

Permit Hearing - Item #7
Jarrell Schwerthner WSC

**NOTICE OF PERMIT HEARING OF THE
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT**

Notice is hereby given that the Board of Directors for the Clearwater Underground Water Conservation District will conduct a hearing on one Application for Permit as described below at 1:30 p.m. on Wednesday, September 11, 2024, in the Clearwater UWCD Board Room located at 640 Kennedy Court, Belton, Texas, in compliance with the Texas Open Meetings Act.

The hearing will be conducted on the following application:

Applicant's File Number/Name	Permit Applicant/Holder and Landowner	Location of Well/Wells	Proposed Annual Groundwater Withdrawal Amount & Purpose of Use
Drilling Permit Hearing related to: N3-24-008P New Well	Jarrell Schwertner Water Supply Corporation c/o Dr. Neil Deeds 9600 Great Hills Trail Suite 300W Austin, TX 78759 (512) 506-1230	The proposed permitted well is located at: Latitude 30.929919° Longitude -97.475825° The proposed annual quantity is not to exceed 577 acre-feet or 188,016,027 gallons per year total for public water supply. The new well is to be completed in the Lower Trinity Aquifer in the CUWCD Eastern Management Zone. The well can be equipped up to a maximum 8-inch column pipe with a submersible pump rate not to exceed 600 gallons per minute on the 1.0-acre tract located at 5729 Royal Street, Salado, TX 76571.	Request for a drilling permit on a new well, N3-24-008P for proposed future production from the Lower Trinity Aquifer for public water supply use not to exceed 577 acre-feet or 188,016,027 gallons per year. This application for a drilling permit contemplates a future application for an operating permit therefore no production will be issued with this drilling permit application.

The applications for permit and/or permit amendments, if granted, would potentially authorize the permit holders to operate wells within the Clearwater Underground Water Conservation District according to the terms and conditions set forth in the permit. A person wishing to submit a Contested Case Hearing Request under District Rule 6.10.15(d) who is unable to appear at the hearing on the date and time set forth above must also file a motion for continuance with CUWCD demonstrating good cause for the inability to not appear.

For additional information about this application or the permitting process, or to request information on the legal requirements on what MUST be included for a Contested Case Hearing Request to be valid, please contact CUWCD at 700 Kennedy Court (PO Box 1989) Belton, Texas, 76513, 254-933-0120.

ISSUED this 29th day of August 2024 in Belton, Texas, on the recommendation of the General Manager.

I, the undersigned authority, do hereby certify that the above NOTICE OF PERMIT HEARING of the Board of Directors of the Clearwater Underground Water Conservation District is a true and correct copy of said Notice. I have posted a true and correct copy of said Notice at the District office located in Belton, Texas, and said Notice was posted on August 29, 2024, and remained posted continuously for at least 10 (ten) days immediately preceding the day of said hearing; a true and correct copy of said Notice was furnished to the Bell County Clerk, in which the above-named political subdivision is located.

Dated 8/29/2024

Clearwater Underground Water Conservation District

By: 
Dirk Aaron, General Manager

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CUWCD Executive Summary

Executive Summary
Application for Drilling Permit
N3-24-008P



Applicant/Owner: Jarrell Schwertner Water Supply Corporation
c/o Neil Deeds, Principal Water Resources Engineer, INTERA Inc.
on behalf of Joe Simmons
2393 CR 311
Jarrell, TX 76537
Phone: (512) 746-2114

Location of Well:

Location description: 1.0-acre tract located at 5729 Royal Street, Salado, TX 76571

Management Zone: Eastern Management Zone

Well #1: (N3-24-008P) Latitude 30.929919° Longitude -97.475825°

Proposed Annual Withdrawal:	Proposed Beneficial Use:	Source Aquifer:	Nearest Registered & Existing Wells:
<u>Well #1:</u> Initial Rate: 600-gpm Column Pipe: 8-inch max Proposed Production: <u>Well #1:</u> Proposed annual quantity not to exceed 577 acre-feet/year or 188,016,027 gallons/year	Public Water Supply (CCN #10002) Proposed well to provide public water to customers in the JSWSC North service corridor, exclusively in Bell County	Lower Trinity Aquifer (Hosston Layer)	Well #1 has 6 wells within ½ mile. 1 - Middle Trinity 1 - Lower Trinity (Inactive) 1 - Edwards BFZ 3 - Unknown

General Information

Neil Deeds, INTERA, on behalf of Joe Simmons, Jarrell Schwertner Water Supply Corporation (JSWSC), has submitted an application, to Clearwater Underground Water Conservation District (CUWCD) on July 22, 2024, for a drilling permit to complete a new well (N3-24-008P) for a proposed future operating permit of 577 ac-ft/year or 188,016,027 gallons/year on a 1.0-acre tract (PID:511491) at 5729 Royal Street, Salado, TX 76571, Latitude 30.929919°/Longitude -97.475825°, located in the northern portion of JSWSC's service area.

This permit, if approved, will only authorize the drilling and completion of the well in the Lower Trinity Aquifer (Hosston Layer) in the Eastern Management Zone with a maximum 8-inch column pipe and an estimated withdrawal rate of 600 gallons/minute. The proposed well will produce groundwater for a TCEQ-approved public water supply system, Certificate of Convenience and Necessity (CCN) #10002, to provide public water to customers in the JSWSC north service corridor, exclusively in Bell County. Upon completion of the well, a formal hydrogeologic report must be submitted to CUWCD to support a future operating permit. This drilling permit will not authorize any production of groundwater other than what is necessary for the prescribed aquifer pumping test.

Per Rules 6.9 and 6.10

In deciding whether or not to issue a permit, the Board must consider the following:

- 1) **Does the application contain all the information requested, is the application accurate? Does it meet spacing and production limitations identified by District Rules, and does it conform to all application requirements which include public notification and accompanied by the prescribed fees? TWC 36.116(a)(1), TWC 36.113(d)(1), Rule 6.9.1(a)(b)(1)(2), Rule 6.9.2(a)-(f), Rule 6.10.24(a)(b), and Rule 9.5.1-2.**

The application has been deemed administratively complete and all requested information has been provided. The application conforms to said rules with all required application fees. In addition, the applicant has met all notification requirements in a proper manner per District Rules.

- 2) **Is the proposed use of water dedicated to a beneficial use? (TWC 36.113(d)(3), District Rule 6.10.24(d), and District Rule 9.5.2 authority to serve as a public water supply per PUC and TCEQ requirements.**

The proposed well will produce groundwater for a TCEQ-approved public water supply system, Certificate of Convenience and Necessity (CCN) #10002, to provide public water to customers in the JSWSC north service corridor, exclusively in Bell County.

- 3) **Has the applicant agreed to avoid waste and achieve water conservation? (TWC 36.113(d)(6) and Rule 6.10.24(f)**

The applicant *should testify* that by signing the application form, they understand, per District Rule 6.10.24(f), that the applicant and their representative agree to and state that they will comply with the District's Management Plan and District Rules in effect on October 11, 2023.

- 4) **Has the applicant agreed that reasonable diligence will be used to protect groundwater quality and that the applicant will follow well plugging guidelines at the time of well closure? (TWC 36.113(d)(7) and Rule 6.10.24(g)) and Rule 9.3.**

The well should be completed in a manner that protects and prevents comingling of the overlying formations of the Hosston. In addition, during construction and completion of the well, all measures will be taken to protect the Edwards BFZ aquifer.

The applicant *should testify* that by signing the application form, they understand if the well deteriorates over time or becomes damaged in such a way that the well is inoperable, state law and District rules require such a well to be plugged before a replacement well can be drilled.

5) Will the proposed water well comply with the spacing and production limitations identified in our rules? (TWC 36.116(a)(1-2), TWC 36.116(c)&(d) and Rule 6.10.24(b)), Rule 7.1 and Rule 9.5.2.

The proposed well is located in the Eastern Management Zone described in District Rule 7.1 and will have a maximum column pipe size not to exceed 8-inches as declared in the applications. Based on this column pipe size, a minimum size tract of 40-acres is required, with a 5280-foot spacing requirement from other wells. The tract does not meet the minimum requirement, but a retail Public Water Utility's non-exempt new well is exempted from tract size requirements if the well is located within the prescribed boundaries of the utility's retail water service area that is certificated by the Public Utility Commission of Texas by the issuance of a Certificate of Convenience and Necessity.

Per District Rule 9.5 Spacing Requirements, the well must be located 75-feet from the property line which is met by the proposed location of the well. However, Texas Commission of Environmental Quality (TCEQ) approval will require a 150-foot sanitary control easement.

TCEQ has a 2-step process for Public Water Supply (PWS) wells. The first step is the approval to construct which focuses on how the well is proposed to be built along potential pollution sources for the well. As part of step 1, only a draft sanitary control easement is required. Step 2 of the process provides the approval to use the well as a PWS source. As part of step 2, the applicant must submit a recorded copy of the sanitary control easement. Providing TCEQ's approval to use the well with the operating permit would indicate the applicant had essentially encumbered at least a 150-foot radius around the well. (See Figure 1 on page 4.)

The District rules do not impose production limitations other than those determined applicable in the review of today's drilling permit request for a well to conduct the study necessary for the prescribed Well Completion Report per District Rule 6.9.2 (f)(1)-(8).

The applicant and their representative must understand that future operating permits for production provide evidence that the permit must not cause any unacceptable level of decline in water quality of the aquifer, or as may be necessary to prevent waste and achieve water conservation, minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, lessen interference between wells, or control and prevent subsidence.

More specifically these issues are considered in Items 6 & 7 below and with staff recommendations to address potential concerns of adjacent property owners and well owners within the potential radius of influence from future production.

Figure 1 below illustrates the proposed well location with a both a 75-foot and 150-foot radius map which shows that the applicant will need to secure an easement from the adjacent landowners to meet the 150-foot setback requirement from TCEQ.

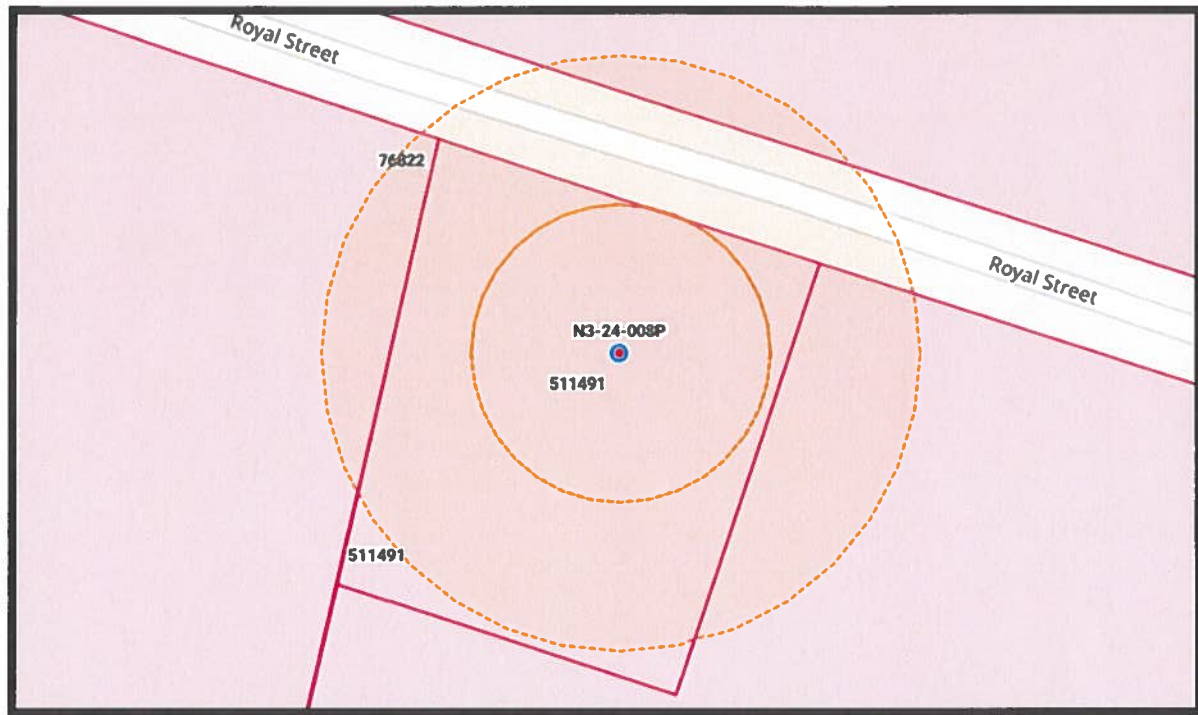
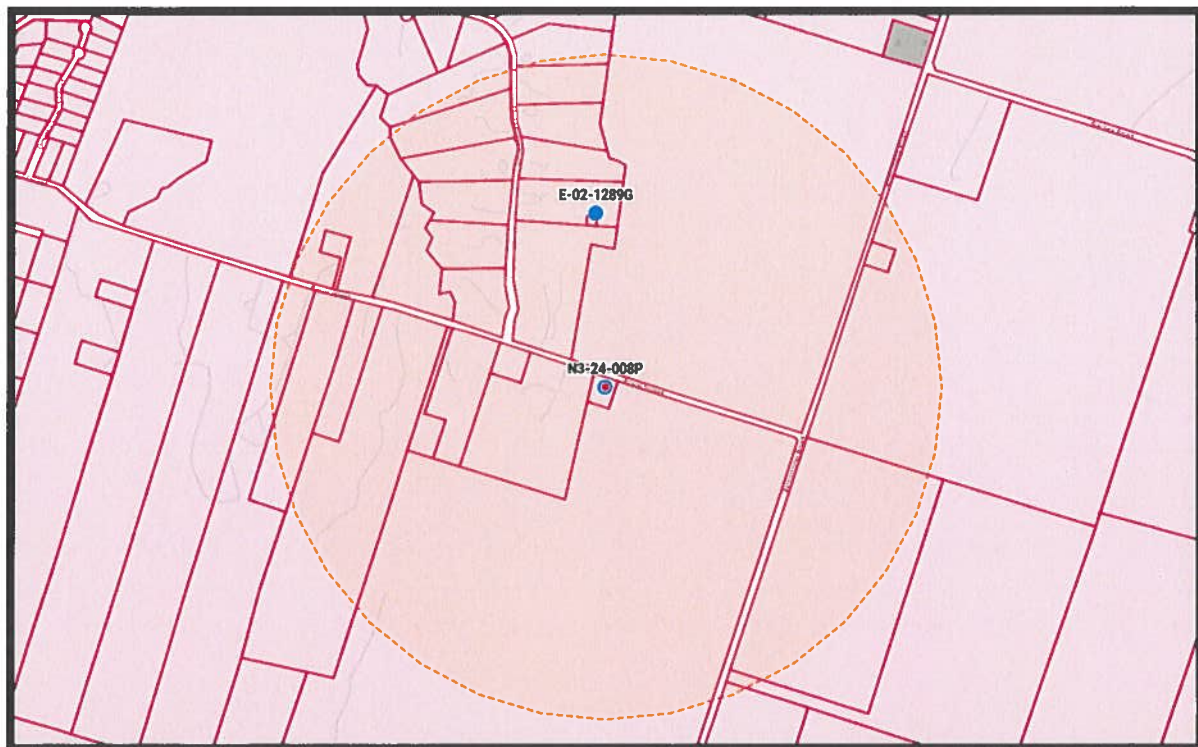


Figure 2 below illustrates 1 inactive well in the Lower Trinity Aquifer (Hosston Layer) within a 1/2-mile radius.



6) **Will the proposed use of water unreasonably affect existing groundwater and surface water resources or existing permit holders?**

Based on our best available information, there is 1 inactive well completed in the Lower Trinity.

Well (N3-24-008P) has 6 wells within ½ mile.

1 - Middle Trinity

1 - Lower Trinity (Inactive)

1 - Edwards BFZ

3 – Unknown (Grandfathered with no drillers report provided)

Mike Keester, KT Groundwater, has reviewed the application, determined the anticipated drawdown, and provided the attached MK report.

Keester states in his conclusions and recommendations the following:

“Available data indicates more than 1,500 feet of water above the top of the aquifer at the proposed JSWSC well site. Based on our current understanding of the local Lower Trinity Aquifer, we expect a relatively small reduction in this artesian pressure due to potential production from the proposed well. While we expect long-term additional drawdown to be about 30 feet, additional water-level monitoring at the completed well will aid in assessing the long-term effects of cumulative groundwater production in the area and in informing local users of the groundwater availability.”

Additionally, the District, to the extent possible, must issue permits up to the point the total volume of exempt and permitted groundwater production will achieve the applicable Desired Future Condition (DFC) per TWC 36.1132(a)(b) and Rule 6.10.25(a)(b)(c)(d)(e).

7) **Is the proposed use of groundwater consistent with the District’s Groundwater Water Management Plan related to the approved DFC and the defined available groundwater for permitting?**

The District’s current Groundwater Management Plan reflects a groundwater availability figure in the Lower Trinity Aquifer of 7,900 ac-ft/year Modeled Available Groundwater (minus the reserve 178 ac-ft/year for exempt well use) thus 7,722 ac-ft/year is the Managed Available Groundwater for permitting.

The Board, per the District Management Plan, has evaluated groundwater available for permitting the Lower Trinity Aquifer and evaluated the available groundwater for permitting (*consistent with the current management plan*).

The requested permit amount relative to the current modeled available groundwater MAG determined by the Texas Water Development Board (TWDB) based on the desired future conditions (DFCs) established by the District for the Lower Trinity Aquifer was set by CUWCD based on 330-ft of drawdown over 60-yrs. To achieve this

DFC, the TWDB used a model that indicated the MAG was equal to 7,900 acre-feet/year from the Lower Trinity.

A summary of YTD 2024 permit production, HEUP & OP Permit Analysis, pending applications, and *Exempt Well Reservations for the Lower Trinity, per District Report illustrates current Lower Trinity Aquifer permits total 950.01 ac-ft/year. Currently, the District has a pending permit of 569.60 ac-ft/year, thus available for permitting is only 3,299.75 acre-feet/year. (See attached Lower Trinity Aquifer Status Report, August 14, 2024.)

- 8) **What are the Modeled Available Groundwater calculations determined by the Executive Administrator of the Texas Water Development Board?**

Refer to #7 above. The modeled available groundwater will not be exceeded by granting this permit. (See attached Lower Trinity Aquifer Status Report, August 14, 2024.)

- 9) **What has the Executive Administrator of the Texas Water Development Board's estimate of the current and projected amount of groundwater produced under the exemptions in District Rule 6.3?**

Refer to #7 above. Reservation of Modeled available groundwater for exempt well use will not be exceeded by granting this permit. (See 2023 District Exempt Well Use Summary.)

- 10) **What is the amount of groundwater authorized under permits previously issued by the District?**

Refer to #7 above. Reservation of Modeled available groundwater for exempt well use will not be exceeded by granting this permit. 178 ac-ft/year is reserved and 60 ac-ft is the total estimated exempt well use annually in the Lower Trinity. (See 2023 District Exempt Well Use Summary.)

- 11) **What is the reasonable estimate of the amount of groundwater that is produced annually under existing non-exempt permits issued by the District?**

The total permitted amounts for non-exempt wells in the Lower Trinity Aquifer in 2023 was 4,560.39 ac-feet/yr. and the actual production in 2023 was 1,860.31 ac-ft/yr (41%) of the permitted amount. (Figures are based upon monthly production reports submitted to Clearwater by the permit holders in 2023).

- 12) **Yearly precipitation and production patterns.**

Clearwater is currently in no drought management stage based on the PDI system (average running total annual rainfall) over the Aquifer in the District, is currently at 47.395 inches of rain received in the last 365 days (as of 8/13/2024) thus 143.62% of annual expected rainfall of 33 inches. The Lower Trinity permit holders in all of 2023 have used 41% of the total permitted amounts in the Aquifer. Permit holders did not exceed their total permitted amounts in 2020, 2021, 2022, and 2023.

Conclusions and Recommendations:

- 1) District GM recommends that the Board only approve drilling permit per Rule 6.7.1 and per Rule 6.9.2(f) must provide the Well Completion Report, when the applicant returns to the District for an Operating Permit per Rule 6.6.1 within 30-days of completion of the well and per Rule 6.6.3 preparation of the required well completion report.
- 2) District GM concurs with Keester that an enhanced well completion report will aid the Board's understanding of anticipated impacts over and above our current understanding of the system. Additional elements are:
 - To assess actual changes in water levels due to pumping from the proposed well and regional water level declines, the pump installer shall install a measuring tube alongside the column pipe to allow for measurement of the water level using an e-line or other direct measurement method.
 - The geophysical log should include, at a minimum: "triple combo" [natural gamma, resistivity, spontaneous potential, and porosity] and borehole deviation of the open borehole. Provide a copy of the log in digital format (TIF and/or PDF) along with the log data in LAS format.
 - Lithologic samples should be collected at no more than 20-foot intervals.
 - The pumping test should be consistent with Texas Commission on Environmental Quality requirements for public water supply wells. During testing we recommend CUWCD monitor water levels at well N2-10-001P at regular intervals
 - The water quality analysis should be consistent with Texas Commission on Environmental Quality requirements for public water supply wells with the inclusion of Ca, Mg, Na, K, Cl, HCO₃, SO₄, SiO₂, and total dissolved solids along with field measurements of pH and temperature at the time of sample collection.
- 3) District GM recommends that the well be equipped with a meter for monthly recording of production in accordance with District Rule.
- 4) District should require the well owner to participate in the Districts continuous water level recorder program with a device provided and maintained by the District Staff.
- 5) The District should ensure that TCEQ standards for a Public Water Supply are met prior to granting an operating permit. If not, the District should require the well to be plugged by the applicant.

Attachments are as follows:

<i>Keester PG Technical Memorandum</i>	<i>09/04/2024</i>
<i>TCEQ Proposed PWS Construction Checklist</i>	<i>See Attached</i>
<i>TCEQ Public Well Completion Data Checklist</i>	<i>See Attached</i>
<i>CUWCD Aquifer Status Report</i>	<i>08/14/2024</i>
<i>CUWCD 2023 Exempt Well Estimate of Use Report</i>	<i>12/31/2023</i>
<i>CUWCD Site Map</i>	<i>See Attached</i>
<i>Applications, fees, and Notification Affidavit</i>	<i>See Attached</i>

Wick Thomas - Protestant
August 6, 2024

STATE OF TEXAS §
COUNTY OF BELL §

SANITARY CONTROL EASEMENT

KNOW ALL MEN BY THESE PRESENTS:

That **Chadwick Wesley and Amy Terese Thomas**, being the owners of the Property described in Instrument No. 2024-00033238 of the Official Public Records in Bell County, Texas, do hereby declare the Property bound by the restrictions and covenants set out below and agree that the Property's purchasers and subsequent owners of the Property shall comply with same. These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for two years from the date that these covenants are recorded, after which time said covenants shall be automatically extended until the use of this water well as a source of water for a public water system ceases.

Enforcement shall be by proceedings at law or in equity against any person or persons violating or attempting to violate any covenant either to restrain violation or to recover damages.

Invalidation of any one of these covenants by judgment or court order shall not in any way affect any of the other provisions which shall remain in full force and effect.

The restrictions are:

1. Sanitation control upon all of that area of land of the Property is included with a 200 foot radius of a deep water well located at 30.9299196°, -097.4758253° and specifically prohibiting the construction and/or operation of underground petrochemical storage tanks, stock pens, feed lots, dump grounds, privies, cesspools, septic tank drainfields, drilling of improperly constructed water wells of any depth and all other construction or operation that could create an unsanitary condition within, upon or across the above described tract of land;
2. Tile or concrete sanitary sewers, sewer appurtenances, septic tanks and storm sewers are specifically prohibited within a 50 foot radius of the deep water well described and located above.
3. This sanitation control permit the construction of homes or buildings upon same, provided, however, that all underground petrochemical storage tanks, stock pens, feed lots, privies, tile or concrete sanitation sewers, cesspools, septic tanks, storm sewers, septic tank drainfields, drilling of improperly constructed wells of any depth and other construction and/or operations that could create an unsanitary condition within, upon or across same are specifically prohibited within the designated distances.



COPY

4. Normal farming and ranching operations are permitted except that livestock shall not be allowed within 50 feet of the proposed well.

Signed on the date of the acknowledgment below.

Chadwick Wesley Thomas

Amy Terese Thomas

STATE OF TEXAS
COUNTY OF _____

BEFORE ME, the undersigned authority, on this day personally appeared **Chadwick Wesley Thomas and Amy Terese Thomas**, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purpose and consideration therein expressed.

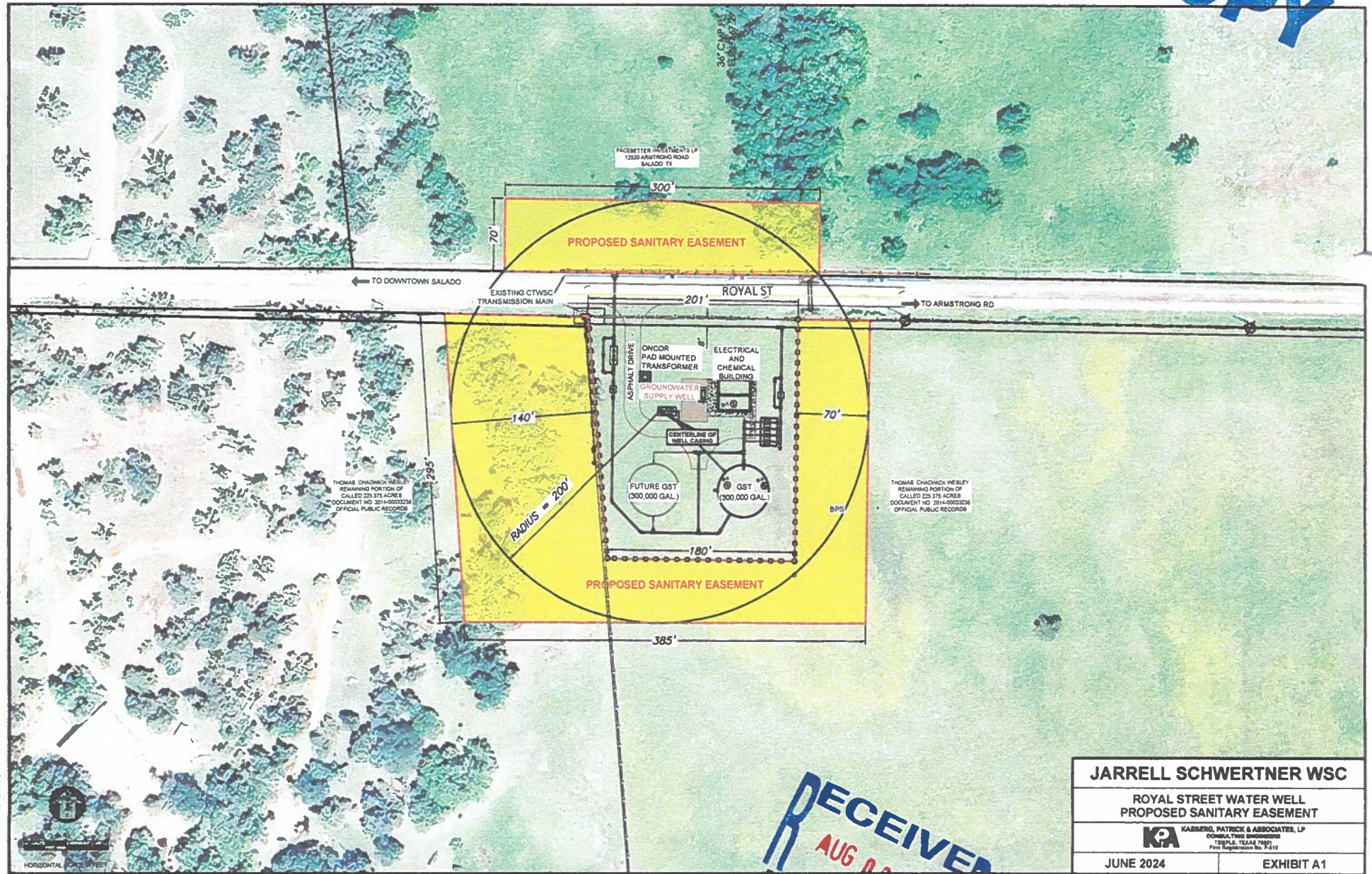
GIVEN UNDER MY AND SEAL OF OFFICE on _____,
2024.


Notary Public, State of Texas

Prepared in the law offices of
Patricia Ferguson & Associates, LLC
815 West 5th Street
Clifton, Texas 76634-1519
Telephone: 254-675-8663
Facsimile: 254-675-4567

RECEIVED
AUG 06 2024
BY: [Signature]
received from Nick Thomas

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JARRELL SCHWERTNER WSC	
ROYAL STREET WATER WELL PROPOSED SANITARY EASEMENT	
 K&A KARRERS, PATRICK & ASSOCIATES, LP CONSULTING ENGINEERS DALLAS, TEXAS 75202 P.E. Registration No. 7-010	
JUNE 2024	EXHIBIT A1

RECEIVED
AUG 08 2024
Dr. Dwyer
don Wick Thomas

KT Groundwater Geoscience Review



2804 Paradise Ridge Cove
Round Rock, Texas 78665
(512) 621-7237
KTGroundwater.com
TBPG Firm No. 50705

Technical Memorandum

To: Mr. Dirk Aaron, General Manager –
Clearwater Underground Water Conservation District

From: Michael R. Keester, P.G.

Date: September 4, 2024

Subject: Hydrogeologic Evaluation of the Jarrell Schwertner WSC Well (N3-24-008P)
Drilling Permit Application

Proposed Well ID: *N3-24-008P*

Well Owner Name: *Jarrell Schwertner WSC*

Tract Size: *1.0 Acres*

Column Pipe Size: *8 inches*

Aquifer: *Lower Trinity*

Management Zone: *Eastern*

Proposed Annual Production: *577 Acre-Feet per Year (188,016,027 gallons per year)*

Proposed Instantaneous Pumping Rate: *600 Gallons per Minute*

According to information provided by the applicant's consultants, the proposed well is intended to serve as a Public Water Supply to help meet increasing needs in the Jarrell Schwertner WSC ("JSWSC") service area in southern Bell County. The proposed well is designed to produce at an instantaneous rate of 600 gallons per minute ("gpm") through an 8-inch column pipe. The applicant's engineer indicated an anticipated annual production of 577 acre-feet by 2030 for 1,233 connections.

The projected demand equates to approximately 417 gallons per day per connection. According to the Texas Water Development Board 2023 Water Audit Report for Jarrell Schwertner WSC, there were a total of 2,695 connections that year. During 2023, the total volume of water input to the system was 332,064,293 gallons with 191,054,782 gallons consumed and 141,009,511 gallons lost (about 42% of the total input). Using the total volume input and the number of connections results in an average input need of 337 gallons per day per connection with an average consumption of 194 gallons per day per connection. The projected demand of 417 gallons per day per connection may be an overestimation and we recommend the applicant address the projections in greater detail when applying for the operating permit.

The identified source for the proposed use is the Lower Trinity Aquifer in the Eastern Management Zone. The application indicates the driller will screen the well from 1,900 to 2,300 feet below ground level. The CUWCD virtual bore indicates the Lower Trinity is about 1,780 feet below ground level and about 465 feet thick. Site specific conditions encountered while drilling will determine the final design of the well and completion interval. We recommend conducting geophysical logging of the open borehole (including, but not limited to: “triple combo” [natural gamma, resistivity, spontaneous potential, and porosity] and borehole deviation) for delineation of the subsurface geologic units.

Based on data from District monitoring well N2-10-001P located about 2.75 miles east of the proposed well and the CUWCD Aquifer Data Analysis Tool, the depth to water in the Lower Trinity is currently about 370 feet below ground level and is declining by about 4 feet per year at the proposed well site. These data indicate water levels are currently more than 1,500 feet above the top of the aquifer with regional water level decline of about 40 feet per decade. The applicant anticipates completing the proposed well to the bottom of the Lower Trinity and setting the pump at approximately 450 feet below ground level which provides for less than 100 feet of submergence. The proposed pump setting is likely an estimate that could be modified based on actual pumping conditions upon completion of the well. With the depth of the aquifer, the pump could easily be set at a depth which provides sufficient submergence for several years under current conditions.

Projected Effect on Existing Wells

The potential effects of the proposed production on local water levels in the aquifer are calculated using the Theis equation¹ which relates water level decline (that is, drawdown) to the pumping rate of a well and properties of the aquifer. While the equation does not account for aquifer conditions which may affect the calculation of long-term water level declines (for example: aquifer recharge, faulting, or changes in aquifer structure), it does provide a reliable and straightforward method for estimating relatively short-term drawdown in and near a well due to pumping. To assess the potential effects from the proposed production, we used values from the Clearwater Groundwater Management Model (“CGMM”)² in the equation.

¹ Theis, C.V., 1935, The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Ground-Water Storage: American Geophysical Union Transactions, v. 16, p. 519-524.

² Keester, Michael R.; Webster, Philip; Beach, James; Chen, Ye Hong, 2023, Clearwater Groundwater Management Model, Report prepared for the Clearwater Underground Water Conservation District, 56 p.



The CGMM indicates the Lower Trinity Aquifer transmissivity is about 52,800 gallons per day per foot (“gpd/ft”) with a storage coefficient of 0.000161 at the proposed wellsite. We used these values to assess the potential drawdown at the proposed well and at existing wells reportedly completed in the Lower Trinity located nearly one mile from the proposed well (Figure 1).

Table 1 presents the calculated drawdown at the proposed well and the nearby well completed in the same aquifer. For 1-Day Drawdown, we applied the proposed instantaneous pumping rate for a period of 24 hours. For 30-Day Drawdown, we assumed peak pumping during the summer of about 15 percent more than the average monthly amount (that is, the proposed annual production rate divided by 12 then multiplied by 1.15). For 1-Year Drawdown, we used the proposed annual production amount.

The predicted drawdown is based on our current understanding of the aquifer hydraulic properties and the estimated production from the proposed well. The predicted drawdown values do not include the effects from other wells pumping near the proposed well. Predicted drawdown of less than one foot is considered negligible for analysis purposes due to inherent uncertainty in the aquifer hydraulic characteristics, modeling limitations, and limited effect the drawdown would have on existing groundwater users.

As noted previously, water levels are currently more than 1,500 feet above the top of the aquifer. The predicted drawdown shown in Table 1 is a small portion of this artesian pressure. To assess the potential long-term effects of the production we also conducted a simulation of the anticipated operating permit using the CGMM. We conducted the simulation by adding the proposed JSWSC production to the pumping file representing the CUWCD adopted desired future conditions. We then compared the difference in water levels for the simulation with versus without the JSWSC potential pumping. As shown on Figure 2, the CGMM predicts about 30 feet of additional water level decline due to the potential pumping.

As part of the public water supply well approval by the Texas Commission on Environmental Quality, the applicant will conduct a 36-hour pumping test and collect water samples for lab analysis. The results of the aquifer test and sampling, along with the other requirements of a well completion report, will be beneficial in the analysis of the potential effects of production associated with the anticipated future operating permit application.



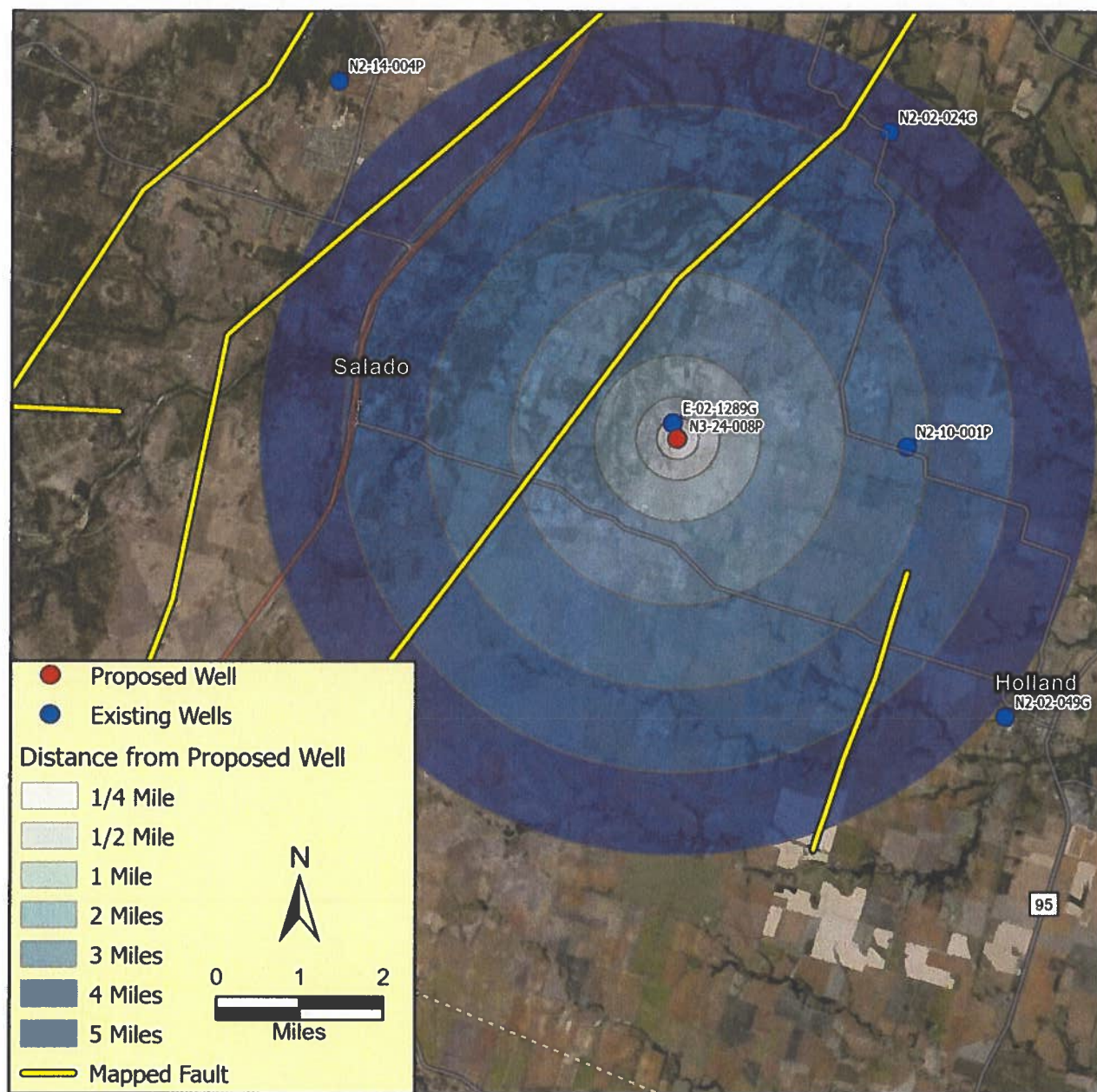


Figure 1. Proposed well and existing wells reportedly completed in the Lower Trinity Aquifer.



Table 1. Calculated drawdown at the proposed well and nearby wells reportedly completed in the Lower Trinity Aquifer based on an annual production rate of 577 acre-feet from the proposed well and instantaneous production of 600 gallons per minute.

CUWCD Well ID	Distance from Proposed Well (feet)	1-Day Drawdown (feet)	30-Day Drawdown (feet)	1-Year Drawdown (feet)
N3-24-008P (Proposed)	—	24	20	19
E-02-1289G	1,024	6	7	8
N2-10-001P	14,450	<i>Negligible</i>	2	4
N2-02-024G	23,550	<i>Negligible</i>	2	3

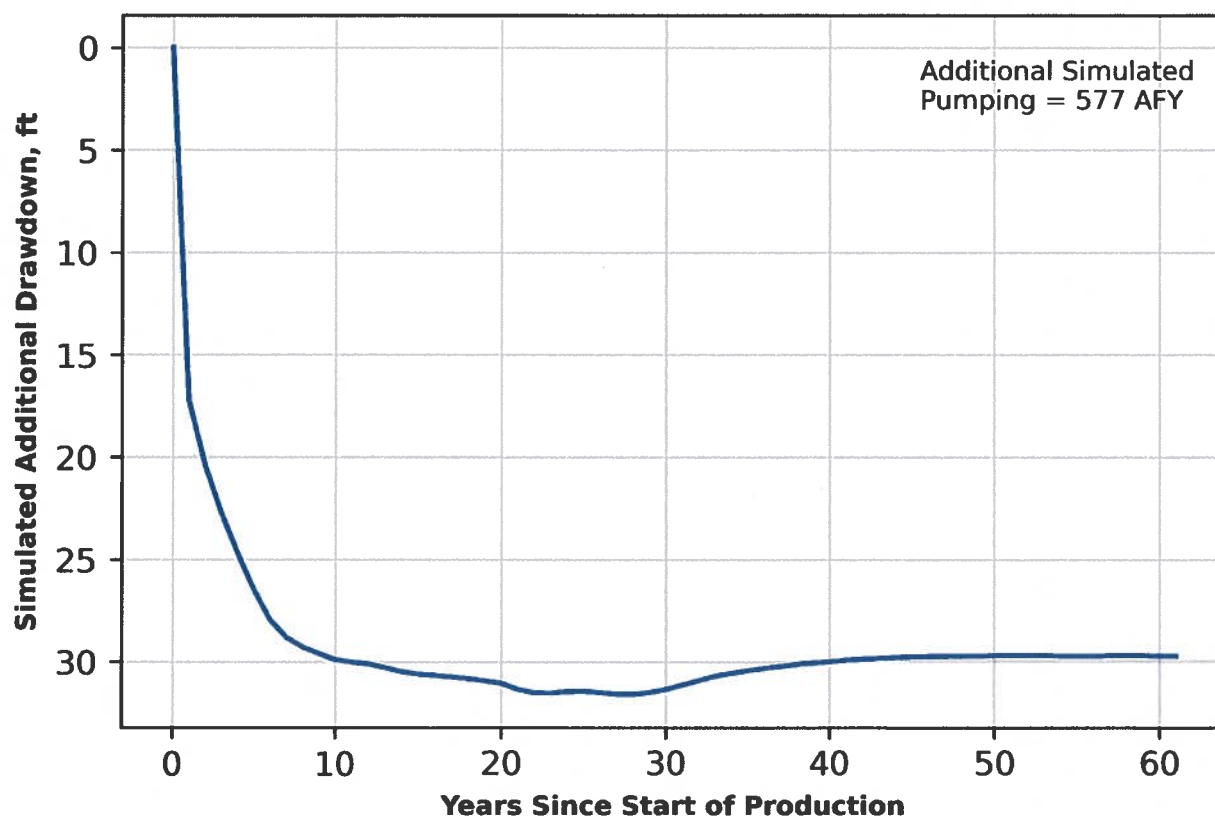


Figure 2. CGMM simulated additional drawdown associated with pumping 577 acre-feet per year from the Lower Trinity Aquifer at the JSWSC proposed well site.



Conclusions and Recommendations

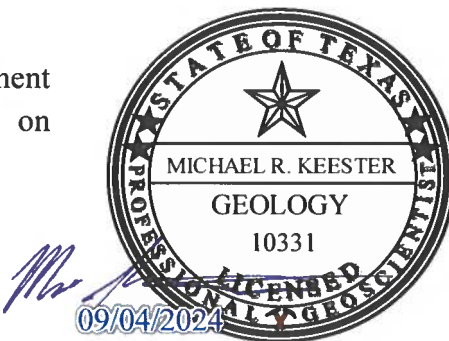
Available data indicates more than 1,500 feet of water above the top of the aquifer at the proposed JSWSC well site. Based on our current understanding of the local Lower Trinity Aquifer, we expect a relatively small reduction in this artesian pressure due to potential production from the proposed well. While we expect long-term additional drawdown to be about 30 feet, additional water-level monitoring at the completed well will aid in assessing the long-term effects of cumulative groundwater production in the area and in informing local users of the groundwater availability.

To aid in the Board's future permit considerations, possible conditions associated with the drilling permit may include the following items or specifications of for the well completion report to be submitted with the operating permit application:

- To assess actual changes in water levels due to pumping from the proposed well and regional water level declines, the pump installer shall install a measuring tube alongside the column pipe to allow for measurement of the water level using an e-line or other direct measurement method.
- The geophysical log should include, at a minimum: "triple combo" [natural gamma, resistivity, spontaneous potential, and porosity] and borehole deviation of the open borehole. Provide a copy of the log in digital format (TIF and/or PDF) along with the log data in LAS format.
- Lithologic samples should be collected at no more than 20-foot intervals.
- The pumping test should be consistent with Texas Commission on Environmental Quality requirements for public water supply wells. During testing we recommend CUWCD monitor water levels at well N2-10-001P at regular intervals
- The water quality analysis should be consistent with Texas Commission on Environmental Quality requirements for public water supply wells with the inclusion of Ca, Mg, Na, K, Cl, HCO₃, SO₄, SiO₂, and total dissolved solids along with field measurements of pH and temperature at the time of sample collection.

Geoscientist Seal

The signature and seal appearing on this document was authorized by Michael R. Keester, P.G. on September 4, 2024.



TCEQ Proposed PWS Construction Checklist

Proposed Water Supply Well Construction Checklist (Step 1)

Texas Commission on Environmental Quality
Water Supply Division
Plan Review Team MC-159
P.O. Box 13 087, Austin, Texas 78711-3087

Public Water System I.D. No. _____
TCEQ Log No. P- _____

The following list is a brief outline of the "Rules for Public Water Systems", 30 TAC Chapter 290 regarding proposed Water Supply Well Construction. Sealed plans and specifications meeting, but not limited to, the minimum requirements cited here shall be prepared under the supervision of a Texas licensed professional engineer and submitted to TCEQ for approval. This list is not a substitute for the rules and this checklist cannot be accepted in lieu of the required engineering submittals. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561 or downloaded from the website:
<http://www.tceq.texas.gov/rules/indxpdx.html>

1. ☐ Site map(s) with appropriate scale showing the following: [§290.41(c)(3)(A)]
 - ☐ (i) Proposed location of the well with coordinates;
 - ☐ (ii) Named roadways;
 - ☐ (iii) All property boundaries within 150 feet of the proposed well location and the property owners' names;
 - ☐ (iv) Concentric circles with the proposed well location as the center point with radii of 10 foot, 50 foot, 150, foot, and ¼ mile;
 - ☐ (v) Any site improvements and existing buildings;
 - ☐ (vi) Any existing or potential pollution hazards; and
 - ☐ (vii) Map must be scalable with a north arrow.
2. ☐ Site plan and proposed well profile drawings showing the following: [§290.41(c)(3)(A)]
 - ☐ (i) Proposed well pump and setting depth;
 - ☐ (ii) Bore hole diameter(s) (must be 3" larger than casing OD) and total well depth;
 - ☐ (iii) Casing size, length, and material (e.g. 200 lf of 12" PVC SDR-17);
 - ☐ (iv) Length and material of any screens, blanks, and/or gravel packs utilized;
 - ☐ (v) Flow meter and sampling cock prior to treatment;
 - ☐ (vi) Well casing vent with a 16-mesh or finer corrosion-resistant screen;
 - ☐ (vii) Concrete sealing block extending at least 3 feet in all directions, with a minimum thickness of 6 inches and slope no less than 0.25 inches per foot for draining;
 - ☐ (viii) Disinfection injection point on the well discharge pipe and the location of the disinfection facilities; and
 - ☐ (ix) Intruder-resistant fence and an all-weather access road.
3. ☐ A sealed engineer's report that sizes the well capacity based on connections or people to be served. See §290.45 for the minimum capacity requirements; [§290.39(e)(1)]
4. ☐ A pollution hazard survey identifying all existing or potential pollution hazards: [§290.41(c)(1)(A)-(E)]
 - ☐ (i) Within 50 feet, identify any tile or concrete sanitary sewers, sewerage appurtenances, septic tanks, storm sewers, cemeteries, or livestock in pastures;
 - ☐ (ii) Within 150 feet, identify any septic tank perforated drainfields, areas irrigated by low dosage, low angle spray on-site sewage facilities, absorption beds, evapotranspiration beds, water wells that do not meet Public Drinking Water Standards, or underground fuel or petrochemical storage tanks or

Proposed Water Supply Well Construction Checklist (Step 1)

- ☐ pipelines;
 - ☐ (iii) Within 300 feet, identify any sewage wet wells, sewage pump stations, or drainage ditches which contain industrial waste or sewage treatment waste;
 - ☐ (iv) Within 500 feet, identify any sewage treatment plants, livestock and animal feed lots, solid waste disposal sites, lands on which sewage plant or septic tank sludge is applied, or lands irrigated by sewage plant effluent; and
 - ☐ (v) Within ¼ mile, identify any abandoned or inoperative wells and any other existing or potential pollution hazards.
- 5. ☐ A copy of the recorded deed of the property on which the well is located; [§290.41(c)(1)(F)(iv)]
- 6. ☐ Drafts of sanitary control easements covering land within 150 feet of the well not owned by the public water system; [§290.41(c)(1)(F)]
- 7. ☐ The premises, materials, tools, and drilling equipment shall be maintained so as to minimize contamination of the groundwater during drilling operation: [§290.41(c)(2)]
 - ☐ (i) Water used in any drilling operation shall be of safe sanitary quality. Water used in the mixing of drilling fluids or mud shall contain a chlorine residual of at least 0.5 milligrams per liter (mg/L);
 - ☐ (ii) The slush pit shall be constructed and maintained so as to minimize contamination of the drilling mud; and
 - ☐ (iii) No temporary toilet facilities shall be maintained within 150 feet of the well being constructed unless they are of a sealed, leakproof type.
- 8. ☐ Well casing requirements: [§290.41(c)(3)(B)]
 - ☐ (i) The material shall conform to AWWA standards;
 - ☐ (ii) The casing shall extend a minimum of 18 inches above the elevation of the finished floor or the natural ground surface and a minimum of one inch above the sealing block or pump motor foundation block when provided;
 - ☐ (iii) The casing shall extend at least to the depth of the shallowest water formation to be developed and deeper, if necessary, in order to eliminate all undesirable water-bearing strata;
 - ☐ (iv) Well construction materials may not contain more than 0.25% lead; and
 - ☐ (v) Cementing depth and pressure method (one of the methods in latest revision of AWWA Standard A-100, Appendix C, excluding the dump bailer and tremie methods).
- 9. ☐ When a gravel packed well is constructed, all gravel shall be of selected and graded quality and shall be thoroughly disinfected with a 50 mg/L chlorine solution as it is added to the well cavity; [§290.41(c)(3)(D)]
- 10. ☐ Safeguards shall be taken to prevent possible contamination of the water or damage by trespassers following the completion of the well and prior to installation of permanent pumping equipment; [§290.41(c)(3)(E)]
- 11. ☐ Upon well completion, the well shall be disinfected in accordance with current AWWA standards for well disinfection except that the disinfectant shall remain in the well for at least six hours; [§290.41(c)(3)(F)]
- 12. ☐ Well head and sealing slab:
 - ☐ (i) Concrete sealing block extending at least three feet from the well casing in all directions, with a minimum thickness of six inches and sloped to drain away at not less than 0.25 inches per foot shall be provided around the wellhead; [§290.41(c)(3)(J)]
 - ☐ (ii) Wellheads and pump bases shall be sealed by a gasket or sealing compound; [§290.41(c)(3)(K)]
 - ☐ (iii) Wellheads and well vents shall be at least two feet above the highest known watermark or 100-year flood elevation; [§290.41(c)(3)(K)]
 - ☐ (iv) If a well blow-off line is provided, its discharge shall terminate in a downward direction and at a point which will not be submerged by flood

Proposed Water Supply Well Construction Checklist (Step 1)

- waters; [§290.41(c)(3)(L)]
- ☐ (v) A suitable sampling cock shall be provided on the discharge pipe of each well pump prior to any treatment; and [§290.41(c)(3)(M)]
- ☐ (vi) Flow-measuring devices shall be provided for each well to measure production yields and provide for the accumulation of water production data. [§290.41(c)(3)(N)]
13. ☐ All completed well units shall be protected by intruder-resistant fences or shall be enclosed in locked, ventilated well houses to exclude possible contamination or damage to the facilities by trespassers; and [§290.41(c)(3)(O)]
14. ☐ An all-weather access road shall be provided to each well site. [§290.41(c)(3)(P)]

LIST OF COUNTIES WHERE RADIONUCLIDE TESTING IS REQUIRED

Please be aware that we have added the requirement for analysis for radionuclides for high risk counties. For elevated levels of any contaminants found in a test well, treatment or blending may be required.

Table 1: List of Counties where Radionuclide Testing is required

COUNTY				
Atascosa	Bandera	Bexar	Bosque	Brazoria
Brewster	Burnet	Concho	Culberson	Dallam
Dawson	Erath	Fort Bend	Frio	Garza
Gillespie	Gray	Grayson	Harris	Hudspeth
Irion	Jeff Davis	Jim Wells	Kendall	Kent
Kerr	Kleberg	Liberty	Llano	Lubbock
McCulloch	Mason	Matagorda	Medina	Midland
Montgomery	Moore	Parker	Pecos	Polk
Presidio	Refugio	San Jacinto	San Saba	Tarrant
Travis	Tyler	Upton	Val Verde	Victoria
Walker	Washington	Wichita	Williamson	Zavala

**TCEQ Public Well
Completion Data Checklist**

Public Well Completion Data Checklist for Approval to Use (Step 2)

Texas Commission on Environmental Quality
Water Supply Division
Plan Review Team MC-159
P.O. Box 13087, Austin, Texas 78711-3087

Public Water System I.D. No. _____
TCEQ Log No. P- _____

The following list is a brief outline of the "Rules for Public Water Systems", 30 TAC Chapter 290 regarding proposed Water Supply Well Completion. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561 or downloaded from the website: <http://www.tceq.texas.gov/rules/indxpathdf.html>

Any well proposed as a source of water for a public water supply must have plans approved for construction by TCEQ. Please include the well construction approval letter with your submittal of well completion data listed below for TCEQ evaluation. Based on review of this submitted data, approval may be given for use of the well.

1. ☐ Site map(s) at appropriate scales showing the following: [§290.41(c)(3)(A)]
 - ☐ (i) Final location of the well with coordinates;
 - ☐ (ii) Named roadways;
 - ☐ (iii) All property boundaries within 150 feet of the final well location and the property owners' names;
 - ☐ (iv) Concentric circles with the final well location as the center point with radii of 10 feet, 50 feet, 150 feet, and ¼ mile;
 - ☐ (v) Any site improvements and existing buildings;
 - ☐ (vi) Any existing or potential pollution hazards; and
 - ☐ (vii) Map must be scalable with a north arrow.
2. ☐ A copy of the recorded deed of the property on which the well is located showing the Public Water System (PWS) as the landowner, and/or any of the following:
[§290.41(c)(1)(F)(iv)]
 - ☐ (i) Sanitary control easements (filed at the county courthouse and bearing the county clerk's stamp) covering all land within 150 feet of the well not owned by the PWS (for a sample easement see TCEQ Form 20698);
 - ☐ (ii) For a political subdivision, a copy of an ordinance or land use restriction adopted and enforced by the political subdivision which provides an equivalent or higher level of sanitary protection to the well as a sanitary control easement; and/or
 - ☐ (iii) A copy of a letter granting an exception to the sanitary control easement rule issued by TCEQ's Technical Review and Oversight Team.
3. ☐ Construction data on the completed well: [§290.41(c)(3)(A)]
 - ☐ (i) Final installed pump data including capacity in gallons per minute (gpm), total dynamic head (tdh) in feet, motor horsepower, and setting depth;
 - ☐ (ii) Bore hole diameter(s) (must be 3" larger than casing OD) and total well depth;
 - ☐ (iii) Casing size, length, and material (e.g. 200 lf of 12" PVC ASTM F480 SDR-17);
 - ☐ (iv) Length and material of any screens, blanks, and/or gravel packs utilized;
 - ☐ (v) Cementing depth and pressure method (one of the methods in latest revision of AWWA Standard A-100, Appendix C, excluding the dump bailer and tremie methods);
 - ☐ (vi) Driller's geologic log of strata penetrated during the drilling of the well;
 - ☐ (vii) Cementing certificate; and

Public Well Completion Data Checklist for Approval to Use (Step 2)

- ☐ (viii) Copy of the official State of Texas Well Report (some of the preceding data is included on the Well Report).
4. ☐ A U.S. Geological Survey 7.5-minute topographic quadrangle map (include quadrangle name and number) or a legible copy showing the location of the completed well; [§290.41(c)(3)(A)]
5. ☐ Record of a 36-hour continuous pump test on the well showing stable production at the well's rated capacity. Include the following: [§290.41(c)(3)(G)]
- ☐ (i) Test pump capacity in gpm, tdh in feet, and horsepower of the pump motor;
 - ☐ (ii) Test pump setting depth;
 - ☐ (iii) Static water level (in feet); and
 - ☐ (iv) Draw down (in feet).
6. ☐ Three bacteriological analysis reports for samples collected on three successive days showing raw well water to be free of coliform organisms. Reports must be for samples of raw (untreated) water from the disinfected well and submitted to a laboratory accredited by TCEQ, accredited to perform these test; and [§290.41(c)(3)(F)(i)]
7. ☐ Chemical analysis reports for well water samples showing the water to be of acceptable quality for the most problematic contaminants listed below. Reports must come from a laboratory accredited by TCEQ; accredited to perform these tests. Maximum contaminant level (MCL) and secondary constituent level (SCL) units are in milligrams per liter (except arsenic which is in micrograms per liter). [§290.41(c)(3)(G) and §290.104 and §290.105]

Table 1: Primary Constituents with Maximum Contaminant Level (MCL)

PRIMARY	MCL
Nitrate	10 (as N)
Nitrite	1 (as N)
Arsenic	10
Fluoride	4.0

Table 2: Secondary Constituents with Secondary Contaminant Level (SCL)

SECONDARY	SCL
Aluminum	0.2
Copper	1.0
Iron	0.3
Manganese	0.05
Zinc	5.0
Total Dissolved Solids	1,000
Fluoride	2.0
Sulfate	300
Chloride	300
pH	> 7.0

Public Well Completion Data Checklist for Approval to Use (Step 2)

Table 3: Water Quality Parameters

PARAMETER	UNITS
Alkalinity as CaCO ₃	mg/L
Calcium as CaCO ₃	mg/L
Sodium	mg/L
Free Ammonia*	mg/L
Lead**	mg/L

*Systems that use free chlorine as their disinfectant and have raw water free ammonia readings above 0.1 mg/l may lose disinfectant residuals or may be using excessive amounts of chlorine due to unintended formation of chloramines. When naturally occurring ammonia is present, the system may consider using chloramine as the disinfectant instead of chlorine. Free available ammonia (referred to as 'free ammonia') is a field test conducted by the Indophenol Method and is not to be confused with Total Ammonia, which also includes the portion that exists as ammonium (NH₄). There is no available accredited method for free ammonia and it is not listed as an "approved Drinking Water or approved Public Water System Lab" analyte on the agency's Drinking Water Lab Approval Form: <https://www.tceq.texas.gov/downloads/drinking-water/form-10450-drinking-water-lab-approval.pdf>. Therefore, please note the following requirements for analyzing raw water free ammonia:

- Required test accuracy is plus or minus 0.1 mg/L.
- Free ammonia must be analyzed in the field.
- Ammonia is measured as free available ammonia as nitrogen.
- Check the range of your kit. The most common one pegs out at 0.55 mg/L. Samples over that level should be diluted and reanalyzed.
- Follow all instructions provided by the field test kit manufacturer.

If you find raw water free ammonia readings above 0.1 mg/l in a well proposed as a source of water for a public water supply, please ensure your submittal addresses the type of disinfectant to be used. The most common methods to address naturally occurring ammonia are to breakpoint chlorinate or create chloramines as the disinfectant. For systems choosing to create chloramines, please be aware that you may need to install ammonia injection to have a reliable level of ammonia. If you would like to discuss any questions about this topic before finalizing and sending in your submittal, please send an email to PTRS@tceq.texas.gov and a staff member will assist you.

**Lead is regulated by the lead and copper rule. This analyte is to document the amount of lead in the source water. The level shall be less than 0.010 mg/L for approval to use.

List of Counties Where Radionuclide Testing is Required

Please be aware that we have added the requirement for analysis for radionuclides for high-risk counties. For elevated levels of any contaminants found in a test well, treatment or blending may be required. All systems located in a high-risk county (see page 4) shall submit radiological analysis reports for water samples showing the water to be of acceptable quality for the contaminants listed below. Reports must come from a TCEQ accredited laboratory for approval to use of the well.

Public Well Completion Data Checklist for Approval to Use (Step 2)

Table 4: Radionuclides with Maximum Contaminant Level (MCL)

CONTAMINANT	MCL
Gross alpha	15 pCi/L
Radium-226/228	5 pCi/L
Beta particle	50 pCi/L
Uranium	30 µg/L

WHERE: pCi/L = pico curies per liter, µg/L = micrograms per liter

Please be aware when you review your radiological data that if the report has gross alpha over 15 pCi/L and individual uranium isotopes are not reported, you will have to resample or reanalyze and resubmit radionuclide results. If you see gross alpha plus radium-228 over 5 pCi/L, and don't have radium-226, you will have to resample or reanalyze and resubmit complete results.

Table 5: List of Counties where Radionuclide Testing is required

COUNTY				
Atascosa	Bandera	Bexar	Bosque	Brazoria
Brewster	Burnet	Concho	Culberson	Dallam
Dawson	Erath	Fort Bend	Frio	Garza
Gillespie	Gray	Grayson	Harris	Hudspeth
Irion	Jeff Davis	Jim Wells	Kendall	Kent
Kerr	Kleberg	Liberty	Llano	Lubbock
McCulloch	Mason	Matagorda	Medina	Midland
Montgomery	Moore	Parker	Pecos	Polk
Presidio	Refugio	San Jacinto	San Saba	Tarrant
Travis	Tyler	Upton	Val Verde	Victoria
Walker	Washington	Wichita	Williamson	Zavala

CUWCD Aquifer Status Report
CUWCD 2023 Exempt Well Usage

Trinity Aquifer Status Report – August 2024

<u>DFC Analysis Over Time</u> (2000-Present) Modeled Available Groundwater			<u>HEUP and OP Permit Analysis</u> Relative to the Modeled Available Groundwater			<u>2024 YTD</u> <u>Total Prod.</u> Jan - Jul 950.01 ac-ft 18.59%		<u>Pending Applications</u>		<u>Exempt Well Reservations</u>		
Trinity Aquifer (by layer)	DFC Adopted * Average Drawdown (by layer)	MAG ** Ac-ft	HEUP Ac-ft (by layer)	OP Ac-ft (by layer)	Total Permitted Ac-ft (by layer)	2023 YTD Prod. (by layer)	2024 YTD Prod. (by layer)	Available for Permitting Ac-ft (by layer)	Pending Applications Ac-ft (by layer)	Exempt Well Reserve Ac-ft (by layer)	2023 Exempt Well Use Estimate Ac-ft (by layer)	Available Exempt Use Ac-ft (by layer)
		Current										
Pawluxy	NA	0	0	0	0	0	0	0	0			0
Glen Rose (upper)	-1.38 ft/yr -83 ft/60 yrs	275	61.9	72.73	134.63	35.94	3.37	0	0	140.37	190	0
Hensell (middle)	-2.28 ft/yr -137 ft/60 yrs	1100	259.3	208.44	467.74	44.70	19.96	84.26	0	548	534	14
Hasston (lower)	-5.50 ft/yr -330 ft/60 yrs	7900	1181.4	3324.99	4506.51	1860.31	926.68	3215.49	***569.60	178	60	118
Total		9275	1502.6	3606.16	5108.88	1940.95 (37.99%)	950.01 (18.59%)	3299.75	569.60	866.37	784	132

*Desired Future Conditions (DFC) is the description of how the aquifer should look in the future (60 years).

**The Modeled Available Groundwater (MAG) is the estimated amount of water available for permitting assigned to Clearwater UWCD by the Executive Administrator of TWDB.

***Pending applications

City of Temple N3-23-004P (239 ac-ft/yr)

UMHB N3-23-005P (64 ac-ft/yr)

Mustang Springs N3-23-010P & N3-23-011P (249.8 ac-ft/yr)

Lake Thomas RV Resort N3-24-002P (16.8 ac-ft/yr)



CUWCD Exempt Well Use Summary

As of: 2/12/2024

Aquifer	Total Active Registered Exempt Wells ¹	Registered Domestic Wells	Estimated Domestic Use Gallons/Day ^{1,2}	Estimated Domestic Use Ac-ft/Year ^{1,2}	Registered Stock Wells	Estimated Stock Use Gallons/Day ⁴	Estimated Stock Use Ac-ft/Year ⁴	Total Estimated Use Gallons/Day ⁷	Total Estimated Exempt Well Use Ac-ft/Year ⁷	MAG Reserved Exempt Well Use
Glen Rose (Upper Trinity)	428	350	102,398	115	78	87,392	75	189,788	190	
Hensell (Middle Trinity)	993	931	423,297	474	82	53,568	80	476,865	534	
Hosston (Lower Trinity)	162	151	44,177	49	11	9,504	11	53,681	60	
Trinity (Total) ⁶	1,583	1,432	569,870	638	151	130,464	146	700,334	784	1,410
Edwards BFZ	855	723	211,521	237	132	114,048	128	325,569	365	825
Edwards Equivalent	485	386	112,928	126	99	85,536	96	198,464	222	
Buda	28	15	4,388	5	13	11,232	13	15,620	17	
Lake Waco	8	3	878	1	5	4,320	6	5,198	6	
Austin Chalk	226	141	41,251	46	85	73,440	82	114,691	128	
Ozan	161	114	33,352	37	47	40,608	45	73,960	83	
Pecan Gap	67	44	12,873	14	23	19,872	22	32,745	37	
Kemp	15	11	3,218	4	4	3,456	4	6,674	7	
Alluvium	585	377	110,295	124	208	179,712	201	290,007	325	
Other ⁵	1,575	1,091	319,183	358	384	418,176	468	737,359	826	
CUWCD Total Active	4,013	3,248	1,100,574	1,233	767	662,688	742	1,763,262	1,975	

1. Domestic use estimate assumes 106 gallons/person per day (USGS estimate of domestic use outside of a municipal water system) and 2.76 persons/household (U.S. Census Bureau, Population Estimates Program (PEP) July 1, 2019)

2. Benjamin G. Wherley, Ph.D. Associate Professor- Turfgrass Science & Ecology Dept. of Soil and Crop Sciences Texas A&M University estimate of 2,000ft² warm season turfgrass requires 38,855gal/yr/lawn or 106gal/day/lawn; "Ranchette" Avg. lawn size is 13,042ft², 6.5X larger; 6.5 X 106gal/day/lawn= 689gal/day/lawn; ~217 "Ranchette" Middle Trinity Wells; 689 X 217=an additional 150,924gal/day/lawn; 490ac-ft/yr or an 89% increase in Middle Trinity exempt well use from the 2018 estimate of 258ac-ft/yr.

3. Exempt well use estimate factors out all plugged, capped, monitor and inactive wells in the database.

4. Source of stock water estimates is Texas Agrilife Extension @ 18 gallons water per day per cow. Livestock water use estimates are based on the 2017 Census of Agriculture, USDA National Agricultural Statistics Service. 36,868 cows / 771 stock wells= 48 cows/stock well; 48* 18gpd= 846 gal/day/stock well. 747ac-ft/yr or a 34% increase in annual stock use from the 2018 estimate of 556ac-ft/yr.

5. The "Other" designation is the total of minor aquifer and alluvium source designation of the exempt wells.

6. Trinity Aquifer wells registered with unknown depth are assigned to the Middle Trinity per Board decision.

7. All estimates of groundwater use by exempt well owners is based on assumptions and scientific data, but by no means are they to be interpreted as recommended practices by CUWCD.

Applicant's Cover Letter



INTERA Incorporated
9600 Great Hills Trail, Suite 300W
Austin, Texas 78759 USA
512.425.2000

July 22, 2024

Mr. Dirk Aaron
General Manager
Clearwater Underground Conservation District
700 Kennedy Court
Belton Texas 76513

Re: Application for Non-Exempt Well: Drilling Permit

Dear Mr. Aaron,

Jarrell Schwertner WSC [JSWSC] is applying to Clearwater Underground Water Conservation District [District] for a drilling permit for a non-exempt well. This well is to help supply JSWSC's growing needs for public supply in southern Bell County. INTERA has been retained by KPA engineers to help support this process, and provides this cover letter to partially meet the requirements of the application. The purpose is to discuss the proposed beneficial use of the groundwater, provide context with respect to District spacing and tract size requirements, and specifically define the need that motivates the application.

Beneficial Use. The proposed well is located in the northern portion of JSWSC's service area (Figure 1), and water from the well will service customers in JSWSC's north service corridor, exclusively in Bell County. Public water supply is the proposed beneficial use of the water.

Well Spacing and Minimum Tract Size Requirements. The proposed well location is in the District's Lower Trinity Eastern management zone. The proposed column pipe diameter is 8 inches. The well is located within the prescribed boundaries of JSWSC's retail water service area that is certified by the Public Utilities Commission of Texas, so is exempted from the minimum tract size requirements.

Figure 2 shows the nearest two existing Lower Trinity wells. The well to the north is recorded as a domestic well, drilled in 1935, with a reported status of "inactive". Discussions with District personnel indicate that the property owners where this well is located have not responded to multiple contact attempts from the District, in order to assess the condition of the well. Records indicate that the well was constructed with mild steel and is 90 years old, so the condition of the well is likely to be poor. This well is located about 1,100 feet from the proposed well location, which is less than the District-required 2,640 feet for a well with an 8-inch pump column.

JSWSC requested a "no objection" spacing waiver from the existing well owners via certified mail on July 11, but have received no response to date. JSWSC is requesting that the District provide a waiver from this spacing requirement, given the "inactive" well status and the likely condition of the existing well.

Demonstration of Need

Attached is an analysis by Sam Blumenthal, PE, of KPA Engineering, that provides a demonstration of need for the groundwater. The estimated need by year 2030, based on the number of connections in

the northern service area, is 577 acre-feet per year. This need is planned to be served by groundwater, with a small amount of blending of treated service water, as needed, to meet secondary drinking water standards.

Please don't hesitate to contact me 512-506-1230 with any questions you may have about this permit application.

Sincerely,



Neil Deeds, PhD, PE, PG
Principal Water Resources Engineer

CC: gm@jswatersupply.com
rkasberg@kpaengineers.com

Enclosure: N3_Application.pdf
KPA - Well Need 20240718.pdf

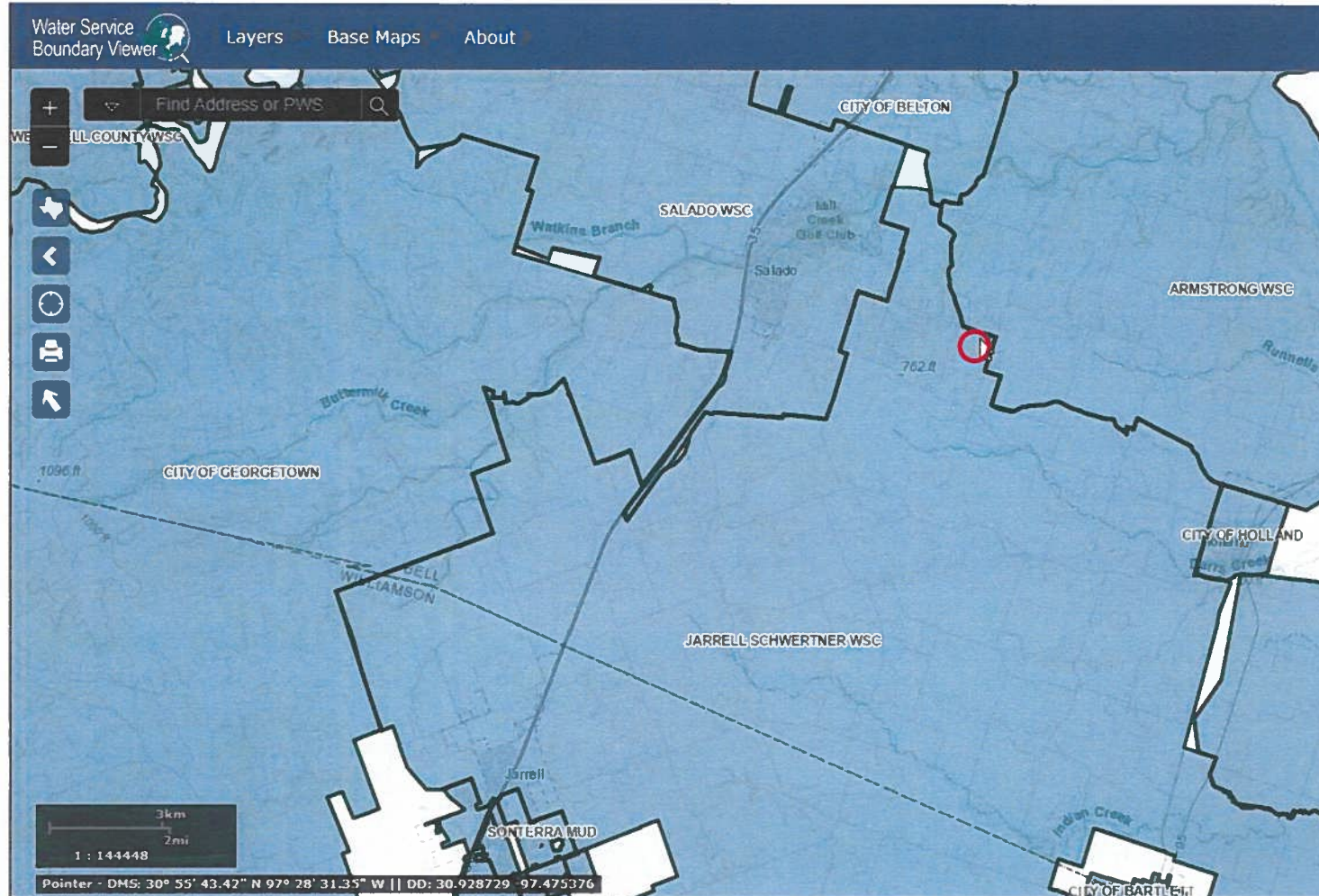


Figure 1. Proposed well location in the northern portion of the Jarrell Schwertner WSC service area. Water from the well will serve customers in Bell County.

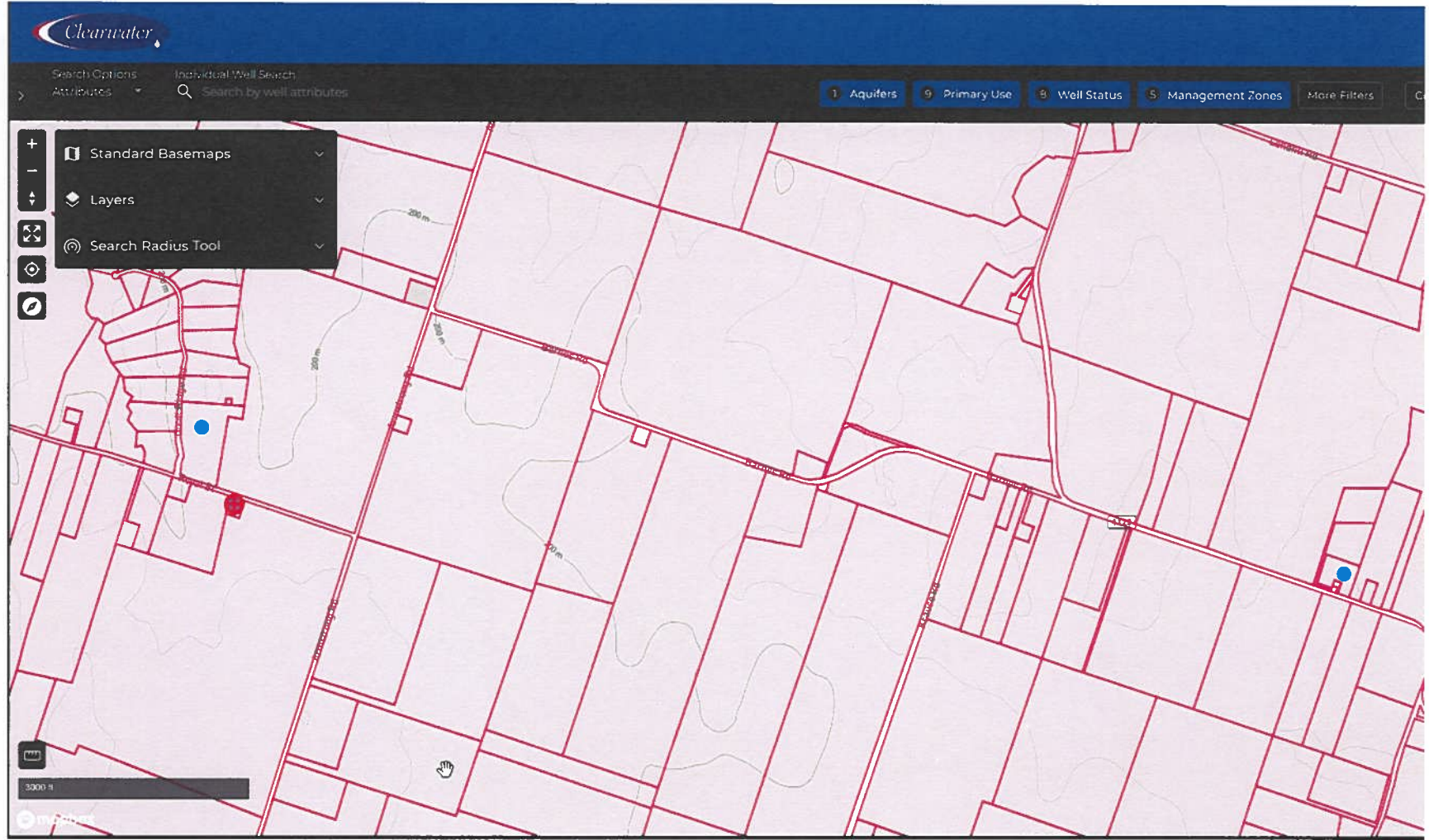


Figure 2. Proposed well location (red symbol) shown with nearest two Lower Trinity wells (blue symbols). The nearest well to the north (~1,100 feet) is recorded as an inactive domestic well. The well to the east is Armstrong WSC #2, and is over 14,000 feet away.

KPA Engineers
Trinity Well
Demonstration of Need



19 North Main Street • Temple, TX 76501 • (254) 773-3731
800 South Austin Ave • Georgetown, TX 78626 • (512) 819-9478

July 18, 2024

Joe Simmons
General Manager
Jarrell-Schwertner Water Supply Corporation

Subject: Re: Demonstration of Need for Royal Street Trinity Well

Mr. Simmons,

The Jarrell-Schwertner WSC (JSWSC) service area is experiencing significant development. From 2020 to 2023, JSWSC added approximately 1,200 connections and this observed growth is expected to continue. Signed Non-Standard Agreements with developers will add an additional 4,364 connections by 2035. The Corporation has an adopted Water Conversation Plan, a Drought Contingency Plan and regularly performs water loss audits. Despite JSWSC's stewardship, the increasing demand generated by development will require JSWSC to obtain new sources of supply.

The JSWSC distribution system is conceptually divided into several Service Corridors which each share common sources of supply, storage, and pressurization facilities. The proposed 940, 860, and 775 pressures planes form the proposed North Service Corridor which includes property along FM2268 between Salado and Holland. In the North Service Corridor, JSWSC is projected to serve approximately 1,233 connections by 2030 and 1,994 connections by 2035. Of the projected connections in 2035, 398 are already existing and approximately 1,200 are accounted for in Non-Standard Agreements with developers. The attached exhibit illustrates the boundaries of the North Service Corridor, existing customer connections and locations of proposed development. The following table describes the annual average and max day demand for 2030 and 2035.

North Service Corridor Projection Summary Table

	Projected Connections	Annual Average	Max Day (TCEQ)
2023	398	186 ac-ft/yr	239 gpm
2030	1,233	577 ac-ft/yr	740 gpm
2035	1,994	932 ac-ft/yr	1,196 gpm

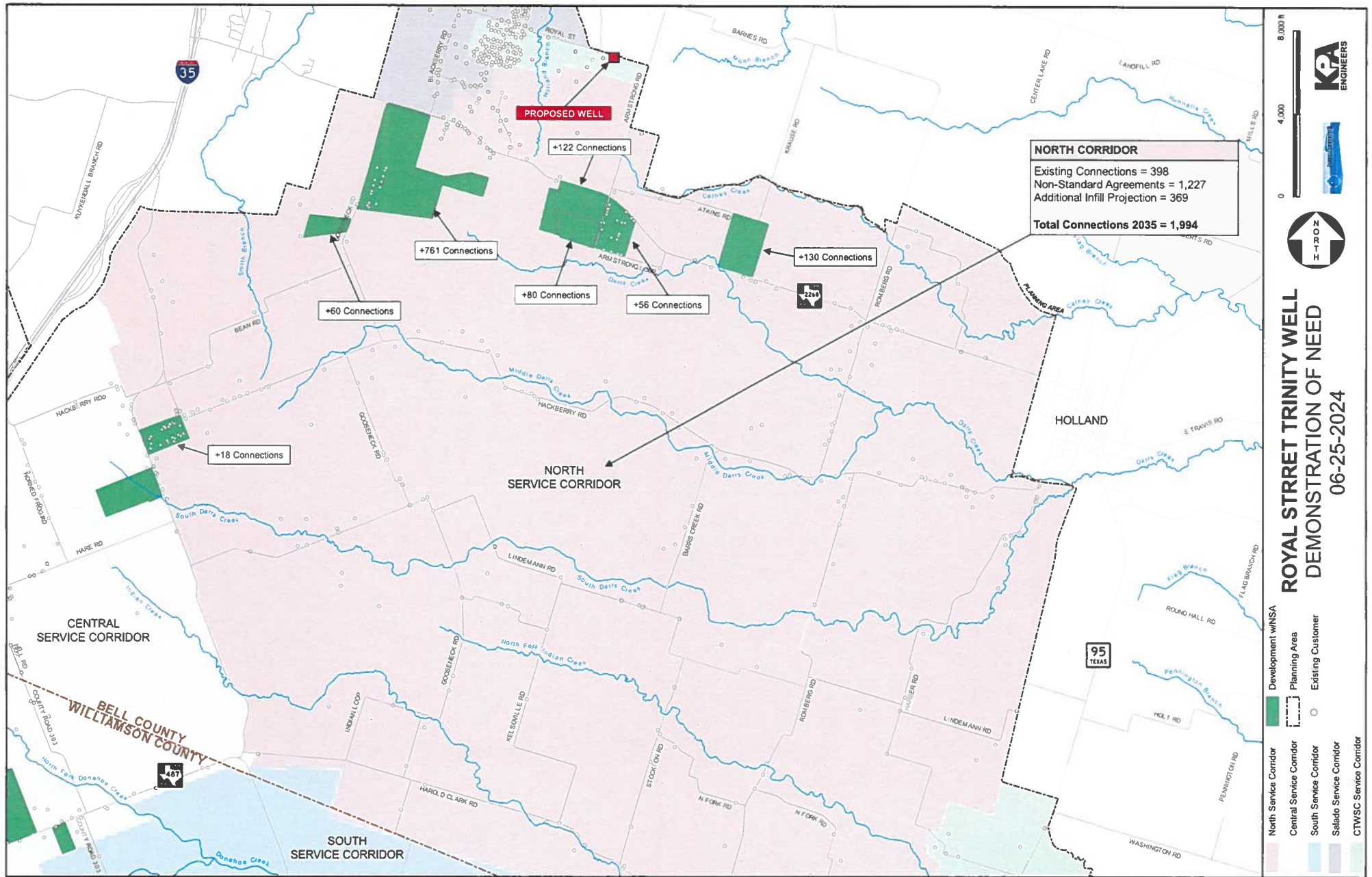
JSWSC plans to serve the growing population along FM2268 and meet secondary drinking water standards by blending groundwater from the proposed well with purchased surface water from Central Texas Water Supply Corporation (CTWSC). Groundwater is financially more feasible than the volumetric cost of purchased surface water and will simultaneously serve to diversify water supply in the Northern Corridor. In addition, the current rate of deliverable surface water from CTWSC is insufficient to meet projected demand and cannot increase substantially until significant treatment and conveyance improvements are completed by CTWSC.

If any additional information is needed, please contact Sam Blumenthal, P.E. (sblumenthal@kpaengineers.com).

Sincerely,

Samuel K. Blumenthal, P.E., C.F.M.

Attachments --- Exhibit: Royal Street Trinity Well – Demonstration of Need



Application

Application for Non-Exempt Well Classification 3

Check one of the following:

- ☐ COMBINATION PERMIT
☒ DRILLING PERMIT
☐ OPERATING PERMIT
☐ PERMIT AMENDMENT
☐ EXPLORATION PERMIT

Answer the following:

- Is this for a New Well? ☒ Yes ☐ No
 Is this for a Replacement Well? ☐ Yes ☐ No
 Do you plan to Export Water Outside District? ☐ Yes ☐ No
 Are you modifying a Drilling Permit? ☐ Yes ☐ No
 Are you modifying an Operating Permit? ☐ Yes ☐ No

1. Owner Information

Well Owner: Jarrell Schwertner WSC Email: gm@iswatersupply.com Telephone: 512-746-2114
 Address (Street/P.O. Box, City, State, ZIP): 2393 County Rd 311, Jarrell, TX 76537
 Contact Person (if other than owner): Joe Simmons Telephone: 512-746-2114
 If ownership of Well has changed, name the previous owner: _____ State Well #: _____

2. Property Location & Proposed Well Location

Owner of Property (if different from Well Owner): _____
 The well is located in Management Zone: Eastern
 Acreage: 1.0 Bell CAD Property ID #: 511491 Latitude: 30.9299196 Longitude: -097.47586

3. Well Description (Submit if State of Texas Well Report is Available)

a. Proposed use of well and estimated amount of water, in acre-feet, to be used for each purpose:

577 *Domestic; _____ Livestock/Poultry; _____ Agricultural/Irrigation;
577 ** Public Supply; _____ Industrial _____ Exploration Permit per Rule 6.1.2

*Total number of houses to be serviced by the well _____.

** Applicant is required to give notice to TCEQ to obtain or modify a Certificate of Convenience and Necessity to provide water or wastewater service with water obtained pursuant to the requested permit.

b. Estimated distance, in feet, from the nearest:

90 N / S Property Line; 83 E / W Property Line; >1000 Existing Septic Leach Field
>1,000 River, Stream, or Lake; 600 Existing Water Well; ~1,100 Livestock Enclosure;
none Other Source of Contamination (cemetery, pesticide mixing/loading, petroleum storage tank, etc.)

c. Estimated Rate of Withdrawal (GPM): 600

d. Is the Property subject to flooding? No

e. Is there another well on the property? No; If YES, how many wells? _____

f. Is the well part of a multi-well aggregate system? No

If YES, list the State or District Well Numbers: _____

REQUIRED BY LAW: Pump Installer / Well Driller Information

Name: To be determined by bid Street Address: _____
 TDLR Pump Installer License #: _____ City, State, ZIP: _____
 TDLR Well Driller License #: _____ Phone: _____ Fax: _____
 Email: _____

Name of Consultant preparing Application (if applicable): _____

Con. Phone: _____ Con. Fax: _____ Con. Email: _____

4. Completion Information

Provide the following information to the extent known and available at the time of application:

Proposed Total Depth of Well: 2,300 ft;

Borehole Diameter (Dia): 20 inches (in) from 0 to 2300;

Dia (2) _____ in from _____ to _____;

Casing Material: steel; Inside Diameter (ID): 13.25 in;

Screen Type: stainless steel; Screen Dia. 14" in from 1,900 to 2,300; # of Packers: 20

Pump Type: Submersible; **Power:** Electric; **Horsepower Rating:** 150;

Pump Depth: 450; **Column Pipe ID:** 8 in.

Date Completed: not completed

Proposed Water Bearing Formation: Lower Trinity; **Management Zone:** Eastern

5. Operating Permit

Number of contiguous acres owned or leased on which water is to be produced: 1.0 (within CCN) acres

Total annual production requested with this operating permit: 577 acre-feet

If exporting water, what is the annual volume requested for export out of the District: _____ Gallons

What is the annual volume requested for export as a % of total pumpage: _____ %

If modifying an operating permit, what is the current, permitted annual production: _____ ac-ft

What is the requested amount of annual production: _____ ac-ft

6. Attachments

Include a statement/documentation explaining your requested production.

If amending an existing permit, explain the requested amendment and the reason for the amendment in a signed and dated letter, attached to this application.

If requesting operating permits or permit renewals for multiple wells, please attach a separate sheet with the information requested in Section 5 for each well.

If applicant plans to export water outside the District, address the following in an attachment and provide documents relevant to these issues:

- The availability of water in the District and in the proposed receiving area during the period requested
- The projected effect of the proposed export on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the District
- How the proposed export is consistent with the approved regional water plan and certified District Management Plan

For more attachments that may be needed, please see the *Full Summary of the Permit Application Process* document.

7. Certification

I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief. I certify to abide by the terms of the District Rules, the District Management Plan, and orders of the Board of Directors. I agree to comply with all District well plugging and capping guidelines as stated in the District Rules.

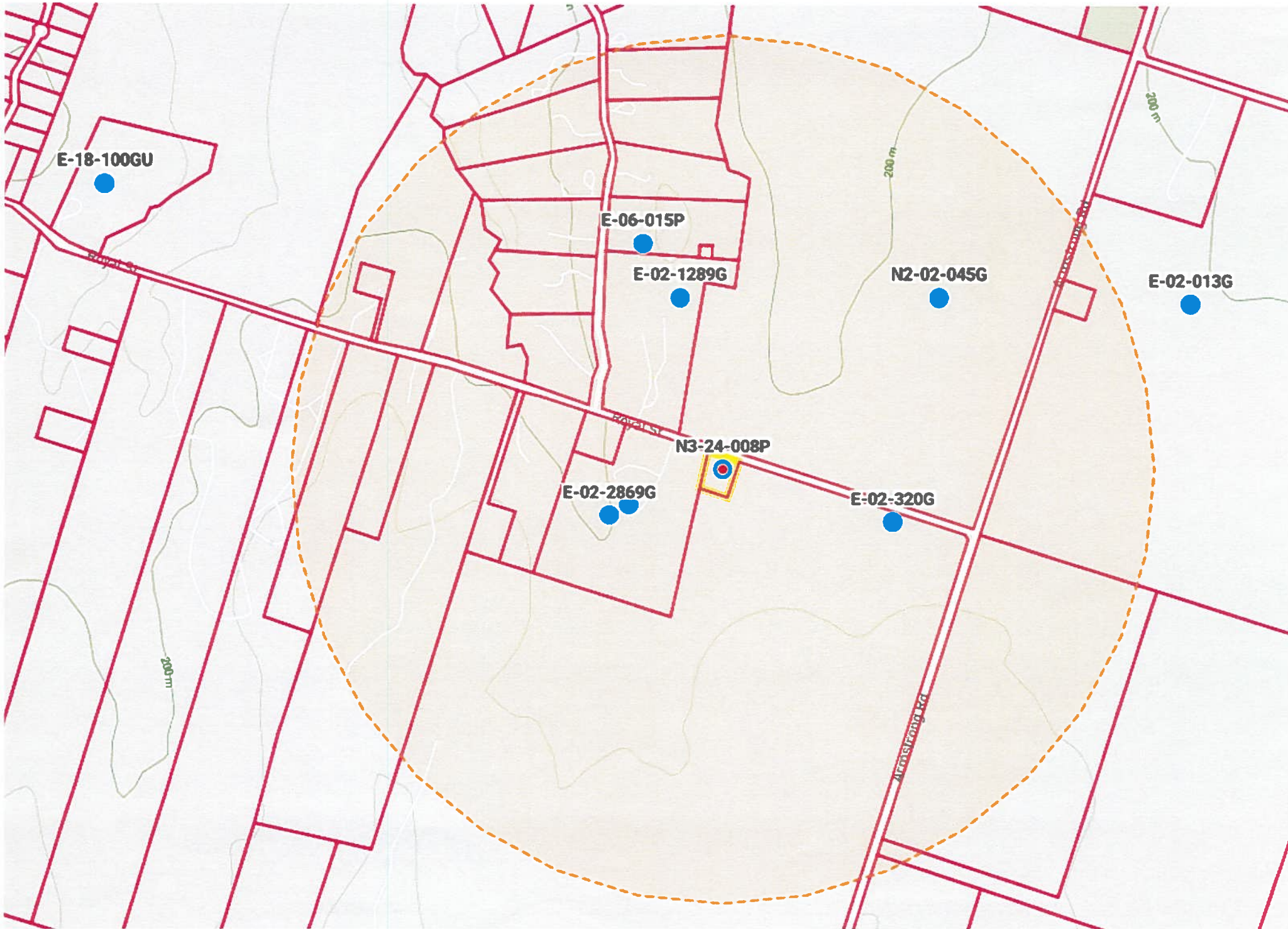
Typed Name of the Owner or Designee: Neil Deeds, designee

Signature: **Neil Deeds**

Digitally signed by Neil Deeds

Date: 2024.07.12 07:26:14 -05'00' Date: 7/12/24

Notification



N3-24-008P Contact List

Wells 1/2 Mile

<u>Prop ID</u>	<u>Name</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip</u>	<u>Well #</u>	<u>Status</u>	<u>Depth</u>	<u>Aquifer</u>	<u>Use</u>	<u>Distance</u>
459082	Chadwick Thomas	5581 Royal Street	Salado	TX	76571	E-02-320G	Active	unknown	unknown	Domestic	1092 ft
76822	Chadwick Thomas	5581 Royal Street	Salado	TX	76571	E-02-2869G	Active	unknown	unknown	Livestock/Poultry	749 ft
76822	Chadwick Thomas	5581 Royal Street	Salado	TX	76571	E-02-2870G	Active	unknown	unknown	Livestock/Poultry	610 ft
14740	Kristopher & Sa Cavanary	380 Quail Ridge Rd	Salado	TX	76571	E-02-1289G	Inactive	1827	Lower Trinity	Not Used	1382 ft
14740	Kristopher & Sa Cavanary	380 Quail Ridge Rd	Salado	TX	76571	E-06-015P	Active	720	Edwards BFZ	Domestic	1452 ft
64305	Pacesetter Investments LP	PO Box 1288	Temple	TX	76504	N2-02-045G	Active	1630	Middle Trinity	Livestock/Poultry	1680 ft

Adjacent Property

76822	Chadwick Thomas	5581 Royal Street	Salado	TX	76571
459082	Chadwick Thomas	5581 Royal Street	Salado	TX	76571
64305	Pacesetter Investments LP	PO Box 1288	Temple	TX	76504

Mailing List

Name	Address	City	State	Zip
Chadwick Thomas	5581 Royal Street	Salado	TX	76571
Kristopher & Sa Cavanary	380 Quail Ridge Rd	Salado	TX	76571
Pacesetter Investments LP	PO Box 1288	Temple	TX	76504
James & Karen Lane	2505 Pecan Dr	Temple	TX	76502
Reed & Janet Wood	2107 Mount Forest Dr	Kingwood	TX	77345
Heights Evergreen Developers Ltd	PO Box 1183	Killeen	TX	76540
Shirley Culver	4490 Royal St	Salado	TX	76571
Ernest Hollas	4365 Betty Place	Salado	TX	76571
Stanley Thomas	13898 Armstrong Rd	Salado	TX	76571

August 15, 2024

NOTICE OF APPLICATION FOR DRILLING PERMIT

Name
Address
City, TX Zip

**VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

RE: Application for N3 Drilling Permit

To Whom It May Concern:

Neil Deeds, INTERA, on behalf of Joe Simmons, Jarrell Schwertner Water Supply Corporation (JSWSC), has submitted an application, to Clearwater Underground Water Conservation District (CUWCD) on July 22, 2024, for a drilling permit to complete a new well (N3-24-008P) for a proposed future operating permit of 577 ac-ft/year or 188,016,027 gallons/year on a 1.0-acre tract (PID:511491) located in the northern portion of JSWSC's service area at 2393 CR 311, Jarrell TX 76537, Latitude 30.929919°/Longitude -97.475825°.

This permit, if approved, will only authorize the drilling and completion of the well in the Lower Trinity Aquifer (Hosston Layer) in the Eastern Management Zone with a maximum 8-inch column pipe and an estimated withdrawal rate of 600 gallons/minute. The proposed well will produce groundwater for a TCEQ-approved public water supply system, Certificate of Convenience and Necessity (CCN) #10002, to provide public water to customers in the JSWSC north service corridor, exclusively in Bell County. Upon completion of the well, a formal hydrogeologic report must be submitted to CUWCD to support a future operating permit. This drilling permit will not authorize any production of groundwater other than what is necessary for the prescribed aquifer pumping test.

This application will be set for hearing before the CUWCD Board upon notice posted at the Bell County Clerk's Office and at the CUWCD Office. If you would like to support, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 6.10. For additional information about this application or the permitting process, please contact the CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant's representative, Neil Deeds, may be contacted at 9600 Great Hills Trail, Suite 300W, Austin TX 78759, or by phone at 512-506-1230.

Sincerely,

Neil Deeds, PhD, PE, PG
Principal Water Resources Engineer

7016 0600 0000 1670 9885

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<input checked="" type="checkbox"/> Return Receipt (hardcopy)	\$0.00
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$0.73
Total Postage and Fees	\$9.68

Sent To
Chadwick Thomas
Street and Apt. No., or PO Box No.
5581 Royal Street
City, State, ZIP+4®
Salado, TX 76571 - 9323

Postmark Here
AUG 16 2024
08/16/2024

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$0.73
Total Postage and Fees	\$9.68

Sent To
Kristopher and Savannah
Street and Apt. No., or PO Box No.
380 Quail Ridge Road
City, State, ZIP+4®
Salado, TX 76571 - 5568

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<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$0.73
Total Postage and Fees	\$9.68

Sent To
Pacesetter Investments LP
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PO Box 1288
City, State, ZIP+4®
Temple, TX 76704 - 1288

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<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$0.73
Total Postage and Fees	\$9.68

Sent To
James and Karen Lane
Street and Apt. No., or PO Box No.
2505 Pecan Drive
City, State, ZIP+4®
Temple, TX 76702 - 2516

Postmark Here
AUG 16 2024
08/16/2024

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Kingwood, TX 77345

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<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$0.73
Total Postage and Fees	\$9.68

Sent To
Deed and Janet Wood
Street and Apt. No., or PO Box No.
2107 Mount Forest Dr.
City, State, ZIP+4®
Kingwood, TX 77345 - 1761

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AUG 16 2024
08/16/2024

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Sent To Shirley Culver Street and Apt. No., or PO Box No. 4490 Royal Street City, State, ZIP+4® Salado, TX 76571-9326 PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	

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Sent To Stanley Thomas Street and Apt. No., or PO Box No. 13898 Armstrong Road City, State, ZIP+4® Salado, TX 76571-1900 PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	

7016 0600 0000 1670 9960

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Sent To Ernest Hollas Street and Apt. No., or PO Box No. 4365 Betty Place City, State, ZIP+4® Salado, TX 76571-5404 PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	

**NOTICE OF APPLICATION FOR A DRILLING PERMIT FROM
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT**

Neil Deeds, INTERA, on behalf of Joe Simmons, Jarrell Schwertner Water Supply Corporation (JSWSC), has submitted an application, to Clearwater Underground Water Conservation District (CUWCD) on July 22, 2024, for a drilling permit to complete a new well (N3-24-008P) for a proposed future operating permit of 577 ac-ft/year or 188,016,027 gallons/year on a 1.0-acre tract (PID:511491) located in the northern portion of JSWSC's service area at 2393 CR 311, Jarrell TX 76537, Latitude 30.929919°/Longitude -97.475825°.

This permit, if approved, will only authorize the drilling and completion of the well in the Lower Trinity Aquifer (Hosston Layer) in the Eastern Management Zone with a maximum 8-inch column pipe and an estimated withdrawal rate of 600 gallons/minute. The proposed well will produce groundwater for a TCEQ-approved public water supply system, Certificate of Convenience and Necessity (CCN) #10002, to provide public water to customers in the JSWSC north service corridor, exclusively in Bell County. Upon completion of the well, a formal hydrogeologic report must be submitted to CUWCD to support a future operating permit. This drilling permit will not authorize any production of groundwater other than what is necessary for the prescribed aquifer pumping test.

This application will be set for hearing before the CUWCD Board upon notice posted at the Bell County Clerk's Office and at the CUWCD Office. If you would like to support, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 6.10. For additional information about this application or the permitting process, please contact the CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant's representative, Neil Deeds, may be contacted at 9600 Great Hills Trail, Suite 300W, Austin TX 78759, or by phone at 512-506-1230.

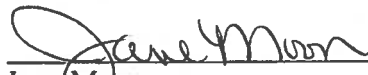
Publisher's Affidavit

State of Texas
County of Bell

Before Me, The Undersigned Authority, this day personally appeared Jane Moon after being by me duly sworn, says that she is the Classified Manager, Inside Sales of the Temple Daily Telegram, a newspaper published in Bell County, Texas and that the stated advertisement was published in said newspaper on the following date(s):


August 24, 2024

For: Neil Deeds, INTERA for
Joe Simmons, Jarrell Schwertrner Water Supply Corp.
Ad #: 16694216
Cost: \$165.00
Times Published: 1



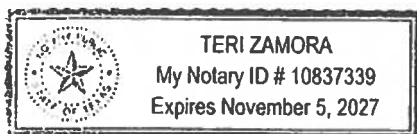
Jane Moon
Classified Manager Inside Sales

Subscribed and sworn to before me,
this day: August 28, 2024



Notary Public in and for
Bell County, Texas

(Seal)



NOTICE OF APPLICATION FOR A DRILLING PERMIT FROM CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

Neil Deeds, INTERA, on behalf of Joe Simmons, Jarrell Schwertrner Water Supply Corporation (JSWSC), has submitted an application, to Clearwater Underground Water Conservation District (CUWCD) on July 22, 2024, for a drilling permit to complete a new well (N3-24-008P) for a proposed future operating permit of 577 ac-ft/year or 188,016,827 gallons/year on a 1.9-acre tract (PID:511491) located in the northern portion of JSWSC's service area at 2393 CR 311, Jarrell TX 76537, Latitude 30.929919° Longitude -97.475825°.

This permit, if approved, will only authorize the drilling and completion of the well in the Lower Trinity Aquifer (Hasson Layer) in the Eastern Management Zone with a maximum 8-inch column pipe and an estimated withdrawal rate of 600 gallons/minute. The proposed well will produce groundwater for a TCEQ-approved public water supply system, Certificate of Convenience and Necessity (CCN) #10002, to provide public water to customers in the JSWSC north service corridor, exclusively in Bell County. Upon completion of the well, a formal hydrogeologic report must be submitted to CUWCD to support a future operating permit. This drilling permit will not authorize any production of groundwater other than what is necessary for the prescribed aquifer pumping test.

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TWDB
2023 Water Use Survey

Date/Time Survey Submitted: 4/15/2024 1:20:45 PM

**TEXAS WATER DEVELOPMENT BOARD
WATER USE SURVEY**

WATER USE IN CALENDAR YEAR: 2023

SYSTEM NAME: JARRELL SCHWERTNER WSC

OPERATOR NAME:

MULTIPLE SURVEY ORG:

MAILING ADDRESS 1: PO BOX 40

MAILING ADDRESS 2:

CITY/STATE/ZIP: JARRELL TX 76537-

PWS NAME: JARRELL SCHWERTNER WSC

SURVEY NUMBER: 0433500

PRIMARY USED COUNTY: WILLIAMSON

PRIMARY USED RIVER BASIN: BRAZOS

ORGANIZATION MAIN PHONE: 512-746-2114

MAIN EMAIL: gm@jswatersupply.com

WEB: www.jswatersupply.com

PWS CODE: 2460011

INTAKE:

Water Type		County	Basin	Aquifer	Well Name (if applicable)		Metered or Estimated	Brackish / Saline (Y or N)	% Treated Prior to Intake	Total Volume (gallons)	
GROUND WATER SELF SUPPLIED		BELL	BRAZOS	EDWARDS-BFZ AQUIFER			M	N	0.00	127,242,771	
JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
4,651,765	6,913,410	9,663,162	8,725,827	10,391,688	13,624,274	13,414,882	14,085,005	11,997,460	11,655,041	11,759,465	10,360,792
Water Type		County	Basin	Aquifer	Well Name (if applicable)		Metered or Estimated	Brackish / Saline (Y or N)	% Treated Prior to Intake	Total Volume (gallons)	
GROUND WATER SELF SUPPLIED		WILLIAMSON	BRAZOS	EDWARDS-BFZ AQUIFER			M	N	0.00	125,836,098	
JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
11,908,612	8,914,312	8,354,659	9,110,698	9,034,080	10,389,807	12,399,375	13,835,494	11,876,440	10,319,427	8,568,976	11,124,218
Water Type		County	Basin	Seller Name and/or Seller System		Aquifer	Metered or Estimated	Brackish / Saline (Y or N)	% Treated Prior to Intake	Total Volume (gallons)	
GROUND WATER PURCHASED				SALADO WSC			M	N	0.00	11,751,300	
JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
560,500	618,200	614,900	765,300	641,400	1,104,200	1,559,400	1,636,800	1,613,000	1,149,400	755,000	733,200
Water Type		County	Basin	Seller Name and/or Seller System		River / Reservoir	Metered or Estimated	Brackish / Saline (Y or N)	% Treated Prior to Intake	Total Volume (gallons)	
SURFACE WATER PURCHASED		BELL	BRAZOS	CENTRAL TEXAS WSC		STILLHOUSE HOLLOW LAKE/RESERVOIR	M	N	100.00	20,822,220	
JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1,207,789	1,253,730	1,494,338	1,325,376	1,602,779	2,271,760	2,938,858	2,574,178	1,870,589	1,646,308	1,307,276	1,329,239
Water Type		County	Basin	Seller Name and/or Seller System		River / Reservoir	Metered or Estimated	Brackish / Saline (Y or N)	% Treated Prior to Intake	Total Volume (gallons)	
SURFACE WATER PURCHASED		WILLIAMSON	BRAZOS	LONESTAR WATER AUTHORITY		BRAZOS RIVER AUTHORITY	E	N	100.00	58,163,204	
JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
2,962,407	3,840,000	3,840,000	3,966,419	3,582,653	4,919,902	5,546,570	6,994,614	6,896,574	5,535,652	4,945,867	5,132,546

COUNTY CONNECTIONS:

COUNTY NAME	TOTAL CONNECTIONS
BELL	0
WILLIAMSON	0

CONNECTIONS & USAGE:	CONNECTIONS	VOLUME (GALLONS)
TOTAL METERED RETAIL:	2,695	190,578,336
Residential - Single Family	2,288	133,472,036
Residential - Multi Family	10	2,617,300
Institutional	31	7,578,100
Commercial	91	15,498,800
Industrial	18	1,634,700
Agriculture	257	29,777,400
Reuse	0	0
TOTAL UNMETERED:	25	190,578,336

WATER SYSTEM INFORMATION:

Estimated full-time residential population served directly by this system	8,160
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TWDB
2023 Water Audit Report

TEXAS WATER DEVELOPMENT BOARD

P.O. BOX 13231, CAPITOL STATION

AUSTIN, TX 78711-3231

2023 WATER AUDIT REPORT

A. Water Utility General Information

1. Water Utility Name	<u>JARRELL SCHWERTNER WSC</u>		
1a. Regional Water Planning Area	<u>G</u>		
1b. Address	<u>PO BOX 40</u>		
	<u>JARRELL, TX 76537-0040</u>		
2. Contact Information			
2a. Name	<u>Joe Simmons</u>	Have you completed Water Loss Auditor Training?	
2b. Telephone Number	<u>(903) 391-2730</u>	<input checked="" type="radio"/> Yes	
2c. Email Address	<u>gm@jswatersupply.com</u>	<input type="radio"/> No	
3. Reporting Period			
3a. Start Date	<u>01/01/2023</u>		
3b. End Date	<u>12/31/2023</u>		

4. Source Water Utilization

4a. Surface Water	<u>26.60</u>	%
4b. Ground Water	<u>73.40</u>	%

5. Population Served

5a. Retail Population Served	<u>8,160</u>	Assessment Scale
5b. Wholesale Population Served	<u>0</u>	

6. Utility's Length of Main Lines	<u>250.00</u>	miles	<u>3</u>
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7. Total Retail Metered Connections - Active and Inactive

7b. Service Connections	<u>2,695</u>	<u>5</u>
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8. Number of Wholesale Connections Served

9. Service Connection Density	<u>10.78</u>	connections per mile
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10. Average Yearly System Operating Pressure	<u>65.00</u>	psi	<u>3</u>
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11. Volume Units of Measure

	<u>Gallons</u>
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B. System Input Volume

12. Volume of Water Intake	<u>264,830,169</u>	gallons	
13. Produced Water	<u>253,078,869</u>	gallons	<u>4.5</u>
13a. Production Meter Accuracy	<u>100.00</u>	%	<u>4.5</u>
13b. Corrected Input Volume	<u>253,078,869</u>	gallons	
14. Total Treated Purchased Water	<u>78,985,424</u>	gallons	<u>4.5</u>
14a. Treated Purchased Water Meter Accuracy	<u>100.00</u>	%	<u>4.5</u>

TEXAS WATER DEVELOPMENT BOARD

P.O. BOX 13231, CAPITOL STATION

AUSTIN, TX 78711-3231

2023 WATER AUDIT REPORT

14b. Corrected Treated Purchased Water Volume	78,985,424	gallons	
15. Total Treated Wholesale Water Sales	0	gallons	4.5
15a. Treated Wholesale Water Meter Accuracy	100.00	%	4.5
15b. Corrected Treated Wholesale Water Sales Volume	0	gallons	
16. Total System Input Volume Line 13b + Line 14b - Line 15b	332,064,293	gallons	
C. Authorized Consumption			Assessment Scale
17. Billed Metered	190,578,336	gallons	4.5
18. Billed Unmetered	0	gallons	4.5
19. Unbilled Metered	0	gallons	4.5
20. Unbilled Unmetered	476,446	gallons	4.5
21. Total Authorized Consumption	191,054,782	gallons	
D. Water Losses			
22. Water Losses Line 16 - Line 21	141,009,511	gallons	
E. Apparent Losses			
23. Average Customer Meter Accuracy	98.00	%	3
24. Customer Meter Accuracy Loss	3,889,354	gallons	
25. Systematic Data Handling Discrepancy	476,446	gallons	4
26. Unauthorized Consumption	476,446	gallons	2
27. Total Apparent Losses	4,842,246	gallons	
F. Real Losses			
28. Reported Breaks and Leaks	84,873,536	gallons	2
29. Unreported Loss	51,293,729	gallons	3
30. Total Real Losses Line 28 + Line 29	136,167,265	gallons	
31. Total Water Losses Line 27 + Line 30	141,009,511	gallons	
32. Non-Revenue Water Line 31 + Line 19 + Line 20	141,485,957	gallons	
G. Technical Performance Indicator for Apparent Loss			
33. Apparent Losses Normalized Line 27 / Line 7b / 365	4.92	gallons lost per connection per day	

TEXAS WATER DEVELOPMENT BOARD

P.O. BOX 13231, CAPITOL STATION

AUSTIN, TX 78711-3231

2023 WATER AUDIT REPORT

H. Technical Performance Indicators for Real Loss

34. Real Loss Volume	<u>136,167,265</u>	gallons
Line 30		
35. Unavoidable Annual Real Losses Volume	<u>0</u>	gallons
(5.41 * Line 6 + (Line 7b * 0.15)) * 365 * Line 10		
36. Infrastructure Leakage Index	<u>0.00</u>	I.L.I
Line 34 / Line 35		
37. Real Losses Normalized - Service Connections	<u>138.43</u>	gallons lost per connection per day
Line 34 / Line 7b / 365		
38. Real Losses Normalized - Main Lines	<u>1492.24</u>	gallons lost per mile per day
Line 34 / Line 6 / 365		

I. Financial Performance Indicators

			Assessment Scale
39. Total Apparent Losses	<u>4,842,246</u>	gallons	
Line 27			
40. Retail Price of Water	<u>0.00310</u>	\$/gallons	<u>5</u>
41. Cost of Apparent Losses	<u>\$15,011</u>		
Line 39 x Line 40			
42. Total Real Losses	<u>136,167,265</u>	gallons	
Line 30			
43. Variable Production Cost of Water	<u>0.001500</u>	\$/gallons	<u>3.5</u>
44. Cost of Real Losses	<u>\$204,251</u>		
Line 42 x Line 43			
45. Total Cost Impact of Apparent and Real Losses	<u>\$219,262</u>		
Line 41 + Line 44			
46. Total Assessment Score	<u>78.5</u>		

J. System Losses and Gallons Per Capita per Day (GPCD)

47. Total Water Loss per Connection per Day	<u>143.35</u>	gallons
Line 22 / Line 7b / 365	<u>111</u>	
48. GPCD Input		
Line 16 / Line 5a / 365	<u>47</u>	
49. GPCD Loss		
Line 31 / Line 5a / 365		

K. Wholesale Factor Adjustments

50. Percent of Treated Wholesale Water Traveling through General Distribution System	<u>0.00</u>	%
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TEXAS WATER DEVELOPMENT BOARD

P.O. BOX 13231, CAPITOL STATION

AUSTIN, TX 78711-3231

2023 WATER AUDIT REPORT

51. Volume of Treated Wholesale Water Traveling through General Distribution System (Line 50/100) * Line 15b	<u>0</u>	gallons
52. Wholesale Factor Line 15b / (Line 13b + Line 14b)	<u>0.00</u>	
53. Adjusted Real Loss Volume ((1 - Line 52) x (Line 30 * Line 50 / 100)) + (Line 30 - (Line 30 * Line 50/100))	<u>136,167,265</u>	gallons
54. Adjusted Cost of Real Losses ((1 - Line 52) x (Line 44 * Line 50 / 100)) + (Line 44 - (Line 44 * Line 50/100))	<u>\$204,251</u>	
55. Adjusted Total Water Loss Volume ((1 - Line 52) x (Line 31 * Line 50 / 100)) + (Line 31 - (Line 31 * Line 50/100))	<u>141,009,511</u>	gallons
56. Adjusted Total Cost Impact of Apparent and Real Losses ((1 - Line 52) x (Line 45 * Line 50 / 100)) + (Line 45 - (Line 45 * Line 50/100))	<u>\$219,262</u>	
57. Adjusted Real Loss Per Connection ((1 - Line 52) x (Line 37 * Line 50 / 100)) + (Line 37 - (Line 37 * Line 50/100))	<u>138.43</u>	gallons lost per connection per day
58. Adjusted Real Loss Per Mile ((1 - Line 52) x (Line 38 * Line 50 / 100)) + (Line 38 - (Line 38 * Line 50/100))	<u>1492.24</u>	gallons lost per mile per day
59. Adjusted Infrastructure Leakage Index ((1 - Line 52) x (Line 36 * Line 50 / 100)) + (Line 36 - (Line 36 * Line 50/100))	<u>0.00</u>	I.L.I
60. Adjusted Total Water Loss Per Connection Per Day (((1 - Line 52) x (Line 37 * Line 50 / 100)) + (Line 37 - (Line 37 * Line 50/100))) + Line 33	<u>143.35</u>	gallons
61. Adjusted GPCD Loss ((1 - Line 52) x (Line 49 * Line 50 / 100)) + (Line 49 - (Line 49 * Line 50/100))	<u>47</u>	

Comments

JSWSC
Water Conservation Plan

Jarrell-Schwertner Water Supply Corporation

Texas Water Development Board

Rural Water Assistance Fund Application

Water Conservation Plan

Evaluation:

The Jarrell-Schwertner Water Supply Corporation was founded in 1969 as a non-profit rural water supply. It initially served only the City of Jarrell but was expanded to serve the needs of customers as far East as Bartlett and as far North as Salado. Much of JSWSC's 209 miles of distribution lines run across pasture land and through sparsely populated areas. There are currently 1367 active connections serving the rural communities of both Bell and Williamson County. JSWSC operates 6 wells, 6 ground storage tanks, and 5 pump houses to distribute 11 million gallons of water in an average month.

Customer Use Characteristics

Water use in the Western portion of the CCN is largely residential with the City of Jarrell comprising almost one half of the systems sales. Industrial / Commercial use in this area is currently limited to Jarrell ISD and truck stops along I-35. Water consumption in the Eastern portion of the CCN is a mixture of residential and agricultural use. The largest single customer for JSWSC with 38 taps is Schwertner Farms, a large-scale cattle feed lot and ranching enterprise. Additional cattle ranches, smaller scale hog farms, and crop farms are also located in this general area. The Northern portion of the CCN is comprised largely of more expensive homes on large landscaped lots.

Opportunities:

Due to the age of the system, the single greatest opportunity to reduce water loss appears to be in replacing older customer meters with new ones. Additionally, because the system is spread across large expanses of farm and ranch land, installing and monitoring leak isolation meters will help narrow down the area in which to search for leaks. JSWSC crew members have taken a proactive approach to reducing water loss by reporting large and small leaks they detect during meter reading and by making line repair a high priority.

Goals:

The overall goal for the field crew has been to reduce unaccounted for (and accounted for) water loss to the lowest levels possible. Methods to accomplish this include replacing all meters every 5 to 10 years and decreasing the average number of days to repair leaks. The current goal for unaccounted for water loss is 20% or lower. The current goal for number of days to repair a leak is 10 or fewer working days.

Long Term Plan

Reduce water loss to less than 10% through any and all methods available.

System Upgrades

- New Water Lines
- Replace Aged Standpipes

Technology

- Meter Replacement
- Isolation Meters
- Leak detection service (Samco)
- Use, Loss, Trend tracking software (Aquistat)
- Three pressure reducing valves

Education

- Mailouts on an annual basis with Conservation Tips
- School Classroom demonstration and discussion
- Reminders on water bills during high use months
- Conservation information to new customers
- Honor Local Science Fair Participants who focus on water issues

Attitude

- Lead by example – Repair our leaks fast
- Proactive approach - Look for leaks during meter reading

Water Company Efforts:

As part of this loan request, extensive line replacement and upgrade will by nature decrease leaks because old leak prone lines will be discarded. In addition, the two aged standpipes due for replacement have been the cause of extensive water loss and low pressure problems in past years.

All meters for route 2 were replaced in 2002 and 2003. The water saving effect is demonstrated on the attached graph. JSWSC has replaced in excess of 150 meters in the past 6 months with Radio Frequency (RF) meters. These more expensive meters should serve a two-fold purpose. One, they should be more accurate than the older meters thereby reducing water loss and secondly, save man power hours by allowing for a reading from the road. The Long Term objective is to replace all meters on a 5 to 10 year cycle with RF meters.

JSWSC has purchased 6 isolation meters for installation in strategic locations. Once installed, these meters will be read monthly and the flow compared to water billed to customers in that area. If a large discrepancy exists then an earnest search begins for leaks in that section of water line.

Samco Leak Detection service was hired in June of 2004 to evaluate the infrastructure within the City of Jarrell. Ten leaks were found and have been repaired.

The Aquistat software program was purchased in 2003 to track accounted for and unaccounted for water loss and show use and revenue trends.

There are currently 3 pressure reducing stations in the JSWSC system to control excess water pressure in the lines.

On an annual basis, JSWSC office personnel will begin including Conservation Tips in the Stock Holders Meeting packet and / or in the annual Consumer Confidence Report. Additionally, conservation information will be included with all new service applications and reminders to conserve will be added to water bills during high use months.

Office Personnel will work with Field Personnel to develop an interactive, fun and informative demonstration for elementary age children on water distribution and conservation.

The JSW crew members will continue their proactive approach to leak detection and water line repair. They succeeded in reducing the number of days to repair a leak but continue to work that number down from 30 days to 14 days on average.

The current and proposed water rate structures are designed to discourage high water use. As the use increases, the cost per thousand gallons increases noticeably.

Approved 12-8-04


Lloyd Fischer, President

JSWSC
Drought Contingency Plan

SECTION H

DROUGHT CONTINGENCY

AND

EMERGENCY WATER DEMAND MANAGEMENT PLAN

Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the Jarrell-Schwertner Water Supply Corporation hereby adopts the following regulations and restrictions on the delivery and consumption of water.

Water uses regulated or prohibited under this Drought Contingency Plan (the Plan) are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply condition are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section XI of this Plan.

Section II: Public Involvement

Opportunity for the public to provide input into the original preparation of the Plan was provided by the Jarrell-Schwertner Water Supply Corporation by means of scheduling and providing public notice of a public meeting to accept input on the Plan. Notice of the meeting was provided to all customers. In the adoption of this plan the Board considered all comments from customers.

Section III: Public Education

The Jarrell-Schwertner Water Supply Corporation will periodically provide the public with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of utility bill messages for Stages 1 and 2 notification, and press releases and/or special mailings for all other stages. All Stages will be posted to the Corporation's website.

Section IV: Coordination with Regional Water Planning Groups

The service area of the Jarrell-Schwertner Water Supply Corporation is located within the Brazos G Regional Water Planning Group and Clearwater Underground Water Conservation District boundaries. Jarrell-Schwertner Water Supply Corporation has provided a copy of this Plan to the Brazos G Regional Water Planning Group and Clearwater Underground Water Conservation District.

Section V: Authorization

The general manager or his/her designee is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The general manager or his/her designee shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

Section VI: Application

The provisions of this Plan shall apply to all persons, customers, and property utilizing water provided by the Jarrell-Schwertner Water Supply Corporation. The terms “person” and “customer” as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

Section VII: Definitions

For the purposes of this Plan, the following definitions shall apply:

Aesthetic water use: water use for ornamental or decorative purposes such as fountains, reflecting pools, and water gardens.

Commercial and institutional water use: water use, which is integral to the operations of commercial and non-profit establishments and governmental entities such as retail establishments, hotels and motels, restaurants, and office buildings.

Conservation: those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water or increase the recycling and reuse of water so that a supply is conserved and made available for future or alternative uses.

Customer: any person, company, or organization using water supplied by Jarrell-Schwertner Water Supply Corporation.

Domestic water use: water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

Even number address: street addresses, box numbers, or rural postal route numbers ending in 0, 2, 4, 6, or 8 and locations without addresses.

Industrial water use: the use of water in processes designed to convert materials of lower value into forms having greater usability and value.

Landscape irrigation use: water used for the irrigation and maintenance of landscaped areas whether publicly or privately owned including residential and commercial lawns, gardens, golf courses, parks, rights-of-way and medians.

Non-essential water use: water uses that are not essential, nor required for the protection of public, health, safety, and welfare, including:

- (a) Irrigation of landscape areas, including parks, lawns, gardens, athletic fields, and golf courses, except otherwise provided under this Plan;
- (b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;
- (c) Use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
- 4) Use of water to wash down buildings or structures for purposes other than immediate fire protection;
- 5) Flushing gutters or permitting water to run or accumulate in any gutter or street;
- 6) Use of water to fill, refill, or add to any indoor or outdoor swimming pools or Jacuzzi-type pools;
- 7) Use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life;
- 8) Failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s); and
- 9) Use of water from hydrants for construction purposes or any other purposes other than fire fighting.

Odd numbered address: street addresses, box numbers, or rural postal route numbers ending in 1, 3, 5, 7, or 9.

Section VIII: Criteria for Initiation and Termination of Drought Response Stages

The general manager or his/her designee shall monitor water supply and/or demand conditions on a monthly basis and shall determine when conditions warrant initiation or termination of each stage of the Plan, that is, when the specified “triggers” are reached.

The triggering criteria described below are based on known system capacity limits and weather patterns for this area.

Stage 1 Trigger -- MILD Water Shortage Conditions

Requirements for initiation

Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses, defined in Section VII – Definitions, annually beginning June 1 through September 30 if no significant rain for 3 weeks.

Requirements for termination

Stage 1 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 5 consecutive days.

Stage 2 Triggers -- MODERATE Water Shortage Conditions

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses provided in Section IX of this Plan when continually falling treated water reservoir levels which do not refill above 90 percent overnight for any of the storage systems.

Requirements for termination

Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 5 consecutive days. Upon termination of Stage 2, Stage 1 becomes operative.

Stage 3 Triggers -- SEVERE Water Shortage Conditions

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses for Stage 3 of this Plan when continually falling treated water reservoir levels which do not refill above 80 percent overnight for any of the storage systems.

Requirements for termination

Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 5 consecutive days. Upon termination of Stage 3, Stage 2 becomes operative.

Stage 4 Triggers -- CRITICAL Water Shortage Conditions

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses for Stage 4 of this Plan when continually falling treated water reservoir levels which do not refill above 70 percent overnight for any of the storage systems.

Requirements for termination

Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 3 consecutive days. Upon termination of Stage 4, Stage 3 becomes operative.

Stage 5 Triggers -- EMERGENCY Water Shortage Conditions

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions for Stage 5 of this Plan when General Manager, or his/her designee, determines that a water supply emergency exists based on:

1. Major water line breaks, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; **or**
2. Natural or man-made contamination of the water supply source(s).

Requirements for termination

Stage 5 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 2 consecutive days or when testing shows the problem has been corrected.

Stage 6 Triggers -- WATER ALLOCATION

Requirements for initiation

Customers shall be required to comply with the water allocation plan prescribed in Section IX of this Plan and comply with the requirements and restrictions for Stage 5 of this Plan when continually falling treated water reservoir levels which do not refill above 50 percent overnight in any of the systems.

Requirements for termination - Water allocation may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 5 consecutive days.

Section IX: Drought Response Stages

The general manager, or his/her designee, shall monitor water supply and/or demand conditions on a daily basis and, in accordance with the triggering criteria set forth in Section VIII of this Plan, shall determine that a mild, moderate, severe, critical, emergency or water shortage condition exists and shall implement the following notification procedures:

Notification

Notification of the Public:

The general manager or his/ here designee shall notify the public by means of:

Messages on billings statements, public service announcements on local television stations, and the Corporation's website.

Additional Notification:

The general manager or his/ her designee shall notify directly, or cause to be notified directly, the following individuals and entities:

Stage 1 - Mayor and City Council of Jarrell and Jarrell Volunteer Fire Department

Stage 2 – In addition to above, Bell and Williamson County Emergency Management Coordinator(s), County Commissioners, Bell and Williamson County Sheriff Departments, State Disaster District / Department of Public Safety, park and public facility managers, and TCEQ.

Stage 3 – All of the above and any major or critical water users.

Stage 4 & 5 All of the above.

Stage 1 Response -- MILD Water Shortage Conditions

Goal: Achieve a voluntary 5 percent reduction in daily water demand.

Supply Management Measures:

Reduced or discontinued flushing of water lines.

Voluntary Water Use Restrictions:

- (a) Water customers are requested to voluntarily limit the irrigation of landscaped areas to Sundays and Thursdays for customers with a street address ending in an even number (0, 2, 4, 6 or 8), and Saturdays and Wednesdays for water customers with a street address ending in an odd number (1, 3, 5, 7 or 9), and to irrigate landscapes only between the hours of midnight and 10:00 a.m. and 8:00 p.m. to midnight on designated watering days.
- (b) All operations of the Jarrell-Schwertner Water Supply Corporation shall adhere to water use restrictions prescribed for Stage 2 of the Plan.
- (c) Water customers are requested to practice water conservation and to minimize or discontinue water use for non-essential purposes.

Stage 2 Responses -- MODERATE Water Shortage Conditions

Goal: Achieve a 10 percent reduction in daily water demand.

Supply Management Measures:

Discontinued flushing of water mains and reduced or discontinued irrigation of public landscaped areas.

Water Use Restrictions: Under threat of penalty for violation, the following water use restrictions shall apply to all persons:

- 1) Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to Sundays and Thursdays for customers with a street address ending in an even number (0, 2, 4, 6 or 8), and Saturdays and Wednesdays for water customers with a street address ending in an odd number (1, 3, 5, 7 or 9), and irrigation of landscaped areas is further limited to the hours of 12:00 midnight until 10:00 a.m. and between 8:00 p.m. and 12:00 midnight on designated watering days. However, irrigation of landscaped areas is permitted at anytime if it is by means of a hand-held hose, a faucet filled bucket or watering can of five (5) gallons or less, or drip irrigation system.
- 2) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except on designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8:00 p.m. and 12:00 midnight. Such washing, when allowed, shall be done with a hand-held bucket or a hand-held hose equipped with a positive shutoff nozzle for quick rises. Vehicle washing may be done at any time on the immediate premises of a commercial car wash or commercial service station. Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public is contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables.
- 3) Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or Jacuzzi-type pools is prohibited except on designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight.
- 4) Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a recirculation system.
- 5) Use of water from hydrants shall be limited to fire fighting, related activities, or other activities necessary to maintain public health, safety, and welfare, except that

use of water from designated fire hydrants for construction purposes may be allowed under special permit from the Jarrell-Schwertner Water Supply Corporation.

- 6) Use of water for the irrigation of golf course greens, tees, and fairways is prohibited except on designated watering days between the hours 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight. However, if the golf course utilizes a water source other than that provided by the Jarrell-Schwertner Water Supply Corporation, the facility shall not be subject to these regulations.
- 7) All restaurants are prohibited from serving water to patrons except upon request of the patron.
- 8) The following uses of water are defined as non-essential and are prohibited:
 - 1) Wash down of any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
 - 2) Use of water to wash down buildings or structures for purposes other than immediate fire protection;
 - 3) Use of water for dust control;
 - 4) Flushing gutters or permitting water to run or accumulate in any gutter or street; and
 - 5) Failure to repair a controllable leak within a reasonable period of time after notice has been given.

Stage 3 Responses -- SEVERE Water Shortage Conditions

Goal: Achieve a 15 percent reduction in daily water demand

Supply Management Measures:

Discontinued flushing of water mains, and discontinued irrigation of public landscaped areas.

Water Use Restrictions All requirements of Stage 2 shall remain in effect during Stage 3 except:

- 1) Irrigation of landscaped areas shall be limited to designate watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight and shall be by means of hand-held hoses, hand-held buckets, drip irrigation, or permanently installed automatic sprinkler system only. The use of hose-end sprinklers is prohibited at all times.

- 2) The watering of golf course tees is prohibited unless the golf course utilizes a water source other than that provided by the Jarrell-Schwertner Water Supply Corporation.
- 3) The use of water for construction purposes from designated fire hydrants under special permit is to be discontinued.

Stage 4 Responses -- CRITICAL Water Shortage Conditions

Goal: Achieve a 20 percent reduction in daily water demand.

Supply Management Measures:

Discontinued flushing of water mains, and discontinued irrigation of public landscaped areas.

Water Use Restrictions All requirements of Stage 2 and 3 shall remain in effect during Stage 4 except:

- 1) Irrigation of landscaped areas shall be limited to designated watering days between the hours of 6:00 a.m. and 10:00 a.m. and between 8:00 p.m. and 12:00 midnight and shall be by means of hand-held hoses, hand-held buckets, or drip irrigation only. The use of hose-end sprinklers or permanently installed automatic sprinkler systems are prohibited at all times.
- 2) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle not occurring on the premises of a commercial car wash and commercial service stations and not in the immediate interest of public health, safety, and welfare is prohibited. Further, such vehicle washing at commercial car washes and commercial service stations shall occur only between the hours of 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10 p.m.
- 3) The filling, refilling, or adding of water to swimming pools, wading pools, and Jacuzzi-type pools is prohibited.
- 4) Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a recirculation system.
- 5) No application for new, additional, expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or water service facilities of any kind shall be approved, and time limits for approval of such applications are hereby suspended for such time as this drought response stage or a higher-numbered stage shall be in effect.

Stage 5 Response -- EMERGENCY Water Shortage Conditions

Goal: Achieve a 25 percent reduction in daily water demand.

Supply Management Measures:

Discontinued flushing of water mains, and discontinued irrigation of public landscaped areas.

Water Use Restrictions All requirements of Stage 2, 3, and 4 shall remain in effect during Stage 5 except:

- 1) Irrigation of landscaped areas is absolutely prohibited.
- 2) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is absolutely prohibited.

Stage 6 Responses -- WATER ALLOCATION

In the event that water shortage conditions threaten public health, safety, and welfare, the General Manager is hereby authorized to allocate water according to the following water allocation plan:

Single-Family Residential Customers

The allocation to residential water customers residing in a single-family dwelling shall be as follows:

Persons per Household	Gallons per Month
1 or 2	3,000
3 or 4	6,000
5 or 6	9,000
7 or 8	12,000
9 or 10	15,000
11 or more	50 gallons per day per person

“Household” means the residential premises served by the customer’s meter. “Persons per household” includes only those persons currently physically residing at the premises and expected to reside there for the entire billing period. It shall be assumed that a particular customer’s household is comprised of two (2) persons unless the customer notifies the Jarrell-Schwertner Water Supply Corporation of a greater number of persons per household on a form prescribed by the General Manager or his/her designee. The General Manager

shall give his/her best effort to see that such forms are mailed, otherwise provided, or made available to every residential customer. If, however, a customer does not receive such a form, it shall be the customer's responsibility to go to the Jarrell-Schwertner Water Supply Corporation offices to complete and sign the form claiming more than two (2) persons per household. New customers may claim more persons per household at the time of applying for water service on the form prescribed by the General Manager. When the number of persons per household increases so as to place the customer in a different allocation category, the customer may notify the Jarrell-Schwertner Water Supply Corporation on such form and the change will be implemented in the next practicable billing period. If the number of persons in a household is reduced, the customer shall notify the Jarrell-Schwertner Water Supply Corporation in writing within two (2) days. In prescribing the method for claiming more than two (2) persons per household, the General Manager shall adopt methods to insure the accuracy of the claim. Any person who knowingly, recklessly, or with criminal negligence falsely reports the number of persons in a household or fails to timely notify the Jarrell-Schwertner Water Supply Corporation of a reduction in the number of person in a household shall be fined not less than \$ 100.

Residential water customers shall pay the following surcharges:

- \$ 10 for the first 1,000 gallons over allocation
- \$ 15 for the second 1,000 gallons over allocation
- \$ 20 for the third 1,000 gallons over allocation
- \$ 25 for each additional 1,000 gallons over allocation

Surcharges shall be cumulative.

Master-Metered Multi-Family Residential Customers

The allocation to a customer billed from a master meter which jointly measures water to multiple permanent residential dwelling units (e.g., apartments, mobile homes) shall be allocated (3,000) gallons per month for each dwelling unit. It shall be assumed that such a customer's meter serves two dwelling units unless the customer notifies the Jarrell-Schwertner Water Supply Corporation of a greater number on a form prescribed by the General Manager. The General Manager shall give his/her best effort to see that such forms are mailed, otherwise provided, or made available to every such customer. If, however, a customer does not receive such a form, it shall be the customer's responsibility to go to the Jarrell-Schwertner Water Supply Corporation offices to complete and sign the form claiming more than two (2) dwellings. A dwelling unit may be claimed under this provision whether it is occupied or not. New customers may claim more dwelling units at the time of applying for water service on the form prescribed by the General Manager. If the number of dwelling units served by a master meter is reduced, the customer shall notify the Jarrell-Schwertner Water Supply Corporation in writing within two (2) days. In prescribing the method for claiming more than two (2) dwelling units, the General Manager shall adopt methods to insure the accuracy of the claim. Any person who knowingly, recklessly, or with criminal negligence falsely reports the number of dwelling units served by a master

meter or fails to timely notify the Jarrell-Schwertner Water Supply Corporation of a reduction in the number of person in a household shall be fined not less than \$ 100. Customers billed from a master meter under this provision shall pay the following monthly surcharges:

- \$ 10 for 1,000 gallons over allocation up through 1,000 gallons for each dwelling unit.
- \$ 20, thereafter, for each additional 1,000 gallons over allocation up through a second 1,000 gallons for each dwelling unit.
- \$ 30, thereafter, for each additional 1,000 gallons over allocation up through a third 1,000 gallons for each dwelling unit.
- \$ 40, thereafter for each additional 1,000 gallons over allocation

Surcharges shall be cumulative.

Commercial Customers

A monthly water allocation shall be established by the General Manager, or his/her designee, for each nonresidential commercial customer other than an industrial customer who uses water for processing purposes. The non-residential customer's allocation shall be approximately 75 percent of the customer's usage for corresponding month's billing period for the previous 12 months. If the customer's billing history is shorter than 12 months, the monthly average for the period for which there is a record shall be used for any monthly period for which no history exists. However, a customer, 75 percent of whose monthly usage is less than 6000 gallons shall be allocated (3,000) gallons. The General Manager shall give his/her best effort to see that notice of each non-residential customer's allocation is mailed to such customer. If, however, a customer does not receive such notice, it shall be the customer's responsibility to contact the Jarrell-Schwertner Water Supply Corporation to determine the allocation. Upon request of the customer or at the initiative of the General Manager, the allocation may be reduced or increased if, (1) the designated period does not accurately reflect the customer's normal water usage, (2) one nonresidential customer agrees to transfer part of its allocation to another nonresidential customer, or (3) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the President of the Jarrell-Schwertner Water Supply Corporation. Nonresidential commercial customers shall pay the following surcharges:

Customers whose allocation is 3,000 (3,000) gallons through 10000 gallons per month:

- \$_10_ per thousand gallons for the first 1,000 gallons over allocation
- \$_15_ per thousand gallons for the second 1,000 gallons over allocation
- \$_20_ per thousand gallons for the third 1,000 gallons over allocation
- \$_25_ per thousand gallons for each additional 1,000 gallons over allocation

Customers whose allocation is 10000 gallons per month or more:

- 1.5 times the block rate for each 1,000 gallons in excess of the allocation up through 5 percent above allocation.
- 2.0 times the block rate for each 1,000 gallons from 5 percent through 10 percent above allocation.
- 2.5 times the block rate for each 1,000 gallons from 10 percent through 15 percent above allocation.
- 3.0 times the block rate for each 1,000 gallons more than 15 percent above allocation.

The surcharges shall be cumulative. As used herein, “block rate” means the charge to the customer per 1,000 gallons at the regular water rate schedule at the level of the customer’s allocation.

D. Industrial Customers

A monthly water allocation shall be established by the General Manager, or his/her designee, for each industrial customer, which uses water for processing purposes. The industrial customer’s allocation shall be approximately 90 percent of the customer’s water usage baseline. Ninety (90) days after the initial imposition of the allocation for industrial customers, the industrial customer’s allocation shall be further reduced to 85 percent of the customer’s water usage baseline. The industrial customer’s water use baseline will be computed on the average water use for the 3 month period ending prior to the date of implementation of Stage 2 of the Plan. If the industrial water customer’s billing history is shorter than 3 months, the monthly average for the period for which there is a record shall be used for any monthly period for which no billing history exists. The General Manager shall give his/her best effort to see that notice of each industrial customer’s allocation is mailed to such customer. If, however, a customer does not receive such notice, it shall be the customer’s responsibility to contact the Jarrell-Schwertner Water Supply Corporation to determine the allocation, and the allocation shall be fully effective notwithstanding the lack of receipt of written notice. Upon request of the customer or at the initiative of the General Manager, the allocation may be reduced or increased, (1) if the designated period does not accurately reflect the customer’s normal water use because the customer had shutdown a major processing unit for repair or overhaul during the period, (2) the customer has added or is in the process of adding significant additional processing capacity, (3) the customer has shutdown or significantly reduced the production of a major processing unit, (4) the customer has previously implemented significant permanent water conservation measures such that the ability to further reduce water use is limited, (5) the customer agrees to transfer part of its allocation to another industrial customer, or (6) if other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the President of the Jarrell-Schwertner Water Supply Corporation. Industrial customers shall pay the following surcharges:

Customers whose allocation is 6000 gallons through 10000 gallons per month:

\$ _10_ per thousand gallons for the first 1,000 gallons over allocation
\$ _15_ per thousand gallons for the second 1,000 gallons over allocation
\$ _20_ per thousand gallons for the third 1,000 gallons over allocation
\$ _25_ per thousand gallons for each additional 1,000 gallons over allocation

Customers whose allocation is 10000 gallons per month or more:

- 1.5 times the block rate for each 1,000 gallons in excess of the allocation up through 5 percent above allocation.
- 2.0 times the block rate for each 1,000 gallons from 5 percent through 10 percent above allocation.
- 2.5 times the block rate for each 1,000 gallons from 10 percent through 15 percent above allocation.
- 3.0 times the block rate for each 1,000 gallons more than 15 percent above allocation.

The surcharges shall be cumulative. As used herein, "block rate" means the charge to the customer per 1,000 gallons at the regular water rate schedule at the level of the customer's allocation.

Section X: Enforcement

- (a) No person shall knowingly or intentionally allow the use of water from the Jarrell-Schwertner Water Supply Corporation for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this Plan, or in an amount in excess of that permitted by the drought response stage in effect at the time pursuant to action taken by General Manager, or his/her designee, in accordance with provisions of this Plan.
- (b) Any person who violates this Plan is guilty of a misdemeanor and, upon conviction shall be punished by a fine of not less than fifty dollars (\$50) and not more than five hundred dollars (\$500). Each day that one or more of the provisions in this Plan is violated shall constitute a separate offense. If a person is convicted of three or more distinct violations of this Plan, the General Manager shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur. Services discontinued under such circumstances shall be restored only upon payment of a re-connection charge, hereby established at \$70, and any other costs incurred by the Jarrell-Schwertner Water Supply Corporation in discontinuing service. In addition, suitable assurance must be given to the General Manager that the same action shall not be repeated while the Plan is in effect. Compliance with this plan may also be sought through injunctive relief in the district court.

- (c) Any person, including a person classified as a water customer of the Jarrell-Schwertner Water Supply Corporation, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation. Parents shall be presumed to be responsible for violations of their minor children and proof that a violation, committed by a child, occurred on property within the parents' control shall constitute a rebuttable presumption that the parent committed the violation, but any such parent may be excused if he/she proves that he/she had previously directed the child not to use the water as it was used in violation of this Plan and that the parent could not have reasonably known of the violation.
- (d) Any member of the county sheriff's department may issue a citation to a person he/she reasonably believes to be in violation of this Ordinance based on information provided by the Jarrell-Schwertner Water Supply Corporation. The citation shall be prepared in duplicate and shall contain the name and address of the alleged violator, if known, the offense charged, and shall direct him/her to appear in the county court on the date shown on the citation. The alleged violator shall be served a copy of the citation. Service of the citation shall be complete upon delivery of the citation to the alleged violator, to an agent or employee of a violator, or to a person over 14 years of age who is a member of the violator's immediate family or is a resident of the violator's residence. The alleged violator shall appear in county court to enter a plea of guilty or not guilty for the violation of this Plan. If the alleged violator fails to appear in county court, a warrant for his/her arrest may be issued. A summons to appear may be issued in lieu of an arrest warrant.

Section XI: Variances

The General Manager or his/her designee, may, in writing, grant temporary variance for existing water uses otherwise prohibited under this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the health, sanitation, or fire protection for the public or the person requesting such variance and if one or more of the following conditions are met:

- (a) Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect.
- (b) Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Ordinance shall file a petition for variance with the Jarrell-Schwertner Water Supply Corporation within 5 days after the Plan or a particular drought response stage has been invoked. All petitions for variances shall be reviewed by the General Manager, or his/her designee, and shall include the following:

- (a) Name and address of the petitioner(s).
- (b) Purpose of water use.
- (c) Specific provision(s) of the Plan from which the petitioner is requesting relief.
- (d) Detailed statement as to how the specific provision of the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance.
- (e) Description of the relief requested.
- (f) Period of time for which the variance is sought.
- (g) Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
- (h) Other pertinent information.

Variances granted by the Jarrell-Schwertner Water Supply Corporation shall be subject to the following conditions, unless waived or modified by the General Manager or his/her designee:

- (a) Variances granted shall include a timetable for compliance.
- (b) Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.
