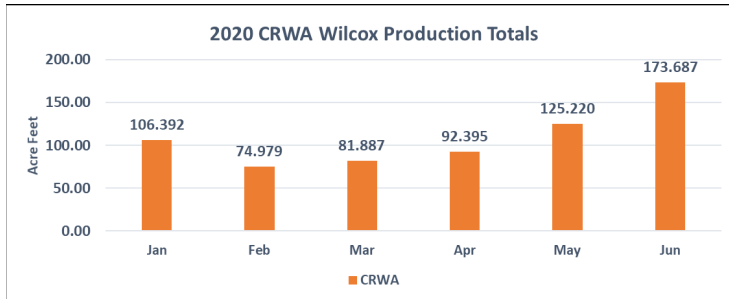
National Weather Service has updated its hurricane preparedness [checklist](#) to include two new items: **a face mask and hand sanitizer.**



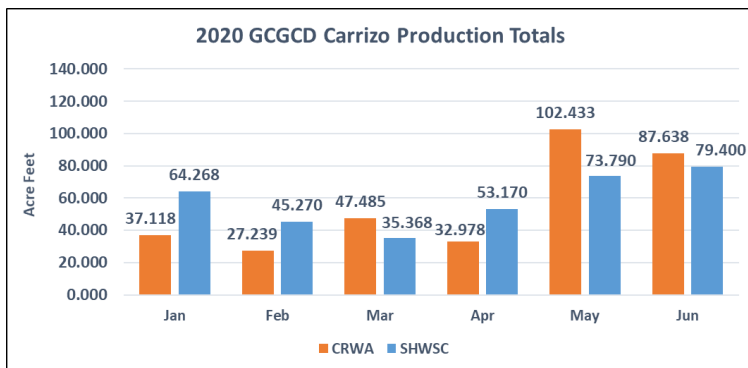
NATIONAL HURRICANE CENTER
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

2020 GCGCD Production Totals

Field Day



Landowner Pastor & Mrs. Sagebiel joined us on their ranch to observe measuring day (MWCZ-3) – Thanks for your continued participation and dedication to conservation!



Aquifer Levels - June 2020

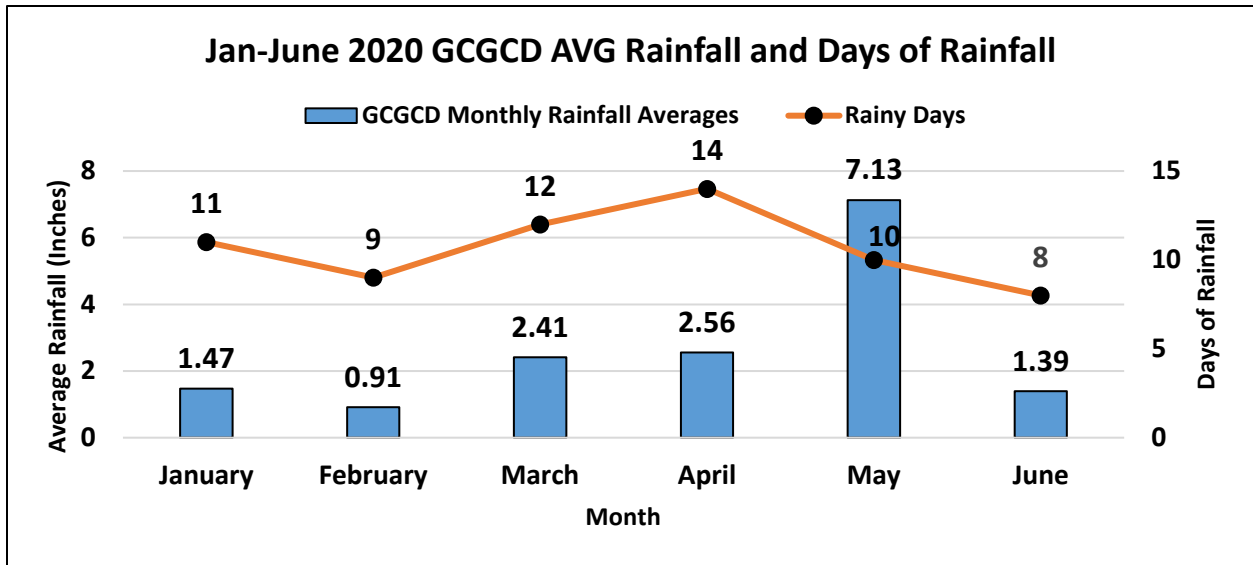
SUMMARY TAKE AWAYS:

- Short term Carrizo water levels declined a little more than expected in the outcrop
- Long-term water levels (2013-2020) indicate normal declines [middle of outcrop 5 feet (0.7 feet/year)]
- Wilcox water levels remain relatively stable
- Present day level of pumpage small to moderate water level declines are to be expected in the Carrizo Aquifer
- Impacts of water level pumping from the Tiemann & SHWSC wells need to be determined on MWCZ-8
- Artesian water levels in the municipal Wilcox wells are sensitive to the length of time the well is turned off prior to measurement
- Recommendations:
 - 24 hours prior to measurement – shut off pumping from large capacity Carrizo & Wilcox wells
 - Obtain information relating to the coefficient of storage for the Wilcox aquifer in Guadalupe County from CRWA & EUWCD

To read the full report →



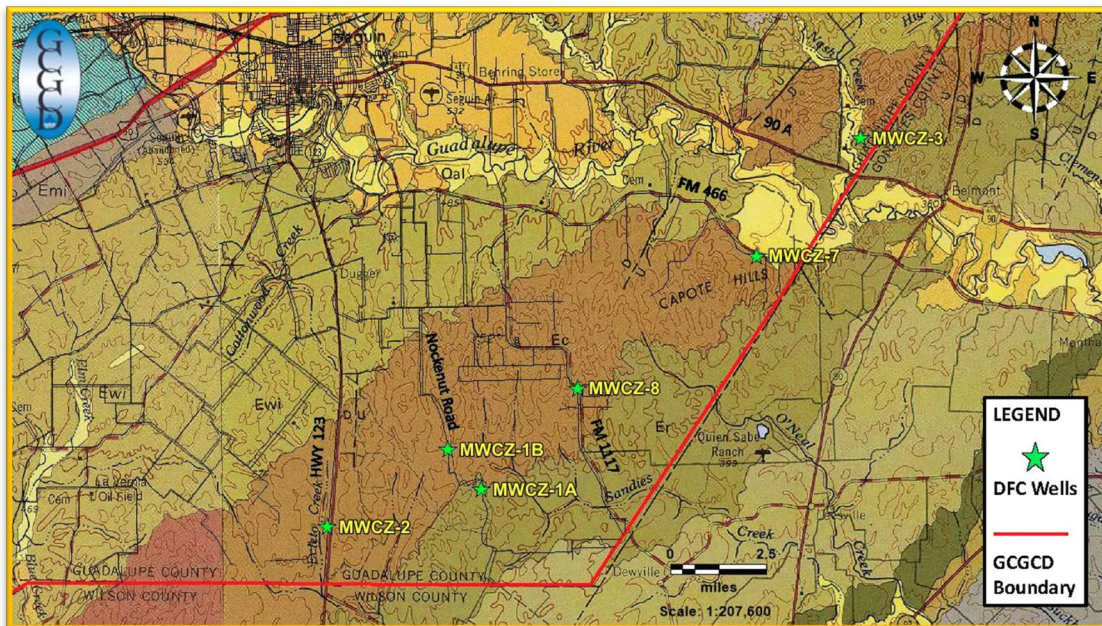
William B. Klemt
William B. Klemt, P.G.



SHWSC – plant station



How GMA 13 and GCGCD are monitoring the Carrizo outcrop in accordance with the adopted DFC





ALERT!
SCIENCE AHEAD

Where are we in the DFC process?

On the [TWDB checklist](#) of nine factors to consider, GMA 13 has recently evaluated Environmental Impacts and Hydrological Conditions.



MORE INFO



Technical Memos prepared by LRE Water available on [GCGCD website](#)

What does this mean? Let's start with **Environmental Impacts**.

TWC §36.108(d)(4) instructs each GMA to consider “other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water” as related to the proposed DFC. Unfortunately, limitations of the current model make predicting baseflows and assessing pumping impacts on baseflows in rivers and streams challenging, as related to desired future conditions. We are looking forward to the updated model – currently under development.

Now let's look at **Hydrological Conditions**.

TWC §36.108(d)(3) requires GMAs to consider “hydrological conditions, including for each aquifer in the management area the total estimated recoverable storage as provided by the executive administrator, and the average annual recharge, inflows, and discharge.” Water budgets for specific periods of time using the adopted GAM can be viewed in the technical memos.

Now, what is meant by *total estimated recoverable storage*? Also known by the acronym TERS, total estimated recoverable storage is defined as the “estimated amount of groundwater within an aquifer that accounts for recovery scenarios that range between 25% and 75% of the porosity-adjusted aquifer volume” TAC 31.10§356.10(23). It's important to note that when calculating TERS for an aquifer, it does not account for water quality, degradation of the water quality, changes in groundwater/surface water interaction, or land surface subsidence.



Need more help understanding? Let's break it down some more....

TERS is calculated using aquifer geometry and its storage properties to find its volume.

Storage Volume = Area x Thickness x Specific Yield [fraction of aquifer (water occupied portion) that is drainable]

Sand = High Specific Yield Clay = Low Specific Yield

TERS can give us a glimpse into the available groundwater that an aquifer might hold. TWC §36.108(d) states that Groundwater Management Areas (GMAs) must consider TERS before adopting a Desired Future Condition (DFC).

Remember, a DFC is a quantifiable future groundwater condition for a specified time-period.

Texas Water Development Board (TWDB) uses Groundwater Availability Models (GAMS) to estimate the amount of pumping that would achieve the DFC of an aquifer.

TWDB provides the Modeled Available Groundwater (MAG), which is the estimated pumping rate (volume/year), based upon the adopted Desired Future Condition (DFC) for each district or regional planning group located within a Groundwater Management Area (GMA) per the TWC §36.1084(b).

The basis of decision-making for all groundwater conservation districts and groundwater management areas in Texas combines the best available science with policy and conservation practices.



Additional reference: Total Estimated Recoverable Storage and Modeled Available Groundwater and Why They Are Different. [TWDB](#)



Updates on Conferences
in response to COVID-19
update your calendars



September 27-29, 2021



Moved to **Nov. 19, 2020**

LCRA Redbud Center, Austin

- **Introduction to ASR:** Learn the basics around the science, technologies and costs
- **86th Texas Legislature Actions for ASR (2019):** A close look at House Bills 720 and 721
- **Texas Water Development Board:** report on the ASR suitability survey of Texas aquifers
- **ASR across Texas:** A panel of water suppliers in various stages of study, rulemaking, project development.

[REGISTER](#)



9th Annual Texas Groundwater Summit
Sept. 1-3, 2020 will be virtual - [INFO](#)



Annual Texas Groundwater Conference Webinar
"Everything Aquifers and Groundwater Management"

2 Day Webinar - August 12 and 13, 2020

In cooperation with the
Texas Water Development Board

**Planning, Policy, Scientific, Engineering & Technical
Issues Related to Groundwater Management in Texas**

[More Details - REGISTER](#)

Fountainhead Q2 2020

Now available

Not a member? [JOIN HERE](#)



Offering Online CE classes:

WWD/PI, Statutes & Rules course – TDLR

Water Well Drillers & Groundwater Districts

[Learn More](#)

2021 DRAFT Regional Water Plans posted on [TWDB](#)

TWDB approved financial assistance for water and wastewater system projects

Projects partially in Guadalupe County: [GBRA](#) and [ARWA](#)



UPCOMING EVENTS –

- August 7th GMA 13 Meeting – @ 9:30 AM method TDB
- August 13th GCGCD Board Meeting – method TBD – visit website for more info www.gcgcd.org
- August 31st Region L – [updates](#)
- Sept. 1-3rd TAGD Groundwater Summit – Virtual event - [INFO](#)
- Sept. 10th GCGCD Board Meeting – method TBD - visit website for more info www.gcgcd.org

GCGCD Board of Directors & Staff

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Omar Maldonado – Field Tech/Admin. Assistant
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District 2 - Hilmar Blumberg - Secretary
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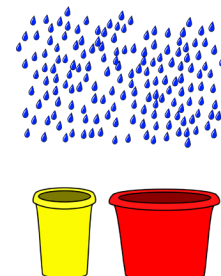
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Did you Know you can collect your own **Meteorites??**

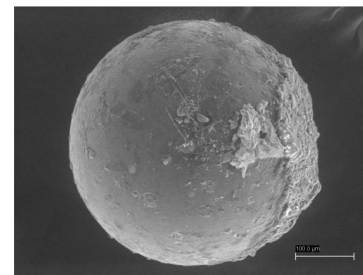
Here’s a fun activity to share with kids to get them interested in science. All you need is rain, a bucket and a magnet. Collect rainfall in a bucket from a downspout. The heavier micrometeorite particles will settle to the bottom. Attach a magnet to a stick and retrieve! If you have a microscope, zoom in 10X.

Micrometeorites are small pieces of space rock that collide with the Earth’s atmosphere at high velocities, burn up into tiny particles and attach to dust - eventually raining down to your yard.

Collect your very own little piece of space rock next time it rains!!!

[Journal of Astronomy & Earth Sciences Education – December 2018, V5,N2](#)

Cool



Zoom - microscope



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