NOTICE OF MEETING of the
BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT
BOARD OF DIRECTORS

Thursday, March 13, 2025	5:00 PM	IN-PERSON

Notice is given that a **Regular Meeting** of the Board of Directors (Board) of the Barton Springs/Edwards Aquifer Conservation District will be held on **Thursday, March 13, 2025** commencing at **5:00 p.m.** at **the District office, located at 1124 Regal Row, Austin, Texas.**

This meeting will be recorded and will be available on the District's website after the meeting.

Public Comments at the Board Meeting – Please complete a comment card prior to the start of the meeting. Each registered person will be recognized and identified by the Presiding Officer or staff moderating the communications when it is their turn to speak. **Public comment is limited to 3 minutes per person.**

AGENDA

Note: The Board of Directors of the Barton Springs/Edwards Aquifer Conservation District reserves the right to meet in Executive Session at any time during the course of this meeting to discuss any of the matters listed on this agenda, as authorized by the Texas Government Code Sections §551.071 (Consultation with Attorney), 551.072 (Deliberations about Real Property), 551.073 (Deliberations about Gifts and Donations), 551.074 (Personnel Matters), 551.076 (Deliberations about Security Devices), 551.087 (Economic Development), 418.183 (Homeland Security). No final action or decision will be made in Executive Session.

1. Call to Order.

2. Citizen Communications (Public Comments of a General Nature).

3. Consent Agenda. *(Note: These items may be considered and approved as one motion. Directors or citizens may request any consent item be removed from the consent agenda, for consideration and possible approval as a separate item of Regular Business on this agenda.)*

a. Approval of Financial Reports under the Public Funds Investment Act, Directors' Compensation Claims, Specified Expenditures greater than $5,000.

b. Approval of minutes of the Board's February 13, 2024, Regular Meeting.

c. Seeking approval for staff request for out-of-state travel.

d. Preapproval for payment of scholarships

4. General Manager's Report.

a. Review of key team activities/projects.
b. Trinity Sustainable Yield.
c. Next well-water checkup
d. Town-hall meetings anyone?
e. EPA-Interagency MAR workshop
f. City of Buda proclamation for National Groundwater Week
g. Aquifer status update.
h. Upcoming events of possible interest.

5. Staff presentation by Bri Moore: "Vulnerability and Risk Mapping for the Protection of Karst Aquifer Waters"

6. Discussion and Possible Action.

a. Discussion and possible action related to the performance and compliance of District permittees with their User Drought Contingency Plan curtailments.

b. Discussion and possible action related to a Combo Application for Drilling Authorization & Production Permit by Far South Mining for 1,500,000 gallons from the Middle Trinity Aquifer for industrial water use. The well is to be located near Fulton Ranch Rd. Wimberley, Texas, at Lat: 29° 56' 25" N, Long: 98° 1' 14" W.

c. Discussion and possible action related to Texas Old Town and a Notice of Alleged Violation for noncompliance with their User Drought Contingency Plan.

d. Discussion and possible action related to an application for a Major Amendment to a Class D Conditional Production Permit filed by Ruby Ranch Water Supply Corporation.

e. Discussion and possible action related to a proposal from LRE Water to study the Lower Trinity Aquifer.

f. Discussion and possible action related to drought declaration or authorizing GM to declare the next stage of drought.

g. Discussion and possible action related to the 89th Texas Legislative Session

7. Review of the Performance of the General Manager: HR and GM Quarterly Reports: FY 25, 2nd qtr. (December through February)

8. Director Reports.

Directors may report on their involvement in activities and dialogue that are of likely interest to the Board, in one or more of the following topical areas:

- Meetings and conferences attended or that will be attended;
- Board committee updates;
- Conversations with public officials, permittees, stakeholders, and other constituents;
- Commendations; and
- Issues or problems of concern.

9. Adjournment.

Please note: This agenda and available related documentation, if any, have been posted on the District website, www.bseacd.org. If you have a special interest in a particular item on this agenda and would like any additional documentation that may be developed for Board consideration, please let staff know at least 24 hours in advance of the Board Meeting so that we can have those copies made for you. The Barton Springs/Edwards Aquifer Conservation District is committed to compliance with the Americans with Disabilities Act (ADA). Reasonable accommodations and equal opportunity for effective communications will be provided upon request. Please contact the District office at 512-282-8441 at least 24 hours in advance if accommodation is needed.

Item 1

Call to Order

Item 2

Citizen Communications

Item 3

Consent Agenda

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b. Approval of minutes of the Board's February 13, 2024, Regular Meeting.

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Item 4

General Manager's Report

a. Review of key team activities/projects.
b. Trinity Sustainable Yield.
c. Next well-water checkup
d. Town-hall meetings anyone?
e. EPA-Interagency MAR workshop
f. City of Buda proclamation for National Groundwater Week
g. Aquifer status update.
h. Upcoming events of possible interest.

Summary of Team Activities in March 2025

Aquifer Science

February Activities

- Sierra West – Wetrock aquifer test report review
- HCP MAC meeting on 2/10
- HCP Final Report sent to USFWS on 2/28
- Aquifer test requirements rules update
- Little Bear Recharge Enhancement QAPP review
- AqSci data migration to new database
- Antioch fieldtrip
- TAS Phase IIa proposal review
- Abandoned well risk assessment: Began overlay analysis using the intrinsic vulnerability framework
- District drought analysis: Worked on two python programs to 1) download and process PRISM climate data for a comparative analysis of precipitation datasets, and 2) create a quantile regression model to evaluate the drought indicator dataset

On Deck:

- Barton Springs Multiport Geochem sampling w/ COA & USGS
- Barton Springs manual flow measurements
- J. Watson & J. Camp attending and presenting at Geological Society of America – South-Central 3/8 -3/11
- Abandoned well risk assessment: Construction of the intrinsic risk map using overlay analysis
- District drought analysis: Correlation analysis of PRISM precipitation data and Mabry/Bergstrom precipitation data
- B. Moore to complete ArcGIS MOOC (massive open online course) through Esri

Administration

- The Administrative team handles a variety of recurring tasks, including generating invoices, processing payments, paying bills, and managing meter readings.
- A revised and updated Purchasing Policy is being readied for committee review.

Regulatory Compliance

February Activities:

- Staff continued to process new applications, assist permittees with drought compliance, and assess DMF's and additional penalties to eligible overpumpers.
- Staff met with Aqua TX to discuss a meter reporting error that could potentially negate some of the previous overpumpages. Staff is working with Lauren to present these findings at the April 10, 2025 meeting.
- Staff worked with AS team to finalize proposed changes of rules related to aquifer testing tiers.
- Staff continuing to work with LRE on completion of database development.

On Deck:

- Staff met with TSY committee and will work with AS Team on compiling information to help explore new permitting schemes and their potential implementation.

Communications and Outreach

February Activities

- Attended Central Texas Water Conservation Symposium on February 13.
- Closed Kent Butler Scholarship, chose and informed winners.
- Promoted the Texas Science Festival: Guardians of Our Water event featuring Justin Camp on March 3.
- Continued organizing and promoting Hot Science – Cool Talks event with UT taking place March 28.
- Planned for Well Water Checkup for April 7 and prepared materials and communications.

On Deck:

- Host Hot Science – Cool Talks event on March 28.
- Host annual Well Water Checkup.
- Write article on City of Austin's Barton Springs salamander counts.

Status Report Update
March 13, 2025 Board Meeting

Summary of Significant Activities – Prepared by Staff Leads

Upcoming Dates of Interest

- Hot Science Cool Talks: The Future of Texas Water – March 28, Austin, TX
- Annual Water, Texas Film Festival – April 1, Austin, TX
- Well Water Checkup hosted by the District – April 7, Austin, TX

DROUGHT MANAGEMENT

Drought Status and Water-Level Monitoring (*Justin*)

The District declared Stage III Critical Drought on October 3. This was a result of the Lovelady monitor well's 10-day groundwater level reaching below the District's Stage III threshold of 462.7 feet mean sea level (ft-msl) on Oct. 1. As of March 6, the District remains in Stage III Critical Drought.

This February, the District received an average of just over two inches (2.04") of rainfall, with the majority falling on a single day (February 11). Most area creeks recorded flow, contributing to much-needed recharge. February's rainfall exceeded the historical monthly average (1.9 inches), marking the first month this has happened since July 2024.

The heavy mid-February rainfall fell across the recharge zone, generating flow in area watersheds like Onion, Bear and Slaughter creeks. As a result, Barton Springs flow increased, peaking at 30 cubic feet per second (cfs). Since then, the flow has gradually decreased to around 17 cfs.

As of March 6, the 10-day average flow at Barton Springs is 17 (cfs). This value is based on the most recent manual measurement taken by the USGS on March 4, 2025.

On March 6, the 10-day average water level at the Lovelady monitor well was recorded at 457.6 feet above mean sea level (ft-msl), placing it within the District's Stage III threshold and approximately 0.5 feet above the Stage IV Exceptional Drought threshold. February's rainfall did little to raise water levels; instead, it temporarily stabilized them or delayed further decline. However, water levels have resumed their downward trend, and without additional rainfall, Lovelady could drop into Stage IV by the end of the month.

The water level in the Lowe-Coronado Middle Trinity monitor well, located in the Rolling Oaks neighborhood in Driftwood, had remained stable and flat-lined from mid-November 2024 until early February, when a distinct decline can be seen in early February – possibly due to localized pumping. However, the mid-February rains have had an increasing effect on water levels since.

February's rains brought a dramatic surge to Jacob's Well Spring (JWS), briefly pushing its flow to a yearly high of 16 cfs. However, the increase was short-lived, with levels swiftly dropping back to near zero. Meanwhile, the Blanco River at Wimberley gauge saw a rise from 7 cfs to 90 cfs before settling into a steady flow of 8 to 9 cfs – a range that has remained consistent since mid-November.

DISTRICT PROJECTS

GMA Joint Planning

- ***GMA 10 Coordination (Tim, Bri)***
-

The next GMA 10 meeting is scheduled for March 17, 2025. All meetings are hosted by the Edwards Aquifer Authority in San Antonio.

Trinity Aquifer Sustainable Yield Study & Planning

- ***Policy Concepts and Advisory Workgroup Planning (Tim, Jeff)***

The TSY Committee met on March 4 to discuss the following:

Technical Evaluations (Jeff)
Aquifer Science staff continue to collect data on the geology and hydrogeology related to the Trinity Aquifers. We are continuing to collect and evaluate water level data from our network of Trinity monitoring wells.

In February aquifer science staff continued to work closely with the GM to advance the Trinity Sustainable Yield project. Two abstracts were submitted for presentation at the Geological Society of America South Central section meeting in March 2025 in Conway, Arkansas: one on multiport data from the Trinity Aquifer and the other on multiport data from the newly installed Barton Springs well. Justin Camp and Jeff Watson will attend the conference to present the findings of these investigations March 9-11.

Habitat Conservation Plan (*Staff*)

- **FY 2024 HCP Report:** Staff incorporated edits and recommendations from the Management Advisory Committee (MAC) into the FY 2024 HCP Report. The MAC, which met virtually on February 10, provided input. The final document was approved by all Board Members at the February 13, 2025, Board meeting and submitted to the Fish and Wildlife Service on February 28.

Database Management System – LRE Water (*Jacob, Tim*)

A second no-cost extension was issued and runs through Mach 31. Progress continues to be made and we expect the public-facing interactive map to be released by the end of March.

District Drought Temporal Analysis -- (Bri)

Following preliminary model runs of the collected dataset, it is evident that the dataset includes outliers that skew model results. To help reduce this noise, a python program is being developed that will run a quantile regression analysis of the dataset. If the quantile regression model still yields skewed results, the data will be log-transformed to normalize the data distribution for further analysis.

Additionally, a correlation analysis between PRISM precipitation data and Mabry/Bergstrom station data to determine which dataset is most accurate to district conditions is in the works. A python program is in development to automate the download and processing of climate data from the PRISM database.

Abandoned Well Risk Assessment -- (Bri)

Construction of the intrinsic risk map is underway. Construction of the map includes an overlay analysis of vulnerability indicators using the COP+K (Slovene Approach) model, where the C) concentration of flow, O) overlying layers, P) precipitation, and K) karst saturated zone will be evaluated to assess risk.

ILA Commitments (*Staff*)

The District has an ILA with COA to coordinate studies for the respective HCPs such as scientific feasibility studies and monitoring evaluations; to collaborate on the planning of future Kent Butler Summits; and to exchange technical information regularly on an annual basis. An annual technical meeting is held between the District and COA in December each year to discuss each organization's activities related to their respective HCPs. The next meeting will be held in December 2025.

Region K Planning Activities (*Tim, Bri*)

Staff were unable to attend the last two meetings: December 6, 2024 and February 12, 2025. The draft 2026 regional plan is now available and scheduled to receive three public hearings with the first one to occur in Austin on April 17.

New Maps, Publications, or Reports

A list of recent publications, including our new 2023 Drought Synoptic Study report, can be found at: https://bseacd.org/scientific-reports/

RULEMAKING, PERMITTING, AND ENFORCEMENT
(*Tim*, *Erin*, Jacob, *District Counsel, Rules and Enforcement Committee)*

Rulemaking and Enforcement

- At February 13th regular meeting of the Board, staff presented changes to the Rules 3-1.4, 3-1.6, 3-1.9, 3-1.24, and 3-1.25 related to the aquifer testing tiers and hydrogeologic reporting. Staff is currently working to address all comments and suggestions made by Directors. A public hearing for these changes is expected to occur at the regular meeting to be held on April 10, 2025.

- On March 4, 2025, staff met with the Sustainable Yield Committee to discuss options for potential permitting schemes to address the increasing demand and strain on the Trinity aquifers. Staff is working to explore these options and will be working together to compile information to better assess how these schemes could potentially be implemented and how the different options could potentially impact our current rules.

Drought (*Erin*)

- Will continue working with permittees to ensure compliance per their Agreed Orders.
- Will continue monthly pumpage analysis to determine all permittee's compliance status of drought curtailments.
- Will continue to assist permittees in ensuring they successfully comply with their UDCPs and Stage III drought curtailments for March.

Enforcement and Compliance Matters (*Erin*)

Compliance/Enforcement			
Permittee or Entity Name	***Aquifer***	***Use Type***	***Notes***
Aqua Texas – Bear Creek Park	Edwards	PWS	Agreed Order Executed.
Aqua Texas – Bliss Spillar (Edwards)	Edwards	PWS	Agreed Order Executed.
Aqua Texas – Bliss Spillar (Lower Trinity)	Lower Trinity	PWS	Full penalty assessment paid so no Order was agreed too; will assess any overpumages per Enforcement Plan.
Creedmoor-MAHA	Edwards	PWS	Agreed Order Executed.
Monarch Utilities, Inc.	Edwards	PWS	Agreed Order Executed.
Tindol Restaurant Group, LLC	Middle Trinity	Commercial	Agreed Order Executed.
Aqua Texas – Sierra West	Middle Trinity	PWS	Agreed Order Executed.
Seiders, Roy	Middle Trinity	Irrigation	Agreed Order Executed.
Ruby Ranch Water Supply Corporation	Edwards	PWS	Agreed Order Executed; working to fulfill the final technical requirements.

Permitting Activity (*Erin, Jacob*)

Upcoming					
Precinct	***Application Type***	***Aquifer***	***Applicant Name***	***Use Type***	***Volume Request (GPY)***
1 - Cradit	Plugging (2)	Edwards	Liberty Civil Construction	Abandoned	0 - Plugging
2- Stansberry	Production (Conditional Class A)	Edwards	TBD – Consultant is Atlas Design	Commercial	TBD
2 – Stansberry	WDA/Production	Middle Trinity	Bryan Boyd is consultant	Commercial – Medical Clinic	TBD
2- Stansberry	Production (Conditional Class C)	Edwards	Grove Place	Commercial	TBD
In Review					
Precinct	***Application Type***	***Aquifer***	***Applicant Name***	***Use Type***	***Volume Request (GPY)***
1 - Pickens	Plugging	Edwards	GS Big Valley MF Owner, LP	Abandon	0 - Plugging
5 – Puig-Williams	Combo Drill/Production	Edwards	Prominence Midtown, LP	Irrigation	TBD
1 – Cradit	Exempt/Replacement	Middle Trinity	Covey, Michael	Domestic	7 GPM
1 - Cradit	Plugging	Middle Trinity	Covey, Michael	Replaced	N/A
1 - Cradit	Exempt	Middle Trinity	Cavanaugh, Mandy	Domestic	7 GPM
Recently Approved and/or Admin Complete					
Precinct	***Application Type***	***Aquifer***	***Applicant Name***	***Use Type***	***Volume Request (GPY)***
3 – Lucas	Plugging	Edwards	Hughey, Cameron	Abandon	N/A
3 - Lucas	Plugging	Edwards	Austin Hot Lava, LLC	Abandon	N/A
1 - Cradit	LPP	Middle Trinity	Chagnon, Pax and Ashley	Domestic	250,000
1 – Cradit	Combo Drill/Production	Middle Trinity	Far South Mining, LLC	Industrial	1,500,000

AQUIFER STUDIES

(*Jeff, Justin, and Tim*)

Permitting Hydrogeologic Studies:

AS staff continues to work with Regulatory Compliance on permitting issues as they arise, including provided geologic interpretation of geophysical logs prior to final well completion to ensure that new wells are completed accurately within the target water-bearing interval. In February 2025 AS staff worked closely with Jacob Newton to ensure that the District's monitoring well data is fully migrated onto the new database. AS staff is also working with Jacob to develop and publish a new public-facing interactive map which will allow the public to view and download all water level data collected by the District.

Groundwater Studies: ***Dye Tracing, Water Quality, Aquifer Characterizations***

- AS staff assisted staff from the USGS and CoA WPD in developing a proposal for sampling the new Barton Springs multiport well for different water quality parameters. The project will be jointly funded by the USGS and City of Austin, with an in-kind contribution of staff time from BSEACD AS staff for field work. Sampling will begin in March of 2025.
- Texas Water Development Board (TWDB) sampling – collecting water level, water quality and chemistry from select wells with funding provided by TWDB.
- Magellan Pipeline annual sampling (TPH & BTEX)
- Aquifer Test plans – evaluating submitted plans, designing monitor well networks, and data collection for analysis. In February 2025 AS staff reviewed the Sierra West Hydrogeologic report in support of adding an additional well to their water system.

Field Activities:

- Barton Springs Complex elevation survey in cooperation with USGS staff-February 11, 2025
- Barton Springs multiport well water quality measurements
- Cooperating with USGS and City of Austin staff to confirm accurate real-time gauge reporting at Barton Springs and Lovelady. Conducting bi-weekly to monthly field measurements.
- Cooperating with USGS staff to confirm accurate real-time gauge reporting at Jacob's Well and the Blanco River at Wimberley.
- Calibrating telemetry monitoring equipment at the Needmore index well (Amos) and reviewing pumping and water-level data as drought worsens.
- Antioch- Continuing to maintain the system and to collect data on flow into the vault (when there is flow). A recent visit to Antioch Cave to assess operating components and electronics indicated the need to recondition most electrical systems.
- Well monitoring- Because of drought, staff are increasing the amount of time maintaining equipment in numerous monitor wells and downloading and interpreting data; and occasionally checking on wells that have been reported as "dry".

Trinity Aquifer Modeling Development:

Aquifer science staff are working to advance Phase II of the Trinity Aquifer Sustainability model (TAS). In December 2024 an RFQ was issued to find a consultant to work with aquifer science staff for completion of Phase II of TAS development. We have received two proposals for the TAS Phase II

modeling work. After consulting with the Trinity Sustainable Yield subcommittee on 3/4/2025, it was determined that AS staff and the GM should seek supplemental funding sources for the project before proceeding with the proposal selection process.

COMMUNICATIONS AND OUTREACH

(*Shay*)

Drought Communications

- January Drought Update
- February Drought Update
- Drought-related social media posts - *These were shared on Facebook, Instagram, X, and LinkedIn.*
    - https://www.facebook.com/share/p/19t2TVN5yz/
    - https://www.facebook.com/share/p/1BZjVfVfmy/
    - https://www.facebook.com/share/p/1Dic2ggKQH/

Articles/News Segments in which the District was Mentioned

- Antioch Cave – Protecting Recharge in the District - BSEACD
- Message from the General Manager: February 2025 – BSEACD
- Saving Texas Springs: A Balance of Groundwater and Growth - Waterloop

Outreach

Texas Water Day

- Shay attended the Texas Water Foundation's event for water-focused organizations at the Capitol on Monday, March 3. Approximately 300 water leaders from across the state were in attendance along with local legislators.

Kent Butler Scholarship Winners

- The Kent Butler Scholarship was closed on Friday, February 28. We received seven applications. Staff are actively working on choosing and informing winners.

Hot Science – Cool Talks

- Free tickets are now available for the Hot Science – Cool Talks event the District is coordinating with UT.
- 20 exhibitors are expected along with 400 attendees of all ages.
- The event will take place from 5:30-8:15pm at Welch Hall at the University of Texas.

Well Water Checkup

- March 24 – April 4: Well owners can pick up water sampling kits at the office during office hours
- April 7: Samples must be dropped off by 11am. Shay will then take samples to Wimberley to be tested by Texas Well Owners Network (TWON).
- April 8: TWON will host an educational event in Wimberley from 11am-noon at the Wimberley Village Library.

Digital Communications Data

Social Media Data				
Platform	**February Reach**	**% MOM Growth: Feb. vs. Jan.**	**February Followers**	**% MOM Growth: Feb. vs. Jan.**
Facebook	1,777	43%	2028	0%
Instagram	32,879	248%	1,477	3%
X	401	15%	815	1%
LinkedIn	2,302	36%	396	-1%

Social media engagement picked up over the last month and resulted in increased reach across all outlets. The District did a partnership post on Instagram with Hike Austin that resulted in over 1,000 likes and an additional 30 followers. If we do not do another partnership post next month, the March reach on Instagram will be significantly less. Posts about rainfall result in high engagement on all platforms, so the rain event in mid-February boosted reach across the District's social media accounts.

Email	**# Sent**	**# Opened**	**Open Rate %**	**# Clicks**	**Click Rate %**
January/February Newsletter	2,332	1,082	46.4%	162	15%

ADMINISTRATION

(Tim, Hannah, and Tina Cooper/AAG)

An update to the previously mentioned purchasing policy review — a redlined version has been finalized following SledgeLaw's review. The draft now reflects the use of QuickBooks and outlines a more streamlined process for purchasing, incurring expenses, and reimbursements. A meeting with the Rules and Compliance Committee is being scheduled for March to review the draft, with plans to present it to the full Board at a future regular meeting.

The Administration Team typically has repetitive monthly tasks e.g. monthly bank reconciliations, monthly adjusting journal entries, accounts payable, payroll, contract/grant/project tracking, office maintenance and repairs, budget monitoring, bi-weekly payroll journal updates, directors' compensation, pre-paids, DMFs, posting public meetings, preparing meeting backups, etc. These types of tasks are not listed in this report because they are repetitive. Administration status reports are generally more summarized than the other teams, as we list our extra-ordinary tasks outside of our routine tasks, while supporting all other teams.

Item 5

Staff presentation by Bri Moore: "Vulnerability and Risk Mapping for the Protection of Karst Aquifer Waters"

Item 6

Board Discussion and Possible Action

a. Discussion and possible action related to the performance and compliance of District permittees with their User Drought Contingency Plan curtailments.

Item 6

Board Discussion and Possible Action

b. Discussion and possible action related to a Combo Application for Drilling Authorization & Production Permit by Far South Mining for 1,500,000 gallons from the Middle Trinity Aquifer for industrial water use. The well is to be located near Fulton Ranch Rd. Wimberley, Texas, at Lat: 29˚56’ 25” N, Long: 98˚1’ 14” W.

Application Summary and Staff Recommendations
03/13/2025

DESCRIPTION OF APPLICATION

Applicant: Far South Mining, LLC

Type of Application: Combination Drilling and Production permit for a new well in the Middle Trinity Management Zone

Request: Applicant requests to drill one (1) well in the Middle Trinity Aquifer for the purpose of supporting the dust suppression needs of a quarry. The well will withdraw up to 1,500,000 gallons per year.

REASON FOR REQUEST

Far South Mining, LLC filed (1) combination well drilling authorization and production permit application on August 19, 2024 with the District for a new nonexempt Middle Trinity well. The proposed well is being drilled with the purpose of supporting the dust suppression needs of a quarry.

WELL/RECEIVING AREA LOCATION

The proposed well is located in Hays County on a 673.652-acre portion of land leased from Needmore River Ranch LLC on Fulton Ranch Rd (29.940278° N, -98.020556° W). Attachment A shows the location of the proposed new well. The produced groundwater is proposed to be used primarily for supporting the dust suppression needs of a quarry.

WELL DESIGN

The well will be completed in the Cow Creek formation of the Middle Trinity Aquifer. The total well depth of this Middle Trinity well will be approximately 1,050 ft below ground surface and completed so that water is only produced from the Middle Trinity Aquifer (Attachment B).

APPLICATION REVIEW

- Staff has reviewed the application and has determined that the application has satisfied all the requirements pursuant to the application checklist requirements in District Rule 3-1.4.(A) and that the required documentation and payment of fees have been satisfied.

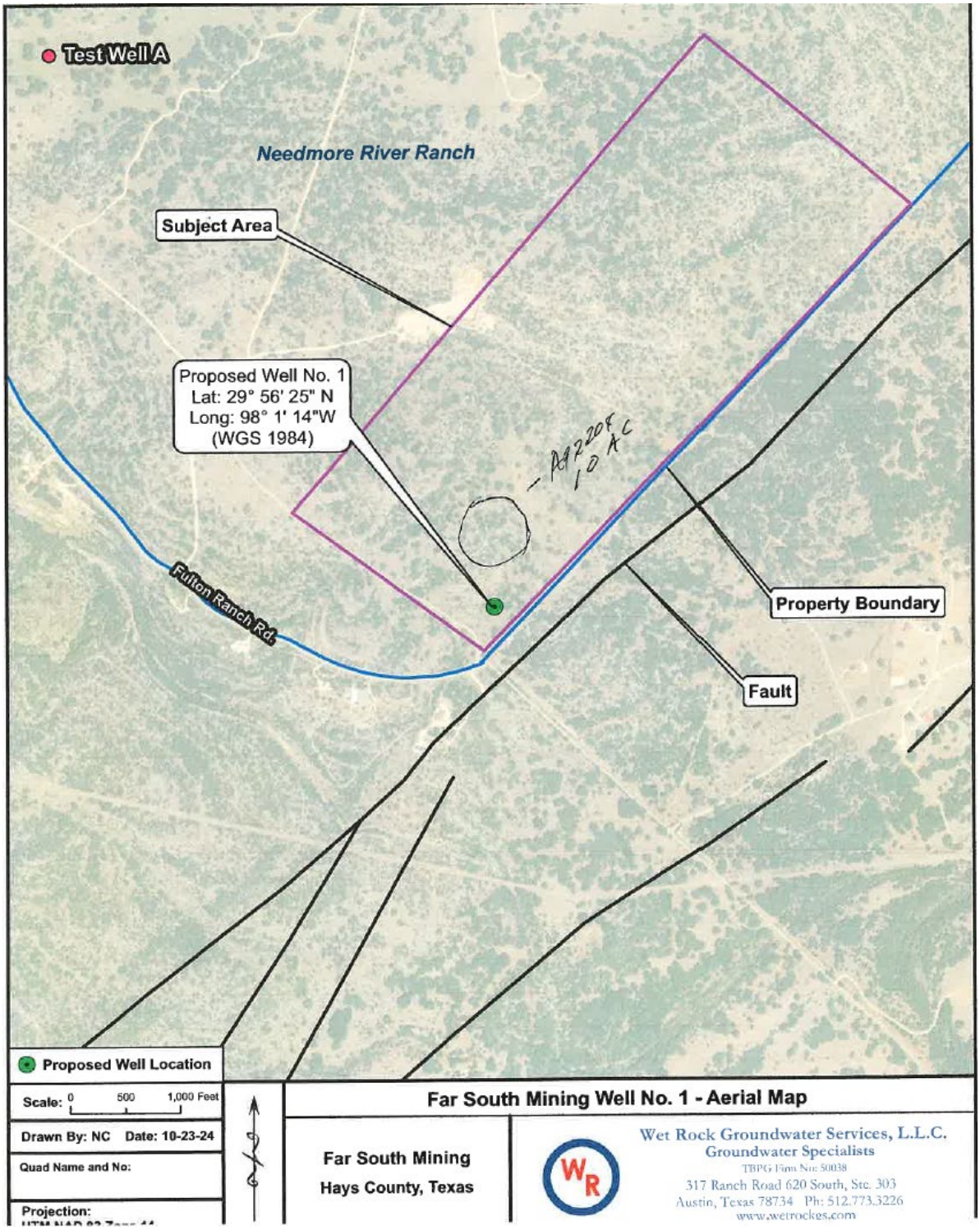
- Staff has reviewed the application and has determined that the application has satisfied all the requirements pursuant to District Rule 3-1.4.(E).

- Staff has determined that the applicant has sufficiently addressed the criteria and considerations for Board action in accordance with District Rule 3-1.6(A).

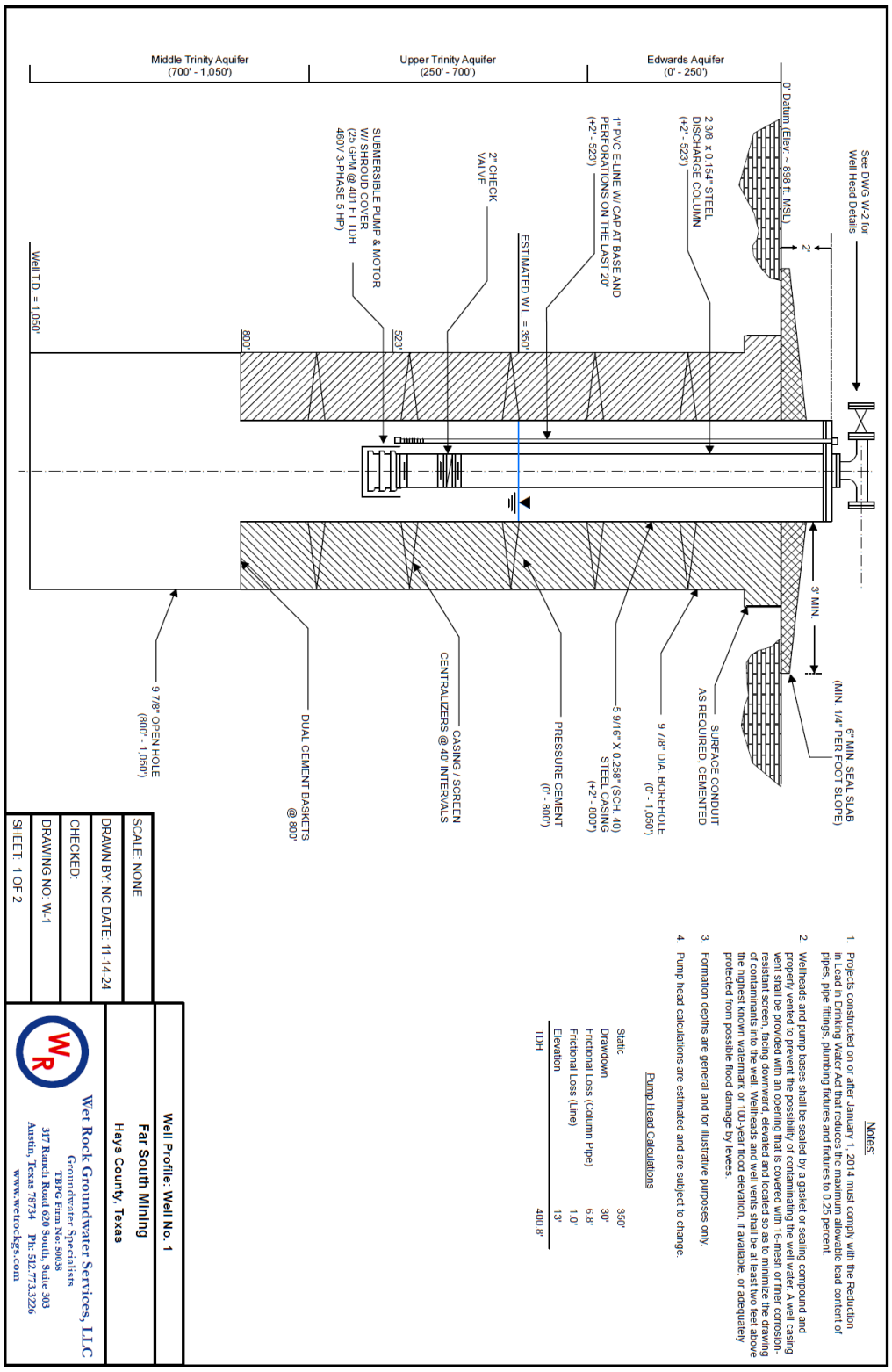
STAFF RECOMMENDATIONS - 03/13/2025

Staff recommends **approval** of the above-referenced combination well drilling and production permit application without delaying the effective date.

Appendix A
Well Location Map



Appendix B
Well Schematic



Notes:

1. Projects constructed on or after January 1, 2014 must comply with the Reduction in Lead in Drinking Water Act that reduces the maximum allowable lead content of pipes, pipe fittings, plumbing fixtures and fixtures to 0.25 percent.
2. Wellheads and pump bases shall be sealed by a gasket or sealing compound and properly vented to prevent the possibility of contaminating the well water. A well casing vent shall be provided with an opening that is covered with 16-mesh or finer corrosion-resistant screen, facing downward, elevated and located so as to minimize the drawing of contaminants into the well. Wellheads and well vents shall be at least two feet above the highest known watermark or 100-year flood elevation, if available, or adequately protected from possible flood damage by levees.
3. Formation depths are general and for illustrative purposes only.
4. Pump head calculations are estimated and are subject to change.

Pump Head Calculations

Static	350'
Drawdown	30'
Frictional Loss (Column Pipe)	6.8'
Frictional Loss (Line)	1.0'
Elevation	13'
TDH	400.8'

Well Profile: Well No. 1
Far South Mining
Hays County, Texas

SCALE: NONE
DRAWN BY: NC DATE: 11-14-24
CHECKED:
DRAWING NO: W-1
SHEET: 1 OF 2

Wet Rock Groundwater Services, LLC
Groundwater Specialists
TBPG Firm No: 50038
317 Ranch Road 620 South, Suite 303
Austin, Texas 78734 Ph: 512.773.3226
www.wetrockgs.com

INTERA Incorporated
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INTERA.com

DRAFT TECHNICAL MEMORANDUM

To: Tim Loftus, General Manager, BSEACD

From: Neil Deeds, PhD, PE, PG, INTERA Incorporated

Date: February 7, 2025

Re: Review of Requested Withdrawal Amount to Support Aggregate Mine

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Barton Springs Edwards Aquifer Groundwater Conservation District (BSEACD) requested that INTERA review the groundwater volume request associated with a Trinity well permit application from Far South Mining. The requested water was to be used for industrial purposes as part of an aggregate mining operation.

The applicant provided the following relevant information in support of the requested volume:

- The water would primarily be used for dust suppression associated with a one-half mile access road used in transporting materials, as well as the rock-crushing machinery being operated at the site.
- Processed material will not be washed on site, so the water will not be used for this purpose.
- About 200 tons/hour of material will be processed at the site.
- The requested water volume was based on an assumed use rate of 4,000 gallons per day, corresponding to the volume carried by one spray truck. This corresponds to 28,000 gallons per week, given a 7-day work week, and 1,456,000 gallons per year, assuming work occurs over all 52 weeks of a year.

I do not have experience making a *priori* estimate of water use for dust suppression. Most often I have seen mines operate under a temporary permit, with record-keeping requirements on the number of spray trucks being filled each day, and a meter on water use. After a year, the mine will provide the truck count and water use, and a permit will be updated based on that data, with perhaps a safety factor to account for a future hotter/drier year. Mines have little incentive to overuse water for dust suppression, since it costs time and labor for the spray trucks.

To help determine whether there was an industry-standard water volume calculation for dust suppression, I reached out to two people. One was Mitchell Sodek, General Manager of Central Texas GCD, which is a district that is very active in aggregate mining, and has significant experience in permitting their groundwater use. The second was Curt Campell, who is active both on the regulatory side (he is a board member of Cow Creek GCD) and the industry side (he works for Westward Environmental, which has many aggregate mining clients). Neither of them were aware of an industry standard approach to making this type of volume estimate, although Curt said that he has made “starter” estimates as part of a temporary permit, that would then be revisited after the mine had been operating and additional data was available.

A quick look at the literature indicated that the volume used was very site-specific, and would vary throughout the year based on whether any precipitation had occurred, and just generally how hot/dry conditions were. For example, a handbook from the Mine Safety and Health Administration (MSHA)[1] notes that

> *There are no universal guidelines for the amount of water to use for dust control on haul roads nor for determining optimum haul road watering intervals. The quantity of water sprayed onto the road during each application, the composition and layout of the road, the traffic volume on the road, and the prevailing weather conditions are factors that should be used to determine site specific optimum intervals for watering.*

So the best I can do is to assess whether what the applicant is proposing is plausible, rather than preparing an accurate estimate for comparison. The following calculation (in the form of answering two questions) provides that assessment. I assume that the bulk of the dust suppression will be needed on the road (simply because of the large area), with the water use on the machinery being secondary.

1. **How active will truck hauling be on the access road?** A typical industrial belly dump truck can carry a maximum of about 23 tons of material. This would mean that 10 trucks per hour could be going one-way on the access road, or one every six minutes. So there is strong potential for creating dust without active suppression. This implies that more than multiple passes may be required per day by a spray truck, especially on hot, dry days.
2. **How many spray truck passes is the applicant proposing per day?** Assuming an application rate of 0.36 gallons per square yard[2], and a one-half mile access road 20 feet wide, about 2,100 gallons of water would be used per pass. Given the applicants request for 4,000 gallons of water per day, this would be just under 2 passes per day, with the understanding that some additional water would be required for dust control on the processing machinery itself.

Acknowledging that dust control will not be required every day of the year (it does occasionally rain in Central Texas), and that hot/dry summer days will require more passes, and cool winter days less, the average of about 2 passes by a spray truck on the access road per day is plausible, and does not appear to be excessive given the assumptions made. If the actual dust suppression water use could be verified in a year's time as part of the permit, that would greatly add to the confidence in this assessment.

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[1] Cecala, Andrew B., et al. "Dust control handbook for industrial minerals mining and processing." (2012).
[2] Johnson, Eddie N., and Roger C. Olson. "Best practices for dust control on aggregate roads." No. MN/RC 2009-04. (2009).

Item 6

Board Discussion and Possible Action

c. Discussion and possible action related to Texas Old Town and a Notice of Alleged Violation for noncompliance with their User Drought Contingency Plan.

Item 6

Board Discussion and Possible Action

d. Discussion and possible action related to an application for a Major Amendment to a Class D Conditional Production Permit filed by Ruby Ranch Water Supply Corporation.

Ruby Ranch Water Supply Corporation (RRWSC) requests that our Aquifer Storage and Recovery (ASR) Program be suspended or set aside for an indefinite period of time. RRWSC has 25 million gallons of ASR stored water in our Trinity well #5. Our intent is to use some or all of this water to blend with our Edwards well #4.

We have a 20.3 million gallon Trinity permit that we have not used for the past 8 years while we were in the ASR Program. As long as we are in the ASR program it is impossible to utilize the Trinity permit because the ASR water is stored on top of the native Trinity water. With the current drought conditions it does not appear that ASR will be viable for the foreseeable future. There would need to be an extended period of non drought conditions before ASR would be feasible.

When ASR was started RRWSC advised the Barton Springs Edward Aquifer Conservation District (BSEACD) that we planned to inject during the winter months and extract during the summer months (winter/summer cycle). This was expected to significantly help the Aquifer levels as the average level is usually higher in the winter than the summer. It does not appear that BSEACD is prepared to allow this cycle for RRWSC.

If we set ASR aside and go back to using our Trinity permit we will be able to stay within our allotted permit amounts and not be subject to over pumping fines we have experienced recently.

We request the following conditions during the time ASR is set aside or suspended:

1. Starting June 1, 2025, the ASR class D permit fee will not be collected for each 3 month period RRWSC is not injecting ASR water. We currently pay the ASR permit fee quarterly ($750. currently paid thru May 2025) so our proposal is to not pay for each full quarter ASR is “suspended”.
2. The $850 Major Amendment application fee will be waived.
3. Extraction shall begin at RRWSC discretion and continue as needed by system demand.
4. Blend ratio will be determined by RRWSC and will be based on water chemistry to insure all TCEQ water quality standards are met.

5. Water quality samples will be taken monthly as long as necessary, while the current buffer is being extracted. These water quality reports will be shared with the district.
6. No other ASR rules or provisions will be required as long as ASR injection is not occurring.

Item 6

Board Discussion and Possible Action

e. Discussion and possible action related to a proposal from LRE Water to study the Lower Trinity Aquifer.

March 4, 2025

Dr. Tim Loftus, General Manager
Barton Springs Edwards Aquifer Conservation District
Submitted Via Email: tloftus@bseacd.org

Updated Proposal to Provide Comprehensive Hydrogeological and Geochemical Data Collection, Assessment, and Evaluation Services for the Lower Trinity Aquifer

Dear Dr. Loftus,

Per your request, LRE Water, LLC ("LRE") is pleased to provide Barton Springs Edwards Aquifer Conservation District ("BSEACD") the following proposed cost and schedule for the completion of the Scope of Work and creation of the deliverables listed within your Request for Proposals (RFP), dated July 19, 2024. Below, we briefly summarize our proposed approach, costs, timeline, and personnel. We welcome the opportunity to further discuss this project with the District and refine our approach based on your needs.

Task 1 – Data Compilation and Analysis: LRE's efforts building a custom data dashboard for BSEACD have uniquely positioned us for success on this project. Our current well impact analysis, using the BSEACD dataset, shows approximately 330 wells screened into the Sligo and/or Hosston formations, classifying them as part of the Lower Trinity Aquifer (LTA, Figure 1). Using this database as a starting point, data compilation and analysis will be expanded to include all available data on the Lower Trinity Aquifer from the Hays Trinity Groundwater Conservation District (HTGCD), the Texas Water Development Board (TWDB), Submitted Drillers Reports (SDR), Bureau of Economic Geology (BEG), and the Texas Railroad Commission (RRC) databases. Given the scarcity of data in the eastern portion of the aquifer, special consideration will be afforded toward including data from the geophysical logs available from the BRACS Database and from publicly available databases associated with oil and gas

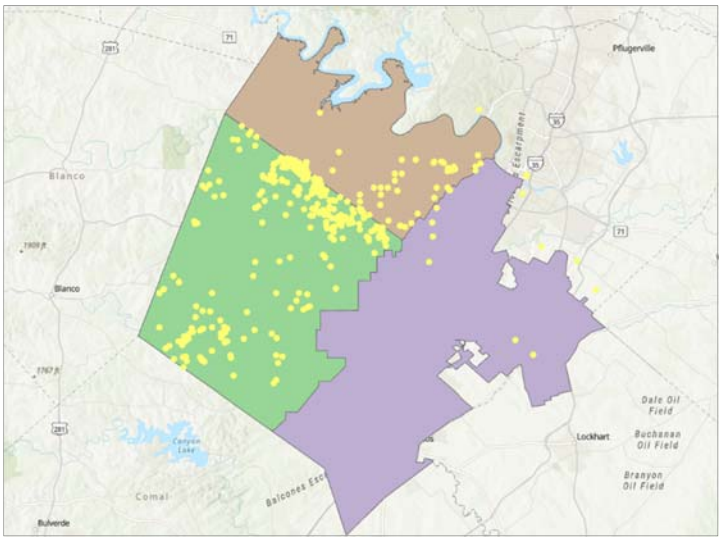


Figure 1: Map of Lower Trinity Aquifer wells (yellow) identified by BSEACD/LRE's Well Impact Analysis

exploration. This task will also include an extensive literature review to summarize the previous studies on the LTA, with a focus on Central Texas. As specified in the RFP, datasets will include a minimum of the following: geochemical and isotopic data; aquifer test/pump testing data; surface and subsurface geologic data including downhole geophysical logs and geologic maps/fault structure data; and water level data.

Task 2 – Geochemical Analysis: In this task, we will use existing groundwater quality and geochemical data to evaluate the LTA. LRE will use publicly available geochemical data to create a Stiff diagram representing water quality, at each well where data are available, and to summarize these data points in an aquifer-level Piper plot.

In conjunction, we will use the PHREEQC aqueous geochemical model to estimate the major ion concentrations that could be dissolved in groundwater, based on knowledge of the aquifer composition. This will be compared to the actual concentrations present to evaluate equilibrium and mixing with freshwater sources. Similarly, we will compare stable isotope data from the LTA, as available, with the local meteoric water line to potentially determine the level of connection between the recharge zone and other portions of the aquifer. If radio isotopic data are available, data may be used to evaluate the relative age of groundwater in the LTA at various locations in the study area. Using these datasets and model outputs, it may be possible to conduct an end-member mixing analysis (EMMA) to better understand the overall inputs to the system from recharge.

Task 3 – Stratigraphy and Structural Evaluation: Here, the LRE team will use the data compiled in Task 1 to refine the stratigraphic model of the study region and map the structural features in the LTA. As prior efforts have characterized the younger strata, identifying and mapping the top and bottom surfaces and thickness of the LTA will be our primary objective. Another major focus of this task will be on extrapolating the knowledge developed from wells in the western portion of the study area to the eastern portion, where development pressures are increasing. To do this, we will focus on mapping the fault locations and offsets, as discernable from Upper and Middle Trinity data, and use this information to inform Lower Trinity structures. Tasks 2 and 3 will be conducted in parallel, and both will be used to inform the groundwater assessment in Task 4.

Task 4 – Groundwater Availability and Recharge Assessment: As part of this task, we will synthesize the data and results generated from the previous tasks to estimate the recharge rates to the LTA and the total volume of recoverable water in the LTA. Initially, we will develop a map of the water levels (potentiometric surface) in the LTA based on available monitoring and water level data. We will then use pump test data and/or literature values of specific yield and storativity, along with the formation geometry, to estimate the total recoverable volume of water available. By comparing these volumes to recharge rates, we will be able to provide an assessment of the sustainability of the LTA. In this task, we will also evaluate the horizontal and vertical connectivity

between segments of the LTA based on the results from Task 2 and 3, to determine how readily groundwater moves in the LTA.

Task 5 – Reporting & Deliverables: The scope of work in BSEACD's original RFP provides a list of the required deliverables, which LRE considers to be minimum requirements. These include a comprehensive report on groundwater availability in the Lower Trinity Aquifer, maps of the aquifer's structure and water level, and geochemical plots. We expect to develop additional deliverables over the course of the project; we will discuss any such new deliverables with BSEACD prior to project completion.

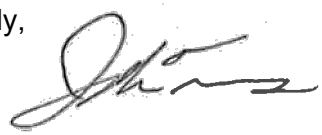
Personnel and Project Management: The team will be led by **Jordan Furnans, PhD, PE, PG**, the South-Central US Regional Director at LRE Water, who will be responsible for project oversight, technical direction, and administrative management. He will serve as the primary point of contact for BSEACD interactions. **Lauren Swientek, GIT** will oversee the development of the structural/stratigraphic model in GIS, with support from **Alex Shellhorn, PG** for model construction. **Gretchen Miller, PhD, PE, PG** will oversee the geochemical analysis and groundwater availability and recharge assessment, with support from **Stephanie Wong, PhD, GIT** and **Theresa Budd, PG.** Data compilation and database analysis will be completed by **Wally Darling, GIT**. All team members will participate in the generation of the report and deliverables; Jordan and Gretchen will provide scientific oversight and QA/QC on these materials.

Timeline and Costs: Based on the scope of work and a April 2025 start, we anticipate the project can be completed by December 31, 2025 for a not-to-exceed total of $111,954. Our breakdown of costs and schedule by task is provided in the table below. This effort shall become Task Order No. 3 on the Master Services Agreement between LRE and BSEACD. Authorization to proceed on this effort will be indicated upon receipt of a fully-executed Task Order No. 3.

Task Name	Cost Estimate	Completion Date
Task 1 – Data Review and Compilation	$16,540	May 2025
Task 2 – Geochemical Analysis	$21,782	September 2025
Task 3 – Stratigraphy and Structural Evaluation	$23,340	October 2025
Task 4 – Groundwater Availability and Recharge Assessment	$20,124	November 2025
Task 5 – Reporting & Documentation	$21,284	December 2025
Project Management	$8,884	n/a
Total	**$111,954**	**December 31, 2025**

Summary: LRE is uniquely positioned to perform this project based on our recent work for the BSEACD, as well as our expertise on the Lower Trinity Aquifer gained via our recent studies in Williamson, Bell, and Bandera Counties. We look forward to discussing this proposal with you and adapting our plans to best meet your needs. If you have any questions or concerns or would like to schedule a follow-up meeting, please call us at 512-736-685 or email Jordan.Furnans@LREwater.com. Thank you for providing us with the opportunity to present this proposal to Barton Springs Edwards Aquifer Conservation District.

Sincerely,



Jordan Furnans, PhD, PE, PG
Vice President – TX Operations

Item 6

Board Discussion and Possible Action

f. Discussion and possible action related to drought declaration or authorizing GM to declare the next stage of drought.

Item 6

Board Discussion and Possible Action

g. Discussion and possible action related to the 89th Texas Legislative Session

Item 7

Review of the Performance of the General Manager: HR and GM Quarterly Reports: FY 25, 2nd qtr. (December through February)

Item 8

Director Reports

Directors may report on their involvement in activities and dialogue that are of likely interest to the Board, in one or more of the following topical areas:

- Meetings and conferences attended or that will be attended
- Board committee updates
- Conversations with public officials, permittees, stakeholders, and other constituents
- Commendations
- Issues or problems of concern

Item 9

Adjournment