Danae Delaney

Please see these written reports with information from technical experts. I am adding this way so that you have the links to go with my uploaded files which include my formal written public comments and the slideshow from the geophysicist in item 6.

1. https://www.msneighbors.com/key-issues/hydrogeology-groundwater-risk
2. https://www.msneighbors.com/key-issues/wells-drinking-water-safety
3. https://www.msneighbors.com/key-issues/flow-path-reality
4. https://www.msneighbors.com/key-issues/cumulative-impact-future-development
5. https://www.msneighbors.com/key-issues/inadequate-standards-in-the-permit
6. https://youtu.be/8j2xhkxLKnk?is=Hoz1FavHN1aWU-j6
7. https://youtu.be/WBJbRPwPgzM?is=P9Gre-qhjKbXMn9d

Thank you so much for your time and attention to the concerns the Canyon Lake community has about the Edwards Aquifer, the Trinity Aquifer, Canyon Lake, and how all three affect water quality for an entire region experiencing rapid expansion.

We must take care of reuse and no discharge before degradation happens, not after. We have the case studies in 6 protected lakes. 40 years of protection to guide the way. We can certainly innovate and improve in the future.

Sincerely,

Danae N Delaney
Please see attached files.

FORMAL WRITTEN PUBLIC COMMENTS

Edwards Aquifer Protection Program — 30 TAC Chapter 213

Subject: Groundwater Vulnerability, Wastewater Discharges, and Beneficial Reuse in the Canyon Lake Area

To the Texas Commission on Environmental Quality:

I submit these comments pursuant to Texas Water Code § 26.046, which requires TCEQ to receive public evidence on actions the Commission should take to protect the Edwards Aquifer from pollution.

I request that TCEQ consider the following site-specific evidence and program-wide recommendations when evaluating the adequacy of its Edwards Aquifer Protection Program rules, technical guidance, and coordination with other water-quality permitting programs.

These comments concern the protection of groundwater resources in the Canyon Lake area, including potential pathways associated with the Canyon Ranch and Broken Cedar Ranch wastewater treatment facilities, and the availability of beneficial wastewater reuse as an alternative to routine surface-water discharge.

I. Groundwater protection must account for actual geological conditions

The Edwards Aquifer Protection Program addresses regulated activities in contributing, recharge, and transition zones. TCEQ describes contributing zones as areas where runoff flows toward the Edwards Aquifer recharge zone. The agency's rules and technical guidance also recognize the significance of geologic features that may provide pathways for water to enter groundwater systems.

The protection of groundwater therefore requires consideration of more than mapped boundaries alone. Site-specific fractures, permeable formations, recharge features, and hydraulic connections may be relevant to evaluating the potential movement of water and contaminants.

In the Canyon Lake area, an independent geophysicist has reported identifying a significant Middle and Lower Trinity Aquifer recharge feature within the Canyon Ranch wastewater effluent pathway. The expert has also reported observing silt sitting in fractures in portions near or part of Cow Creek Formation following grading and stormwater runoff. We are still unsure "if the berms were built properly, properly maintained or even built at all," as per a TCEQ inspector

email looking into the issue, and are waiting this inspector report. There have been rain events after that letter, and people from Lennar Homes were seen on the property in Mystic Shores removing new silted runoff. What is Lennar Homes doing with the silt piles?

As a side note: An area of silted runoff has been seen coming from the Lennar land clearing, flowing through tributaries in the neighborhood called Cross Canyon Ranch. This is proof of meaningful safeguards that would limit land scraping and impervious cover, to try and keep the soil and trees on the land as much as possible so that we stop damaging our recharge features in contributing and recharge zones, for the Edwards Aquifer, and all Aquifers.

These reported findings warrant review of the supporting technical documentation. They should not be dismissed merely because a feature is outside a mapped recharge-zone boundary or because groundwater contamination has not yet been demonstrated.

I request that TCEQ evaluate whether existing site assessments and protection requirements adequately address the identified geological conditions and whether additional hydrogeological investigation is necessary.

The investigation should establish, to the extent supported by available evidence:

1. The location, extent, and geological significance of the reported fractures and recharge feature.
2. Whether the feature is hydraulically connected to the proposed or existing effluent pathway.
3. The potential for contaminants to migrate through fractures, permeable formations, or other preferential flow pathways.
4. Whether the reported silt deposition could affect infiltration, recharge, or the movement of water through the identified features.
5. Whether additional baseline groundwater sampling, monitoring locations, or other protective measures are warranted.

These requests concern the adequacy of the investigation and preventive protections; they do not presume that contamination has occurred.

II. A permit or an effluent limit does not independently resolve every groundwater-protection question

The U.S. Environmental Protection Agency's Clean Water Act definitions include sewage and municipal waste within the statutory definition of pollutants when discharged into water. Federal and state programs regulate wastewater discharges through applicable permits and water-quality requirements.

The existence of a permit, compliance with an effluent limit, and protection of a vulnerable groundwater receiving environment are related but distinct questions.

Effluent limits address specified constituents and regulatory requirements. They do not, by themselves, establish whether a particular geological pathway exists, whether every relevant contaminant is adequately characterized, or whether cumulative long-term effects have been evaluated. I appreciate the work that you do, and when we use reuse solutions in other areas, I cannot understand why we do not apply what works to keep raw water assets clean everywhere. For 40 years, Austin and the state have worked diligently to keep their water conservation supply, raw water clean before treatement. Can we do that everywhere with old and new methods? TCEQ has formal rulemaking authority. The legislature is not needed. Common sense 100% beneficial reuse, as stated by Lee Zeldin, EPA Director and lead on the G20 Water Reuse Action Plan, can be a guiding principle TCEQ uses to quickly safeguard out water supplies. Reuse would preserve quality and conserve supply simultaneously.

Accordingly, I request that TCEQ address the following questions rather than relying solely on a statement that wastewater discharges are permitted or subject to existing effluent limitations:

- Has the potential for contaminants to move through the reported geological features been evaluated?
- Do the existing monitoring requirements provide adequate information about groundwater conditions along the potential pathway?
- Have relevant wastewater constituents been identified based on the treatment process, discharge characteristics, receiving environment, and plausible exposure pathways?
- Are the applicable protection measures sufficient in light of the reported site-specific geological evidence?

If TCEQ concludes that existing requirements adequately address these concerns, I request identification of the specific rules, permit conditions, technical findings, and monitoring data supporting that conclusion.

III. The contributing-zone designation does not eliminate the need to evaluate groundwater pathways

I recognize that the Edwards Aquifer contributing zone and recharge zone are distinct regulatory areas, with different definitions and requirements under 30 TAC Chapter 213.

My concern is not that the two zones are interchangeable. It is that the designation of a location as a contributing zone should not substitute for an evaluation of relevant site-specific geological and hydrological conditions.

Where credible technical evidence identifies a potential pathway toward an aquifer or connected groundwater system, the relevant question is whether existing regulatory protections adequately address that pathway. Are we clear and knowledgeable about how the Edwards Aquifer is impacted or could be impacted by the Trinity Aquifer underground?

I request that TCEQ clarify how its current rules and technical review procedures account for documented fractures, recharge features, and potential groundwater connections in the Canyon

Lake area, including circumstances in which a feature may affect an aquifer system other than the Edwards Aquifer itself, and how it contributes to the Edwards Aquifer throught the Contributing Zone.

The Canyon Ranch WWTP example is both in the Edwards Aquifer Contributing Zone and the Trinity Aquifer Recharge Zone. The Broken Cedar Ranch WWTP example is in the Edwards Aquifer Contributing Zone and is being studied if there are recharge or contributing features to the Trinity Aquifer. Canyon Lake sits in the Edwards Aquifer Contributing Zone and over the Trinity Aquifer. We know by well testing that Canyon Lake directly affects well drilled in this area. The water rises and falls with lake levels.

Where another regulatory program has primary jurisdiction over a particular aspect of groundwater protection, I request that TCEQ identify the appropriate program and explain how the relevant technical information will be communicated and considered.

IV. Evaluate the combined effects of expanding wastewater infrastructure

The Canyon Lake area is experiencing rapid expansion in regards to development that includes the Canyon Ranch and Broken Cedar Ranch wastewater treatment projects, both in the Edwards Aquifer Contributing Zone.

A review of each facility's individual permit may address facility-specific requirements without necessarily answering broader questions about the combined effects of development, wastewater management, stormwater runoff, and groundwater vulnerability within the watershed.

I request that TCEQ evaluate whether existing assessments and monitoring adequately account for cumulative effects, including:

1. Existing and proposed wastewater discharge volumes. Could 100% reuse protect our aquifers better?
2. The combined loading of nitrogen, phosphorus, suspended solids, and other relevant constituents.
3. Potential contaminant pathways identified by site-specific geological investigations.
4. Changes in land cover, runoff, and infiltration associated with development.
5. The adequacy of baseline data and long-term monitoring for identifying changes in groundwater quality.

Where information is insufficient to determine whether cumulative effects are adequately addressed, I request that TCEQ identify the data gaps and the appropriate regulatory mechanism for addressing them. Then, take action to sufficiently protect both water quality and water supply.

A lack of documented contamination is not equivalent to evidence that every plausible pathway has been evaluated. Conversely, the existence of a potential pathway does not establish that

contamination has occurred. The appropriate response is a technically supported assessment proportionate to the identified risk.

V. Beneficial reuse should be evaluated as a substantive alternative to surface-water discharge

Treated wastewater is a potential source of recoverable water. Depending on treatment quality, intended use, distribution infrastructure, and applicable regulatory requirements, reclaimed water can serve beneficial purposes such as landscape irrigation and other approved non-potable uses.

Examples identified for consideration in Texas include Vintage Oaks in New Braunfels, TX, the Highland Lakes watershed protection area, and Santa Rita Ranch in Leander. The precise reuse percentages, treatment systems, operating arrangements, and residual discharge volumes at each location should be verified from reliable documentation before being used as comparative performance claims.

These examples raise a substantive planning question: when beneficial reuse is feasible, why should discharge to surface waters remain the default rather than an alternative that must be evaluated and justified when we have been using beneficial reuse and a no discharge policy successfully in the Highland Lakes for 40 years. This has not stopped development, and it has protected Austin's water quality as per Austin's Municipal Water Quality Director.

I request that TCEQ consider recommendations that would:

1. Require a documented beneficial-reuse alternatives analysis for new or substantially expanded wastewater facilities in sensitive watersheds and aquifer protection areas, where legally authorized.
2. Evaluate the feasibility of maximizing beneficial reuse, including a 100% beneficial-reuse objective where technically, environmentally, and economically feasible.
3. Require applicants to explain the constraints that prevent complete reuse and to identify measures for minimizing residual discharges.
4. Encourage coordinated planning for reclaimed-water distribution systems, irrigation demand, seasonal storage, advanced treatment, and other suitable beneficial uses.
5. Evaluate whether additional rules, guidance, or interagency planning requirements are needed to give groundwater protection and beneficial reuse appropriate weight in wastewater infrastructure decisions.

I recognize that beneficial reuse is not automatically appropriate at every site. Reuse systems must protect public health, groundwater, soils, and receiving waters, and must comply with applicable requirements. Those considerations support a site-specific alternatives analysis rather than an assumption that either discharge or reuse is universally appropriate. The cost of the best and most advanced system should not be a factor when the goal is to protect waters of state. Either we pay upfront to protect the water or we pay later. Lady Bird Lake's remediation efforts only work if they are continued at a high cost, and there are no effluent discharges into Lady Bird Lake, and this lake is not a drinking water supply for Austin, so it is even more important to

protect drinking water supply assets like Canyon Lake and the Highland Lakes. Protection of Canyon Lake will also provide protection for the Edwards Aquifer since Canyon Lake is in the contributing zone.

VI. Request specific findings and program-level action

Texas Water Code § 26.046 directs TCEQ to receive evidence on actions it should take to protect the Edwards Aquifer from pollution. I therefore request that the Commission consider the evidence and recommendations in these comments as part of its evaluation of the Edwards Aquifer Protection Program.

Specifically, I request that TCEQ:

A. Review the reported groundwater-recharge feature. Evaluate the submitted geophysicist's documentation and determine whether additional geological or hydrogeological investigation is warranted. Does Cow Creek Formation only contribute to the Trinity Aquifer or is there a contribution to the EA because it lies within the EACZ. Find out about EACZ features in Potter's Creek and the tributary leading up to the Broken Cedar Ranch WWTP proposal for protection

B. Clarify the scope of existing protections. Identify how Chapter 213 rules and technical guidance address site-specific fractures, recharge features, and potential groundwater pathways in contributing-zone settings.

C. Coordinate relevant regulatory reviews. Identify how information about groundwater vulnerability is shared with the programs responsible for wastewater discharge permits and other applicable groundwater protections.

D. Strengthen monitoring where justified. Evaluate whether baseline and ongoing monitoring requirements adequately address the groundwater pathways in the Canyon Lake Watershed EACZ areas and the contaminants identified through site-specific evidence.

E. Evaluate beneficial-reuse policy. Consider rules, guidance, or recommendations that encourage 100% beneficial reuse and require transparent consideration of alternatives to surface-water discharge. The Highland Lakes have done 100% Beneficial Reuse for 40 years.

F. Address cumulative impacts. Evaluate whether existing program procedures adequately account for combined rapid expansion of development and wastewater pressures where relevant to the protection of the Edwards Aquifer within the Edwards Aquifer Contributing Zone.

G. Provide a substantive response. Where TCEQ determines that current protections are sufficient, identify the specific regulatory provisions and technical evidence supporting that determination. Where a concern falls outside Chapter 213, identify the appropriate program or regulatory mechanism for consideration.

Conclusion

Protecting the Edwards Aquifer and associated groundwater resources requires decisions informed by site-specific geology, credible expert findings, appropriate monitoring, and an honest evaluation of alternatives.

The reported recharge feature and fractures along the Canyon Ranch effluent pathway warrant technical consideration. The Canyon Ranch and Broken Cedar Ranch projects also illustrate the importance of evaluating wastewater infrastructure in the broader context of groundwater vulnerability, watershed protection, and long-term water-resource planning.

The central question is not simply whether wastewater treatment facilities can operate under permits. It is whether the state's combined regulatory and planning framework adequately protects vulnerable groundwater resources while making full and beneficial use of treated wastewater where feasible.

I respectfully request that TCEQ evaluate these issues and consider specific, technically supported improvements to its Edwards Aquifer Protection Program.

Respectfully submitted,

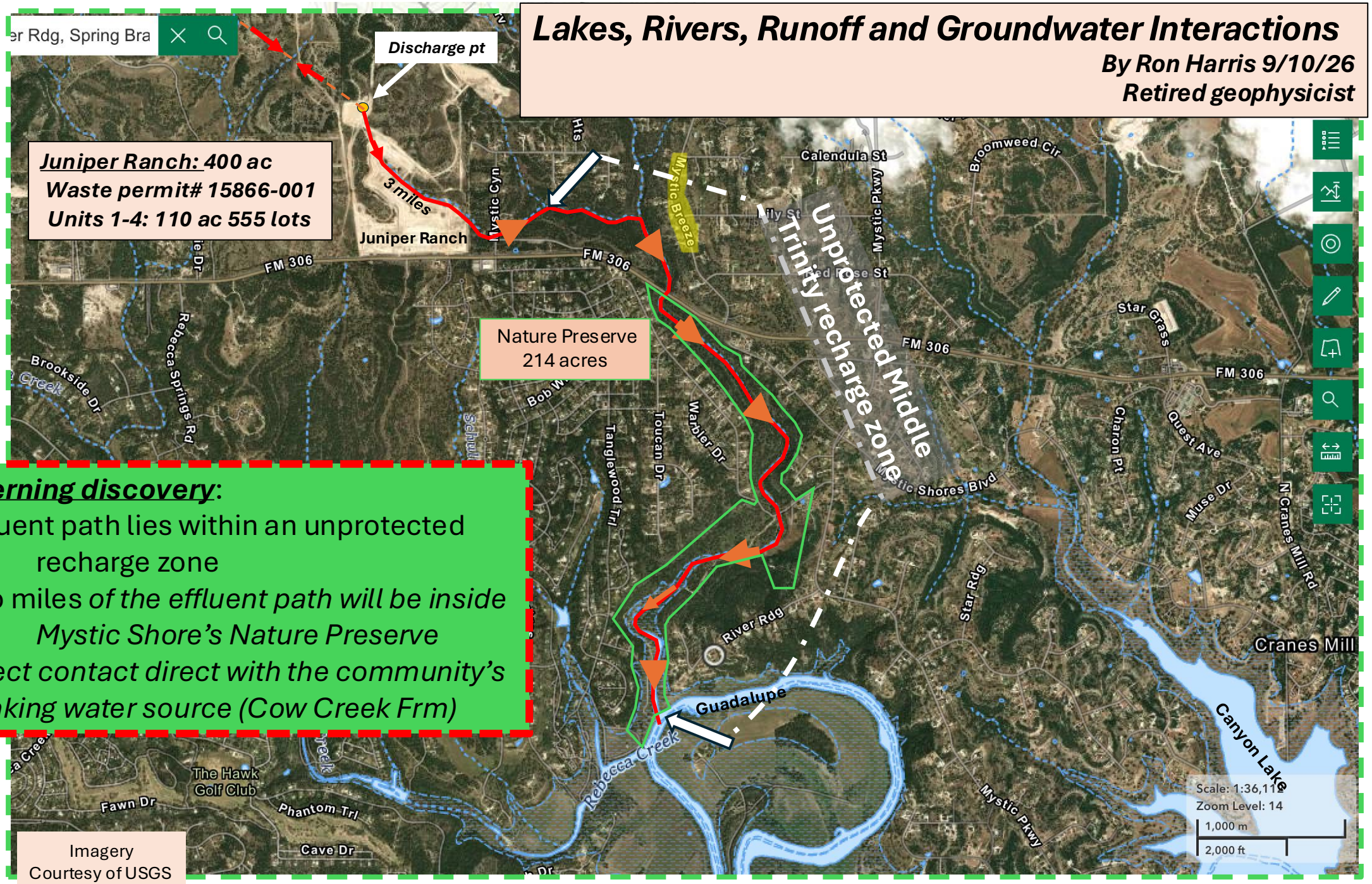
Danae N Delaney

A Concerned Citizen and Community Water Advocate

ProtectOurWatersofTexas.org

Lakes, Rivers, Runoff and Groundwater Interactions

By Ron Harris 9/10/26
Retired geophysicist



Concerning discovery:

- Effluent path lies within an unprotected recharge zone
- Two miles *of the effluent path will be inside Mystic Shore's Nature Preserve*
- *Direct contact direct with the community's drinking water source (Cow Creek Frm)*

Imagery Courtesy of USGS

Vertical Cross-Section along effluent discharge path

Northwest — SE

Juniper Ranch

Discharge Pt.

Water well

Over 60% of water wells in NW Comal county produce from the Cow Creek

Bulv

L Blanco

Twin Sister

Doepenschmidt

Run-off

Rust (confining bed)

Honey Creek

Fracture

Hensel

Fracture

Cow Creek

Hammett Shale (confining bed)

Unprotected Trinity Aquifer Recharge zone

306 Bridge

Fracture

Run-off

Fracture

Hammett Shale

Top of ground water

Wl: 872'asl5/19/26

30' throw

110' throw

170'throw

Cow Crk

Fracture

Guadalupe River

909

Hammett shale

Hensel

Fracture

Cow Crk

Hammett

1,300'

1,200'

1,100'

1,000'

900'

800'

700'

asl

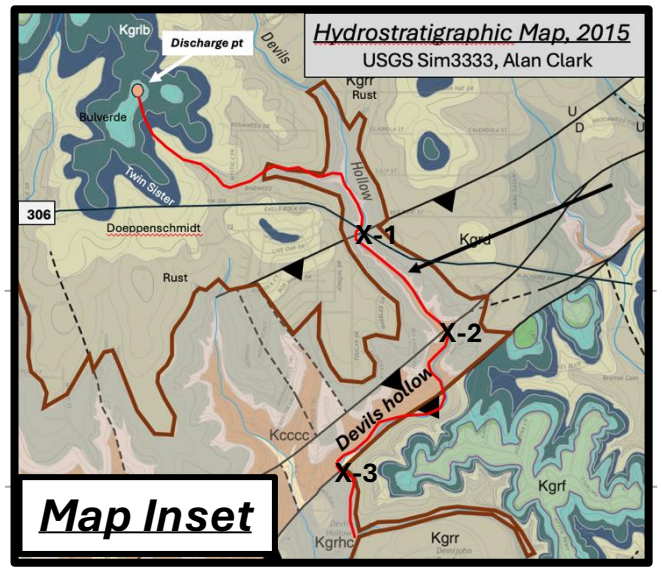
Feet above sea level

X-1

X-2

X-3

By Ron Harris 9/10/26
Retired geophysicist



Map Inset