MIRASOL SPRINGS RANCH

2023 TLAP

Submittal Date: April 28th, 2023

WATER RECLAMATION FACILITY

PERMIT NUMBER: NEW PERMIT

TEXAS LAND APPLICATION PERMIT PACKET

for the

MIRASOL SPRINGS RANCH WATER RECLAMATION FACILITY

Prepared for:

Mirasol Springs Ranch
c/o Clancy Utility Holdings, LLC
4143 Maple Avenue, Suite 400
Dallas, TX 75219

Prepared by:

Murfee Engineering Company, Inc.
Texas Registered Firm No. F-353
1101 Capital of Texas Highway South
Building D, Suite 110
Austin, Texas 78746
(512) 327-9204

April 2023

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT: Clancy Utility Holdings, LLC

PERMIT NUMBER: WQ0016335001

Indicate if each of the following items is included in your application.

	Y	N		Y	N
Administrative Report 1.0	☒	☐	Original USGS Map	☒	☐
Administrative Report 1.1	☒	☐	Affected Landowners Map	☒	☐
SPIF	☐	☐	Landowner Disk or Labels	☒	☐
Core Data Form	☒	☐	Buffer Zone Map	☒	☐
Public Involvement Plan Form	☒	☐	Flow Diagram	☒	☐
Technical Report 1.0	☒	☐	Site Drawing	☒	☐
Technical Report 1.1	☒	☐	Original Photographs	☒	☐
Worksheet 2.0	☐	☒	Design Calculations	☒	☐
Worksheet 2.1	☐	☒	Solids Management Plan	☒	☐
Worksheet 3.0	☒	☐	Water Balance	☐	☒
Worksheet 3.1	☐	☒			
Worksheet 3.2	☐	☒			
Worksheet 3.3	☒	☐			
Worksheet 4.0	☐	☒			
Worksheet 5.0	☐	☒			
Worksheet 6.0	☒	☐			
Worksheet 7.0	☒	☐			

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

APPLICATION FOR A DOMESTIC WASTEWATER PERMIT ADMINISTRATIVE REPORT 1.0

If you have questions about completing this form please contact the Applications Review and Processing Team at 512-239-4671.

Section 1. Application Fees (Instructions Page 29)

Indicate the amount submitted for the application fee (check only one).

Flow	New/Major Amendment	Renewal
<0.05 MGD	$350.00 ☒	$315.00 ☐
≥0.05 but <0.10 MGD	$550.00 ☐	$515.00 ☐
≥0.10 but <0.25 MGD	$850.00 ☐	$815.00 ☐
≥0.25 but <0.50 MGD	$1,250.00 ☐	$1,215.00 ☐
≥0.50 but <1.0 MGD	$1,650.00 ☐	$1,615.00 ☐
≥1.0 MGD	$2,050.00 ☐	$2,015.00 ☐

Minor Amendment (for any flow) $150.00 ☐

Payment Information:

Mailed Check/Money Order Number: 56562

Check/Money Order Amount: $350.00

Name Printed on Check: TCEQ Financial Administration Division Cashier's Office MC-214

EPAY Voucher Number: Click here to enter text

Copy of Payment Voucher enclosed? Yes ☐

Section 2. Type of Application (Instructions Page 29)

☐ New TPDES

☒ New TLAP

☐ Major Amendment *with* Renewal

☐ Minor Amendment *with* Renewal

☐ Major Amendment *without* Renewal

☐ Minor Amendment *without* Renewal

☐ Renewal without changes

☐ Minor Modification of permit

For amendments or modifications, describe the proposed changes: Click here to enter text.

For existing permits:

Permit Number: WQ00 Click here to enter text

EPA I.D. (TPDES only): TX Click here to enter text

Expiration Date: Click here to enter text

Section 3. Facility Owner (Applicant) and Co-Applicant Information (Instructions Page 29)

A. The owner of the facility must apply for the permit.

What is the Legal Name of the entity (applicant) applying for this permit?

Clancy Utility Holdings, LLC

(The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/

CN: 605924489

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Shaun Miller

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: President

B. Co-applicant information. Complete this section only if another person or entity is required to apply as a co-permittee.

What is the Legal Name of the co-applicant applying for this permit?

Click here to enter text.

(The legal name must be spelled exactly as filed with the TX SOS, with the County, or in the legal documents forming the entity.)

If the co-applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at: http://www15.tceq.texas.gov/crpub/

CN: Click here to enter text.

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

Prefix (Mr., Ms., Miss): Click here to enter text.

First and Last Name: Click here to enter text.

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: Click here to enter text.

Provide a brief description of the need for a co-permittee: Click here to enter text.

C. Core Data Form

Complete the Core Data Form for each customer and include as an attachment. If the customer type selected on the Core Data Form is **Individual**, complete **Attachment 1** of Administrative Report 1.0.

Attachment: Attachment 1: Core Data Form

Section 4. Application Contact Information (Instructions Page 30)

This is the person(s) TCEQ will contact if additional information is needed about this application. Provide a contact for administrative questions and technical questions.

A. Prefix (Mr., Ms., Miss): Mrs.

First and Last Name: Andrea Wyatt

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: Project Engineer

Organization Name: Murfee Engineering Company, Inc.

Mailing Address: 1101 S. Capital of Texas Hwy, Bldg D.

City, State, Zip Code: Austin, TX 78746

Phone No.: 512-327-9204 Ext.: Click here to enter text. Fax No.: 512-327-2947

E-mail Address: awyatt@murfee.com

Check one or both: ☒ Administrative Contact ☒ Technical Contact

B. Prefix (Mr., Ms., Miss): Mr.

First and Last Name: George Murfee

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: President

Organization Name: Murfee Engineering Company, Inc.

Mailing Address: 1101 S. Capital of Texas Hwy, Bldg D.

City, State, Zip Code: Austin, TX 78746

Phone No.: 512-327-9204 Ext.: Click here to enter text. Fax No.: 512-327-2947

E-mail Address: gmurfee@murfee.com

Check one or both: ☒ Administrative Contact ☐ Technical Contact

Section 5. Permit Contact Information (Instructions Page 30)

Provide two names of individuals that can be contacted throughout the permit term.

A. Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Shaun Miller

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: President

Organization Name: Clancy Utility Holdings, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: 214-301-4255 Ext.: Click here to enter text. Fax No.: Not available

E-mail Address: smiller@winnfamily.org

B. Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Jim Truitt

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: Vice President

Organization Name: Clancy Utility Holdings, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: (214) 301-4277 Ext.: Click here to enter text. Fax No.: Not available

E-mail Address: jtruitt@mirasolcapital.com

Section 6. Billing Information (Instructions Page 30)

The permittee is responsible for paying the annual fee. The annual fee will be assessed to permits ***in effect on September 1 of each year***. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (using form TCEQ-20029).

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Jim Truitt

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: Vice President

Organization Name: Clancy Utility Holdings, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: (214) 301-4277 Ext.: Click here to enter text. Fax No.: Not available

E-mail Address: jtruitt@mirasolcapital.com

Section 7. DMR/MER Contact Information (Instructions Page 31)

Provide the name and complete mailing address of the person delegated to receive and submit Discharge Monitoring Reports (EPA 3320-1) or maintain Monthly Effluent Reports.

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Shaun Miller

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: President

Organization Name: Clancy Utility Holdings, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: (214) 301-4277 Ext.: Click here to enter text. Fax No.: Not available

E-mail Address: smiller@winnfamily.org

DMR data is required to be submitted electronically. Create an account at: https://www.tceq.texas.gov/permitting/netdmr/netdmr.html.

Section 8. Public Notice Information (Instructions Page 31)

A. Individual Publishing the Notices

Prefix (Mr., Ms., Miss): Mrs.

First and Last Name: Andrea Wyatt

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: Project Engineer

Organization Name: Murfee Engineering Company

Mailing Address: 1101 S. Capital of Texas Highway, Building D

City, State, Zip Code: Austin, TX, 78746

Phone No.: 512-327-9204 Ext.: 310 Fax No.: 512-327-2947

E-mail Address: awyatt@murfee.com

B. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package

Indicate by a check mark the preferred method for receiving the first notice and instructions:

☒ E-mail Address

☐ Fax

☐ Regular Mail

C. Contact person to be listed in the Notices

Prefix (Mr., Ms., Miss): Mrs.

First and Last Name: Andrea Wyatt

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: Project Engineer

Organization Name: Murfee Engineering Company, Inc.

Phone No.: 512-327-9204 Ext.: 310

E-mail: awyatt@murfee.com

D. Public Viewing Information

If the facility or outfall is located in more than one county, a public viewing place for each county must be provided.

Public building name: Bee Cave Public Library; Dripping Springs Community Library

Location within the building: Public Access Section/ Front Desk

Physical Address of Building: 4000 Galleria Pkwy, Bee Cave, TX 78738; 501 Sportsplex Dr, Dripping Springs, TX 78620

City: Bee Cave, TX; Dripping Springs, TX County: Travis; Hays

Contact Name: Click here to enter text.

Phone No.: 512-757-6620; 512-858-7825 Ext.: Click here to enter text.

E. Bilingual Notice Requirements:

This information **is required** for **new, major amendment, minor amendment or minor modification, and renewal applications**.

This section of the application is only used to determine if alternative language notices will be needed. Complete instructions on publishing the alternative language notices will be in your public notice package.

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine whether an alternative language notices are required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

   ☐ Yes ☒ No

   If **no**, publication of an alternative language notice is not required; **skip to** Section 9 below.

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

   ☐ Yes ☐ No

3. Do the students at these schools attend a bilingual education program at another location?

☐ Yes ☐ No

4. Would the school be required to provide a bilingual education program but the school has waived out of this requirement under 19 TAC §89.1205(g)?

   ☐ Yes ☐ No

5. If the answer is yes to question 1, 2, 3, or 4, public notices in an alternative language are required. Which language is required by the bilingual program? Click here to enter text

F. Public Involvement Plan Form

Complete the Public Involvement Plan Form (TCEQ Form 20960) for each application for a **new permit or major amendment to a permit** and include as an attachment.

Attachment: Attachment 25 – Public Involvement Plan Form

Section 9. Regulated Entity and Permitted Site Information (Instructions Page 33)

A. If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. **RN** Click here to enter text

Search the TCEQ's Central Registry at http://www15.tceq.texas.gov/crpub/ to determine if the site is currently regulated by TCEQ.

B. Name of project or site (the name known by the community where located):

Mirasol Springs Ranch Water Reclamation Facility

C. Owner of treatment facility: Clancy Utility Holdings, LLC

Ownership of Facility: ☐ Public ☒ Private ☐ Both ☐ Federal

D. Owner of land where treatment facility is or will be:

Prefix (Mr., Ms., Miss): Click here to enter text

First and Last Name: Mirasol Springs, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: 214-301-4255 E-mail Address: smiller@winnfamily.org

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Attachment 21: Deed Recorded Easement

E. Owner of effluent disposal site:

Prefix (Mr., Ms., Miss): Click here to enter text

First and Last Name: Mirasol Springs, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: 214-301-4255 E-mail Address: smiller@winnfamily.org

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Attachment 21: Deed Recorded Easement

F. Owner of sewage sludge disposal site (if authorization is requested for sludge disposal on property owned or controlled by the applicant):

Prefix (Mr., Ms., Miss): Click here to enter text

First and Last Name: Click here to enter text

Mailing Address: Click here to enter text

City, State, Zip Code: Click here to enter text

Phone No.: Click here to enter text E-mail Address: Click here to enter text

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Click here to enter text

Section 10. TPDES Discharge Information (Instructions Page 34)

A. Is the wastewater treatment facility location in the existing permit accurate?

☐ Yes ☐ No

If **no**, **or a new permit application**, please give an accurate description:

N/A

B. Are the point(s) of discharge and the discharge route(s) in the existing permit correct?

☐ Yes ☐ No

If **no**, **or a new or amendment permit application**, provide an accurate description of the point of discharge and the discharge route to the nearest classified segment as defined in 30 TAC Chapter 307:

N/A

City nearest the outfall(s): Click here to enter text

County in which the outfalls(s) is/are located: Click here to enter text

Outfall Latitude: Click here to enter text Longitude: Click here to enter text

C. Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

☐ Yes ☐ No

If **yes**, indicate by a check mark if:

☐ Authorization granted ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

Attachment: Click here to enter text.

D. For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge.

N/A

Section 11. TLAP Disposal Information (Instructions Page 36)

A. For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description of the disposal site location:

0.8 mile southwest of the intersection of Hamilton Pool Road and Stagecoach Ranch Road.

B. City nearest the disposal site: Bee Cave, TX

C. County in which the disposal site is located: Travis and Hays

D. Disposal Site Latitude: N30°19'46" ; N30°19'47" Longitude: W98°08'18" ; W98°08'18"

E. For **TLAPs**, describe the routing of effluent from the treatment facility to the disposal site:

Effluent will discharge from plant into an effluent holding tank. It will be pumped into drip irrigation fields from the effluent lift station at various on-site locations.

F. For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained:

Unnamed tributary to Pedernales River.

Section 12. Miscellaneous Information (Instructions Page 37)

A. Is the facility located on or does the treated effluent cross American Indian Land?

☐ Yes ☒ No

B. If the existing permit contains an onsite sludge disposal authorization, is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☐ No ☒ Not Applicable

If No, or if a new onsite sludge disposal authorization is being requested in this permit application, provide an accurate location description of the sewage sludge disposal site.

Click here to enter text

C. Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?

☐ Yes ☒ No

If yes, list each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application:

Click here to enter text

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If **yes**, provide the following information:

Account number: Click here to enter text Amount past due: Click here to enter text

E. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If **yes**, please provide the following information:

Enforcement order number: Click here to enter text Amount past due: Click here to enter text

Section 13. Attachments (Instructions Page 38)

Indicate which attachments are included with the Administrative Report. Check all that apply:

☒ Lease agreement or deed recorded easement, if the land where the treatment facility is located or the effluent disposal site are not owned by the applicant or co-applicant.

☒ Original full-size USGS Topographic Map with the following information:

- Applicant's property boundary
- Treatment facility boundary
- Labeled point of discharge for each discharge point (TPDES only)
- Highlighted discharge route for each discharge point (TPDES only)
- Onsite sewage sludge disposal site (if applicable)
- Effluent disposal site boundaries (TLAP only)
- New and future construction (if applicable)
- 1 mile radius information
- 3 miles downstream information (TPDES only)
- All ponds.

☐ Attachment 1 for Individuals as co-applicants

☐ Other Attachments. Please specify: Attachment 21 – Deed Recorded Easement; Attachment 2 – Original Full-Sized USGS Topographic Map; Attachment 25 – Public Involvement Plan Form

Section 14. Signature Page (Instructions Page 39)

If co-applicants are necessary, each entity must submit an original, separate signature page.

Permit Number: New Permit Application

Applicant: Clancy Utility Holdings, LLC

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code § 305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signatory name (typed or printed): Shaun Miller

Signatory title: President

Signature: Shaun Miller Date: April 25, 2023

(Use blue ink)

Subscribed and Sworn to before me by the said Shaun Miller

on this 25th day of April, 20 23.

My commission expires on the 1st day of June, 20 25.

Renee Long

Notary Public

[SEAL]

Dallas

County, Texas

RENEE LONG
Notary ID #676415-6
My Commission Expires
June 1, 2025

Section 15. Plain Language Summary (Instructions Page 40)

If you are subject to the alternative language notice requirements in 30 Texas Administrative Code §39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS

DOMESTIC WASTEWATER

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.
Clancy Utility Holdings, LLC (CN605924489) proposes to operate Mirasol Springs Ranch Water Reclamation Facility and disposal facilities (RN111731972). an activated sludge treatment system operated as single stage nitrification with tertiary filtration. The facility will be located 0.8 miles southwest of the intersection of Hamilton Pool Road and Stagecoach Ranch Road , in Bee Cave, Travis/Hays County, Texas 78738.

This application is for a new application to discharge at a daily average flow of 39,000 gallons per day of treated domestic wastewater. This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain low levels of Biochemical Oxygen Demand (5-day), Total Suspended Solids (TSS), and Ammonia Nitrogen (NH_3-N). Domestic wastewater will be treated by an activated sludge treatment system operated as single stage nitrification with tertiary filtration. Treatment units include an influent screen, anoxic basin, aeration basin, clarifier, cloth filter, and chlorine contact chamber and the process produces Type I effluent.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS TPDES o TLAP

AGUAS RESIDUALES DOMÉSTICAS

El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no son representaciones federales exigibles de la solicitud de permiso.

Clancy Utility Holdings, LLC (CN605924489) propone operar la instalación de recuperación de agua Mirasol Springs Ranch y las instalaciones de disposición (RN111731972), un sistema de tratamiento de lodos activados operado como nitrificación de una sola etapa con filtración terciaria. La instalación estará ubicada 0.8 millas al suroeste de la intersección de Hamilton Pool Road y Stagecoach Ranch Road, en Bee Cave, en el Condado de Travis/Hays, Texas 78738.

Esta solicitud es para una nueva solicitud para descargar a un flujo promedio diario de 39,000 galones por día de aguas residuales domésticas tratadas. Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan niveles bajos de demanda bioquímica de oxígeno (5 días), sólidos suspendidos totales (TSS) y nitrógeno amoniacal (NH3-N). Las aguas residuales domésticas serán tratadas por un sistema de tratamiento de lodos activados operado como nitrificación de una sola etapa con filtración terciaria. Las unidades de tratamiento incluyen una pantalla de entrada, un tanque anóxico, un tanque de aireación, un clarificador, un filtro de tela y una cámara de contacto con cloro, y el proceso produce efluentes de Tipo I.

DOMESTIC ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

Section 1. Affected Landowner Information (Instructions Page 41)

A. Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable:

- ☒ The applicant's property boundaries
- ☒ The facility site boundaries within the applicant's property boundaries
- ☐ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone
- ☒ The property boundaries of all landowners surrounding the applicant's property (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
- ☐ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream
- ☐ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge
- ☐ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides
- ☒ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
- ☒ The property boundaries of all landowners surrounding the effluent disposal site
- ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
- ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located

B. ☒ Indicate by a check mark that a separate list with the landowners' names and mailing addresses cross-referenced to the landowner's map has been provided.

C. Indicate by a check mark in which format the landowners list is submitted:

☒ USB Drive ☐ Four sets of labels

D. Provide the source of the landowners' names and mailing addresses: Travis and Hays County Central Appraisal District Websites

E. As required by *Texas Water Code § 5.115*, is any permanent school fund land affected by this application?

☐ Yes ☒ No

If **yes**, provide the location and foreseeable impacts and effects this application has on the land(s):

Click here to enter text.

Section 2. Original Photographs (Instructions Page 44)

Provide original ground level photographs. Indicate with checkmarks that the following information is provided.

☒ At least one original photograph of the new or expanded treatment unit location

☒ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.

☒ At least one photograph of the existing/proposed effluent disposal site

☒ A plot plan or map showing the location and direction of each photograph

Section 3. Buffer Zone Map (Instructions Page 44)

A. Buffer zone map. Provide a buffer zone map on 8.5 x 11-inch paper with all of the following information. The applicant's property line and the buffer zone line may be distinguished by using dashes or symbols and appropriate labels.

- The applicant's property boundary;
- The required buffer zone; and
- Each treatment unit; and
- The distance from each treatment unit to the property boundaries.

B. Buffer zone compliance method. Indicate how the buffer zone requirements will be met. Check all that apply.

☒ Ownership

☐ Restrictive easement

☐ Nuisance odor control

☐ Variance

C. Unsuitable site characteristics. Does the facility comply with the requirements regarding unsuitable site characteristic found in 30 TAC § 309.13(a) through (d)?

☒ Yes ☐ No

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CHECKLIST OF COMMON DEFICIENCIES

Below is a list of common deficiencies found during the administrative review of domestic wastewater permit applications. To ensure the timely processing of this application, please review the items below and indicate by checking Yes that each item is complete and in accordance applicable rules at 30 TAC Chapters 21, 281, and 305. If an item is not required this application, indicate by checking N/A where appropriate. Please do not submit the application until the items below have been addressed.

Core Data Form (TCEQ Form No. 10400) ☒ Yes
(Required for all applications types. Must be completed in its entirety and signed. Note: Form may be signed by applicant representative.)

Correct and Current Industrial Wastewater Permit Application Forms ☒ Yes
(TCEQ Form Nos. 10053 and 10054. Version dated 6/25/2018 or later.)

Water Quality Permit Payment Submittal Form (Page 19) ☐ Yes
(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)

7.5 Minute USGS Quadrangle Topographic Map Attached ☒ Yes
(Full-size map if seeking "New" permit. 8 ½ x 11 acceptable for Renewals and Amendments)

Current/Non-Expired, Executed Lease Agreement or Easement Attached ☐ N/A ☒ Yes

Landowners Map ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Things to Know:

- All the items shown on the map must be labeled.
- The applicant's complete property boundaries must be delineated which includes boundaries of contiguous property owned by the applicant.
- The applicant cannot be its own adjacent landowner. You must identify the landowners immediately adjacent to their property, regardless of how far they are from the actual facility.
- If the applicant's property is adjacent to a road, creek, or stream, the landowners on the opposite side must be identified. Although the properties are not adjacent to applicant's property boundary, they are considered potentially affected landowners. If the adjacent road is a divided highway as identified on the USGS topographic map, the applicant does not have to identify the landowners on the opposite side of the highway.

Landowners Cross Reference List ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Landowners Labels or USB Drive attached ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Original signature per 30 TAC § 305.44 – Blue Ink Preferred ☒ Yes
(If signature page is not signed by an elected official or principle executive officer, a copy of signature authority/delegation letter must be attached)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION

DOMESTIC TECHNICAL REPORT 1.0

The Following Is Required For All Applications

Renewal, New, And Amendment

Section 1. Permitted or Proposed Flows (Instructions Page 51)

A. Existing/Interim I Phase

Design Flow (MGD): NA

2-Hr Peak Flow (MGD): NA

Estimated construction start date: Click here to enter text.

Estimated waste disposal start date: Click here to enter text.

B. Interim II Phase

Design Flow (MGD): NA

2-Hr Peak Flow (MGD): NA

Estimated construction start date: Click here to enter text.

Estimated waste disposal start date: Click here to enter text.

C. Final Phase

Design Flow (MGD): 0.039

2-Hr Peak Flow (MGD): 0.156

Estimated construction start date: 2024

Estimated waste disposal start date: 2025

D. Current operating phase: None

Provide the startup date of the facility: Click here to enter text.

Section 2. Treatment Process (Instructions Page 51)

A. Treatment process description

Provide a detailed description of the treatment process. **Include the type of**

treatment plant, mode of operation, and all treatment units. Start with the plant's head works and finish with the point of discharge. Include all sludge processing and drying units. **If more than one phase exists or is proposed in the permit, a description of *each phase* must be provided**. Process description:

The headworks will consist of a self-cleaning screen which will discharge into a conventional aerated sludge system consisting of an anoxic basin, an aeration basin, and a clarifier. Clarifier effluent will be filtered using a cloth filter and filtrate will be disinfected in a dedicated disinfection channel using free chlorine for disinfection. Effluent will be stored in an in-ground basin for pumping to the drip fields. The waste sludge from the clarifier will be stored in a sludge storage basin, dewatered using a mechanical dewatering device and discharge into a dumpster for disposal by a third party wastewater solids facility. Attachment 5: Treatment Process Description

Port or pipe diameter at the discharge point, in inches: NA

B. Treatment Units

In Table 1.0(1), provide the treatment unit type, the number of units, and dimensions (length, width, depth) **of each treatment unit, accounting for *all* phases of operation**.

Table 1.0(1) – Treatment Units

Treatment Unit Type	Number of Units	Dimensions (L x W x D)
Screen	1	
Anoxic Basin	1	12' x 12' x 15'
Aeration Basin	1	12' x 38' x 15'
Clarifier	1	12' Diameter 14' depth
CT Basin	1	12' x 2.5 x 15'
Sludge Basin	1	12' x 10' x 15'
Effluent Storage	1	218,000 Gallons

C. Process flow diagrams

Provide flow diagrams for the existing facilities and **each** proposed phase of construction.

Attachment: Attachment 6: Process Flow Diagram

Section 3. Site Drawing (Instructions Page 52)

Provide a site drawing for the facility that shows the following:

- The boundaries of the treatment facility;
- The boundaries of the area served by the treatment facility;
- If land disposal of effluent, the boundaries of the disposal site and all storage/holding ponds; and
- If sludge disposal is authorized in the permit, the boundaries of the land application or disposal site.

Attachment: Attachment 7: Site Drawing

Provide the name and a description of the area served by the treatment facility.

Once built, the waste water treatment plant will serve the residents and guests within the Mirasol Springs Ranch.

Section 4. Unbuilt Phases (Instructions Page 52)

Is the application for a renewal of a permit that contains an unbuilt phase or phases?

Yes ☐ No ☒

If yes, does the existing permit contain a phase that has not been constructed within five years of being authorized by the TCEQ?

Yes ☐ No ☐ N/A

If yes, provide a detailed discussion regarding the continued need for the unbuilt phase. Failure to provide sufficient justification may result in the Executive Director recommending denial of the unbuilt phase or phases.

N/A

Section 5. Closure Plans (Instructions Page 53)

Have any treatment units been taken out of service permanently, or will any units be taken out of service in the next five years?

Yes ☐ No ☒

If yes, was a closure plan submitted to the TCEQ?

Yes ☐ No ☐ N/A

If yes, provide a brief description of the closure and the date of plan approval.

N/A

Section 6. Permit Specific Requirements (Instructions Page 53)

For applicants with an existing permit, check the *Other Requirements* or *Special Provisions* of the permit.

A. Summary transmittal

Have plans and specifications been approved for the existing facilities and each proposed phase?

Yes ☐ No ☐ N/A – New Permit

If yes, provide the date(s) of approval for each phase: N/A

Provide information, including dates, on any actions taken to meet a requirement or provision pertaining to the submission of a summary transmittal letter. Provide a copy of an approval letter from the TCEQ, if applicable.

N/A

B. Buffer zones

Have the buffer zone requirements been met?

Yes ☒ No ☐

Provide information below, including dates, on any actions taken to meet the conditions of the buffer zone. If available, provide any new documentation relevant to maintaining the buffer zones.

Buffer zones will be met as shown in the various attachments. Where necessary the discharge areas will be setback from existing and proposed facilities and features requiring buffer zones.

C. Other actions required by the current permit

Does the *Other Requirements* or *Special Provisions* section in the existing permit require submission of any other information or other required actions? Examples include Notification of Completion, progress reports, soil monitoring data, etc.

Yes ☐ No ☐ N/A

If yes, provide information below on the status of any actions taken to meet the conditions of an *Other Requirement* or *Special Provision*.

N/A

D. Grit and grease treatment

1. Acceptance of grit and grease waste

Does the facility have a grit and/or grease processing facility onsite that treats and decants or accepts transported loads of grit and grease waste that are discharged directly to the wastewater treatment plant prior to any treatment?

Yes ☐ No ☒

If No, stop here and continue with Subsection E. Stormwater Management.

2. Grit and grease processing

Describe below how the grit and grease waste is treated at the facility. In your description, include how and where the grit and grease is introduced to the treatment works and how it is separated or processed. Provide a flow diagram showing how grit and grease is processed at the facility.

Click here to enter text.

3. Grit disposal

Does the facility have a Municipal Solid Waste (MSW) registration or permit for grit disposal?

Yes ☐ No ☐

If No, contact the TCEQ Municipal Solid Waste team at 512-239-0000. Note: A registration or permit is required for grit disposal. Grit shall not be combined with treatment plant sludge. See the instruction booklet for additional information on grit disposal requirements and restrictions.

Describe the method of grit disposal.

Click here to enter text.

4. Grease and decanted liquid disposal

Note: A registration or permit is required for grease disposal. Grease shall not be combined with treatment plant sludge. For more information, contact the TCEQ Municipal Solid Waste team at 512-239-0000.

Describe how the decant and grease are treated and disposed of after grit separation.

Click here to enter text.

E. Stormwater management

1. Applicability

Does the facility have a design flow of 1.0 MGD or greater in any phase?

Yes ☐ No ☒

Does the facility have an approved pretreatment program, under 40 CFR Part 403?

Yes ☐ No ☒

If no to both of the above, then skip to Subsection F, Other Wastes Received.

2. MSGP coverage

Is the stormwater runoff from the WWTP and dedicated lands for sewage disposal currently permitted under the TPDES Multi-Sector General Permit (MSGP), TXR050000?

Yes ☐ No ☐

If yes, please provide MSGP Authorization Number and skip to Subsection F, Other Wastes Received:

TXR05 Click here to enter text or TXRNE Click here to enter text

If no, do you intend to seek coverage under TXR050000?

Yes ☐ No ☐

3. Conditional exclusion

Alternatively, do you intend to apply for a conditional exclusion from permitting based TXR050000 (Multi Sector General Permit) Part II B.2 or TXR050000 (Multi Sector General Permit) Part V, Sector T 3(b)?

Yes ☐ No ☐

If yes, please explain below then proceed to Subsection F, Other Wastes Received:

Click here to enter text

4. Existing coverage in individual permit

Is your stormwater discharge currently permitted through this individual TPDES or TLAP permit?

Yes ☐ No ☐

If yes, provide a description of stormwater runoff management practices at the site that are authorized in the wastewater permit then skip to Subsection F, Other Wastes Received.

Click here to enter text.

5. Zero stormwater discharge

Do you intend to have no discharge of stormwater via use of evaporation or other means?

Yes ☐ No ☐

If yes, explain below then skip to Subsection F. Other Wastes Received.

Click here to enter text.

Note: If there is a potential to discharge any stormwater to surface water in the state as the result of any storm event, then permit coverage is required under the MSGP or an individual discharge permit. This requirement applies to all areas of facilities with treatment plants or systems that treat, store, recycle, or reclaim domestic sewage, wastewater or sewage sludge (including dedicated lands for sewage sludge disposal located within the onsite property boundaries) that meet the applicability criteria of above. You have the option of obtaining coverage under the MSGP for direct discharges, (recommended), or obtaining coverage under this individual permit.

6. Request for coverage in individual permit

Are you requesting coverage of stormwater discharges associated with your treatment plant under this individual permit?

Yes ☐ No ☐

If yes, provide a description of stormwater runoff management practices at the site for which you are requesting authorization in this individual wastewater permit and describe whether you intend to comingle this discharge with your treated effluent or discharge it via a separate dedicated stormwater outfall. Please also indicate if you intend to divert stormwater to the treatment plant headworks and indirectly discharge it to water in the state.

Click here to enter text.

Note: Direct stormwater discharges to waters in the state authorized through this individual permit will require the development and implementation of a stormwater pollution prevention plan (SWPPP) and will be subject to additional monitoring and reporting requirements. Indirect discharges of stormwater via headworks recycling will require compliance with all individual permit requirements including 2-hour peak flow limitations. All stormwater discharge authorization requests will require additional information during the technical review of your application.

F. Discharges to the Lake Houston Watershed

Does the facility discharge in the Lake Houston watershed?
Yes ☐ No ☒

If yes, a Sewage Sludge Solids Management Plan is required. See Example 5 in the instructions.

G. Other wastes received including sludge from other WWTPs and septic waste

1. Acceptance of sludge from other WWTPs

Does the facility accept or will it accept sludge from other treatment plants at the facility site?
Yes ☐ No ☒

If yes, attach sewage sludge solids management plan. See Example 5 of the instructions.

In addition, provide the date that the plant started accepting sludge or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the BOD_5 concentration of the sludge, and the design BOD_5 concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click here to enter text.

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

2. Acceptance of septic waste

Is the facility accepting or will it accept septic waste?

Yes ☐ No ☒

If yes, does the facility have a Type V processing unit?

Yes ☐ No ☐

If yes, does the unit have a Municipal Solid Waste permit?

Yes ☐ No ☐

If yes to any of the above, provide a the date that the plant started accepting septic waste, or is anticipated to start accepting septic waste, an estimate of monthly septic waste acceptance (gallons or millions of gallons), an estimate of the BOD_5 concentration of the septic waste, and the design BOD_5 concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click here to enter text.

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

3. Acceptance of other wastes (not including septic, grease, grit, or RCRA, CERCLA or as discharged by IUs listed in Worksheet 6)

Is the facility accepting or will it accept wastes that are not domestic in nature excluding the categories listed above?

Yes ☐ No ☒

If yes, provide the date that the plant started accepting the waste, an estimate how much waste is accepted on a monthly basis (gallons or millions of gallons), a description of the entities generating the waste, and any distinguishing chemical or other physical characteristic of the waste. Also note if this information has or has not changed since the last permit action.

Click here to enter text.

Section 7. Pollutant Analysis of Treated Effluent (Instructions Page 58)

Is the facility in operation?

Yes ☐ No ☒

If no, this section is not applicable. Proceed to Section 8.

If yes, provide effluent analysis data for the listed pollutants. ***Wastewater treatment facilities*** complete Table 1.0(2). W***ater treatment facilities*** discharging filter backwash water, complete Table 1.0(3).

Note: The sample date must be within 1 year of application submission.

Table 1.0(2) - Pollutant Analysis for Wastewater Treatment Facilities

Pollutant	**Average Conc.**	**Max Conc.**	**No. of Samples**	**Sample Type**	**Sample Date/Time**
$CBOD_5$, mg/l					
Total Suspended Solids, mg/l					
Ammonia Nitrogen, mg/l					
Nitrate Nitrogen, mg/l					
Total Kjeldahl Nitrogen, mg/l					
Sulfate, mg/l					
Chloride, mg/l					
Total Phosphorus, mg/l					
pH, standard units					
Dissolved Oxygen*, mg/l					
Chlorine Residual, mg/l					
E.coli (CFU/100ml) freshwater					
Entercocci (CFU/100ml)					

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
saltwater					
Total Dissolved Solids, mg/l					
Electrical Conductivity, µmohs/cm, †					
Oil & Grease, mg/l					
Alkalinity ($CaCO_3$)*, mg/l					

*TPDES permits only

†TLAP permits only

Table 1.0(3) - Pollutant Analysis for Water Treatment Facilities

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Total Suspended Solids, mg/l					
Total Dissolved Solids, mg/l					
pH, standard units					
Fluoride, mg/l					
Aluminum, mg/l					
Alkalinity ($CaCO_3$), mg/l					

Section 8. Facility Operator (Instructions Page 60)

Facility Operator Name: TBD

Facility Operator's License Classification and Level: Click here to enter text.

Facility Operator's License Number: Click here to enter text.

Section 9. Sewage Sludge Management and Disposal (Instructions Page 60)

A. Sludge disposal method

Identify the current or anticipated sludge disposal method or methods from the

following list. Check all that apply.

- ☐ Permitted landfill
- ☐ Permitted or Registered land application site for beneficial use
- ☐ Land application for beneficial use authorized in the wastewater permit
- ☐ Permitted sludge processing facility
- ☐ Marketing and distribution as authorized in the wastewater permit
- ☐ Composting as authorized in the wastewater permit
- ☐ Permitted surface disposal site (sludge monofill)
- ☐ Surface disposal site (sludge monofill) authorized in the wastewater permit
- ☒ Transported to another permitted wastewater treatment plant or permitted sludge processing facility. If you selected this method, a written statement or contractual agreement from the wastewater treatment plant or permitted sludge processing facility accepting the sludge must be included with this application.
- ☐ Other: Attachment 8: Sludge Transport Letter

B. Sludge disposal site

Disposal site name: Austin Wastewater Processing Facility

TCEQ permit or registration number: MSW 2384

County where disposal site is located: Travis

C. Sludge transportation method

Method of transportation (truck, train, pipe, other): Truck

Name of the hauler: Wastewater Transport Services, LLC

Hauler registration number: 24343

Sludge is transported as a:

Liquid ☐ semi-liquid ☐ semi-solid ☐ solid ☒

Section 10. Permit Authorization for Sewage Sludge Disposal (Instructions Page 60)

A. Beneficial use authorization

Does the existing permit include authorization for land application of sewage sludge for beneficial use?

Yes ☐ No ☒

If yes, are you requesting to continue this authorization to land apply sewage sludge for beneficial use?

Yes ☐ No ☐

If yes, is the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)** attached to this permit application (see the instructions for details)?

Yes ☐ No ☐

B. Sludge processing authorization

Does the existing permit include authorization for any of the following sludge processing, storage or disposal options?

Sludge Composting	Yes ☐	No ☐
Marketing and Distribution of sludge	Yes ☐	No ☐
Sludge Surface Disposal or Sludge Monofill	Yes ☐	No ☐
Temporary storage in sludge lagoons	Yes ☐	No ☐

If yes to any of the above sludge options and the applicant is requesting to continue this authorization, is the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)** attached to this permit application?

Yes ☐ No ☐

Section 11. Sewage Sludge Lagoons (Instructions Page 61)

Does this facility include sewage sludge lagoons?

Yes ☐ No ☒

If yes, complete the remainder of this section. If no, proceed to Section 12.

A. Location information

The following maps are required to be submitted as part of the application. For each map, provide the Attachment Number.

- Original General Highway (County) Map:

  Attachment: Click here to enter text.
- USDA Natural Resources Conservation Service Soil Map:

  Attachment: Click here to enter text.
- Federal Emergency Management Map:

  Attachment: Click here to enter text.
- Site map:

  Attachment: Click here to enter text.

Discuss in a description if any of the following exist within the lagoon area. Check all that apply.

- ☐ Overlap a designated 100-year frequency flood plain
- ☐ Soils with flooding classification
- ☐ Overlap an unstable area
- ☐ Wetlands
- ☐ Located less than 60 meters from a fault
- ☐ None of the above

Attachment: Click here to enter text.

If a portion of the lagoon(s) is located within the 100-year frequency flood plain, provide the protective measures to be utilized including type and size of protective structures:

Click here to enter text.

B. Temporary storage information

Provide the results for the pollutant screening of sludge lagoons. These results are in addition to pollutant results in Section 7 of Technical Report 1.0.

Nitrate Nitrogen, mg/kg: Click here to enter text.

Total Kjeldahl Nitrogen, mg/kg: Click here to enter text.

Total Nitrogen (=nitrate nitrogen + TKN), mg/kg: Click here to enter text.

Phosphorus, mg/kg: Click here to enter text.

Potassium, mg/kg: Click here to enter text.

pH, standard units: Click here to enter text.

Ammonia Nitrogen mg/kg: Click here to enter text.

Arsenic: Click here to enter text.

Cadmium: Click here to enter text.

Chromium: Click here to enter text.

Copper: Click here to enter text.

Lead: Click here to enter text.

Mercury: Click here to enter text.

Molybdenum: Click here to enter text.

Nickel: Click here to enter text.

Selenium: Click here to enter text.

Zinc: Click here to enter text.

Total PCBs: Click here to enter text.

Provide the following information:

Volume and frequency of sludge to the lagoon(s): Click here to enter text.

Total dry tons stored in the lagoons(s) per 365-day period: Click here to enter text.

Total dry tons stored in the lagoons(s) over the life of the unit: Click here to enter text.

C. Liner information

Does the active/proposed sludge lagoon(s) have a liner with a maximum hydraulic conductivity of $1x10^{-7}$ cm/sec?

Yes ☐ No ☐

If yes, describe the liner below. Please note that a liner is required.

Click here to enter text.

D. Site development plan

Provide a detailed description of the methods used to deposit sludge in the

lagoon(s):

Click here to enter text

Attach the following documents to the application.

- Plan view and cross-section of the sludge lagoon(s)

  Attachment: Click here to enter text

- Copy of the closure plan

  Attachment: Click here to enter text

- Copy of deed recordation for the site

  Attachment: Click here to enter text

- Size of the sludge lagoon(s) in surface acres and capacity in cubic feet and gallons

  Attachment: Click here to enter text

- Description of the method of controlling infiltration of groundwater and surface water from entering the site

  Attachment: Click here to enter text

- Procedures to prevent the occurrence of nuisance conditions

  Attachment: Click here to enter text

E. Groundwater monitoring

Is groundwater monitoring currently conducted at this site, or are any wells available for groundwater monitoring, or are groundwater monitoring data otherwise available for the sludge lagoon(s)?

Yes ☐ No ☒

If groundwater monitoring data are available, provide a copy. Provide a profile of soil types encountered down to the groundwater table and the depth to the shallowest groundwater as a separate attachment.

Attachment: Click here to enter text

Section 12. Authorizations/Compliance/Enforcement

(Instructions Page 63)

A. Additional authorizations

Does the permittee have additional authorizations for this facility, such as reuse authorization, sludge permit, etc?

Yes ☐ No ☒

If yes, provide the TCEQ authorization number and description of the authorization:

Click here to enter text

B. Permittee enforcement status

Is the permittee currently under enforcement for this facility?

Yes ☐ No ☒

Is the permittee required to meet an implementation schedule for compliance or enforcement?

Yes ☐ No ☒

If yes to either question, provide a brief summary of the enforcement, the implementation schedule, and the current status:

Click here to enter text

Section 13. RCRA/CERCLA Wastes (Instructions Page 63)

A. RCRA hazardous wastes

Has the facility received in the past three years, does it currently receive, or will it receive RCRA hazardous waste?

Yes ☐ No ☒

B. Remediation activity wastewater

Has the facility received in the past three years, does it currently receive, or will it receive CERCLA wastewater, RCRA remediation/corrective action wastewater or other remediation activity wastewater?

Yes ☐ No ☒

C. Details about wastes received

If yes to either Subsection A or B above, provide detailed information concerning these wastes with the application.

Attachment: Click here to enter text.

Section 14. Laboratory Accreditation (Instructions Page 64)

All laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*, which includes the following general exemptions from National Environmental Laboratory Accreditation Program (NELAP) certification requirements:

- The laboratory is an in-house laboratory and is:
  - periodically inspected by the TCEQ; or
  - located in another state and is accredited or inspected by that state; or
  - performing work for another company with a unit located in the same site; or
  - performing pro bono work for a governmental agency or charitable organization.
- The laboratory is accredited under federal law.
- The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements.

The following certification statement shall be signed and submitted with every application. See the *Signature Page* section in the Instructions, for a list of designated representatives who may sign the certification.

CERTIFICATION:

I certify that all laboratory tests submitted with this application meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.*

Printed Name: Shaun Miller

Title: President

Signature: 

Date: April 25, 2023

DOMESTIC TECHNICAL REPORT 1.1

The following is required for new and amendment applications

Section 1. Justification for Permit (Instructions Page 66)

A. Justification of permit need

Provide a detailed discussion regarding the need for any phase(s) not currently permitted. Failure to provide sufficient justification may result in the Executive Director recommending denial of the proposed phase(s) or permit.

The permit is needed in order to dispose of the wastewater produced in the surrounding Mirasol development. There are no nearby wastewater treatment facilities, installing a force main to the nearest facility would be cost prohibitive. Treating the wastewater on site and disposing of the effluent produced via land application will best protect the environment and surrounding ecosystem. Attachment 9: Justification of Permit

B. Regionalization of facilities

Provide the following information concerning the potential for regionalization of domestic wastewater treatment facilities:

1. Municipally incorporated areas

If the applicant is a city, then Item 1 is not applicable. Proceed to Item 2 Utility CCN areas.

Is any portion of the proposed service area located in an incorporated city?

Yes ☐ No ☒ Not Applicable ☐

If yes, within the city limits of: Click here to enter text

If yes, attach correspondence from the city.

Attachment: Click here to enter text

If consent to provide service is available from the city, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the city versus the cost of the proposed facility or expansion attached.

Attachment: Click here to enter text

2. Utility CCN areas

Is any portion of the proposed service area located inside another utility's CCN area?

Yes ☐ No ☒

If yes, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the CCN facilities versus the cost of the proposed facility or expansion.

Attachment: Click here to enter text.

3. Nearby WWTPs or collection systems

Are there any domestic permitted wastewater treatment facilities or collection systems located within a three-mile radius of the proposed facility?

Yes ☐ No ☒

If yes, attach a list of these facilities that includes the permittee's name and permit number, and an area map showing the location of these facilities.

Attachment: Click here to enter text.

If yes, attach copies of your certified letters to these facilities **and** their response letters concerning connection with their system.

Attachment: Click here to enter text.

Does a permitted domestic wastewater treatment facility or a collection system located within three (3) miles of the proposed facility currently have the capacity to accept or is willing to expand to accept the volume of wastewater proposed in this application?

Yes ☐ No ☐

If yes, attach an analysis of expenditures required to connect to a permitted wastewater treatment facility or collection system located within 3 miles versus the cost of the proposed facility or expansion.

Attachment: Click here to enter text.

Section 2. Organic Loading (Instructions Page 67)

Is this facility in operation?

Yes ☐ No ☒

If no, proceed to Item B, Proposed Organic Loading.

If yes, provide organic loading information in Item A, Current Organic Loading

A. Current organic loading

Facility Design Flow (flow being requested in application): Click here to enter text.

Average Influent Organic Strength or BOD_5 Concentration in mg/l: Click here to enter text.

Average Influent Loading (lbs/day = total average flow X average BOD_5 conc. X 8.34): Click here to enter text.

Provide the source of the average organic strength or BOD_5 concentration.

Click here to enter text.

B. Proposed organic loading

This table must be completed if this application is for a facility that is not in operation or if this application is to request an increased flow that will impact organic loading.

Table 1.1(1) – Design Organic Loading

Source	Total Average Flow (MGD)	Influent BOD_5 Concentration (mg/l)
Municipality		
Subdivision	0.0116	300
Trailer park – transient		
Mobile home park		
School with cafeteria and showers		
School with cafeteria,		

Source	Total Average Flow (MGD)	Influent BOD_5 Concentration (mg/l)
no showers		
Recreational park, overnight use		
Recreational park, day use		
Office building or factory	0.0005	300
Motel	0.013	300
Restaurant	0.012	1000
Hospital		
Nursing home		
Other	0.0016	300
TOTAL FLOW from all sources	0.0387	
AVERAGE BOD_5 from all sources		517

Section 3. Proposed Effluent Quality and Disinfection (Instructions Page 68)

A. Existing/Interim I Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: N/A

Total Suspended Solids, mg/l: N/A

Ammonia Nitrogen, mg/l: N/A

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: N/A

Other: N/A

B. Interim II Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: N/A

Total Suspended Solids, mg/l: N/A

Ammonia Nitrogen, mg/l: N/A

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: N/A

Other: N/A

C. Final Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: <10

Total Suspended Solids, mg/l: <15

Ammonia Nitrogen, mg/l: <2

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: N/A

Other: Click here to enter text.

D. Disinfection Method

Identify the proposed method of disinfection.

☒ Chlorine: 4 mg/l after 20 minutes detention time at peak flow

Dechlorination process: None

☐ Ultraviolet Light: Click here to enter text. seconds contact time at peak flow

☐ Other: Click here to enter text.

Section 4. Design Calculations (Instructions Page 68)

Attach design calculations and plant features for each proposed phase. Example 4 of the instructions includes sample design calculations and plant features.

Attachment: Attachment 10: Design Calculations

Section 5. Facility Site (Instructions Page 68)

A. 100-year floodplain

Will the proposed facilities be located above the 100-year frequency flood level?

Yes ☒ No ☐

If no, describe measures used to protect the facility during a flood event. Include a site map showing the location of the treatment plant within the 100-year frequency flood level. If applicable, provide the size and types of protective structures.

Click here to enter text

Provide the source(s) used to determine 100-year frequency flood plain.

Attachment 11: FEMA FIRM Maps # 48453C0360H Sep 26, 2008 and 48209C0025F Sep 2, 2005

For a new or expansion of a facility, will a wetland or part of a wetland be filled?

Yes ☐ No ☐

If yes, has the applicant applied for a US Corps of Engineers 404 Dredge and Fill Permit?

Yes ☐ No ☐

If yes, provide the permit number: Click here to enter text

If no, provide the approximate date you anticipate submitting your application to the Corps: Click here to enter text

B. Wind rose

Attach a wind rose. **Attachment**: Attachment 22: Wind Rose

Section 6. Permit Authorization for Sewage Sludge Disposal (Instructions Page 69)

A. Beneficial use authorization

Are you requesting to include authorization to land apply sewage sludge for beneficial use on property located adjacent to the wastewater treatment facility under the wastewater permit?

Yes ☐ No ☒

If yes, attach the completed Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)

Attachment: Click here to enter text

B. Sludge processing authorization

Identify the sludge processing, storage or disposal options that will be conducted at the wastewater treatment facility:

☐ Sludge Composting

☐ Marketing and Distribution of sludge

☐ Sludge Surface Disposal or Sludge Monofill

If any of the above sludge options are selected, attach a completed DOMESTIC WASTEWATER PERMIT APPLICATION: SEWAGE SLUDGE TECHNICAL REPORT (TCEQ Form No. 10056).

Attachment: Click here to enter text

Section 7. Sewage Sludge Solids Management Plan (Instructions Page 69)

Attach a solids management plan to the application.

Attachment: Attachment 8a: Sludge Management Plan

The sewage sludge solids management plan must contain the following information:

- Treatment units and processes dimensions and capacities
- Solids generated at 100, 75, 50, and 25 percent of design flow
- Mixed liquor suspended solids operating range at design and projected actual flow
- Quantity of solids to be removed and a schedule for solids removal
- Identification and ownership of the ultimate sludge disposal site
- For facultative lagoons, design life calculations, monitoring well locations and depths, and the ultimate disposal method for the sludge from the facultative lagoon

An example of a sewage sludge solids management plan has been included as Example 5 of the instructions.

DOMESTIC WORKSHEET 3.0

LAND DISPOSAL OF EFFLUENT

The following is required for all permit applications

Renewal, New, and Amendments

Section 1. Type of Disposal System (Instructions Page 77)

Identify the method of land disposal:

- ☐ Surface application
- ☐ Irrigation
- ☐ Drip irrigation system
- ☐ Evaporation
- ☐ Evapotranspiration beds
- ☐ Other (describe in detail): Click here to enter text.
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☒ Subsurface area drip dispersal system

NOTE: All applicants without authorization or proposing new/amended subsurface disposal MUST complete and submit Worksheet 7.0.

For existing authorizations, provide Registration Number: Click here to enter text.

Section 2. Land Application Site(s) (Instructions Page 77)

In table 3.0(1), provide the requested information for the land application sites. Include the agricultural or cover crop type (wheat, cotton, alfalfa, bermuda grass, native grasses, etc.), land use (golf course, hayland, pastureland, park, row crop, etc.), irrigation area, amount of effluent applied, and whether or not the public has access to the area. Specify the amount of land area and the amount of effluent that will be allotted to each agricultural or cover crop, if more than one crop will be used.

Table 3.0(1) – Land Application Site Crops

Crop Type & Land Use	Irrigation Area (acres)	Effluent Application (GPD)	Public Access? Y/N
Common Area, Pearl Millet and Mixed Native Species	16.2	39,000	Y

Section 3. Storage and Evaporation Lagoons/Ponds (Instructions Page 77)

Table 3.0(2) – Storage and Evaporation Ponds

Pond Number	Surface Area (acres)	Storage Volume (acre-feet)	Dimensions	Liner Type
Tank	N/A	0.671	N/A	N/A

Attach a copy of a liner certification that was prepared, signed, and sealed by a Texas licensed professional engineer for each pond.

Attachment: N/A – Concrete tank will be used

Section 4. Flood and Runoff Protection (Instructions Page 77)

Is the land application site within the 100-year frequency flood level?

Yes ☐ No ☒

If yes, describe how the site will be protected from inundation.

Click here to enter text

Provide the source used to determine the 100-year frequency flood level:

Attachment 11: FEMA Firm Map(s) #48209C0025F Sep 2,2005 ; #48453C0360H Sep 26, 2008

Provide a description of tailwater controls and rainfall run-on controls used for the land application site.

The majority of the storm runoff will be diverted away from the sites via drainage swales or drip area slope. The subsurface irrigation process should not be adversely affected by the small amount of non-concentrated runoff from the adjacent lots.

Section 5. Annual Cropping Plan (Instructions Page 77)

Attach an Annual Cropping Plan which includes a discussion of each of the following items. If not applicable, provide a detailed explanation indicating why.

Attachment: Attachment 12: Annual Cropping Plan

- Soils map with crops
- Cool and warm season plant species
- Crop yield goals
- Crop growing season
- Crop nutrient requirements
- Additional fertilizer requirements
- Minimum/maximum harvest height (for grass crops)
- Supplemental watering requirements
- Crop salt tolerances
- Harvesting method/number of harvests
- Justification for not removing existing vegetation to be irrigated

Section 6. Well and Map Information (Instructions Page 78)

Attach a USGS map with the following information shown and labeled. If not applicable, provide a detailed explanation (on a separate page) indicating why.

Attachment: Attachment 13: USGS Well Map

- The boundaries of the land application site(s)
- Waste disposal or treatment facility site(s)
- On-site buildings
- Buffer zones
- Effluent storage and tailwater control facilities
- All water wells within 1 mile of the disposal site or property boundaries
- All springs and seeps onsite and within 500 feet of the property boundaries

- All surface waters in the state onsite and within 500 feet of the property boundaries
- All faults and sinkholes onsite and within 500 feet of the property

List and cross reference all water wells shown on the USGS map in the following table. Attach additional pages as necessary to include all of the wells.

Table 3.0(3) – Water Well Data

Well ID	Well Use	Producing? Y/N	Open, cased, capped, or plugged?	Proposed Best Management Practice
			Choose an item.	Attachment 14: Well Data Table

If water quality data or well log information is available please include the information in an attachment listed by Well ID.

Attachment: Attachment 15: Well Data Reports

Section 7. Groundwater Quality (Instructions Page 79)

Attach a Groundwater Quality Technical Report which assesses the impact of the wastewater disposal system on groundwater. This report shall include an evaluation of the water wells (including the information in the well table provided in Item 6. above), the wastewater application rate, and pond liners. Indicate by a check mark that this report is provided.

Attachment: Attachment 16: Groundwater Quality Technical Report

Are groundwater monitoring wells available onsite? Yes ☐ No ☒

Do you plan to install ground water monitoring wells or lysimeters around the land application site? Yes ☐ No ☒

If yes, then provide the proposed location of the monitoring wells or lysimeters on a site map.

Attachment: Click here to enter text.

Section 8. Soil Map and Soil Analyses (Instructions Page 79)

A. Soil map

Attach a USDA Soil Survey map that shows the area to be used for effluent disposal.

Attachment: Attachment 17: USDA Soil Survey Map

B. Soil analyses

Attach the laboratory results sheets from the soil analyses. **Note**: for renewal applications, the current annual soil analyses required by the permit are acceptable as long as the test date is less than one year prior to the submission of the application.

Attachment: Attachment 19: Soil Evaluation Plan and Soil Sampling and Testing

List all USDA designated soil series on the proposed land application site. Attach additional pages as necessary.

Table 3.0(4) – Soil Data

Soil Series	Depth from Surface	Permeability	Available Water Capacity	Curve Number
Brackett-Rock outcrop-Real	0-60”	Moderate	Very Low	80
Krum clay (KrC)	0-80’	Moderate	Moderate	80

Section 9. Effluent Monitoring Data (Instructions Page 80)

Is the facility in operation?

Yes ☐ No ☒

If no, this section is not applicable and the worksheet is complete.

If yes, provide the effluent monitoring data for the parameters regulated in the existing permit. If a parameter is not regulated in the existing permit, enter N/A.

Table 3.0(5) – Effluent Monitoring Data

Date	30 Day Avg Flow MGD	BOD_5 mg/l	TSS mg/l	pH	Chlorine Residual mg/l	Acres irrigated

Provide a discussion of all persistent excursions above the permitted limits and any corrective actions taken.

Click here to enter text

DOMESTIC WORKSHEET 3.3

SUBSURFACE AREA DRIP DISPERSAL SYSTEM (SADDS) LAND DISPOSAL OF EFFLUENT

The following is required for new and major amendment subsurface area drip dispersal system applications. Renewal and minor amendments may require the worksheet on a case by case basis.

NOTE: All applicants proposing new or amended subsurface disposal MUST complete and submit Worksheet 7.0. This worksheet applies to any subsurface disposal system that meets the definition of a subsurface area drip dispersal system as defined in *30 TAC Chapter 222, Subsurface Area Drip Dispersal System.*

Section 1. Administrative Information (Instructions Page 84)

A. Provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the treatment facility.

Clancy Utility Holdings, LLC

B. Is the owner of the land where the treatment facility is located the same as the owner of the treatment facility?

Yes ☐ No ☒

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the land where the treatment facility is located.

Mirasol Springs, LLC

C. Owner of the subsurface area drip dispersal system:

Clancy Utility Holdings, LLC

Is the owner of the subsurface area drip dispersal system the same as the owner of the wastewater treatment facility or the site where the wastewater treatment facility is located?

Yes ☒ No ☐

If **no**, identify the names of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in Item 1.C.

Click here to enter text

D. Owner of the land where the subsurface area drip dispersal system is located:

Mirasol Springs, LLC

Is the owner of the land where the subsurface area drip dispersal system is located the same as owner of the wastewater treatment facility, the site where the wastewater treatment facility is located, or the owner of the subsurface area drip dispersal system?

Yes ☒ No ☐

If **no**, identify the name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in item 1.E.

Click here to enter text.

Section 2. Subsurface Area Drip Dispersal System (Instructions Page 84)

A. Type of system

☒ Subsurface Drip Irrigation

☐ Surface Drip Irrigation

☐ Other, specify: Click here to enter text.

B. Irrigation operations

Application area, in acres: 16.2

Infiltration Rate, in inches/hour: 0.06-1.98

Average slope of the application area, percent (%): Zone A: 6.16%; Zone B: 13.73%; Zone C: 5.30%; Zone D: 9.98%; Zone E: 6.18%; Zone F: 10.43%; Zone G: 4.33%; Zone H: 9.72%

Maximum slope of the application area, percent (%): Zone A: 56.56%; Zone B: 41.78%; Zone C: 44.82%; Zone D: 72.01; Zone E: 77.36%; Zone F: 90.02%; Zone G: 36.36%; Zone H: 194.76%

Storage volume, in gallons: 218,000

Major soil series: BtG and KrC

Depth to groundwater, in feet: approx. 80 feet

C. Application rate

Is the facility located **west** of the boundary shown in *30 TAC § 222.83* **and** also using a vegetative cover of non-native grasses over seeded with cool season grasses during the winter months (October-March)?

Yes ☒ No ☐

If yes, then the facility may propose a hydraulic application rate not to exceed 0.1 gal/square foot/day.

Is the facility located **east** of the boundary shown in *30 TAC § 222.83* **or** in any part of the state when the vegetative cover is any crop other than non-native grasses?

Yes ☐ No ☒

If **yes**, the facility must use the formula in *30 TAC §222.83* to calculate the maximum hydraulic application rate.

Do you plan to submit an alternative method to calculate the hydraulic application rate for approval by the executive director?

Yes ☐ No ☐

Hydraulic application rate, in gal/square foot/day: 0.1 gal/sf/day

Nitrogen application rate, in lbs/gal/day: 0.0001 lbs/gal/day

D. Dosing information

Number of doses per day: 1

Dosing duration per area, in hours: 12

Rest period between doses, in hours: 12

Dosing amount per area, in inches/day: Maximum of 0.13

Number of zones: 7

Does the proposed subsurface drip irrigation system use tree vegetative cover as a crop?

Yes ☐ No ☒

If **yes**, provide a vegetation survey by a certified arborist. Please call the Water Quality Assessment Team at (512) 239-4671 to schedule a pre-application meeting.

Attachment: Click here to enter text.

Section 3. Required Plans (Instructions Page 84)

A. Recharge feature plan

Attach a Recharge Feature Plan with all information required in *30 TAC §222.79*.

Attachment: Attachment 18: Recharge Feature Plan

B. Soil evaluation

Attach a Soil Evaluation with all information required in *30 TAC §222.73*.

Attachment: Attachment 19: Soil Evaluation Plan and Soil Sampling and Testing

C. Site preparation plan

Attach a Site Preparation Plan with all information required in *30 TAC §222.75*.

Attachment: Attachment 20: Site Preparation Plan

D. Soil sampling/testing

Attach soil sampling and testing that includes all information required in *30 TAC §222.157*.

Attachment: Attachment 19: Soil Evaluation Plan and Soil Sampling and Testing

Section 4. Floodway Designation (Instructions Page 85)

A. Site location

Is the existing/proposed land application site within a designated floodway?

Yes ☐ No ☒

B. Flood map

Attach either the FEMA flood map or alternate information used to determine the floodway.

Attachment: Attachment 11: FEMA Firm Map(s) #48209C0025F Sep 2,2005 ; #48453C0360H Sep 26, 2008

Section 5. Surface Waters in the State (Instructions Page 85)

A. Buffer Map

Attach a map showing appropriate buffers on surface waters in the state, water wells, and springs/seeps.

Attachment: Attachment 4: Buffer Zone Map

B. Buffer variance request

Do you plan to request a buffer variance from water wells or waters in the state?

Yes ☐ No ☒

If yes, then attach the additional information required in *30 TAC § 222.81(c).*

Attachment: Click here to enter text.

Section 6. Edwards Aquifer (Instructions Page 85)

A. Is the SADDS located on the Edwards Aquifer Recharge Zone as mapped by the TCEQ?

Yes ☐ No ☒

B. Is the SADDS located on the Edwards Aquifer Transition Zone as mapped by the TCEQ?

Yes ☐ No ☒

If yes to either question, then the SADDS may be prohibited by *30 TAC §213.8*. Please call the Municipal Permits Team at 512-239-4671 to schedule a pre-application meeting.

DOMESTIC WORKSHEET 4.0

POLLUTANT ANALYSES REQUIREMENTS*

The following is required for facilities with a permitted or proposed flow of 1.0 MGD or greater, facilities with an approved pretreatment program, or facilities classified as a major facility. See instructions for further details.

This worksheet is not required for minor amendments without renewal

Section 1. Toxic Pollutants (Instructions Page 87)

For pollutants identified in Table 4.0(1), indicate the type of sample.

Grab ☐ Composite ☐ N/A

Date and time sample(s) collected: Click here to enter text

Table 4.0(1) – Toxics Analysis

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Acrylonitrile				50
Aldrin				0.01
Aluminum				2.5
Anthracene				10
Antimony				5
Arsenic				0.5
Barium				3
Benzene				10
Benzidine				50
Benzo(a)anthracene				5

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Benzo(a)pyrene				5
Bis(2-chloroethyl)ether				10
Bis(2-ethylhexyl)phthalate				10
Bromodichloromethane				10
Bromoform				10
Cadmium				1
Carbon Tetrachloride				2
Carbaryl				5
Chlordane*				0.2
Chlorobenzene				10
Chlorodibromomethane				10
Chloroform				10
Chlorpyrifos				0.05
Chromium (Total)				3
Chromium (Tri) **(*1)**				N/A
Chromium (Hex)				3
Copper				2
Chrysene				5
p-Chloro-m-Cresol				10
4,6-Dinitro-o-Cresol				50
p-Cresol				10

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Cyanide **(*2)**				10
4,4'- DDD				0.1
4,4'- DDE				0.1
4,4'- DDT				0.02
2,4-D				0.7
Demeton (O and S)				0.20
Diazinon				0.5/0.1
1,2-Dibromoethane				10
m-Dichlorobenzene				10
o-Dichlorobenzene				10
p-Dichlorobenzene				10
3,3'-Dichlorobenzidine				5
1,2-Dichloroethane				10
1,1-Dichloroethylene				10
Dichloromethane				20
1,2-Dichloropropane				10
1,3-Dichloropropene				10
Dicofol				1
Dieldrin				0.02
2,4-Dimethylphenol				10
Di-n-Butyl Phthalate				10

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Diuron				0.09
Endosulfan I (alpha)				0.01
Endosulfan II (beta)				0.02
Endosulfan Sulfate				0.1
Endrin				0.02
Ethylbenzene				10
Fluoride				500
Guthion				0.1
Heptachlor				0.01
Heptachlor Epoxide				0.01
Hexachlorobenzene				5
Hexachlorobutadiene				10
Hexachlorocyclohexane (alpha)				0.05
Hexachlorocyclohexane (beta)				0.05
gamma-Hexachlorocyclohexane (Lindane)				0.05
Hexachlorocyclopentadiene				10
Hexachloroethane				20
Hexachlorophene				10
Lead				0.5
Malathion				0.1

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Mercury				0.005
Methoxychlor				2
Methyl Ethyl Ketone				50
Mirex				0.02
Nickel				2
Nitrate-Nitrogen				100
Nitrobenzene				10
N-Nitrosodiethylamine				20
N-Nitroso-di-n-Butylamine				20
Nonylphenol				333
Parathion (ethyl)				0.1
Pentachlorobenzene				20
Pentachlorophenol				5
Phenanthrene				10
Polychlorinated Biphenyls (PCB's) **(*3)**				0.2
Pyridine				20
Selenium				5
Silver				0.5
1,2,4,5-Tetrachlorobenzene				20
1,1,2,2-Tetrachloroethane				10

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Tetrachloroethylene				10
Thallium				0.5
Toluene				10
Toxaphene				0.3
2,4,5-TP (Silvex)				0.3
Tributyltin (see instructions for explanation)				0.01
1,1,1-Trichloroethane				10
1,1,2-Trichloroethane				10
Trichloroethylene				10
2,4,5-Trichlorophenol				50
TTHM (Total Trihalomethanes)				10
Vinyl Chloride				10
Zinc				5

(*1) Determined by subtracting hexavalent Cr from total Cr.

(*2) Cyanide, amenable to chlorination or weak-acid dissociable.

(*3) The sum of seven PCB congeners 1242, 1254, 1221, 1232, 1248, 1260, and 1016.

Section 2. Priority Pollutants

For pollutants identified in Tables 4.0(2)A-E, indicate type of sample.

Grab ☐ Composite ☐

Date and time sample(s) collected: Click here to enter text

Table 4.0(2)A – Metals, Cyanide, Phenols

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Antimony				5
Arsenic				0.5
Beryllium				0.5
Cadmium				1
Chromium (Total)				3
Chromium (Hex)				3
Chromium (Tri) (*1)				N/A
Copper				2
Lead				0.5
Mercury				0.005
Nickel				2
Selenium				5
Silver				0.5
Thallium				0.5
Zinc				5
Cyanide (*2)				10
Phenols, Total				10

(*1) Determined by subtracting hexavalent Cr from total Cr.

(*2) Cyanide, amenable to chlorination or weak-acid dissociable

Table 4.0(2)B – Volatile Compounds

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Acrolein				50
Acrylonitrile				50
Benzene				10
Bromoform				10
Carbon Tetrachloride				2
Chlorobenzene				10
Chlorodibromomethane				10
Chloroethane				50
2-Chloroethylvinyl Ether				10
Chloroform				10
Dichlorobromomethane [Bromodichloromethane]				10
1,1-Dichloroethane				10
1,2-Dichloroethane				10
1,1-Dichloroethylene				10
1,2-Dichloropropane				10
1,3-Dichloropropylene [1,3-Dichloropropene]				10
1,2-Trans-Dichloroethylene				10
Ethylbenzene				10
Methyl Bromide				50
Methyl Chloride				50
Methylene Chloride				20
1,1,2,2-Tetrachloroethane				10
Tetrachloroethylene				10

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Toluene				10
1,1,1-Trichloroethane				10
1,1,2-Trichloroethane				10
Trichloroethylene				10
Vinyl Chloride				10

Table 4.0(2)C – Acid Compounds

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
2-Chlorophenol				10
2,4-Dichlorophenol				10
2,4-Dimethylphenol				10
4,6-Dinitro-o-Cresol				50
2,4-Dinitrophenol				50
2-Nitrophenol				20
4-Nitrophenol				50
P-Chloro-m-Cresol				10
Pentalchlorophenol				5
Phenol				10
2,4,6-Trichlorophenol				10

Table 4.0(2)D – Base/Neutral Compounds

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Acenaphthene				10
Acenaphthylene				10
Anthracene				10
Benzidine				50
Benzo(a)Anthracene				5
Benzo(a)Pyrene				5
3,4-Benzofluoranthene				10
Benzo(ghi)Perylene				20
Benzo(k)Fluoranthene				5
Bis(2-Chloroethoxy)Methane				10
Bis(2-Chloroethyl)Ether				10
Bis(2-Chloroisopropyl)Ether				10
Bis(2-Ethylhexyl)Phthalate				10
4-Bromophenyl Phenyl Ether				10
Butyl benzyl Phthalate				10
2-Chloronaphthalene				10
4-Chlorophenyl phenyl ether				10
Chrysene				5
Dibenzo(a,h)Anthracene				5
1,2-(o)Dichlorobenzene				10
1,3-(m)Dichlorobenzene				10
1,4-(p)Dichlorobenzene				10
3,3-Dichlorobenzidine				5
Diethyl Phthalate				10
Dimethyl Phthalate				10

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Di-n-Butyl Phthalate				10
2,4-Dinitrotoluene				10
2,6-Dinitrotoluene				10
Di-n-Octyl Phthalate				10
1,2-Diphenylhydrazine (as Azo-benzene)				20
Fluoranthene				10
Fluorene				10
Hexachlorobenzene				5
Hexachlorobutadiene				10
Hexachlorocyclo-pentadiene				10
Hexachloroethane				20
Indeno(1,2,3-cd)pyrene				5
Isophorone				10
Naphthalene				10
Nitrobenzene				10
N-Nitrosodimethylamine				50
N-Nitrosodi-n-Propylamine				20
N-Nitrosodiphenylamine				20
Phenanthrene				10
Pyrene				10
1,2,4-Trichlorobenzene				10

Table 4.0(2)E - Pesticides

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
Aldrin				0.01
alpha-BHC (Hexachlorocyclohexane)				0.05
beta-BHC (Hexachlorocyclohexane)				0.05
gamma-BHC (Hexachlorocyclohexane)				0.05
delta-BHC (Hexachlorocyclohexane)				0.05
Chlordane				0.2
4,4-DDT				0.02
4,4-DDE				0.1
4,4,-DDD				0.1
Dieldrin				0.02
Endosulfan I (alpha)				0.01
Endosulfan II (beta)				0.02
Endosulfan Sulfate				0.1
Endrin				0.02
Endrin Aldehyde				0.1
Heptachlor				0.01
Heptachlor Epoxide				0.01
PCB-1242				0.2
PCB-1254				0.2
PCB-1221				0.2
PCB-1232				0.2

Pollutant	AVG Effluent Conc. (µg/l)	MAX Effluent Conc. (µg/l)	Number of Samples	MAL (µg/l)
PCB-1248				0.2
PCB-1260				0.2
PCB-1016				0.2
Toxaphene				0.3

* For PCBS, if all are non-detects, enter the highest non-detect preceded by a "<".

Section 3. Dioxin/Furan Compounds

A. Indicate which of the following compounds from may be present in the influent from a contributing industrial user or significant industrial user. Check all that apply.

☐ 2,4,5-trichlorophenoxy acetic acid
Common Name 2,4,5-T, CASRN 93-76-5

☐ 2-(2,4,5-trichlorophenoxy) propanoic acid
Common Name Silvex or 2,4,5-TP, CASRN 93-72-1

☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate
Common Name Erbon, CASRN 136-25-4

☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate
Common Name Ronnel, CASRN 299-84-3

☐ 2,4,5-trichlorophenol
Common Name TCP, CASRN 95-95-4

☐ hexachlorophene
Common Name HCP, CASRN 70-30-4

For each compound identified, provide a brief description of the conditions of its/their presence at the facility.

Click here to enter text

B. Do you know or have any reason to believe that 2,3,7,8 Tetrachlorodibenzo-P-Dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

Yes ☐ No ☐

If **yes**, provide a brief description of the conditions for its presence.

Click here to enter text.

If any of the compounds in Subsection A **or** B are present, complete Table 4.0(2)F.

For pollutants identified in Table 4.0(2)F, indicate the type of sample.

Grab ☐ Composite ☐

Date and time sample(s) collected: Click here to enter text.

TABLE 4.0(2)F - DIOXIN/FURAN COMPOUNDS

Compound	Toxic Equivalency Factors	Wastewater Concentration (ppq)	Wastewater Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Equivalents (ppt)	MAL (ppq)
2,3,7,8 TCDD	1					10
1,2,3,7,8	0.5					50
2,3,7,8 HxCDDs	0.1					50
1,2,3,4,6,7,8 HpCDD	0.01					50
2,3,7,8 TCDF	0.1					10
1,2,3,7,8 PeCDF	0.05					50
2,3,4,7,8 PeCDF	0.5					50
2,3,7,8 HxCDFs	0.1					50
2,3,4,7,8	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					0.5
PCB 81	0.0003					0.5

Compound	Toxic Equivalency Factors	Wastewater Concentration (ppq)	Wastewater Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Equivalents (ppt)	MAL (ppq)
PCB 126	0.1					0.5
PCB 169	0.03					0.5
Total						

DOMESTIC WORKSHEET 6.0

INDUSTRIAL WASTE CONTRIBUTION

The following is required for all publicly owned treatment works (POTWs)

Section 1. All POTWs (Instructions Page 99)

A. Industrial users

Provide the number of each of the following types of industrial users (IUs) that discharge to your POTW and the daily flows from each user. See the Instructions for definitions of Categorical IUs, Significant IUs – non-categorical, and Other IUs.

If there are no users, enter 0 (zero).

Categorical IUs:

Number of IUs: 0

Average Daily Flows, in MGD: Click here to enter text.

Significant IUs – non-categorical:

Number of IUs: 0

Average Daily Flows, in MGD: Click here to enter text.

Other IUs:

Number of IUs: 0

Average Daily Flows, in MGD: Click here to enter text.

B. Treatment plant interference

In the past three years, has your POTW experienced treatment plant interference (see instructions)?

Yes ☐ No ☐ N/A, New Facility

If yes, identify the dates, duration, description of interference, and probable cause(s) and possible source(s) of each interference event. Include the names of the IUs that may have caused the interference.

Click here to enter text.

C. Treatment plant pass through

In the past three years, has your POTW experienced pass through (see instructions)?

Yes ☐ No ☐ N/A, New Facility

If yes, identify the dates, duration, a description of the pollutants passing through the treatment plant, and probable cause(s) and possible source(s) of each pass through event. Include the names of the IUs that may have caused pass through.

Click here to enter text

D. Pretreatment program

Does your POTW have an approved pretreatment program?

Yes ☐ No ☒

If yes, complete Section 2 only of this Worksheet.

Is your POTW required to develop an approved pretreatment program?

Yes ☐ No ☒

If yes, complete Section 2.c. and 2.d. only, and skip Section 3.

If no to either question above, skip Section 2 and complete Section 3 for each significant industrial user and categorical industrial user.

Section 2. POTWs with Approved Programs or Those Required to Develop a Program (Instructions Page 100)

A. Substantial modifications

Have there been any **substantial modifications** to the approved pretreatment program that have not been submitted to the TCEQ for approval according to *40 CFR §403.18*?

Yes ☐ No ☐

If yes, identify the modifications that have not been submitted to TCEQ, including the purpose of the modification.

Click here to enter text.

B. Non-substantial modifications

Have there been any **non-substantial modifications** to the approved pretreatment program that have not been submitted to TCEQ for review and acceptance?

Yes ☐ No ☐

If yes, identify all non-substantial modifications that have not been submitted to TCEQ, including the purpose of the modification.

Click here to enter text.

C. Effluent parameters above the MAL

In Table 6.0(1), list all parameters measured above the MAL in the POTW's effluent monitoring during the last three years. Submit an attachment if necessary.

Table 6.0(1) – Parameters Above the MAL

Pollutant	Concentration	MAL	Units	Date

D. Industrial user interruptions

Has any SIU, CIU, or other IU caused or contributed to any problems (excluding interferences or pass throughs) at your POTW in the past three years?

Yes ☐ No ☐

If yes, identify the industry, describe each episode, including dates, duration, description of the problems, and probable pollutants.

Click here to enter text

Section 3. Significant Industrial User (SIU) Information and Categorical Industrial User (CIU) (Instructions Page 100)

A. General information

Company Name: None – No Industrial Users

SIC Code: Click here to enter text

Telephone number: Click here to enter text Fax number: Click here to enter text

Contact name: Click here to enter text

Address: Click here to enter text

City, State, and Zip Code: Click here to enter text

B. Process information

Describe the industrial processes or other activities that affect or contribute to the SIU(s) or CIU(s) discharge (i.e., process and non-process wastewater).

No SIUs or CIUs

C. Product and service information

Provide a description of the principal product(s) or services performed.

Click here to enter text.

D. Flow rate information

See the Instructions for definitions of "process" and "non-process wastewater."

Process Wastewater:

Discharge, in gallons/day: Click here to enter text.

Discharge Type: ☐ Continuous ☐ Batch ☐ Intermittent

Non-Process Wastewater:

Discharge, in gallons/day: Click here to enter text.

Discharge Type: ☐ Continuous ☐ Batch ☐ Intermittent

E. Pretreatment standards

Is the SIU or CIU subject to technically based local limits as defined in the instructions?

Yes ☐ No ☐

Is the SIU or CIU subject to categorical pretreatment standards found in *40 CFR Parts 405-471*?

Yes ☐ No ☐

If subject to categorical pretreatment standards, indicate the applicable category and subcategory for each categorical process.

Category: Click here to enter text.
Subcategories: Click here to enter text.

Category: Click here to enter text.
Subcategories: Click here to enter text.

Category: Click here to enter text.
Subcategories: Click here to enter text.

Category: Click here to enter text.
Subcategories: Click here to enter text.

Category: Click here to enter text.
Subcategories: Click here to enter text.

F. Industrial user interruptions

Has the SIU or CIU caused or contributed to any problems (e.g., interferences, pass through, odors, corrosion, blockages) at your POTW in the past three years?

Yes ☐ No ☐

If yes, identify the SIU, describe each episode, including dates, duration, description of problems, and probable pollutants.

Click here to enter text

WORKSHEET 7.0

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CLASS V INJECTION WELL INVENTORY/AUTHORIZATION FORM

Submit to:
TCEQ
IUC Permits Team
Radioactive Materials Division
MC-233
PO Box 13087
Austin, Texas 78711-3087
512-239-6466

For TCEQ Use Only
Reg. No._____
Date Received_____
Date Authorized_____

Section 1. General Information (Instructions Page 102)

1. TCEQ Program Area

Program Area (PST, VCP, IHW, etc.): Municipal Domestic Wastewater

Program ID: N/A

Contact Name: N/A

Phone Number: N/A

2. Agent/Consultant Contact Information

Contact Name: Andrea Wyatt, P.E.

Address: 1101 S. Capital of Texas Hwy, Bldg D.

City, State, and Zip Code: Austin, TX, 78746

Phone Number: 512-327-9204

3. Owner/Operator Contact Information

Owner ☒ Operator ☐

Owner/Operator Name: Clancy Utility Holdings, LLC

Contact Name: Jim Truitt

Address: 4143 Maple Avenue, Suite 400

City, State, and Zip Code: Dallas, TX 75219

Phone Number: 214-301-4277

4. Facility Contact Information

Facility Name: TBD

Address: Click here to enter text.

City, State, and Zip Code: Click here to enter text.

Location description (if no address is available): Click here to enter text.

Facility Contact Person: Click here to enter text.

Phone Number: Click here to enter text.

5. Latitude and Longitude, in degrees-minutes-seconds

Latitude: N30˚19'44" Longitude: W98˚08'15"

Method of determination (GPS, TOPO, etc.): GPS and TOPO

Attach topographic quadrangle map as attachment A.

6. Well Information

Type of Well Construction, select one:

- ☐ Vertical Injection
- ☒ Subsurface Fluid Distribution System
- ☐ Infiltration Gallery
- ☐ Temporary Injection Points
- ☐ Other, Specify: Click here to enter text.

Number of Injection Wells: Click here to enter text.

7. Purpose

Detailed Description regarding purpose of Injection System:

Safely discharge treated wastewater to subsurface irrigation of open fields of Pearl Millet grass and other species. Attachment 7 shows the Site Map

Attach a Site Map as Attachment B (Attach the Approved Remediation Plan, if appropriate.)

8. Water Well Driller/Installer

Water Well Driller/Installer Name: Click here to enter text.

City, State, and Zip Code: Click here to enter text.

Phone Number: Click here to enter text.

License Number: Click here to enter text.

Section 2. Proposed Down Hole Design

Attach a diagram signed and sealed by a licensed engineer as Attachment C.

Table 7.0(1) –Down Hole Design Table

Name of String	Size	Setting Depth	Sacks Cement/Grout – Slurry Volume – Top of Cement	Hole Size	Weight (lbs/ft) PVC/Steel
Casing					
Tubing					
Screen					

Section 3. Proposed Trench System, Subsurface Fluid Distribution System, or Infiltration Gallery

Attach a diagram signed and sealed by a licensed engineer as Attachment D.

System(s) Dimensions: Click here to enter text.

System(s) Construction: Click here to enter text.

Section 4. Site Hydrogeological and Injection Zone Data

1. Name of Contaminated Aquifer: N/A
2. Receiving Formation Name of Injection Zone: Trinity Group – Glen Rose
3. Well/Trench Total Depth: 6 inches
4. Surface Elevation: 870 – 900 ft MSL
5. Depth to Ground Water: 80 ft approximate
6. Injection Zone Depth: 6 inches
7. Injection Zone vertically isolated geologically? Yes ☐ No ☒

Impervious Strata between Injection Zone and nearest Underground Source of Drinking Water:

Name: N/A

Thickness: Click here to enter text.

8. Provide a list of contaminants and the levels (ppm) in contaminated aquifer

Attach as Attachment E.

9. Horizontal and Vertical extent of contamination and injection plume

Attach as Attachment F.

10. Formation (Injection Zone) Water Chemistry (Background levels) TDS, etc.

Attach as Attachment G.

11. Injection Fluid Chemistry in PPM at point of injection

Attach as Attachment H.

12. Lowest Known Depth of Ground Water with < 10,000 PPM TDS: N/A

13. Maximum injection Rate/Volume/Pressure: N/A

14. Water wells within 1/4 mile radius (attach map as Attachment I): Three, Attachment 13 - USGS Topo map- Water wells within 1/4 mile radius

15. Injection wells within 1/4 mile radius (attach map as Attachment J): One, Attachment 13 - USGS Topo map- Water wells within 1/4 mile radius

16. Monitor wells within 1/4 mile radius (attach drillers logs and map as Attachment K): None

17. Sampling frequency: Once/week

18. Known hazardous components in injection fluid: None

Section 5. Site History

1. Type of Facility: Wastewater Treatment Facility

2. Contamination Dates: N/A

3. Original Contamination (VOCs, TPH, BTEX, etc.) and Concentrations (attach as Attachment L): N/A

4. Previous Remediation: N/A

Attach results of any previous remediation as attachment M

NOTE: Authorization Form should be completed in detail and authorization given by the TCEQ before construction, operation, and/or conversion can

begin. Attach additional pages as necessary.

Class V Injection Well Designations

5A07	Heat Pump/AC return (IW used for groundwater to heat and/or cool buildings)
5A19	Industrial Cooling Water Return Flow (IW used to cool industrial process equipment)
5B22	Salt Water Intrusion Barrier (IW used to inject fluids to prevent the intrusion of salt water into an aquifer)
5D02	Storm Water Drainage (IW designed for the disposal of rain water)
5D04	Industrial Stormwater Drainage Wells (IW designed for the disposal of rain water associated with industrial facilities)
5F01	Agricultural Drainage (IW that receive agricultural runoff)
5R21	Aquifer Recharge (IW used to inject fluids to recharge an aquifer)
5S23	Subsidence Control Wells (IW used to control land subsidence caused by ground water withdrawal)
5W09	Untreated Sewage
5W10	Large Capacity Cesspools (Cesspools that are designed for 5,000 gpd or greater)
5W11	Large Capacity Septic systems (Septic systems designed for 5,000 gpd or greater)
5W12	WTTP disposal
5W20	Industrial Process Waste Disposal Wells
5W31	Septic System (Well Disposal method)
5W32	Septic System Drainfield Disposal
5X13	Mine Backfill (IW used to control subsidence, dispose of mining byproducts, and/or fill sections of a mine)
5X25	Experimental Wells (Pilot Test) (IW used to test new technologies or tracer dye studies)
5X26	Aquifer Remediation (IW used to clean up, treat, or prevent contamination of a USDW)
5X27	Other Wells
5X28	Motor Vehicle Waste Disposal Wells (IW used to dispose of waste from a motor vehicle site - These are currently banned)
5X29	Abandoned Drinking Water Wells (waste disposal)

Attachment 1 – Core Data Form

TCEQ Core Data Form

TCEQ Use Only

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN		RN

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	N/A

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* *If new Customer, enter previous Customer below:*

Clancy Utility Holdings, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
803659689	32074761407	86-1937134	

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☒ Other: Limited Liability Company

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following:*

☒ Owner ☐ Operator ☐ Owner & Operator

☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:	4143 Maple Avenue, Suite 400						
	City	Dallas	State	TX	ZIP	75219	ZIP + 4	3289

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	smiller@winnfamily.org

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(214) 301-4255		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Mirasol Springs Water Reclamation Facility

23. Street Address of the Regulated Entity: *(No PO Boxes)*	No address on file							
	City		**State**	TX	**ZIP**		**ZIP + 4**	
24. County	Hays							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	0.8 mile southwest of the intersection of Hamilton Pool Road and Stagecoach Ranch Road.				
26. Nearest City			**State**	**Nearest ZIP Code**	
Bee Cave			TX	78738	
27. Latitude (N) In Decimal:	30.32889		**28. Longitude (W) In Decimal:**	-98.13750	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	19	44	98	8	15

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
4952		221320	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Wastewater Treatment Plant

34. Mailing Address:								
	City		**State**		**ZIP**		**ZIP + 4**	
35. E-Mail Address:								

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
( ) -		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Mrs. Andrea Wyatt, P.E.	**41. Title:**	Project Engineer
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 327-9204		(512) 327-2947	awyatt@murfee.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

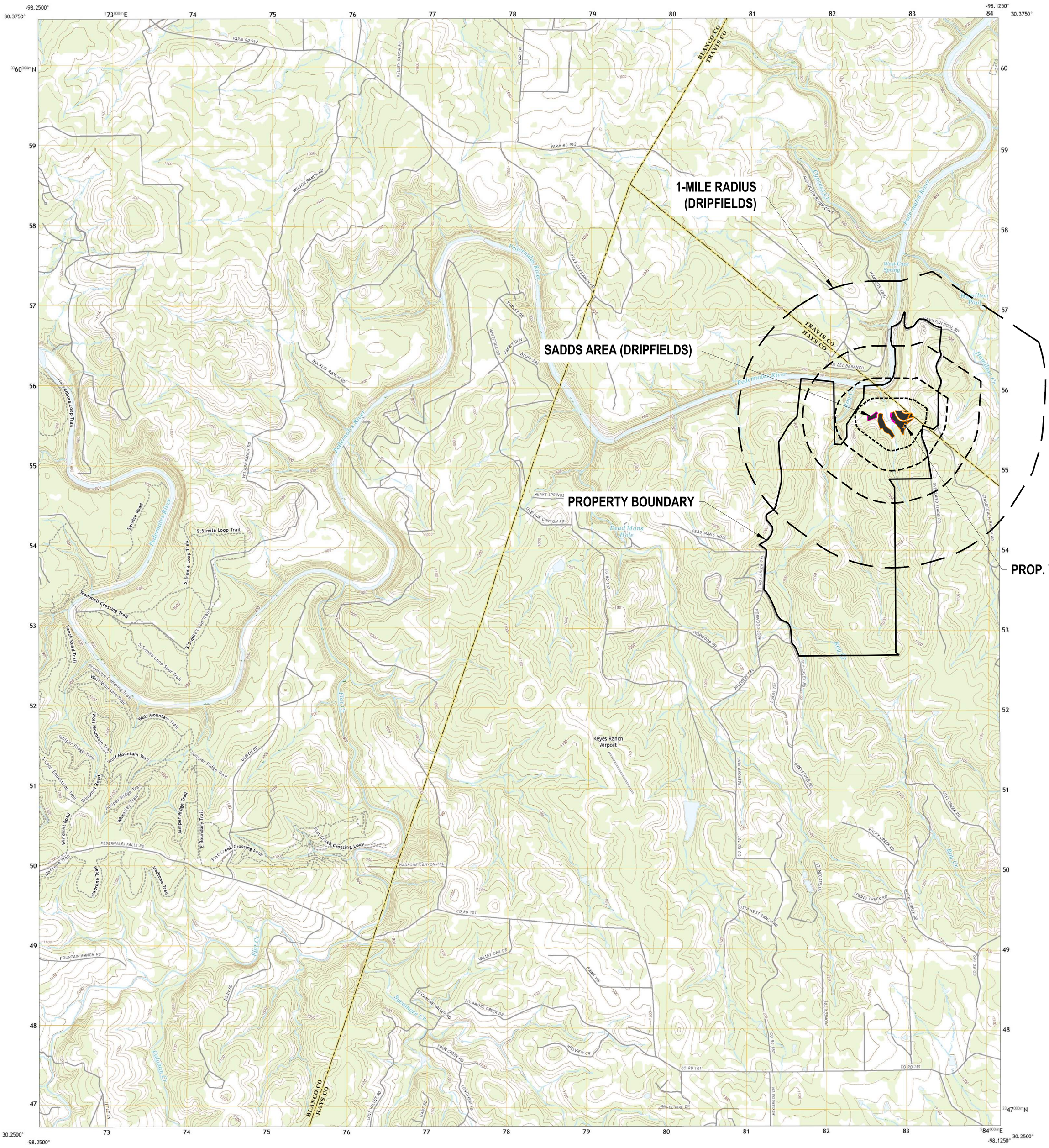
Company:	Clancy Utility Holdings, LLC	**Job Title:**	President
Name *(In Print)* **:**	Shaun Miller	**Phone:**	(214) 301-4255
Signature:	Shaun Miller	**Date:**	4-25-23

Attachment 2 – Original full-size USGS Topographic Map

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

HAMMETTS CROSSING QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, September 2016 - November 2016
Roads.....U.S. Census Bureau, 2015
Names.....GNIS, 2000 - 2003
Hydrography.....National Hydrography Dataset, 2002 - 2018
Contours.....National Elevation Dataset, 2010
Boundaries.....Multiple sources; see metadata file 2016 - 2017

Wetlands.....FWS National Wetlands Inventory 1983

MN
GN
0°55'
7 MILS
3°56'
70 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NU
Grid Zone Designation
14R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Round Mountain
2 Spicewood
3 Pace Bend
4 Pedernales Falls
5 Shingle Hills
6 Yeager Creek
7 Henly
8 Dripping Springs

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

HAMMETTS CROSSING, TX
2019

NSN. 7643016396434
NGA REF NO. USGSX24K70297

FOR PLANNING PURPOSES ONLY

2000 1500 1000 500 0 1000 2000 4000
(SCALE IN FEET)
SCALE: 1" = 2,000'

LEGEND
SERVICE AREA BOUNDARY
SADDS AREA (DRIPFIELDS)
1-MILE RADIUS (DRIPFIELDS)

PLOT DATE: 3/29/2023 2:16 PM rwilliams
FILE PATH: W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT)-USGS WELL MAP-TOPO-MIRASOL.dwg

DESIGNED BY: ANA
DRAWN BY: MLH
CHECKED BY: ANA
APPROVED BY: ANA
DATE: March 29, 2023

MURFEE ENGINEERING COMPANY
1101 CAPITAL OF TEXAS HIGHWAY SOUTH
BUILDING D, SUITE 110
AUSTIN, TEXAS 78746
(512) 327-9204
Texas Registered Engineering Firm F-353

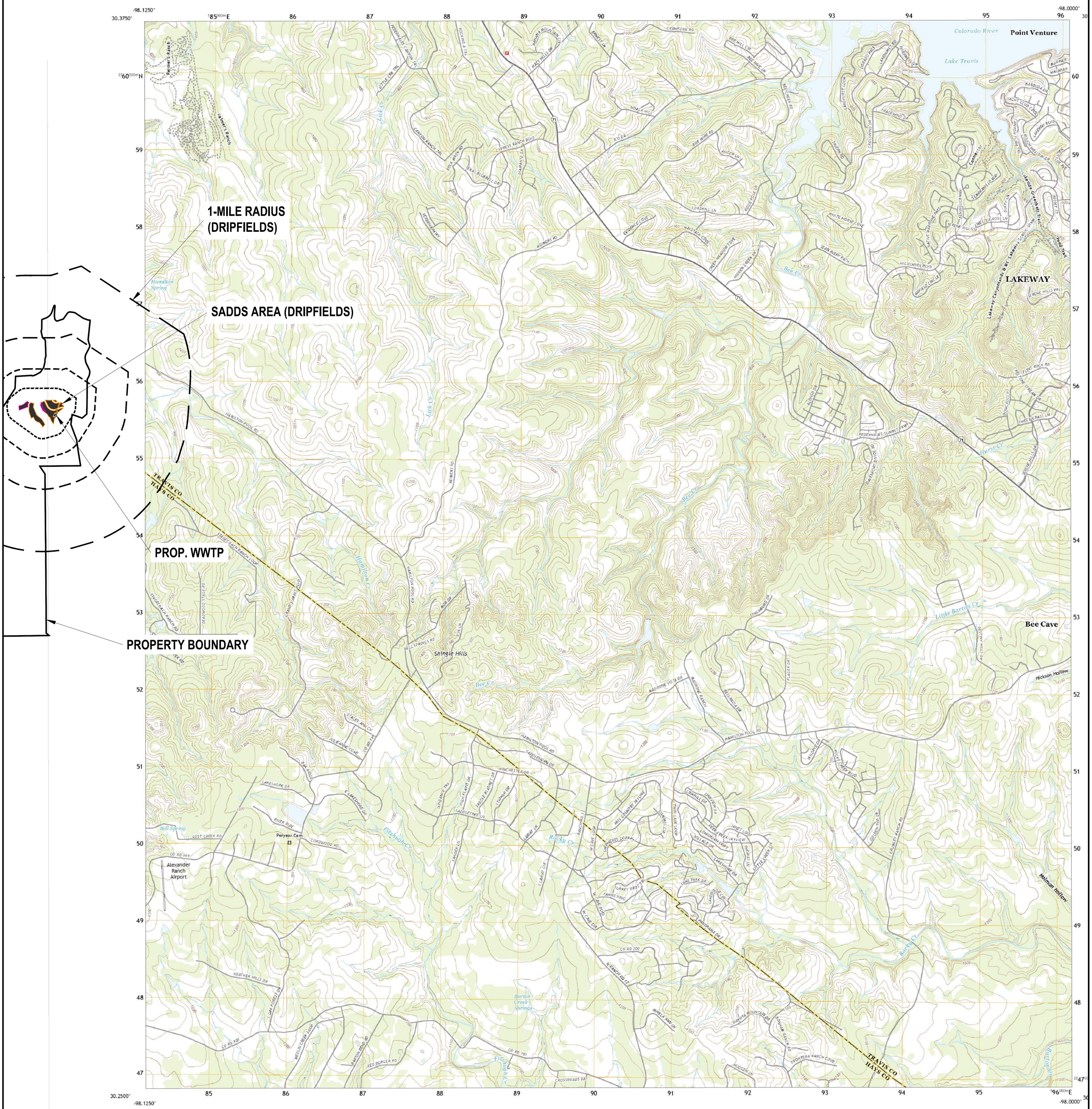
MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility

ORIGINAL FULL-SIZED USGS TOPOGRAPHIC MAP

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

SHINGLE HILLS QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery	NAIP,	September 2016 - November 2016
Roads	U.S. Census Bureau,	2015
Names	GNIS,	1979 - 2015
Hydrography	National Hydrography Dataset,	2002 - 2018
Contours	National Elevation Dataset,	2002 - 2010
Boundaries	Multiple sources; see metadata file	2016 - 2017
Wetlands	FWS National Wetlands Inventory	1983

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
MN
GN
0°28'
9 MILS
3°52'
69 MILS
U.S. National Grid
100,000-m Square ID
NU
Grid Zone Designation
14R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Spicewood
2 Pace Bend
3 Mansfield Dam
4 Hammetts Crossing
5 Bee Cave
6 Henly
7 Dripping Springs
8 Signal Hill

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

SHINGLE HILLS, TX
2019

FOR PLANNING PURPOSES ONLY

0 1000 2000 4000
2000 1500 1000 500
(SCALE IN FEET)
SCALE: 1" = 2,000'

LEGEND
SERVICE AREA BOUNDARY
SADDS AREA (DRIPFIELDS)
1-MILE RADIUS (DRIPFIELDS)

DESIGNED BY: ANA
DRAWN BY: MLH
CHECKED BY: ANA
APPROVED BY: ANA
DATE: March 29, 2023

MURFEE ENGINEERING COMPANY
1101 CAPITAL OF TEXAS HIGHWAY SOUTH
BUILDING D, SUITE 110
AUSTIN, TEXAS 78746
(512) 327-9204
Texas Registered Engineering Firm F-353

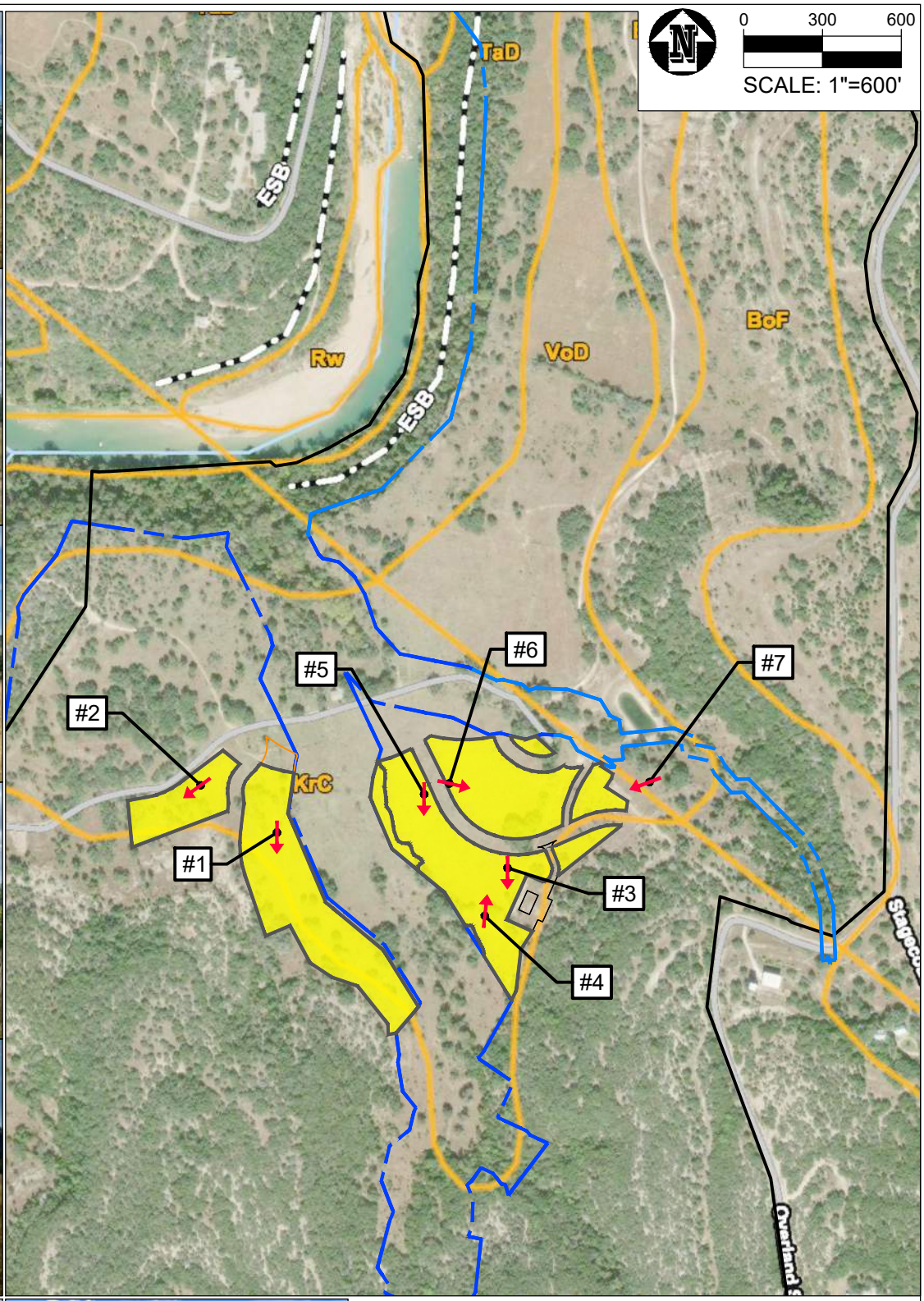
MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility

ORIGINAL FULL-SIZED USGS TOPOGRAPHIC MAP

PLOT DATE: 3/29/2023 2:16 PM rwilliams
FILE PATH: W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT)-USGS WELL MAP-TOPO-MIRASOL.dwg

FILE: W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT)-USGS WELL MAP-TOPO-MIRASOL.dwg

Attachment 3 – Original Photographs



Murfee Engineering Company
Texas Registered Engineering Firm F-353
1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746, (512) 327-9204

MIRASOL

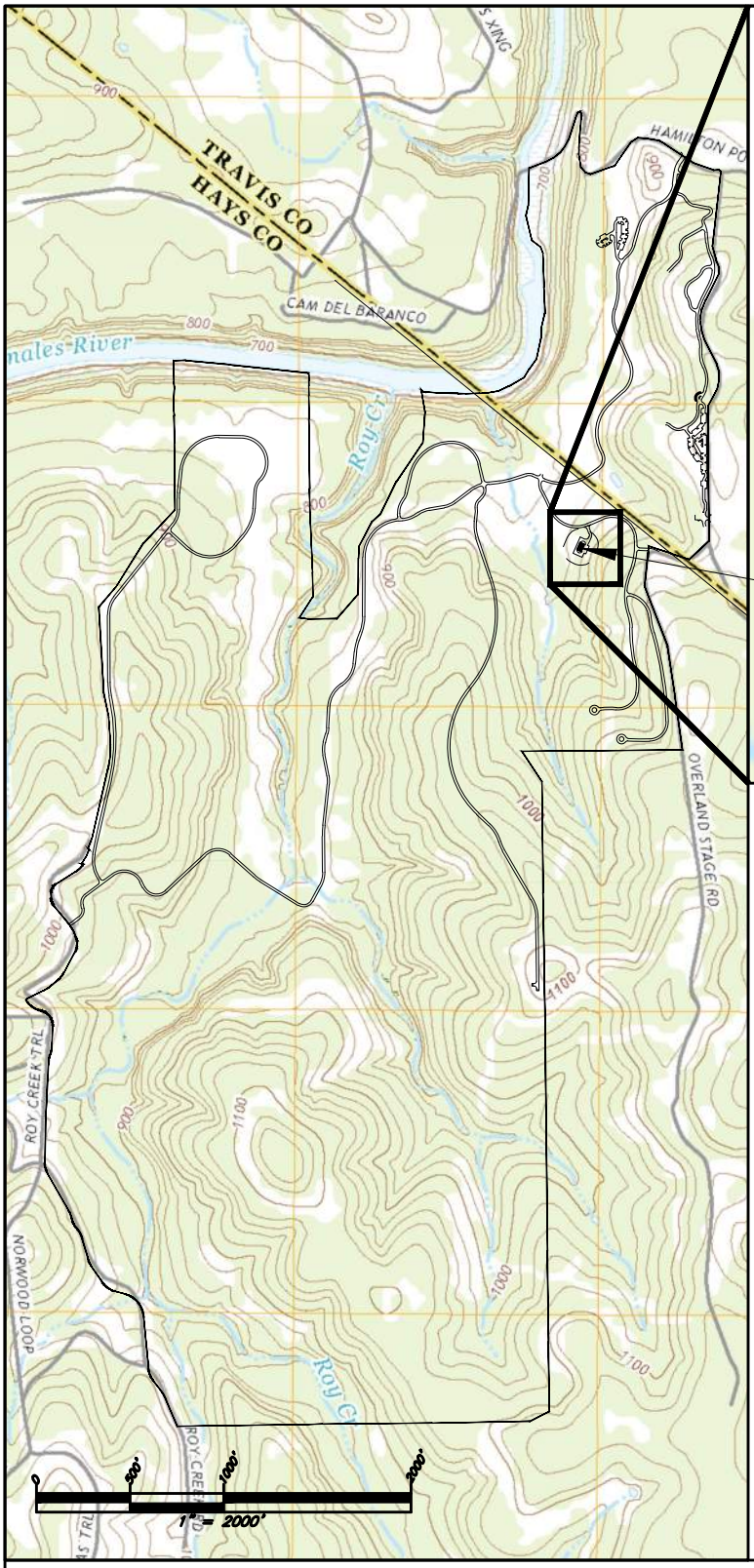
AERIAL IMAGERY GEOLOCATION

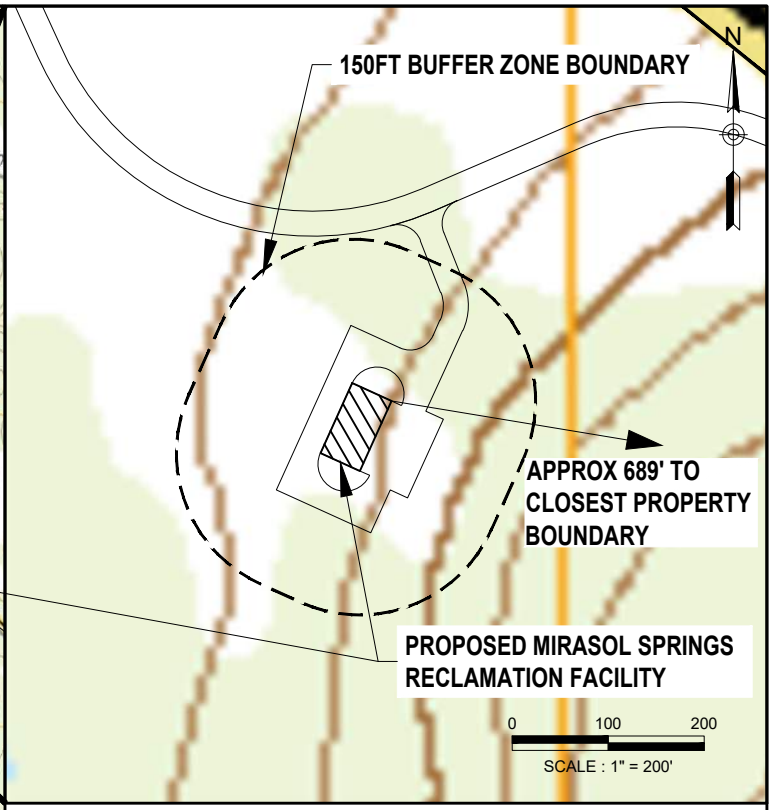
JOB NO.	19-011-85	DESIGNED BY:	AW
DATE:	3/20/2023	DRAWN BY:	RLW
TAB:	A600	CHECKED BY:	AW

APP000095

W:\Mirasol\Conceptual\MIRASOL-E-TLAP-SOILS.dwg(A600)

Attachment 4 – Buffer Zone Map





NOTE: ALL WASTEWATER TREATMENT UNITS ARE ENCLOSED IN A SINGLE BUILDING

MIRASOL MEADOWS RANCH WATER RECLAMATION FACILITY

BUFFER ZONE MAP

DESIGNED BY:	ANW
DRAWN BY:	MJS\RLW
CHECKED BY:	ANW
APPROVED BY:	ANW
DATE:	4/10/2023

MURFEE ENGINEERING COMPANY
1101 CAPITAL OF TEXAS HIGHWAY SOUTH
BUILDING D, SUITE 110
AUSTIN, TEXAS 78746
(512) 327-9204
TEXAS REGISTERED ENGINEERING FIRM F-353

APP000097

PLOT DATE: 4/10/2023 7:52 AM awyatt
FILE PATH: W:\Mirasol\Facilities\Wastewater\TLAP\CAD\Exhibit-Mirasol-TLAP BUFFER ZONE MAP-230410.dwg

Attachment 5 – Treatment Process Description

Treatment Process Description - Mirasol Springs Ranch Water Reclamation Facility

The Mirasol Springs Ranch Water Reclamation Facility will serve the Mirasol commercial development and branded residential homes. This treatment system will be constructed in a single phase capable of treating the full permit capacity of 39,000 gallons per day. The proposed treatment process is an activated sludge treatment system operated as single stage nitrification with tertiary filtration.

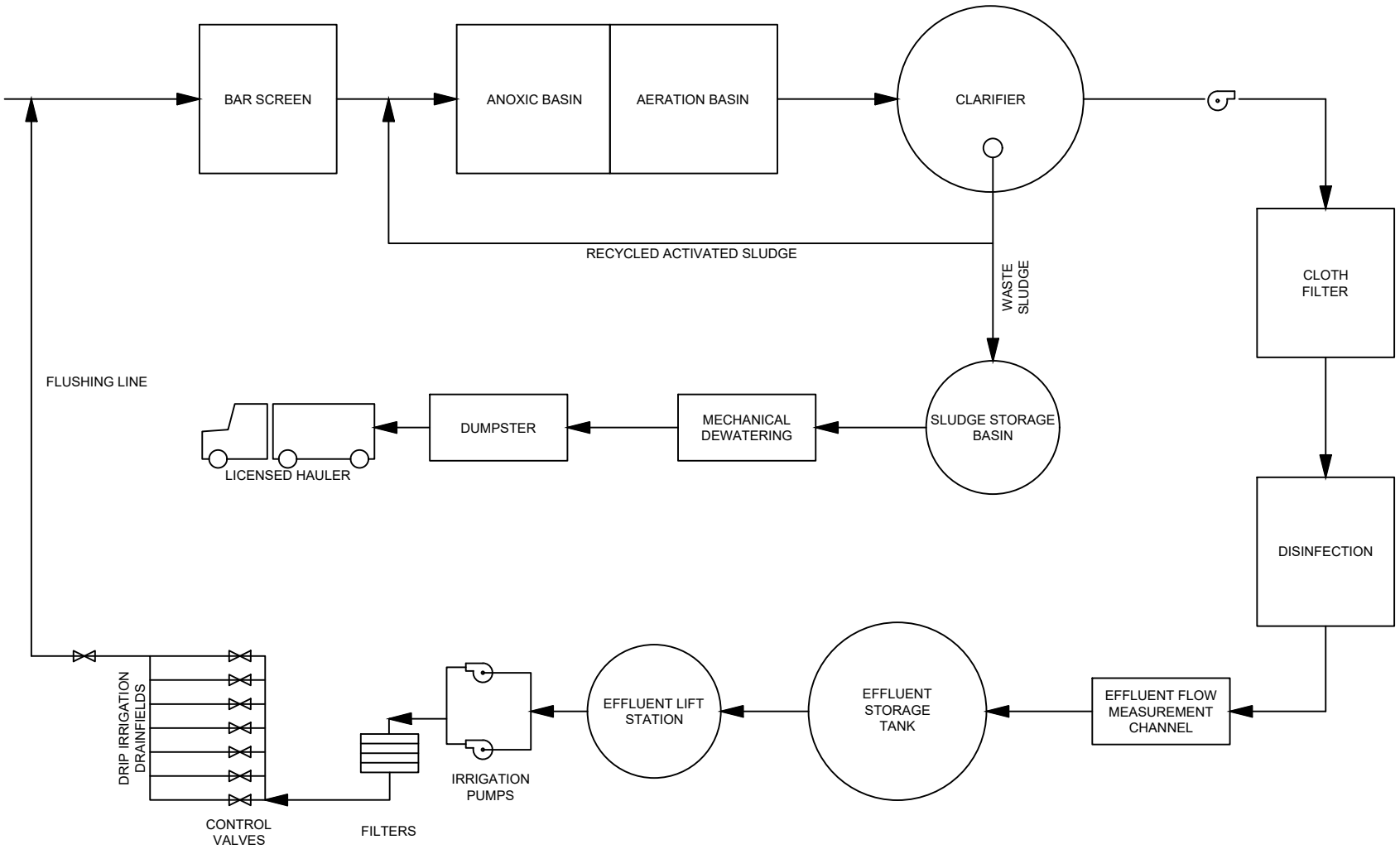
Treatment units include an influent screen, anoxic basin, aeration basin, clarifier, cloth filter, and chlorine contact chamber and the process produces Type I effluent. Following treatment, effluent is directed to an effluent flow monitoring channel and discharged into a 218,000 gallon (0.67 acre-feet) storage basin.

Effluent irrigation pumps will withdraw from the storage basin and pump effluent to a 16.2-acre subsurface area drip dispersal system.

Waste sludge will be stored in a sludge storage basin prior to dewatering. Dewatered sludge will meet the requirements for hauling as a solid and be stored on-site in a dumpster prior to hauling by a licensed hauler to a licensed disposal site.

Attachment 6 – Process Flow Diagrams

MIRASOL WWTP - PROCESS FLOW DIAGRAM



FOR PLANNING PURPOSED ONLY

DESIGNED BY: ANA DRAWN BY: PEP CHECKED BY: APPROVED BY: DATE: 11/26/2021	MURFEE ENGINEERING COMPANY	1101 CAPITAL OF TEXAS HIGHWAY SOUTH BUILDING D, SUITE 110 AUSTIN, TEXAS 78746 (512) 327-9204 TEXAS REGISTERED ENGINEERING FIRM F-353

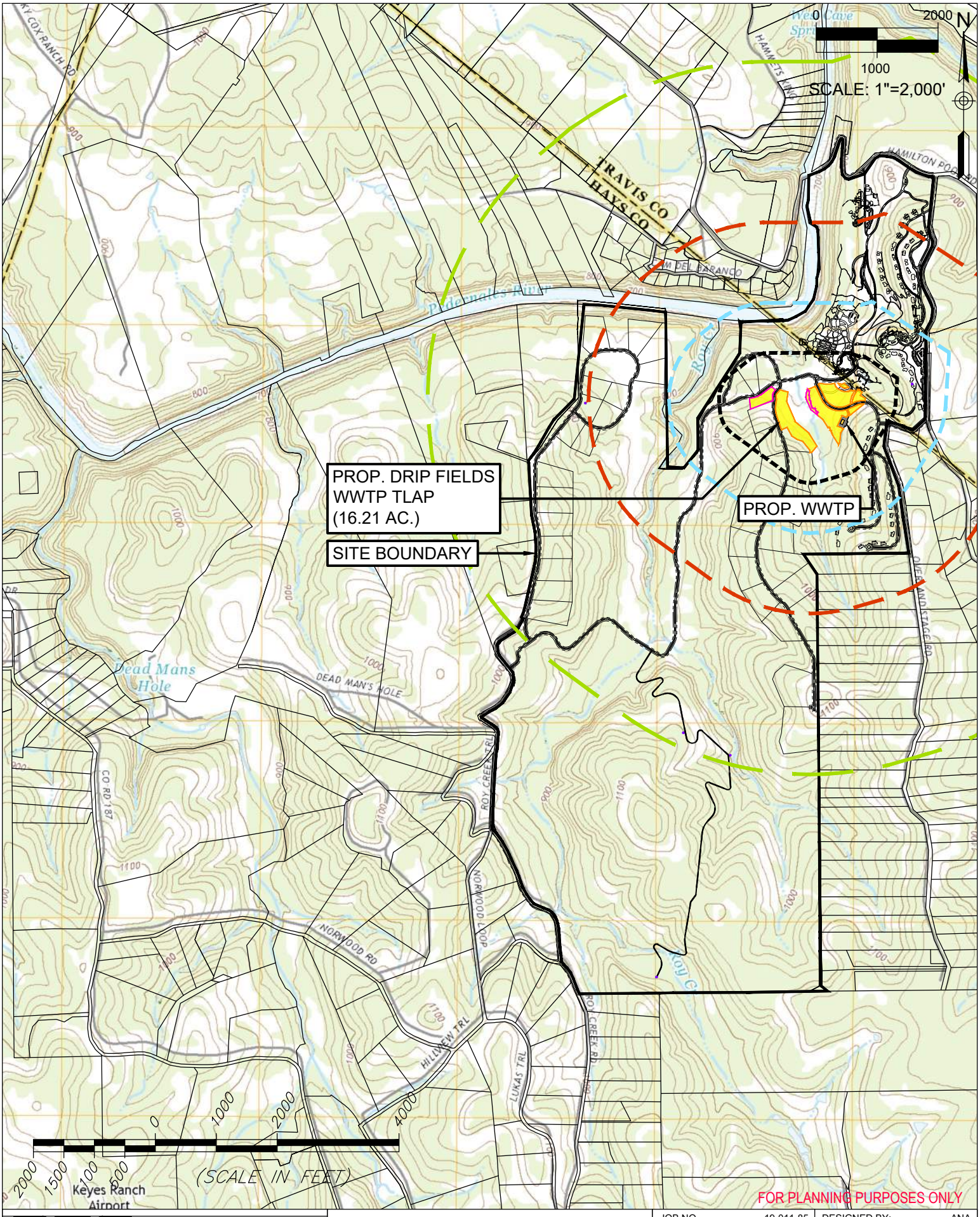
MIRASOL

WASTEWATER TREATMENT PLANT - TLAP
FLOW DIAGRAM

APP000101

PLOT DATE: 11/26/2021
FILE PATH: W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\MIRASOL PROCESS FLOW DIAGRAM_.dwg(INITIAL)

Attachment 7 – Site Drawing



FOR PLANNING PURPOSES ONLY

MEC
Murfee Engineering Company
Texas Registered Engineering Firm F-353
1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746, (512) 327-9204

MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility
Site Drawing

JOB NO.	19-011-85	DESIGNED BY:	ANA
DATE:	3/28/2023	DRAWN BY:	MJS/RLW
SCALE:	AS NOTED	CHECKED BY:	ANA

APP000103

W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT)-TLAP-MIRASOL WW.dwg(Site Plan)

Attachment 8 – Sludge Transport Letter and Sludge Management Plan

Wastewater Residuals Management, LLC

Austin Wastewater Processing Facility
826 Linger Ln
Austin, Texas 78721
(512) 973-8484

Waste Stream Acceptance

Wastewater Residuals Management, LLC an affiliate of Wastewater Transport Services, LLC, owns and operates the Austin Wastewater Processing Facility. This facility has been permitted by the TCEQ and assigned permit number MSW 2384. The disposal facility is expected to be open for at least the next 5 years. Wastewater Residuals Management reserves the right to discontinue acceptance of the below mentioned waste at any time.

The facility has been permitted to receive the following non-categorical waste streams:

- Wastewater Treatment Plant Sludge
- Water Treatment Plant Sludge
- Leachate
- Septic
- Sanitary Sewer
- Storm Water**
- Food Service Grease
- Lint Trap Waste
- Other Non-Hazardous Liquid Waste**

The facility has also been permitted as a centralized waste treatment facility to receive and treat the following categorical waste steams:

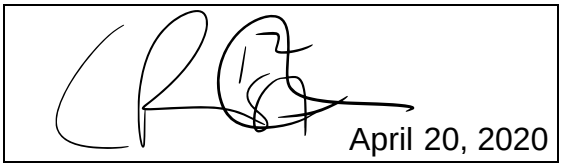
- Grit Trap Waste (Car Wash)**
- Other Oils Treatment and Recovery**

We agree to accept the following waste stream from the below listed generator:

Generator: Mirasol Water Reclamation Facility

Waste Stream(s): WWTP Sludge, Raw Sewage

Profile Number: N/A



Wastewater Residuals Management, LLC

**Waste stream will need a profile and may need analytical

SLUDGE MANAGEMENT PLAN
for the
MIRASOL SPRINGS
WATER RECLAMATION FACILITY TLAP

Prepared for:

Mirasol Springs Ranch
c/o Clancy Utility Holdings, LLC
4143 Maple Avenue, Suite 400
Dallas, TX 75219

Prepared by:

Murfee Engineering Company, Inc.
Texas Registered Firm No. F-353
1101 Capital of Texas Highway South
Building D, Suite 110
Austin, Texas 78746
(512) 327-9204

May 5th, 2023

The following information is provided to meet the requirements of item 10 of the Domestic Technical Report 1.0.

The Mirasol Springs Water Reclamation Facility will process wastewater produced by the proposed inn and branded residential housing. The anticipated wastewater has the following characteristics:

Influent Design Flow = 0.039 MGD

Influent BOD Concentration = 480 mg/L

Aeration Basin MLSS = 2,500 mg/L

Sludge Yield = 0.7

Solids Concentration in Storage = 1%

Table 1 shows the anticipated wet sludge production given the various influent flow rates.

Table 1: Sludge Production

Solids Generated	100% flow	75% flow	50% flow	25% flow
Pounds Influent BOD_5	156	117	78	39
Pounds of sludge to process	109	82	55	27
Pounds of wet sludge produced	10,929	8,197	5,464	2,732
Gallons of wet sludge produced	1,310	983	655	328

Sludge will be wasted from the RAS flow stream to the proposed 10,000-gallon aerated sludge holding basin. Sludge will be pumped to the volute dewatering device with a proposed treatment capacity of 15 gallons per minute and produce approximately 80 pounds of dry solids per hour. Filtrate from the dewatering device will be introduced back to the anoxic treatment basin. Solids produced by the dewatering device will be hauled from site for further processing and final disposal by a licensed facility. The minimum dry solids produced by the dewatering device will be 85%. Table 2 shows the anticipated dry sludge production and the various influent flow rates.

Table 2: Dry Solids Production

Dry Solids Generated	100% flow	75% flow	50% flow	25% flow
Solids %	85%	85%	85%	85%
Pounds of dry solids produced	728	546	364	182
Cu ft of dry solids	9.34	7.01	4.67	2.34

Table 3 shows the removal schedule for the dry sludge assuming a four-yard dumpster is used and allowed to fill completely prior to removal. Dry sludge will be removed from the site regularly. The twenty-yard dumpster will be used to hold the dry solids and will be emptied once each month, regardless of how full it is.

Table 3: Solid Sludge Removal Schedule

Removal Schedule (days)	100% flow	75% flow	50% flow	25% flow
Days between Sludge Removal	57	77	115	231

In the event of a failure of the dewatering device, the proposed sludge storage tank will follow the removal schedule shown in Table 4.

Table 4: Liquid Sludge Removal Schedule

Removal Schedule (days)	100% flow	75% flow	50% flow	25% flow
Days between Sludge Removal	8	10	15	31

The sludge will be transported by licensed hauler, Wastewater Transport Services, Registration # 24343 to Wastewater Residual Management's disposal facility: Austin Wastewater Processing Facility, Permit No. MSW 2384 in Travis County.

Attachment 9 – Justification for Permit

Justification of Permit Need - Mirasol Springs Ranch Water Reclamation Facility

Proposed Flows

Final phase

Design Flow: 0.039 MGD

2-Hr Peak Flow: 0.156 MGD

Construction Start Date: 2024

Waste Disposal Date: 2025

The proposed flows are based on the current land plan for the service area. The service area includes a hotel made up of 71 rooms (with a potential for 12 additional rooms), two restaurants, an events venue, a variety of visitor venues, a few retail areas, 69 single-family residences (with a potential for 8 additional residences, and a University of Texas Field Station. Wastewater production was estimated in two manners. First, the number of living unit equivalents was estimated using the square footage of the planned program areas and an estimate of how many gallons of wastewater would be produced per LUE. The second method used the TCEQ flow per unit method to estimate the wastewater production of a development. The following table summarizes the LUE method:

Use Type	Total Sqft or rooms	LUE/SQFT or rooms	LUEs	Anticipated mg/L BOD
Single Family	77	1	77	300
Hotel rooms	83	0.5	41.50	300
office	8,984	3.33E-04	2.99	300
Restaurant/Cafeteria	15,127	5.00E-03	75.64	1,000
Retail and Misc	77,020	6.02E-04	46.40	300
UT Field Station			10.99	300
Pools	6,615	6.02E-04	3.98	5
Total			258.5	
Gallons per LUE	150	Total Gallons	38,850	499

The following table summarizes the TCEQ method:

Type	Flow per Unit (GPD)	Unit	Est # Units	Total Flow (GPD)	Anticipated mg/L BOD
Office Building	20	people in largest shift	150	3,000	300
The Inn	50	beds	166	8,300	300
Restaurant	7	meal	1,500	10,500	1,000
Catering/Events	10	per attendee	55	550	1,000
Residential	50	per person	193	9,625	300
UT Field Station	100	Person	20	2,000	300
Totals				33,975	528

Given the results of these analyses, 39,000 gallons per day was selected as the design flow, based on the LUE method. As this is a new system with no flow data, the TCEQ regulatory requirement a peaking factor of 4 for the 2-hour peak flow.

There are currently no plans for future development other than what has been presented.

Attachment 10 – Design Calculations

Mirasol Process Calculations

Design Parameters

Average Daily Flow	39,000	GPD
Peak 2 Hour Flow	156,000	GPD
Influent BOD Concentration	525	mg/L
Influent TKN Concentration	60	mg/L

Required Process Limits

Aeration Basin Air Requirement	3,200	SCF/day/lb BOD
Clarifier Maximum Surface Loading	1,800	gal/day/sf
Maximum Weir Loading Rate	20,000	gal/day/ft
Minimum Detention Time at Peak Flow	1.8	hours
Chlorine Contact time at Peak Flow	20	minutes
Effluent Storage	3	days

Resultant Minimum Basin Sizing

	Operating Volume	Width	Length	Operating Depth
Anoxic Basin	13,000 gallons	12 feet	10 feet	15 feet
Aeration Basin	51,100 gallons	12 feet	36 feet	15 feet
Chlorine Contact	2,170 gallons	12 feet	2 feet	15 feet
Sludge Storage	13,400 gallons	12 feet	10 feet	15 feet
Clarifier	11,845 gallons	12 feet		14 feet
Effluent Storage	117,000 gallons	Irregular Shape	2,090 square feet	14 feet

Design Calculations

Clarifier Sizing

Clarifier size is dictated by surface loading rate, detention time. or weir loading rate. Surface loading rate is the limiting characteristic in this case.

$$SLR = \frac{Q_{peak}}{SA}$$

$$SLR \equiv Surface\ Loading\ Rate\ \left(1{,}800\,\frac{gal}{day \cdot sf}\right)$$

$$\mathrm{SA} = \frac{\mathrm{Q_{peak}}}{\mathrm{SLR}} = \frac{156{,}000\ \mathrm{gpd}}{1{,}800\,\frac{\mathrm{gal}}{\mathrm{day.\,sf}}} = 87\ \mathrm{sf}$$

$$Clarifier\ Diameter \equiv 10.5\ feet\ minimum$$

Aeration Basin Sizing

Aeration basin size is determined by the BOD loading rate.

$$MaximumLoadingRate(MLR) = \frac{25\ pounds\ BOD}{day \cdot 1{,}000\ cf}$$

$$BOD\ Loading = 525\,\frac{mg}{L} * Q_{peak} = 170.7\,\frac{lbs}{day}$$

$$V_{AB} = \frac{BOD\ Load}{MLR} = \frac{170.7\,\frac{lbs}{day}}{\frac{25\ pounds\ BOD}{day \cdot 1{,}000\ cf}} = 6{,}830\ cf\ or\ 51{,}092\ gallon$$

Anoxic Basin Sizing

Anoxic basin size is determined by the nitrogen load, unless the load results in a low detention time. A nitrogen load of 19.5 pounds per day was used based on influent concentration of 60 mg/L. The nitrogen load yielded a basin size of 9,364 gallons. In this case, the detention time is set to 2 hours yielding a basin volume of 13,000 gallons or 1,738 cf.

$$V_{Anox} = \frac{Detention\ Time * Q_{peak}}{24\,\frac{hours}{day}}$$

$$V_{Anox} = \frac{2\ hrs * 156{,}000\,\frac{gallons}{day}}{24\,\frac{hours}{day}} = 13{,}000\ gallons\ or\ 1{,}738\ cf$$

Chlorine Contact Basin Sizing

Chlorine contact basins must provide at least 20 minutes of hydraulic detention time at the 2-hour peak flow. This yields a Contact Basin volume of 2,167 gallons or 290 cubic feet.

$$V_{CT} = \frac{Detention\ Time * Q_{peak}}{24\ hours/_{day} * 60\ minutes/_{hour}}$$

$$V_{CT} = \frac{20\ minutes * 156{,}000\,\frac{gallons}{day}}{24\,\frac{hours}{day} * 60\,\frac{minutes}{hour}} = 2{,}167\ gallons\ or\ 289.6\ cf$$

Sludge Basin Sizing

There are no standards for sizing sludge basins. This system includes a sludge dewatering process which will not be installed with redundant capacity. Therefore, the sludge basin size was calculated based on a seven-day storage volume for wasted sludge. Waste sludge is assumed to have a solids concentration of approximately 1%.

$$BOD\ loading\ =\ 170.7\frac{lbs}{day}$$

$$Sludge\ Yield = 0.7$$

$$Sludge\ Produced = 0.7 * 162.6\frac{lbs}{day} = 119.5\frac{lbs}{day}$$

$$Pounds\ of\ Wet\ Sludge = \frac{119.5\frac{lbs}{day}}{1\%} = 11{,}953\ lbs$$

$$V_{wet\ sludge} = \frac{11{,}953\ lbs}{78\frac{lbs}{cf}} = 191.6\ cf\ or\ 1{,}433.3\ gallons$$

$$V_{sludge\ storage} = 7 \times V_{wet\ sludge} = 1341 cf\ or\ 10{,}033\ gallons$$

Effluent Storage

The effluent storage basin is sized to contain a minimum of three (3) days volume of treated effluent. This results in a basin with an operating volume of at least 117,000 gallons. The design intent is to construct a below-ground effluent clearwell within the footprint of the wastewater treatment plant (WWTP). The proposed WWTP is enclosed in an 80-foot by 45-foot building and roughly 1,335 square foot is dedicated to treatment basins. The remaining area available is approximately 2,090 square feet. The proposed operating depth of the basin is 14 feet. This provides 218,000 gallons of available effluent storage.

Attachment 11 – FEMA Firm Maps #48209C0025F Sep 2,2005 ; #48453C0360H Sep 26, 2008

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 14. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information about the **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from Texas Natural Resources Information System Digital Orthophoto Quadrangles (DOQs) produced at a scale of 1:12,000 from photography dated 1995.

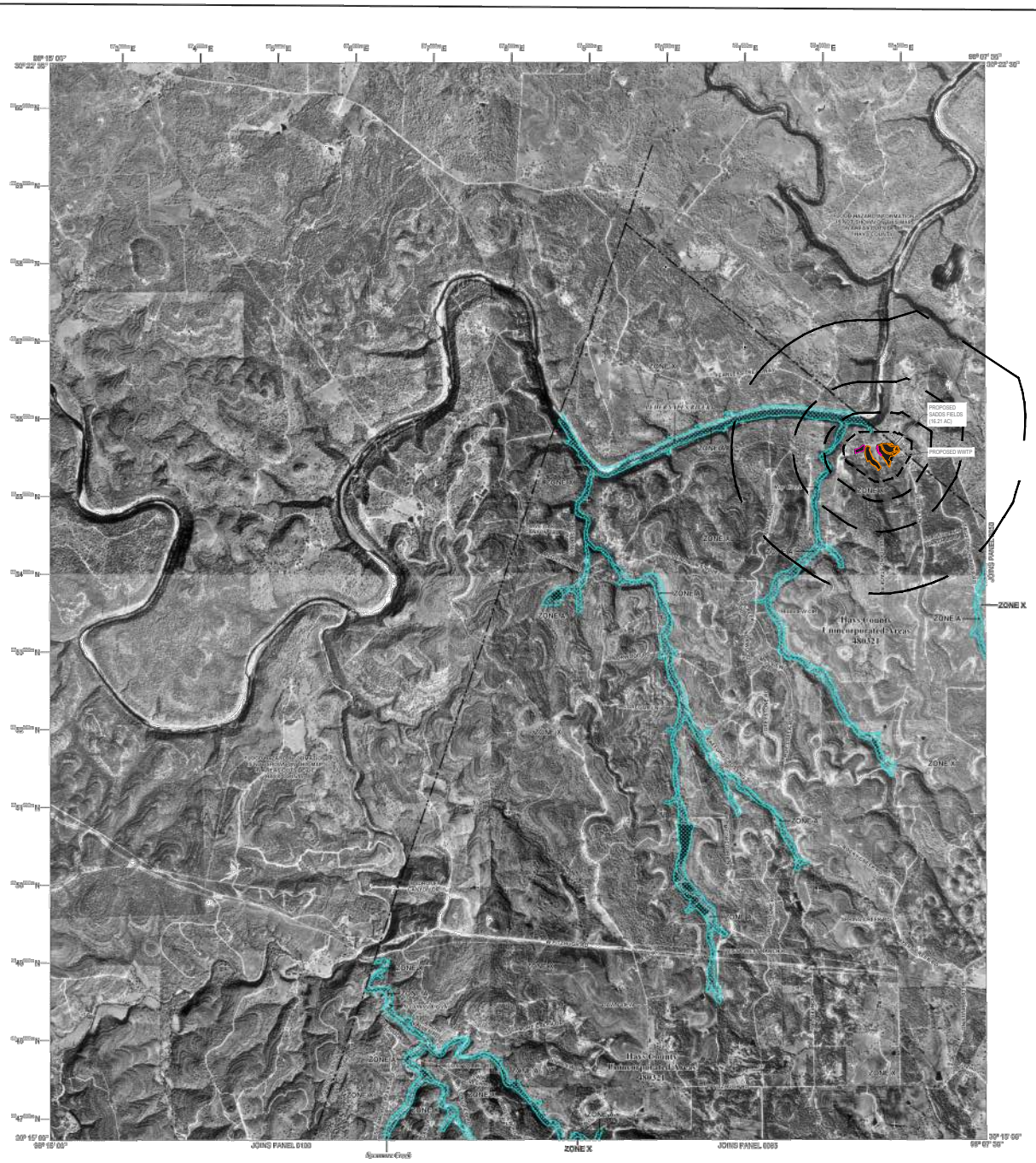
This map reflects more detailed and/or more recent **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of Communities Table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at www.fema.gov/msc.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877- FEMA MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** — No Base Flood Elevations determined.
- **ZONE AE** — Base Flood Elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are usually located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation (forward) value; elevation in feet*
- (EL. 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 97° 07' 30", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 3276000 mE — 1000-meter Universal Transverse Mercator grid values, zone 14
- 5000000 mN
- BM5 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
FEBRUARY 15, 1996

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 2, 2005 — to update corporate limits and map format; to add roads and road names; and to incorporate previously issued Letters of Map Revision.

For Community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
300 0 600 1200 METERS

NFIP — NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0025F

FIRM
FLOOD INSURANCE RATE MAP

HAYS COUNTY, TEXAS AND INCORPORATED AREAS

PANEL 25 OF 495

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HAYS COUNTY	480321	0025	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 48209C0025F

MAP REVISED SEPTEMBER 2, 2005

Federal Emergency Management Agency

APP000117

FILE: W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT)-TLAP-FEMA FIRM.dwg

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Texas State Plane central zone (FIPSZONE 4203). The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the City of Austin and CAPCOG. This information was photogrammetrically compiled at a scale of at least 1:15,000 from aerial photography dated January 2003.

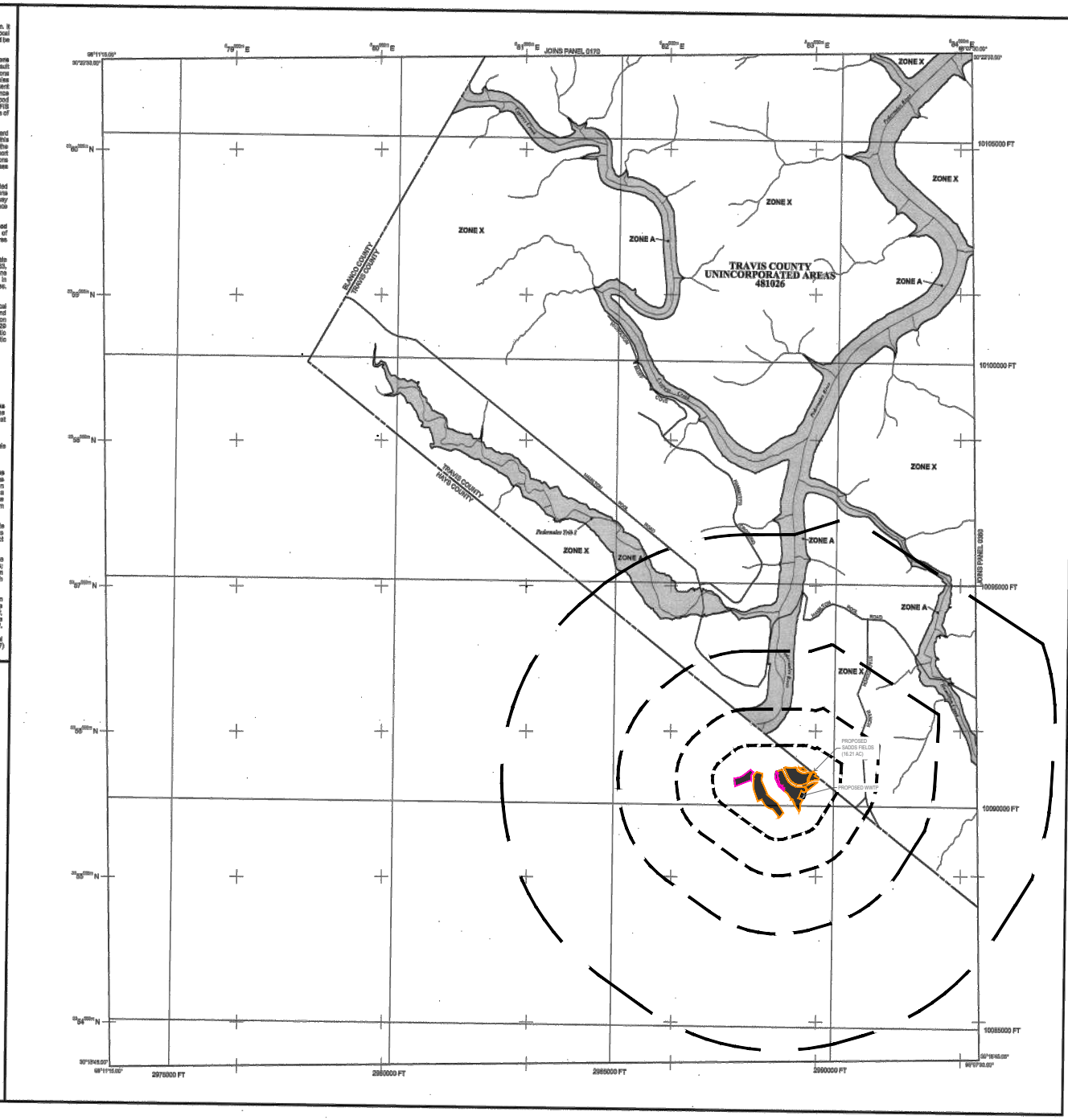
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP (1-877-336-2627)** or visit the FEMA website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A — No Base Flood Elevations determined.
- ZONE AE — Base Flood Elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A — Cross section line
- 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4979000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 14
- 6000000 FT — 5000-foot grid values: Texas State Plane coordinate system, central zone (FIPSZONE 4203), Lambert Conformal Conic
- DX5910 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
June 19, 1980

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
June 6, 1997 · January 19, 2000 · April 19, 2002
September 26, 2008 - To update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision, and to update map format.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
150 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0360H

FIRM
FLOOD INSURANCE RATE MAP
TRAVIS COUNTY, TEXAS
AND INCORPORATED AREAS

PANEL 360 OF 730
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
TRAVIS COUNTY	481026	0360	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
48453C0360H
MAP REVISED
SEPTEMBER 26, 2008

Federal Emergency Management Agency

APP000118

FILE: W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT)-TLAP-FEMA FIRM.dwg

Attachment 12 – Annual Cropping Plan

Annual Cropping Plan – Mirasol Springs Ranch Water Reclamation Facility

The same crops will be planted across the entire proposed TLAP area, refer to Attachment 3 for the area and soil map and to Attachment 17 for additional soil information. The flora in the TLAP area will be removed to plant the proposed mix of grasses. To preserve the native flora and fauna in the surrounding area, we propose that a blend of non-native and native, deep-rooted, quick germinating grasses be used to seed the irrigated areas in the summer and cereal rye grain be overseeded for winter growth. The development has an agronomist involved to monitor the area foliage and he, along with the environmental conservation consultant, will plant a seed mix including Texas native grasses that have water and nutrient demands similar to Bermuda grass along with pearl millet grass to meet the requirement for a non-Native summer growing grass species. Cereal rye grain will be used for winter over-seeding. Irrigated areas will be installed in advance of the anticipated use for effluent disposal to ensure sufficient plant growth for nutrient/water uptake. Extensive data is not available, but the grasses in the proposed list have similar nutrient uptake capacities as Bermuda. The average monthly use, expressed in inches for rye grass, was derived from Bulletin 6019, "Consumptive Use of Water by Major Crops in Texas," a publication of The Texas Board of Water Engineers, a predecessor of the Water Commission. Specifically, rye grass rates of consumptive use are derived from Table 8 – Small Grains, from the publication. Bermuda grass rates were taken from "Mean Crop Consumptive Use and Free-Water Evaporation for Texas," by John Borrelli, et. al. at Texas Tech University. The total monthly rates are calculated as follows:

Month	Bermuda (in/month)	Rye (in/month)	Total (in/month)
January	2.2	1.3	3.5
February	2.3	2.3	4.6
March	3.4	5.7	9.1
April	4.1	7.4	11.5
May	4.4	5.6	10.0
June	5.1	---	5.1
July	6.2	---	6.2
August	5.8	---	5.8
September	4.7	---	4.7
October	3.5	1.2	4.7
November	2.4	1.6	4.0
December	2.0	1.3	3.3
Total	46.1	26.4	72.5
Average	---	---	6.04

The design irrigation rate of 0.1 GPD/ft^2 is equivalent to 4.87 inches per month, which is based on design flow. Results from similar existing projects tend to have an actual irrigation rate at 80% or less of the design irrigation rate value. Actual flows will result in an average application rate of 3.9 inches per month. It is normal for wastewater flows in the winter months to be less than the average flow rate.

A nitrogen (total) loading was calculated for the irrigated areas, based on 25 mg/l of TN in the effluent. The annual application rate is 332 pounds per acre per year, which is below the quantity that can be used by the two grass crops. Additional nutrients do not appear to be a critical necessity.

No additional watering or fertilizing of crops is anticipated to be necessary to maintain adequate growth of the two grass crops proposed. Grass will be mowed as necessary.

Mirasol Springs Ranch TLAP Field Seed List

September 12, 2022

Warm-season crops:

- Non-native primary crop
  - Pearl millet, *Pennisetum glaucum*, seed, 6lbs/ac
- Native crops (upland fields)
  - Switchgrass, *Panicum virgatum*, 4" plugs 12 feet o.c.
  - Eastern gamagrass, *Tripsacum dactyloides*, 4" plugs 12 feet o.c.
  - Switchgrass, *Panicum virgatum*, 3lbs seed /acre
  - Eastern gamagrass, *Tripsacum dactyloides*, 3lbs seed /acre
  - Green sprangletop, *Leptochloa dubia*, 4lbs seed/acre
  - Little bluestem, *Schizachrium scoparium*, 6lbs seed /acre
- Native crops (lowland fields)
  - Switchgrass, *Panicum virgatum*, 4" plugs 12 feet o.c.
  - Eastern gamagrass, *Tripsacum dactyloides*, 4" plugs 12 feet o.c.
  - Switchgrass, *Panicum virgatum*, 3lbs seed /acre
  - Eastern gamagrass, *Tripsacum dactyloides*, 3lbs seed /acre
  - Big bluestem, *Andropogon gerardii*, 3lbs seed /acre
  - Bushy bluestem, *Andropogon glomeratus*, 3lbs seed /acre

Note: the total quantity of 4" plugs to be planted 6 feet on-center, with each of the two grasses to make up half of the total and to be evenly distributed.

Cool-season crops:

- Non-native primary crop
  - Cereal rye grain, *Secale cereale*, 25lbs/acre
- Native crops
  - Virginia wildrye, *Elymus virginicus*, 6lbs/acre
  - Canada wildrye, *Elymus canadensis*, 6lbs/acre
  - Texas wintergrass, *Nassella leucotricha*, 8lbs/acre

Additional native species recommended for ecological diversity, 10lbs/acre total to be overseeded across the entire TLAP fields:

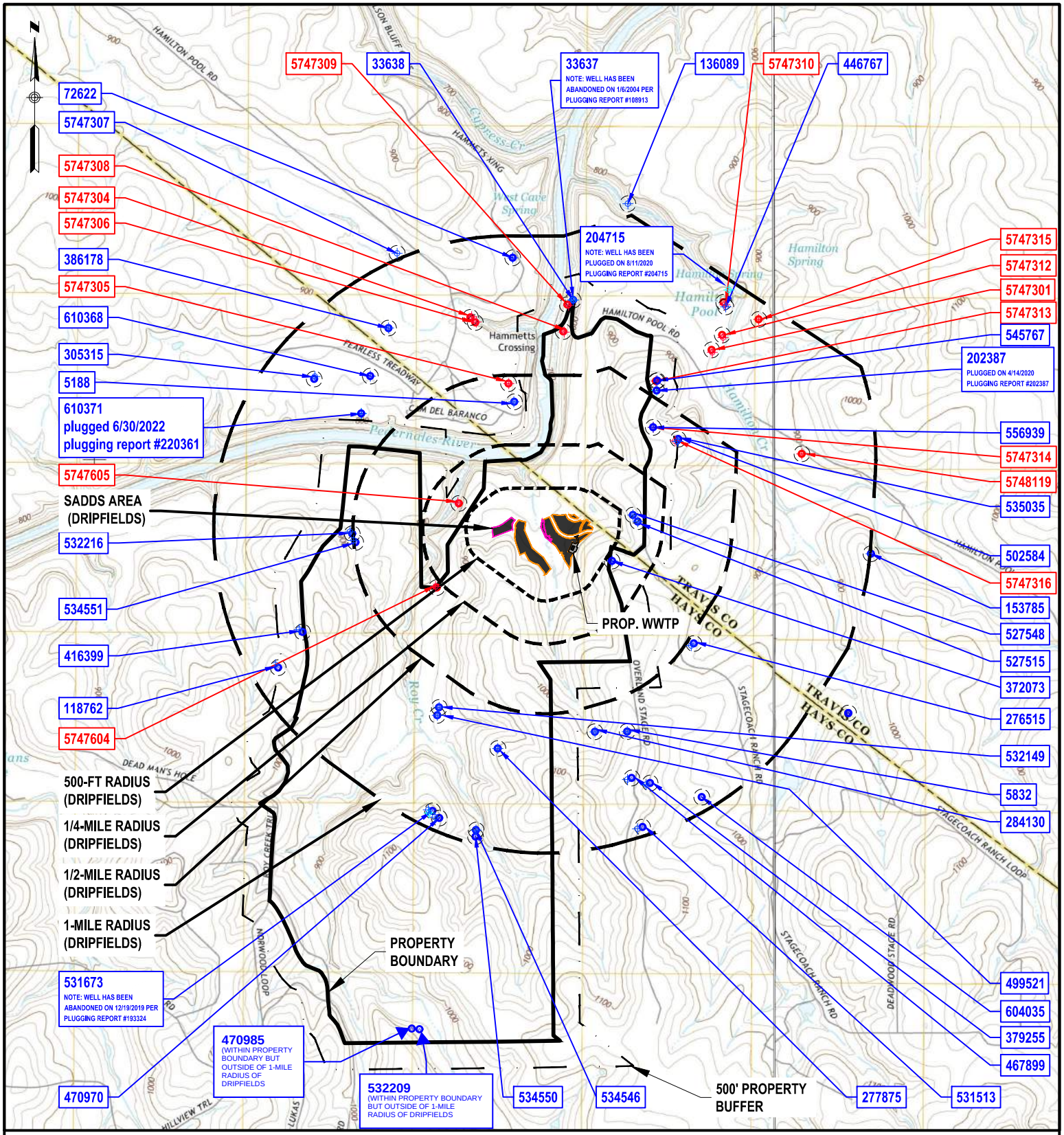
- Maximilian sunflower, *Helianthus maximilianii*
- Late goldenrod, *Solidago altissima*
- Butterfly weed, *Asclepias tuberosa*

- Standing cypress, *Ipomopsis rubra*
- Datura, *Datura wrightii*
- Buffalo gourd, *Cucurbita foetidissima*
- Lemon mint, *Monarda citriodora*
- Cutleaf daisy, *Engelmannia peristenia*
- Lanceleaf coreopsis, *Coreopsis lanceolata*
- Black-eyed susan, *Rudbeckia hirta*
- Firewheel, *Gaillardia pulchella*
- Texas bluebonnet, *Lupinus texensis*
- Texas gayfeather, *Liatris mucronate*
- Zemenia, *Wedelia texana*

Mowing regime:

- Mow twice per year in February and August.
- Mow 8" height minimum.

Attachment 13 – USGS Well Map



SCALE: 1" = 2,500'

FOR PLANNING PURPOSES ONLY

Murfee Engineering Company Texas Registered Engineering Firm F-353
1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746, (512) 327-9204

MIRASOL
Wastewater Treatment Plant - TLAP Renewal
USGS Well Map

JOB NO. 19011.85	SCALE: 1" = 2000'	SHEET: 1 OF 1
DESIGNED BY: ANA		
DRAWN BY: MJS\RLW		DATE: 5/25/2023

FILE(LAYOUT): W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT) USGS WELL MAP-SITE-MIRASOL 230525.dwg(Site Plan)

Attachment 14 – Well Data Table

Well Table

Well ID	Well Use	Producing? Y/N	Open/cased/capped or plugged	Proposed Best Management Practice
5188	Injection	No	No Data	Applicable buffer distance will be met
5832	Domestic	Yes	Open Hole	Applicable buffer distance will be met
33637	Domestic	No	Plugged	Well has been plugged
33638	Domestic	Yes	Filter Packed	Applicable buffer distance will be met
72622	Domestic	Yes	Open Hole	Applicable buffer distance will be met
118762	Domestic	Yes	Open Hole	Applicable buffer distance will be met
136089	Domestic	Yes	Open Hole	Applicable buffer distance will be met
153785	Domestic	Yes	Cased	Applicable buffer distance will be met
202387	Test Well	No	Plugged	Well has been plugged
204715	No Data	No	Plugged	Well has been plugged
276515	Domestic	Yes	Cased	Applicable buffer distance will be met
277875	Domestic	Yes	Straight Wall	Applicable buffer distance will be met
284130	Domestic	Yes	Straight Wall	Applicable buffer distance will be met
305315	Domestic	Yes	Straight Wall	Applicable buffer distance will be met
372073	Domestic	Yes	Open Hole	Applicable buffer distance will be met
379255	Domestic	Yes	Cased	Applicable buffer distance will be met
386178	Domestic	Yes	Filter Packed	Applicable buffer distance will be met
416399	Domestic	Yes	Open Hole	Applicable buffer distance will be met
446767	Public Supply	Yes	Filter Packed	Applicable buffer distance will be met
467899	Domestic	Yes	No Data	Applicable buffer distance will be met
470985*	Test Well	Yes	Filter Packed	Applicable buffer distance will be met
470970	Test Well	Yes	Filter Packed	Applicable buffer distance will be met
499521	Domestic	Yes	Perforated or Slotted	Applicable buffer distance will be met
502584	Test Well	No	Open Hole	Applicable buffer distance will be met
527515	Domestic	Yes	Perforated or Slotted	Applicable buffer distance will be met
527548	Public Supply	Yes	Perforated or Slotted	Applicable buffer distance will be met
531513	Domestic	Yes	Straight Wall	Applicable buffer distance will be met
531673	Domestic	No	Plugged	Well has been plugged
532149	Domestic	Yes	Perforated or Slotted	Applicable buffer distance will be met
532209*	Domestic	Yes	Perforated or Slotted	Applicable buffer distance will be met
532216	Domestic	No Data	Perforated or Slotted	Applicable buffer distance will be met
534546	Domestic	Yes	Perforated or Slotted	Applicable buffer distance will be met
534550	Domestic	Yes	Perforated or Slotted	Applicable buffer distance will be met
534551	Domestic	Yes	Perforated or Slotted	Applicable buffer distance will be met
535035	Public Supply	Yes	Straight Wall	Applicable buffer distance will be met
545767	Monitor	Yes	Filter Packed	Applicable buffer distance will be met
556939	Monitor	Yes	Filter Packed	Applicable buffer distance will be met
604035	Domestic	Yes	Perforated or Slotted	Applicable buffer distance will be met
610368	Domestic	Yes	Screened; Straight Wall	Applicable buffer distance will be met
610371	Domestic	No	Plugged	Well has been plugged
5747301	Oil and Gas	No Data	No Data	Applicable buffer distance will be met
5747304	Stock	Yes	Open Hole	Applicable buffer distance will be met
5747305	Domestic	Yes	Open Hole	Applicable buffer distance will be met
5747306	Other	Yes	Open Hole	Applicable buffer distance will be met

Well Table

5747307	Domestic	Yes	No Data	Applicable buffer distance will be met
5747308	No Data	No Data	No Data	Applicable buffer distance will be met
5747309	No Data	No Data	No Data	Applicable buffer distance will be met
5747310	Public Supply	Yes	Filter Packed	Applicable buffer distance will be met
5747312	Public Supply	Yes	Filter Packed	Applicable buffer distance will be met
5747313	Monitor	No Data	No Data	Applicable buffer distance will be met
5747314	Monitor	Yes	No Data	Applicable buffer distance will be met
5747604	Unused	Yes	Spring	Applicable buffer distance will be met
5747605	Domestic	Yes	Spring	Applicable buffer distance will be met
5747315	Unused	No Data	No Data	Applicable buffer distance will be met
5747316	Public Supply	Yes	No Data	Applicable buffer distance will be met
5748119	Stock	Yes	Cased	Applicable buffer distance will be met

*Well not within 1-mile radius of WWTP & SADDS area; but still within 500 feet of property boundary.

Attachment 15 – Well Reports

STATE OF TEXAS WELL REPORT for Tracking #5188

Owner:	**Lower Colorado River Authority**	Owner Well #:	**No Data**
Address:	**3700 Lake Austin Blvd Austin, TX 78703**	Grid #:	**57-47-3**
Well Location:	**Westcave Preserve 24814 Hamilton Pool Road Round Mountain, TX 78663**	Latitude:	**30° 20' 11" N**
		Longitude:	**098° 08' 27" W**
Well County:	**Travis**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Injection**

Drilling Start Date: **2/21/2002** Drilling End Date: **2/24/2002**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**4.75**	**0**	**300**

Drilling Method: **Air Rotary**

Borehole Completion: **Unknown**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**300**	**9 per well**

Seal Method: **Benseal EZ Mud Pressure Grout**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **55**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape Measure**

Surface Completion: **Alternative Procedure Used**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **Unknown**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **Unknown**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Ball Drilling Company**

P. O. Box 201717
Austin, TX 78720

Driller Name: **Lonnie C. Ball** License Number: **2298**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**22**	**White Limestone**
22	**23**	**Clay**
23	**100**	**Grey Shale with Limestone Streaks**
100	**155**	**Red Shale**
155	**220**	**Limestone (Hard)**
220	**300**	**Grey Shale**
10		**Closed Loop Wells**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
1 inch	**New**	**Polyethylene Loop**	**-4 to 300**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #5832

Owner:	**BLAINE WILLIAMS**	Owner Well #:	**001**
Address:	**204 E. 35TH ST. AUSTIN, TX 78705**	Grid #:	**57-47-6**
Well Location:	**1316 OVERLAND STAGE RD. DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 19' 09" N**
		Longitude:	**098° 08' 03" W**
Well County:	**Hays**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **2/22/2002** Drilling End Date: **2/22/2002**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**30**
6.125	**30**	**350**

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**2**

Seal Method: **SLURRIED & POURED**

Sealed By: **BOBBY ROBERTS**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **60**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **NOT YET INSTALLED**

Surface Completion: **Surface Sleeve Installed**

Water Level: **261 ft.** below land surface on **2002-02-23** Measurement Method: **Unknown**

Packers: **PLASTIC 30**
PLASTIC 260

Type of Pump: **Submersible** Pump Depth (ft.): **320**

Well Tests: **Jetted** **Yield: 5 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEE CAVE DRILLING, INC.**

185 ANGELFIRE DR.
DRIPPING SPRINGS, TX 78620

Driller Name: **JIM BLAIR**

License Number: **54416**

Apprentice Name: **BOBBY ROBERTS**

Apprentice Number: **WWDAPP00001234**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**TOPSOIL**
1	**20**	**CALICHE**
20	**55**	**GREY LIMESTONE**
55	**60**	**GREY SHALE**
60	**75**	**GREY LIMESTONE**
75	**85**	**BLUE SHALE**
85	**90**	**GREY LIMESTONE**
90	**110**	**BLUE SHALE**
110	**200**	**GREY LIMESTONE**
200	**235**	**GREY ROCK**
235	**250**	**GREY SHALE**
250	**290**	**PINK ROCK**
290	**300**	**GREY SHALE**
300	**320**	**WHITE ROCK W/B 5 GPM**
320	**325**	**GREY SHALE**
325	**342**	**GREY LIMESTONE**
342	**350**	**GREY SHALE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**NEW**	**PLASTIC**	**0-260**
4.5	**NEW**	**PERFORATED**	**260-350**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #33637

Owner: **DAVID GRESSETT**

Address: **906 DAWSON**
AUSTIN, TX 78704

Well Location: **24601 HAMILTON POOL RD**
DRIPPING SPRINGS, TX 78620

Well County: **Travis**

Owner Well #: **01**

Grid #: **57-47-3**

Latitude: **30° 20' 30" N**

Longitude: **098° 08' 14" W**

Elevation: **830 ft. above sea level**

****Plugged Within 48 Hours****

****This well has been plugged****

Plugging Report Tracking #108913

Type of Work: **New Well**

Proposed Use: **Domestic**

Drilling Start Date: **1/5/2004** Drilling End Date: **1/6/2004**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**30**
7	**30**	**590**

Drilling Method: **Air Hammer**

Borehole Completion: **Unknown**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
	2	

Seal Method: **Unknown**

Sealed By: **GREG SVETLIK**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Unknown**

Water Level: **No Data**

Packers: **NONE**

Type of Pump: **No Data**

Well Tests: **Unknown** **Yield: 0 GPM**

Plug Information:

Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
0 - 2 2 CEMENT		
2 - 590 CUTTINGS		

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEE CAVE DRILLING, INC.**

185 ANGELFIRE DR.
DRIPPING SPRINGS, TX 78620

Driller Name: **JIM BLAIR** License Number: **54416**

Apprentice Name: **GREG SVETLIK** Apprentice Number: **WWDAPP00001734**

Comments: **updated lat/long by TWDB on 2/12/08 - BA**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**TOPSOIL**
1	**10**	**WHITE ROCK**
10	**30**	**TAN LIMESTONE**
30	**45**	**GREY LIMESTONE**
45	**70**	**BLUE CLAY**
70	**105**	**GREY LIMESTONE**
105	**155**	**TAN ROCK / DRY**
155	**200**	**LT GREY LIMESTONE**
200	**202**	**LT GREY CLAY**
202	**230**	**LT GREY ROCK**
230	**275**	**BLUE / GREEN CLAY**
275	**340**	**GREY SHALE**
340	**550**	**DARK GREY LIMESTONE W/ CLAY**
550	**590**	**GREY CLAY**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
No Data			

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(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #108913

Owner:	**DAVID GRESSETT**	Owner Well #:	**01**
Address:	**906 DAWSON AUSTIN, TX 78704**	Grid #:	**57-47-3**
Well Location:	**24601 HAMILTON POOL RD DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 20' 30" N**
		Longitude:	**098° 08' 14" W**
Well County:	**Travis**	Elevation:	**830**

Well Type: **Domestic**

Drilling Information

Company: **BEE CAVE DRILLING, INC.** Date Drilled: **1/6/2004**

Driller: **Jim Blair** License Number: **54416**

Well Report Tracking #33637

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**30**
7	**30**	**590**

Plugging Information

Date Plugged: **1/6/2004** Plugger: **JIM BLAIR**

Plug Method: **Unknown**

Casing Left in Well:

No Data

Plug(s) Placed in Well:

Description (number of sacks & material)
0 - 2 2 CEMENT
2 - 590 CUTTINGS

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information:	**BEE CAVE DRILLING, INC.** **185 ANGELFIRE DR.** **DRIPPING SPRINGS, TX 78620**		
Driller Name:	**JIM BLAIR**	License Number:	**54416**
Apprentice Name:	**GREG SVETLIK**	Apprentice Number:	**WWDAPP00001734**
Comments:	**updated lat/long by TWDB on 2/12/08 - BA**		

STATE OF TEXAS WELL REPORT for Tracking #33638

Owner:	**DAVID GRESSETT**	Owner Well #:	**01**
Address:	**906 DAWSON AUSTIN, TX 78704**	Grid #:	**57-47-3**
Well Location:	**24601 HAMILTON POOL RD DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 20' 30" N**
		Longitude:	**098° 08' 14" W**
Well County:	**Travis**	Elevation:	**844 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **1/6/2004** Drilling End Date: **1/7/2004**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**30**
7	**30**	**230**

Drilling Method: **Air Hammer**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
130	**230**	**Gravel**	

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**22 CEMENT**
115	**130**	**2 HOLE PLUG**

Seal Method: **SLURRIED & POURED**

Sealed By: **GREG SVETLIK**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **NOT YET INSTALLED**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **1 PLASTIC 30**

Type of Pump: **DID NOT SET**

Well Tests: **Jetted** **Yield: 15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEE CAVE DRILLING, INC.**

185 ANGELFIRE DR.
DRIPPING SPRINGS, TX 78620

Driller Name: **JIM BLAIR**

License Number: **54416**

Apprentice Name: **GREG SVETLIK**

Apprentice Number: **WWDAPP00001734**

Comments: **updated lat/long by TWDB on 2/12/08 - BA**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**TOPSOIL**
1	**23**	**WHITE ROCK**
23	**35**	**TAN LIMESTONE**
35	**48**	**GOLD SANDSTONE**
48	**65**	**BLUE LIMESTONE / CLAY STREAKS**
65	**130**	**BLUE SHALE**
130	**226**	**TAN ROCK W/B 15 GPM**
226	**230**	**LT GREY CLAY**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5 NEW PLASTIC 0 - 160
4.5 NEW SCREEN MFG. 160 - 220 .10
4.5 NEW PLASTIC 220 - 230

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STATE OF TEXAS WELL REPORT for Tracking #72622

Owner:	**TED STEWART #3**	Owner Well #:	**No Data**
Address:	**26800 HAMILTON POOL RD. ROUND MOUNTAIN, TX 78654**	Grid #:	**57-47-3**
Well Location:	**CYPRESS CREEK - PEDERNALES PASTURE ROUND MOUNTAIN, TX 78654**	Latitude:	**30° 20' 38" N**
		Longitude:	**098° 08' 27" W**
Well County:	**Travis**	Elevation:	**877 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **11/17/2005** Drilling End Date: **11/18/2005**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**10**
6.75	**10**	**235**

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**8**	**5 CEMENT**
8	**10**	**1 HOLEPLUG**

Seal Method: **SLURRIED & POURED**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **NOT YET INSTALLED**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **PLASTIC 10**
NEOPRENE 60

Type of Pump: **DID NOT SET**

Well Tests: **Jetted** **Yield: 15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEE CAVE DRILLING, INC.**

185 ANGELFIRE DR.
DRIPPING SPRINGS, TX 78620

Driller Name: **BOBBY ROBERTS** License Number: **54416**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**GREY ROCK**
1	**12**	**TAN CLAY**
12	**15**	**SANDSTONE**
15	**16**	**TAN CLAY**
16	**20**	**SAND**
20	**30**	**TAN CLAY**
30	**40**	**BROWN & RED CLAY**
40	**52**	**RED SAND**
52	**65**	**RED CLAY**
65	**100**	**WHITE ROCK W/B 5 GPM TDS 450**
100	**123**	**GREY ROCK**
123	**165**	**GREY CLAY**
165	**170**	**RED CLAY**
170	**180**	**RED SAND**
180	**220**	**RED & WHITE ROCK**
220	**230**	**GREY CLAY**
230	**232**	**WHITE & GREY ROCK**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5 NEW PLASTIC 0 - 60
4.5 NEW SCREEN MFG. 60 - 100 .05
4.5 NEW PLASTIC 100 - 140

232	**235**	**BLUE CLAY**

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STATE OF TEXAS WELL REPORT for Tracking #118762

Owner:	**GRINTA LLC**	Owner Well #:	**No Data**
Address:	**98 SAN JACINTO, STE 430 AUSTIN, TX 78701**	Grid #:	**57-47-6**
		Latitude:	**30° 19' 22" N**
Well Location:	**560 DEAD MAN HOLE RD DRIPPING SPRINGS, TX 78620**	Longitude:	**098° 09' 19" W**
Well County:	**Hays**	Elevation:	**1077 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **7/16/2007** Drilling End Date: **7/16/2007**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**12**
6.75	**12**	**295**

Drilling Method: **Air Hammer**

Borehole Completion: **Open Hole**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**6**	**5**
6	**12**	**4**

Seal Method: **SLURRIED & POURED**

Sealed By: **CESAR RAMOS**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **NOT YET INSTALLED**

Surface Completion: **Surface Sleeve Installed**

Water Level: **246 ft.** below land surface on **2007-07-17** Measurement Method: **Unknown**

Packers: **NEOPRENE 12**
NEOPRENE 210
NEOPRENE 243
NEOPRENE 245

Type of Pump: **Submersible** Pump Depth (ft.): **280**

Well Tests: **Jetted** **Yield: 30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEE CAVE DRILLING INC**

185 ANGELFIRE DR
DRIPPING SPRINGS, TX 78620

Driller Name: **JIM BLAIR** License Number: **54416**

Apprentice Name: **CESAR RAMOS** Apprentice Number: **57534**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**SURFACE ROCK**
5	**12**	**CALICHE**
12	**45**	**TAN ROCK**
45	**95**	**GRAY LIMESTONE**
95	**105**	**BLUE SHALE**
105	**170**	**GRAY ROCK**
170	**195**	**BROWN SANDSTONE**
195	**205**	**BLUE CLAY**
205	**230**	**BROWN SAND**
230	**245**	**RED CLAY**
245	**290**	**WHITE ROCK W/B 30 GPM TDS 500**
290	**295**	**GREY LIMESTONE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5 NEW PLASTIC 0-245
4.5 NEW SCREEN MFG 245-295 .050

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STATE OF TEXAS WELL REPORT for Tracking #136089

Owner:	**ALAN FETTY**	Owner Well #:	**#1**
Address:	**25711 HAMILTON POOL RD ROUND MOUNTAIN, TX 78663**	Grid #:	**57-47-3**
Well Location:	**25711 HAMILTON POOL RD ROUND MOUNTAIN, TX 78663**	Latitude:	**30° 20' 48" N**
		Longitude:	**098° 08' 02" W**
Well County:	**Travis**	Elevation:	**862 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **2/26/2008** Drilling End Date: **2/26/2008**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**12**
6.75	**12**	**290**

Drilling Method: **Air Hammer**

Borehole Completion: **Open Hole**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**6**	**6**
6	**12**	**5**

Seal Method: **SLURRIED & POURED**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **NOT YET INSTALLED**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **NEOPRENE 12**
NEOPRENE 45
NEOPRENE 155
NEOPRENE 185
NEOPRENE 190

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 5 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEE CAVE DRILLING INC**

185 ANGELFIRE DR
DRIPPING SPRINGS, TX 78620

Driller Name: **BOBBY ROBERTS** License Number: **54416**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**TOPSOIL**
2	**14**	**CALICHE**
14	**25**	**BROWN CLAY**
25	**45**	**TAN LIMESTONE**
45	**75**	**WHITE ROCK W/B 12 GPM TDS 500**
75	**150**	**BLUE SHALE**
150	**172**	**BROWN ROCK W/B 3 GPM TDS 600**
172	**185**	**BROWN CLAY**
185	**248**	**BROWN ROCK W/B 5 GPM TDS 700**
248	**252**	**BROWN CLAY**
252	**278**	**BROWN SANDSTONE**
278	**290**	**GREEN CLAY**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5 NEW PLASTIC 0-215
4.5 NEW MFG SCREEN 215-255 .050
4.5 NEW PLASTIC 255-290

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STATE OF TEXAS WELL REPORT for Tracking #153785

Owner:	**MICHAEL MYERS**	Owner Well #:	**No Data**
Address:	**23707 HAMILTON POOL RD. DRIPPING SPRINGS, TX 78620**	Grid #:	**57-48-4**
Well Location:	**23611 HAMILTON POOL RD. DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 19' 42" N**
		Longitude:	**098° 07' 10" W**
Well County:	**Travis**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **8/5/2008** Drilling End Date: **8/5/2008**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.625	**0**	**50**
6.5	**50**	**250**

Drilling Method: **Air Rotary**

Borehole Completion: **CASED**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**50**	**5 CEMENT**
0	**50**	**5 VOLCLAY**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **N/A**

Distance to Septic Field or other concentrated contamination (ft.): **N/A**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **WELL DRILLED FIRST**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **5 BURLAP,PVC,PLASTIC 50',100',120',180',220'**

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 40 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
60	**MIDDLE TRINITY**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **CENTRAL TEXAS DRILLING, INC.**

2520 HWY. 290 WEST
DRIPPING SPRINGS, TX 78620

Driller Name: **AARON GLASS** License Number: **4227**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**2**	**ROCK**
2	**18**	**TAN (CALICHE)**
18	**20**	**BLUE LIMESTONE**
20	**70**	**GRAY LIMESTONE**
70	**80**	**WHITE LIMESTONE**
80	**90**	**TAN LIMESTONE**
90	**120**	**GRAY LIMESTONE**
120	**130**	**GRAY/TAN LIMESTONE**
130	**150**	**TAN H20 FORMATION**
150	**170**	**BROWN W/RED LIMESTONE**
		& BLUE CLAY
170	**175**	**WHITE/TAN/GRAY LIMESTONE**
175	**200**	**WHITE/TAN LIMESTONE**
200	**220**	**TAN LIMESTONE**
220	**225**	**GRAY LIMESTONE W/CLAY**
225	**240**	**BROWN LIMESTONE**
240	**250**	**CLAY & GRAY HAMMIT**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
5"	**OD**	**N SDR17 PVC**	**+3 TO 250**
5"	**OD**	**N SDR17 PVC**	**SLOT 120 TO 140 .032**
5"	**OD**	**N SDR17 PVC**	**SLOT 180 TO 220 .032**

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(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #204715

Owner:	**Travis County Parks**	Owner Well #:	**1**
Address:	**24300 Hamilton Pool Road Dripping Springs, TX 78620**	Grid #:	**57-47-3**
Well Location:	**23610 Hamilton Pool Road Dripping Springs, TX 78620**	Latitude:	**30° 20' 31.67" N**
		Longitude:	**098° 07' 40.33" W**
Well County:	**Travis**	Elevation:	**No Data**

Well Type: **Unknown**

Drilling Information

Company: **No Data** Date Drilled: **No Data**

Driller: **No Data** License Number: **No Data**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**6**	**0**	**177**

Plugging Information

Date Plugged: **8/11/2020** Plugger: **Brice Bormann/Josph Dottavio**

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

No Data

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**2**	**Cement 1 Bags/Sacks**
2	**177**	**Bentonite 35 Bags/Sacks**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Texan Water**

161 Industrial Loop
Fredericksburg, TX 78624

Driller Name: **Brice Bormann** License Number: **54855**

Apprentice Name: **Joseph Dottavio** Apprentice Number: **59883**

Comments: **No Data**

STATE OF TEXAS WELL REPORT for Tracking #276515

Owner:	**ERIC KRAENZEL**	Owner Well #:	**No Data**
Address:	**158 BEAU LANE KYLE, TX 78640**	Grid #:	**57-47-6**
Well Location:	**1201 STAGECOACH RANCH RD. DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 19' 25" N**
		Longitude:	**098° 07' 49" W**
Well County:	**Hays**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **12/21/2011** Drilling End Date: **12/21/2011**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**50**
6.5	**50**	**230**

Drilling Method: **Air Rotary**

Borehole Completion: **CASED**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**50**	**4 VOLCLAY**
0	**50**	**5 CEMENT**

Seal Method: **PRESSURE TRIMMIE CEMENT**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **1000+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **OWNER**

Surface Completion: **Surface Sleeve Installed**

Water Level: **172.6 ft.** below land surface on **2011-12-21** Measurement Method: **Unknown**

Packers: **4 BURLAP, PVC 50',140',160',170'**

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 20-25 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
60	**MIDDLE TRINITY**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **CENTEX PUMP & SUPPLY, INC.**

2520 HWY. 290 WEST
DRIPPING SPRINGS, TX 78620

Driller Name: **AARON GLASS** License Number: **4227**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**1**	**TOP SOIL**
1	**15**	**CALICHE**
15	**18**	**BLUE LIMESTONE**
18	**65**	**GRAY LIMESTONE**
65	**120**	**GRAY W/TAN LIMESTONE**
120	**150**	**TAN LIMESTONE**
150	**165**	**TAN/GRAY LIMESTONE W/BLUE**
CLAY		
165	**210**	**TAN LIMESTONE**
210	**220**	**GRAY LIMESTONE**
220	**230**	**CLAY (HAMMIT CLAY)**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
5"	**OD**	**N SDR17 PVC**	**+3 TO 230**
5"	**OD**	**N SDR17 PVC SLOT**	**180 TO 220 .032**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #277875

Owner:	**Brian Hill**	Owner Well #:	**001**
Address:	**1616 Overland Stage Rd. Dripping Springs, TX 78620**	Grid #:	**57-47-6**
Well Location:	**1616 Overland Stage Rd. Dripping Springs, TX 78620**	Latitude:	**30° 19' 06" N**
		Longitude:	**098° 08' 31" W**
Well County:	**Hays**	Elevation:	**1007 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **1/14/2012** Drilling End Date: **1/15/2012**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**6.75**	**0**	**380**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**10**	**1 - Portland**
	10	**22**	**2 - Bentonite**

Seal Method: **Trimie**

Sealed By: **Bobby Wallacer**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **+100ft.**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Measure**

Surface Completion: **Pitless Adapter Used**

Water Level: **330 ft.** below land surface, and **20 GPM** artesian flow on **2012-01-15** Measurement Method: **Unknown**

Packers: **Formation packets set at 22', 230', and 240'.**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
355	**Groundwater**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **Bobby J Wallace** License Number: **58861**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**Topsoil.**
2	**40**	**Caliche.**
40	**54**	**Gray limestone.**
54	**76**	**Shale.**
76	**95**	**Gray limestone.**
95	**124**	**Shale.**
124	**126**	**Gray limestone Anhydride gypsum.**
126	**160**	**Shale.**
160	**165**	**Gray limestone shale streaks.**
165	**180**	**Tan and brown limestone.**
180	**285**	**Gray and tan limestone.**
285	**346**	**Tan limestone.**
346	**380**	**Tan and brown limestone.**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4 1/2	**New**	**PVC**	**+1 - 320 SDR 17**
4 1/2	**New**	**PVC**	**320-380 SDR 17**

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STATE OF TEXAS WELL REPORT for Tracking #284130

Owner:	**Luis & Heather Martinez**	Owner Well #:	**1**
Address:	**Lot 001A Replica Rd. Spicewood, TX 78669**	Grid #:	**57-47-6**
Well Location:	**Lot 001A Replica Rd. Spicewood, TX 78669**	Latitude:	**30° 19' 09" N**
		Longitude:	**098° 08' 10" W**
Well County:	**Hays**	Elevation:	**782 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **2/24/2012** Drilling End Date: **2/25/2012**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.875**	**0**	**280**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Portland 3 bags**
0	**20**	**Benoite chips**

Seal Method: **Trimmie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **Over 100**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Measuring tape**

Surface Completion: **Unknown**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 3 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
160'	**Groundwater**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling Inc.**

185 Angelfire Dr.
Dripping Springs, TX 78620

Driller Name: **Bobby J Wallace** License Number: **58861**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**Topsoil.**
2	**48**	**White limestone.**
48	**53**	**Gray shale.**
53	**58**	**Tan limestone.**
58	**110**	**Gray shale & limestone.**
110	**150**	**Red shale.**
150	**160**	**Red/tan sandstone fracture 150**
160	**176**	**Red shale fracture 176**
176	**220**	**Tan & red sandstone.**
220	**280**	**Tan & brown shale.**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4 1/2 New PVC SDR 17 +2 - 140
4 1/2 New PVC SDR 17 Slotted 140 - 160
4 1/2 New PVC SDR 17 160 - 240
4 1/2 New PVC SDR 17 Slotted 240 - 260
4 1/2 New PVC SDR 17 260 - 280

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STATE OF TEXAS WELL REPORT for Tracking #305315

Owner:	**Ralph Combest**	Owner Well #:	**No Data**
Address:	**3500 Fearless Treadway Round Mountain, TX 78663**	Grid #:	**57-47-3**
Well Location:	**3500 Fearless Treadway Round Mountain, TX 78663**	Latitude:	**30° 20' 16" N**
		Longitude:	**098° 09' 10" W**
Well County:	**Hays**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **11/8/2012** Drilling End Date: **11/8/2012**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9.5	**0**	**58**
6.75	**58**	**185**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
2	**4**	**0.5 cement**
4	**65**	**6 bentonite**

Seal Method: **gravity grouted**

Sealed By: **Driller**

Distance to Property Line (ft.): **55**

Distance to Septic Field or other concentrated contamination (ft.): **n/a**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **estimated**

Surface Completion: **Pitless Adapter Used**

Water Level: **101 ft.** below land surface on **2012-11-08** Measurement Method: **Unknown**

Packers: **poor boy 71'**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 5 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
130, 150, 170	**500 TDS, 17 grains hardness**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **L & L Drilling Co.**

P.O. Box 217
Hye, TX 78635

Driller Name: **Gregory A. Smith** License Number: **1595**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**brown topsoil**
1	**5**	**brown & red limestone & loam**
5	**9**	**red clay**
9	**19**	**red limestone & clay**
19	**54**	**brown limestone**
54	**65**	**yellow limestone**
65	**66**	**gray clay**
66	**86**	**gray shale with gray limestone**
86	**120**	**gray clay**
120	**130**	**gray & brown clay**
130	**140**	**gray limestone**
130	**145**	**water 1 gpm**
140	**150**	**red shale**
150	**151**	**brown gravel**
150	**165**	**water 2 gpm**
151	**170**	**brown & red limestone**
170	**175**	**brown gravel**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
5 new plastic solid 0 - 130 0.265
5 new plastic slotted 131 - 141 0.265
5 new plastic solid 141 - 151 0.265
5 new plastic slotted 151 - 185 0.265

170	**175**	**water 2 gpm**
175	**185**	**red limestone**

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STATE OF TEXAS WELL REPORT for Tracking #372073

Owner:	**Raymond Frank**	Owner Well #:	**No Data**
Address:	**905 Overland Stage Rd. Dripping Springs, TX 78620**	Grid #:	**57-47-6**
Well Location:	**905 Overland Stage Rd. Dripping Springs, TX 78620**	Latitude:	**30° 19' 41" N**
		Longitude:	**098° 08' 06" W**
Well County:	**Hays**	Elevation:	**971 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **6/20/2014** Drilling End Date: **6/20/2014**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**10**
8	**10**	**50**
6.75	**50**	**230**

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**50**	**16 cement**

Seal Method: **slurry & pour**

Sealed By: **Steve Stewart**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **149 ft.** below land surface on **2014-06-27** Measurement Method: **Unknown**

Packers: **neoprene 50, 145, 150**

Type of Pump: **Submersible** Pump Depth (ft.): **210**

Well Tests: **Jetted** **Yield: 7 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **Jim Blair** License Number: **54416**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**tan limestone**
10	**20**	**gray limestone**
20	**35**	**tan limestone**
35	**80**	**gray limestone**
80	**90**	**tan limestone**
90	**100**	**tan sandstone**
100	**115**	**red shale & sandstone mix**
115	**130**	**red clay & trinity mix**
130	**180**	**tan sandstone wb 7 gpm 500 tds**
180	**205**	**gray & tan sandstone**
205	**230**	**gray clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**new**	**sdr-17**	**0 170**
4.5	**new**	**perf**	**170 210**
4.5	**new**	**sdr-17**	**210 230**

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STATE OF TEXAS WELL REPORT for Tracking #379255

Owner:	**TONY PARENT**	Owner Well #:	**No Data**
Address:	**3616 2ND STREET AUSTIN, TX 78704**	Grid #:	**57-47-6**
Well Location:	**1515 OVERLAND STAGE RD. DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 18' 59" N**
		Longitude:	**098° 07' 59" W**
Well County:	**Hays**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **7/11/2014** Drilling End Date: **7/11/2014**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**50**
6.5	**50**	**370**

Drilling Method: **Air Rotary**

Borehole Completion: **CASED**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**50**	**7 CEMENT**
0	**50**	**3 VOLCLAY**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **OWNER**

Surface Completion: **Surface Sleeve Installed**

Water Level: **215 ft.** below land surface on **2014-07-11** Measurement Method: **Unknown**

Packers: **3 BURLAP,PVC 50',290',310'**

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 25 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
60	**MIDDLE TRINITY**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **CENTEX PUMP & SUPPLY, INC.**

2520 HWY. 290 WEST
DRIPPING SPRINGS, TX 78620

Driller Name: **AARON GLASS** License Number: **4227**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**1**	**TOP SOIL & ROCK**
1	**18**	**CALICHE**
18	**22**	**BLUE/GRAY LIMESTONE**
22	**30**	**GRAY LIMESTONE**
30	**40**	**TAN LIMESTONE**
40	**260**	**GRAY LIMESTONE**
260	**280**	**GRAY/TAN LIMESTONE**
280	**300**	**TAN LIMESTONE**
300	**305**	**GRAY LIMESTONE**
305	**310**	**BROWN/GRAY LIMESTONE**
W/BLUE		**CLAY**
310	**320**	**TAN LIMESTONE**
320	**345**	**WHITE LIMESTONE**
345	**360**	**BROWN LIMESTONE**
360	**365**	**GRAY LIMESTONE**
365	**370**	**GRAY LIMESTONE W/STRIPS**
OF CLAY		

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
5"	**OD**	**N SDR17 PVC**	**+3 TO 370**
5"	**OD**	**N SDR17 PVC SLOT**	**310 TO 370 .032**

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STATE OF TEXAS WELL REPORT for Tracking #386178

Owner:	**Clay Olivier - Tunkan LLC**	Owner Well #:	**No Data**
Address:	**3736 Bee Caves Rd. #1144 West Lake Hills, TX 78746**	Grid #:	**57-47-3**
Well Location:	**25009 Hamilton Pool Rd. Round Mountain, TX 78663**	Latitude:	**30° 20' 25" N**
		Longitude:	**098° 08' 54" W**
Well County:	**Travis**	Elevation:	**835 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/18/2014** Drilling End Date: **12/18/2014**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**10**
8	**10**	**200**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
80	**200**	**Gravel**	**3/8**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**50**	**11 cement**

Seal Method: **slurry & pour**

Sealed By: **Derek Scott**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used**

Water Level: **94 ft.** below land surface on **2014-12-31** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **180**

Well Tests: **Jetted** **Yield: 15-18 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **Jim Blair** License Number: **54416**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**topsoil**
1	**10**	**red sandstone**
10	**30**	**white limestone**
30	**65**	**gray & tan sandstone wb 4 gpm 400 tds**
65	**70**	**gray sandstone & clay**
70	**120**	**gray clay**
120	**200**	**trinity sandstone & gravel wb 15 gpm 600 tds**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**new**	**sdr-17**	**0 120**
4.5	**new**	**perf**	**120 200**

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #416399

Owner:	**Joe Cabela**	Owner Well #:	**1**
Address:	**220 Roy Creek Trail Dripping Springs, TX 78620**	Grid #:	**57-47-6**
Well Location:	**220 Roy Creek Trail Dripping Springs, TX 78620**	Latitude:	**30° 19' 28.58" N**
		Longitude:	**098° 09' 13.78" W**
Well County:	**Hays**	Elevation:	**959 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **2/1/2016** Drilling End Date: **2/1/2016**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**9**
8.5	**9**	**20**
6.75	**20**	**205**

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 4 Bags/Sacks**
20	**50**	**Bentonite 3 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used** **Surface Completion by Driller**

Water Level: **141 ft.** below land surface on **2016-02-02** Measurement Method: **Electric Line**

Packers: **Rubber at 50 ft.**
Rubber at 100 ft.
Rubber at 140 ft.
Rubber at 145 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **180**

Well Tests: **Jetted** **Yield: 25 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **Jim Blair** License Number: **54416**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Caliche**
1	**3**	**Tan Clay**
3	**55**	**Tan Lime, Frac at 20'**
55	**80**	**Grey Lime, .5GPM @ 80'**
80	**95**	**Grey Sand/Clay Stringers**
95	**110**	**Grey/Tan Sand**
110	**130**	**Grey Sand/Clay Stringers WB 2GPM**
130	**195**	**Tan SS, WB 150-190, 25GPM 400TDS**
195	**205**	**Grey Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR-17**	**-2**	**145**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**SDR-17**	**145**	**205**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #446767

Owner:	**HAMILTON POOL PRESERVE**	Owner Well #:	**1**
Address:	**TRAVIS COUNTY PARKS DEPT. 700 LAVACA STREET, STE 800 AUSTIN, TX 78701**	Grid #:	**57-47-3**
		Latitude:	**30° 20' 28.5" N**
Well Location:	**HAMILTON POOL PRESERVE 24300 HAMILTON POOL ROAD DRIPPING SPRINGS, TX 78620**	Longitude:	**098° 07' 41" W**
		Elevation:	**813 ft. above sea level**
Well County:	**Travis**		

Type of Work: **New Well** Proposed Use: **Public Supply**

Drilling Start Date: **12/23/2016** Drilling End Date: **3/10/2017** **Plans Approved by TCEQ - YES**
PWS# 12102015

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
17.5	**0**	**12**
12.25	**0**	**240**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
20	**60**	**Sand**	**12X20**
125	**240**	**Sand**	**12X20**

Annular Seal Data: **No Data**

Seal Method: **Positive Displacement**

Sealed By: **HYDRO**

Distance to Property Line (ft.): **150+**

Distance to Septic Field or other concentrated contamination (ft.): **N/A**

Distance to Septic Tank (ft.): **N/A**

Method of Verification: **TAPE**

Surface Completion: **Surface Slab Installed** **Surface Completion NOT by Driller**

Water Level: **21 ft.** below land surface on **2017-03-23**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 5 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Hydro Resources Mid-Continent, Inc.**

31866 RR 12
DRIPPING SPRINGS, TX 78620

Driller Name: **CANON KUTSCHER** License Number: **58773**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**8**	**TOPSOIL & LOOSE ROCK**
8	**40**	**YELLOW LIMESTONE (H20)**
40	**50**	**GREY LIMESTONE**
50	**115**	**GREY CLAY & LIMESONTE**
115	**280**	**REDDISH BROWN**
280	**410**	**GREY CLAY - SANDSTONE STREAKS**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
6.9	**Blank**	**New Plastic (PVC)**	**SDR-17**	**0**	**20**
14	**Blank**	**New Steel**		**0**	**12**
6.9	**Screen**	**New Plastic (PVC)**	**0.035**	**20**	**60**
6.9	**Blank**	**New Plastic (PVC)**	**SDR-17**	**60**	**200**
6.9	**Screen**	**New Plastic (PVC)**	**0.035**	**200**	**220**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #467899

Owner:	**Fred Ballard Blue Horse Builders**	Owner Well #:	**No Data**
Address:	**111 Golden Bear Cove Lakeway , TX 78738**	Grid #:	**57-47-6**
		Latitude:	**30° 19' 00" N**
Well Location:	**1516 Overland Stage Rd Dripping Springs, TX 78620**	Longitude:	**098° 08' 03" W**
Well County:	**Hays**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **11/9/2017** Drilling End Date: **11/9/2017**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**50**
6.25	**50**	**385**

Drilling Method: **Air Rotary**

Borehole Completion:

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**50**	**4 Portland / 3 Benseal 7 Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **50**

Method of Verification: **Land Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
276 - 375	**M. Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**

P.O. Box 867
Marble Falls, TX 78654

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

Report Amended on 3/19/2018 by Request #24537

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**35**	**Tan LS**
35	**276**	**Gray Tan LS**
276	**315**	**Tan LS**
315	**321**	**Red LS**
321	**355**	**Tan LS**
355	**375**	**Gray Tan LS**
375	**385**	**Gray LS w/ Clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
No Data			

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #470985

Owner:	**Mirasol Hills, LLC.**	Owner Well #:	**2**
Address:	**4000 International Pkwy. Carrollton, TX 75007**	Grid #:	**57-47-6**
		Latitude:	**30° 18' 13.58" N**
Well Location:	**7001 Hamilton Pool Rd. Dripping Springs, TX 78620**	Longitude:	**098° 08' 50.06" W**
Well County:	**Hays**	Elevation:	**952 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Start Date: **1/29/2018** Drilling End Date: **1/30/2018**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
11	**0**	**11**
10	**11**	**225**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
130	**225**	**Gravel**	**3/8"**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**130**	**Cement 52 Bags/Sacks**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **102 ft.** below land surface on **2018-02-07**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Pump** **Yield: 69 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **Jim Blair** License Number: **54416**

Comments: **500 tds**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**4**	**topsoil**
4	**40**	**tan limestone**
40	**45**	**shale**
45	**60**	**tan limestone**
60	**130**	**red clay**
130	**140**	**white rock**
140	**205**	**gray limestone**
205	**225**	**gray clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**145**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**145**	**225**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #470970

Owner:	**Mirasol Hills, LLC**	Owner Well #:	**1**
Address:	**4000 International Pkwy. Carrollton, TX 75007**	Grid #:	**57-47-6**
		Latitude:	**30° 18' 53.21" N**
Well Location:	**7001 Hamilton Pool Rd. Dripping Springs, TX 78620**	Longitude:	**098° 08' 44.7" W**
Well County:	**Hays**	Elevation:	**1000 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Start Date: **12/20/2017** Drilling End Date: **12/30/2017**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**10**	**0**	**470**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**330**	**470**	**Gravel**	**3/8"**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**330**	**Cement 172 Bags/Sacks**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **253 ft.** below land surface on **2018-01-30**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Pump** **Yield: 15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
340 - 447	**No Data**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **Jim Blair** License Number: **54416**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**topsoil & loose rock**
2	**10**	**caliche & tan limestone**
10	**17**	**tan & gray limestone**
17	**44**	**gray shale**
44	**62**	**tan limestone & brown clay mix**
62	**76**	**gray limestone**
76	**89**	**gray & white limestone**
89	**112**	**gray sandstone & gravel**
112	**193**	**gray limestone**
193	**265**	**gray clay**
265	**300**	**gray limestone**
300	**308**	**red clay**
308	**346**	**gray shale**
346	**370**	**tan limestone**
370	**440**	**conglomerate**
440	**447**	**porous gray limestone**
447	**470**	**gray limestone & shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**330**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**330**	**470**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #499521

Owner:	**Mirasol Meadows**	Owner Well #:	**No Data**
Address:	**2201 Lakeside Blvd. Richardson, TX 75082**	Grid #:	**57-47-6**
Well Location:	**7001 Hamilton Pool Rd. Dripping Springs, TX 78620**	Latitude:	**30° 19' 12.29" N**
		Longitude:	**098° 08' 44.06" W**
Well County:	**Hays**	Elevation:	**867 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/18/2018** Drilling End Date: **12/19/2018**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.5	**0**	**8.5**
8.5	**8.5**	**302**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**50**	**Cement 12 Bags/Sacks**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **40 ft.** below land surface on **2018-12-28**

Packers: **Rubber at 50 ft.**
Rubber at 52 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **90**

Well Tests: **Pump** **Yield: 42 GPM**

Plug Information:

Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Bentonite	**120**	**302**

Water Quality:

Strata Depth (ft.)	Water Type
50 - 72	**cow creek**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **Jim Blair** License Number: **54416**

Comments: **400 tds**
Well constructed like a public supply well in case they choose to make it a public supply well later.

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**3**	**topsoil**
3	**12**	**caliche & gravel mix**
12	**42**	**tan limestone**
42	**50**	**gray limestone**
50	**72**	**broken rock & gravel layers wb**
72	**85**	**gray limestone w/ shale stringers**
85	**102**	**gray limestone w/ clay stringsers**
102	**142**	**clay**
142	**190**	**white porous rock**
190	**240**	**red sandstone**
240	**278**	**conglomerate**
278	**302**	**clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**52**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**52**	**82**
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**82**	**102**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #532209

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**mobs-2**
Address:	**4143 Maple Ave Dallas , TX 78219**	Grid #:	**57-47-6**
Well Location:	**24643 Hamilton Pool Rd. Round Mountain, TX 78663**	Latitude:	**30° 18' 13.42" N**
		Longitude:	**098° 08' 48.36" W**
Well County:	**Hays**	Elevation:	**953 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/4/2019** Drilling End Date: **12/4/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**50**
6.75	**50**	**185**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 6**
40	**50**	**Bentonite 3**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **1000+**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 105 ft.
Rubber at 110 ft.

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 35 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31098

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Topsoil**
1	**40**	**tan limestone**
40	**45**	**shale**
45	**70**	**tan limestone**
70	**90**	**gravel wb 5-10 gpm at 380 tds**
90	**105**	**red shale**
105	**180**	**tan / white limestone wb 35+ gpm at 460 tds**
180	**185**	**clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**120**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**120**	**185**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #502584

Owner:	**BENTREE BUILDERS/KRISTY PETREE**	Owner Well #:	**No Data**
Address:	**14801 ARROWHEAD DRIVE LEANDER, TX 78641**	Grid #:	**57-47-3**
Well Location:	**STAGECOACH RD. DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 20' 03.36" N**
Well County:	**Travis**	Longitude:	**098° 07' 51.66" W**
		Elevation:	**No Data**

Type of Work: **TEST WELL ONLY** Proposed Use: **Test Well**

Drilling Start Date: **1/4/2019** Drilling End Date: **1/4/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**20**
6.125	**20**	**250**

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**18**	**HOLE PLUG 3 Bags/Sacks**

Seal Method: **HOLE PLUG**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **N/A**

Distance to Septic Tank (ft.): **N/A**

Method of Verification: **OWNER**

Surface Completion: **TEST WELL ONLY** **Surface Completion by Driller**

Water Level: **140 ft.** below land surface on **2019-02-04** Measurement Method: **Electric Line**

Packers: **Burlap at 18 ft.**

Type of Pump: **NO PUMP**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
140 - 180	**COW CREEK**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Centex Pump & Supply, Inc.**

2520 Hwy. 290 West
Dripping Springs, TX 78620

Driller Name: **MARTIN DALE LINGLE** License Number: **54813**

Comments: **No Data**

Report Amended on 2/8/2019 by Request #27112

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**45**	**CALICHE**
45	**50**	**BLUE LIMESTONE**
50	**72**	**GRAY/TAN LIMESTONE**
72	**90**	**BROWN LIMESTONE**
90	**100**	**SAND/BROWN/TAN LIMESTONE**
100	**120**	**SAND/BROWN LIMESTONE**
120	**130**	**RED CLAY W/SAND**
130	**140**	**RED CLAY**
140	**160**	**TAN LIMESTONE**
160	**170**	**WHITE LIMESTONE**
170	**180**	**BROWN LIMESTONE**
180	**190**	**GRAY LIMESTONE**
190	**200**	**GRAY CLAY**
200	**210**	**GRAY CLAY**
210	**230**	**GRAY CLAY**
230	**250**	**GRAY & BROWN CLAY**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
6.25	**Blank**	**New Plastic (PVC)**	**SDR17**	**2**	**18**

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P.O. Box 12157
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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #527515

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**OBS #2**
Address:	**4143 Maple Ave. Dallas, TX 78219**	Grid #:	**57-47-6**
Well Location:	**Stagecoach Rd. Dripping Springs, TX 78620**	Latitude:	**30° 19' 48.37" N**
		Longitude:	**098° 08' 00.36" W**
Well County:	**Travis**	Elevation:	**955 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **10/30/2019** Drilling End Date: **10/30/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
6.75	**10**	**325**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**Cement 4 Bags/Sacks**
30	**50**	**Bentonite 4 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **137**

Distance to Septic Field or other concentrated contamination (ft.): **none**

Distance to Septic Tank (ft.): **none**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 105 ft.
Rubber at 110 ft.

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 8-10 GPM**

Plug Information:

Description (number of sacks & material)	Top Depth (ft.)	Bottom Depth (ft.)
Cement	**205**	**325**

Water Quality:

Strata Depth (ft.)	Water Type
110 - 185	**Glenrose**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31092

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**topsoil**
5	**45**	**white limestone**
45	**90**	**light gray clay**
90	**110**	**red clay**
110	**150**	**tan limestone wb 2-3 gpm 543 tds**
150	**165**	**gray limestone**
165	**185**	**dark gray limestone wb 8-10 gpm**
185	**250**	**dark gray clay**
250	**325**	**red sandstone wb 25-30 gpm 2380 tds**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**110**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**110**	**185**
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**185**	**205**

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Texas Department of Licensing and Regulation
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Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #527548

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**PWS1**
Address:	**4143 Maple Ave. Dallas, TX 78219**	Grid #:	**57-47-6**
Well Location:	**Stagecoach Ranch Rd. Dripping Springs, TX 78620**	Latitude:	**30° 19' 49.58" N**
		Longitude:	**098° 08' 01.4" W**
Well County:	**Travis**	Elevation:	**954 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Public Supply**

Drilling Start Date: **10/31/2019** Drilling End Date: **10/31/2019** **Plans Approved by TCEQ - NO**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**205**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**110**	**Cement 20 Bags/Sacks**
110	**115**	**Bentonite 2 Bags/Sacks**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **220**

Distance to Septic Field or other concentrated contamination (ft.): **none**

Distance to Septic Tank (ft.): **none**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **129 ft.** below land surface on **2019-11-18**

Packers: **Rubber at 115 ft.**
Rubber at 120 ft.

Type of Pump: **No Data**

Well Tests: **Pump** **Yield: 27 GPM with 5 ft. drawdown after 24 hours**

Water Quality:

Strata Depth (ft.)	Water Type
100 - 160	**Cow Creek**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31091

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**35**	**tan limestone**
35	**75**	**gray limestone & clay**
75	**100**	**red clay**
100	**135**	**tan rock wb 1-2 gpm 670 tds**
135	**160**	**tan rock wb 8-10 gpm 510 tds**
160	**205**	**dark gray limestone & shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
5	**Blank**	**New Plastic (PVC)**	**sch. 80**	**0**	**120**
5	**Perforated or Slotted**	**New Plastic (PVC)**	**sch. 80**	**120**	**180**
5	**Blank**	**New Plastic (PVC)**	**sch. 80**	**180**	**200**

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STATE OF TEXAS WELL REPORT for Tracking #531513

Owner:	**JOSH BARNETT**	Owner Well #:	**No Data**
Address:	**1721 OVERLAND STAGE RD. DRIPPING SPRINGS, TX 78620**	Grid #:	**57-47-6**
Well Location:	**1721 OVERLAND STAGE RD. DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 18' 50.76" N**
		Longitude:	**098° 08' 00.9" W**
Well County:	**Hays**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/9/2019** Drilling End Date: **12/9/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**100**
6.125	**100**	**390**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**100**	**PORTLAND CEMENT 12 Bags/Sacks**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **25**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **100+**

Method of Verification: **OWNER**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data** Measurement Method: **Electric Line**

Packers: **Burlap at 100 ft.**
BURLAP & PLASTIC at 120 ft.
BURLAP & PLASTIC at 300 ft.
BURLAP & PLASTIC at 330 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **380**

Well Tests: **Jetted** **Yield: 20+ GPM**

Water Quality:

Strata Depth (ft.)	Water Type
330 - 390	**MIDDLE TRINITY**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Centex Pump & Supply, Inc.**

2520 Hwy. 290 West
Dripping Springs, TX 78620

Driller Name: **MARTIN DALE LINGLE** License Number: **54813**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**TOP SOIL/ ROCK**
1	**30**	**BROWN LIMESTONE W/CLAY**
30	**80**	**GRAY LIMESTONE**
80	**100**	**GRAY/TAN LIMESTONE**
100	**135**	**GRAY LIMESTONE W/CLAY**
135	**330**	**TAN LIMESTONE**
330	**340**	**GRAY/TAN LIMESTONE**
340	**390**	**TAN LIMESTONE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**2**	**330**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**SDR17**	**330**	**390**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #193324

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**No Data**
Address:	**4143 Maple Ave Dallas , TX 78219**	Grid #:	**57-47-6**
Well Location:	**24643 Hamilton Pool Rd Round mountain, TX 78663**	Latitude:	**30° 18' 54" N**
		Longitude:	**098° 08' 46" W**
Well County:	**Hays**	Elevation:	**994**

Well Type: **Domestic**

Drilling Information

Company: **Bee Cave Drilling, Inc.** Date Drilled: **12/18/2019**

Driller: **Jim Blair** License Number: **54416**

Well Report Tracking #531673

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.5	**0**	**10**
8.5	**10**	**470**

Plugging Information

Date Plugged: **12/19/2019** Plugger:

Plug Method: **Tremmie pipe bentonite from bottom to 2 feet from surface, cement top 2 feet**

Casing Left in Well:

DIa (in.)	*Top (ft.)*	*Bottom (ft.)*
	0	**0**

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**470**	**Bentonite 30**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

STATE OF TEXAS WELL REPORT for Tracking #531673

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**mobs-1**
Address:	**4143 Maple Ave Dallas , TX 78219**	Grid #:	**57-47-6**
		Latitude:	**30° 18' 54.57" N**
Well Location:	**24643 Hamilton Pool Rd Round mountain, TX 78663**	Longitude:	**098° 08' 46.16" W**
Well County:	**Hays**	Elevation:	**996 ft. above sea level**
			****Plugged Within 48 Hours****

****This well has been plugged**** **Plugging Report Tracking #193324**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **12/17/2019** Drilling End Date: **12/18/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.5	**0**	**10**
8.5	**10**	**470**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data: **No Data**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **No Data**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 5 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31097

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**top soil**
2	**15**	**tan limestone**
15	**25**	**grey limestone**
25	**35**	**grey sandstone**
35	**50**	**tan limestone**
50	**110**	**grey limestone**
110	**120**	**grey sandstone**
120	**170**	**grey sandstone/ red clay**
170	**470**	**sandstone/ gravel mix 5 gpm**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
No Data			

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #532149

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**mobs-3**
Address:	**4143 Maple Ave Dallas, TX 78219**	Grid #:	**57-47-6**
Well Location:	**24643 Hamilton Pool Rd Round Mountain, TX 78663**	Latitude:	**30° 19' 13.77" N**
		Longitude:	**098° 08' 43.62" W**
Well County:	**Hays**	Elevation:	**870 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **11/27/2019** Drilling End Date: **11/27/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**50**
6.75	**50**	**100**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 6**
40	**50**	**Bentonite 3**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 52 ft.

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 3-4 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
50 - 70	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31100

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**topsoil**
1	**18**	**red clay**
18	**25**	**red/tan sandstone**
25	**28**	**green clay**
28	**65**	**tan sandstone**
65	**70**	**grey sandstone**
70	**100**	**grey sandstone/shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**50**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**50**	**100**

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #532216

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**tw-2**
Address:	**4143 Maple Ave Dallas , TX 78219**	Grid #:	**57-47-6**
Well Location:	**24643 Hamilton Pool Rd Round Mountain, TX 78663**	Latitude:	**30° 19' 46.86" N**
		Longitude:	**098° 09' 02.6" W**
Well County:	**Hays**	Elevation:	**872 ft. above sea level**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **12/4/2019** Drilling End Date: **12/4/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**50**
6.75	**50**	**140**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 7**
40	**50**	**Bentonite 3**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 60 ft.
Rubber at 65 ft.

Type of Pump: **Submersible**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31093

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**topsoil**
2	**15**	**tan sandstone**
15	**22**	**tan/red sandstone**
22	**40**	**gravel/sandstone**
40	**55**	**red clay**
55	**90**	**sandstone**
90	**110**	**sand/sandstone 5 gpm**
110	**140**	**clay / sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**80**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**80**	**110**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #534546

Owner:	**Mirasol Meadows LLc**	Owner Well #:	**No Data**
Address:	**4143 Maple Ave Dallas, TX 78219**	Grid #:	**57-47-6**
Well Location:	**24643 Hamilton Pool Rd Round Mountain, TX 78663**	Latitude:	**30° 18' 50.72" N**
		Longitude:	**098° 08' 35.83" W**
Well County:	**Hays**	Elevation:	**901 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/12/2019** Drilling End Date: **12/12/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**50**
6.75	**50**	**120**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 6**
40	**50**	**Bentonite 3**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **1000+**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 60 ft.
Rubber at 65 ft.

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 10 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31096

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**topsoil**
2	**10**	**caliche**
10	**25**	**sandstone/clay**
25	**35**	**sandstone**
35	**65**	**red clay**
65	**105**	**sandstone wb 10 gpm at 664 tds**
105	**120**	**clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**80**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**80**	**120**

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Texas Department of Licensing and Regulation
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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #534550

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**tw-3**
Address:	**4143 Maple Ave Dallas, TX 78219**	Grid #:	**57-47-6**
		Latitude:	**30° 18' 49.5" N**
Well Location:	**24643 Hamilton Pool Rd Round Mountain, TX 78663**	Longitude:	**098° 08' 35.97" W**
Well County:	**Hays**	Elevation:	**905 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/11/2019** Drilling End Date: **12/11/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**50**
6.75	**50**	**120**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 7**
40	**50**	**Bentonite 3**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **200+**

Distance to Septic Tank (ft.): **200+**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 60 ft.
Rubber at 65 ft.

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 10 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31095

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**topsoil**
2	**10**	**caliche**
10	**25**	**sandstone/clay**
25	**35**	**grey/tan sandstone**
35	**65**	**red clay**
65	**105**	**sandstone wb 10 gpm at 665 tds**
105	**120**	**clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**80**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**80**	**120**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #534551

Owner:	**Mirasol Meadows LLC**	Owner Well #:	**obs-2**
Address:	**4143 Maple Ave Dallas, TX 78219**	Grid #:	**57-47-6**
Well Location:	**24643 Hamilton pool Rd Round Mountain, TX 78663**	Latitude:	**30° 19' 45.23" N**
		Longitude:	**098° 09' 01.87" W**
Well County:	**Hays**	Elevation:	**875 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/3/2019** Drilling End Date: **12/3/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.635	**0**	**10**
8.5	**10**	**50**
6.75	**50**	**145**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 8**
40	**50**	**Bentonite 3**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 60 ft.
Rubber at 65 ft.

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **jim blair** License Number: **54416**

Comments: **No Data**

Report Amended on 3/18/2020 by Request #31094

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**tan caliche**
10	**30**	**tan sandstone**
30	**50**	**red shale**
50	**80**	**tan limestone**
80	**120**	**tan limestone wb 15 gpm at 460 tds**
120	**145**	**grey clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**75**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**75**	**145**

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STATE OF TEXAS WELL REPORT for Tracking #535035

Owner:	**BENTREE BUILDERS**	Owner Well #:	**No Data**
Address:	**14801 ARROWHEAD DRIVE LEANDER, TX 78641**	Grid #:	**57-47-3**
Well Location:	**401 STAGECOACH RANCH RD. DRIPPING SPRINGS, TX 78620**	Latitude:	**30° 20' 03.36" N**
		Longitude:	**098° 07' 51.6" W**
Well County:	**Travis**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Public Supply**

Drilling Start Date: **11/20/2019** Drilling End Date: **11/20/2019** **Plans Approved by TCEQ - YES**
PWS# 2270419

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
14.75	**0**	**18**
10	**18**	**210**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**18**	**Cement 15 Bags/Sacks**
0	**140**	**Cement 52 Bags/Sacks**

Seal Method: **Positive Displacement**

Sealed By: **Driller**

Distance to Property Line (ft.): **500+**

Distance to Septic Field or other concentrated contamination (ft.): **N/A**

Distance to Septic Tank (ft.): **N/A**

Method of Verification: **OWNER**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **32 ft.** below land surface on **2020-01-14** Measurement Method: **Electric Line**

Packers: **BURLAP & PLASTIC at 140 ft.**
BURLAP & PLASTIC at 140.6 ft.
BURLAP & PLASTIC at 141 ft.

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 55 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
60	**Middle Trinity**

Chemical Analysis Made: **Yes**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Centex Pump & Supply, Inc.**

2520 Hwy. 290 West
Dripping Springs, TX 78620

Driller Name: **Martin Lingle** License Number: **54813**

Comments: **No Data**

Report Amended on 2/13/2020 by Request #30924

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**45**	**TOP SOIL**
45	**50**	**BLUE LIMESTONE**
50	**72**	**GRAY/TAN LIMESTONE**
72	**90**	**BROWN LIMESTONE**
90	**125**	**TAN./BROWN SAND**
125	**140**	**RED CLAY W/SAND**
140	**160**	**TAN LIMESTONE**
160	**170**	**WHITE LIMESTONE**
170	**200**	**BROWN LIMESTONE**
200	**210**	**GRAY LIMESTONE W/CLAY**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
10	**Blank**	**New Plastic (PVC)**	**SCH. 40**	**0**	**18**
5	**Blank**	**New Plastic (PVC)**	**SDR17**	**2**	**140**
5	**Perforated or Slotted**	**New Plastic (PVC)**	**SDR17 0.032**	**140**	**200**
5	**Blank**	**New Plastic (PVC)**	**SDR17**	**200**	**210**

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P.O. Box 12157
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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #545767

Owner:	**Travis County**	Owner Well #:	**MW-1**
Address:	**P.O. Box 1748 Austin, TX 78767**	Grid #:	**57-47-3**
Well Location:	**Hamilton Pool Road at Stagecoach Road Dripping Springs, TX 78620**	Latitude:	**30° 20' 14.75" N**
		Longitude:	**098° 07' 55.94" W**
Well County:	**Travis**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **5/15/2020** Drilling End Date: **5/20/2020**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**219**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed; Screened; Straight Wall**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**159**	**219**	**Sand**	**8/16**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**157**	**Cement 27 Bags/Sacks**
	157	**159**	**Bentonite 1 Bags/Sacks**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+ feet**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **157 ft.** below land surface on **2020-05-19** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **Solar** Pump Depth (ft.): **210**

Well Tests: **Jetted** **Yield: 1-3 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
174 - 214	**Cow Creek**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Geoprojects International, Inc.**

8834 Circle Dr
Austin, TX 78736

Driller Name: **Evan K. Schaefer** License Number: **58772**

Apprentice Name: **Max Sisco** Apprentice Number: **60071**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**Top soil and white Limestone**
2	**15**	**Yellow weathered Limestone**
15	**83**	**Gray Limestone with yellow and gray Clay**
83	**110**	**Light tan fractured Limestone**
110	**120**	**Sand and gravel mixed**
120	**125**	**Red Clay**
125	**160**	**Yellow Sandstone**
160	**198**	**White fractured Sandstone**
198	**213**	**Gray Sandstone and Shale**
213	**219**	**Green Shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**0**	**74**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.035**	**174**	**214**

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #556939

Owner:	**Travis County**	Owner Well #:	**Johannsen 2**
Address:	**P.O. Box 1748 Austin, TX 78767**	Grid #:	**57-47-3**
Well Location:	**Hamilton Pool Road at Stagecoach Ranch Road Dripping Springs, TX 78620**	Latitude:	**30° 20' 06.01" N**
		Longitude:	**098° 07' 56.89" W**
Well County:	**Travis**	Elevation:	**968 ft. above sea level**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **10/2/2020** Drilling End Date: **10/8/2020**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**215**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed; Screened; Straight Wall**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**165**	**210**	**Sand**	**8/16**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**148**	**Cement 18 Bags/Sacks**
	148	**165**	**Grout 1 Bags/Sacks**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **100+**

Distance to Septic Field or other concentrated contamination (ft.): **N/A**

Distance to Septic Tank (ft.): **N/A**

Method of Verification: **Owner Knowledge**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **153 ft.** below land surface on **2020-10-06** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 5 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
170 - 207	**Middle Trinity, Cow Creek**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Geoprojects International, Inc.**

8834 Circle Dr
Austin, TX 78736

Driller Name: **Evan K. Schaefer** License Number: **58772**

Apprentice Name: **Max Sisco** Apprentice Number: **60071**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**6**	**Yellow weathered Limestone**
6	**25**	**Grey Limestone**
25	**50**	**Tan to Yellow Limestone**
50	**82**	**Dark grey Limestone with grey Clay**
82	**110**	**Tan Limestone with tan Clay lenses**
110	**132**	**Red Clay with Sand and Gravel**
132	**142**	**Grey Clay and grey Limestone**
142	**175**	**Fractured white Limestone (Water encountered at 170 feet)**
175	**185**	**Light tan Limestone**
185	**207**	**Grey fractured Limestone**
207	**215**	**Grey Shale with green Clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**0**	**170**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**170**	**210**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #604035

Owner:	**Laurel & Patrick Massey**	Owner Well #:	**No Data**
Address:	**24201 Fossil Trail Spicewood , TX 78669**	Grid #:	**57-47-6**
Well Location:	**1800 stagecoach ranch lp Dripping Springs, TX 78620**	Latitude:	**30° 18' 56.6" N**
		Longitude:	**098° 07' 47" W**
Well County:	**Hays**	Elevation:	**1050 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **2/28/2022** Drilling End Date: **3/4/2022**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**50**
6.75	**50**	**320**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**45**	**Cement 8**
45	**50**	**Bentonite 2**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **58**

Distance to Septic Field or other concentrated contamination (ft.): **not installed**

Distance to Septic Tank (ft.): **not installed**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 238 ft.
Rubber at 240 ft.

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Rd.
Dripping Springs, TX 78620

Driller Name: **Michael Scott** License Number: **59719**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**topsoil**
1	**11**	**caliche**
11	**25**	**tan limestone**
25	**200**	**grey limestone**
200	**220**	**grey shale**
220	**235**	**grey clay**
235	**300**	**grey sandstone wb 15 gpm at 467 tds**
300	**320**	**grey clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**240**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**240**	**300**
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**300**	**320**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #610368

Owner:	**Scott Hemphill**	Owner Well #:	**No Data**
Address:	**3850 Fearless Treadway Round Mountain, TX 78663**	Grid #:	**57-47-3**
Well Location:	**3850 Fearless Treadway Round Mountain, TX 78663**	Latitude:	**30° 20' 16" N**
		Longitude:	**098° 08' 58" W**
Well County:	**Hays**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **6/30/2022** Drilling End Date: **6/30/2022**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**270**

Drilling Method: **Air Rotary**

Borehole Completion: **Screened; Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**147**	**Cement 26 Bags/Sacks**
147	**151**	**Bentonite 2 Bags/Sacks**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **15**

Distance to Septic Field or other concentrated contamination (ft.): **200+**

Distance to Septic Tank (ft.): **200+**

Method of Verification: **Tape Measure**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **106.5 ft.** below land surface on **2022-07-15** Measurement Method: **Electric Line**

Packers: **Plastic at 149 ft.**
Rubber at 151 ft.

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
150 - 265	**Lower Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Geoprojects International, Inc.**

8834 Circle Dr
Austin, TX 78736

Driller Name: **Evan K Schaefer** License Number: **58772**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**14**	**Red Silty Clay**
14	**22**	**Yellow weathered Limestone**
22	**48**	**White Limestone**
48	**65**	**Tan Limestone**
65	**82**	**Grey Limestone**
82	**130**	**Green Shale and Clay**
130	**150**	**Red Clay with Grey and Red Mudstone**
150	**265**	**Red Sandstone with Red Clay and gravel lenses;**
265	**270**	**Yellow Clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**0**	**210**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**210**	**270**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #610371

Owner: **Scott Hemphill**

Address: **3850 Fearless Treadway**
Round Mountain, TX 78663

Well Location: **3850 Fearless Treadway**
Round Mountain, TX 78663

Well County: **Hays**

Owner Well #: **Dry Hole**

Grid #: **57-47-3**

Latitude: **30° 20' 09" N**

Longitude: **098° 09' 00" W**

Elevation: **No Data**

****Plugged Within 48 Hours****

****This well has been plugged****

Plugging Report Tracking #220361

Type of Work: **New Well**

Proposed Use: **Domestic**

Drilling Start Date: **6/29/2022** Drilling End Date: **6/30/2022**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**370**

Drilling Method: **Air Rotary**

Borehole Completion: **Plugged**

Annular Seal Data: **No Data**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **No Data**

Surface Completion NOT by Driller

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Geoprojects International, Inc.**

8834 Circle Dr
Austin, TX 78736

Driller Name: **Evan K Schaefer** License Number: **58772**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**Red Silt and Clay**
10	**45**	**White hard Limestone**
45	**65**	**Grey Limestone**
65	**110**	**Green Clay**
110	**125**	**Grey Limestone with grey Clay lenses**
125	**250**	**Red Clay with Sandstone and Gravel lenses**
250	**270**	**Yellow Clay**
270	**370**	**Dark grey Clay and Mudstone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
No Data			

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #220361

Owner:	**Scott Hemphill**	Owner Well #:	**Dry Hole**
Address:	**3850 Fearless Treadway Round Mountain, TX 78663**	Grid #:	**57-47-3**
Well Location:	**3850 Fearless Treadway Round Mountain, TX 78663**	Latitude:	**30° 20' 09" N**
		Longitude:	**098° 09' 00" W**
Well County:	**Hays**	Elevation:	**No Data**

Well Type: **Domestic**

Drilling Information

Company: **Geoprojects International, Inc.** Date Drilled: **6/30/2022**

Driller: **Evan Schaefer** License Number: **58772**

Well Report Tracking #610371

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**370**

Plugging Information

Date Plugged: **6/30/2022** Plugger: **Evan K Schaefer**

Plug Method: **Tremmie pipe cement from bottom to top**

Casing Left in Well:

No Data

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**370**	**Cement 80 Bags/Sacks**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Geoprojects International, Inc.**

8834 Circle Dr
Austin, TX 78736

Driller Name: **Evan K Schaefer** License Number: **58772**

Comments: **No Data**

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-301

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747301
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.338889
Latitude (degrees minutes seconds)	30° 20' 20" N
Longitude (decimal degrees)	-98.128889
Longitude (degrees minutes seconds)	098° 07' 44" W
Coordinate Source	+/- 1 Minute
Aquifer Code	NOT-APPL - Aquifer Code Is Not Applicable to this Well
Aquifer	Unassigned
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	800
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	1134
Well Depth Source	Another Government Agency
Drilling Start Date	
Drilling End Date	0/0/1926
Drilling Method	
Borehole Completion	

Well Type	Oil or Gas
Well Use	Unused
Water Level Observation	None
Water Quality Available	No
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	H. Reimers
Driller	E.D. Summerow
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	
Created Date	
Last Update Date	3/4/2020

Remarks	Oil test. Well B-37 in 1957 Travis County report.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

CROSS REFERENCE SHEET

Date

bject CR-GWTD
TRAVIS

Located Well Data
YD 57-47-301

rding Electric Log

Subject GW-SC
ELECTRIC LOG FILE Q-50

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-304

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747304
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.340834
Latitude (degrees minutes seconds)	30° 20' 27" N
Longitude (decimal degrees)	-98.143334
Longitude (degrees minutes seconds)	098° 08' 36" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	218GLRSL - Glen Rose Limestone, Lower Member
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	809
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Spring
Well Use	Stock
Water Level Observation	None
Water Quality Available	Yes
Pump	None
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	C.F. Lay Hammett's Spring
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	9/3/1972
Last Update Date	3/4/2020

Remarks	Hammett's Spring. Flowed 3 gal/min on Mar.5,1955, and 10 gal/min on Sept. 3,1972. Well B-38 in 1957 Travis County report.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis

Sample Date: 4/10/1950 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** U.S. Geological Survey

Sampled Aquifer: Glen Rose Limestone, Lower Member

Analyzed Lab: U.S. Geological Survey Lab **Reliability:** Reliability unknown or not available

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		272.13	mg/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		332	mg/L	
00910	CALCIUM (MG/L)		60	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		42	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		330	mg/L	
00920	MAGNESIUM (MG/L)		44	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		6.3	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.9	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		18	mg/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.33		
00932	SODIUM, CALCULATED, PERCENT		8	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		14	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		696	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		23	mg/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		370	mg/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer ~~Edwards~~ Kgl Field No. B-38 State Well No. 57-47-304

Owner's Well No. _____ County Travis

1. Location: _____ 1/4, _____ 1/4 Sec. _____, Block _____ Survey _____

2. Owner: C. F. Kay Address: _____

Tenant: _____ Address: _____

Driller: _____ Address: _____

3. Elevation of LSD is 805 ft. above msl, determined by topo

4. Drilled: _____ 19____; Dug, Cable Tool, Rotary, _____

5. Depth: Rept. _____ ft. Meas. _____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed _____

7. Pump: Mfgr. _____ Type _____

No. Stages _____, Bowls Diam. _____ in., Setting _____ ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Fuel _____ Make & Model _____ HP. _____

9. Yield: Flow 10 gpm, Pump _____ gpm, Meas., Rept., (Est.) 9-3-72

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

CASING & BLANK PIPE

Cemented From _____ ft. to _____ ft.

Diam. (in.)	Type	Setting, ft. from	to

11. Water Level: _____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, _____

13. Quality: (Remarks on taste, odor, color, etc.) 5708

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test, _____

15. Record by: Ja Brune Date 9-3 1972

Source of Data 5708 and observ.

16. Remarks: Hammett Spring

Flowed 3 gpm 3-5-55

Public Recreational Area

WELL SCREEN

Screen Openings

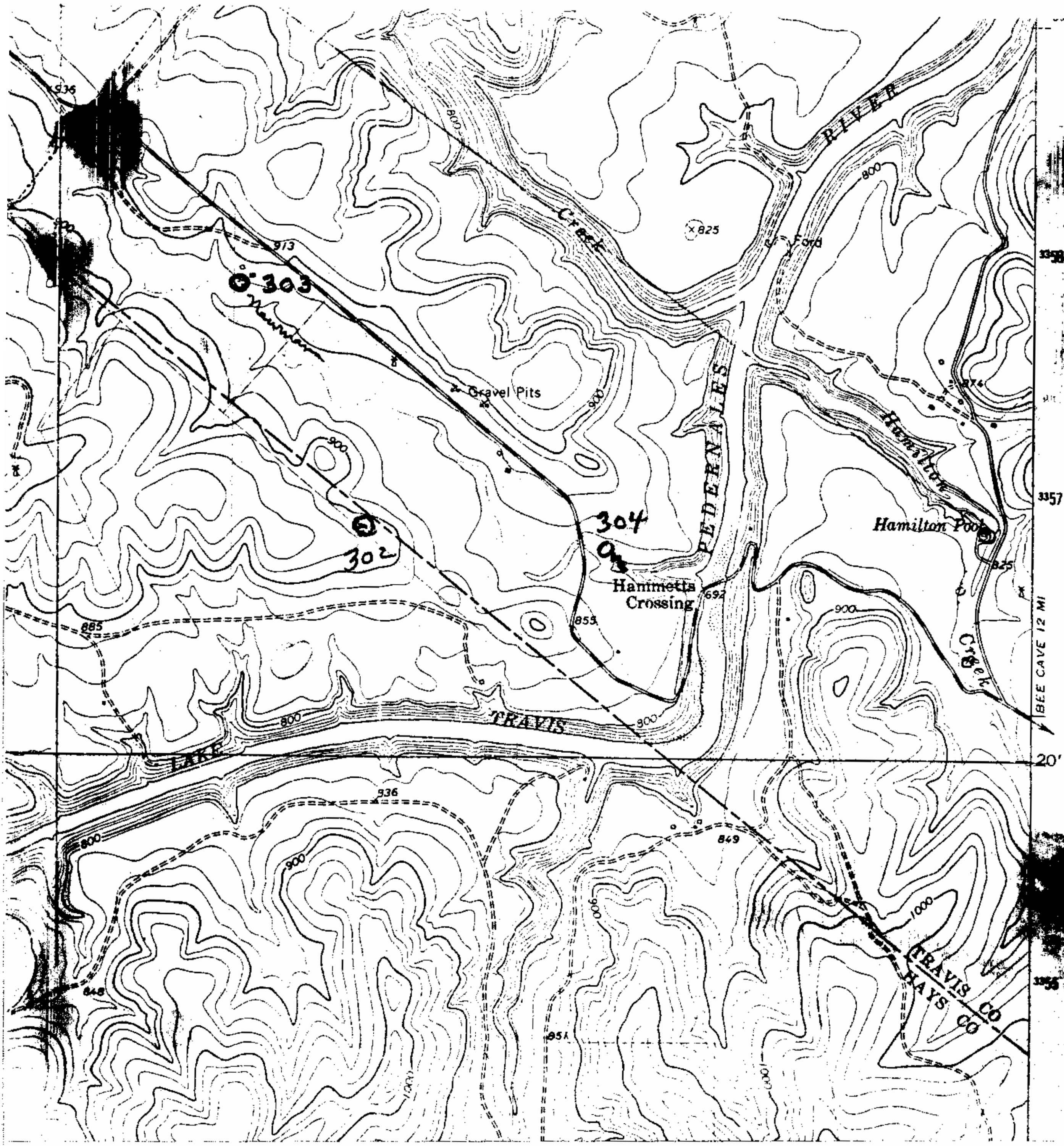
Diam. (in.)	Type	Setting, ft. from	to

(Sketch)

57-47-304

APP000243

TWDBE-WD-2



PEDERNALES RIVER
Creek
×825
Ford
913
303
302
304
Gravel Pits
900
800
Hamilton Creek
874
Hamilton Pool
825
Hammetts Crossing
692
855
885
LAKE TRAVIS
836
849
1000
848
851
TRAVIS CO
HAYS CO
BEE CAVE 12 MI
20′
3358
3357
3356

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-305

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747305
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.3373444
Latitude (degrees minutes seconds)	30° 20' 14.44" N
Longitude (decimal degrees)	-98.1411306
Longitude (degrees minutes seconds)	098° 08' 28.07" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218SCMR - Sycamore Sand Member of Travis Peak Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	828
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	280
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	
Drilling Method	Air Rotary
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	Miscellaneous Measurements
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	220
Power Type	Electric Motor
Annular Seal Method	Gravity
Surface Completion	
Owner	West Cave Preserve
Driller	James B. Tucker
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	
Created Date	12/20/1996
Last Update Date	3/4/2020

Remarks	Drilled 4/1978 2/14/2018: Could not insert steel tape into well- no WL measurement. Well plumbing has been reworked since last visit in 1986.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
4.5	Blank	Plastic (PVC)			1	234

Well Tests

Test Date	Test Type	Yield (gallons per minute)	Drawdown (ft.)	Test Hours
4/0/1978	Jetted	0.5		

Lithology

Top Depth (ft.)	Bottom Depth (ft.)	Description
0	1	Surface topsoil
1	5	Red Gran?
5	30	Hard brown
30	31	Grey shale
31	35	Brown
35	50	Grey lime shaly
50	53	Blue shale
53	62	Med.
62	70	Blue shale
70	74	Brown shale
74	80	Blue shale
80	95	Blue and red clay
95	110	Lt. brown
110	120	Red sandstone
120	130	Hard broken red & green
130	155	Red & green clay
155	165	Hard broken seep 1/2 gpm
165	220	Hard pink and white
220	225	Blue clay
225	235	Red clay
235	245	Brown clay
245	270	Blue clay
270	273	Brown clay
273	280	Blue clay

Annular Seal Range - No Data

Borehole

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
6.25	0	280

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	4/20/1978		165		663	1	Registered Water Well Driller	Unknown		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis

Sample Date: 6/10/1986 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Sycamore Sand Member of Travis Peak Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		343	mg/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		418.58	mg/L	
00910	CALCIUM (MG/L)		29	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		182	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		1.3	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		121	mg/L	
00920	MAGNESIUM (MG/L)		12	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		3.46	mg/L	
00400	PH (STANDARD UNITS), FIELD		6.8	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		8	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		4.43		
00955	SILICA, DISSOLVED (MG/L AS SI02)		11	mg/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		10.09		
00932	SODIUM, CALCULATED, PERCENT		82	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		256	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1474	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		93	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		23	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		801	mg/L	

Water Quality Analysis

Sample Date: 2/14/2018 **Sample Time:** 1027 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Sycamore Sand Member of Travis Peak Formation

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: Sample collected from faucet after first large storage tank. If sampled again, ask owner to cut off power to well and install a faucet by removing pressure relief valve from top of well.

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		331	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		331	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		0.44	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		55.3	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		403.935	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		2190	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.728	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		31.2	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		123	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		1.44	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)		2.74	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		1.15	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		142.604	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		121	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		15.4	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1.28	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		2.515	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.568	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.77	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		8.49	mg/L	

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		3.796		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		10.2	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		7.138		
00932	SODIUM, CALCULATED, PERCENT		75.022	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		195	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1121	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		1100	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		71.3	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		10.4	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		657.969	mg/L	
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		234	ug/L	

Water Quality Analysis

Sample Date: 10/30/2018 **Sample Time:** 1225 **Sample Number:** 1 **Collection Entity:** Barton Springs/Edwards Aquifer CD

Sampled Aquifer: Sycamore Sand Member of Travis Peak Formation

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		361	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		361	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		0.39	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		58.4	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		440.545	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		827	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.175	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		78.8	mg/L	
28004	CARBON-14 DISS APPARENT AGE (YEARS BP)		4600	Y-BP	
82172	CARBON-14 FRACTION MODERN		0.5641		0.002
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		31.5	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		1.78	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
82081	DELTA CARBON 13 C13/C12 PER MIL		-10.3	0/00	
50791	DEUTERIUM, EXPRESSED AS PERMIL VSMOW		-26.6	0/00	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.532	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		265.057	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		49	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		16.3	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		3.289	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.743	mg/L	

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		5.5	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		1.947		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		11.3	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.135		
00932	SODIUM, CALCULATED, PERCENT		39.666	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		79.7	mg/L	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		982	ug/L	
48297	STRONTIUM, ISOTOPE OF MASS 86 AND 87 RATIO		0.7078515	N/A	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		40	mg/L	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		484.519	mg/L	
07012	TRITIUM IN WATER (TRITIUM UNITS)		0.8	TU	0.09
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)	<	1	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer(s) Sycamore Sand (442) Project No. _____ State Well No. 57-47-305

_____ Field No./Owner's Well No. 1 County TRAVIS

1. Location: ___ ft., ___ ft., Section ___, Block ___, Survey _____, Lat. 30-20-10 N, Long. 098-08-26 W

2. Owner: West Cave Preserve Address: St. Rt. 4 Box 30-C Dripping Springs 78620
   Tenant (other): John Ahrns (Mgr.) Address: do
   Driller: Glass & Tucker (James B. Tucker, Jr.) Address: Rt. 1 A Box 52A Dripping Springs 78620

3. Land Surface Elevation: 810 ft. above msl determined by Topo

4. Drilled: 04/20/ 19 78 ; Dug, Cable Tool, Rotary, Air, _____

5. Depth: Rept. 280 ft. Meas. _____ ft.

6. Borehole Completion: Open Hole, (Straight Wall) Underreamed, Gravel Packed

7. Pump: Mfr. _____ Type Subm.
   No. Stages _____, Bowls Diam. ___ in., Setting 220 ft.
   Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Mfr. _____ Fuel Elec. HP. ___

9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est. ___ Date ___

10. Performance Test: Date _____ Length of Test ___ Made by _____
    Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.
    Production _____ gpm Specific Capacity _____ gpm/ft.

11. Quality: (Remarks on taste, odor, color, etc.) _____
    Analyses
    73° Date 06/10/86 Laboratory TSDH TDS ___ Sp Cond ___
    Date _____ Laboratory _____ TDS ___ Sp Cond ___

12. Other data available (as circled): Pumping Test, Power & Yield Test, (Drillers Log) 57-47-8A
    Formation Samples, Geophysical Log(s) _____

13. Water Level(s): 165.0 ft (rept meas.) 04/20/ 19 68 (type) (above) below L.S.D which is ___ ft. above below Land Surface
    _____ ft. rept. meas. _____ 19 ___ above below _____ which is ___ ft. above below Land Surface

14. Use: (Dom.) Stock, Public Supply, Ind., Irr., Observation, Other (Test Hole, Oil Test, etc.) _____

15. Recorded by: D. R. Jones Source of data: John Ahrns & D. log Date: 06/10/86

16. Remarks: _____

17. Location or Sketch:

CASING, BLANK PIPE & WELL SCREEN
Cemented From 0 ft. to 20 ft.

Diam. (in.)	Type	Setting (feet) from	to
4½	P.V.C.	+1.0	234

TWDB-0308 (Rev. 12-11-85)

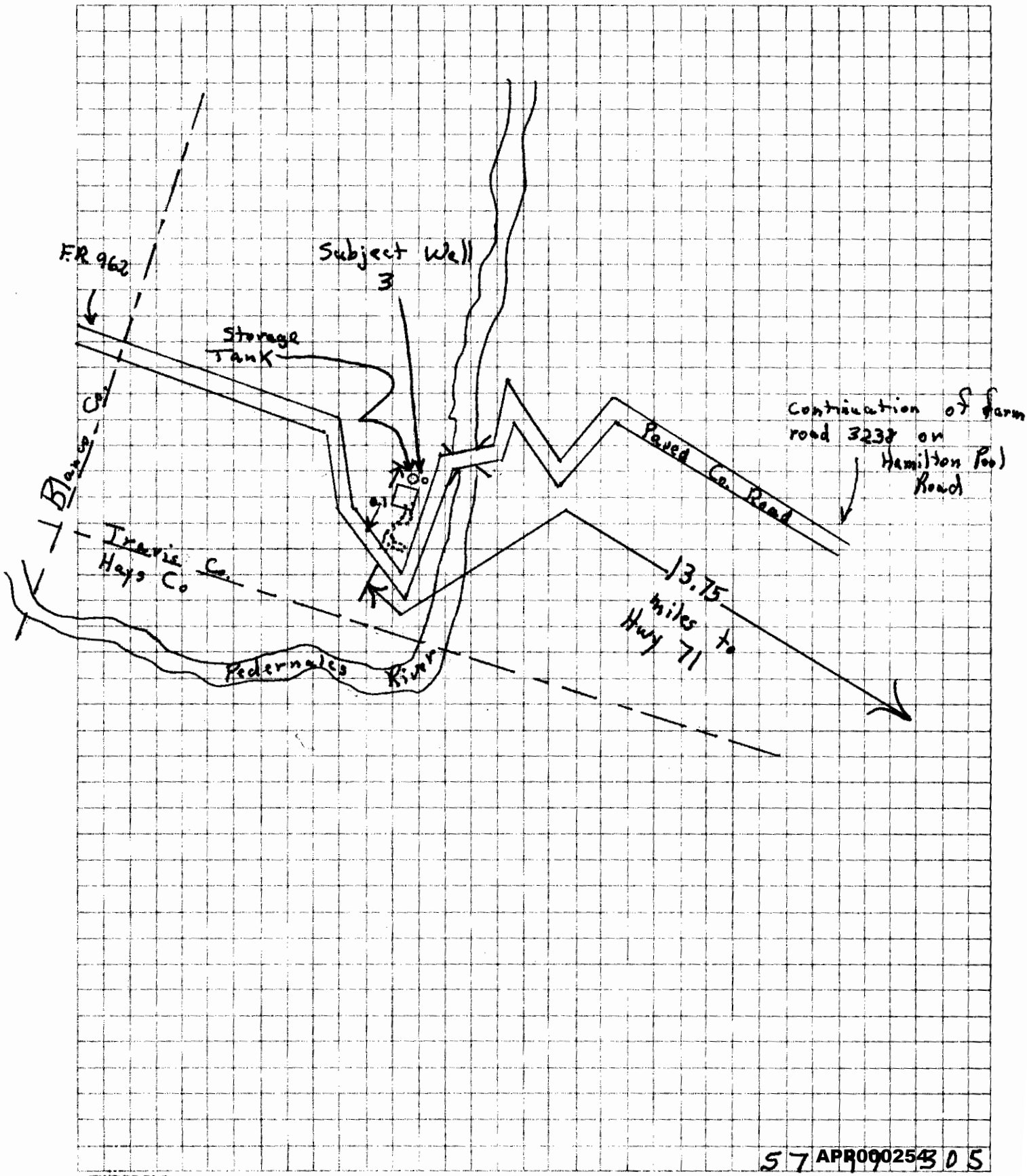
W/L Obs. Well ___ W/Q Obs. Well ✓
State Well No. 57AP[illegible]

TEXAS WATER DEVELOPMENT BOARD

BY Doc Jones DATE _____ DIVISION _____ SHEET NO. _____ OF _____

CHKD _____ DATE _____ JOB NAME _____

JOB NO. 57-47-3 PROG. CODE _____



57 APR0002543 05

TWDBS-SI-3

RECEIVED

AUG 31 1978

DEPT. OF WATER RESOURCES

Send original copy by certified mail to the Texas Department of Water Resources P. O. Box 13087 Austin, Texas 78711

State of Texas
WATER WELL REPORT

For TDWR use only
Well No.
Located on map
Received:

John Ahrns St.Rt.1A Box 52A Dripping Springs Tx. 78620

1) OWNER West Cave Preserve (Name) Address P.O. Box 5103 (Street or RFD) Austin, (City) Tx. (State) (Zip)

2) LOCATION OF WELL: County TRAVIS ____ ____ miles in N. (N.E., S.W., etc.) direction from Dripping Springs, (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ____ Block No. ____ Township ____
Abstract No. ____ Survey Name ____
Distance and direction from two intersecting section or survey lines ____

☐ See attached map. or 58-41-5L

3) TYPE OF WORK (Check):
☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check):
☒ Domestic ☐ Industrial ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Other ____

5) DRILLING METHOD (Check):
☐ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☒ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other ____

6) WELL LOG:
Date drilled 4- -78

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
6 3/4	Surface	280

7) BOREHOLE COMPLETION:
☐ Open Hole ☒ Straight Wall ☐ Undereamed
☐ Gravel Packed ☐ Other CASED
If Gravel Packed give interval . . . from ____ ft. to ____ ft.

From (ft.)	To (ft.)	Description and color of formation material
0	1	Surface
1	5	Red Gran
5	30	Hard Brown
30	31	Grey Clay
31	35	Brown
35	50	Grey Lime Shaly
50	53	Blue Shale
53	62	Med.
62	70	Blue Shale
70	74	Brown Shale
74	80	Blue Shale
80	95	Blue & Red Clay
95	110	Lt. Brown
110	120	Red Sandstone
120	130	Hard Broken Red&Green
130	155	Red & Green Clay
155	165	Hard Broken Seep Sept
165	220	Hard Pink & White
220	225	Blue Clay
225	235	Red Clay
235	245	Brown Clay
245	270	Blue Clay

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4½	NEW	PVC WELLCASING	+1	234	

CEMENTING DATA
Cemented from 0 ft. to 20 ft.
Method used GRAVITY
Cemented by JAMES B TUCKER (Company or Individual)

9) WATER LEVEL:
Static level 165 ft. below land surface Date APR 20-78
Artesian flow ____ gpm. Date ____

10) PACKERS: Type ____ Depth ____

11) TYPE PUMP:
☐ Turbin ☐ Jet ☒ Submersible ☐ Cylinder
☐ Other ____
Depth to pump bowls, cylinder, jet, etc., 220 ft.

12) WELL TESTS:
☐ Type Test: ☐ Pump ☐ Bailer ☒ Jetted ☐ Estimated
Yield: ½ gpm with 235 ft. drawdown after ____ hrs.

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☒ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? SEA ROSE Depth of strata 165 Ft
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME James B. Tucker, Jr. (Type or Print) Water Well Drillers Registration No. 1488

ADDRESS Rt.1A Box 52A (Street or RFD) Dripping Springs, (City) Tx. (State) 78620 (Zip)

(Signed) James B Tucker Jr. (Water Well Driller) Class A Tucker Drilling Co. Inc. (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

Additional instructions on reverse side.
WR-0382

57-47-305

APP000255

LOCATION OF WELL:

The sketch showing the well location must be as accurate as possible, showing landmarks, in sufficient detail so that the well may be plotted on a General Highway Map of the county in which the well is located.

Reference points from which distances are measured and directions given should be of a permanent nature (e.g. highway intersections, center of towns, river and creek bridges, railroad crossings). The distance and direction from the nearest town should always be indicated.

When giving a legal description include a sketch showing location of the well within the described area, e.g. survey abstract.

Information furnished in Section 2 of the TDWR-0392 is very important. Unless the well can be accurately located on a map the value of the other data contained in the Report is greatly reduced.

270	273	Brown Clay
273	280	Blue Clay

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TWDB ONLY
Organization No. 914 Lab No. 01
Work No. 6042 IAC (86-87) 0838

CHEMICAL WATER ANALYSIS REPORT

Send Reply To:
Water Availability Data and Studies Section
Texas Water Development Board
Stephen F. Austin Building
1700 Congress Ave.
Austin, Texas 78711
Attn: D.R. Jones Rm. 439

County 227 Travis
State Well No. 57-47-305
Well No.
Date Collected 06-10-86

Owner Westcave Preserve % John F. Ahrns ✓ Send copy to owner Sample No. 1 By D.R. Jones & Z.S.
Address St. Rt. 4 Box 30-C Dripping Springs, Tx. 78620 Well Location
Date Drilled Depth 280 ft. WBF Source (type of well) Subm.
Producing intervals Water level ft. Sample depth ft.
Sampled after pumping 5 Min hrs. Yield GPM meas. est. Temperature 073 °F °C
Point of collection End of discharge pipe Appearance ☑ clear ☐ turbid ☐ colored ☐ other
Use Domestic Remarks

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

Laboratory No. [redacted]
Date Received JUN 11 '86 KEY PUNCHED
Date Reported JUN 25 '86

WATER ANALYSIS
State Well No:57-47-3 Date:061786 Sample No:EB6-891

	MG/L	ME/L		MG/L	ME/L
Silica:00955:	11		Carbonate:00445:	0	0
Calcium:00910:	29	1.46	Bicarbonate:00440:	418	6.86
Magnesium:00920:	12	.98	Sulfate:00945:	93	1.94
Sodium:00929:	256	11.13	Chloride:00940:	182	5.13
Potassium:00937:	8	.20	Fluoride:00951:	1.3	.07
T.Cations		13.78	Nitrate as NO3:71850:	3.46	.06
Manganese:01055:		%Na	T. Anions		14.05
			pH:00403:	6.8	
Boron:01022:		SAR			
			180 deg TDS:70300:	792	
Total Iron:01045:		RSC	P. Alk.:00415:	0	
Other			T. Alk.:00410:	343	
(Specific Cond.:00095:		1135	T. Hardness:00900:	122	

Diluted Conductance (micromhos/cm3)
11 x134 =1474

__ items will be analyzed if checked.

Ammonia-N:00610:
Nitrite-N:00615:
Nitrate-N:00620:
OrganicNitrogen:00605:

WQ FY 2018

TWDB Water Quality Field Data Sheet

Newly Inventoried Well: N

SWN: 57-47-305
County: Travis
County Code: 227
Aquifer Code: 218 SCMR
Aquifer Id: 28

Name: Amber Ahrns Gosselin
Address: 24814 Hamilton Pool Road
Round Mountain, TX 78663
Attention:
Well Name or #:

ID Number: 202
Date: 2/14/2018
Sampler(s): Muller/Bjornson

(1)	(2)	(3)	4	5	6	7	8	9	10	11
250 ml filtered	500 ml filtered	250 ml filtered	1 Liter filtered	40 ml unfiltered						
Cation	**Anions/T. Alk.**	**Nitrate**	**Gross**	**Atrazine**						
RED		YELLOW	**Alpha**							
HNO_3	**ICE**	**ICE + H_2SO_4**	**HNO_3 by lab**	**ICE**						

Calibration Verification Readings

pH	SLOPE =	97.2
	7 =	6.97
	4 or 10 =	3.99
Conductivity	500 =	488
	1000 =	950
	2000 =	1908
	5000 =	4650

Time In: 9:43
Time Out:

Water Level:
M.P. =
W.L. remark:

Pumping time:
Sampling Point: FAW after storage tanks

Well Use: H
Lift: S
Power: E

FIELD G.P.S. readings
Latitude:
Longitude:

Casing Type:
Casing Size:

Sample Time: 10:27
Filter pressure: hand pump / line / spring sampler

Field Alkalinity Titration

	Start pH
	End pH
	mL Sample Size
	mL Acid Phenol (> 8.3)
	mL Acid Total (to pH 4.5)

mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): mg/L

Total Alkalinity (39086): mg/L

Notes: SYCAMORE SD

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

Time	10:15	10:20	10:25						
pH	7.27	7.71	7.77						
Celsius Temp.	10.8	10.4	10.4						
Conductivity	1135	1121	1121						

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone: (512)356-6022
Fax: (512)356-6021

ANALYTICAL RESULTS

Workorder: Q1806116

Lab ID: **Q1806116001**
Sample ID: **5747305 (202)**
Project ID: **Collected for TWDB**

Date Received: 2/14/2018 11:31
Date Collected: 2/14/2018 10:27

Matrix: Aqueous
Sample Type: SAMPLE

Parameters	Results	Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS											
Analysis Desc: E200.7 Metals, Trace Elements	Preparation Method: E200.7 Prep Analytical Method: E200.7 Metals, Trace Elements										
Boron Dissolved	2190	ug/L	50.0	20.0		1	02/19/18 15:48	BS	02/22/18 20:39	FO	
Calcium Dissolved	31.2	mg/L	0.200	0.0700		1	02/19/18 15:48	BS	02/22/18 20:39	FO	
Strontium Dissolved	1100	ug/L	10.0	4.00		1	02/19/18 15:48	BS	02/22/18 20:39	FO	
Iron Dissolved	<50.0	ug/L	50.0	20.0		1	02/19/18 15:48	BS	02/22/18 20:39	FO	
Magnesium Dissolved	15.4	mg/L	0.200	0.0700		1	02/19/18 15:48	BS	02/22/18 20:39	FO	
Potassium Dissolved	8.49	mg/L	0.200	0.0700		1	02/19/18 15:48	BS	02/22/18 20:39	FO	
Sodium Dissolved	195	mg/L	0.200	0.0700		1	02/19/18 15:48	BS	02/22/18 20:39	FO	
Analysis Desc: E200.8, ICP-MS	Preparation Method: E200.8, ICP-MS Prep Analytical Method: E200.8, ICP-MS										
Aluminum Dissolved	<5.00	ug/L	5.00	1.50		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Antimony Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Arsenic Dissolved	<1.00	ug/L	1.00	0.700		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Barium Dissolved	55.3	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Beryllium Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Cadmium Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Chromium Dissolved	1.44	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Cobalt Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Copper Dissolved	2.74	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Lithium Dissolved	121	ug/L	2.00	0.700		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	N
Lead Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Manganese Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Molybdenum Dissolved	1.28	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Selenium Dissolved	<5.00	ug/L	5.00	1.50		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Silver Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Thallium Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Uranium Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	N
Vanadium Dissolved	<1.00	ug/L	1.00	0.400		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	
Zinc Dissolved	234	ug/L	5.00	1.50		1	02/19/18 15:53	BS	02/21/18 11:50	SLW	

APP000259

3004.7.0.0

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone: (512)356-6022
Fax: (512)356-6021

ANALYTICAL RESULTS

Workorder: Q1806116

Lab ID: **Q1806116001** Date Received: 2/14/2018 11:31 Matrix: Aqueous
Sample ID: **5747305 (202)** Date Collected: 2/14/2018 10:27 Sample Type: SAMPLE
Project ID: **Collected for TWDB**

Parameters	Results	Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Analysis Desc: E300.0, Anions	Preparation Method: E300.0, Anions Analytical Method: E300.0, Anions										
Chloride DIssolved	123	mg/L	5.00	2.00		5	02/15/18 02:00	FO	02/15/18 02:00	FO	
Bromide Dissolved	0.728	mg/L	0.100	0.0400		5	02/15/18 02:00	FO	02/15/18 02:00	FO	
Fluoride Dissolved	1.15	mg/L	0.0500	0.0200		5	02/15/18 02:00	FO	02/15/18 02:00	FO	
Sulfate Dissolved	71.3	mg/L	5.00	2.00		5	02/15/18 02:00	FO	02/15/18 02:00	FO	
TOTAL PHOSPHATE AS P											
Analysis Desc: E365.4 Phosphorus, Total	Preparation Method: E365.4 / E351.2 Water Prep Analytical Method: E365.4 Phosphorus, Total										
Phosphorus, Dissolved (As P)	<0.0200	mg/L	0.0200	0.00800		1	02/21/18 12:24	BS	02/23/18	MO	
ALKALINITY											
Analysis Desc: SM2320B, Alkalinity	Preparation Method: SM2320B, Alkalinity Analytical Method: SM2320B, Alkalinity										
Phenolphthalein Alkalinity	0.00	mg/L	0.00	0.00		1	02/23/18	MM	02/23/18	MM	N
Hydroxide Alkalinity	0.00	mg/L	0.00	0.00		1	02/23/18	MM	02/23/18	MM	N
Bicarbonate Alkalinity	331	mg/L	0.00	0.00		1	02/23/18	MM	02/23/18	MM	N
Carbonate Alkalinity	0.00	mg/L	0.00	0.00		1	02/23/18	MM	02/23/18	MM	N
Total Alkalinity (CaCO3)	331	mg/L	20.0	20.0		1	02/23/18	MM	02/23/18	MM	
NITRATE AND NITRITE											
Analysis Desc: SM4500-NO3-H, Nitrate/Nitrite	Preparation Method: SM4500-NO3-H, Nitrate/Nitrite Analytical Method: SM4500-NO3-H, Nitrate/Nitrite										
Nitrate/Nitrite Dissolved	0.568	mg/L	0.0200	0.00800		1	02/22/18	MO	02/22/18	MO	
SILICA											
Analysis Desc: SM4500-SiO2-C, Silica	Preparation Method: SM4500-SiO2-C, Silica Analytical Method: SM4500-SiO2-C, Silica										
Silica, Dissolved	10.2	mg/L	0.500	0.200		1	02/23/18	MO	02/23/18	MO	
HEAVY METALS											
Analysis Desc: E245.1 Mercury Water	Preparation Method: E245.1 Mercury Water Analytical Method: E245.1 Mercury Water										
Mercury Dissolved	<0.200	ug/L	0.200	0.0700		1	02/15/18 09:32	FM	02/19/18 09:23	FM	

APP000260

3004.7.0.0

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone: (512)356-6022
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ANALYTICAL RESULTS

Workorder: Q1806116

Lab ID: **Q1806116001**
Sample ID: **5747305 (202)**
Project ID: **Collected for TWDB**

Date Received: 2/14/2018 11:31
Date Collected: 2/14/2018 10:27

Matrix: Aqueous
Sample Type: SAMPLE

Parameters	Results	Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS											
Analysis Desc: SM1030B Cation/Anion Balance	Preparation Method: SM1030B Cation/Anion Balance Analytical Method: SM1030B Cation/Anion Balance										
Cation/Anion Balance	0.4400	%				1	02/27/18 09:08	CW	02/27/18 09:08	CW	

APP000261

3004.7.0.0

TWDB Water Quality Field Data Sheet

SWN: 57-47-305 Site Name: WESTCAVE WELL Project TWDB Sampling

County: (Travis (453); Hays (209)) Address or Location: WESTCAVE PRESERVE Newly Inventoried Well NO

County Code: 24814 HAMILTON POOL RD. ID Number: 1024

Aquifer Code: 218SCMR ROUND MOUNTAIN, TX 78663 Date: 10/30/2018

Aquifer Id: (Edwards (11); Trinity (28)) Sampler(s): LC, BH, JV BSEACD

Standard TWDB suite			Isotopes (unfiltered, no ice)						
1	2	3	4	5	6	7			
250 ml filtered Cation ice + HNO3	500ml filtered Anion Total Alk. ice	250 ml filtered Nitrate ice + H2SO4	250 ml Sr 87/86 unpreserved	250 ml Deut. / O18 unpreserved	1 L Tritium unpreserved	1L C14 unpreserved			

All acidified samples pH <2.0. (*) If natural pH is <7, then add NaOH until pH is between 7 and 8. If natural pH is ≥7, no NaOH required.

Calibration Verification Readings			
		Pre Sample	Post Sample
PH	4	4.0	3.79
Cond	0 (air)	0	0
	4.49	4.49	4.40

Time In: 12:00 Time Out: 12:40

Water Level: – M.P. = ft W.L. remark: NOT ACCESSIBLE

Pumping time: 20 MINUTES Sampling Point: PIPE INFLOW FROM WELL INTO STORAGE TANK.

Well Use: IRR.

Lift: SUB.

Power: ELEC.

FIELD G.P.S. readings

Latitude: 30.337342 > GOOGLE EARTH

Longitude: -98.141097

Casing Type: PVC Casing Size: 6 inches

Sample Time: 12:25 Filtered: (Yes) / No

Filter pressure: hand pump / line / (gravity)

Items Below Calculated Later From Results:	
Dissolved Solids (mg/L):	
Hardness (as CaCO3):	
Balanced:	

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

Time	12:10	12:16	12:20						
pH	7.40	7.35	7.35						
Fahrenheit Temp.	22.59	22.50	22.52						
Turbidity	0	0	0						
uS/Cm Conductivity	910	901	904						

Notes: ESTIMATED 5 GPM YIELD

Field Data entered into TWDB GWDB: yes / no

Comments

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-306

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747306
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.340556
Latitude (degrees minutes seconds)	30° 20' 26" N
Longitude (decimal degrees)	-98.143056
Longitude (degrees minutes seconds)	098° 08' 35" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218HNSL - Hensell Sand Member of Travis Peak Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	841
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Spring
Well Use	Other
Water Level Observation	None
Water Quality Available	Yes
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	West Cave Preserve
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	5/5/2005
Last Update Date	3/4/2020

Remarks	

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis

Sample Date: 10/25/1988 **Sample Time:** 0915 **Sample Number:** 1 **Collection Entity:** Other State Agencies

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: Misc. Commerical Lab **Reliability:** Collected from pumped well, but not filtered or preserved

Collection Remarks: LCRA MONIT. PROGRAM

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		390	mg/L	
01503	ALPHA, DISSOLVED (PC/L)	<	10	PC/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	10	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		130	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		475.93	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)	<	10	ug/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	10	ug/L	
00910	CALCIUM (MG/L)		101.2	mg/L	
00690	CARBON, TOTAL (MG/L AS C)	<	10	mg/L	
00685	CARBON, TOTAL INORGANIC (MG/L AS C)	<	10	mg/L	
00680	CARBON, TOTAL ORGANIC (MG/L AS C)		0.9	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		23	mg/L	
46560	CHROMIUM, FIELD ACIDIFIED W/HNO3, FILTERED, UG/L	<	10	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	10	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.4	mg/L	
78115	HALOGEN, TOTAL ORGANIC, UG/L	<	10	ug/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		375	mg/L	
01045	IRON, TOTAL (UG/L AS FE)	<	10	ug/L	
46564	LEAD, FIELD FILTERED, ACIDIFIED W/HNO3, UG/L	<	10	ug/L	
00920	MAGNESIUM (MG/L)		30	mg/L	
01055	MANGANESE, TOTAL (UG/L AS MN)	<	10	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	2	ug/L	
00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)		1.33	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		5.89	mg/L	
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	<	0.01	mg/L	
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	<	0.01	mg/L	
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	<	0.01	mg/L	
00090	OXIDATION REDUCTION POTENTIAL (ORP), MILLIVOLTS		0.16	MV	
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE (MG/L)		2.39	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.6	SU	
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	<	0.01	mg/L	
00665	PHOSPHORUS, TOTAL (MG/L AS P)	<	0.01	mg/L	
00937	POTASSIUM, TOTAL (MG/L AS K)		1.6	mg/L	

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0.28		
70300	RESIDUE, TOTAL FILTERABLE (DRIED AT 180C), MG/L		430	mg/L	
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	10	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		7	mg/L	
46566	SILVER, FIELD FILTERED, ACIDIFIED W/HNO3, UG/L	<	10	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.47		
00932	SODIUM, CALCULATED, PERCENT		8	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		17	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		756	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		17	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		22	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		437	mg/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)	<	10	ug/L	

Water Quality Analysis

Sample Date: 5/10/1989 **Sample Time:** 1345 **Sample Number:** 1 **Collection Entity:** Other State Agencies

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: Misc. Industrial Lab **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		362	mg/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		90	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		441.77	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)	<	10	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		103.6	mg/L	
00680	CARBON, TOTAL ORGANIC (MG/L AS C)		1.23	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		18	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.3	mg/L	
78115	HALOGEN, TOTAL ORGANIC, UG/L		14	ug/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		396	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	10	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		33.6	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		5.31	mg/L	
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	<	0.01	mg/L	
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)		0.01	mg/L	
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)		0.13	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.57	SU	
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	<	0.01	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.5	mg/L	
81277	PURGEABLE ORGANIC CARBON, UG/L		0.2	ug/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
70300	RESIDUE, TOTAL FILTERABLE (DRIED AT 180C), MG/L		384	mg/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		5.88	mg/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.29		
00932	SODIUM, CALCULATED, PERCENT		6	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		13.2	mg/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		12	mg/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		410	mg/L	

Water Quality Analysis

Sample Date: 5/5/2005 **Sample Time:** 1414 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39086	ALKALINITY FIELD DISSOLVED AS CACO3		382	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		379	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	4.08	ug/L	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1.02	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	2.04	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		72.6	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1.02	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		462.51	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		84.5	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.105	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1.02	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		97.5	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		13.6	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.23	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1.02	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)		1.11	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.4	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		388	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	51	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1.02	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		4.4	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		35	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1.02	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1.02	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		2.32	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.5233	mg/L	
00400	PH (STANDARD UNITS), FIELD		6.96	SU	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.83	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	4.08	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		16.9	mg/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.24		
00932	SODIUM, CALCULATED, PERCENT		6	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		11.2	mg/L	

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		782	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		347	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		14.8	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		19.1	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1.02	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		420	mg/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		3.62	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		10	ug/L	

Water Quality Analysis

Sample Date: 4/28/2017 **Sample Time:** 1110 **Sample Number:** 1 **Collection Entity:** Barton Springs/Edwards Aquifer CD

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		354	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		354	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		-1.41	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		67.3	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		432.002	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		59.9	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)	<	0.02	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		97.8	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		19.2	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.27	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.301	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		385.874	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		4.25	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		34.3	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)		2.1	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.961	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.217	mg/L	
00400	PH (STANDARD UNITS), FIELD		6.95	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.14	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 57-47-306

groundwater division

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		13.3	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.248		
00932	SODIUM, CALCULATED, PERCENT		5.949	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		11.2	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		763	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		307	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		16.9	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		25.72	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		407.824	mg/L	
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)		1.11	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		3.89	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

State Well No. 57 47 306 (10–17) Previous Well No. (19–26) County TRAVIS 453 (28–30)

River Basin Colorado 14 (32–33) Zone 3 (35) Lat. 30 20 24 (37–42) Long. 098 08 30 (44–50) Source of Coord. 1 (52)

Owner's Well No. _____ Location _____ 1/4, _____ 1/4, Section _____, Block _____, Survey _____

Owner West Cave Preserve (10–31) Driller (33–52)

Address Rt. 4, Box 30-C, Dripping Springs, Tx 78620 Address _____

Tenant John Ahrns Address _____

Date Drilled (10–17) Depth (19–23) Source of Depth Datum (25) Altitude 775 (27–30) Source of Alt. Datum M (32)

Aquifer ~~Edwards~~ Hensell Sd 218HNSL (34–41) Well Type S (43) User (45–53)

Well Construction — Const. Method (55) Casing Material (57) Screen Material (59) Completion (61)

Casing or Blank Pipe (C)
Well Screen or Slotted Zone (S)
Open Hole (O)
Cemented from _____ to _____

Diam. (in.)	Setting (feet) From	To
10		23
26		39
42		55
58		71
10		23
26		39
42		55
58		71
10		23
26		39
42		55
58		71
10		23
26		39
42		55
58		71

Lift Data Pump Mfr. _____ Type _____ (63) No. Stages _____

Bowls Diam. _____ in. Setting _____ ft. Column Diam. _____ in. Length Tailpipe _____ ft.

Motor Mfr. _____ Fuel or Power _____ (65) Horsepower _____ (67–73)

Yield Flow _____ GPM Pump _____ GPM Meas., Rept., Est. _____ Date _____

Performance Test Date _____ Length of Test _____ Production _____ GPM

Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft. Sp. Cap. _____ GPM/ft.

Quality (Remarks on Taste, Odor, Color, Etc.) _____

Water Use Primary Use other 7 (10) Secondary Use _____ (12) Tertiary Use _____ (14)

Other Data Available — Water Level (16) Water Quality (18) Logs (20–25) Other Data (27–31)

Water Levels — Date _____ Meas. _____ ft. (+) Above (–) Below Landsurface

Date _____ Meas. _____ ft. (+) Above (–) Below Landsurface

Recorded By Laura De La Garza Date Record Collected or Updated 05 16 1989 (33–40) Reporting Agency 05 (42–43)

Remarks: Spring is used for environmental awareness education. (10–80)

Well Schedule In TWDB File Y (45)

Aquifer APP000272

Well No. 57-47-306

TWDB-0409 (02-26-88)

LCRA - WATER QUALITY MONITORING
WELL INVENTORY

County TRAVIS Aquifer _____ State Well No 57-47-306

USGS 7.5" quad. Hammeth Crossing Field Located? ____ Date _____

Well owner _____ John Ahnert Field No 57-47-3 W.S.

Mailing address Rt. 4, Box 30-C Phone No 1-825-3442

Dripping Springs, Tx 78620

Driller West Cave Preserve-Spring Date ~~drilled~~ _____

Reason for sampling suspect DDT contam., regional coverage

Well Type: dug, cable, rotary, other _____

Pump Test: pumped _____ gpm with _____ ft drawdown after _____ hours
Yield _____ gpm Date _____ measured, reported, estimated

Use _____ Land surface elevation _____ Depth _____

Well diameter _____ in. Completion: open-hole, screened, gravel pked

Casing. Type: steel, tin, iron, PVC, concrete, other _____
Cased from _____ ft to _____ ft
Completion interval _____ ft to _____ ft

Pump setting _____ ft Type pump _____

Historic water levels or samples?

Conditions around well: Does casing extend above ground?

Is well properly grouted to prevent land surface contam.?

Does cement pad surround top of casing?

Is well in a well house?

Potential contaminants stored in well house?

Is well covered or wrapped in material, if so, what?

Access to bore for water levels?

Access to unstored water from pump?

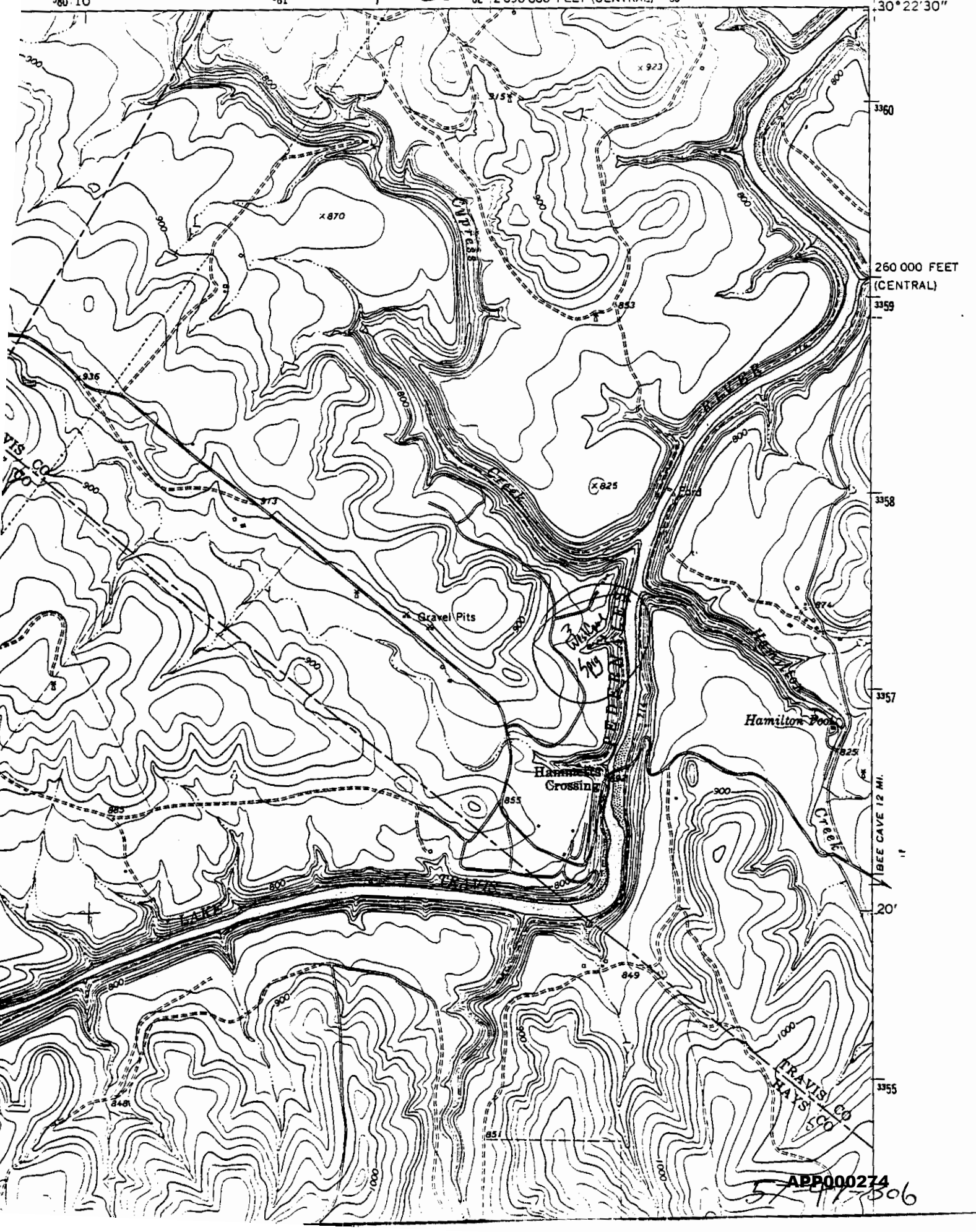
Is water treated to kill bacteria?

APP000273
57-47-306

Hammetts Crossing, TX 57-47 1"=2000'

7.5 MINUTE SERIES (TOPOGRAPHIC)

580 10' 581 582 2 690 000 FEET (CENTRAL) 583 98°07'30" 30°22'30"



APP000274

57-47-506

5747306

QPL055A ENVIRONMENTAL LABORATORY ANALYSIS
GROUND WATER MONITORING PROG

LAB ID: 6429C SAMPLE TYPE: GWMP DATE REPORTED: 01/27/89
ACILITY: WQMP ACCT NO: DATE RECEIVED: 10/25/88
LCRA SAMPLE DATE: 10/25/88
SAMPLE TIME: 09:15

LOCATION ID: 6429C NAME: WEST CAVE PRESERVE

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
ALKALINITY, BICARBONATE (F)	390	MG/L	SM403	
ALKALINITY, CARBONATE (F)	0	MG/L	E310.2	
ALPHA, GROSS (UF)	<10	PCI/L	E9310	
ARSENIC, DISS (F)	<0.01	MG/L	E206.2	
BARIUM, DISS (F)	0.13	MG/L	E200.7	
BORON, DISS (F)	<0.01	MG/L	E200.7	
CADMIUM, DISS (F)	<0.01	MG/L	E200.7	
CALCIUM, DISS (F)	101.2	MG/L	E200.7	
CARBON, PURGEABLE ORGANIC (UF)	0.1	MG/L	E415.2	
CARBON, TOTAL (UF)	>10	MG/L	E415.2	
CARBON, TOTAL INORGANIC (UF)	>10	MG/L	E415.2	
CARBON, TOTAL ORGANIC (UF)	0.9	MG/L	E415.2	
CHLORIDE (F)	23	MG/L	E325.2	
CHROMIUM, DISS (F)	<0.01	MG/L	E200.7	
COLIFORM, FECAL (UF)	1	/100ML	SM909C	NUMBER OF COLONIES BELOW IDEAL PLATE COUNT
COPPER, DISS (F)	<0.01	MG/L	E200.7	
FLOURIDE (F)	0.4	MG/L	E340.2	
HALOGENS, TOTAL ORGANIC (UF)	<0.01	MG/L	E9020	
IRON, DISS (F)	<0.01	MG/L	E200.7	
LEAD, DISS (F)	<0.01	MG/L	E239.2	
MAGNESIUM, DISS (F)	<0.01	MG/L	E200.7	
MANGANESE, DISS (F)	<0.01	MG/L	E200.7	
MERCURY, DISS (F)	<0.002	MG/L	E245.1	
NITROGEN, AMMONIA (F)	<0.01	MG/L	E350.1	
NITROGEN, KJELDAHL (F)	<0.01	MG/L	E351.2	
NITROGEN, NITRATE (F)	1.33	MG/L	E353.2	
NITROGEN, NITRITE (F)	<0.01	MG/L	E353.2	
PHOSPHORUS, ORTHO (F)	<0.01	MG/L	E365.1	
PHOSPHORUS, TOTAL (F)	<0.01	MG/L	E365.4	
POTASSIUM, DISS (F)	1.6	MG/L	E200.7	
RESIDUE, FILTERABLE (F)	430	MG/L	E160.1	
SELENIUM, DISS (F)	<0.01	MG/L	E270.2	
SILICON, DISS (F)	7.2	MG/L	E200.7	
SILVER, DISS (F)	<0.01	MG/L	E200.7	
SODIUM, DISS	17.1	MG/L	E200.7	
STREPTOCOCCUS, FECAL (UF)	58	/100ML	SM910B	
SULFATE (F)	17	MG/L	E375.2	
ZINC, DISS (F)	<0.01	MG/L	E200.7	

JQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
GROUND WATER MONITORING PROG

LAB ID: 6429C SAMPLE TYPE: GWMP DATE REPORTED: 01/27/89
FACILITY: WQMP ACCT NO: DATE RECEIVED: 10/25/88
LCRA SAMPLE DATE: 10/25/88
SAMPLE TIME: 09:15

LOCATION ID: 6429C NAME: WEST CAVE PRESERVE

PARAMETER	RESULT	UNITS	METHOD	COMMENTS

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

TEXAS WATER DEVELOPMENT BOARD

CHEMICAL WATER ANALYSIS REPORT
DW3900 FORM 2/DG#6

Send Reply To
Water Availability Data
and Studies Section
Texas Water Development Board
Stephen F. Austin Building
1700 Congress Avenue
Austin, Texas 78711

TWDB ONLY
Organization No. ____
Work No. 64290

Attn. _____ Room: _____ Laboratory Code 98

County _____ State Well No. 57 47 306

Date Collected 10 25 1988 Sample No. 1 Time 09 : 15

By FIELD TESTS Code for Sample Collecting Agency 05

Temperature 21.74 °C

If Different From Completed Well

Analysis Reliability Remark _____ | Aquifer _____ | Producing Interval Top _____ Bottom _____

Chemical Constituent Remark _____

Remarks _____

Owner _____ Send copy to owner

Address _____

Date Drilled _____ Depth _____ ft. WBF _____ Point of collection _____

Sampled after pumping _____ hrs. Yield _____ GPM (megs. / est.) Use _____

CHEMICAL ANALYSIS

Laboratory No. _____ Date Received _____ Date Reported _____

DESCRIPTION (optional)	STORET CODE	UNITS	FLAG	VALUE
Iron (01045)				
Manganese (01055)				
Boron (01020)				
Carbonate	99445	MG/L		
Bicarbonate	00453	MG/L		
Phenol Alk.	82244	MG/L		
Total Alk.	00431	MG/L		
Specific Conductance	00094	MICRH		756
Redox	00090	MV		160
pH	00400	SU		7.55
DO	00299	MG/L		2.39
Residue, Filterable	70300	MG/L		

TWDB-0449

APP000277

Lower Colorado River Authority

ENVIRONMENTAL LABORATORY

3600 Lake Austin Blvd. Austin, Texas 78703 • (512) 473-3374

LAB ID: 8900951 SAMPLE TYPE: GWMP DATE REPORTED: 07/31/89
FACILITY: WQMP DATE RECEIVED: 05/10/89
ACCT NO: 15825000000BCC000V24004 GROUNDWA
LCRA

SAMPLE DATE: 05/10/89
SAMPLE TIME: 1345
LOCATION ID: WESTCAVE - TRAVIS DEPTH:

PARAMETER	RESULTS	UNITS	METHOD #	COMMENTS
Alkalinity, bicarb.	362	mg/L	SM403	
Alkalinity,Carbonate	<1	mg/L	310.2	
Barium, Dissolved	0.09	mg/L	E200.7	
Boron, Dissolved	<0.01	mg/L	E200.7	
Calcium, Dissolved	103.60	mg/L	E200.7	
Carbon, Purgeable	0.20	mg/L	E415.2	
Carbon, Tot. Organic	1.23	mg/L	E415.2	
Chloride	18	mg/L	E325.2	
Coliform, Fecal	38	/100 ml	SM909C	#colonies below ideal plate count
Fluoride	0.3	mg/L	E340.2	
Iron, Dissolved	<0.01	mg/L	E200.7	
Magnesium, Dissolved	33.60	mg/L	E200.7	
Nitrogen, Kjeldahl	0.13	mg/L	E351.2	
Nitrogen, ammonia	0.01	mg/L	E350.1	
Nitrogen, nitrate	1.20	mg/L	E353.2	
Nitrogen, nitrite	<0.01	mg/L	E353.2	
Phosphorus, ortho	<0.01	mg/L	E365.1	
Potassium, Dissolved	1.50	mg/L	E200.7	
Residue, Filt. - TDS	384	mg/L	E160.1	
Silicon, Dissolved	5.88	mg/L	E200.7	
Sodium, Dissolved	13.20	mg/L	E200.7	
Sulfate	12	mg/L	E375.2	
TOX Halogens,Tot.Org	14	ug/L	E9020	KEY PUNCHED
pH, Laboratory	7.57	S.U.	E150.1	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

Accredited for Environmental Testing
by The American Association for
Laboratory Accreditation
APP000278

5747306

TWDB Water Quality Field Data Sheet

Newly Inventoried Well _____

State Well Number: 57-47-306
County: Travis
County Code: 453
Aquifer Code: 218 HRSL
Aquifer Id: 28

Name: West Cave Preserve
Address: 24814 Hamilton Pool Rd
ROUND MOUNTAIN 78663
Phone Number: 830-825-3442
Attention: John AHRNS
Well Name or #: West Cave Spring

Sample ID Number: 1135
Date: 5-5-2005
Sampler(s): G. Franklin

APP000279

CIRCLE EACH SAMPLE FRACTION COLLECTED:				
(1) 500ml (filtered) **Anions / Total Alk.** Ice	(2) 500ml (filtered) **Cations** Nitric (HNO3)	(3) 250ml (filtered) **Nutrient** Ice + H2SO4		
Proper Cation, Nutrient, and Alpha/Beta preservation requires adding enough of the correct acid to each sample fraction to bring the pH below 2.0				

Calibration Verification Readings

pH @19.5°C	7 =	7.02
	4 or 10 =	10.04
SLP = 95.9	7.38 =	7.35
Conductivity	500 =	508
	1000 =	1015
	2000 =	1.97
	5000 =	4.99

Time In: _____ Time Out: _____

W. L. depth from LSD (ft.): _____ W.L. remark: _____ M.P. = _____

Pumping Since: _____ Sampling Point: orifice in bank just above falls.

Well Use: Z
Lift: N
Power: _____

FIELD G.P.S. readings
Latitude: 30°20'26.4"
Longitude: 98°08'35.1"

Casing Type: _____ Casing Size: _____"

Sample Time: 1414 Filter pressure: hand pump / line

Field Alkalinity Titration:

6.96	Start pH	4.51 End pH
50.0	**mL Sample Size**	
—	mL Acid added for Phenol (> 8.3)	
19.1	mL Acid added for Total (to pH 4.5)	

Items below calculated from: mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): — mg/L

Total Alkalinity (39086): 382 mg/L

Items Below Calculated Later From Results:

Dissolved Solids (mg/L): 420
Hardness (as CaCO3): 388
Balanced: yes

Water Quality Stabilization Parameters Table (at least 3 readings at five minute intervals)

Time:	1402	1407	1412				
pH:	7.15	6.99	6.96				
Celsius Temp. (00010)	19.1	19.1	19.1				
Conductivity (uS/cm):	782	782	782				

Notes: _____

Data Entered By Sampler Into Database: yes / no

1836

Spring Data Sheet

Spring Name Westcave Spring Date 5/5/05 Time 10:30 AM
GPS: Lat. N30°20'26.4" Long. W 98°08'35.1" GPS Name
WAAS enabled (Y)N) 3D GPS Accuracy: 49.4ft Elevation 8486
Personnel Norris, Nelson, Franklin, Levine County Travis
River Basin Colorado Tributary to: Pedernales
Invert sample ID √ - Kick-net Fish Sample ID —
Weather Conditions Cool, cloudy ≈ 70°
Setting Springs emerge from beneath rock ledges in intermittent stream beds. - Drainages separated by large boulders
Water falls from fern covered ledge ≈ 50-60 ft. into large pool. perimeter of pool
covered w/ maidenhair & Lindheimer fern. Pool shaded by Bald cypress, Sycamore, spanish oak, walnut, etc.
deep grotto eroded into head of headwater and large rocks that sloughed off from shin oak
above - covered w/ ferns & Amblystegium. Other springs issue from rock right on pool
Collapsed Grotto formation

maidenhair ferns, Lindheimer's fern, Shield fern??

Notes * water moccasin in pool ≈ 3 ft. long
• Emerges from Cow Creek L.S.

Salamander Survey (indicate length of reach surveyed, cover type, time surveyed, and # observed): 11:11, 15:00, 10:21, 11:21 → 12:21, 15:00 → Ø Salamanders

* spring run habitat below pool and side springs surveyed - abundant leaf litter & silt
• 3 ferns Collected

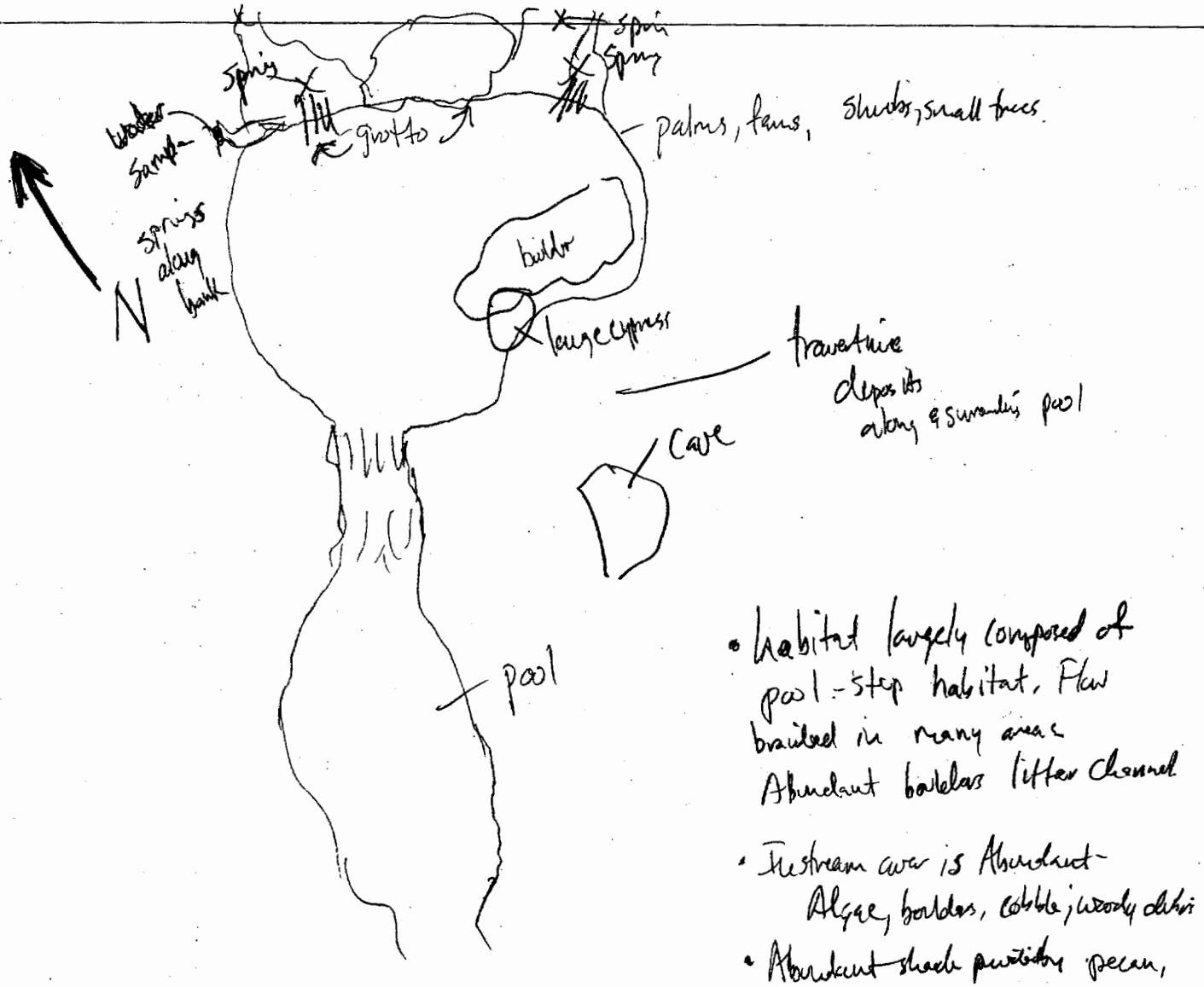
Water Quality

Location	spring on west side of falls				
Depth	3 in.				
Temp (°C)	19.06				
PH	6.86				
D.O. (mg/L)	5.01				
D.O. Sat. (%)	54.4%				
SpCond (µmhos)	753.4				
TDS	0.4822				

5747306
APP000280

Spring Name:_____ Date:_____

Map of Spring Habitat



- Habitat largely composed of pool-step habitat. Flow braided in many areas. Abundant boulders, little channel
- The stream area is Abundant- Algae, boulders, cobble, woody debris
- Abundant shade provided by pecan, bald cypress & other veg.

*indicate North, location of springs and where GPS coordinates and water quality were taken

5747306

APP000281

Final Analysis Report

LCRA Environmental Laboratory Services

Date: *20-May-05*

CLIENT: Texas Water Development Board
Client Sample ID: 57-47-306
Lab Order: 0505155 **File No:** 37784
Project: TWDB FY05
Collection Date: 5/5/2005 2:14:00 PM
Lab ID: 0505155-001
Matrix: GROUNDWATER

Analyses	Storet	Result	Qual	PQL	Units	DF	Batch ID	Date Analyzed
ICP METALS DISSOLVED			**E200.7**					Analyst: **TH**
Calcium		97.5		0.204	mg/L	1	33479	5/9/2005 5:58:19 PM
Magnesium		35.0		0.204	mg/L	1	33479	5/9/2005 5:58:19 PM
Potassium		0.830		0.204	mg/L	1	33479	5/9/2005 5:58:19 PM
Sodium		11.2		0.714	mg/L	1	33479	5/9/2005 5:58:19 PM
ICP METALS DISSOLVED			**E200.7**					Analyst: **TH**
Boron		85		51	µg/L	1	33480	5/9/2005 5:58:19 PM
Iron		ND		51	µg/L	1	33480	5/9/2005 5:58:19 PM
Strontium		347		20	µg/L	1	33480	5/9/2005 5:58:19 PM
ICPMS DISSOLVED METALS			**E200.8**					Analyst: **SW**
Aluminum		ND		4.08	µg/L	1	33572	5/13/2005
Antimony		ND		1.02	µg/L	1	33572	5/13/2005
Arsenic		ND		2.04	µg/L	1	33572	5/13/2005
Barium		72.6		1.02	µg/L	1	33572	5/13/2005
Beryllium		ND		1.02	µg/L	1	33572	5/13/2005
Cadmium		ND		1.02	µg/L	1	33572	5/13/2005
Chromium		2.23		1.02	µg/L	1	33572	5/13/2005
Cobalt		ND		1.02	µg/L	1	33572	5/13/2005
Copper		1.11		1.02	µg/L	1	33572	5/13/2005
Lead		ND		1.02	µg/L	1	33572	5/13/2005
Lithium		4.40		2.04	µg/L	1	33572	5/13/2005
Manganese		ND		1.02	µg/L	1	33572	5/13/2005
Molybdenum		ND		1.02	µg/L	1	33572	5/13/2005
Selenium		ND		4.08	µg/L	1	33572	5/13/2005
Thallium		ND		1.02	µg/L	1	33572	5/13/2005
Vanadium		3.62		1.02	µg/L	1	33572	5/13/2005
Zinc		10.0		4.08	µg/L	1	33572	5/13/2005
CATION/ANION BALANCES			**CALCULATION**					Analyst: **AMJ**
Cation/Anion Balance		Balanced		0	Date	1	33685	5/19/2005
ANIONS BY ION CHROMATOGRAPHY, DISSOLVE			**E300**					Analyst: **WR**
Bromide Dissolved		0.10		0.10	mg/L	5	33673	5/18/2005 10:14:00 PM
Chloride Dissolved		13.6		5.00	mg/L	5	33673	5/18/2005 10:14:00 PM
Fluoride Dissolved		0.40		0.05	mg/L	5	33673	5/18/2005 10:14:00 PM
Sulfate Dissolved		14.8		5.00	mg/L	5	33673	5/18/2005 10:14:00 PM
ALKALINITY			**M2320 B**					Analyst: **WR**
Alkalinity, Phenolphthalein		ND		0	mg/L CaCO3	1	33664	5/18/2005
Alkalinity, Total (As CaCO3)		379		2	mg/L CaCO3	1	33664	5/18/2005

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

LCRA Environmental Laboratory Services

Date: *20-May-05*

CLIENT:	Texas Water Development Board	**Client Sample ID:**	57-47-306
Lab Order:	0505155 **File No:** 37784		
Project:	TWDB FY05	**Collection Date:**	5/5/2005 2:14:00 PM
Lab ID:	0505155-001	**Matrix:**	GROUNDWATER

Analyses	Storet	Result	Qual	PQL	Units	DF	Batch ID	Date Analyzed
NITRATE AND NITRITE				**E353.2**				Analyst: **LL**
Nitrogen, Nitrate & Nitrite		0.5233		0.0200	mg/L	1	33518	5/11/2005
SILICA				**E370.1**				Analyst: **LL**
Silica, Dissolved (as SiO2)		16.9		0.50	mg/L	1	33558	5/13/2005

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-307

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747307
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.344167
Latitude (degrees minutes seconds)	30° 20' 39" N
Longitude (decimal degrees)	-98.147778
Longitude (degrees minutes seconds)	098° 08' 52" W
Coordinate Source	+/- 1 Second
Aquifer Code	218HNSL - Hensell Sand Member of Travis Peak Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	860
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	83
Well Depth Source	Memory of Owner
Drilling Start Date	
Drilling End Date	0/0/1950
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	None
Water Quality Available	Yes
Pump	Piston
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Peter W. Agnell
Driller	
Other Data Available	Microlog
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	
Last Update Date	3/4/2020

Remarks	

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-307

Water Quality Analysis

Sample Date: 8/20/1991 **Sample Time:** 1400 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: TWDB Field Analysis **Reliability:** Sampled using TWDB protocols but through Hach DR-2000 lab

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39086	ALKALINITY FIELD DISSOLVED AS CACO3		352	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		352	mg/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		429.56	mg/L	
00910	CALCIUM (MG/L)		90.18	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		29.6	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.2	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		369	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)		25	ug/L	
00920	MAGNESIUM (MG/L)		35.07	mg/L	
00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)		0.38	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		1.68	mg/L	
00090	OXIDATION REDUCTION POTENTIAL (ORP), MILLIVOLTS		117	MV	
00400	PH (STANDARD UNITS), FIELD		6.73	SU	
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	<	0.007	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		11.92	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		717	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		14.89	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		23	C	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

NEW WELL

Texas Water Development Board
Well Schedule

State Well No. 57 47 307 Previous Well No. _____ County TRAVIS 453

River Basin COLORADO 14 Zone 3 Region 12 Lat. 30 20 38 Long. 098 08 51 Source of Coord. 1

Owner's Well No. _____ Location ____ 1/4, ____ 1/4, Section ____, Block ____, Survey ____

Owner PETER W AGNELL Driller _____

Address HCO 4 Box 29-A DRIPPING SPRINGS TX 78620 Tenant/Oper. _____

Date Drilled ____ 1950 Depth 83 Source of Depth Datum M Altitude 860 Source of Alt. Datum M

Aquifer _____ Well Type W User _____

Well Construction Const. Method _____ Casing Material STEEL S

Completion _____ Screen Material STEEL S

Lift Data Pump Mfr. _____ Type PUMP JACK P No. Stages ____

Bowls Diam. ____ in. Setting 77 ft. Column Diam. ____ in.

Motor Mfr. _____ Fuel or Power ELEC E Horsepower .33

Yield Flow ____ GPM Pump ____ GPM Meas.,Rept.,Est. _____ Date ____

Performance Test Date ____ Length of Test ____ Production ____ GPM

Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft. Sp.Cap. ____ GPM/ft.

Quality (Remarks _____

Water Use Primary DOM H Secondary STOCK S Tertiary ____

Other Data Available: Water Level ☐ Water Quality Y Logs ☐ Other Data ☐

Water Levels: Date ____ Meas. ____ • ____ ____

Date ____ Meas. ____ • ____ ____

Date ____ Meas. ____ • ____ ____

Casing or Blank Pipe (C)
Well Screen or Slotted Zone (S)
Open Hole (O)
Cemented from ___ to ___

	Diam. (in.)	Setting (feet) From	To
1	6		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

(20 max)

Recorded By John ASENSIO Date Record Collected or Updated 08 20 1991 Reporting Agency 01

Remarks

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____

Aquifer _____

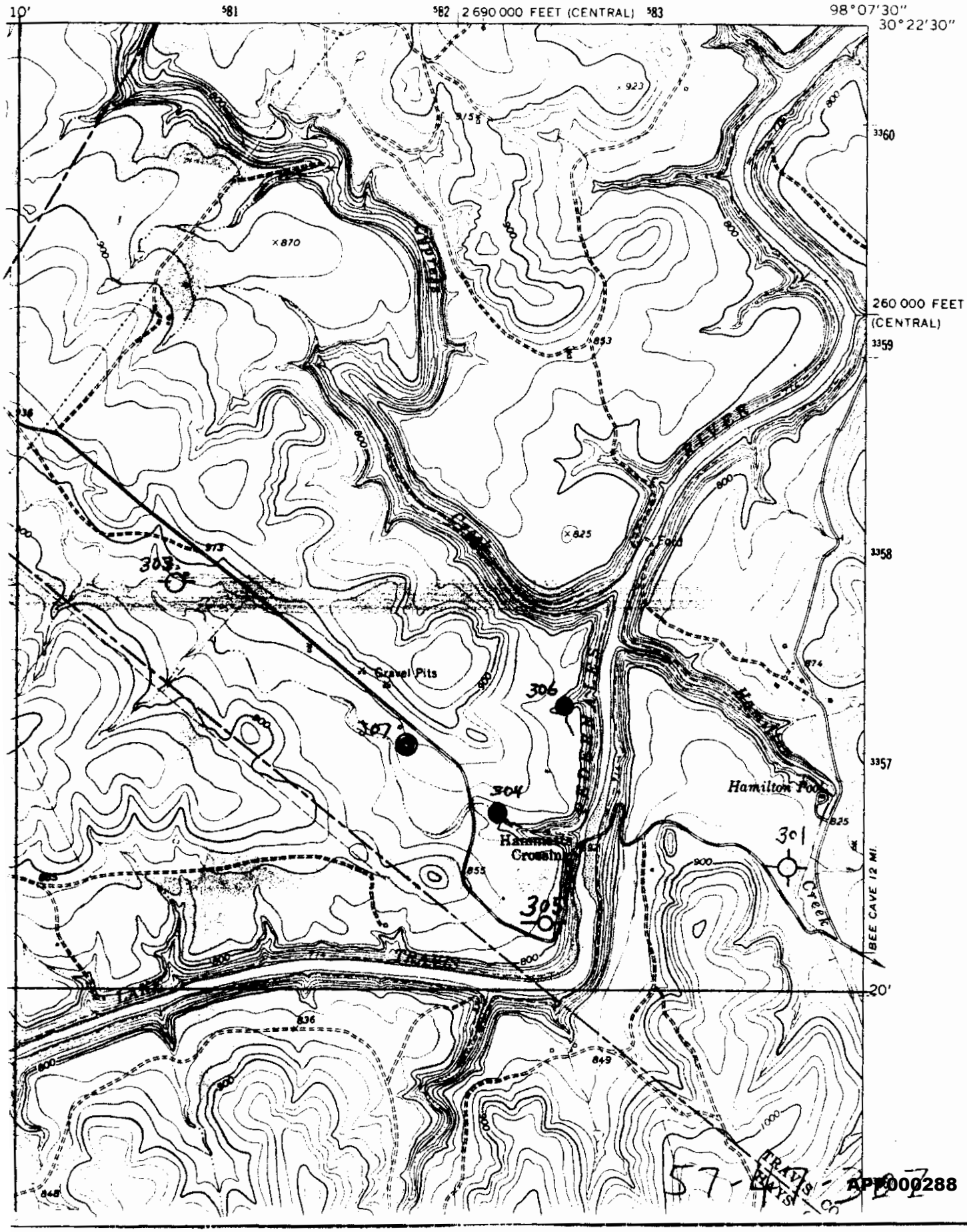
Well No. 57-47-307

900052
11/21/89

APP000287

HAMMETTS CROSSING QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)
SW/4 SPICEWOOD 15' QUADRANGLE

6344 I NE (PACE BEND)



57-[illegible] TRAVIS CO.

APP000288

TEXAS WATER DEVELOPMENT BOARD

Sample Number 1618

Well Number 57-47-307 Date/Time 8-20-1991 12:00

County TRAVIS Collected by John ASENSIO

Owner's Name PETER W. AGNELL

Address HCO 4 Box 29-A DRIPPING SPRINGS TX 78620

Date Drilled 1950 Depth 83 Yield _____

Use DOM / STOCK Send copy to owner: ✓ Yes ___ No

Collection point FAUCET ON PUMP After pumping 1/2 hours

pH 6.73 Eh +117.0 Spec. Cond. 717 TDS 478 Temp. 22.9 °C

Field Alkalinity: Phenol 0 mg/l Total 352 mg/l

Date Analyzed 8/28/91 Analyst B.E. Beynon

Calcium	90.18	mg/l
Chloride	29.6	mg/l
Fluoride	0.20	mg/l
Iron (01046)	25	µg/l
Magnesium	35.07	mg/l
Nitrate (as N)	0.38	mg/l
Orthophosphate (00671) (as PO4)	<0.02	mg/l
Silica	11.92	mg/l
Sulfate	14.89	mg/l

KEY PUNCHED

Results from the Ground Water Monitoring Unit, Texas Water Development Board, P.O. Box 13231, Austin, TX 78711.

Water Quality Sampling Run

SWN: 57-47-307 PETER W. AGNELL Sample No. 1618

County: TRAVIS HCO 4 Box 29-A Date: 8-20-1991 14:00

Aquifer(s): DRIPPING SPRINGS TX. 78620 By: John ASENSIO

	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6	Bottle 7	Total
	1 liter Anions	1 liter Cations/HM	1 gallon Radioactivity	500 ml Nitrate/ Phosphate	1 Qt.(glass) (TOC) Organics	500 ml Cyanide		Sub-Samples
		2 mL		1 mL	unfiltered			All filtered unless otherwise stipulated. All on ice.
Preserve with:	–	HNO_3 (Nitric)	HNO_3 (Nitric)	H_2SO_4 (Sulfuric)	–	NaOH (Sodium Hydroxide)		

Water Level _____ LSD

Temperature (00010) 22.9 °C

Specific Conductance (00094) 717 µmhos/cm

pH (00400) 6.73 ● _____ °C

Eh (00090) +117.0 mv ● _____ °C

Phenol ALK (82244) 0 mg/l

Total ALK (00431) 352 mg/l

Carbonate (00452) 0 meq/l 0 mg/l

Bicarbonate (00453) 7.04 meq/l 429.6 mg/l

Total Cations (+) _____

Total Anions (-) _____

Total Hardness (46570) _____

Dissolved Solids (70301) _____ 478

Notes & Calculations

IN: 1:30 OUT: 2:20

PUMPING ON ARRIVAL

KEY PUNCHED

TEST

	145	200
TIME		
ph	6.71	6.73
TEMP	22.9	22.9
COND	722	717
TDS	481	478
EH		+117.0

TITRATION

ph AT START 6.72 @ 25.8

mL	ph	mL	ph
1	6.69	9	6.02
2	6.63	10	5.96
3	6.57	11	5.84
4	6.48	12	5.79
5	6.35	13	5.70
6	6.25	14	5.49
7	6.17	15	5.35
8	6.11	16	5.14
		17	4.83
		17.6	4.51

SAMPLED FROM FAUCET ON PUMP JACK AFTER 20 MIN:

DOM/STOCK USE DAILY

DRILLED ±1950 <100 TD (583' ON WELL HOUSE)

APP000290

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-308

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747308
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.34
Latitude (degrees minutes seconds)	30° 20' 24" N
Longitude (decimal degrees)	-98.137778
Longitude (degrees minutes seconds)	098° 08' 16" W
Coordinate Source	+/- 1 Second
Aquifer Code	
Aquifer	Unassigned
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	695
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	
Water Level Observation	None
Water Quality Available	No
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Hammetts Crossing Spring 2
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	11/6/2003
Last Update Date	3/4/2020

Remarks	

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

Scanned Documents do not exist for this well

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-309

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747309
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.341389
Latitude (degrees minutes seconds)	30° 20' 29" N
Longitude (decimal degrees)	-98.1375
Longitude (degrees minutes seconds)	098° 08' 15" W
Coordinate Source	+/- 1 Second
Aquifer Code	
Aquifer	Unassigned
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	697
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	
Water Level Observation	None
Water Quality Available	No
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Hammetts Crossing Spring 1
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	11/6/2003
Last Update Date	3/4/2020

Remarks	

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

Scanned Documents do not exist for this well

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-310

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747310
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Barton Springs/Edwards Aquifer CD
Latitude (decimal degrees)	30.3413611
Latitude (degrees minutes seconds)	30° 20' 28.9" N
Longitude (decimal degrees)	-98.1281111
Longitude (degrees minutes seconds)	098° 07' 41.2" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218CCRK - Cow Creek Limestone
Aquifer	Trinity
Aquifer Pick Method	Assigned by Professional Geoscientist using all available documentation
Land Surface Elevation (feet above sea level)	831
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	240
Well Depth Source	Driller's Log
Drilling Start Date	12/23/2016
Drilling End Date	3/10/2017
Drilling Method	Air Rotary
Borehole Completion	Filter Packed

Well Type	Withdrawal of Water
Well Use	Public Supply
Water Level Observation	Other Cooperator Recorder Well
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	Positive Displacement
Surface Completion	Surface Slab Installed
Owner	Hamilton Pool Preserve
Driller	Hydro Resources Mid-Continent Inc.
Other Data Available	Drillers Log; Other
Well Report Tracking Number	446767
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	1
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	3/27/2017
Last Update Date	7/22/2019

Remarks	This well is equipped with a pump which may turn on during data collection. Be advised that some water level measurements for this well may be influenced by pumping. Yield/Specific Capacity: 3/23/2017 1200-1415 Start 4-5 gpm 1230 drawdown 92.5 feet; 3.25 gpm; SC= 0.05 1300 drawdown 101 feet SC = 0.03 1320 2 gpm Cementing report

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
14	Blank	Steel			0	12
6.9	Blank	Plastic (PVC)	SDR-17		0	20
6.9	Screen	Plastic (PVC)		0.035	20	60
6.9	Blank	Plastic (PVC)	SDR-17		60	200
6.9	Screen	Plastic (PVC)		0.035	200	220

Well Tests

Test Date	Test Type	Yield (gallons per minute)	Drawdown (ft.)	Test Hours
2017-03-10	Estimated	5		

Lithology

Top Depth (ft.)	Bottom Depth (ft.)	Description
0	8	Topsoil & loose rock
8	40	Yellow limestone (H20)
40	50	Grey Limestone
50	115	Grey Clay & Limestone
115	280	Reddish Brown ?
280	410	Grey Clay - Sandstone Streaks ?

Annular Seal Range - No Data

Borehole

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
17.5	0	12
12.25	0	240

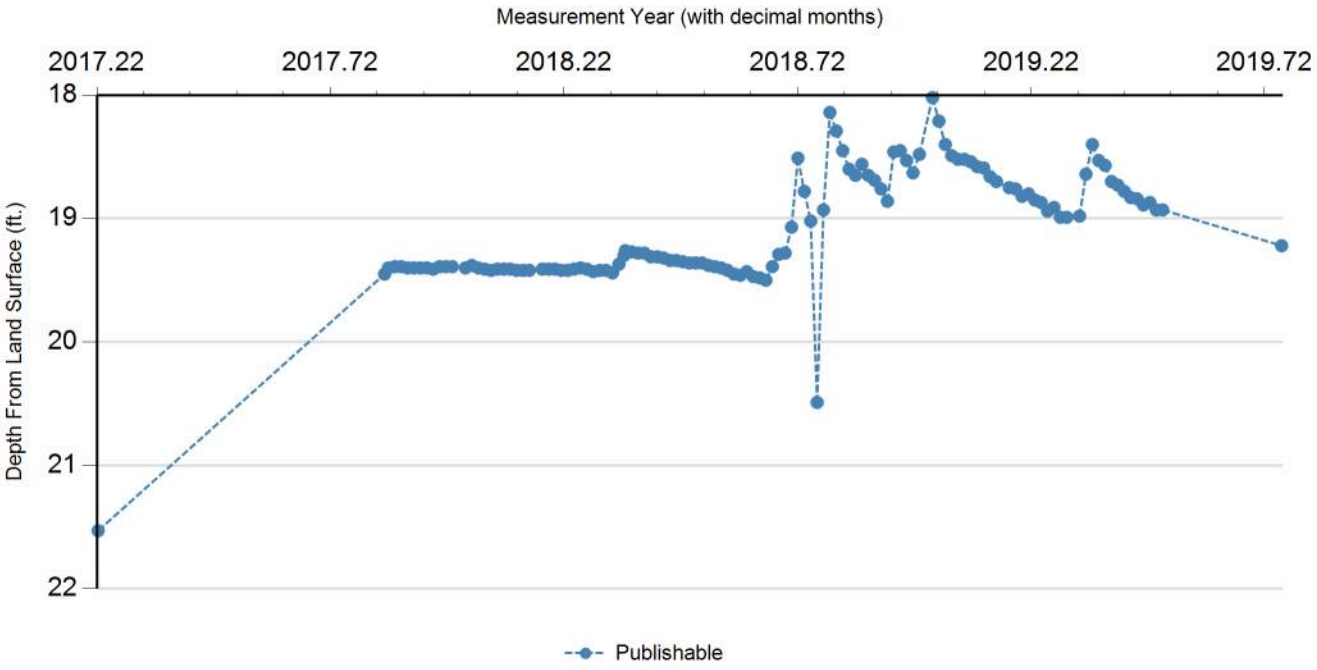
Plugged Back - No Data

Filter Pack

Filter Material	Top Depth (ft.)	Bottom Depth (ft.)	Size
Sand	20	60	12x20
Sand	125	240	12x20

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	3/23/2017	1100	21.53		809.47	1	Groundwater Conservation District	Electric Line	1	
P	11/7/2017	1430	19.45	(2.08)	811.55	1	Texas Water Development Board	Electric Line		
P	11/10/2017	0300	19.4	(0.05)	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/15/2017	0000	19.39	(0.01)	811.61	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/20/2017	1200	19.39	0.00	811.61	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/25/2017	0200	19.4	0.01	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/30/2017	1300	19.4	0.00	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/5/2017	1400	19.4	0.00	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/10/2017	1400	19.4	0.00	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/15/2017	1200	19.41	0.01	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-310

groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	12/20/2017	1400	19.39	(0.02)	811.61	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/25/2017	1100	19.39	0.00	811.61	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/30/2017	0300	19.39	0.00	811.61	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/5/2018	1400	19.4	0.01	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/10/2018	1400	19.38	(0.02)	811.62	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/15/2018	1300	19.4	0.02	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/20/2018	0000	19.41	0.01	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/25/2018	0100	19.42	0.01	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/30/2018	1400	19.41	(0.01)	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/5/2018	1300	19.41	0.00	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/10/2018	0000	19.41	0.00	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/15/2018	0000	19.42	0.01	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/20/2018	1300	19.42	0.00	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/25/2018	1400	19.42	0.00	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/5/2018	0200	19.41	(0.01)	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/10/2018	0000	19.41	0.00	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/15/2018	1300	19.41	0.00	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/20/2018	1200	19.42	0.01	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/25/2018	0300	19.42	0.00	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	3/30/2018	0100	19.41	(0.01)	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/5/2018	0300	19.4	(0.01)	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/10/2018	1500	19.41	0.01	811.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/15/2018	0500	19.43	0.02	811.57	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/20/2018	1500	19.42	(0.01)	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/25/2018	1800	19.42	0.00	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/30/2018	0300	19.44	0.02	811.56	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/5/2018	0000	19.37	(0.07)	811.63	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/9/2018		19.3	(0.07)	811.7	1	Texas Water Development Board	Electric Line		
P	5/10/2018	1100	19.26	(0.04)	811.74	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/15/2018	1700	19.27	0.01	811.73	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/20/2018	0200	19.28	0.01	811.72	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/25/2018	2200	19.28	0.00	811.72	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/30/2018	0200	19.31	0.03	811.69	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/5/2018	0000	19.31	0.00	811.69	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/10/2018	0000	19.32	0.01	811.68	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/15/2018	0000	19.34	0.02	811.66	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/20/2018	0000	19.34	0.00	811.66	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/25/2018	0000	19.35	0.01	811.65	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/30/2018	0000	19.36	0.01	811.64	1	Texas Water Development Board	Recorder (Float or Transducer)		

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	7/5/2018	0000	19.36	0.00	811.64	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/10/2018	0000	19.36	0.00	811.64	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/15/2018	0000	19.38	0.02	811.62	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/20/2018	0000	19.39	0.01	811.61	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/25/2018	0000	19.4	0.01	811.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/30/2018	0000	19.42	0.02	811.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/5/2018	0000	19.45	0.03	811.55	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/10/2018	0000	19.46	0.01	811.54	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/15/2018	0000	19.43	(0.03)	811.57	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/20/2018	0000	19.47	0.04	811.53	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/25/2018	0000	19.48	0.01	811.52	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/30/2018	0000	19.5	0.02	811.5	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/5/2018	0000	19.39	(0.11)	811.61	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/10/2018	0000	19.29	(0.10)	811.71	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/15/2018	0000	19.28	(0.01)	811.72	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/20/2018	0000	19.07	(0.21)	811.93	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/25/2018	0000	18.51	(0.56)	812.49	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/30/2018	0000	18.78	0.27	812.22	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/5/2018	0000	19.02	0.24	811.98	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/10/2018	1146	20.49	1.47	810.51	1	Texas Water Development Board	Electric Line		

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-310

groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	10/15/2018	0000	18.93	(1.56)	812.07	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/20/2018	0000	18.14	(0.79)	812.86	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/25/2018	0000	18.29	0.15	812.71	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/30/2018	0000	18.45	0.16	812.55	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/5/2018	0000	18.6	0.15	812.4	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/10/2018	0000	18.65	0.05	812.35	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/15/2018	0000	18.56	(0.09)	812.44	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/20/2018	0000	18.65	0.09	812.35	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/25/2018	0000	18.69	0.04	812.31	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/30/2018	0000	18.76	0.07	812.24	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/5/2018	0000	18.86	0.10	812.14	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/10/2018	0000	18.46	(0.40)	812.54	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/15/2018	0000	18.45	(0.01)	812.55	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/20/2018	0000	18.53	0.08	812.47	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/25/2018	0000	18.63	0.10	812.37	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/30/2018	0000	18.48	(0.15)	812.52	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/5/2019	0000	18.02	(0.46)	812.98	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/10/2019	0000	18.21	0.19	812.79	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/15/2019	0000	18.4	0.19	812.6	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-310

groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	1/20/2019	0000	18.49	0.09	812.51	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/25/2019	0000	18.52	0.03	812.48	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/30/2019	0000	18.52	0.00	812.48	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/5/2019	0000	18.54	0.02	812.46	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/10/2019	0000	18.58	0.04	812.42	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/15/2019	0000	18.59	0.01	812.41	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/20/2019	0000	18.66	0.07	812.34	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/25/2019	0000	18.7	0.04	812.3	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/5/2019	0000	18.75	0.05	812.25	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/10/2019	0000	18.76	0.01	812.24	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/15/2019	0000	18.82	0.06	812.18	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/20/2019	0000	18.8	(0.02)	812.2	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/25/2019	0000	18.85	0.05	812.15	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/30/2019	0000	18.87	0.02	812.13	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/5/2019	0000	18.94	0.07	812.06	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/10/2019	0000	18.91	(0.03)	812.09	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/15/2019	0000	18.99	0.08	812.01	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/20/2019	0000	18.99	0.00	812.01	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/30/2019	0000	18.98	(0.01)	812.02	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 57-47-310

groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	5/5/2019	0000	18.64	(0.34)	812.36	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/10/2019	0000	18.4	(0.24)	812.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/15/2019	0000	18.53	0.13	812.47	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/20/2019	0000	18.57	0.04	812.43	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/25/2019	0000	18.7	0.13	812.3	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/30/2019	0000	18.73	0.03	812.27	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/5/2019	0000	18.78	0.05	812.22	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/10/2019	0000	18.83	0.05	812.17	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/15/2019	0000	18.84	0.01	812.16	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/20/2019	0000	18.89	0.05	812.11	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/25/2019	0000	18.87	(0.02)	812.13	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/30/2019	0000	18.93	0.06	812.07	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/5/2019	0000	18.93	0.00	812.07	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/8/2019	1018	19.22	0.29	811.78	1	Texas Water Development Board	Electric Line		

Code Descriptions

Status Code	Status Description
P	Publishable

Remark ID	Remark Description
1	Accurately reflect water-level conditions

Water Quality Analysis

Sample Date: 3/23/2017 **Sample Time:** 1415 **Sample Number:** 1 **Collection Entity:** Barton Springs/Edwards Aquifer CD

Sampled Aquifer: Cow Creek Limestone

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		324	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB	<	20	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB	<	20	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)	<	20	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		324	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		-2.66	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		57.1	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		395.392	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)	<	50	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)	<	0.02	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		91.5	mg/L	
28004	CARBON-14 DISS APPARENT AGE (YEARS BP)		40	Y-BP	
82172	CARBON-14 FRACTION MODERN		0.9949		0.0036
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		9.5	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		4.75	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
82081	DELTA CARBON 13 C13/C12 PER MIL		-10.4	0/00	
50791	DEUTERIUM, EXPRESSED AS PERMIL VSMOW		-26.2	0/00	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.261	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		349.455	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		4.87	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		29.2	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)		18.4	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1.57	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		2.072	mg/L	

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.468	mg/L	
50790	OXYGEN-18, EXPRESSED AS PERMIL VSMOW		-4.59	0/00	
00400	PH (STANDARD UNITS), FIELD		7.8	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.75	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		16.6	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.227		
00932	SODIUM, CALCULATED, PERCENT		5.726	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		9.73	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		666	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		588	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		14	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		23.08	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		369.615	mg/L	
07012	TRITIUM IN WATER (TRITIUM UNITS)		1.73	TU	0.09
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)		1.73	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		4.14	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		75.9	ug/L	

Water Quality Analysis

Sample Date: 7/16/2019 **Sample Time:** 1341 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Cow Creek Limestone

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		309	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		309	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)		7.59	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		-2.97	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		57.7	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		377.087	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		66	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0586	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		90.3	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		6.92	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2.83	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)		1.49	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.354	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		335.631	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		4.28	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		26.6	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		3.493	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.789	mg/L	
00400	PH (STANDARD UNITS), FIELD		6.94	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.52	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		15.4	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.183		
00932	SODIUM, CALCULATED, PERCENT		4.765	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		7.7	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		528	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		484	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		12.9	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		21.9	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		351.085	mg/L	
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)		1.13	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		4.17	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		17	ug/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

Scanned Documents do not exist for this well

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-312

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747312
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.3396556
Latitude (degrees minutes seconds)	30° 20' 22.76" N
Longitude (decimal degrees)	-98.1282333
Longitude (degrees minutes seconds)	098° 07' 41.64" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218CCRK - Cow Creek Limestone
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	833
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	244
Well Depth Source	Another Government Agency
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Public Supply
Water Level Observation	Other Cooperator Recorder Well
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Travis County
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	2/2/2018
Last Update Date	3/4/2020

Remarks	This well is equipped with a pump which may turn on during data collection. Be advised that some water level measurements for this well may be influenced by pumping.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

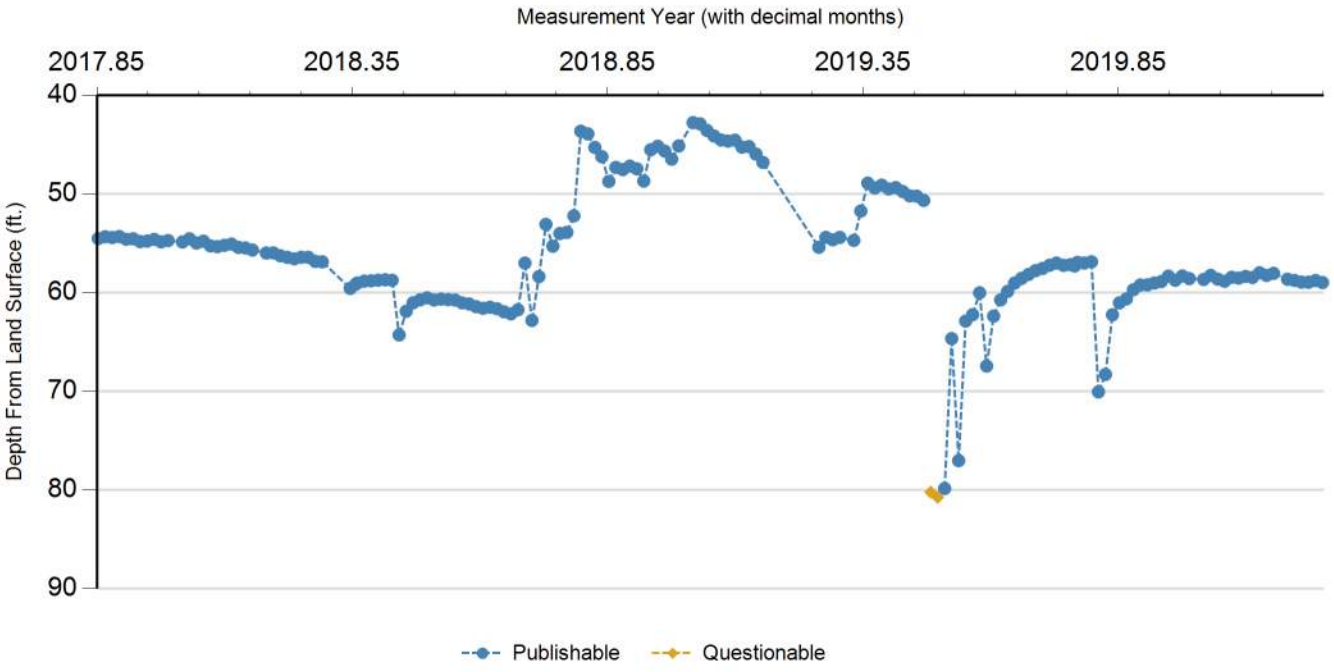
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	11/10/2017	1700	54.52		778.48	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/15/2017	0700	54.34	(0.18)	778.66	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/20/2017	2000	54.42	0.08	778.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/25/2017	0000	54.32	(0.10)	778.68	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/30/2017	0500	54.6	0.28	778.4	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/5/2017	0000	54.55	(0.05)	778.45	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/10/2017	0000	54.83	0.28	778.17	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/15/2017	0000	54.78	(0.05)	778.22	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/20/2017	1900	54.61	(0.17)	778.39	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/25/2017	2300	54.86	0.25	778.14	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-312

groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	12/30/2017	0600	54.73	(0.13)	778.27	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/5/2018	2000	54.87	0.14	778.13	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/10/2018	1800	54.55	(0.32)	778.45	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/15/2018	1800	54.98	0.43	778.02	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/20/2018	1800	54.79	(0.19)	778.21	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/25/2018	1600	55.27	0.48	777.73	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/30/2018	2000	55.35	0.08	777.65	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/5/2018	2200	55.21	(0.14)	777.79	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/10/2018	0700	55.08	(0.13)	777.92	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/15/2018	1900	55.42	0.34	777.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/20/2018	0000	55.48	0.06	777.52	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/25/2018	0400	55.69	0.21	777.31	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/5/2018	0000	55.99	0.30	777.01	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/10/2018	1800	55.98	(0.01)	777.02	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/15/2018	2000	56.27	0.29	776.73	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/20/2018	0000	56.43	0.16	776.57	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/25/2018	1800	56.58	0.15	776.42	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/30/2018	0000	56.42	(0.16)	776.58	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/5/2018	2300	56.43	0.01	776.57	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

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groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	4/10/2018	0000	56.84	0.41	776.16	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/15/2018	0000	56.88	0.04	776.12	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/5/2018	2100	59.57	2.69	773.43	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/9/2018		59.15	(0.42)	773.85	1	Texas Water Development Board	Electric Line		
P	5/10/2018	1900	59.03	(0.12)	773.97	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/15/2018	2100	58.84	(0.19)	774.16	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/20/2018	0300	58.81	(0.03)	774.19	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/25/2018	1800	58.75	(0.06)	774.25	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/30/2018	2000	58.7	(0.05)	774.3	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/5/2018	0000	58.75	0.05	774.25	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/10/2018	0000	64.29	5.54	768.71	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/15/2018	0000	61.89	(2.40)	771.11	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/20/2018	0000	61.03	(0.86)	771.97	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/25/2018	0000	60.73	(0.30)	772.27	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/30/2018	0000	60.53	(0.20)	772.47	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/5/2018	0000	60.75	0.22	772.25	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/10/2018	0000	60.66	(0.09)	772.34	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/15/2018	0000	60.71	0.05	772.29	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/20/2018	0000	60.75	0.04	772.25	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/25/2018	0000	61.04	0.29	771.96	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

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groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	7/30/2018	0000	61.15	0.11	771.85	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/5/2018	0000	61.43	0.28	771.57	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/10/2018	0000	61.59	0.16	771.41	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/15/2018	0000	61.49	(0.10)	771.51	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/20/2018	0000	61.63	0.14	771.37	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/25/2018	0000	61.95	0.32	771.05	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/30/2018	0000	62.15	0.20	770.85	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/5/2018	0000	61.74	(0.41)	771.26	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/10/2018	0000	57.01	(4.73)	775.99	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/15/2018	0000	62.82	5.81	770.18	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/20/2018	0000	58.38	(4.44)	774.62	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/25/2018	0000	53.09	(5.29)	779.91	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/30/2018	0000	55.3	2.21	777.7	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/5/2018	0000	54.01	(1.29)	778.99	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/10/2018	1200	53.9	(0.11)	779.1	1	Texas Water Development Board	Steel Tape		
P	10/15/2018	0000	52.23	(1.67)	780.77	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/20/2018	0000	43.65	(8.58)	789.35	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/25/2018	0000	43.92	0.27	789.08	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/30/2018	0000	45.3	1.38	787.7	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/5/2018	0000	46.24	0.94	786.76	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

Texas Water Development Board (TWDB)
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groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	11/10/2018	0000	48.74	2.50	784.26	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/15/2018	0000	47.32	(1.42)	785.68	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/20/2018	0000	47.54	0.22	785.46	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/25/2018	0000	47.19	(0.35)	785.81	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/30/2018	0000	47.46	0.27	785.54	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/5/2018	0000	48.7	1.24	784.3	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/10/2018	0000	45.53	(3.17)	787.47	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/15/2018	0000	45.18	(0.35)	787.82	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/20/2018	0000	45.67	0.49	787.33	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/25/2018	0000	46.48	0.81	786.52	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/30/2018	0000	45.15	(1.33)	787.85	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/5/2019	0000	42.78	(2.37)	790.22	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/10/2019	0000	42.91	0.13	790.09	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/15/2019	0000	43.58	0.67	789.42	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/20/2019	0000	44.14	0.56	788.86	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/25/2019	0000	44.54	0.40	788.46	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/30/2019	0000	44.65	0.11	788.35	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/5/2019	0000	44.56	(0.09)	788.44	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/10/2019	0000	45.27	0.71	787.73	1	Texas Water Development Board	Recorder (Float or Transducer)		

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	2/15/2019	0000	45.21	(0.06)	787.79	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/20/2019	0000	45.97	0.76	787.03	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/25/2019	0000	46.81	0.84	786.19	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/5/2019	0000	55.41	8.60	777.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/10/2019	0000	54.41	(1.00)	778.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/15/2019	0000	54.65	0.24	778.35	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/20/2019	0000	54.41	(0.24)	778.59	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	4/30/2019	0000	54.71	0.30	778.29	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/5/2019	0000	51.74	(2.97)	781.26	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/10/2019	0000	48.91	(2.83)	784.09	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/15/2019	0000	49.4	0.49	783.6	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/20/2019	0000	49.11	(0.29)	783.89	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/25/2019	0000	49.5	0.39	783.5	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	5/30/2019	0000	49.37	(0.13)	783.63	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/5/2019	0000	49.76	0.39	783.24	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/10/2019	0000	50.2	0.44	782.8	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/15/2019	0000	50.23	0.03	782.77	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	6/20/2019	0000	50.66	0.43	782.34	1	Texas Water Development Board	Recorder (Float or Transducer)		
Q	6/25/2019		80.21	29.55	752.79	1	Texas Water Development Board	Recorder (Float or Transducer)	2	Possibly a pumping level measurement.

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
Q	6/30/2019		80.74	0.53	752.26	1	Texas Water Development Board	Recorder (Float or Transducer)	2	Possibly a pumping level measurement.
P	7/5/2019	0000	79.84	(0.90)	753.16	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/10/2019	0000	64.66	(15.18)	768.34	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/15/2019	0000	77.02	12.36	755.98	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/20/2019	0000	62.89	(14.13)	770.11	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/25/2019	0000	62.24	(0.65)	770.76	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	7/30/2019	0000	60.02	(2.22)	772.98	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/5/2019	0000	67.44	7.42	765.56	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/10/2019	0000	62.38	(5.06)	770.62	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/15/2019	0000	60.74	(1.64)	772.26	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/20/2019	0000	59.88	(0.86)	773.12	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/25/2019	0000	59.04	(0.84)	773.96	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	8/30/2019	0000	58.56	(0.48)	774.44	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/5/2019	0000	58.16	(0.40)	774.84	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/10/2019	0000	57.78	(0.38)	775.22	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/15/2019	0000	57.55	(0.23)	775.45	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/20/2019	0000	57.23	(0.32)	775.77	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/25/2019	0000	57.01	(0.22)	775.99	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	9/30/2019	0000	57.24	0.23	775.76	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-312

groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	10/5/2019	0000	57.17	(0.07)	775.83	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/8/2019	1227	57.3	0.13	775.7	1	Texas Water Development Board	Steel Tape		
P	10/10/2019	0000	56.94	(0.36)	776.06	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/15/2019	0000	57.01	0.07	775.99	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/20/2019	0000	56.88	(0.13)	776.12	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/25/2019	0000	70.06	13.18	762.94	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	10/30/2019	0000	68.29	(1.77)	764.71	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/5/2019	0000	62.25	(6.04)	770.75	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/10/2019	0000	61.04	(1.21)	771.96	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/15/2019	0000	60.64	(0.40)	772.36	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/20/2019	0000	59.71	(0.93)	773.29	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/25/2019	0000	59.23	(0.48)	773.77	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	11/30/2019	0000	59.22	(0.01)	773.78	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/5/2019	0000	59.03	(0.19)	773.97	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/10/2019	0000	58.88	(0.15)	774.12	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/15/2019	0000	58.33	(0.55)	774.67	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/20/2019	0000	58.75	0.42	774.25	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/25/2019	0000	58.32	(0.43)	774.68	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	12/30/2019	0000	58.58	0.26	774.42	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/5/2020	0000	58.67	0.09	774.33	1	Texas Water Development Board	Recorder (Float or Transducer)		

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 57-47-312

groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	1/10/2020	0000	58.26	(0.41)	774.74	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/15/2020	0000	58.63	0.37	774.37	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/20/2020	0000	58.85	0.22	774.15	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/25/2020	0000	58.45	(0.40)	774.55	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	1/30/2020	0000	58.53	0.08	774.47	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/5/2020	0000	58.36	(0.17)	774.64	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/10/2020	0000	58.47	0.11	774.53	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/15/2020	0000	57.99	(0.48)	775.01	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/20/2020	0000	58.26	0.27	774.74	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	2/25/2020	0000	58.05	(0.21)	774.95	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/5/2020	0000	58.65	0.60	774.35	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/10/2020	0000	58.77	0.12	774.23	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/15/2020	0000	58.94	0.17	774.06	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/20/2020	0000	58.95	0.01	774.05	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/25/2020	0000	58.78	(0.17)	774.22	1	Texas Water Development Board	Recorder (Float or Transducer)		
P	3/30/2020	0000	58.98	0.20	774.02	1	Texas Water Development Board	Recorder (Float or Transducer)		

Code Descriptions

Status Code	Status Description
P	Publishable
Q	Questionable

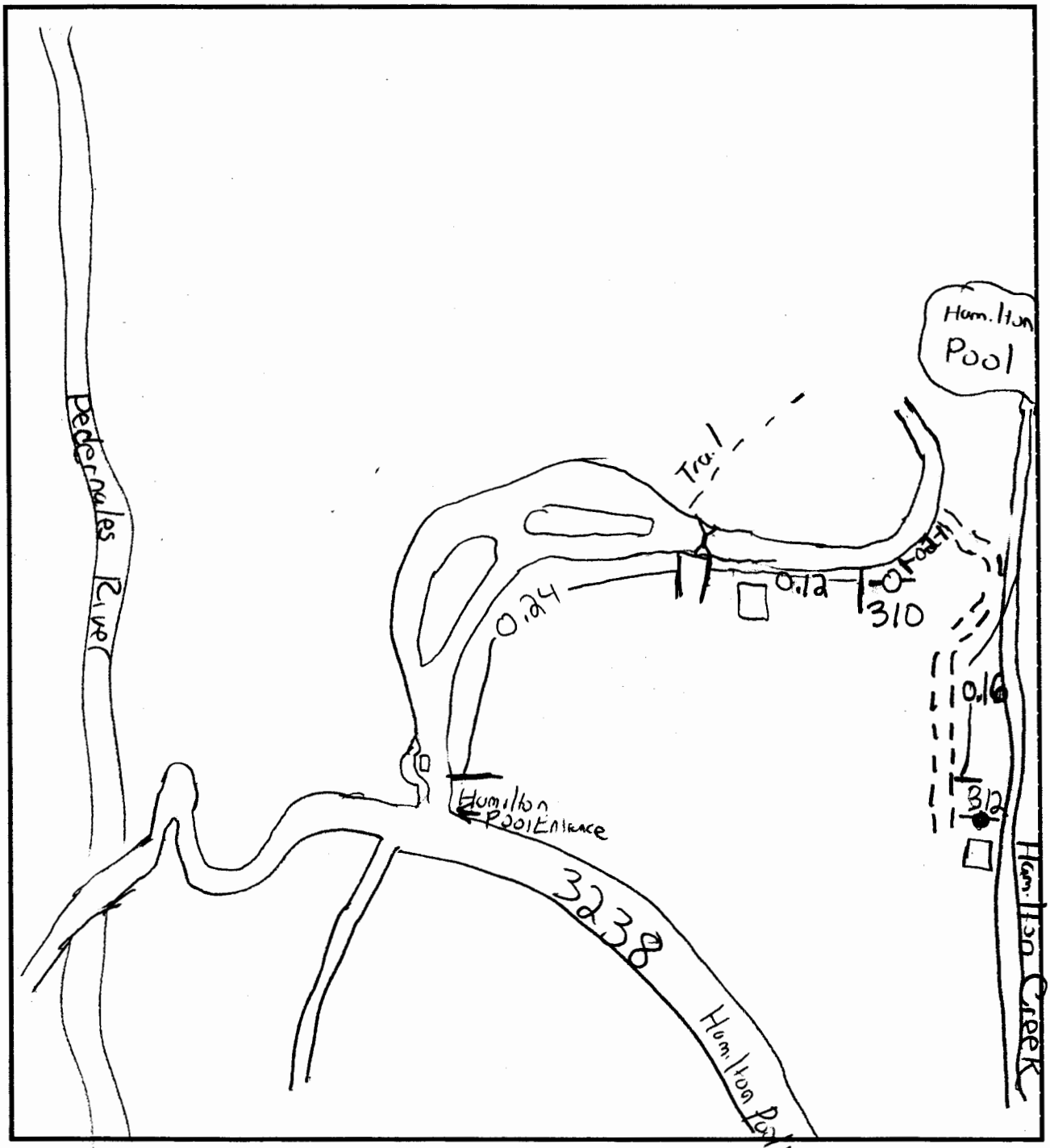
Remark ID	Remark Description
2	Pumping-level measurement

Water Quality Analysis - No Data Available

Texas Water Development Board - Well Location Sketch

By: CC Date: 11/13/17 G.P.S Coordinates: 30° 20' 22.76" 98° 07' 41.64"

County Travis M.P. = _____ State Well Number: 57-47-312



State Well Number 57-47-312

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-313

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747313
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.3374139
Latitude (degrees minutes seconds)	30° 20' 14.69" N
Longitude (decimal degrees)	-98.1322722
Longitude (degrees minutes seconds)	098° 07' 56.18" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218CCRK - Cow Creek Limestone
Aquifer	Trinity
Aquifer Pick Method	Provided by Groundwater Conservation District
Land Surface Elevation (feet above sea level)	979
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	219
Well Depth Source	Driller's Log
Drilling Start Date	5/15/2020
Drilling End Date	5/20/2020
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Monitor
Water Level Observation	None
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	210
Power Type	Solar
Annular Seal Method	
Surface Completion	
Owner	Travis County Johnson #1
Driller	Geoprojects International, Inc.
Other Data Available	Drillers Log
Well Report Tracking Number	545767
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	Johanson #1
Owner Well Number	MW-1
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	7/30/2021
Last Update Date	8/11/2021

Remarks	

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

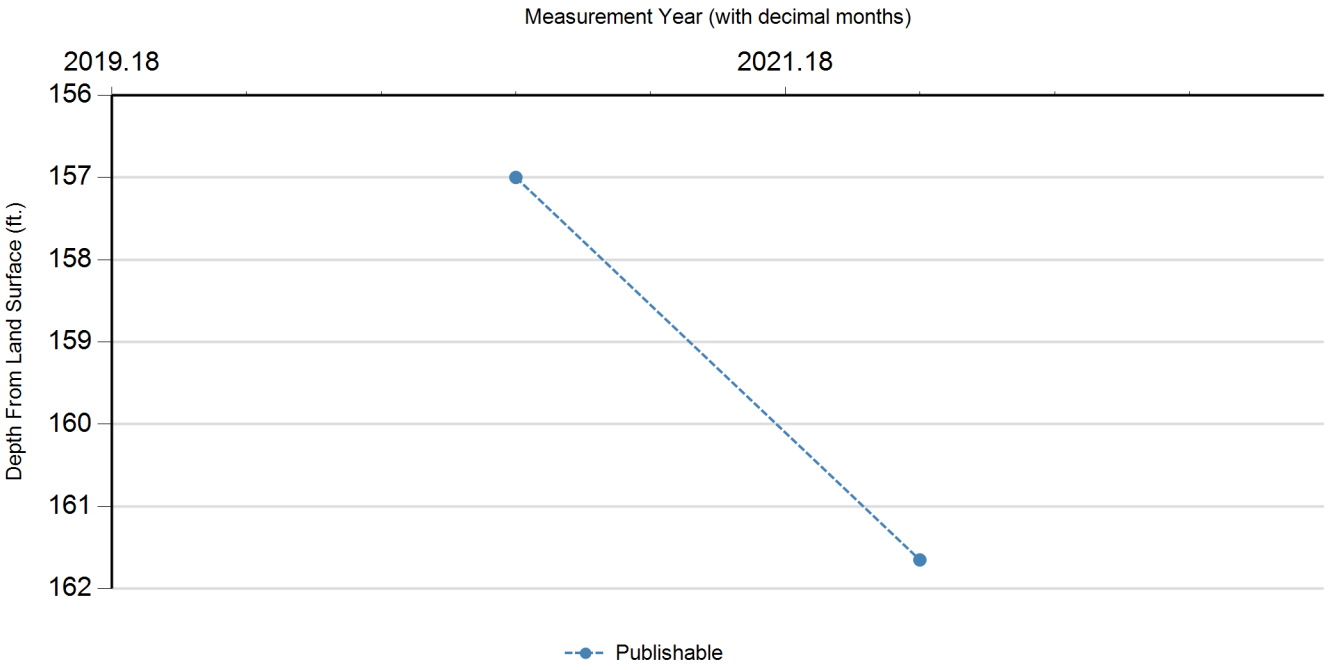
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	5/19/2020		157		822	1	Registered Water Well Driller	Electric Line		
P	8/2/2021		161.65	4.65	817.35	1	Groundwater Conservation District	Electric Line		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis

Sample Date: 8/2/2021 **Sample Time:** 1330 **Sample Number:** 1 **Collection Entity:** Barton Springs/Edwards Aquifer CD

Sampled Aquifer: Cow Creek Limestone

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		322	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		322	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)		7.02	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		2.79	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)		1.1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		48.2	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		392.951	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		187	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.083	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		77.2	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		10.9	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		1.9	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.342	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		321.338	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)		398	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		9.06	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		30.9	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)		19.2	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		2.51	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		2.036	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.46	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.79	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)		0.231	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.9	mg/L	

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 57-47-313

groundwater division

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0.045		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		11.6	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.589		
00932	SODIUM, CALCULATED, PERCENT		14.134	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		24.2	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		613	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		1110	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		15.7	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		21.92	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		369.103	mg/L	
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)		1.13	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		2.73	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		16.6	ug/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

WQ FY 2021 Barton Springs GCD TWDB Water Quality Field Data Sheet

Newly Inventoried Well: Yes

SWN: 57-47-313
County: Hays
County Code: 209
Aquifer Code: 218CCRK
Aquifer Id: 28

Name: Johnson #1
Address:
Attention:
Well Name or #:

ID Number: 1010
Date: 8/2/21
Sampler(s): JC, BH

1	2	3	4	5	6	7	8			
500 ml filtered Anions/T. Alk.	250 ml filtered Cation	250 ml filtered Nitrate								
ICE	HNO3	ICE + H2SO4								

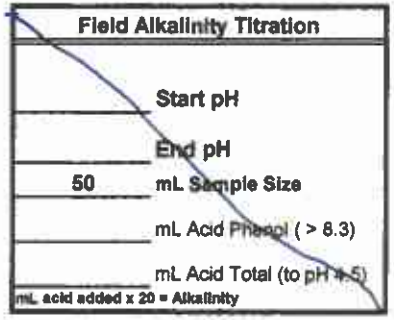
Cation and Nitrate bottles are pre- acidified.

Calibration Verification Readings

pH	SLOPE =	
	7 =	
	4 or 10 =	4.01
Conductivity	500 =	
4.49	1000 =	4.49
	2000 =	
	5000 =	

Time In: 13:20
Time Out: 13:35
Water Level: 161.65
M.P. = 3.0
W.L. remark: 158.65
Pumping time: 15 mins
Sampling Point: Well head
Well Use: Fire Suppression
Lift: Sub
Power: Solar
FIELD G.P.S. readings
Latitude: 30° 20' 4.14" N
Longitude: 98° 7' 56.03" W
Casing Type: PVC
Casing Size: 4.5"
Sample Time: 13:30
Filter pressure: hand pump / (line) / spring

Field Alkalinity Titration



Phenol Alkalinity (82244): _____ mg/L

Total Alkalinity (39086): _____ mg/L

Notes:

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

Time	13:20	13:25	13:30						
pH	7.89	7.79	7.79						
Celsius Temp.	21.96	21.96	21.92						
Conductivity	603	613	613						

APP000329

Texas Water Development Board
Well Schedule

State Well Number 57 47 313 Prev. Well No. _____ County Travis County Code 453

Basin Colorado 14 GMA 09 RWPA K GCD South West Travis County Aquifer Cow Creek 218CCRK

Latitude 30 20 14.69 Longitude 098 07 56.18 Coord Accuracy 0 Aquifer ID1 _____ Aquifer ID2 _____ Aquifer ID3 _____

Owner/ Travis County Driller GeoProjects

Well No. Johnson #1

Address _____ Tenant/Oper. _____

Well Depth 219 Source of Depth D Altitude 979 Source of Alt. Datum Z

Date Drilled 05 20 2020 Well Type O User Code _____

Lift Data Pump Mfr. _____ Type of Lift Sub S Pump Depth Setting (ft) 210 ft.

Motor Mfg _____ Type of Power Solar Z Horsepower _____

Water Use Primary Fire F Secondary _____ Tertiary _____

Other Data Available Water Level L Water Quality _____ Well Logs D Other Data _____

Well Construction Const Method Air Rotary A Casing Material PVC P

Completion Method Screened P Screen Material PVC P

Water Levels

Date 05 19 2020 Meas. 157 Remarks _____ M.P. (+) -3.0

Date 08 02 2021 Meas. 16165 Remarks _____

Date _____ Meas. _____ Remarks _____

Water Quality (Remarks. TWDB Suite Collected 8/2/21

Yield Flow Rate _____ Pump Rate _____ GPM Circle how rate was determined: Meas Rept Est Date of Test _____

Performance Test Length of test _____ hr Production Rate _____ GPM Circle how rate was determined: Meas Rept Est Date of Test _____

Static Level _____ ft. Pumping Level _____ ft. Amount of Drawdown _____ ft. Specific Capacity _____ GPM/ft.

Casing Records:

Casing or Blank Pipe (C)
Well Screen or Slotted Zone (S)
Open Hole (O)

Cemented from 0 to 157

	Diam. (in.)	Interval of C,S, or O. From	To
1	C 4.5	0	74
2	S 4.5	174	214
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Date Record Collected or Information Updated 08 02 2021 Reporting Agency 05 Recorded by JustinCamp-BSEACD

Other Remarks

1 Solar Powered
2
3 See Well Report + Trucking # 545767
4
5
6

Aquifer _____

Well Number - -

V:\SurfaceWaterResources\Groundwater\WaterQuality\WellSchedule

APP000330

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID:	TWDB	**Date Collected:**	08/02/2021 13:30	**Matrix:**	Aqueous
Lab ID:	Q2120544006	**Date Received:**	08/05/2021 09:05	**Sample Type:**	SAMPLE
Sample ID:	5747313 JOHANSON 1	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

ALKALINITY (SM2320B, Alkalinity)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phenolphthalein Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Hydroxide Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Bicarbonate Alkalinity	322	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Carbonate Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Total Alkalinity (CaCO3)	322	mg/L	20.0	20.0		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	

HEAVY METALS (E245.1 Mercury Water)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Mercury Dissolved	<0.200	ug/L	0.200	0.0700		1	08/17/2021 16:55	FM	08/19/2021 11:09	FM	

INORGANICS (E200.7 Prep/E200.7 Metals, Trace Elements)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Dissolved	187	ug/L	50.0	20.0		1	08/10/2021 14:00	ERR	08/18/2021 16:23	FM	
Calcium Dissolved	77.2	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 16:23	FM	
Strontium Dissolved	1110	ug/L	10.0	4.00		1	08/10/2021 14:00	ERR	08/18/2021 16:23	FM	
Iron Dissolved	398	ug/L	50.0	20.0		1	08/10/2021 14:00	ERR	08/18/2021 16:23	FM	
Magnesium Dissolved	30.9	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 16:23	FM	
Potassium Dissolved	1.90	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 16:23	FM	
Sodium Dissolved	24.2	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 16:23	FM	

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID:	TWDB	**Date Collected:**	08/02/2021 13:30	**Matrix:**	Aqueous
Lab ID:	Q2120544006	**Date Received:**	08/05/2021 09:05	**Sample Type:**	SAMPLE
Sample ID:	5747313 JOHANSON 1	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

INORGANICS (E200.8, ICP-MS Prep/E200.8, ICP-MS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Aluminum Dissolved	7.02	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Antimony Dissolved	1.10	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Arsenic Dissolved	<1.00	ug/L	1.00	0.700		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Barium Dissolved	48.2	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Beryllium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Cadmium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Chromium Dissolved	1.90	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Cobalt Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Copper Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Lithium Dissolved	9.06	ug/L	2.00	0.700		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	N
Lead Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Manganese Dissolved	19.2	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Molybdenum Dissolved	2.51	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Selenium Dissolved	<5.00	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Silver Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Thallium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Uranium Dissolved	1.13	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	N
Vanadium Dissolved	2.73	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	
Zinc Dissolved	16.6	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 23:18	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride DIssolved	10.9	mg/L	1.00	0.400		1	08/06/2021 07:21	FO	08/06/2021 07:21	FO	
Bromide Dissolved	0.0830	mg/L	0.0200	0.00800		1	08/06/2021 07:21	FO	08/06/2021 07:21	FO	
Fluoride Dissolved	0.342	mg/L	0.0100	0.00400		1	08/06/2021 07:21	FO	08/06/2021 07:21	FO	
Sulfate Dissolved	15.7	mg/L	1.00	0.400		1	08/06/2021 07:21	FO	08/06/2021 07:21	FO	

INORGANICS (SM1030B Cation/Anion Balance)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Cation/Anion Balance	2.790	%				1	08/19/2021 11:31	CW	08/19/2021 11:31	CW	

NITRATE AND NITRITE (SM4500-NO3-H, Nitrate/Nitrite)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Nitrate/Nitrite as N Dissolved	0.460	mg/L	0.0200	0.00800		1	08/09/2021 00:00	ME	08/09/2021 00:00	ME	

APP000332

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID:	TWDB	**Date Collected:**	08/02/2021 13:30	**Matrix:**	Aqueous
Lab ID:	Q2120544006	**Date Received:**	08/05/2021 09:05	**Sample Type:**	SAMPLE
Sample ID:	5747313 JOHANSON 1	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

SILICA (SM4500-SiO2-C, Silica)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Silica as SiO2, Dissolved	11.6	mg/L	0.500	0.200		1	08/11/2021 00:00	ME	08/11/2021 00:00	ME	

TOTAL PHOSPHATE AS P (E365.4 / E351.2 Water Prep/E365.4 Phosphorus, Total)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phosphorus, Dissolved (As P)	0.231	mg/L	0.0200	0.00800		1	08/17/2021 12:39	ERR	08/18/2021 00:00	ME	

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-314

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747314
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.3350028
Latitude (degrees minutes seconds)	30° 20' 06.01" N
Longitude (decimal degrees)	-98.1324694
Longitude (degrees minutes seconds)	098° 07' 56.89" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218CCRK - Cow Creek Limestone
Aquifer	Trinity
Aquifer Pick Method	Provided by Groundwater Conservation District
Land Surface Elevation (feet above sea level)	968
Land Surface Elevation Method	Global Positioning System-GPS
Well Depth (feet below land surface)	215
Well Depth Source	Driller's Log
Drilling Start Date	10/2/2020
Drilling End Date	10/8/2020
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Monitor
Water Level Observation	None
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Travis County
Driller	Geoprojects International, Inc.
Other Data Available	Drillers Log
Well Report Tracking Number	556939
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	Johanson #2
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	7/30/2021
Last Update Date	7/30/2021

Remarks	

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis

Sample Date: 8/2/2021 **Sample Time:** 1255 **Sample Number:** 1 **Collection Entity:** Other State Agencies

Sampled Aquifer: Cow Creek Limestone

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: Western Travis Co. Study-BEG Brian Hunt

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		320	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		320	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		-0.34	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)		1.57	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		39.5	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		390.511	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		127	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0709	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		63.5	mg/L	
28004	CARBON-14 DISS APPARENT AGE (YEARS BP)		8420	Y-BP	
82172	CARBON-14 FRACTION MODERN		0.3506		0.0013
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		13.5	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		1.48	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
82081	DELTA CARBON 13 C13/C12 PER MIL		-7.2	0/00	
50791	DEUTERIUM, EXPRESSED AS PERMIL VSMOW		-30.29	0/00	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.553	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		361.989	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		18.8	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		45.7	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		17.5	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.854	mg/L	

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 57-47-314

groundwater division

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.193	mg/L	
50790	OXYGEN-18, EXPRESSED AS PERMIL VSMOW		-4.24	0/00	
00400	PH (STANDARD UNITS), FIELD		7.89	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		4.37	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		18.5	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.174		
00932	SODIUM, CALCULATED, PERCENT		4.462	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		7.44	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		672	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		13300	ug/L	
48297	STRONTIUM, ISOTOPE OF MASS 86 AND 87 RATIO		0.707773	N/A	0.00073
00946	SULFATE, DISSOLVED (MG/L AS SO4)		43	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		21.71	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		402.732	mg/L	
07012	TRITIUM IN WATER (TRITIUM UNITS)		-0.04	TU	0.09
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)		2.5	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		4.8	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		11.1	ug/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

WQ FY 2021 Barton Springs GCD TWDB Water Quality Field Data Sheet

Newly Inventoried Well: Yes

SWN: 57-47-314
County: Hays
County Code: 209
Aquifer Code: 218CCRK
Aquifer Id: 28

Name: Johnson #2
Address:
Attention:
Well Name or #:

ID Number:
Date: 8/2/21
Sampler(s): JC, BH

1	2	3	4	5	6	7	8			
500 ml filtered Anions/T. Alk. ICE	250 ml filtered Cation HNO3	250 ml filtered Nitrate ICE + H2SO4	Tritium	C14	Sr 84/87	Dec/018				
Cation and Nitrate bottles are pre- acidified.			Isotopes							

Calibration Verification Readings

pH	SLOPE =	
	7 =	
	4 or 10 =	4.01
Conductivity	500 =	
4.49	~~4990~~ =	4.49
	2000 =	
	5000 =	

Time In: 12:40
Time Out: 13:00

Water Level:
M.P. =
W.L. remark:

Pumping time: 15 mins
Sampling Point: well head

Well Use: Fire Suppression
Lift: Sub
Power: Solar
Casing Type: PVC

FIELD G.P.S. readings
Latitude: 30° 20' 06.01" N
Longitude: 98° 07' 56.89" W
Casing Size: [illegible] 4.5"

Sample Time: 12:55
Filter pressure: hand pump / (inline) / spring

Field Alkalinity Titration

	Start pH
	End pH
50	mL Sample Size
	mL Acid Phenol (> 8.3)
	mL Acid Total (to pH 4.5)

mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): mg/L

Total Alkalinity (39086): mg/L

Notes:

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

Time	12:45	12:50	12:55						
pH	7.89	7.88	7.89						
Celsius Temp.	22.21	21.70	21.71						
Conductivity	669	673	672						

Texas Water Development Board
Well Schedule

State Well Number 57 47 31 4 Prev. Well No. _____ County Travis County Code 453

Basin Colorado 14 GMA 09 RWPA K GCD South West Travis Co. Aquifer Cow Creek 218CCRK

Latitude 30 20 06.01 Longitude 098 07 56.89 Coord Accuracy O Aquifer ID1 _____ Aquifer ID2 _____ Aquifer ID3 _____

Owner/ Travis County
Well No. Johanson #2 Driller GeoProjects

Address _____ Tenant/Oper. _____

Well Depth 215 Source of Depth D Altitude 968 Source of Alt. Datum Z

Date Drilled 10 08 2020 Well Type O User Code _____

Lift Data Pump Mfr. _____ Type of Lift Sub S Pump Depth Setting (ft) _____ ft.

Motor Mfg _____ Type of Power Solar Z Horsepower _____

Water Use Primary Fire F Secondary _____ Tertiary _____

Other Data Available Water Level L Water Quality _____ Well Logs D Other Data _____

Well Construction Const Method Air Rotary A Casing Material PVC P

Completion Method Screened P Screen Material PVC P

Water Levels

	Date	Meas.	Remarks	M.P.
	10 06 2020	153.0		+ -

Water Quality (Remarks: TWDB Suite + isotopes collected 8/2/21

Yield Flow Rate _____ Pump Rate _____ GPM Circle how rate was determined: Meas Rept Est Date of Test _____

Performance Test Length of test _____ hr Production Rate _____ GPM Circle how rate was determined: Meas Rept Est Date of Test _____

Static Level _____ ft. Pumping Level _____ ft. Amount of Drawdown _____ ft. Specific Capacity _____ GPM/ft.

Casing Records:

Casing or Blank Pipe (C)
Well Screen or Slotted Zone (S)
Open Hole (O)
Cemented from 0 to 148

	Diam. (in.)	Interval of C,S, or O. From	To
1	C 4.5	0	170
2	C 4.5	170	210
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Date Record Collected or Information Updated 08 13 2021 Reporting Agency 05 Recorded by Joshua Camp - BSEACD

Other Remarks
1 Solar powered
2
3 See Well Report Tracking # 556939
4
5
6

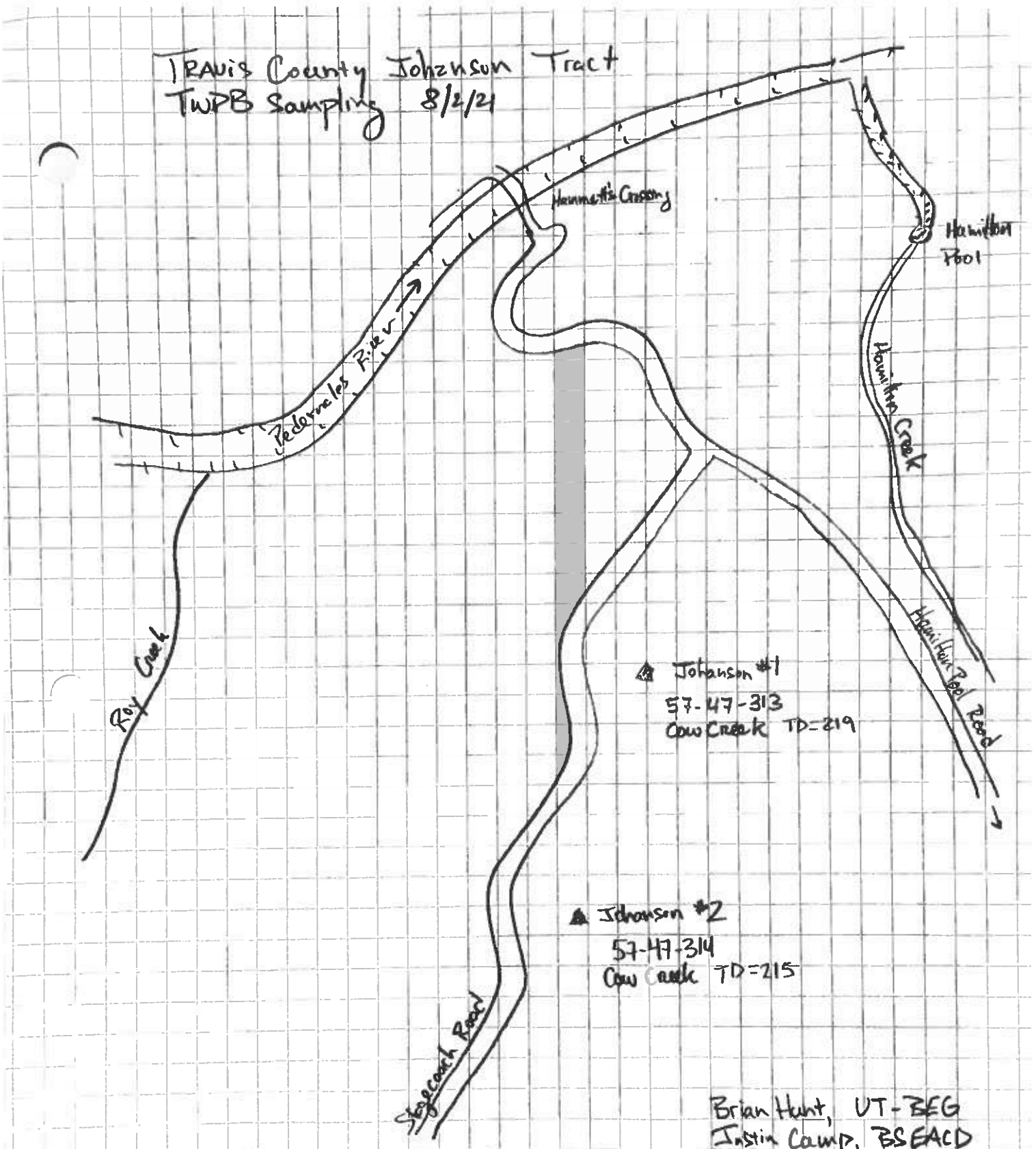
Aquifer _____

- -

Well Number _____

V:/SurfaceWaterResources/Groundwater/WaterQuality/WellSchedule

APP000339


Travis County Johnson Tract
TWPB Sampling 8/2/21
Hammett's Crossing
Hamilton Pool
Hamilton Creek
Hamilton Pool Road
Pedernales River
Fox Creek
Johnson #1
57-47-313
Cow Creek TD=219
Johnson #2
57-47-314
Cow Creek TD=215
Stagecoach Road
Brian Hunt, UT-BEG
Justin Camp, BSEACD

MIT Isotope Laboratory

Massachusetts Institute of Technology

Date: 10/11/2021

Analysts: Jahan Ramezani

Sample #	Sample Type	$^{87}Sr/^{86}Sr$ (1)	% std err (2)	2σ std err (2)	
Q2120563001	water	0.707773	0.00073	1.03E-05	**57-47-314**

(1) Corrected for mass-dependant fractionation.
(2) Within-run internal precision of measured ratio.

Long term reproducibility of NBS-987 Sr standard at MIT: 0.7102379 ± 0.0000109 (2σ s.e.).

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

Dale Jurecka

Report Date:10/4/2021

LCRA-Environmental Laboratory Services (EL-101)

Material Received:8/18/2021

Laboratory Number	pMC	$F^{14}C$	d13C o/oo	d18O o/oo	dD o/oo
Beta - 600696	35.06 +/- 0.13 pMC	0.3506 +/- 0.0013	-7.20	-4.24	-30.29

Q2120562001

57-47-314

AMS-Standard delivery

MATERIAL/PRETREATMENT: (water DIC) acidify-gas strip

COMMENTS: The equivalent "Apparent" radiocarbon age to the reported pMC/fMDN values is ~ 8420 BP (not adjusted for any hydro-geochemical effects on meteoric water 14CO2). Given the complex nature of groundwater DIC14 chemistry, duplicate measurements within 1-2 pMC are reasonable for a single water sample. For very low DIC concentration waters (< 20 mg/L HCO3) DIC14 and waters with complex organic chemistry, results can vary significantly outside of this expectation.

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Insitute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12 ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

APP000342

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-315

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747315
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.3405833
Latitude (degrees minutes seconds)	30° 20' 26.1" N
Longitude (decimal degrees)	-98.1260806
Longitude (degrees minutes seconds)	098° 07' 33.89" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218HNSL - Hensell Sand Member of Travis Peak Formation
Aquifer	Trinity
Aquifer Pick Method	Provided by Groundwater Conservation District
Land Surface Elevation (feet above sea level)	857
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	
Drilling Method	Dug
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Unused
Water Level Observation	None
Water Quality Available	No
Pump	None
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Travis County
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	Hamilton Pool Handug
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	7/30/2021
Last Update Date	7/30/2021

Remarks	

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
	Blank	Rock or Stone				

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

Scanned Documents do not exist for this well

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-316

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747316
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.3342833
Latitude (degrees minutes seconds)	30° 20' 03.42" N
Longitude (decimal degrees)	-98.1311583
Longitude (degrees minutes seconds)	098° 07' 52.17" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218CCRK - Cow Creek Limestone
Aquifer	Trinity
Aquifer Pick Method	Provided by Groundwater Conservation District
Land Surface Elevation (feet above sea level)	971
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	210
Well Depth Source	Driller's Log
Drilling Start Date	11/20/2019
Drilling End Date	11/20/2019
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Public Supply
Water Level Observation	GCD Current Observation Well
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	190
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Buddy's Backyard RV Resort
Driller	Centex Pump & Supply, Inc.
Other Data Available	Drillers Log
Well Report Tracking Number	535035
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G2270419A
Groundwater Conservation District Well Number	
Owner Well Number	1
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	8/15/2022
Last Update Date	8/15/2022

Remarks	

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis

Sample Date: 8/18/2022 **Sample Time:** 1315 **Sample Number:** 1 **Collection Entity:** Barton Springs/Edwards Aquifer CD

Sampled Aquifer: Cow Creek Limestone

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		297	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		297	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		-2.73	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		48.5	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		362.443	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		61.6	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0884	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		84.2	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		10.7	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		1.24	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.258	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		317.903	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		5.15	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		25.9	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1.23	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		1.567	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.354	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.06	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.712	mg/L	

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 57-47-316

groundwater division

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		11	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.158		
00932	SODIUM, CALCULATED, PERCENT		4.242	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		6.45	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		633.7	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		825	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		35.2	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		21.49	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		355.025	mg/L	
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)		1.43	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		2.26	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

Texas Water Development Board

Texas Water Development Board
Well Schedule

groundwater division

State Well Number: **57-47-316** Previous Well Number: County: **Travis**

Latitude (dms): **30° 20' 03.42" N** Longitude (dms): **098° 07' 52.17" W** Coordinate Accuracy: **Global Positioning System - GPS**

River Basin: **Colorado** GMA: **9** RWPA: **K** GCD: **Southwestern Travis County GCD**

Owner: **Buddy's Backyard RV Resort** Driller: **Centex Pump & Supply, Inc.** Aquifer ID: **Trinity**

Aquifer Code: **Cow Creek Limestone**

Depth (ft): **210** Elevation (ft): **971**

Source of Depth: **Driller's Log** Source of Elevation: **Digital Elevation Model -DEM**

Date Drilled: **11/20/2019** Well Type: **Withdrawal of Water**

Type of Lift: **Submersible** Pump Depth: **190** Power:

Construction: Completion:

Water Use: **Public Supply** Reporting Agency: **Groundwater Conservation District**

Other Data: **Drillers Log** Date Created: **8/15/2022** Created By: **Amy De Luna**

Water Quality: **Yes**

REMARKS:

WELL NUMBERS:

Well Report Tracking	*Plug Report Tracking*	*USGS Site Number*	*TCEQ Source ID*	*GCD Number*	*Owner Number*
535035			**G2270419A**		**1**

WQ FY 2021 UT-BEG

TWDB Water Quality Field Data Sheet

SWN: 57-47-316
County: TRAVIS
County Code:
Aquifer Code: 218 CCRK
Aquifer Id:

Name: BENTREE
Address: 401 STAGECOACH RANCH RD
DRIPPING SPRINGS, TX 78620
Attention:
Well Name or #:

Newly Inventoried Well: NO
ID Number: 1017
Date: 8/18/22
Sampler(s): DDL, CM

1	2	3	4	5	6	7	8			
500 ml filtered Anions/T. Alk. ICE	250 ml filtered Cation HNO3	250 ml filtered Nitrate ICE + H2SO4								

Cation and Nitrate bottles are pre- acidified.

Calibration Verification Readings

pH	SLOPE =	ND
	7 =	7.0
	4 or ~~10~~ =	10.0
Conductivity	~~0~~ 500 =	0
	1413 ~~1000~~ =	1414
	2000 =	ND
	~~5000~~ =	ND

Time In: 1:03
Time Out: 13:30
Water Level: 162.2
M.P. =
W.L. remark: PUMPING ON ARRIVAL
Pumping time: —
Sampling Point: Spigot at wellhead, no treatment before storage
Well Use: PSW
Lift: SUB
Power: ELECTRIC
Casing Type: PVC
Sample Time: 1:15
Casing Size: 6"
Filter pressure: hand pump / line / spring gravity

FIELD G.P.S. readings
Latitude: 30.33422359
Longitude: -97.13099966

Field Alkalinity Titration

	Start pH
	End pH
50	mL Sample Size
	mL Acid Phenol (> 8.3)
	mL Acid Total (to pH 4.5)

mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): _____ mg/L
Total Alkalinity (39086): _____ mg/L

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

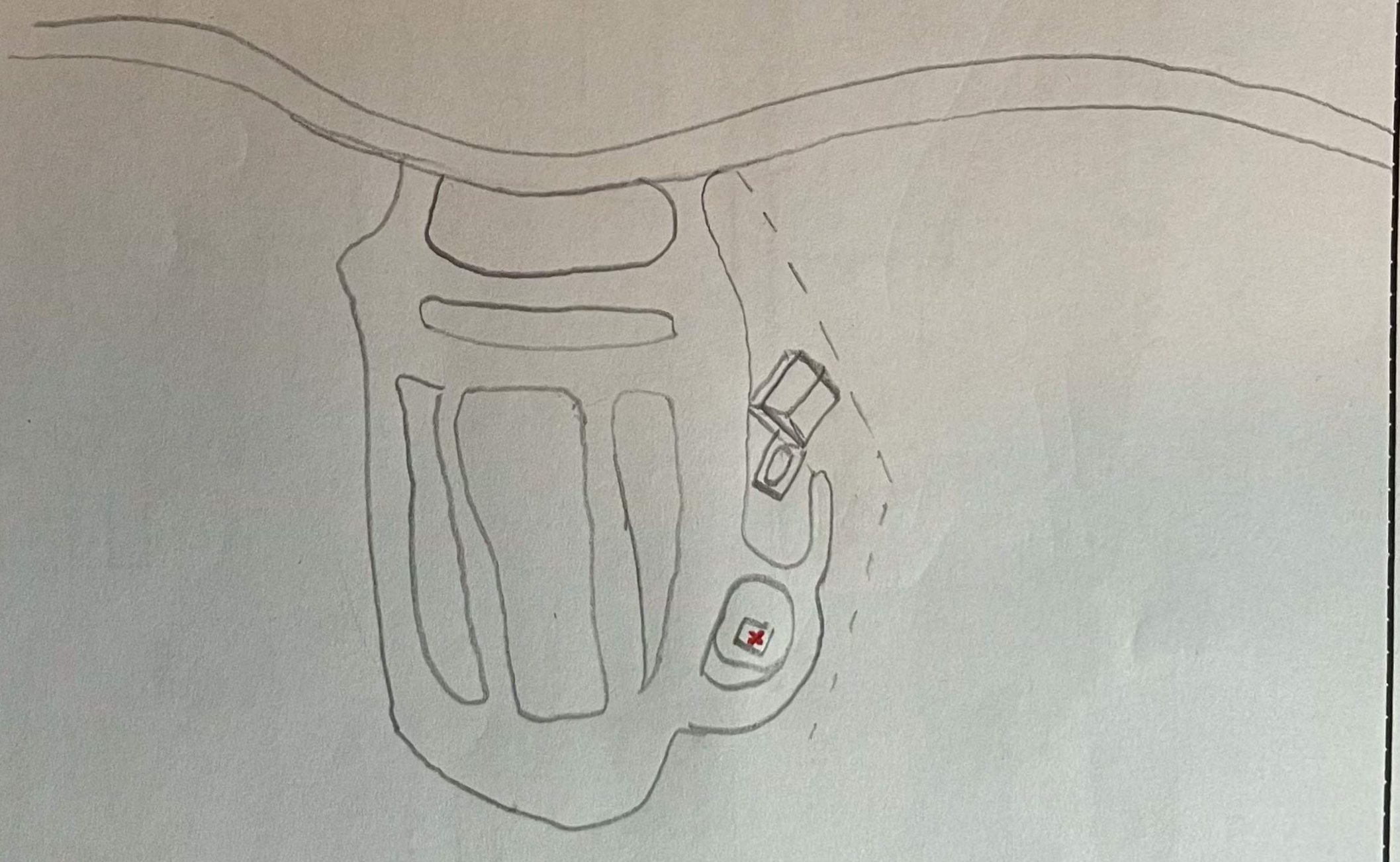
Time	1:03	1:10	1:15						
pH	7.1	7.12	7.06						
Celsius Temp.	21.62	21.49	21.44						
Conductivity	632.5	633.6	633.7						

Notes:

Texas Water Development Board - Well Location Sketch

By: NSH Date: 8/18/22 G.P.S Coordinates: 30°33'42.35.7" -98°.1307966"

County TRAVIS M.P. = +2.0# State Well Number: 57-47-316



State Well Number _____

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID:	TWDB	**Date Collected:**	08/18/2022 13:15	**Matrix:**	Aqueous
Lab ID:	Q2224460003	**Date Received:**	08/18/2022 14:33	**Sample Type:**	SAMPLE
Sample ID:	1013-BUDDYS	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

ALKALINITY (SM2320B, Alkalinity)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phenolphthalein Alkalinity	0.00	mg/L	0.00	0.00		1	08/22/2022 00:00	MO	08/22/2022 00:00	MO	N
Hydroxide Alkalinity	0.00	mg/L	0.00	0.00		1	08/22/2022 00:00	MO	08/22/2022 00:00	MO	N
Bicarbonate Alkalinity	297	mg/L	0.00	0.00		1	08/22/2022 00:00	MO	08/22/2022 00:00	MO	N
Carbonate Alkalinity	0.00	mg/L	0.00	0.00		1	08/22/2022 00:00	MO	08/22/2022 00:00	MO	N
Total Alkalinity (CaCO3)	297	mg/L	20.0	20.0		1	08/22/2022 00:00	MO	08/22/2022 00:00	MO	

HEAVY METALS (245.1Hg)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Mercury Dissolved	<0.20	ug/L	0.20	0.070		1	09/01/2022 23:00	FM	09/01/2022 23:00	FM	N

INORGANICS (E200.7 Prep/E200.7 Metals, Trace Elements)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Dissolved	61.6	ug/L	50.0	20.0		1	08/25/2022 12:43	FO	09/15/2022 19:04	FM	
Calcium Dissolved	84.2	mg/L	0.200	0.0700		1	08/25/2022 12:43	FO	09/15/2022 19:04	FM	
Strontium Dissolved	825	ug/L	10.0	4.00		1	08/25/2022 12:43	FO	09/15/2022 19:04	FM	
Iron Dissolved	<50.0	ug/L	50.0	20.0		1	08/25/2022 12:43	FO	09/15/2022 19:04	FM	
Magnesium Dissolved	25.9	mg/L	0.200	0.0700		1	08/25/2022 12:43	FO	09/15/2022 19:04	FM	
Potassium Dissolved	0.712	mg/L	0.200	0.0700		1	08/25/2022 12:43	FO	09/15/2022 19:04	FM	
Sodium Dissolved	6.45	mg/L	0.200	0.0700		1	08/25/2022 12:43	FO	09/15/2022 19:04	FM	

APP000354

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID:	TWDB	**Date Collected:**	08/18/2022 13:15	**Matrix:**	Aqueous
Lab ID:	Q2224460003	**Date Received:**	08/18/2022 14:33	**Sample Type:**	SAMPLE
Sample ID:	1013-BUDDYS	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

INORGANICS (E200.8, ICP-MS Prep/E200.8, ICP-MS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Aluminum Dissolved	<5.00	ug/L	5.00	1.50		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Antimony Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Arsenic Dissolved	<1.00	ug/L	1.00	0.700		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Barium Dissolved	48.5	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Beryllium Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Cadmium Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Chromium Dissolved	1.24	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Cobalt Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Copper Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Lithium Dissolved	5.15	ug/L	2.00	0.700		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	N
Lead Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Manganese Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Molybdenum Dissolved	1.23	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Selenium Dissolved	<5.00	ug/L	5.00	1.50		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Silver Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Thallium Dissolved	<1.00	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Uranium Dissolved	1.43	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	N
Vanadium Dissolved	2.26	ug/L	1.00	0.400		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	
Zinc Dissolved	<5.00	ug/L	5.00	1.50		1	08/25/2022 12:41	FO	08/25/2022 14:04	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride DIssolved	10.7	mg/L	2.00	0.800		2	08/18/2022 17:54	BC	08/18/2022 17:54	BC	
Bromide Dissolved	0.0884	mg/L	0.0400	0.0160		2	08/18/2022 17:54	BC	08/18/2022 17:54	BC	
Fluoride Dissolved	0.258	mg/L	0.0200	0.00800		2	08/18/2022 17:54	BC	08/18/2022 17:54	BC	
Sulfate Dissolved	35.2	mg/L	2.00	0.800		2	08/18/2022 17:54	BC	08/18/2022 17:54	BC	

INORGANICS (SM1030B Cation/Anion Balance)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Cation/Anion Balance	-2.730	%				1	09/19/2022 09:17	CW	09/19/2022 09:17	CW	

NITRATE AND NITRITE (SM4500-NO3-H, Nitrate/Nitrite)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Nitrate/Nitrite as N Dissolved	0.354	mg/L	0.0200	0.00800		1	08/25/2022 00:00	ML	08/25/2022 00:00	ML	

APP000355

LCRA Environmental Laboratory Services
3505 Montopolis Drive
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Phone (512)730-6022
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Analytical Results

Client ID:	TWDB	**Date Collected:**	08/18/2022 13:15	**Matrix:**	Aqueous
Lab ID:	Q2224460003	**Date Received:**	08/18/2022 14:33	**Sample Type:**	SAMPLE
Sample ID:	1013-BUDDYS	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

SILICA (SM4500-SiO2-C, Silica)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Silica as SiO2, Dissolved	11.0	mg/L	1.00	0.400		2	08/26/2022 00:00	ML	08/26/2022 00:00	ML	

TOTAL PHOSPHATE AS P (E365.4 / E351.2 Water Prep/E365.4 Phosphorus, Total)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phosphorus, Dissolved (As P)	<0.0200	mg/L	0.0200	0.00800		1	08/24/2022 17:03	MAB	08/25/2022 00:00	ML	

APP000356

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-604

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747604
County	Hays
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Hays Trinity GCD
Latitude (decimal degrees)	30.3267917
Latitude (degrees minutes seconds)	30° 19' 36.45" N
Longitude (decimal degrees)	-98.1456167
Longitude (degrees minutes seconds)	098° 08' 44.22" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218CCRK - Cow Creek Limestone
Aquifer	Trinity
Aquifer Pick Method	Provided by Groundwater Conservation District
Land Surface Elevation (feet above sea level)	816
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Spring
Well Use	Unused
Water Level Observation	None
Water Quality Available	Yes
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Lew Adams
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	Big Spring
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	7/30/2021
Last Update Date	8/11/2021

Remarks	Reported by BSEACD.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis

Sample Date: 8/2/2021 **Sample Time:** 0910 **Sample Number:** 1 **Collection Entity:** Barton Springs/Edwards Aquifer CD

Sampled Aquifer: Cow Creek Limestone

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		305	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		305	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		4.06	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		44.2	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		372.206	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		57.8	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0657	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		97.8	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		10.2	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		1.25	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)		1.92	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.219	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		350.652	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		4.6	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		25.6	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)		1.66	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1.77	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.02	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)	<	0.02	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.19	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		1.65	mg/L	

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 57-47-604

groundwater division

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		11.2	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.139		
00932	SODIUM, CALCULATED, PERCENT		3.584	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		5.97	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		600	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		842	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		15.8	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		23.2	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		352.294	mg/L	
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		2.47	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

WQ FY 2021 Barton Springs GCD TWDB Water Quality Field Data Sheet

Newly Inventoried Well: Yes

SWN: 57-47-604
County: Hays
County Code: 209
Aquifer Code: 218CCRK
Aquifer Id: 28

Name: Big Spring
Address:
Attention:
Well Name or #:

ID Number: 1005
Date: 8/2/21
Sampler(s): JC, BH

1	2	3	4	5	6	7	8			
500 ml filtered Anions/T. Alk.	250 ml filtered Cation	250 ml filtered Nitrate								
ICE	HNO3	ICE + H2SO4								

Cation and Nitrate bottles are pre- acidified.

Calibration Verification Readings

pH SLOPE =
X =
4 or 10 = 4.01

Conductivity 500 =
4.49 ~~1000~~ = 4.49
2000 =
5000 =

Time In: 9:10
Time Out: 9:30

Water Level: N/A - Spring
M.P. =
W.L. remark:

Pumping time: —
Sampling Point: Spring Boil

Well Use: —
Lift: —
Power: —

FIELD G.P.S. readings
Latitude: 30° 19' 36.45" N
Longitude: 98° 8' 44.22" W

Casing Type: —
Casing Size: —

Sample Time: 9:10
Filter pressure: hand pump / line / spring

Field Alkalinity Titration

Start pH
End pH
50 mL Sample Size
mL Acid Phenol (> 8.3)
mL Acid Total (to pH 4.5)
mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): _____ mg/L

Total Alkalinity (39086): _____ mg/L

Notes:

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

Time	9:15	9:20	9:25						
pH	7.18	7.19	7.19						
Celsius Temp.	23.08	23.15	23.20						
Conductivity	594	598	600						

Texas Water Development Board
Well Schedule

State Well Number 5747604 Prev. Well No. _____ County Hays County Code 209

Basin Colorado 14 GMA 09 RWPA K GCD 19990 9KL Aquifer Cow Creek 218CCRK

Latitude 30 19 36 Longitude 098 08 44 Coord Accuracy 0 Aquifer ID1 __ Aquifer ID2 __ Aquifer ID3 __

Owner/ Lew Adams Driller _____

Well No. _____

Address _____ Tenant/Oper. _____

Well Depth _____ Source of Depth __ Altitude 816 Source of Alt. Datum ?

Date Drilled _____ Well Type S User Code _____

Lift Data Pump Mfr. _____ Type of Lift _____ Pump Depth Setting (ft) _____ ft.

Motor Mfg _____ Type of Power _____ Horsepower _____

Water Use Primary _____ Secondary _____ Tertiary _____

Other Data Available Water Level __ Water Quality __ Well Logs _____ Other Data _____

Well Construction Const Method _____ Casing Material _____

Completion Method _____ Screen Material _____

Water Levels

Date _____ Meas. _____ Remarks _____ M.P. + - _____

Date _____ Meas. _____ Remarks _____

Date _____ Meas. _____ Remarks _____

Water Quality (Remarks: TWDB Sample Collected 8/2/21

Yield Flow Rate _____ Pump Rate _____ GPM Circle how rate was determined: Meas Rept Est Date of Test _____

Performance Test Length of test _____ hr Production Rate _____ GPM Circle how rate was determined: Meas Rept Est Date of Test _____

Static Level _____ ft. Pumping Level _____ ft. Amount of Drawdown _____ ft. Specific Capacity _____ GPM/ft.

Casing Records:

Casing or Blank Pipe (C)
Well Screen or Slotted Zone (S)
Open Hole (O)
Cemented from ___ to ___

	Diam. (in.)	Interval of C,S, or O. From	To
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Date Record Collected or Information Updated 08132021 Reporting Agency 05 Recorded by Justin Camp-BSEACD

Other Remarks
1 Spring Name: Big Spring
2
3
4
5
6

Aquifer

- -

Well Number

V:/SurfaceWaterResources/Groundwater/WaterQuality/WellSchedule

APP000362

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID:	TWDB	**Date Collected:**	08/02/2021 09:10	**Matrix:**	Aqueous
Lab ID:	Q2120544001	**Date Received:**	08/05/2021 09:05	**Sample Type:**	SAMPLE
Sample ID:	5747604 BIG SPRING	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

ALKALINITY (SM2320B, Alkalinity)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phenolphthalein Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Hydroxide Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Bicarbonate Alkalinity	305	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Carbonate Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Total Alkalinity (CaCO3)	305	mg/L	20.0	20.0		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	

HEAVY METALS (E245.1 Mercury Water)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Mercury Dissolved	<0.200	ug/L	0.200	0.0700		1	08/17/2021 16:55	FM	08/19/2021 10:52	FM	

INORGANICS (E200.7 Prep/E200.7 Metals, Trace Elements)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Dissolved	57.8	ug/L	50.0	20.0		1	08/10/2021 14:00	ERR	08/18/2021 15:41	FM	
Calcium Dissolved	97.8	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 15:41	FM	
Strontium Dissolved	842	ug/L	10.0	4.00		1	08/10/2021 14:00	ERR	08/18/2021 15:41	FM	
Iron Dissolved	<50.0	ug/L	50.0	20.0		1	08/10/2021 14:00	ERR	08/18/2021 15:41	FM	
Magnesium Dissolved	25.6	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 15:41	FM	
Potassium Dissolved	1.65	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 15:41	FM	
Sodium Dissolved	5.97	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 15:41	FM	

APP000363

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID: TWDB
Lab ID: Q2120544001
Sample ID: 5747604 BIG SPRING
Project ID: TWDB CAN

Date Collected: 08/02/2021 09:10
Date Received: 08/05/2021 09:05
Location:
Facility:
Sample Point:

Matrix: Aqueous
Sample Type: SAMPLE

INORGANICS (E200.8, ICP-MS Prep/E200.8, ICP-MS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Aluminum Dissolved	<5.00	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Antimony Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Arsenic Dissolved	<1.00	ug/L	1.00	0.700		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Barium Dissolved	44.2	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Beryllium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Cadmium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Chromium Dissolved	1.25	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Cobalt Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Copper Dissolved	1.92	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Lithium Dissolved	4.60	ug/L	2.00	0.700		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	N
Lead Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Manganese Dissolved	1.66	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Molybdenum Dissolved	1.77	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Selenium Dissolved	<5.00	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Silver Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Thallium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Uranium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	N
Vanadium Dissolved	2.47	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	
Zinc Dissolved	<5.00	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 22:51	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride DIssolved	10.2	mg/L	1.00	0.400		1	08/06/2021 03:52	FO	08/06/2021 03:52	FO	
Bromide Dissolved	0.0657	mg/L	0.0200	0.00800		1	08/06/2021 03:52	FO	08/06/2021 03:52	FO	
Fluoride Dissolved	0.219	mg/L	0.0100	0.00400		1	08/06/2021 03:52	FO	08/06/2021 03:52	FO	
Sulfate Dissolved	15.8	mg/L	1.00	0.400		1	08/06/2021 03:52	FO	08/06/2021 03:52	FO	

INORGANICS (SM1030B Cation/Anion Balance)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Cation/Anion Balance	4.060	%				1	08/19/2021 11:29	CW	08/19/2021 11:29	CW	

NITRATE AND NITRITE (SM4500-NO3-H, Nitrate/Nitrite)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Nitrate/Nitrite as N Dissolved	<0.0200	mg/L	0.0200	0.00800		1	08/09/2021 00:00	ME	08/09/2021 00:00	ME	

APP000364

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID:	TWDB	**Date Collected:**	08/02/2021 09:10	**Matrix:**	Aqueous
Lab ID:	Q2120544001	**Date Received:**	08/05/2021 09:05	**Sample Type:**	SAMPLE
Sample ID:	5747604 BIG SPRING	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

SILICA (SM4500-SiO2-C, Silica)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Silica as SiO2, Dissolved	11.2	mg/L	0.500	0.200		1	08/11/2021 00:00	ME	08/11/2021 00:00	ME	

TOTAL PHOSPHATE AS P (E365.4 / E351.2 Water Prep/E365.4 Phosphorus, Total)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phosphorus, Dissolved (As P)	<0.0200	mg/L	0.0200	0.00800		1	08/11/2021 15:24	ERR	08/12/2021 00:00	ME	

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-47-605

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5747605
County	Hays
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Hays Trinity GCD
Latitude (decimal degrees)	30.3311472
Latitude (degrees minutes seconds)	30° 19' 52.13" N
Longitude (decimal degrees)	-98.14425
Longitude (degrees minutes seconds)	098° 08' 39.3" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218CCRK - Cow Creek Limestone
Aquifer	Trinity
Aquifer Pick Method	Provided by Groundwater Conservation District
Land Surface Elevation (feet above sea level)	753
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Spring
Well Use	Domestic
Water Level Observation	None
Water Quality Available	Yes
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Lew Adams
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	Red Spring
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	7/30/2021
Last Update Date	8/11/2021

Remarks	Reported by BSEACD.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis

Sample Date: 8/2/2021 **Sample Time:** 0940 **Sample Number:** 1 **Collection Entity:** Barton Springs/Edwards Aquifer CD

Sampled Aquifer: Cow Creek Limestone

Analyzed Lab: LCRA - Lower Colorado River Authority **Reliability:** Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00425	ALKALINITY, BICARBONATE DISSOLVED (MG/L), LAB		325	mg/L	
00430	ALKALINITY, CARBONATE DISSOLVED (MG/L), LAB		0	mg/L	
00420	ALKALINITY, HYDROXIDE DISSOLVED (MG/L), LAB		0	mg/L	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		325	mg/L	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	5	ug/L	
50938	ANION/CATION CHG BAL, PERCENT		2.12	PCT	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		46.4	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		396.612	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)	<	50	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.0668	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		97.6	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		10.1	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)	<	1	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.205	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		354.635	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	50	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		3.78	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		26.8	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.293	mg/L	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.0661	mg/L	
00400	PH (STANDARD UNITS), FIELD		7.28	SU	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	<	0.02	mg/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		0.628	mg/L	

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 57-47-605

groundwater division

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	5	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		11.4	mg/L	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	1	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.132		
00932	SODIUM, CALCULATED, PERCENT		3.386	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		5.7	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		604	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		439	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		11.6	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)		21.14	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		359.779	mg/L	
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)	<	1	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		2.63	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)	<	5	ug/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

WQ FY 2021 Barton Springs GCD TWDB Water Quality Field Data Sheet

Newly Inventoried Well: yes

SWN: 57-47605
County: Hays
County Code: 209
Aquifer Code: 218CCAK
Aquifer Id: 28

Name: Red Spring
Address:
Attention:
Well Name or #:

ID Number: 1006
Date: 8/2/21
Sampler(s): JC, BH

1	2	3	4	5	6	7	8			
500 ml filtered Anions/T. Alk. ICE	250 ml filtered Cation HNO3	250 ml filtered Nitrate ICE + H2SO4								

Cation and Nitrate bottles are pre- acidified.

Calibration Verification Readings

pH SLOPE =
7 =
4 or 10 = 4.01
Conductivity 500 =
4.44 ~~1000~~ = 4.49
2000 =
5000 =

Time In: 9:30
Time Out: 9:45

Water Level: Spring
M.P. =
W.L. remark: –

Pumping time: –
Sampling Point: Spring boil

Well Use: –
Lift: –
Power: –

FIELD G.P.S. readings
Latitude: 30° 19' 52.13" N
Longitude: 98° 8' 39.30" W

Casing Type: –
Casing Size: –

Sample Time: 9:40
Filter pressure: hand pump / ~~tap~~ / spring

Field Alkalinity Titration

Start pH
End pH
50 mL Sample Size
mL Acid Phenol (> 8.3)
mL Acid Total (to pH 4.5)
mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): mg/L

Total Alkalinity (39086): mg/L

Notes:

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

Time	9:30	9:35	9:40						
pH	7.25	7.28	7.28						
Celsius Temp.	21.43	21.18	21.14						
Conductivity	602	604	604						

APP000370

Texas Water Development Board
Well Schedule

State Well Number 5747605 Prev. Well No. _____ County Hays County Code 209

Basin Colorado 14 GMA 09 RWPA K GCD 19909KL Aquifer Cow Creek 218CCRK

Latitude 30 19 52.13 Longitude 098 08 39.30 Coord Accuracy 0 Aquifer ID1 __ Aquifer ID2 __ Aquifer ID3 __

Owner/ Lew Adams Driller _____

Well No. _____

Address _____ Tenant/Oper. _____

Well Depth _____ Source of Depth __ Altitude 753 Source of Alt. Datum Z

Date Drilled _____ Well Type S User Code _____

Lift Data Pump Mfr. _____ Type of Lift _____ Pump Depth Setting (ft) _____ ft.

Motor Mfg _____ Type of Power _____ Horsepower _____

Water Use Primary _____ Secondary _____ Tertiary _____

Other Data Available Water Level __ Water Quality __ Well Logs _____ Other Data _____

Well Construction Const Method _____ Casing Material _____

Completion Method _____ Screen Material _____

Water Levels

Date _____ Meas. _____ Remarks _____ M.P. + - _____

Date _____ Meas. _____ Remarks _____

Date _____ Meas. _____ Remarks _____

Water Quality (Remarks: TWDB Sample Collected 8/2/21

Yield Flow Rate _____ Pump Rate _____ GPM Circle how rate was determined: Meas Rept Est Date of Test _____

Performance Test Length of test _____ hr Production Rate _____ GPM Circle how rate was determined: Meas Rept Est Date of Test _____

Static Level _____ ft. Pumping Level _____ ft. Amount of Drawdown _____ ft. Specific Capacity _____ GPM/ft.

Date Record Collected or Information Updated 08132021 Reporting Agency 05 Recorded by Jason Camp BSEACD

Other Remarks

1 Spring Name: Red Spring

2

3

4

5

6

Casing Records:

Casing or Blank Pipe (C)

Well Screen or Slotted Zone (S)

Open Hole (O)

Cemented from ___ to ___

	Diam. (in.)	Interval of C,S, or O. From	To
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Aquifer _____

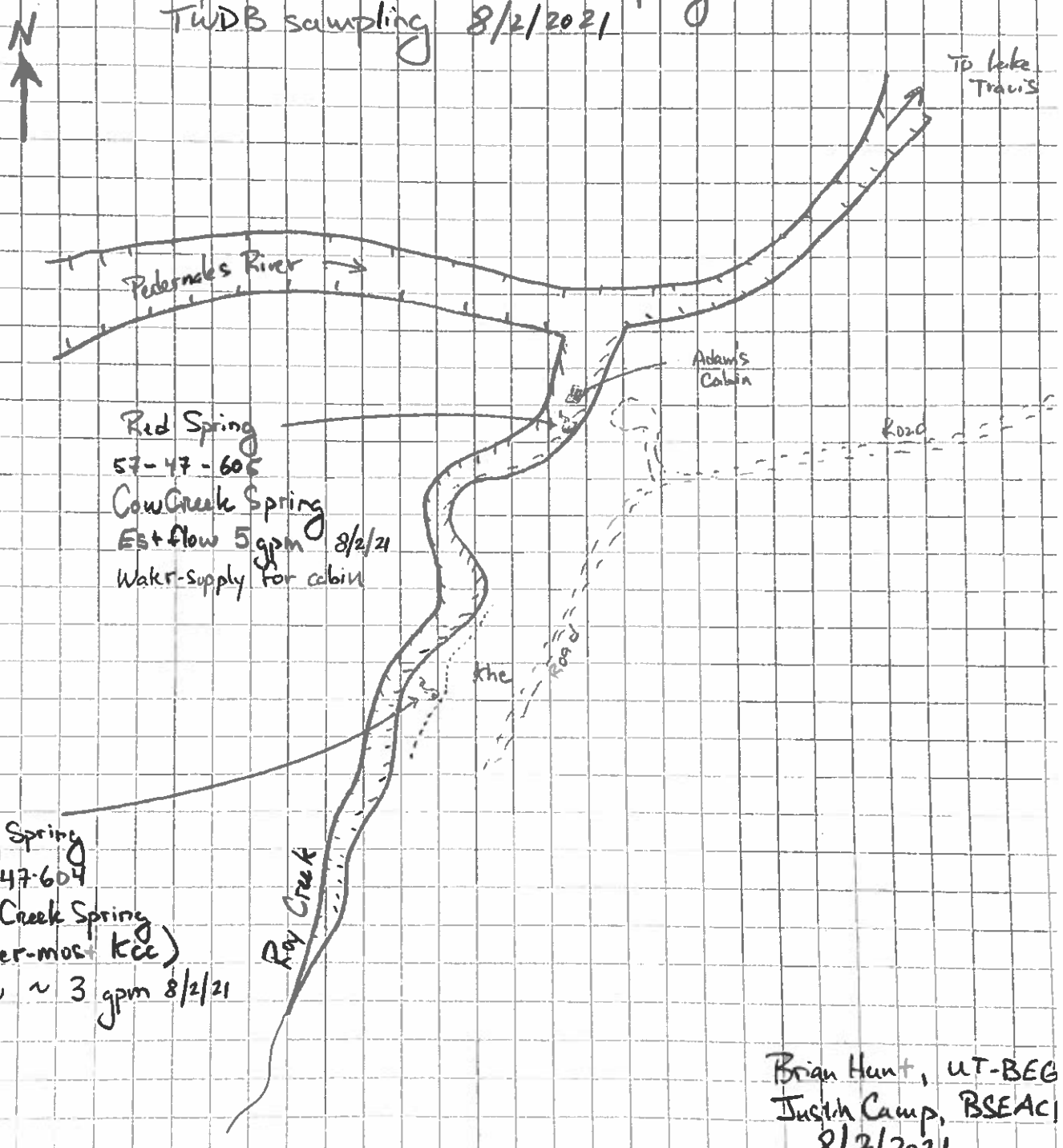
- -

Well Number _____

V:/SurfaceWaterResources/Groundwater/WaterQuality/WellSchedule

APP000371

Roy Creek - Adam's Preserve Springs
TWDB sampling 8/2/2021



Red Spring
57-47-605
Cow Creek Spring
Est flow 5 gpm 8/2/21
Water-Supply for cabin

Big Spring
57-47-604
Cow Creek Spring
(upper-most kcc)
Flow ~ 3 gpm 8/2/21

Brian Hunt, UT-BEG
Justin Camp, BSEACD
8/2/2021

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID: TWDB
Lab ID: Q2120544002
Sample ID: 5747605 RED SPRING
Project ID: TWDB CAN

Date Collected: 08/02/2021 09:40
Date Received: 08/05/2021 09:05
Location:
Facility:
Sample Point:

Matrix: Aqueous
Sample Type: SAMPLE

ALKALINITY (SM2320B, Alkalinity)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phenolphthalein Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Hydroxide Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Bicarbonate Alkalinity	325	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Carbonate Alkalinity	0.00	mg/L	0.00	0.00		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	N
Total Alkalinity (CaCO3)	325	mg/L	20.0	20.0		1	08/06/2021 00:00	ME	08/06/2021 00:00	ME	

HEAVY METALS (E245.1 Mercury Water)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Mercury Dissolved	<0.200	ug/L	0.200	0.0700		1	08/17/2021 16:55	FM	08/19/2021 10:54	FM	

INORGANICS (E200.7 Prep/E200.7 Metals, Trace Elements)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Dissolved	<50.0	ug/L	50.0	20.0		1	08/10/2021 14:00	ERR	08/18/2021 15:45	FM	
Calcium Dissolved	97.6	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 15:45	FM	
Strontium Dissolved	439	ug/L	10.0	4.00		1	08/10/2021 14:00	ERR	08/18/2021 15:45	FM	
Iron Dissolved	<50.0	ug/L	50.0	20.0		1	08/10/2021 14:00	ERR	08/18/2021 15:45	FM	
Magnesium Dissolved	26.8	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 15:45	FM	
Potassium Dissolved	0.628	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 15:45	FM	
Sodium Dissolved	5.70	mg/L	0.200	0.0700		1	08/10/2021 14:00	ERR	08/18/2021 15:45	FM	

APP000373

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID: TWDB
Lab ID: Q2120544002
Sample ID: 5747605 RED SPRING
Project ID: TWDB CAN

Date Collected: 08/02/2021 09:40
Date Received: 08/05/2021 09:05
Location:
Facility:
Sample Point:

Matrix: Aqueous
Sample Type: SAMPLE

INORGANICS (E200.8, ICP-MS Prep/E200.8, ICP-MS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Aluminum Dissolved	<5.00	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Antimony Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Arsenic Dissolved	<1.00	ug/L	1.00	0.700		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Barium Dissolved	46.4	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Beryllium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Cadmium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Chromium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Cobalt Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Copper Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Lithium Dissolved	3.78	ug/L	2.00	0.700		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	N
Lead Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Manganese Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Molybdenum Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Selenium Dissolved	<5.00	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Silver Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Thallium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Uranium Dissolved	<1.00	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	N
Vanadium Dissolved	2.63	ug/L	1.00	0.400		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	
Zinc Dissolved	<5.00	ug/L	5.00	1.50		1	08/10/2021 13:59	ERR	08/11/2021 22:54	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride DIssolved	10.1	mg/L	1.00	0.400		1	08/06/2021 05:58	FO	08/06/2021 05:58	FO	
Bromide Dissolved	0.0668	mg/L	0.0200	0.00800		1	08/06/2021 05:58	FO	08/06/2021 05:58	FO	
Fluoride Dissolved	0.205	mg/L	0.0100	0.00400		1	08/06/2021 05:58	FO	08/06/2021 05:58	FO	
Sulfate Dissolved	11.6	mg/L	1.00	0.400		1	08/06/2021 05:58	FO	08/06/2021 05:58	FO	

INORGANICS (SM1030B Cation/Anion Balance)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Cation/Anion Balance	2.120	%				1	08/19/2021 11:29	CW	08/19/2021 11:29	CW	

NITRATE AND NITRITE (SM4500-NO3-H, Nitrate/Nitrite)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Nitrate/Nitrite as N Dissolved	0.0661	mg/L	0.0200	0.00800		1	08/09/2021 00:00	ME	08/09/2021 00:00	ME	

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Analytical Results

Client ID:	TWDB	**Date Collected:**	08/02/2021 09:40	**Matrix:**	Aqueous
Lab ID:	Q2120544002	**Date Received:**	08/05/2021 09:05	**Sample Type:**	SAMPLE
Sample ID:	5747605 RED SPRING	**Location:**			
Project ID:	TWDB CAN	**Facility:**			
		Sample Point:			

SILICA (SM4500-SiO2-C, Silica)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Silica as SiO2, Dissolved	11.4	mg/L	0.500	0.200		1	08/11/2021 00:00	ME	08/11/2021 00:00	ME	

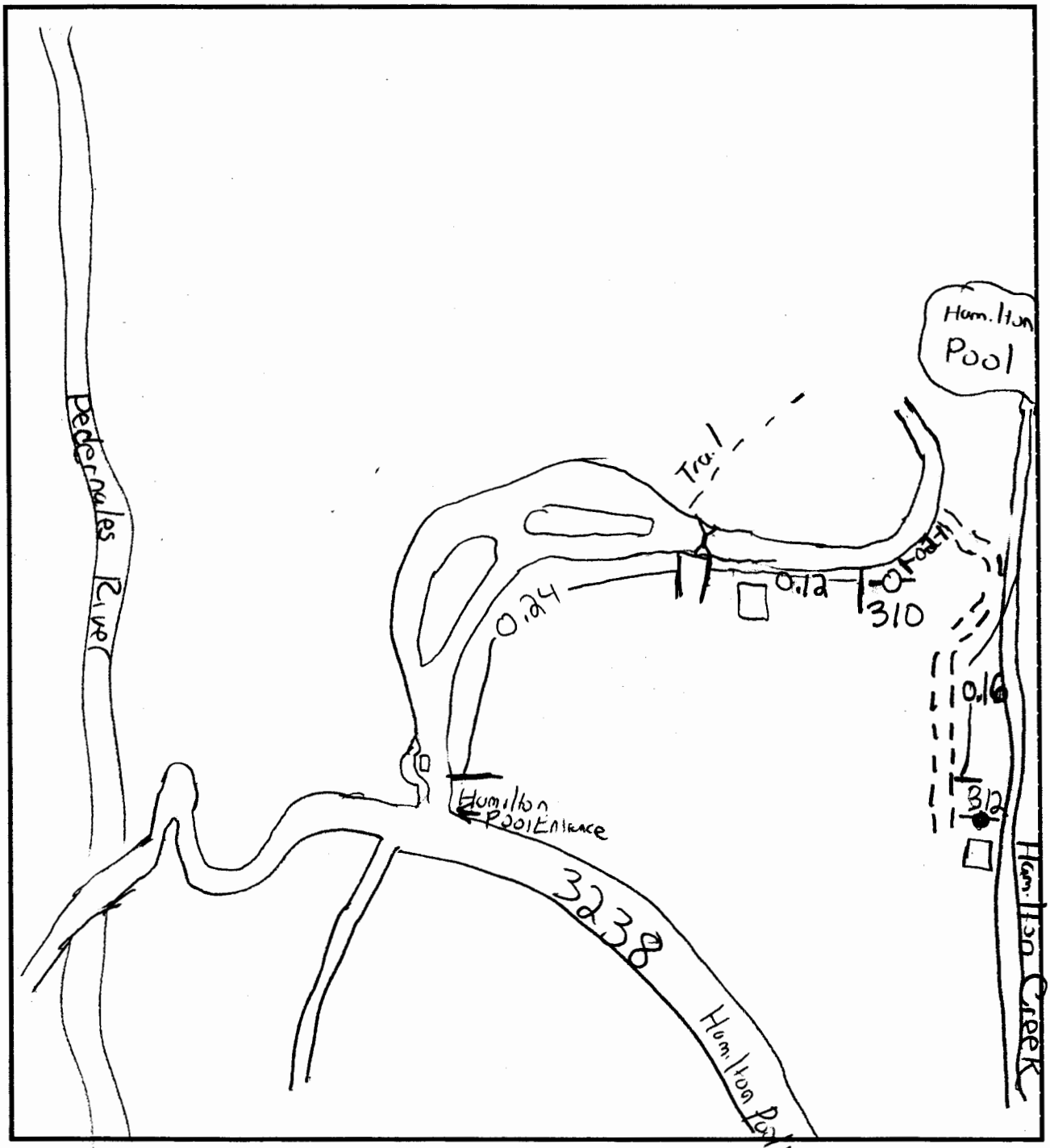
TOTAL PHOSPHATE AS P (E365.4 / E351.2 Water Prep/E365.4 Phosphorus, Total)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phosphorus, Dissolved (As P)	<0.0200	mg/L	0.0200	0.00800		1	08/11/2021 15:24	ERR	08/12/2021 00:00	ME	

Texas Water Development Board - Well Location Sketch

By: CC Date: 11/13/17 G.P.S Coordinates: 30° 20' 22.76" 98° 07' 41.64"

County Travis M.P. = _____ State Well Number: 57-47-312



State Well Number 57-47-312

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 57-48-119

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5748119
County	Travis
River Basin	Colorado
Groundwater Management Area	9
Regional Water Planning Area	K - Lower Colorado
Groundwater Conservation District	Southwestern Travis County GCD
Latitude (decimal degrees)	30.3335667
Latitude (degrees minutes seconds)	30° 20' 00.84" N
Longitude (decimal degrees)	-98.12355
Longitude (degrees minutes seconds)	098° 07' 24.78" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218CCRK - Cow Creek Limestone
Aquifer	Trinity
Aquifer Pick Method	Provided by Groundwater Conservation District
Land Surface Elevation (feet above sea level)	893
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	200
Well Depth Source	Other (see remarks)
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Stock
Water Level Observation	GCD Current Observation Well
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Marvin Myers
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	8/15/2022
Last Update Date	8/15/2022

Remarks	Well depth estimated.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
6	Blank	Plastic (PVC)				

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

Scanned Documents do not exist for this well

Attachment 16 – Groundwater Quality Technical Report

Groundwater Quality Technical Report

The Trinity Aquifer is a major aquifer that extends across much of the central and northeastern part of the state. It is composed of several smaller aquifers contained within the Trinity Group. Although referred to differently in different parts of the state, they include the Antlers, Glen Rose, Paluxy, Twin Mountains, Travis Peak, Hensell, and Hosston aquifers. These aquifers consist of limestones, sands, clays, gravels, and conglomerates. Their combined freshwater saturated thickness averages about 600 feet in North Texas and about 1,900 feet in Central Texas. The Hickory Aquifer stretches across 19 counties in the Llano Uplift region of Central Texas. Hickory Sandstone outcrops are non-continuous and may overlie or run along Precambrian rocks that form the uplift core. In general, groundwater is fresh but very hard in the outcrop of the aquifer. Total dissolved solids increase from less than 1,000 milligrams per liter in the east and southeast to between 1,000 and 5,000 milligrams per liter, or slightly too moderately saline, as the depth to the aquifer increases. Sulfate and chloride concentrations also tend to increase with depth. The aquifer is one of the most extensive and highly used groundwater resources in Texas. Although its primary use is for municipalities, it is also used for irrigation, livestock, and other domestic purposes. Some of the state's largest water level declines, ranging from 350 to more than 1,000 feet, have occurred in counties along the IH-35 corridor from McLennan County to Grayson County. These declines are primarily attributed to municipal pumping, but they have slowed over the past decade as a result of increasing reliance on surface water.

According to the Geologic Atlas of Texas, the site is located in the Trinity Group. Sand, silt, clay, and conglomerate: conglomerate, cemented, composed chiefly of pebbles and cobbles of Paleozoic rocks: forms shoreward fades of Glen Rose Limestone. Occupies essentially same position as the Antlers Sand north of the high area of Paleozoic rocks south of Brady on the Brownwood sheet. South of this area of Paleozoic rocks on the Brownwood Sheet, for consistency, the rocks mapped as Antlers should have been shown as Hensell. The wells closest to the site show a groundwater depth between 32 and 420 feet. Wells at this depth, with data available on the Texas Water Development Board’s database, have an average total dissolved solids of about 1,500 mg/L; that value varies greatly both between individual wells and over time in the same well. The proposed subsurface area drip dispersal system (SADDS) is to be designed as per the Texas Administrative Code Title 30, Part 1, Chapter 222 Subsurface Area Drip Dispersal Systems Subchapter D: Design Criteria; which states the dispersal lines with emitters are to be placed between six and 48 inches below the surface of the soil. Additionally, the hydraulic application rate shall not exceed 0.1 gallons per square foot per day as per the requirements in Subchapter C: Siting Requirements and Effluent Limitations. Given this information, and the shallowest depth of the closest wells being 32 feet; the effluent will not be discharged into the groundwater table. A comparison of water quality constituents between the effluent and the native aquifer water will show that the effluent will be of higher quality.

Vegetation in the irrigation area consists primarily of native grasses, cedar trees, and scattered oak trees, all vegetation in the proposed irrigation area will be removed and replaced with a mix of native and non-native grasses, including pearl millet, and be over-seeded with cereal rye grain for the winter growing season. The native and non-native grass mix will be similar to Coastal Bermuda, which actively

grows when base temperatures are above 55°F, in both water needs and nutrient uptake. The cereal rye grain, a cool season grass, will provide year-round vegetative growth within the irrigation area. These grasses are highly salt tolerant and are assumed to have minimum electrical conductivities of 8 milliohms/cm. In addition to these grasses, native vegetation will be allowed to grow in the disposal area. The list of plants is attached to this report and these plants were selected by the landscape architect for their high nitrogen holding capacity and tolerance of soil saturation, as well as similarity to Bermuda grasses in terms of water uptake. All water and nutrient requirements of the crops will be supplied by precipitation and effluent irrigation. The effluent application rate will not exceed 0.1 gallons per square foot per day and the nitrogen loading rate will not exceed 0.91 pounds of total nitrogen per acre per day, to allow for the vegetation to take up as much water and nutrients as possible. Although the effluent is not to be discharged into the groundwater table, the effluent dispersed through the SADDS that has been treated by the vegetation will show a higher quality than that of a sample collected from the local groundwater.

There are fifteen wells within the property boundary. Well #531673 was a domestic well but was plugged and abandon on December 19th, 2019. There are four wells within ¼ of a mile of the effluent drip fields. Within a mile of the drip fields, there are over 50 wells, including 5 plugged wells. The State of Texas well records for all wells within 1 mile radius of the proposed effluent disposal fields and wastewater treatment plant are attached to the Domestic Technical Report, as Attachment 15, along with a map showing the well locations, as Attachment 13. A USDA soil map is also attached to the Domestic Technical Report, as part of Attachment 17.

Attachment 17 – USDA Soil Survey Map

United States Department of Agriculture

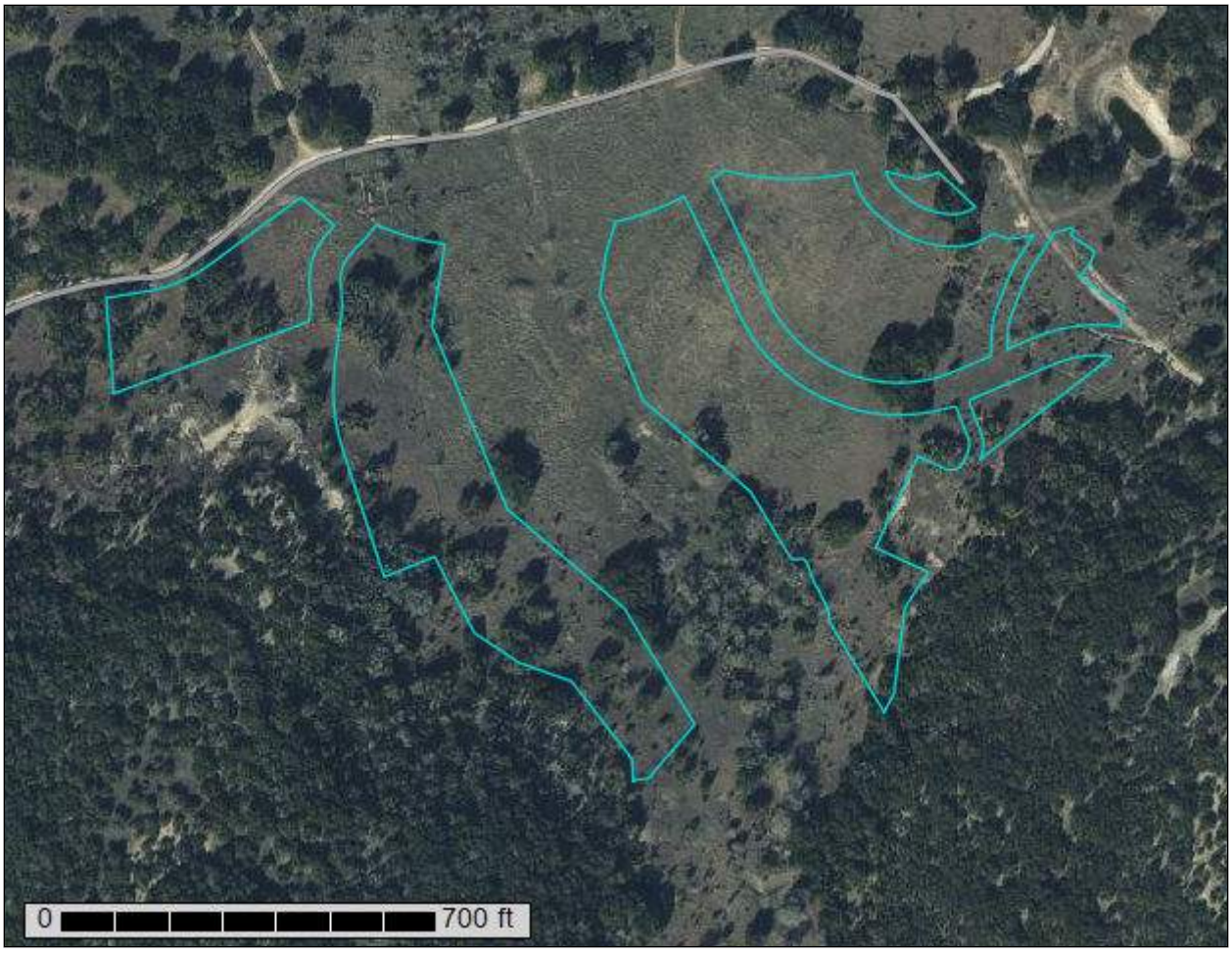
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Comal and Hays Counties, Texas

Mirasol Proposed TLAP Areas



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

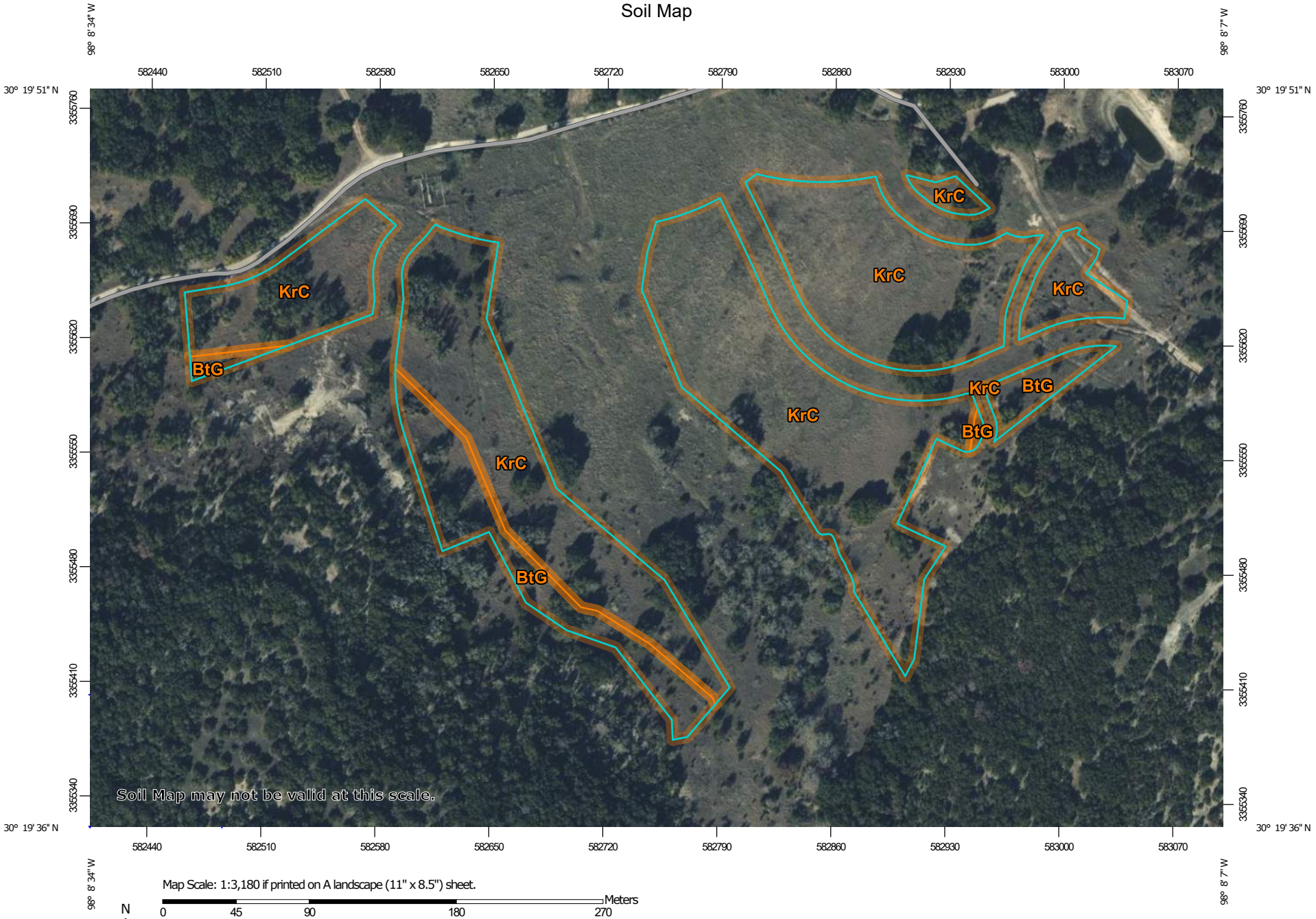
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:3,180 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

APP000393

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 19, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 15, 2019—Dec 19, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BtG	Brackett-Rock outcrop-Real complex, 8 to 30 percent slopes	2.2	13.5%
KrC	Krum clay, 3 to 5 percent slopes	14.0	86.5%
Totals for Area of Interest		**16.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Comal and Hays Counties, Texas

BtG—Brackett-Rock outcrop-Real complex, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t2m3
Elevation: 470 to 1,900 feet
Mean annual precipitation: 32 to 37 inches
Mean annual air temperature: 66 to 68 degrees F
Frost-free period: 230 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Brackett and similar soils: 38 percent
Rock outcrop: 25 percent
Real and similar soils: 22 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brackett

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 6 inches: gravelly clay loam
Bk - 6 to 14 inches: gravelly clay loam
Cr - 14 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 90 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R081CY362TX - Steep Adobe 29-35 PZ
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Limestone

Typical profile

R - 0 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: 0 to 2 inches to lithic bedrock
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Real

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 4 inches: gravelly loam
Ak - 4 to 14 inches: extremely gravelly loam
Cr - 14 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 8 to 19 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 70 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R081CY362TX - Steep Adobe 29-35 PZ
Hydric soil rating: No

Minor Components

Eckrant

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Backslope, footslope, summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R081BY350TX - Steep Rocky 23-31 PZ
Hydric soil rating: No

Volente

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

KrC—Krum clay, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2t2j6
Elevation: 620 to 1,820 feet
Mean annual precipitation: 31 to 37 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 230 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Krum and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Krum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous silty and clayey alluvium derived from limestone

Typical profile

A - 0 to 13 inches: clay
Bk1 - 13 to 27 inches: clay
Bk2 - 27 to 40 inches: clay
Ck - 40 to 80 inches: clay

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Bolar

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Doss

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex

Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Lewisville

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

References

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RECHARGE FEATURE PLAN
for the
MIRASOL SPRINGS
WATER RECLAMATION FACILITY TLAP

Prepared for:

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c/o Clancy Utility Holdings, LLC
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Prepared by:

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July 2023

TABLE OF CONTENTS

INTRODUCTION

This Recharge Feature Plan (RFP) and attachments have been prepared to incorporate information required by the Texas Commission on Environmental Quality (TCEQ) in support of permitting Subsurface Area Drip Dispersal System (SADDS) for Mirasol.

In preparing this plan, the following databases/resources were researched for geology, soil, well, and groundwater information:

- Landowner(s), existing and previous (where possible);
- Submitted Driller's Report Database;
- TCEQ Water Well Database;
- Texas Water Development Board Groundwater Database;
- Water Utility Database;
- Railroad Commission of Texas;
- Natural Resources Conservation Service;
- Southwestern Travis County Groundwater Conservation District;
- Hays Trinity Groundwater Conservation District – note: no response was received to our inquiry; and
- Westcave Outdoor Discovery Center – note: no response was received to our inquiry.

SITE DESCRIPTION AND GEOLOGY

The site is located on the border of both Travis County and Hays County on the south of the Hamilton Pool Road (RR 3238) – Stagecoach Ranch Road intersection. The proposed SADDS sites are currently undeveloped. The SADDS sites are located within the Trinity Group and in the Hickory aquifer (minor). The Trinity Aquifer is a major aquifer that extends across much of the central and northeastern part of the state. It is composed of several smaller aquifers contained within the Trinity Group. Although referred to differently in different parts of the state, they include the Antlers, Glen Rose, Paluxy, Twin Mountains, Travis Peak, Hensell, and Hosston

aquifers. These aquifers consist of limestones, sands, clays, gravels, and conglomerates. Their combined freshwater saturated thickness averages about 600 feet in North Texas and about 1,900 feet in Central Texas. The Hickory Aquifer stretches across 19 counties in the Llano Uplift region of Central Texas. Hickory Sandstone outcrops are non-continuous and may overlie or run along Precambrian rocks that form the uplift core.

According to the Geologic Atlas of Texas, the site is located in the Trinity Group in the Hensel Sand rock unit which is composed of sand, silt, clay, and conglomerate: conglomerate, cemented, composed chiefly of pebbles and cobbles of Paleozoic rocks: forms shoreward fades of Glen Rose Limestone. Occupies essentially same position as the Antlers Sand north of the high area of Paleozoic rocks south of Brady on the Brownwood sheet. South of this area of Paleozoic rocks on the Brownwood Sheet, for consistency, the rocks mapped as Antlers should have been shown as Hensell. The Hydrogeologic Atlas of the Hill Country shows no recorded Karst features within 500 feet of the proposed SADDS field locations (Weirman, Broun, & Hunt, 2010).

The drainage from the site and surrounding areas will either flow into the Pedernales River or a tributary that flows into the Pedernales River. The groundwater in the area also flows toward the Pedernales River (Kuniansky & Ardis, 2004).

There is an unnamed tributary to the Pedernales River that has intermittent flow. This feature has not been carrying water during any of the site investigations made by the engineer or consultants and no data could be located on historical flows or floods. A buffer zone of at least 100 feet has been included in the design of the drip fields to protect the tributary.

The SADDS sites and surrounding areas were visited to evaluate whether any recharge feature such as caves, sinkholes, faults, fractures, or other permeable features that could potentially serve as recharge features were present. No such features were observed. Several wells were located within the site vicinity; however, all of the area wells are not public water supply wells

and a 150’ buffer is maintained from the proposed SADDS sites. A spring is also near the site; a 500ft buffer is maintained from the SADDS site. All appropriate setbacks will be maintained between surface waters and the SADDS area. If any features are encountered during future field investigations or during construction, we will ensure that the appropriate setbacks are maintained per TAC §222.81.

GROUNDWATER

The site is located along the Trinity Aquifer. The aquifer is one of the most extensive and highly used groundwater resources in Texas. Although its primary use is for municipalities, it is also used for irrigation, livestock, and other domestic purposes. There are fifteen wells within the property boundary. Well #531673 was a domestic well but was plugged and abandon on December 19th, 2019. There are four wells within ¼ of a mile of the effluent drip fields. Within a mile of the drip fields, there more than 50 wells ranging 0 feet – 1,134 feet in depth including two springs and five plugged wells. The State of Texas well records for all wells within 1 mile radius of the drip fields are attached to the Domestic Technical Report as Attachment 15. A USDA soil map as well as a map displaying the locations of the wells are also attached to the Domestic Technical Report, as Attachments 17 and 13, respectively. Table 1 lists the wells within one-half mile of the drip field location. The two springs included in the table are located between the proposed drip fields and the Pedernales River.

Table 1: Wells within 1/2-mile of Proposed Drip Field

Well #	Water Level	Land Surface
5188	No Data	815 ft MSL*
372073	No Data	971 ft MSL
502584	140 ft	970 ft MSL*
527515	110 - 185 ft	955 ft MSL
527548	129 ft	954 ft MSL
534551	145 ft	875 ft MSL
535035 (5747316)	32 ft	971 ft MSL
556939 (5747314)	153 ft	968 ft MSL
5747305	165 ft	828 ft MSL
5747604	Spring	816 ft MSL
5747605	Spring	753 ft MSL

Note: Land surface elevations marked * were not available in the well report data were obtain using the provided coordinates and available topo.

Based on the information available for the nearby wells, and the elevation at the proposed site, the groundwater is anticipated to be approximately 50 to 100 ft below ground.

PREVENTATIVE MEASURES

Buffer zones from the SADDS and WWTP will be maintained to prevent impacts to recharge features, which only include the unnamed tributary. Appropriate buffer zones (i.e. setbacks) as defined in TAC §222.81(a) are met under the existing site conditions, including the proposed SADDS. These setbacks include a minimum 150 feet to existing on-site and off-site private water wells. The setback will be a minimum of 500 feet to existing on-site and off-site public water supply wells. These buffer zones are shown on the exhibit in Appendix A. There are also setbacks from creeks as prescribed in Chapter 222. The appropriate setback from surface waters will be maintained.

REFERENCES

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Appendix A

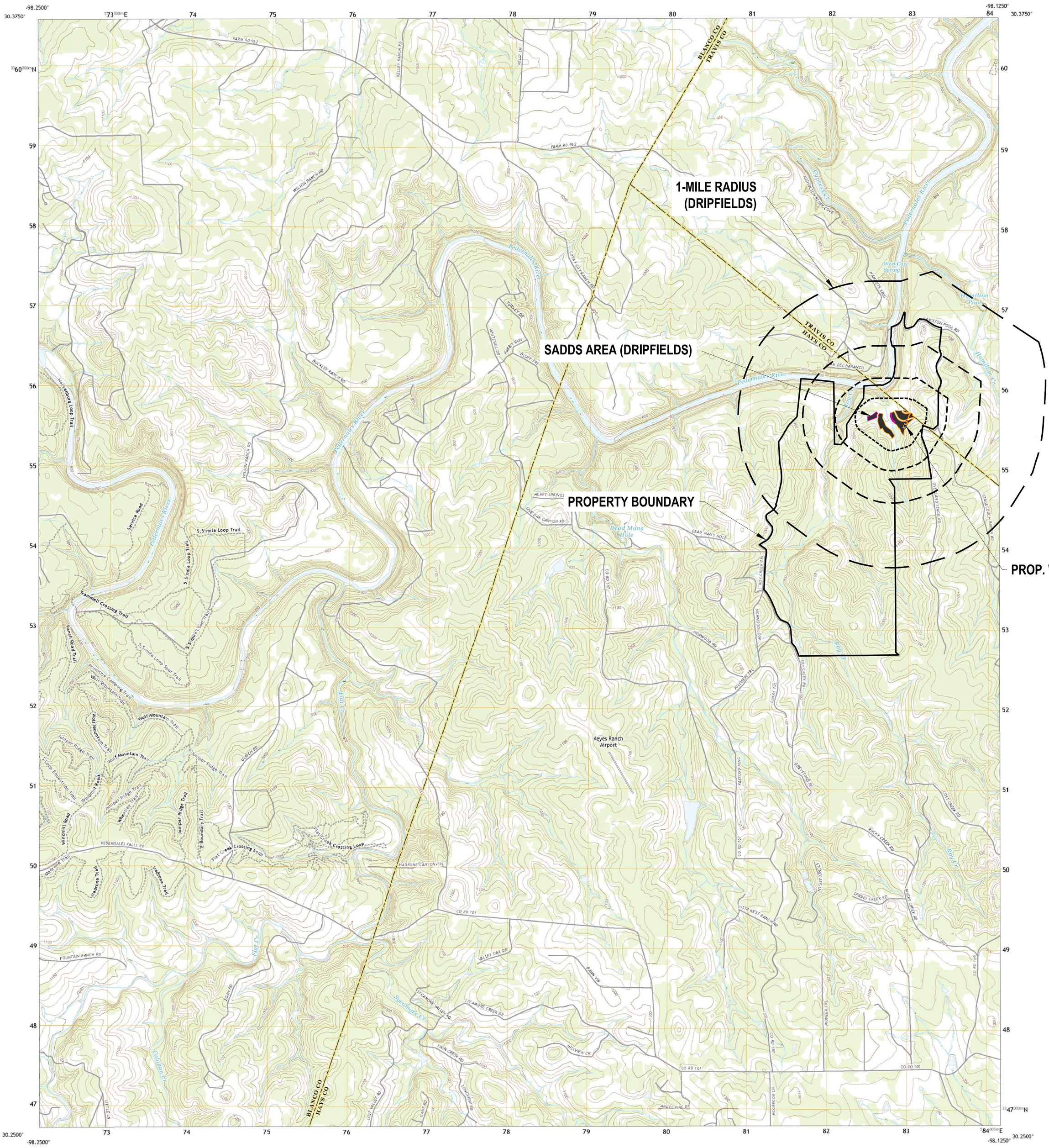
Project Location – Proposed SADDS Fields and WWTP

USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

HAMMETTS CROSSING QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, September 2016 - November 2016
Roads.....U.S. Census Bureau, 2015
Names.....GNIS, 2000 - 2003
Hydrography.....National Hydrography Dataset, 2002 - 2018
Contours.....National Elevation Dataset, 2010
Boundaries.....Multiple sources; see metadata file 2016 - 2017

Wetlands.....FWS National Wetlands Inventory 1983

MN
GN
0°55'
7 MILS
3°56'
70 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NU
Grid Zone Designation
14R

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1 0.5 0 1
MILES
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FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Round Mountain
2 Spicewood
3 Pace Bend
4 Pedernales Falls
5 Shingle Hills
6 Yeager Creek
7 Henly
8 Dripping Springs

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

HAMMETTS CROSSING, TX
2019

NSN. 7643016396434
NGA REF NO. USGSX24K70297

FOR PLANNING PURPOSES ONLY

0 1000 2000 4000
2000 1500 1000 500
(SCALE IN FEET)
SCALE: 1" = 2,000'

N

LEGEND
SERVICE AREA BOUNDARY
SADDS AREA (DRIPFIELDS)
1-MILE RADIUS (DRIPFIELDS)

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DESIGNED BY: ANA
DRAWN BY: MLH
CHECKED BY: ANA
APPROVED BY: ANA
DATE: March 29, 2023

MEC
MURFEE ENGINEERING COMPANY
1101 CAPITAL OF TEXAS HIGHWAY SOUTH
BUILDING D, SUITE 110
AUSTIN, TEXAS 78746
(512) 327-9204
Texas Registered Engineering Firm F-353

MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility

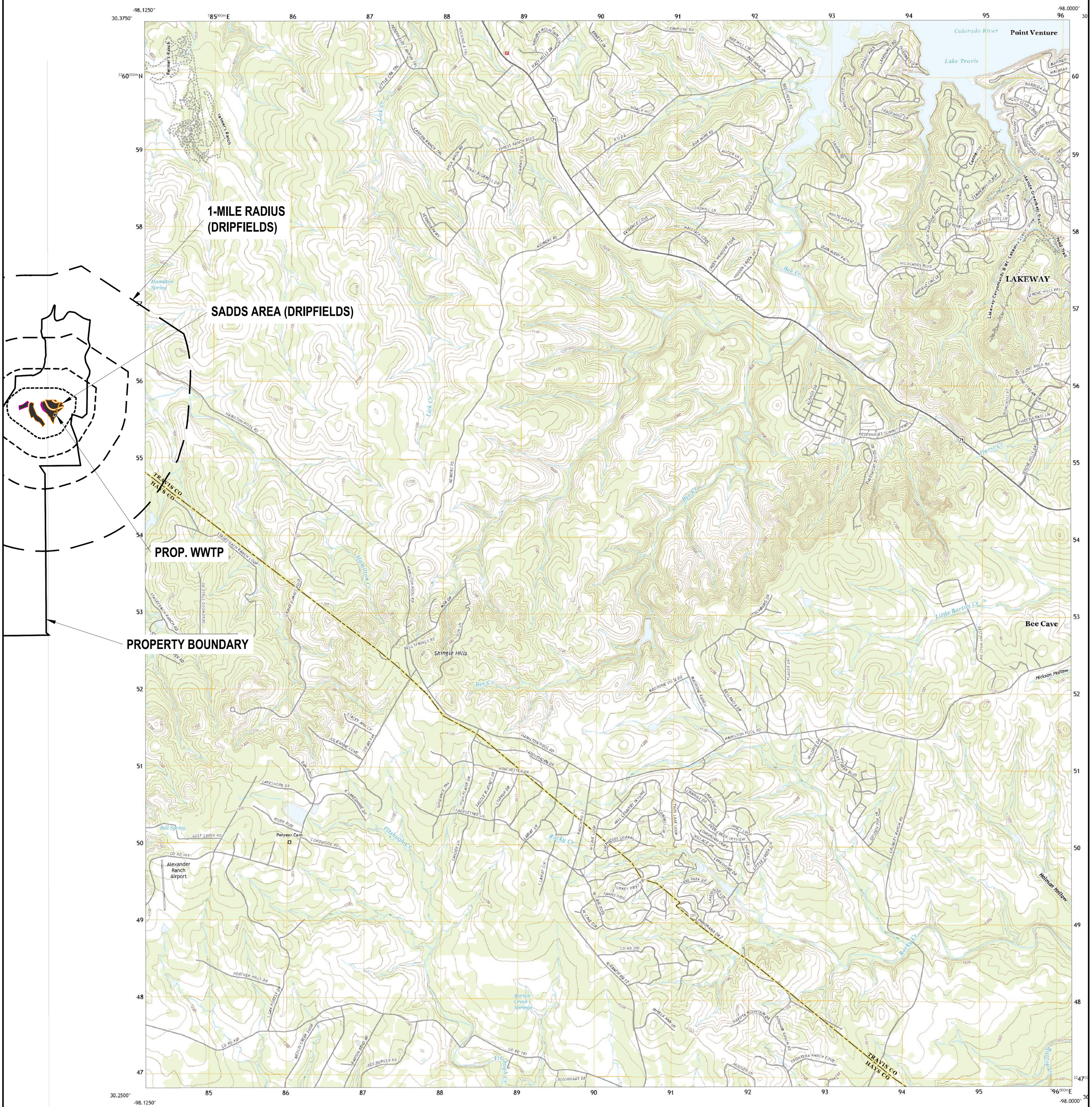
ORIGINAL FULL-SIZED USGS TOPOGRAPHIC MAP

FILE: W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT)-USGS WELL MAP-TOPO-MIRASOL.dwg

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

SHINGLE HILLS QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
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This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery	NAIP,	September 2016 - November 2016
Roads	U.S. Census Bureau,	2015
Names	GNIS,	1979 - 2015
Hydrography	National Hydrography Dataset,	2002 - 2018
Contours	National Elevation Dataset,	2002 - 2010
Boundaries	Multiple sources; see metadata file	2016 - 2017
Wetlands	FWS National Wetlands Inventory	1983

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
MN
GN
0°28'
9 MILS
3°52'
69 MILS
U.S. National Grid
100,000-m Square ID
NU
Grid Zone Designation
14R

SCALE 1:24 000
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1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Spicewood
2 Pace Bend
3 Mansfield Dam
4 Hammetts Crossing
5 Bee Cave
6 Henly
7 Dripping Springs
8 Signal Hill

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

SHINGLE HILLS, TX
2019

FOR PLANNING PURPOSES ONLY

0 1000 2000 4000
2000 1500 1000 500
(SCALE IN FEET)
N
SCALE: 1" = 2,000'

LEGEND
SERVICE AREA BOUNDARY
SADDS AREA (DRIPFIELDS)
1-MILE RADIUS (DRIPFIELDS)

DESIGNED BY: ANA
DRAWN BY: MLH
CHECKED BY: ANA
APPROVED BY: ANA
DATE: March 29, 2023

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MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility

ORIGINAL FULL-SIZED USGS TOPOGRAPHIC MAP

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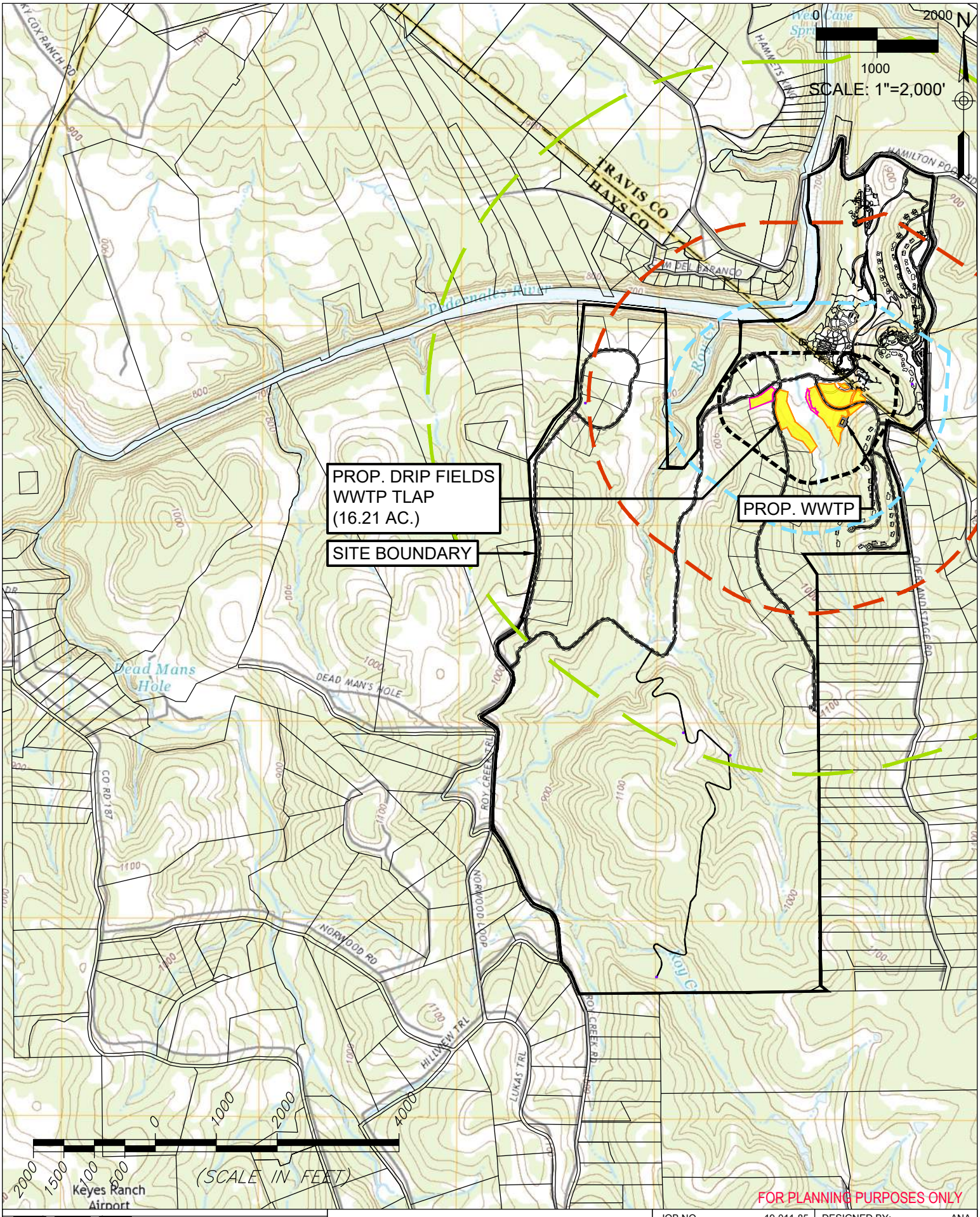
APP000412



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MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility
Site Drawing

JOB NO.	19-011-85	DESIGNED BY:	ANA
DATE:	3/28/2023	DRAWN BY:	MJS/RLW
SCALE:	AS NOTED	CHECKED BY:	ANA

APP000413

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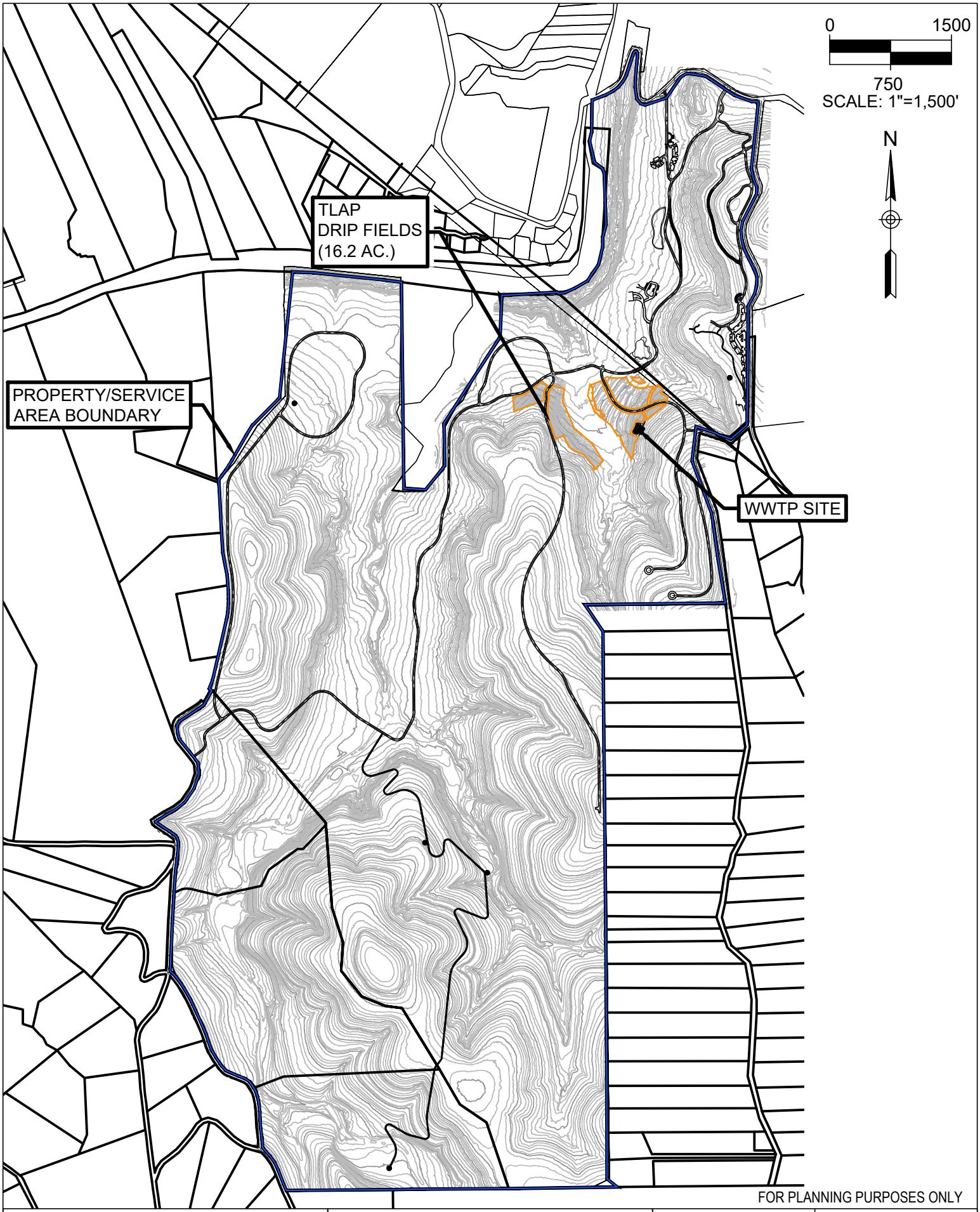

FOR PLANNING PURPOSES ONLY

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MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility
Site Drawing

JOB NO.	23004-220	DESIGNED BY:	ANW
DATE:	9/19/2023	DRAWN BY:	MJS/RLW
SCALE:	AS NOTED	CHECKED BY:	ANW

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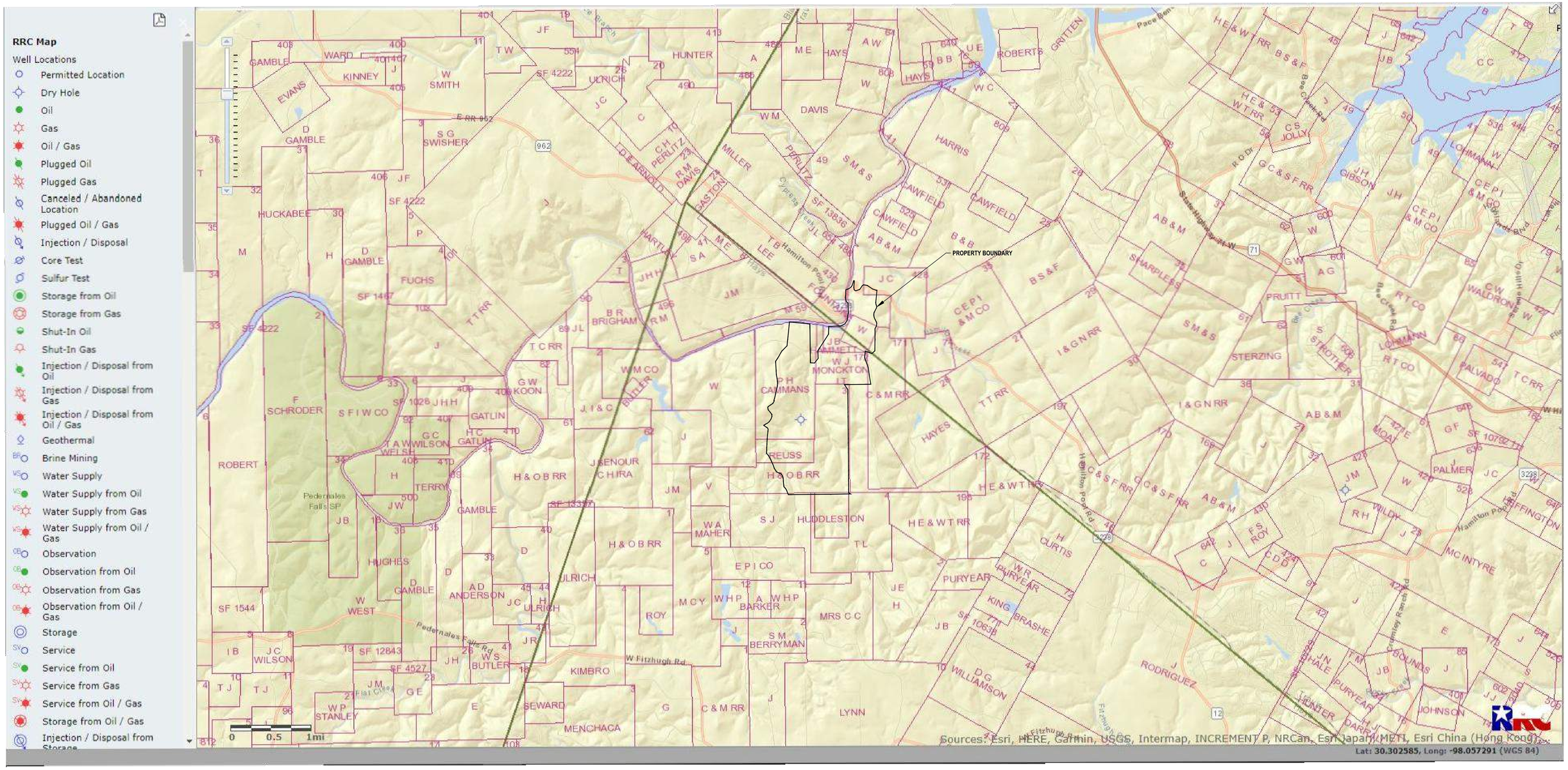
Appendix B

Railroad Commission Map



PRELIMINARY DRAWING
FOR PLANNING PURPOSES ONLY

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MIRASOL SPRINGS RANCH TLAP
RECHARGE FEATURE PLAN
RAILROAD COMMISSION MAP

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Attachment 19 – Soil Evaluation Plan and Soil Sampling and Testing

ATTACHMENT 3.3-3b

MIRASOL

SOILS EVALUATION

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Prepared by:
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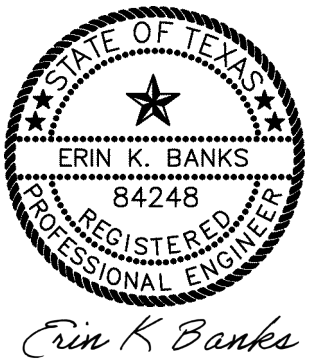
April 3, 2023



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Soils Site Investigation for Mirasol Development
Hays and Travis Counties, Texas

INTRODUCTION

WWD Engineering is providing technical services to support Murfee Engineering in preparing a Texas Land Application Permit (TLAP) wastewater permit application. This system is to include subsurface area drip disposal systems (SADDS) on the proposed future development known as the Mirasol (the "Site"). The site is located on Hamilton Pool Road, just east of the Pedernales Riveralong the Hays Travis County line.

The site is not located in the Edwards Aquifer Recharge or Contributing Zone. We are proposing to utilize a SADDS disposal method at this site. The treated effluent irrigation system will utilize a drip irrigation management system to allow for accurate control of the proposed surface drip treated effluent irrigation system. The subsurface drip irrigation system will utilize drip tubing that is embedded with compensating drip emitters to ensure accurate and uniform dosing of the irrigation sites. The site will retain all of the trees that are present now. The tubing will be buried 6" – 8" below the surface of the ground.

A site investigation was performed to obtain information to evaluate the soils and assist in the design of the drip irrigation system. This report summarizes the findings of this investigation.

Management Plan

The proposal for the treated effluent application areas is to utilize Bermuda grass and Winter Rye for establishing a cover crop. Herbaceous vegetation will be used to vegetate the areas where soils will be imported and areas where clearing will occur.

In developing the irrigation areas, upslope surface drainage will be diverted to prevent run-on onto the treated effluent application areas. Areas where drainage appears to be concentrated, and active, should be buffered from application of treated effluent.

Where soils are not sufficient, a suitable material will need to be imported to ensure that there is at least one foot of rootable material beneath the dripper lines. This will ensure that there is sufficient rooting depth to allow for the growth of herbaceous vegetation that will utilize the treated effluent.

All areas will be seeded with high performance turf grass vegetation and will include warm season and cool season vegetation. This will help ensure that there is a viable cover crop growing at all times to uptake the water and nutrients associated with the treated effluent. Most species can and will utilize N levels much greater than 100-150 lbs of N/acre/yr. These areas will be mowed to ensure that the vegetation continues to exhibit vigorous growth habits and to maximize the uptake potentials and to ensure that a standing crop does not interfere with the establishment of the following seasons' vegetation emergence.

Site Details

Geology

According to the Geologic Atlas of Texas, Llano Sheet, this site is located on the Upper Glen Rose (Kgr(u)) and the Hensell Sand (Kh) formations. The official description of the Glen Rose is:

> "Glen Rose Limestone, Kgr, limestone, dolomite, and marl subdivided into two units by a Corbula bed; alternating resistant and recessive beds forming stairstep topography; limestone, aphanitic to fine-grained, hard to soft and marly, light-gray to yellowish-gray; dolomite, fine-grained, porous, yellowish-brown; marine megafossils include molluscan steinkerns, rudistids, oysters, and echinoids; upper part relatively thinner bedded, more dolomitic and less fossiliferous than lower part, thickness about 220 feet; lower part more massive and about 160 feet thick, includes at top Corbula Bed, C, with abundant steinkerns of Corbula harveyi (Hill) in an interval up to 5 feet thick; thickness of Glen Rose 380+/- feet[1]."

The Hensell Sand formation is described as" sand, silt, clay and conglomerate; composed chiefly of pebbles and cobbles of Paleozoic and Precambrian rocks"

USDA-Soil Survey

A soils map is located in the Appendix of this document. According to the results of the site investigation and visual observations, the soils at this site consists of clay loam, gravelly clay loam, cobbly clay and alluvium.

Climate

According to the USDA-SCS Soil Survey for Hays and Travis County, Texas, the climate in Hays and Travis County is humid subtropical and is characterized by hot summers and relatively mild winters. Temperature and rainfall are the climatic factors that have the greatest influence on the formation of soils in these areas. The pattern of rainfall consists of interspersed wet and dry periods.

Vegetation

Vegetation within the areas to be utilized for the initial phases of the project will be planted to improved turf grasses. These areas will be mowed and managed to ensure that the vegetation is actively growing at all times.

Soils

According to the Soil Survey, soils of the treated effluent application site consist of the following soils:

- BlD Brackett-Rock outcrop Real complex, 8 to 30 percent slopes;
- KrC Krum clay, 3 to 5 percent slopes;

[1] Bureau of Economic Geology, 1974, Austin Sheet, Geologic Atlas of Texas, University of Texas

Details regarding these soils are presented in the soils report in the Appendix.

Test Hole Selection

Erin Banks, P.E. selected four representative sites within the areas proposed for the wastewater treatment and disposal areas and representing the soils in the SADDS areas.

It is virtually impossible to try and establish a sampling regime that will sufficiently allow for coverage of inclusional features within the application areas. However, if any of these features are discovered at the time of construction, these areas will be noted and sufficiently evaluated to determine their relevance to the construction and ultimate performance of the treated effluent application sites. The soil descriptions will be followed by pictures for each hole.

Test Hole #3

Vegetation Characteristics

The woody vegetation of this site consisted of large oak with 5% canopy cover. There was 95% herbaceous plant growth in the immediate area of this hole. Surficial stoniness was estimated at 0%. The litter layer coverage was estimated at 0%. Slope of this area was 2-4%.

Soil Characteristics

Total soil depth was 42 inches where refusal was achieved. The profile consisted of two horizons. The primary rooting depth in the hole was 3 inches with no secondary rooting.

Depth of the 1st horizon was 3 inches. The 1st horizon consisted of a silty clay loam material. The 1st horizon consisted of a material that was course in texture and structure. The material in the 1st horizon was a red brown color. There was no mottling evident in the 1st horizon. The 1st horizon consisted of <10% limestone fragments.

Depth of the 2nd horizon was 42 inches. The 2nd horizon consisted of a caliche material. The 2nd horizon consisted of a material that was blocky in texture and structure. The material in the 2nd horizon was tan/red in color. There was no mottling evident in the 2nd horizon. The 2nd horizon consisted of 10% limestone fragments. The boundary between the 1st horizon and the 2nd horizon was level. The boundary between the 2nd horizon and the restrictive horizon was level. In this hole no potential water bearing zones were encountered. In this hole no active water bearing zones were encountered.

Test Hole 3

Test Hole 3

Test Hole #4

Vegetation Characteristics

The woody vegetation of this site consisted of large oak with 5% canopy cover. There was 95% herbaceous plant growth in the immediate area of this hole. Surficial stoniness was estimated at 0%. The litter layer coverage was estimated at 0%. Slope of this area was 2-5%.

Soil Characteristics

Total soil depth was 49 inches where refusal was achieved. The profile consisted of one horizon. The primary rooting depth in the hole was 2 inches with no secondary rooting.

Depth of the 1st horizon was 49 inches. The 1st horizon consisted of a silty clay loam material. The 1st horizon consisted of a material that was coarse in texture and structure. The material in the 1st horizon was a red brown color. There was no mottling evident in the 1st horizon. The 1st horizon consisted of <10% limestone fragments.

Test Hole 4

Test Hole 4

Test Hole #5

Vegetation Characteristics

The woody vegetation of this site consisted of large oak, small oak and juniper with 25% canopy cover. There was 75% herbaceous plant growth in the immediate area of this hole. Surficial stoniness was estimated at 0%. The litter layer coverage was estimated at 0%. Slope of this area was 2-4%.

Soil Characteristics

Total soil depth was 34 inches where refusal was achieved. The profile consisted of two horizons. The primary rooting depth in the hole was 6 inches with no secondary rooting.

Depth of the 1st horizon was 6 inches. The 1st horizon consisted of a sandy loam material. The 1st horizon consisted of a material that was course in texture and structure. The material in the 1st horizon was a red brown color. There was no mottling evident in the 1st horizon. The 1st horizon consisted of <10% limestone fragments.

Depth of the 2nd horizon was 34 inches. The 2nd horizon consisted of a silty clay loam material. The 2nd horizon consisted of a material that was coarse in texture and structure. The material in the 2nd horizon was brown/red in color. There was no mottling evident in the 2nd horizon. The 2nd horizon consisted of 10% limestone fragments. The boundary between the 1st horizon and the 2nd horizon was level. The boundary between the 2nd horizon and the restrictive horizon was level. In this hole no potential water bearing zones were encountered. In this hole no active water bearing zones were encountered.

Test Hole 5

Test Hole 5

Test Hole #6

Vegetation Characteristics

The woody vegetation of this site consisted of large oak, small oak and juniper with 30% canopy cover. There was 70% herbaceous plant growth in the immediate area of this hole. Surficial stoniness was estimated at 0%. The litter layer coverage was estimated at 0%. Slope of this area was 4-6%.

Soil Characteristics

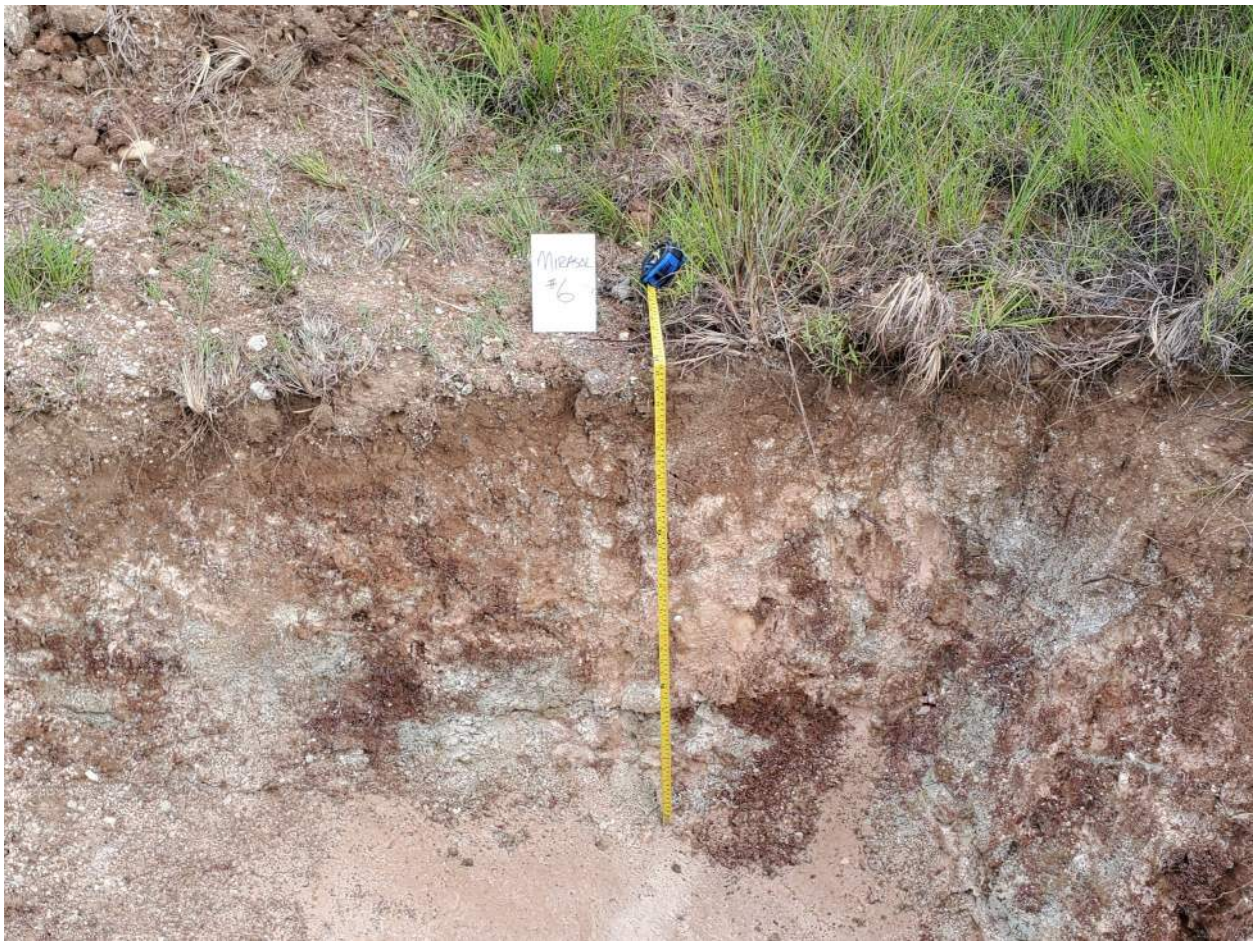
Total soil depth was 34 inches where refusal was achieved. The profile consisted of two horizons. The primary rooting depth in the hole was 6 inches with no secondary rooting.

Depth of the 1st horizon was 10 inches. The 1st horizon consisted of a sandy loam material. The 1st horizon consisted of a material that was course in texture and structure. The material in the 1st horizon was a red brown color. There was no mottling evident in the 1st horizon. The 1st horizon consisted of <10% limestone fragments.

Depth of the 2nd horizon was 34 inches. The 2nd horizon consisted of a silty clay loam material. The 2nd horizon consisted of a material that was coarse in texture and structure. The material in the 2nd horizon was brown/red in color. There was no mottling evident in the 2nd horizon. The 2nd horizon consisted of 10% limestone fragments. The boundary between the 1st horizon and the 2nd horizon was level. The boundary between the 2nd horizon and the restrictive horizon was level. In this hole no potential water bearing zones were encountered. In this hole no active water bearing zones were encountered.

Test Hole 6

Test Hole 6



Appendix I

Site Map

0 300 600
150 450
SCALE: 1"=300'

N

BtD
BID
VoD
ESB
Fearless Treadway
PdB
Hammats Xing
TaD
RUD
CrD
ErG
W
Rw
BID
GP
VoD
BoF
PdB
BtD
KrC
16.21 ACRES
PROPOSED
WWTP SITE
Stagecoach Ranch Rd
Overland Stage
Roy Creek Trl

FILE: W:\Mirasol\Conceptual\MIRASOL-E-TLAP-SOILS.dwg

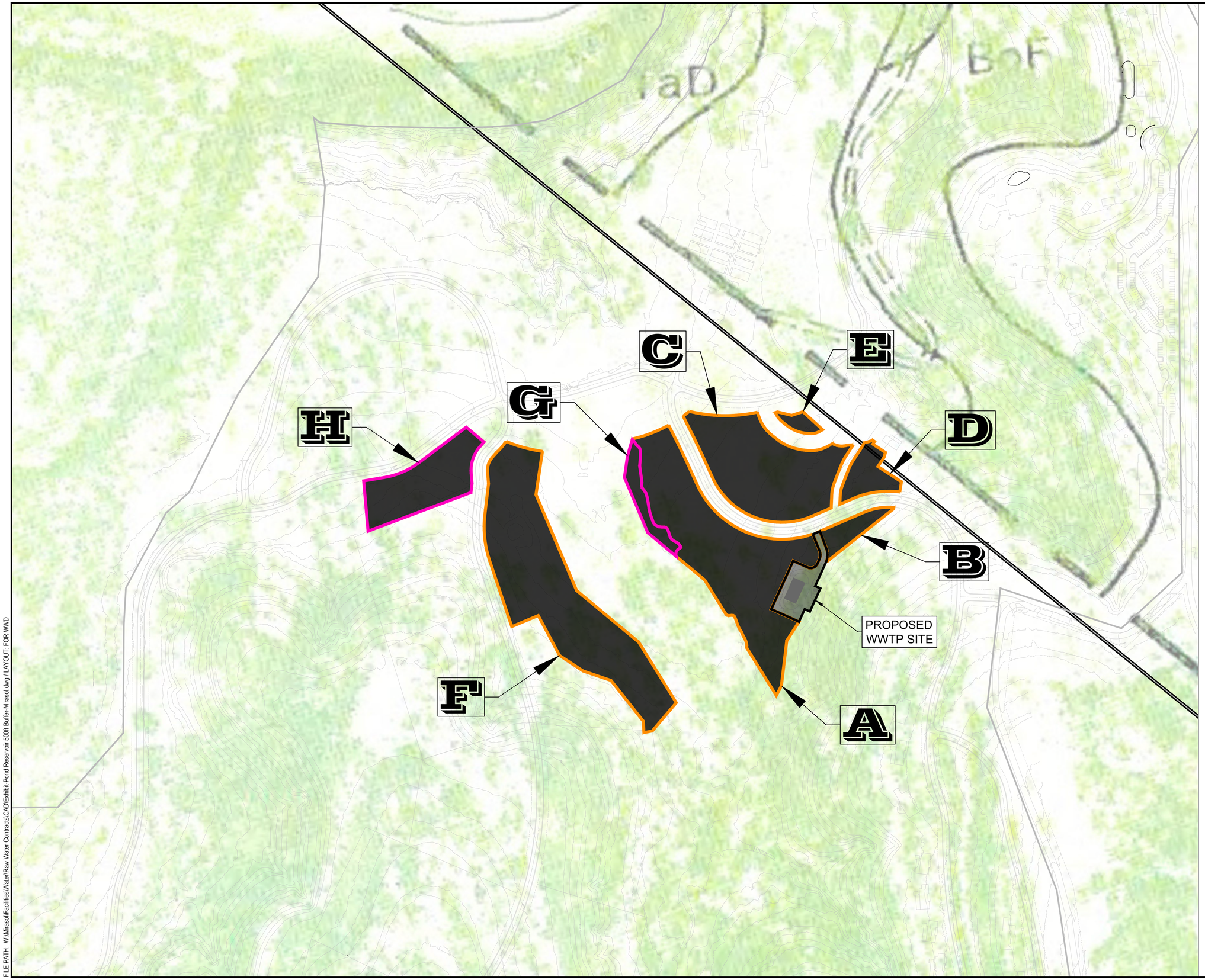
Murfee Engineering Company
Texas Registered Engineering Firm F-353
1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746, (512) 327-9204

MIRASOL
AERIAL IMAGERY GEOLOCATION

DATE: 4/3/2023	JOB NO. 19-011-10	TAB: D300
DESIGNED BY: GWM	DRAWN BY: RLW	CHECKED BY: GWM

APP000436

FILE: W:\Mirasol\Conceptual\MIRASOL-E-TLAP-SOILS.dwg



N

0 150 300

75 225

SCALE: 1"=150'

TLAP AREAS

AREA	ACREAGE
A	4.60
B	0.40
C	3.16
D	0.57
E	0.17
F	5.21
G	0.43
H	1.67
TOTAL	16.21

Murfee Engineering Company | Texas Registered Engineering Firm F-353

MIRASOL SPRINGS

SITE MAP

1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746, (512) 327-9204

JOB NO. 19011-85	SCALE: AS NOTED	SHEET: 1 OF 1
DESIGNED BY:		
DRAWN BY: SJA/MJS/RLW		DATE: 11/17/2022

FILE: W:\Mirasol\Facilities\Water\Raw Water Contracts\CAD\Exhibit-Pond Reservoir 500ft Buffer-Mirasol.dwg

FILE PATH: W:\Mirasol\Facilities\Water\Raw Water Contracts\CAD\Exhibit-Pond Reservoir 500ft Buffer-Mirasol.dwg / LAYOUT: FOR WWD

APP000437

Appendix II

USDA Soil Survey Map and Report

Attachment 17 – USDA Soil Survey Map

United States Department of Agriculture

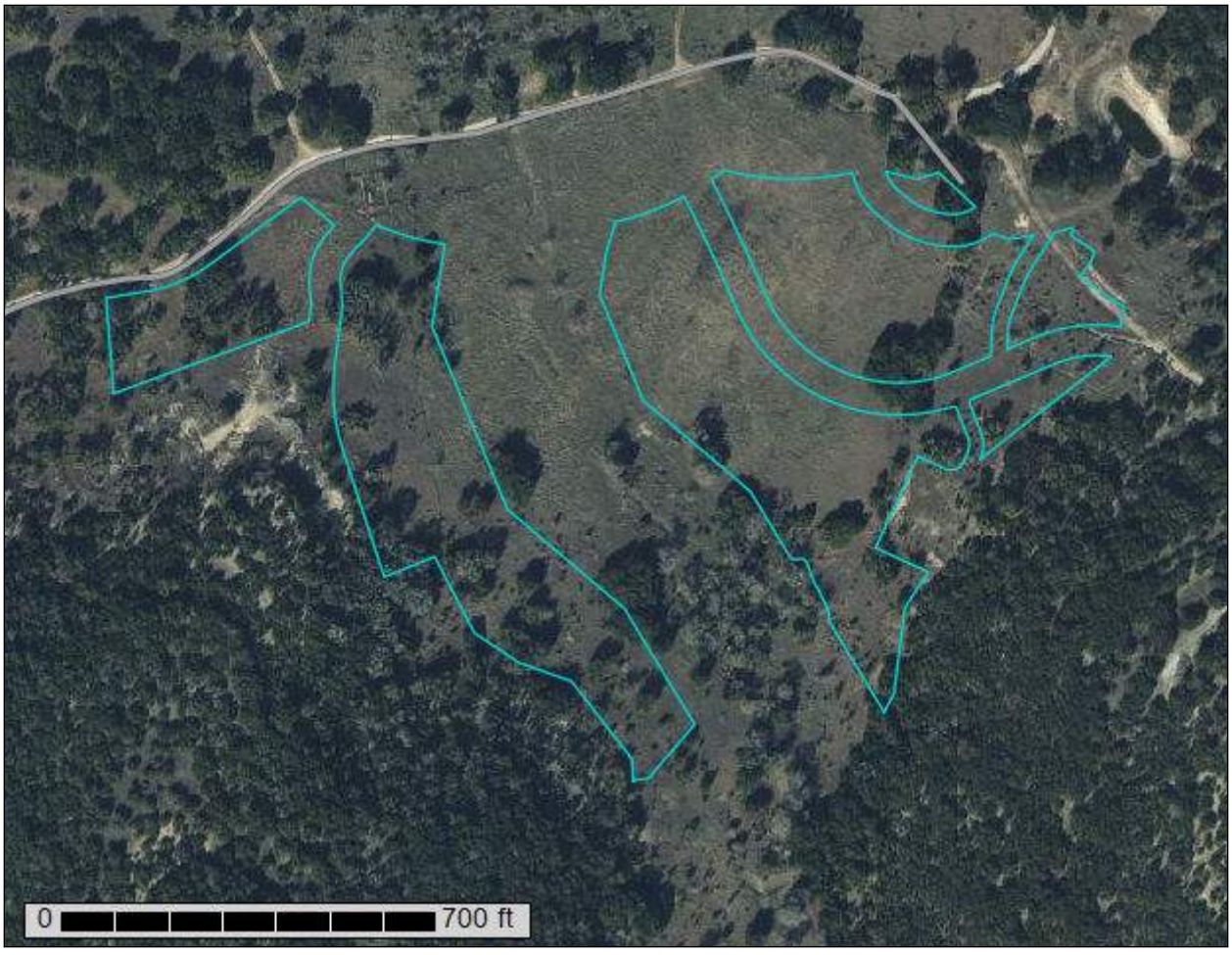
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Comal and Hays Counties, Texas

Mirasol Proposed TLAP Areas



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

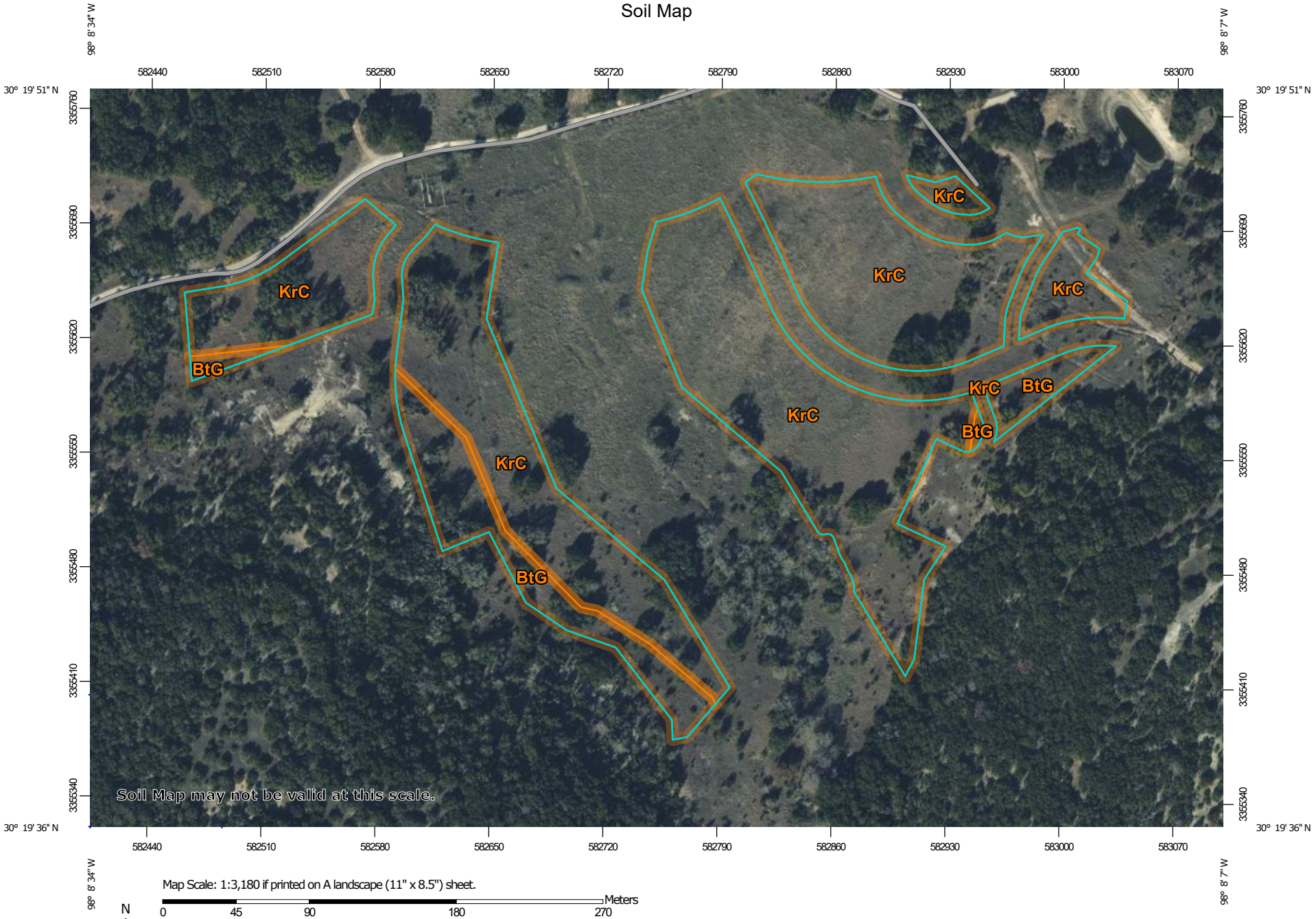
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:3,180 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 19, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 15, 2019—Dec 19, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BtG	Brackett-Rock outcrop-Real complex, 8 to 30 percent slopes	2.2	13.5%
KrC	Krum clay, 3 to 5 percent slopes	14.0	86.5%
Totals for Area of Interest		**16.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Comal and Hays Counties, Texas

BtG—Brackett-Rock outcrop-Real complex, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t2m3
Elevation: 470 to 1,900 feet
Mean annual precipitation: 32 to 37 inches
Mean annual air temperature: 66 to 68 degrees F
Frost-free period: 230 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Brackett and similar soils: 38 percent
Rock outcrop: 25 percent
Real and similar soils: 22 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brackett

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 6 inches: gravelly clay loam
Bk - 6 to 14 inches: gravelly clay loam
Cr - 14 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 90 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R081CY362TX - Steep Adobe 29-35 PZ
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Limestone

Typical profile

R - 0 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: 0 to 2 inches to lithic bedrock
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Real

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 4 inches: gravelly loam
Ak - 4 to 14 inches: extremely gravelly loam
Cr - 14 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 8 to 19 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 70 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R081CY362TX - Steep Adobe 29-35 PZ
Hydric soil rating: No

Minor Components

Eckrant

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Backslope, footslope, summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R081BY350TX - Steep Rocky 23-31 PZ
Hydric soil rating: No

Volente

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

KrC—Krum clay, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2t2j6
Elevation: 620 to 1,820 feet
Mean annual precipitation: 31 to 37 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 230 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Krum and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Krum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous silty and clayey alluvium derived from limestone

Typical profile

A - 0 to 13 inches: clay
Bk1 - 13 to 27 inches: clay
Bk2 - 27 to 40 inches: clay
Ck - 40 to 80 inches: clay

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Bolar

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Doss

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex

Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Lewisville

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

References

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Appendix III

Profile Hole Information Sheets

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Project	Mirasol	Profile Hole #	3	County	Travis/Hays	Date	3/4/2021

1	Total Depth of Profile hole	42
2	Primary Rooting Depth	3
3	Secondary Rooting Depth	NA
4	Horizons Descriptions Shall Include	

A	Depth of Horizon	0" - 16"	A	Depth of Horizon	16"-42"	A	Depth of Horizon	
B	Soil Texture	SCL	B	Soil Texture	CALICHE	B	Soil Texture	
C	Soil Structure	COARSE	C	Soil Structure	BLOCKY	C	Soil Structure	
D	Soil Color	RED BROWN	D	Soil Color	RED TAN	D	Soil Color	
E	Mottling	NA	E	Mottling	NA	E	Mottling	
F	Percent Coarse Fragments	<10%	F	Percent Coarse Fragments	10%	F	Percent Coarse Fragments	

5	Boundary Descriptions (Soil Horizons)	LEVEL
6	Restrictive Horizons	0
7	Potential Water Bearing Zones	0
8	Active Water Bearing Zones	0

Site Characteristics

Vegetation				Surface Fragments	Litter	Slope Type
Large Oak	<5	5 % Woody	95 % Herbaceous	0 % Visible	0 %	2 % - 4 %
Juniper	0	5 % Canopy Cover	95 % Cover			
Small Oak	0					

Comments Pictures _____ Refusal at: N/A Stopped Digging at: 42 inches

APP000460

wwdengineering

Project: Mirasol | Profile Hole #: 4 | County: Travis/Hays | Date: 3/4/2021

1 Total Depth of Profile hole	49	
2 Primary Rooting Depth	2	
3 Secondary Rooting Depth	NA	
4 Horizons Descriptions Shall Include		

A Depth of Horizon	0"-49"	A Depth of Horizon		A Depth of Horizon	
B Soil Texture	SCL	B Soil Texture		B Soil Texture	
C Soil Structure	COARSE	C Soil Structure		C Soil Structure	
D Soil Color	RED BROWN	D Soil Color		D Soil Color	
E Mottling	NA	E Mottling		E Mottling	
F Percent Coarse Fragments	<10%	F Percent Coarse Fragments		F Percent Coarse Fragments	

5 Boundary Descriptions (Soil Horizons)	
6 Restrictive Horizons	0
7 Potential Water Bearing Zones	0
8 Active Water Bearing Zones	0

Site Characteristics

Vegetation					Surface Fragments	Litter	Slope Type
Large Oak	<5%	<5	% Woody	95 % Herbaceous	0 % Visible	0 %	2 % - 5 %
Juniper	0	<5	% Canopy Cover	95 % Cover			
Small Oak	0						

Comments: Pictures | Refusal at: N/A | Stopped Digging at: 49 inches

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Project: Mirasol | Profile Hole #: 5 | County: Travis/Hays | Date: 6/30/2021

1 Total Depth of Profile hole	34"
2 Primary Rooting Depth	6"
3 Secondary Rooting Depth	NA
4 Horizons Descriptions Shall Include	

A Depth of Horizon	0-10"	A Depth of Horizon	10-34"	A Depth of Horizon	
B Soil Texture	SANDY LOAM	B Soil Texture	SILTY CLAY LOAM	B Soil Texture	
C Soil Structure	COARSE	C Soil Structure	COARSE	C Soil Structure	
D Soil Color	RED BROWN	D Soil Color	RED/BROWN	D Soil Color	
E Mottling	NA	E Mottling	NA	E Mottling	
F Percent Coarse Fragments	<10%	F Percent Coarse Fragments	<10%	F Percent Coarse Fragments	

5 Boundary Descriptions (Soil Horizons)	2
6 Restrictive Horizons	0
7 Potential Water Bearing Zones	0
8 Active Water Bearing Zones	0

Site Characteristics

Vegetation				Surface Fragments	Litter	Slope Type
Large Oak	15%	25 % Woody	75 % Herbaceous	<5 % Visible	0 %	2 % - 4 %
Juniper	5%	25 % Canopy Cover	75 % Cover			
Small Oak	5%					

Comments: Pictures | Refusal at: N/A | Stopped Digging at: 34 inches

wwdengineering

Project: Mirasol | Profile Hole #: 6 | County: Travis/Hays | Date: 6/30/2021

1 Total Depth of Profile hole	34"
2 Primary Rooting Depth	6"
3 Secondary Rooting Depth	NA
4 Horizons Descriptions Shall Include	

A Depth of Horizon	0-6"	A Depth of Horizon	6-34"	A Depth of Horizon	
B Soil Texture	SANDY LOAM	B Soil Texture	SILTY CLAY LOAM	B Soil Texture	
C Soil Structure	COARSE	C Soil Structure	COARSE	C Soil Structure	
D Soil Color	RED/BROWN	D Soil Color	RED/GRAY	D Soil Color	
E Mottling	NA	E Mottling	NA	E Mottling	
F Percent Coarse Fragments	<10%	F Percent Coarse Fragments	<10%	F Percent Coarse Fragments	

5 Boundary Descriptions (Soil Horizons)	2
6 Restrictive Horizons	0
7 Potential Water Bearing Zones	0
8 Active Water Bearing Zones	0

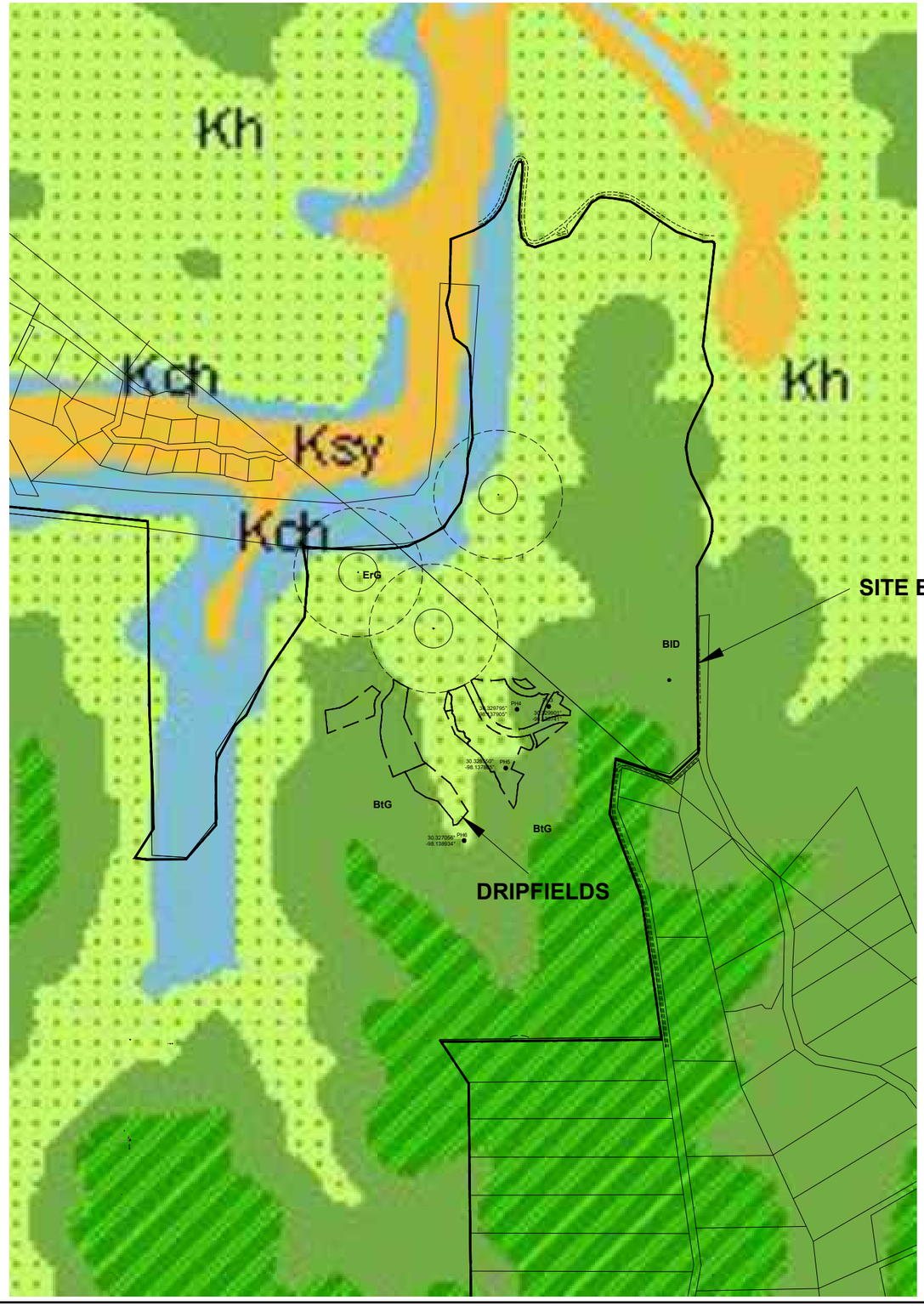
Site Characteristics

Vegetation				Surface Fragments	Litter	Slope Type
Large Oak	20%	30 % Woody	70 % Herbaceous	0 % Visible	0 %	4 % - 6 %
Juniper	5%	30 % Canopy Cover	70 % Cover			
Small Oak	5%					

Comments: Pictures | Refusal at: N/A | Stopped Digging at: 34 inches

Appendix IV

Geologic Atlas of Texas



●1- PROFILE HOLE LOCATION AND NUMBER

1" = 1000'

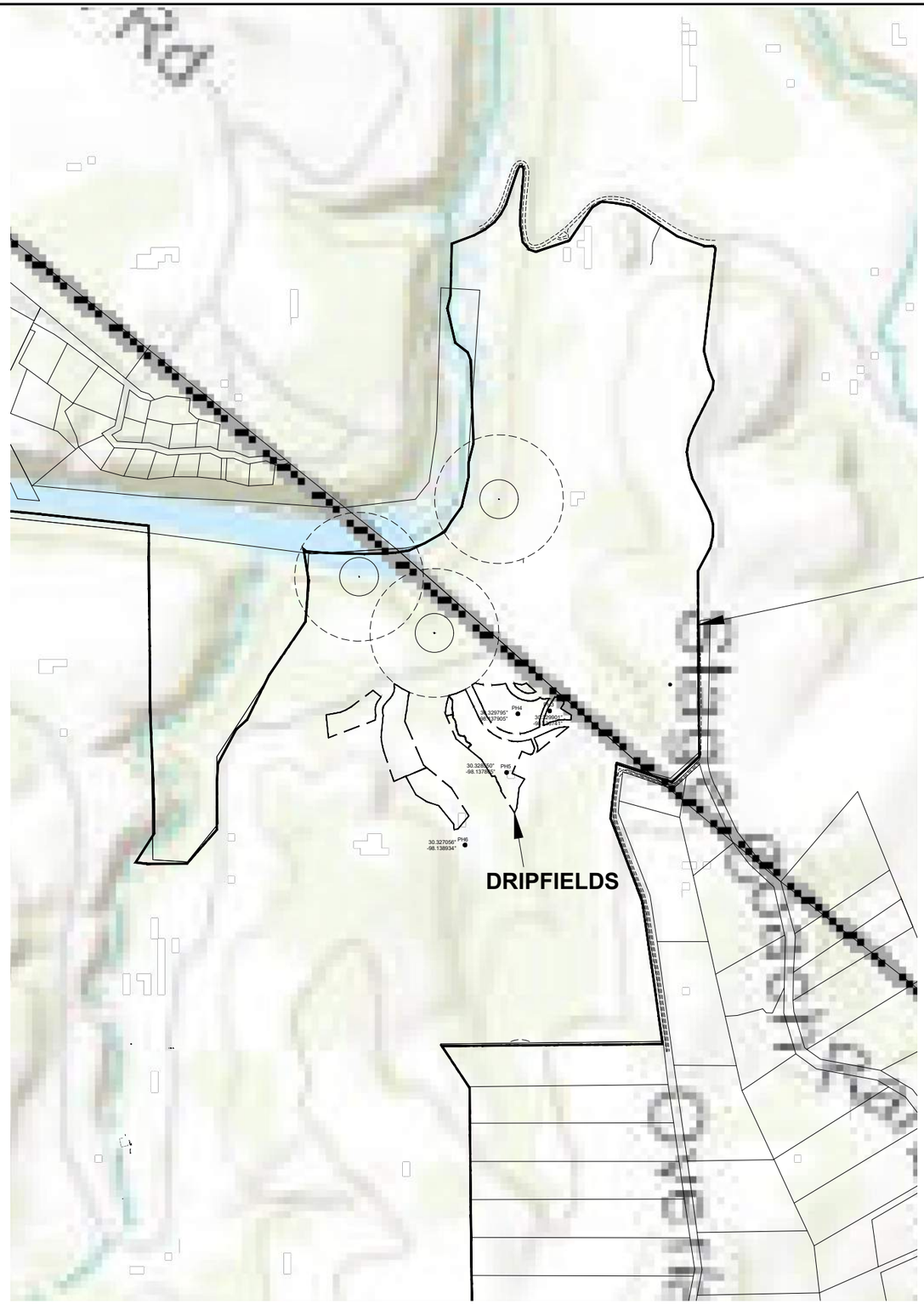
1000 0 500 1000 2000

APPENDIX IV - GEOLOGIC ATLAS OF TEXAS MAP
MIRASOL
TLAP
DRIPPING SPRINGS, TEXAS

wwdengineering
engineered wastewater solutions
F-12009
9217 Hwy 290 W., Ste 110
Austin, Texas 78736
(512) 288-2111

Appendix V

Edwards Aquifer Map



NOTE:
PROPERTY IS OUT OF EDWARDS AQUIFER CONTRIBUTING ZONE

1" = 1000'

1000 0 500 1000 2000

APPENDIX V - EDWARDS AQUIFER MAP
MIRASOL
TLAP
DRIPPING SPRINGS, TEXAS

wwdengineering
engineered wastewater solutions
F-12009
9217 Hwy 290 W., Ste 110
Austin, Texas 78736
(512) 288-2111

Appendix VI

Soil Sampling Results

- Mirasol Comp1 is a composite sample obtained in the 0”-6” Range from test pits 3-4
- Mirasol Comp2 is a composite sample obtained in the 6”-18” Range from test pits 3-4
- Mirasol Comp3 is a composite sample obtained in the 18”-30” Range from test pits 3-4
- Mirasol Samp 2 is from test pit #3 @ 20”
- Mirasol Comp4 is a composite sample obtained in the 0”-6” Range from test pits 5-6
- Mirasol Comp5 is a composite sample obtained in the 6”-18” Range from test pits 5-6
- Mirasol Comp6 is a composite sample obtained in the 18”-30” Range from test pits 5-6
- Mirasol Samp A is from test pit #5 @ 12”
- Mirasol Samp B is from test pit #6 @ 20”

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
WWD Engineering
Mirasol
9217 Highway 290 W, Ste. 110
AUSTIN, TX 78676

Sample received on: 3/9/2021
Printed on: 3/25/2021
Area Represented: 6 acres

Travis County

Laboratory Number: 576329
Customer Sample ID: Comp 1
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	**7.8**	(5.8)	-	**Mod. Alkaline**						
Conductivity	**372**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**
Nitrate-N	**0**	(-)	ppm**							**95** lbs N/acre
Phosphorus	**0**	(50)	ppm							**120** lbs P2O5/acre
Potassium	**183**	(150)	ppm				I			**0** lbs K20/acre
Calcium	**11,933**	(180)	ppm						I	**0** lbs Ca/acre
Magnesium	**100**	(50)	ppm				I			**0** lbs Mg/acre
Sulfur	**4**	(13)	ppm		I					**15** lbs S/acre
Sodium	**10**	(-)	ppm	I						
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										**0.00** tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	**7.5**		
Conductivity	**0.24**	mmhos/cm	
Sodium	**16**	ppm	**0.676** meq/L
Potassium	**2**	ppm	**0.038** meq/L
Calcium	**25**	ppm	**1.256** meq/L
Magnesium	**2**	ppm	**0.137** meq/L
SAR	**0.81**		
SSP	**32.09**		

Total N	511	ppm

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j
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Soil Analysis Report

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Report generated for:
WWD Engineering
Mirasol
9217 Highway 290 W, Ste. 110
AUSTIN, TX 78676

Sample received on: 3/9/2021
Printed on: 3/25/2021
Area Represented: 6 acres

Travis County

Laboratory Number: 576329
Customer Sample ID: Comp 1
Crop Grown: RYEGRASS , MODERATE GRAZING

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.8**	(6)	-	**Mod. Alkaline**							
Conductivity	**372**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**	
Nitrate-N	**0**	(-)	ppm**							**125**	lbs N/acre
Phosphorus	**0**	(50)	ppm							**55**	lbs P2O5/acre
Potassium	**183**	(125)	ppm							**0**	lbs K20/acre
Calcium	**11,933**	(180)	ppm							**0**	lbs Ca/acre
Magnesium	**100**	(50)	ppm							**0**	lbs Mg/acre
Sulfur	**4**	(13)	ppm							**15**	lbs S/acre
Sodium	**10**	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement										**0.00**	tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	**7.5**		
Conductivity	**0.24**	mmhos/cm	
Sodium	**16**	ppm	**0.676** meq/L
Potassium	**2**	ppm	**0.038** meq/L
Calcium	**25**	ppm	**1.256** meq/L
Magnesium	**2**	ppm	**0.137** meq/L
SAR	**0.81**		
SSP	**32.09**		

Total N	**511**	ppm

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply 1/2 of nitrogen at preplant and topdress remainder of nitrogen after 4 to 6 weeks of grazing.

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http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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APP000470

Soil Analysis Report

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Report generated for:
WWD Engineering
Mirasol
9217 Highway 290 W, Ste. 110
AUSTIN, TX 78676

Sample received on: 3/9/2021
Printed on: 3/25/2021
Area Represented: 6 acres

Travis County

Laboratory Number: 576330
Customer Sample ID: Comp 2
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	
pH	7.9	(5.8)	-	Mod. Alkaline	
Conductivity	240	(-)	umho/cm	None	**Fertilizer Recommended**
Nitrate-N	0	(-)	ppm**		**95** lbs N/acre
Phosphorus	0	(50)	ppm		**120** lbs P2O5/acre
Potassium	167	(150)	ppm		**0** lbs K20/acre
Calcium	15,637	(180)	ppm		**0** lbs Ca/acre
Magnesium	128	(50)	ppm		**0** lbs Mg/acre
Sulfur	4	(13)	ppm		**15** lbs S/acre
Sodium	10	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					**0.00** tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	7.5		
Conductivity	0.38	mmhos/cm	
Sodium	12	ppm	0.501 meq/L
Potassium	1	ppm	0.038 meq/L
Calcium	28	ppm	1.390 meq/L
Magnesium	2	ppm	0.145 meq/L
SAR	0.57		
SSP	24.17		

Total N	965	ppm

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
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Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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Mirasol
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AUSTIN, TX 78676

Sample received on: 3/9/2021
Printed on: 3/25/2021
Area Represented: 6 acres

Travis County

Laboratory Number: 576330
Customer Sample ID: Comp 2
Crop Grown: RYEGRASS , MODERATE GRAZING

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.9**	(6)	-	**Mod. Alkaline**							
Conductivity	**240**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**	
Nitrate-N	**0**	(-)	ppm**							**125**	lbs N/acre
Phosphorus	**0**	(50)	ppm							**55**	lbs P2O5/acre
Potassium	**167**	(125)	ppm							**0**	lbs K20/acre
Calcium	**15,637**	(180)	ppm							**0**	lbs Ca/acre
Magnesium	**128**	(50)	ppm							**0**	lbs Mg/acre
Sulfur	**4**	(13)	ppm							**15**	lbs S/acre
Sodium	**10**	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement										**0.00**	tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	**7.5**		
Conductivity	**0.38**	mmhos/cm	
Sodium	**12**	ppm	**0.501** meq/L
Potassium	**1**	ppm	**0.038** meq/L
Calcium	**28**	ppm	**1.390** meq/L
Magnesium	**2**	ppm	**0.145** meq/L
SAR	**0.57**		
SSP	**24.17**		

Total N	**965**	ppm

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply 1/2 of nitrogen at preplant and topdress remainder of nitrogen after 4 to 6 weeks of grazing.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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APP000472

Soil Analysis Report

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Report generated for:
WWD Engineering
Mirasol
9217 Highway 290 W, Ste. 110
AUSTIN, TX 78676

Sample received on: 3/9/2021
Printed on: 3/25/2021
Area Represented: 6 acres

Travis County

Laboratory Number: 576331
Customer Sample ID: Comp 3
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.8**	(5.8)	-	**Mod. Alkaline**							
Conductivity	**146**	(-)	umho/cm	**None**							**Fertilizer Recommended**
Nitrate-N	**0**	(-)	ppm**				CL*				**95** lbs N/acre
Phosphorus	**0**	(50)	ppm								**120** lbs P2O5/acre
Potassium	**164**	(150)	ppm								**0** lbs K20/acre
Calcium	**13,877**	(180)	ppm								**0** lbs Ca/acre
Magnesium	**136**	(50)	ppm								**0** lbs Mg/acre
Sulfur	**4**	(13)	ppm								**15** lbs S/acre
Sodium	**12**	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											**0.00** tons 100ECCE/acre

			Detailed Salinity Test (Saturated Paste Extract)		
			pH	**7.7**	
			Conductivity	**0.20** mmhos/cm	
			Sodium	**9** ppm	**0.377** meq/L
			Potassium	**2** ppm	**0.038** meq/L
			Calcium	**24** ppm	**1.173** meq/L
			Magnesium	**1** ppm	**0.111** meq/L
Total N	**977**	ppm	**SAR**	**0.47**	
			SSP	**22.16**	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

Soil Analysis Report

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Report generated for:
WWD Engineering
Mirasol
9217 Highway 290 W, Ste. 110
AUSTIN, TX 78676

Sample received on: 3/9/2021
Printed on: 3/25/2021
Area Represented: 6 acres

Travis County

Laboratory Number: 576331
Customer Sample ID: Comp 3
Crop Grown: RYEGRASS , MODERATE GRAZING

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.8**	(6)	-	**Mod. Alkaline**							
Conductivity	**146**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**	
Nitrate-N	**0**	(-)	ppm**							**125**	lbs N/acre
Phosphorus	**0**	(50)	ppm							**55**	lbs P2O5/acre
Potassium	**164**	(125)	ppm							**0**	lbs K20/acre
Calcium	**13,877**	(180)	ppm							**0**	lbs Ca/acre
Magnesium	**136**	(50)	ppm							**0**	lbs Mg/acre
Sulfur	**4**	(13)	ppm							**15**	lbs S/acre
Sodium	**12**	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement										**0.00**	tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	**7.7**		
Conductivity	**0.20**	mmhos/cm	
Sodium	**9**	ppm	**0.377** meq/L
Potassium	**2**	ppm	**0.038** meq/L
Calcium	**24**	ppm	**1.173** meq/L
Magnesium	**1**	ppm	**0.111** meq/L
SAR	**0.47**		
SSP	**22.16**		

Total N	**977**	ppm

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply 1/2 of nitrogen at preplant and topdress remainder of nitrogen after 4 to 6 weeks of grazing.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j
APP000474

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
WWD Engineering
Mirasol
9217 Highway 290 W, Ste. 110
AUSTIN, TX 78676

Sample received on: 3/9/2021
Printed on: 3/25/2021
Area Represented: 6 acres

Travis County

Laboratory Number: 576333
Customer Sample ID: Samp 2
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	**8.0**	(5.8)	-	**Mod. Alkaline**						
Conductivity	**127**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**
Nitrate-N	**1**	(-)	ppm**							**95** lbs N/acre
Phosphorus	**0**	(50)	ppm							**120** lbs P2O5/acre
Potassium	**107**	(150)	ppm							**70** lbs K20/acre
Calcium	**33,534**	(180)	ppm							**0** lbs Ca/acre
Magnesium	**232**	(50)	ppm							**0** lbs Mg/acre
Sulfur	**6**	(13)	ppm							**10** lbs S/acre
Sodium	**7**	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										**0.00** tons 100ECCE/acre

Textural Analysis Test (hydrometer)		
Sand	**42**	%
Silt	**26**	%
Clay	**32**	%
Textural Class:	**Clay Loam**	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j

APP000475

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
WWD Engineering
Mirasol
9217 Highway 290 W, Ste. 110
AUSTIN, TX 78676

Sample received on: 3/9/2021
Printed on: 3/25/2021
Area Represented: 6 acres

Travis County

Laboratory Number: 576333
Customer Sample ID: Samp 2
Crop Grown: RYEGRASS , MODERATE GRAZING

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	**8.0**	(6)	-	**Mod. Alkaline**						
Conductivity	**127**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**
Nitrate-N	**1**	(-)	ppm**							**125** lbs N/acre
Phosphorus	**0**	(50)	ppm							**55** lbs P2O5/acre
Potassium	**107**	(125)	ppm							**15** lbs K20/acre
Calcium	**33,534**	(180)	ppm							**0** lbs Ca/acre
Magnesium	**232**	(50)	ppm							**0** lbs Mg/acre
Sulfur	**6**	(13)	ppm							**10** lbs S/acre
Sodium	**7**	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										**0.00** tons 100ECCE/acre

Textural Analysis Test (hydrometer)		
Sand	**42**	%
Silt	**26**	%
Clay	**32**	%
Textural Class:	**Clay Loam**	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply 1/2 of nitrogen at preplant and topdress remainder of nitrogen after 4 to 6 weeks of grazing.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j
APP000476

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
WWD Engineering - Erin Banks
Mirasol
9217 Hwy 290 West - Ste 110
AUSTIN, TX 78676

Sample received on: 7/7/2021
Printed on: 7/16/2021
Area Represented: not provided

Travis County

Laboratory Number: 586541
Customer Sample ID: Comp 4
Crop Grown: NO CROP GIVEN

Analysis	Results	CL*	Units	ExLow / VLow / Low / Mod / High / VHigh / Excess.	Fertilizer Recommended
pH	8.4	(5.8)	-	Mod. Alkaline	
Conductivity	177	(-)	umho/cm	None	
Nitrate-N	1	(-)	ppm**		
Phosphorus	1	(0)	ppm		
Potassium	115	(0)	ppm		
Calcium	12,412	(180)	ppm		
Magnesium	402	(50)	ppm		
Sulfur	59	(13)	ppm		
Sodium	11	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					

Analysis	Result	Units
Total N	827	ppm

Detailed Salinity Test (Saturated Paste Extract)

	Result	Units	meq/L
pH	6.7		
Conductivity	0.61	mmhos/cm	
Sodium	21	ppm	0.914 meq/L
Potassium	7	ppm	0.184 meq/L
Calcium	101	ppm	5.056 meq/L
Magnesium	16	ppm	1.352 meq/L
SAR	0.51		
SSP	12.18		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
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College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
WWD Engineering - Erin Banks
Mirasol
9217 Hwy 290 West - Ste 110
AUSTIN, TX 78676

Sample received on: 7/7/2021
Printed on: 7/16/2021
Area Represented: not provided

Travis County

Laboratory Number: 586542
Customer Sample ID: Comp 5
Crop Grown: NO CROP GIVEN

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	**8.6**	(5.8)	-	**Mod. Alkaline**						
Conductivity	**214**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**
Nitrate-N	**0**	(-)	ppm**							
Phosphorus	**0**	(0)	ppm							
Potassium	**124**	(0)	ppm							
Calcium	**31,779**	(180)	ppm							
Magnesium	**840**	(50)	ppm							
Sulfur	**29**	(13)	ppm							
Sodium	**13**	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										

Detailed Salinity Test (Saturated Paste Extract)			
pH	**7.2**		
Conductivity	**0.37**	mmhos/cm	
Sodium	**18**	ppm	**0.772** meq/L
Potassium	**2**	ppm	**0.045** meq/L
Calcium	**31**	ppm	**1.565** meq/L
Magnesium	**11**	ppm	**0.909** meq/L
SAR	**0.69**		
SSP	**23.47**		

Total N	459	ppm

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j
APP000478

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
WWD Engineering - Erin Banks
Mirasol
9217 Hwy 290 West - Ste 110
AUSTIN, TX 78676

Sample received on: 7/7/2021
Printed on: 7/16/2021
Area Represented: not provided

Travis County

Laboratory Number: 586543
Customer Sample ID: Comp 6
Crop Grown: NO CROP GIVEN

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	8.7	(5.8)	-	Strongly Alkaline						
Conductivity	177	(-)	umho/cm	None			CL*			Fertilizer Recommended
Nitrate-N	0	(-)	ppm**							
Phosphorus	0	(0)	ppm							
Potassium	122	(0)	ppm							
Calcium	14,853	(180)	ppm							
Magnesium	931	(50)	ppm							
Sulfur	5	(13)	ppm							
Sodium	13	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										

Detailed Salinity Test (Saturated Paste Extract)			
pH	7.4		
Conductivity	0.26	mmhos/cm	
Sodium	18	ppm	0.768 meq/L
Potassium	2	ppm	0.049 meq/L
Calcium	22	ppm	1.103 meq/L
Magnesium	9	ppm	0.761 meq/L
SAR	0.80		
SSP	28.64		

Total N	325	ppm

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j

APP000479

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
WWD Engineering - Erin Banks
Mirasol
9217 Hwy 290 West - Ste 110
AUSTIN, TX 78676

Sample received on: 7/7/2021
Printed on: 7/16/2021
Area Represented: not provided

Travis County

Laboratory Number: 586544
Customer Sample ID: Samp A
Crop Grown: NO CROP GIVEN

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	8.5	(5.8)	-	Mod. Alkaline						
Conductivity	238	(-)	umho/cm	None			CL*			Fertilizer Recommended
Nitrate-N	0	(-)	ppm**							
Phosphorus	0	(0)	ppm							
Potassium	198	(0)	ppm							
Calcium	8,384	(180)	ppm							
Magnesium	761	(50)	ppm							
Sulfur	2	(13)	ppm							
Sodium	12	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										

Textural Analysis Test (hydrometer)		
Sand	48	%
Silt	16	%
Clay	36	%
Textural Class:	Sandy Clay	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j
APP000480

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
WWD Engineering - Erin Banks
Mirasol
9217 Hwy 290 West - Ste 110
AUSTIN, TX 78676

Sample received on: 7/7/2021
Printed on: 7/16/2021
Area Represented: not provided

Travis County

Laboratory Number: 586545
Customer Sample ID: Samp B
Crop Grown: NO CROP GIVEN

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	**8.7**	(5.8)	-	**Strongly Alkaline**						
Conductivity	**155**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**
Nitrate-N	**0**	(-)	ppm**							
Phosphorus	**0**	(0)	ppm							
Potassium	**107**	(0)	ppm							
Calcium	**23,116**	(180)	ppm							
Magnesium	**907**	(50)	ppm							
Sulfur	**3**	(13)	ppm							
Sodium	**12**	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										

Textural Analysis Test (hydrometer)		
Sand	**20**	%
Silt	**50**	%
Clay	**30**	%
Textural Class:	**Silty Clay Loam**	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

ProAnalysisVer. 2.19j
APP000481

Attachment 20 – Site Preparation Plan

SITE PREPARATION PLAN
for the
MIRASOL SPRINGS
WATER RECLAMATION FACILITY TLAP

Prepared for:

Mirasol Springs Ranch
c/o Clancy Utility Holdings, LLC
4143 Maple Avenue, Suite 400
Dallas, TX 75219

Prepared by:

Murfee Engineering Company, Inc.
Texas Registered Firm No. F-353
1101 Capital of Texas Highway South
Building D, Suite 110
Austin, Texas 78746
(512) 327-9204

April 2023

The following information is provided to meet the requirements of 30 TAC 222.75 with regards to a site preparation plan for the subsurface area drip irrigation system (SADDS).

Stormwater Run-on and Runoff Controls

In order to minimize run-on and maximize runoff from the dispersal zones, berms or swales will be constructed upstream of the SADDS fields in order to divert rainfall run-on away from the dispersal areas. The SADDS areas will be graded to minimize stormwater run-on from upstream areas and be evenly graded to promote efficient runoff. During construction, SADDS lines will not be constructed in areas that show evidence of rainfall channeling and any grading changes necessary to prevent SADDS areas from receiving and retaining stormwater runoff will be made.

Restrictive Horizons in Soil Column

During the field investigation, four profile holes were excavated to evaluate the soil column. The minimum depth to refusal encountered was 36 inches. If, during construction, areas with restrictive horizons shallower than 30 inches are discovered, suitable soils will be imported to maintain appropriate, required soil column depth.

Soil Importation

Soil importation may be required in some areas of the site. If it is required, sandy loam soils will be imported to meet the required soil column depth for the selected vegetation to thrive and allow for optimum nutrient uptake.

Existing Vegetation

There are some plants within the proposed SADDS areas that will need to be removed in order to install the SADDS and plant the necessary grasses to establish groundcover within the SADDS areas. All areas of the SADDS, including where plants are removed and where they are not, will be overseeded with the selected mix of grasses. Any areas where there is tree canopy cover will not be counted in the final irrigated acreage. Excess acreage has been included in order to allow for these types of exclusions.

Attachment 21 – Deed Recorded Easement

23012963 EASEMENT Total Pages: 29
Filed and Recorded: 04/17/2023 10:55:20 AM

AFTER RECORDING, RETURN TO:
Armbrust & Brown, PLLC
Attn: David Armbrust
100 Congress Avenue, Suite 1300
Austin, Texas 78701

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT THAT TRANSFERS AN INTEREST IN REAL PROPERTY BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER' S LICENSE NUMBER.

WASTEWATER TREATMENT PLANT AND TREATED EFFLUENT DISPOSAL EASEMENT

THE STATE OF TEXAS §
§
COUNTIES OF TRAVIS § KNOW ALL BY THESE PRESENTS:
AND HAYS §

THAT **MIRASOL SPRINGS, LLC**, a Texas limited liability company ("*Grantor*"), for and in consideration of the sum of TEN DOLLARS ($10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and for which no lien, express or implied, is retained, has this day **GRANTED, SOLD**, and **CONVEYED**, and, by these presents, does hereby **GRANT, SELL**, and **CONVEY**, unto **CLANCY UTILITY HOLDINGS, LLC**, a Texas limited liability company ("*Grantee*"), whose address is 4143 Maple Avenue, Suite 400, Dallas, Texas 75219, a permanent easement (the "*Easement*") in, under, upon, over, across, and through the following real property:

> All that certain land more particularly described by metes and bounds on **Exhibit "A"** attached hereto and incorporated herein by reference (collectively, the "*Easement Property*");

TO HAVE AND TO HOLD the Easement together with the right and privilege at any and all times to enter the Easement Property or any part thereof, unto Grantee and its successors and assigns forever, but subject to the terms and conditions set forth herein. Grantor does itself, and for its successors and assigns, covenant unto Grantee and Grantee's successors and assigns that Grantor (i) owns good and indefeasible fee simple title to the Easement Property, (ii) is lawfully seized and possessed of the Easement Property, and (iii) has the full right and authority to grant, sell, and convey the Easement as provided herein; and Grantor, on behalf of itself and its successors and assigns, does hereby covenant and agree to **WARRANT** and **FOREVER DEFEND** title to the Easement unto Grantee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through, or under Grantor, but not otherwise, subject to the terms and provisions hereof and all matters of record or visible and apparent on the ground, to the extent that the same are valid, subsisting, and affect the Easement Property.

The Easement may be used for the purposes of:

(a) the construction, installation, placement, operation, inspection, maintenance, use, repair, upgrade, modification, expansion, extension, replacement, relocation, decommissioning, and removal of:

(i) a wastewater treatment plant facility (including, without limitation, influent, effluent, and process lines; tanks; basins; lift stations; sludge handling facilities; wastewater reuse facilities; storage, laboratory and administration buildings; electric, telephone, water, gas, and other utility lines and facilities; and access roads and parking and turn-around areas);

(ii) wastewater effluent storage, delivery, and disposal facilities, lines, pipes, reservoirs, outfalls, and drip field irrigation systems; and

(iii) any related structures, improvements, equipment, fixtures, facilities, and appurtenances necessary or incidental to the treatment, storage, delivery, and disposal of wastewater effluent and/or the safety and security of the Easement Property, including gates and fencing, in compliance with all applicable statutes, rules, and regulations of all governmental agencies with jurisdiction (collectively, the "*Facilities*");

(b) accessing and making connections to the Facilities;

(c) treating wastewater and storing, delivering, and disposing of treated wastewater effluent within the Easement Property; and

(d) maintaining the Easement Property by, among other things, clearing and removing vegetation and debris;

subject to, in each case, applicable law and the terms and conditions hereof.

In addition, in order to provide Grantee, and Grantee's employees, agents, and contractors, access to and from the Easement Property, Grantor also hereby grants to Grantee free and uninterrupted ingress and egress in, upon, and over any private roadways located on Grantor's adjacent/surrounding property.

The Easement will be non-exclusive; however, (a) no permanent structure may be constructed on the surface of the Easement Property by Grantor, or anyone acting by, through, or under Grantor, without Grantee's consent; and (b) Grantor will not use the Easement Property in any manner or grant any easement or other right in, under, upon, over, across, or through the Easement Property that interferes with, conflicts with, is inconsistent with, or prevents the use of the Easement by Grantee as contemplated herein or the Permit (defined below). Grantee will have the right to review in advance any proposed use of the Easement Property, or grant of additional easements or other rights affecting the Easement Property, to determine the effect, if any, on the Easement and the Facilities, and Grantee may require reasonable safeguards to protect the use, safety, and integrity thereof.

Grantee may contract with third parties to perform any or all activities related to the Facilities or activities located or to be located within the Easement Property and may assign this Easement and Grantee's rights hereunder, in whole or in part, exclusively or non-exclusively, so long as the assignee utilizes the Easement solely as contemplated herein. Any such assignment must include an express assumption by the assignee of the obligations set forth herein and will release the assignor of its rights and obligations hereunder to the extent assumed.

Grantor and Grantee agree that, if after the Texas Commission of Environmental Quality (the "*TCEQ*") issues a permit authorizing the treatment and disposal of wastewater effluent within the Easement Property (the "*Permit*"), the Easement Property differs from the area(s) authorized for treatment and disposal of effluent in the Permit, Grantor and Grantee will, prior

to commence of treatment and disposal of effluent by Grantee, execute an amendment to this instrument in order to adjust the boundaries of the Easement Property to correspond to the area(s) authorized for treatment and disposal of effluent by the Permit. Any amendments or modifications to the Easement Property pursuant to this paragraph will be recorded in the Official Public Records of Travis and Hays Counties, Texas.

Similarly, as development of Grantor's property surrounding the Easement Property progresses, the boundaries of the Easement Property may require adjustment from time to time. If adjustments to the boundaries of the Easement Property are necessary, Grantor and Grantee will use good faith efforts to amend this instrument to accommodate such adjustments provided that Grantee retains sufficient area for the treatment and disposal of wastewater effluent as provided herein, with the caveat that any adjustment to the boundaries of the Easement Property may require and be subject to an amendment to the Permit and will be at Grantor's cost and expense. Any amendments or modifications to the Easement Property pursuant to this paragraph will be recorded in the Official Public Records of Travis and Hays Counties, Texas.

This instrument does not in any manner create or grant any rights to the public generally or to any person or entity other than Grantee and its successors and assigns. Grantee may restrict or prohibit public access to the Easement Property.

* * *

[*Signature Pages Follow*]

EXECUTED to be effective as of the 13th day of April, 2023.

GRANTOR:

MIRASOL SPRINGS, LLC, a Texas limited liability company

By: Shawn Miller
Printed Name: Shawn Miller
Title: President

STATE OF TEXAS §
§
COUNTY OF Dallas §

This instrument was acknowledged before me, on the 13th day of April, 2023, by Shawn Miller, President of Mirasol Springs, LLC, a Texas limited liability company, on behalf of said limited liability company.

RENEE LONG
Notary ID #676415-6
My Commission Expires
June 1, 2025

Renee Long
Notary Public, State of Texas

Accepted and Agreed to by:

GRANTEE:

CLANCY UTILITY HOLDINGS, LLC,
a Texas limited liability company

By: Shaun Miller
Printed Name: Shaun Miller
Title: President

STATE OF TEXAS §
§
COUNTY OF Dallas §

This instrument was acknowledged before me, on the 13th day of April, 2023, by Shaun Miller, President of Clancy Utility Holdings, LLC, a Texas limited liability company, on behalf of said limited liability company.

RENEE LONG
Notary ID #676415-6
My Commission Expires
June 1, 2025

Notary Public, State of Texas

EXHIBIT "A"
EASEMENT PROPERTY

0.2616 Acres

W. Hammet Survey, Abst. No. 2406
November 30, 2022
21505.71

STATE OF TEXAS §
§
COUNTY OF HAYS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 0.2616 acres situated in the W. Hammet Survey, Abstract No. 2406, Abstract No. 782, Hays County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 0.2616 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N19°30'15"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 2,902.29 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the east corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following seven (7) courses:

1) S60°58'09"W, 23.04 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the right;

2) With the said non-tangent curve to the right, having a central angle of 61°11'32", a radius of 146.42 feet, a chord distance of 149.05 feet (chord bears N77°14'26"W), for an arc distance of 156.37 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the right;

3) With the said compound non-tangent curve to the right, having a central angle of 27°07'15", a radius of 89.00 feet, a chord distance of 41.74 feet (chord bears N38°15'09"W), for an arc distance of 42.13 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the right;

4) With the said compound non-tangent curve to the right, having a central angle of 10°43'16", a radius of 144.96 feet, a chord distance of 27.09 feet (chord bears N15°56'09"W), for an arc distance of 27.12 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

5) S76°28'47"E, 73.83 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

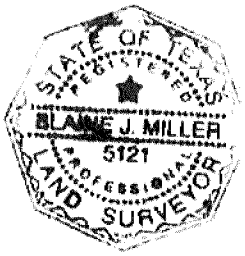
6) N72°32'00"E, 45.03 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the north corner of the herein described tract, from which a 3/8" iron rod found bears N23°00'53"E, 3,676.09 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;

7) S47°34'41"E, 113.86 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 0.2616 acres of land area

The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

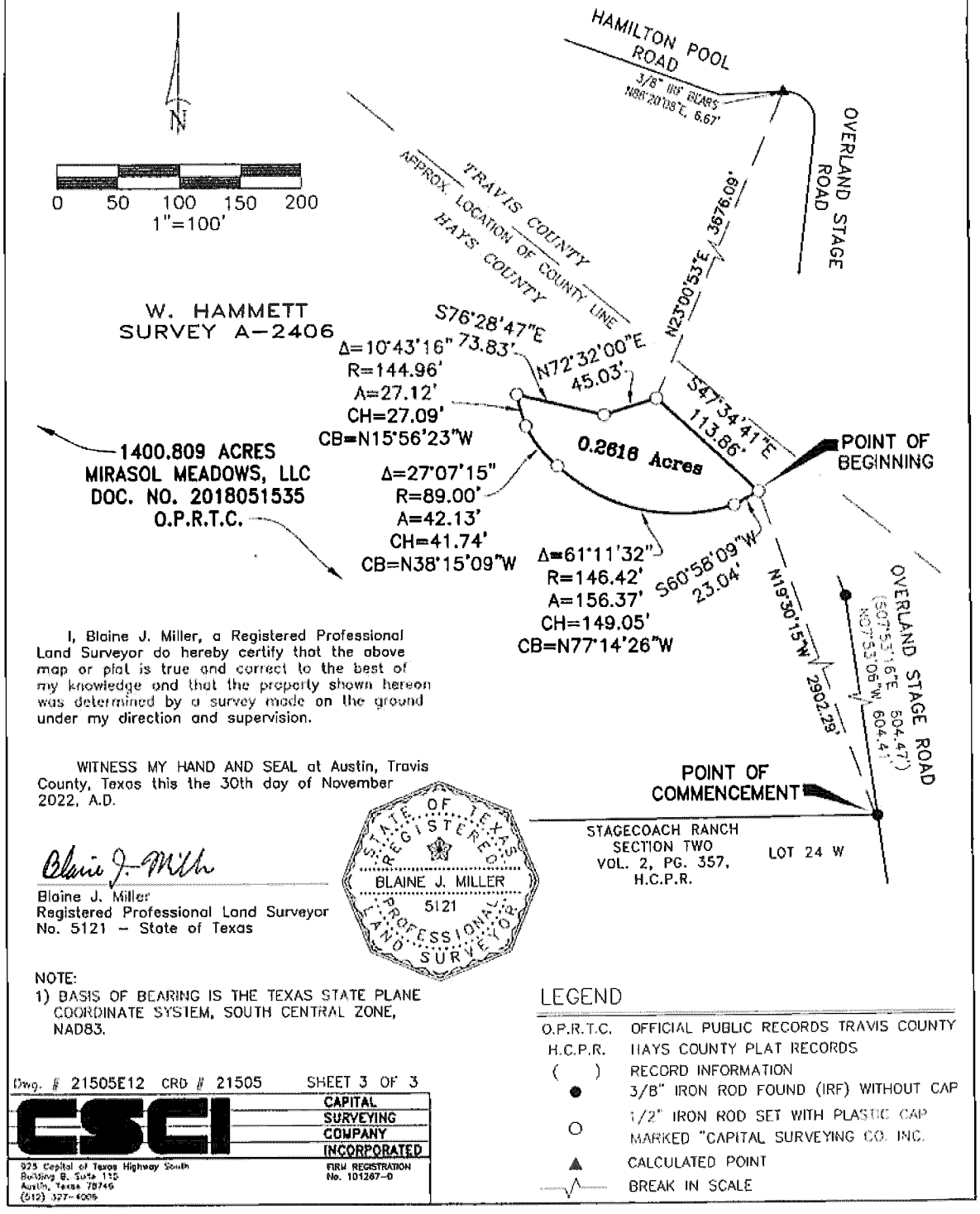
I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 30th day of November, 2022.



Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas

SURVEY OF 0.2616 ACRE (11,394 SQ.FT.) EASEMENT AREA OUT OF THE W. HAMMETT SURVEY, ABSTRACTT No. 2406 HAYS COUNTY, TEXAS



I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 30th day of November 2022, A.D.

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 – State of Texas

STATE OF TEXAS REGISTERED BLAINE J. MILLER 5121 PROFESSIONAL LAND SURVEYOR

NOTE:
1) BASIS OF BEARING IS THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.

LEGEND

O.P.R.T.C.	OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
H.C.P.R.	HAYS COUNTY PLAT RECORDS
( )	RECORD INFORMATION
●	3/8" IRON ROD FOUND (IRF) WITHOUT CAP
○	1/2" IRON ROD SET WITH PLASTIC CAP MARKED "CAPITAL SURVEYING CO. INC.
▲	CALCULATED POINT
	BREAK IN SCALE

Dwg. # 21505E12 CRD # 21505 SHEET 3 OF 3

CSCI CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4005
FIRM REGISTRATION No. 101267-0

1.9660 Acres

Page 1 of 3

J.B . Hammett Survey, Abst. No. 636
November 30, 2022
21505.72

STATE OF TEXAS §
§
COUNTY OF HAYS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 1.9660 acres situated in the J. B. Hammett Survey, Abstract No. 636, Hays County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 1.9660 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N47°44'54"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 3,516.78 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the southwest corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following ten (10) courses:

1) N05°02'57"W, 201.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

2) N80°32'38"E, 83.37feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the left;

3) With the said curve to the left, having a central angle of 27°23'49", a radius of 270.00 feet, a chord distance of 127.88 feet (chord N66°50'44"E), for an arc distance of 129.10 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

4) N53°08'49"E, 217.65 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the north corner of the herein described tract, from which a 3/8" iron rod found bears N37°26'11"E, 4328.10 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;;

5) S50°11'28"E, 99.96 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

6) S41°21'48"W, 31.08 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for a point of curvature for a curve to the left;

7) With the said non-tangent curve to the left, having a central angle of 46°49'38", a radius of 118.00 feet, a chord distance of 92.52 feet (chord bears S18°16'59"W), for an arc distance of 95.07 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

8) S04°47'51"E, 37.15 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

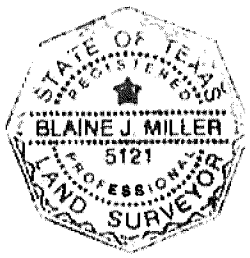
9) S06°44'18"W, 39.44 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

10) S69°25'32"W, 408.01 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 1.9660 acres of land area.

The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

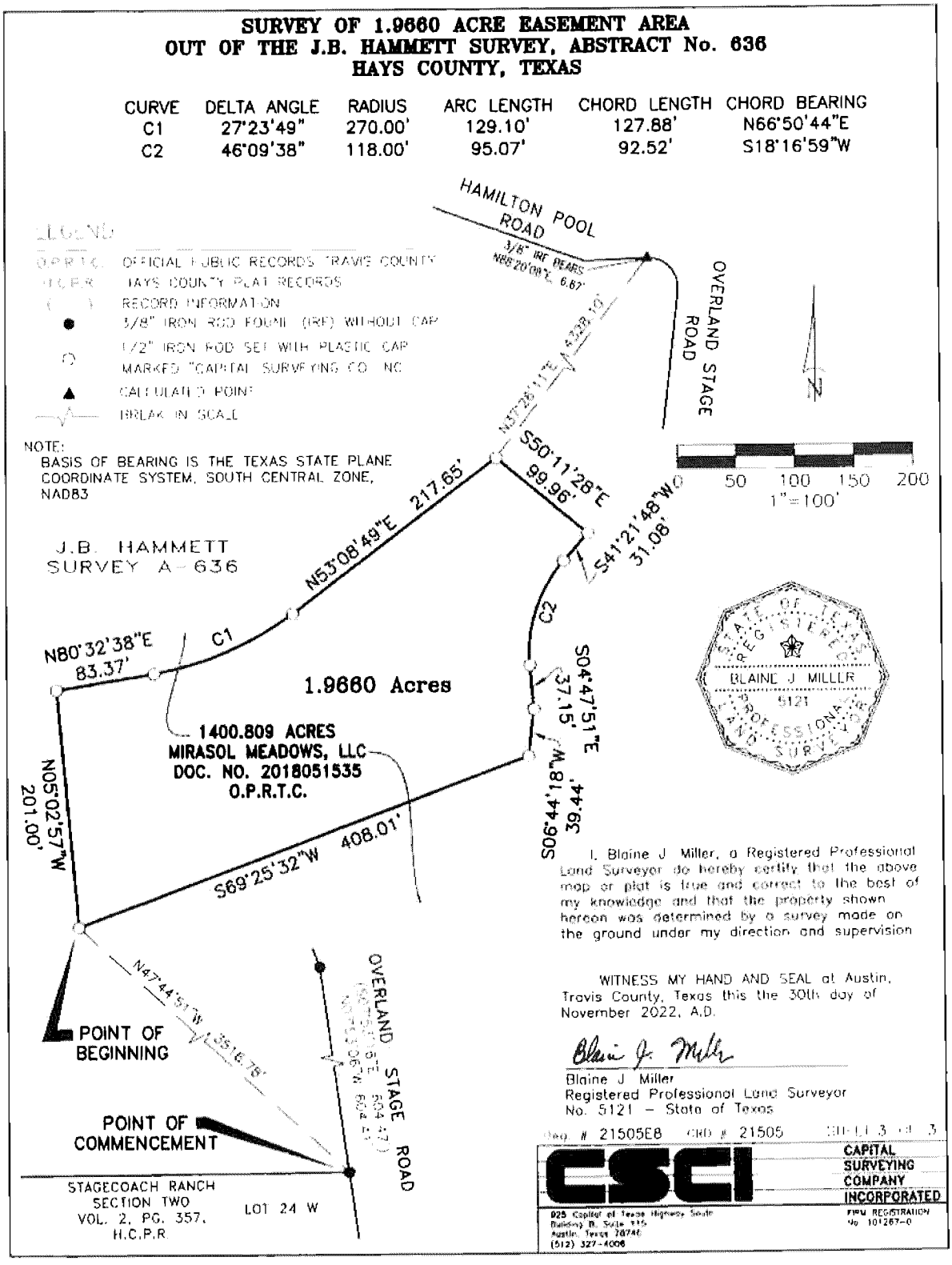
WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 30th day of November, 2022.



Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas

SURVEY OF 1.9660 ACRE EASEMENT AREA
OUT OF THE J.B. HAMMETT SURVEY, ABSTRACT No. 636
HAYS COUNTY, TEXAS

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	27°23'49"	270.00'	129.10'	127.88'	N66°50'44"E
C2	46°09'38"	118.00'	95.07'	92.52'	S18°16'59"W



I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 30th day of November 2022, A.D.

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 – State of Texas

Proj. # 21505E8 CAD # 21505

CAPITAL SURVEYING COMPANY INCORPORATED
825 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101267-0

4.3745 Acres

Page 1 of 5

W. Hammet Survey, Abst. No. 2406
April 3, 2023
21505.71

STATE OF TEXAS §
§
COUNTIES OF HAYS AND TRAVIS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 4.3745 acres situated in the W. Hammet Survey, Abstract No. 2406, Hays County and Travis County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 4.3745 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N15°42'18"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 2,603.48 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature of a curve to the left and the southeast corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following twenty-one (21) courses:

1) With said curve to the left, having a central angle of 31°45'12", a radius of 315.00 feet, a cord distance of 172.35 feet (cord bears S82°37'33"W), for an arc distance of 174.57 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

2) S66°44'57"W, 156.39 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the right;

3) With the said curve to the right, having a central angle of 89°35'08", a radius of 280.00 feet, a chord distance of 394.55 feet (chord bears N68°27'29"W), for an arc distance of 437.80 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of reverse curvature for a curve to the left;

4) With the said curve to the left, having a central angle of 03°42'13", a radius of 3,449.97 feet, a chord distance of 222.96 feet (chord bears N25°31'01"W), for an arc distance of 223.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of reverse curvature for a non-tangent curve to the right;

5) With the said reverse non-tangent curve to the right, having a central angle of 07°23'04", a radius of 180.00 feet, a cord distance of 23.18 feet (chord bears N23°40'35"W), for an arc distance of 23.20 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

6) With the said compound non-tangent curve to the left, having a central angle of 04°37'45", a radius of 490.00 feet, a chord distance of 39.58 feet (chord bears N52°56'42"E), for an arc distance of 39.59 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

7) With the said compound non-tangent curve to the left, having a central angle of 27°12'16", a radius of 531.68 feet, a chord distance of 250.08 feet (chord bears S89°31'04"E), for an arc distance of 252.45 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set the north corner of the herein described tract, from which a 3/8" iron rod found bears N25°13'16"E, 3,741.22 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;

8) S18°08'39"E, 25.49 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the left;

9) With the said non-tangent curve to the left, having a central angle of 16°38'38", a radius of 97.96 feet, a chord distance of 28.36 feet (chord bears S24°27'14"E), for an arc distance of 28.46 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

10) With the said compound non-tangent curve to the left, having a central angle of 20°13'17", a radius of 129.00 feet, a chord distance of 45.29 feet (chord bears S40°52'28"E), for an arc distance of 45.53 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the left;

11) With the said compound non-tangent curve to the left, having a central angle of 61°55'56", a radius of 186.42 feet, a chord distance of 191.83 feet (chord bears S78°08'50"E), for an arc distance of 201.50 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

12) N60°58'09"E, 25.40 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the left;

13) With the said non-tangent curve to the left, having a central angle of 54°24'58", a radius of 57.14 feet, a chord distance of 52.25 feet (chord bears S82°11'26"E), for an arc distance of 54.26 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

14) With the said compound non-tangent curve to the left, having a central angle of 19°29'51", a radius of 275.68 feet, a chord distance of 93.36 feet (chord bears N78°43'08"E), for an arc distance of 93.81 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

15) S56°30'12"E, 22.68 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

16) S33°29'48"W, 11.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

17) S56°30'12"E, 50.88 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

18) S15°51'29"W, 26.48 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

19) S33°29'48"W, 30.84 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

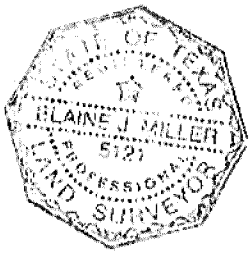
20) S56°53'51"E, 95.53 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

21) S09°07'27"W, 52.54 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 4.3745 acres of land area.

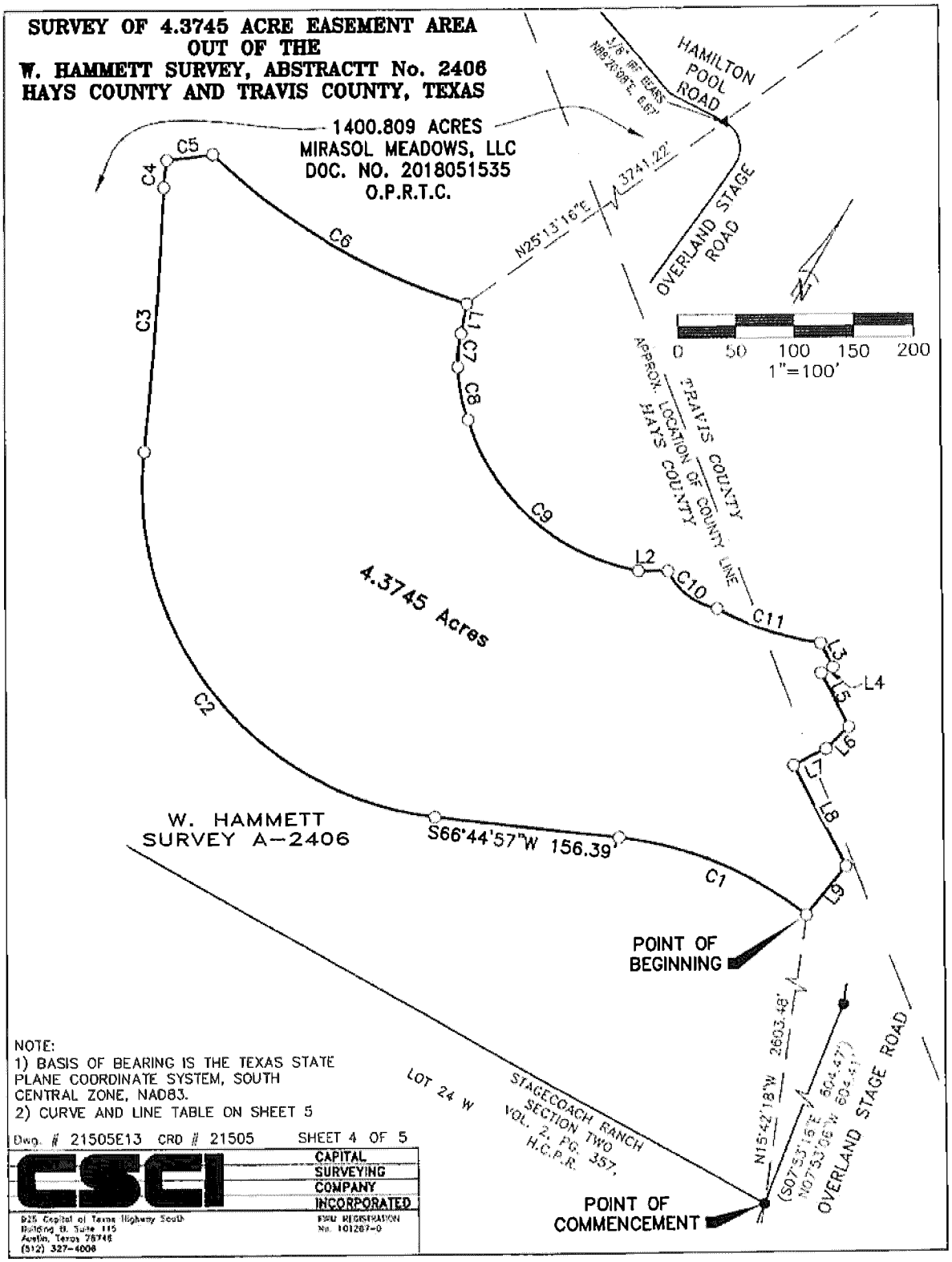
The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 3rd day of April, 2023.



Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas


SURVEY OF 4.3745 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
HAYS COUNTY AND TRAVIS COUNTY, TEXAS
1400.809 ACRES
MIRASOL MEADOWS, LLC
DOC. NO. 2018051535
O.P.R.T.C.
HAMILTON POOL ROAD
OVERLAND STAGE ROAD
3741.22'
N25°13'16"E
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
L1
L2
L3
L4
L5
L6
L7
L8
L9
4.3745 Acres
APPROX. LOCATION OF COUNTY LINE
HAYS COUNTY
TRAVIS COUNTY
0 50 100 150 200
1"=100'
W. HAMMETT
SURVEY A-2406
S66°44'57"W 156.39'
POINT OF BEGINNING
POINT OF COMMENCEMENT
2603.48'
N15°42'18"W
(S07°53'15"E 604.47')
(N07°53'06"W 604.47')
OVERLAND STAGE ROAD
LOT 24 W
STAGECOACH RANCH
SECTION TWO
VOL. 2, PG. 357,
H.C.P.R.
NOTE:
1) BASIS OF BEARING IS THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.
2) CURVE AND LINE TABLE ON SHEET 5
Dwg. # 21505E13 CRD # 21505 SHEET 4 OF 5
CSCI
CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101287-0

SURVEY OF 4.3745 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
HAYS COUNTY AND TRAVIS COUNTY, TEXAS

LEGEND

OPRTC	OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
HCPR	HAYS COUNTY PLAT RECORDS
( )	RECORD INFORMATION
●	3/8" IRON ROD FOUND (IRF) WITHOUT CAP
○	1/2" IRON ROD SET WITH PLASTIC CAP MARKED "CAPITAL SURVEYING CO INC"
▲	CALCULATED POINT
	BREAK IN SCALE

I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 3rd day of April 2023. A.D.

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas

STATE OF TEXAS
REGISTERED
BLAINE J. MILLER
5121
PROFESSIONAL
LAND SURVEYOR

CURVE TABLE

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	31°45'12"	315.00'	174.57'	172.35'	S82°37'33"W
C2	89°35'08"	280.00'	437.80'	394.55'	N68°27'29"W
C3	3°42'13"	3449.97'	223.00'	222.96'	N25°31'01"W
C4	7°23'04"	180.00'	23.20'	23.18'	N23°40'35"W
C5	4°37'45"	490.00'	39.59'	39.58'	N52°56'42"E
C6	27°12'16"	531.68'	252.45'	250.08'	S89°31'04"E
C7	16°38'38"	97.96'	28.46'	28.36'	S24°27'14"E
C8	20°13'17"	129.00'	45.53'	45.29'	S40°52'28"E
C9	61°55'56"	186.42'	201.50'	191.83'	S78°08'50"E
C10	54°24'58"	57.14'	54.26'	52.25'	S82°11'26"E
C11	19°29'51"	275.68'	93.81'	93.36'	N78°43'08"E

LINE TABLE

LINE	BEARING	DISTANCE
L1	S18°08'39"E	25.49'
L2	N60°58'09"E	25.40'
L3	S56°30'12"E	22.68'
L4	S33°29'48"W	11.00'
L5	S56°30'12"E	50.88'
L6	S15°51'29"W	26.48'
L7	S33°29'48"W	30.84'
L8	S56°53'51"E	95.53'
L9	S09°07'27"W	52.54'

Dwg # 21505E13 CRD # 21505

CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101267-0

5.8467 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

STATE OF TEXAS §
§
COUNTY OF HAYS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 5.8467 acres situated in the W. Hammet Survey, Abstract No. 2406, J. B. Hammett Survey, Abstract No. 636 and W. & J. Monckton Survey, Abstract No. 782, Hays County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 5.8467 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N40°06'58"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 2,314.84 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the southwest corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following twenty-one (21) courses:

1) S40°21'11"W, 142.03 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

2) S78°47'38"W, 45.07 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

3) N02°54'45"W, 48.46 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

4) N38°22'33"W, 178.19 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

5) N71°12'10"W, 102.97 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

6) N56°29'51"W, 103.31 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

7) N28°05'17"W, 153.65 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

8) S67°20'44"W, 103.21 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

9) N18°32'57"W, 257.93 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the right;

10) With the said curve to the right, having a central angle of 25°17'15", a radius of 380.00 feet, a chord distance of 166.36 feet (chord N05°54'19"W), for an arc distance of 167.71 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

11) N06°44'18"E, 109.99 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

12) N04°47'51"W, 40.99 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the right;

13) With the said curve to the right, having a central angle of 46°09'38", a radius of 80.00 feet, a chord distance of 62.72 feet (chord bears N18°16'59"E), for an arc distance of 64.45 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

14) N41°21'48"E, 23.04 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the left;

15) With the said curve to the left, having a central angle of 15°24'49", a radius of 150.93 feet, a chord distance of 40.48 feet (chord bears N41°20'16"E), for an arc distance of 40.60 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

16) With the said non-tangent compound curve to the left, having a central angle of 09°27'27", a radius of 108.13 feet, a chord distance of 17.83 feet (chord bears N38°23'47"E), for an arc distance of 17.85 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

17) With the said non-tangent compound curve to the left, having a central angle of 17°22'50", a radius of 490.00 feet, a chord distance of 148.07 feet (chord bears S74°48'08"E), for an arc distance of 148.64 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the northeast corner of the herein described tract, from which a 3/8" iron rod found bears N33°41'02"E, 4237.69 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;

18) S08°28'11"W, 162.28 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

19) S22°55'53"E, 363.47 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for a point of curvature for a curve to the left;

5.8467 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

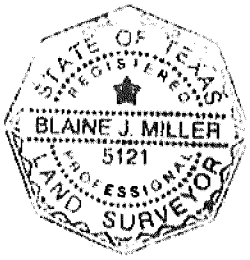
20) S50°16'29"E, 285.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

21) S31°46'37"E, 261.36 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 5.8467 acres of land area.

The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

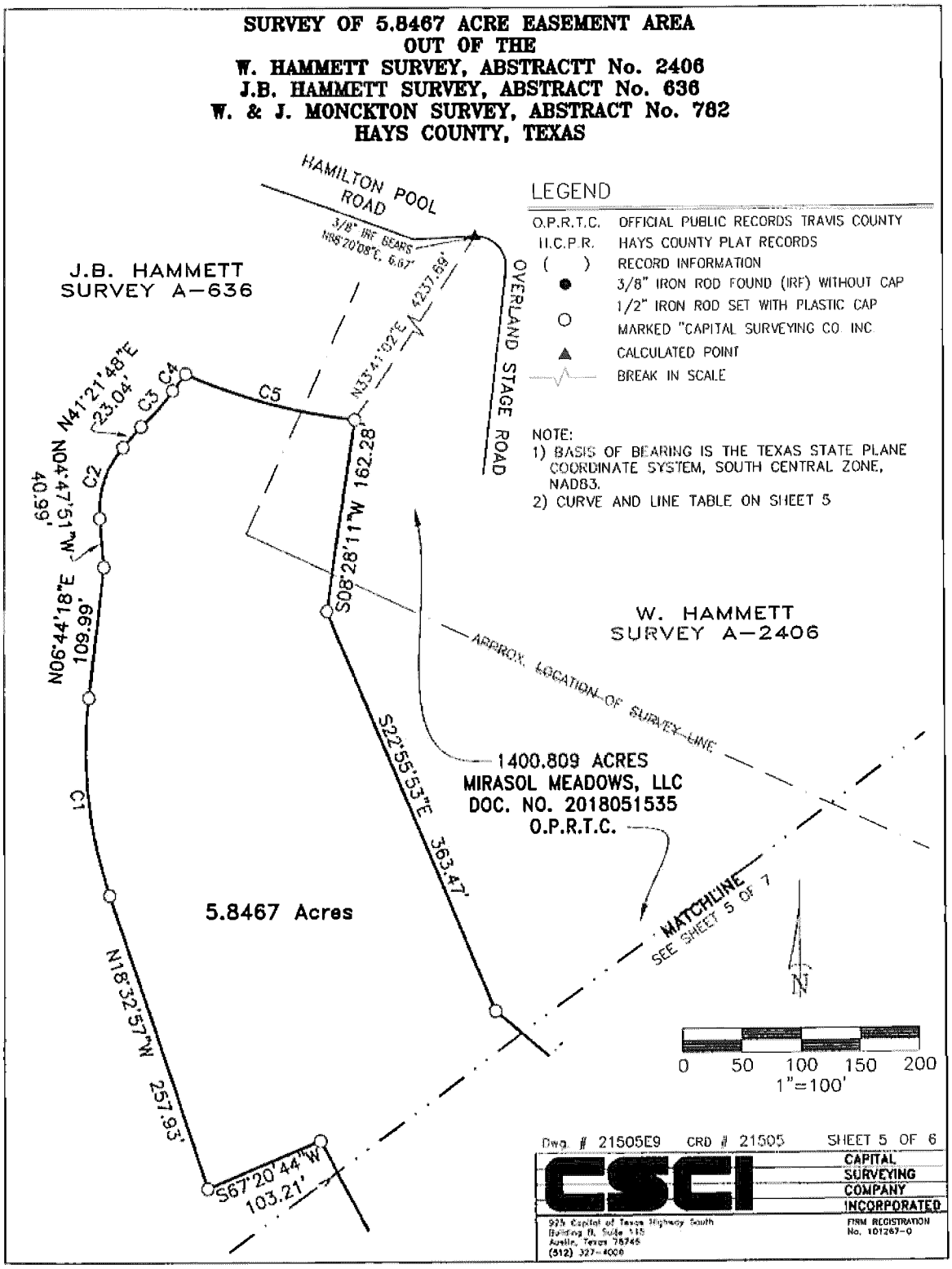
I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 30th day of November, 2022

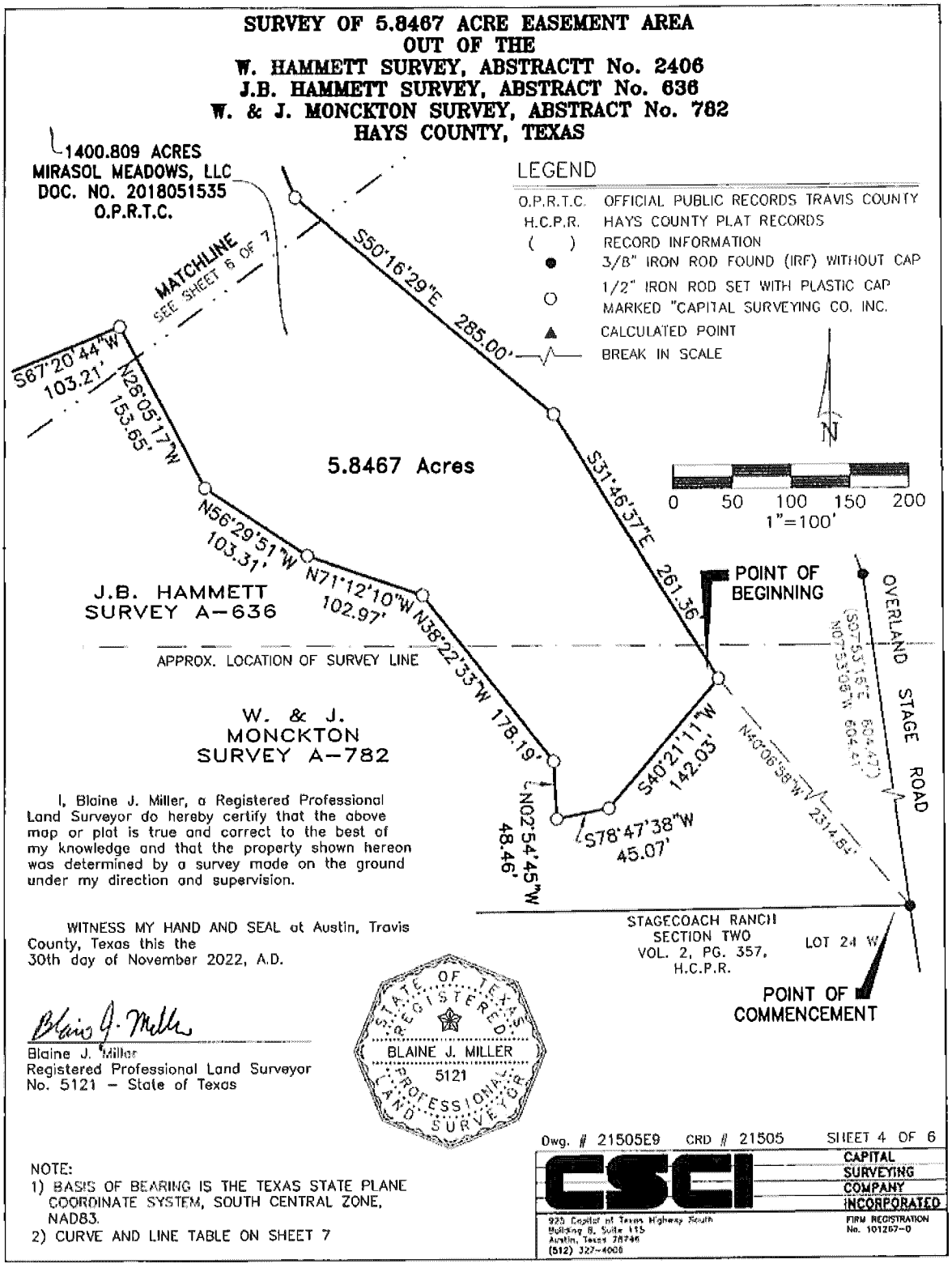


Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas

SURVEY OF 5.8467 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
J.B. HAMMETT SURVEY, ABSTRACT No. 636
W. & J. MONCKTON SURVEY, ABSTRACT No. 782
HAYS COUNTY, TEXAS



SURVEY OF 5.8467 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
J.B. HAMMETT SURVEY, ABSTRACT No. 636
W. & J. MONCKTON SURVEY, ABSTRACT No. 782
HAYS COUNTY, TEXAS



I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 30th day of November 2022, A.D.

Blaine J. Miller

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 – State of Texas

NOTE:
1) BASIS OF BEARING IS THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.
2) CURVE AND LINE TABLE ON SHEET 7

Dwg. # 21505E9 CRD # 21505 SHEET 4 OF 6

CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4008
FIRM REGISTRATION No. 101267-0

SURVEY OF A 5.8467 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY ABSTRACT No. 2406
J.M. HAMMET SURVEY ABSTRACT No. 420
C. & M. R.R. SURVEY ABSTRACT No. 2161
HAYS COUNTY, TEXAS

CURVE TABLE

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	25°17'15"	380.00'	167.71'	166.36'	N05°54'19"W
C2	46°09'38"	80.00'	64.45'	62.72'	N18°16'59"E
C3	15°24'49"	150.93'	40.60'	40.48'	N41°20'16"E
C4	9°27'27"	108.13'	17.85'	17.83'	N38°23'47"E
C5	17°22'50"	490.00'	148.64'	148.07'	S74°48'08"E

Dwg. # 21505E9 CRD # 21505 SHEET 6 OF 6

CAPITAL SURVEYING COMPANY INCORPORATED

925 Capitol of Texas Highway South
Building D, Suite 115
Austin, Texas 78746
(512) 327-4008

FIRM REGISTRATION No. 101267-0

6.8309 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

STATE OF TEXAS §
§
COUNTY OF HAYS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 6.8309 acres situated in the W. Hammet Survey, Abstract No. 2406, J. B. Hammett Survey, Abstract No. 636 and W. & J. Monckton Survey, Abstract No. 782, Hays County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 6.8309 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N32°53'56"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 2,115.71 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the south corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following twenty-four (24) courses:

1) N31°46'37"W, 497.26 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

2) N50°16'28"W, 262.49 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

3) N22°55'53"W, 217.56 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

4) N08°08'02"E, 80.87 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

5) N16°16'09"E, 78.32 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

6) N71°48'31"E, 145.46 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the left and the northeast corner of the herein described tract, from which a 3/8" iron rod found bears N29°07'42"E, 3,924.45 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;

6.8309 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

7) With the said non-tangent curve to the left, having a central angle of 05°05'55", a radius of 220.00 feet, a chord distance of 19.57 feet (chord bears S24°48'33"E), for an arc distance of 19.58 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of reverse curvature for a curve to the right;

8) With the said reverse curve to the right, having a central angle of 03°43'12", a radius of 3410.00 feet, a chord distance of 220.36 feet (chord bears S25°30'25"E), for an arc distance of 220.40 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of reverse curvature for a curve to the left;

9) With the said reverse curve to the left, having a central angle of 89°35'51", a radius of 320.00 feet, a chord distance of 450.96 feet (chord bears S68°27'14"E), for an arc distance of 500.41 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

10) N66°44'57"E, 174.75 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the right;

11) With the said curve to the right, having a central angle of 35°02'33", a radius of 230.00 feet, a chord distance of 138.49 feet (chord bears N84°16'13"E), for an arc distance of 140.67 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

12) S51°38'15"W, 332.56 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

13) S24°26'07"W, 80.06 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

14) S65°33'53"E, 20.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

15) S24°26'07"W, 110.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

16) N65°33'53"W, 20.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

17) S24°26'07"W, 29.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

18) S65°33'53"E, 1.59 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

19) S32°52'10"W, 10.85 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

20) S24°26'07"W, 9.26 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

6.8309 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

21) N65°33'53"W, 1.37 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

22) S32°52'10"W, 68.73 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

23) S06°44'48"W, 160.52 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

24) S27°37'21"W, 58.09 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 6.8309 acres of land area.

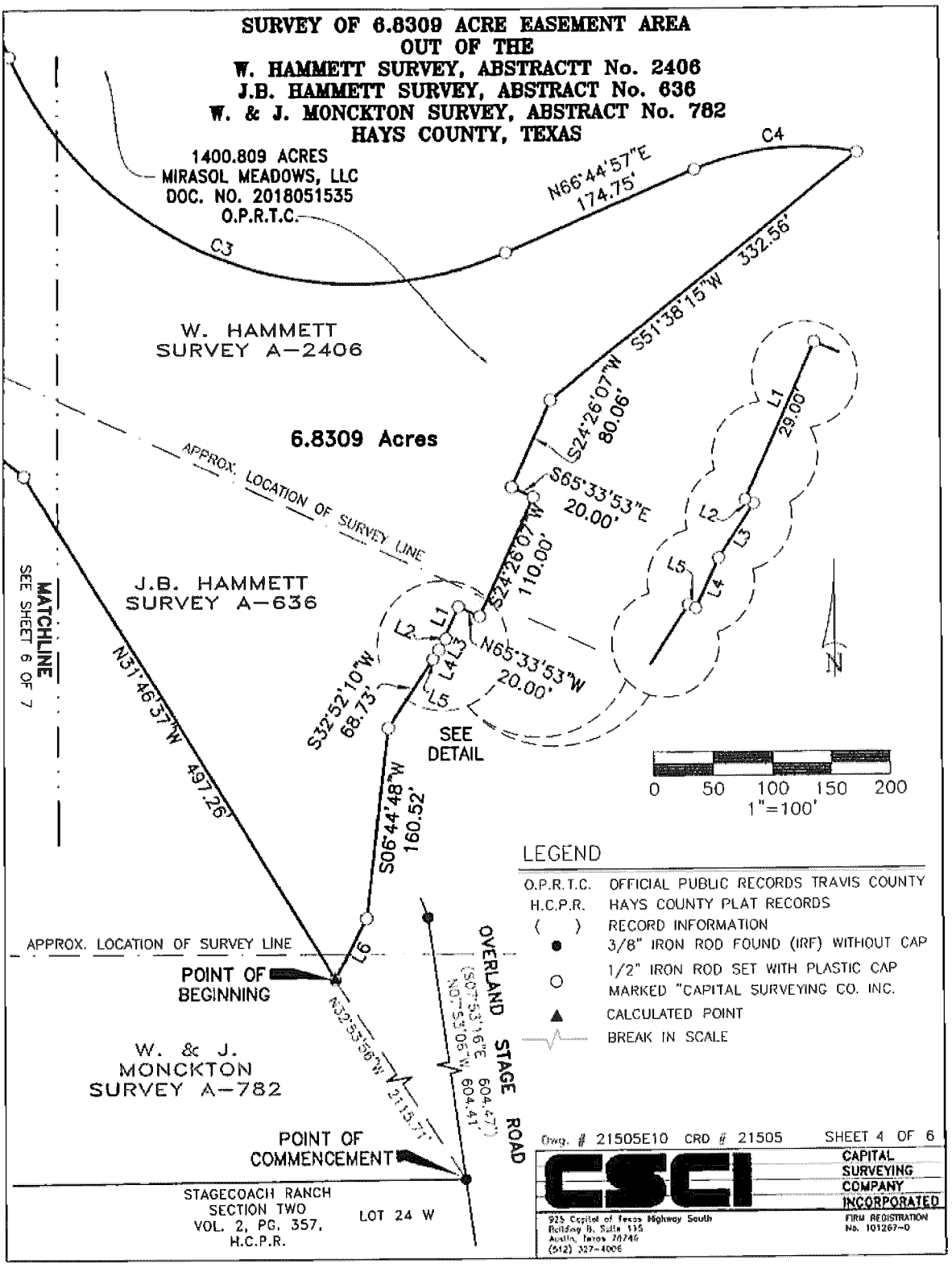
The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

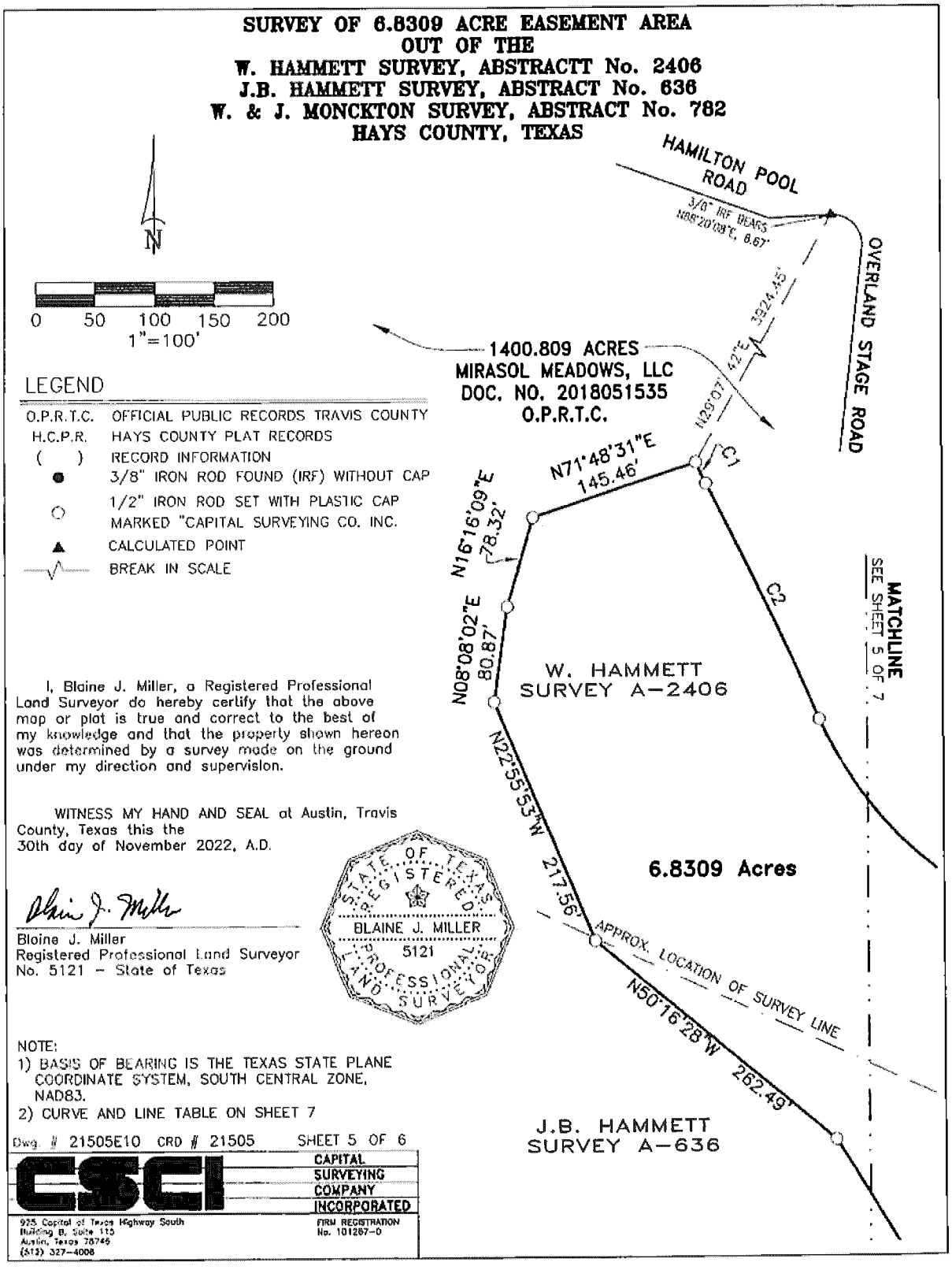
WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 30th day of November, 2022.

STATE OF TEXAS
REGISTERED
BLAINE J. MILLER
5121
PROFESSIONAL
LAND SURVEYOR

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas


SURVEY OF 6.8309 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
J.B. HAMMETT SURVEY, ABSTRACT No. 636
W. & J. MONCKTON SURVEY, ABSTRACT No. 782
HAYS COUNTY, TEXAS
1400.809 ACRES
MIRASOL MEADOWS, LLC
DOC. NO. 2018051535
O.P.R.T.C.
W. HAMMETT
SURVEY A-2406
6.8309 Acres
APPROX. LOCATION OF SURVEY LINE
J.B. HAMMETT
SURVEY A-636
MATCHLINE
SEE SHEET 6 OF 7
SEE DETAIL
APPROX. LOCATION OF SURVEY LINE
POINT OF BEGINNING
POINT OF COMMENCEMENT
W. & J.
MONCKTON
SURVEY A-782
STAGECOACH RANCH
SECTION TWO
VOL. 2, PG. 357,
H.C.P.R.
LOT 24 W
OVERLAND STAGE ROAD
N66°44'57"E
174.75'
S51°38'15"W
332.56'
S24°26'07"W
80.06'
S65°33'53"E
20.00'
S24°26'07"W
110.00'
N65°33'53"W
20.00'
S32°52'10"W
68.73'
N31°46'37"W
497.26'
S06°44'48"W
160.52'
N32°53'56"W
2115.71'
N07°53'16"E
604.47'
(N07°53'16"E
604.41')
L1
29.00'
0 50 100 150 200
1"=100'
LEGEND
O.P.R.T.C. OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
H.C.P.R. HAYS COUNTY PLAT RECORDS
( ) RECORD INFORMATION
3/8" IRON ROD FOUND (IRF) WITHOUT CAP
1/2" IRON ROD SET WITH PLASTIC CAP MARKED "CAPITAL SURVEYING CO. INC.
CALCULATED POINT
BREAK IN SCALE
Dwg. # 21505E10 CRD # 21505 SHEET 4 OF 6
CAPITAL SURVEYING COMPANY INCORPORATED
925 Capitol of Texas Highway South
Building B, Suite 135
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101267-0

SURVEY OF 6.8309 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
J.B. HAMMETT SURVEY, ABSTRACT No. 636
W. & J. MONCKTON SURVEY, ABSTRACT No. 782
HAYS COUNTY, TEXAS



LEGEND

O.P.R.T.C.	OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
H.C.P.R.	HAYS COUNTY PLAT RECORDS
( )	RECORD INFORMATION
●	3/8" IRON ROD FOUND (IRF) WITHOUT CAP
○	1/2" IRON ROD SET WITH PLASTIC CAP MARKED "CAPITAL SURVEYING CO. INC.
▲	CALCULATED POINT
	BREAK IN SCALE

I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 30th day of November 2022, A.D.

STATE OF TEXAS
REGISTERED
BLAINE J. MILLER
5121
PROFESSIONAL
LAND SURVEYOR

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 – State of Texas

NOTE:
1) BASIS OF BEARING IS THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.
2) CURVE AND LINE TABLE ON SHEET 7

Dwg. # 21505E10 CRD # 21505 SHEET 5 OF 6

CSCI
CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4008
FIRM REGISTRATION No. 101287-0

SURVEY OF A 6.8309 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY ABSTRACT No. 2406
J.M. HAMMET SURVEY ABSTRACT No. 420
C. & M. R.R. SURVEY ABSTRACT No. 2161
HAYS COUNTY, TEXAS

LINE TABLE

LINE	BEARING	DISTANCE
L1	S24°26'07"W	29.00'
L2	S65°33'53"E	1.59'
L3	S32°52'10"W	10.85'
L4	S24°26'07"W	9.26'
L5	N65°33'53"W	1.37'
L6	S27°37'21"W	58.09'

CURVE TABLE

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	05°05'55"	220.00'	19.58'	19.57'	S24°48'33"E
C2	03°42'12"	3410.00	220.40'	220.36'	S25°30'25"E
C3	89°35'51"	320.00'	500.41'	450.96'	S68°27'14"E
C4	35°02'33"	230.00'	140.67'	138.49'	N84°16'13"E

Dwg. # 21505E10 CRD # 21505 SHEET 6 OF 6

CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building II, Suite 115
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101287-0

THE STATE OF TEXAS
COUNTY OF HAYS

I hereby certify that this instrument was FILED on the date and the time stamped hereon by me and was duly RECORDED in the Records of Hays County, Texas.

23012963 EASEMENT
04/17/2023 10:55:20 AM Total Fees: $134.00

Elaine H. Cárdenas, MBA, PhD,County Clerk
Hays County, Texas

Elaine H Cárdenas

FILED AND RECORDED
OFFICIAL PUBLIC RECORDS
Dyana Limon-Mercado, County Clerk
Travis County, Texas
Apr 17, 2023 12:55 PM Fee: $ 134.00
2023040037
Electronically Recorded

AFTER RECORDING, RETURN TO:
Armbrust & Brown, PLLC
Attn: David Armbrust
100 Congress Avenue, Suite 1300
Austin, Texas 78701

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT THAT TRANSFERS AN INTEREST IN REAL PROPERTY BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER' S LICENSE NUMBER.

WASTEWATER TREATMENT PLANT AND TREATED EFFLUENT DISPOSAL EASEMENT

THE STATE OF TEXAS §
§
COUNTIES OF TRAVIS §
AND HAYS §

KNOW ALL BY THESE PRESENTS:

THAT **MIRASOL SPRINGS, LLC**, a Texas limited liability company ("*Grantor*"), for and in consideration of the sum of TEN DOLLARS ($10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and for which no lien, express or implied, is retained, has this day **GRANTED, SOLD**, and **CONVEYED**, and, by these presents, does hereby **GRANT, SELL**, and **CONVEY**, unto **CLANCY UTILITY HOLDINGS, LLC**, a Texas limited liability company ("*Grantee*"), whose address is 4143 Maple Avenue, Suite 400, Dallas, Texas 75219, a permanent easement (the "*Easement*") in, under, upon, over, across, and through the following real property:

> All that certain land more particularly described by metes and bounds on **Exhibit "A"** attached hereto and incorporated herein by reference (collectively, the "*Easement Property*");

TO HAVE AND TO HOLD the Easement together with the right and privilege at any and all times to enter the Easement Property or any part thereof, unto Grantee and its successors and assigns forever, but subject to the terms and conditions set forth herein. Grantor does itself, and for its successors and assigns, covenant unto Grantee and Grantee's successors and assigns that Grantor (i) owns good and indefeasible fee simple title to the Easement Property, (ii) is lawfully seized and possessed of the Easement Property, and (iii) has the full right and authority to grant, sell, and convey the Easement as provided herein; and Grantor, on behalf of itself and its successors and assigns, does hereby covenant and agree to **WARRANT** and **FOREVER DEFEND** title to the Easement unto Grantee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through, or under Grantor, but not otherwise, subject to the terms and provisions hereof and all matters of record or visible and apparent on the ground, to the extent that the same are valid, subsisting, and affect the Easement Property.

The Easement may be used for the purposes of:

(a) the construction, installation, placement, operation, inspection, maintenance, use, repair, upgrade, modification, expansion, extension, replacement, relocation, decommissioning, and removal of:

(i) a wastewater treatment plant facility (including, without limitation, influent, effluent, and process lines; tanks; basins; lift stations; sludge handling facilities; wastewater reuse facilities; storage, laboratory and administration buildings; electric, telephone, water, gas, and other utility lines and facilities; and access roads and parking and turn-around areas);

(ii) wastewater effluent storage, delivery, and disposal facilities, lines, pipes, reservoirs, outfalls, and drip field irrigation systems; and

(iii) any related structures, improvements, equipment, fixtures, facilities, and appurtenances necessary or incidental to the treatment, storage, delivery, and disposal of wastewater effluent and/or the safety and security of the Easement Property, including gates and fencing, in compliance with all applicable statutes, rules, and regulations of all governmental agencies with jurisdiction (collectively, the "*Facilities*");

(b) accessing and making connections to the Facilities;

(c) treating wastewater and storing, delivering, and disposing of treated wastewater effluent within the Easement Property; and

(d) maintaining the Easement Property by, among other things, clearing and removing vegetation and debris;

subject to, in each case, applicable law and the terms and conditions hereof.

In addition, in order to provide Grantee, and Grantee's employees, agents, and contractors, access to and from the Easement Property, Grantor also hereby grants to Grantee free and uninterrupted ingress and egress in, upon, and over any private roadways located on Grantor's adjacent/surrounding property.

The Easement will be non-exclusive; however, (a) no permanent structure may be constructed on the surface of the Easement Property by Grantor, or anyone acting by, through, or under Grantor, without Grantee's consent; and (b) Grantor will not use the Easement Property in any manner or grant any easement or other right in, under, upon, over, across, or through the Easement Property that interferes with, conflicts with, is inconsistent with, or prevents the use of the Easement by Grantee as contemplated herein or the Permit (defined below). Grantee will have the right to review in advance any proposed use of the Easement Property, or grant of additional easements or other rights affecting the Easement Property, to determine the effect, if any, on the Easement and the Facilities, and Grantee may require reasonable safeguards to protect the use, safety, and integrity thereof.

Grantee may contract with third parties to perform any or all activities related to the Facilities or activities located or to be located within the Easement Property and may assign this Easement and Grantee's rights hereunder, in whole or in part, exclusively or non-exclusively, so long as the assignee utilizes the Easement solely as contemplated herein. Any such assignment must include an express assumption by the assignee of the obligations set forth herein and will release the assignor of its rights and obligations hereunder to the extent assumed.

Grantor and Grantee agree that, if after the Texas Commission of Environmental Quality (the "*TCEQ*") issues a permit authorizing the treatment and disposal of wastewater effluent within the Easement Property (the "*Permit*"), the Easement Property differs from the area(s) authorized for treatment and disposal of effluent in the Permit, Grantor and Grantee will, prior

to commence of treatment and disposal of effluent by Grantee, execute an amendment to this instrument in order to adjust the boundaries of the Easement Property to correspond to the area(s) authorized for treatment and disposal of effluent by the Permit. Any amendments or modifications to the Easement Property pursuant to this paragraph will be recorded in the Official Public Records of Travis and Hays Counties, Texas.

Similarly, as development of Grantor's property surrounding the Easement Property progresses, the boundaries of the Easement Property may require adjustment from time to time. If adjustments to the boundaries of the Easement Property are necessary, Grantor and Grantee will use good faith efforts to amend this instrument to accommodate such adjustments provided that Grantee retains sufficient area for the treatment and disposal of wastewater effluent as provided herein, with the caveat that any adjustment to the boundaries of the Easement Property may require and be subject to an amendment to the Permit and will be at Grantor's cost and expense. Any amendments or modifications to the Easement Property pursuant to this paragraph will be recorded in the Official Public Records of Travis and Hays Counties, Texas.

This instrument does not in any manner create or grant any rights to the public generally or to any person or entity other than Grantee and its successors and assigns. Grantee may restrict or prohibit public access to the Easement Property.

* * *

[*Signature Pages Follow*]

EXECUTED to be effective as of the 13th day of April, 2023.

GRANTOR:

MIRASOL SPRINGS, LLC, a Texas limited liability company

By: Shawn Miller
Printed Name: Shawn Miller
Title: President

STATE OF TEXAS §
§
COUNTY OF Dallas §

This instrument was acknowledged before me, on the 13th day of April, 2023, by Shawn Miller, President of Mirasol Springs, LLC, a Texas limited liability company, on behalf of said limited liability company.

RENEE LONG
Notary ID #676415-6
My Commission Expires
June 1, 2025

Notary Public, State of Texas

Accepted and Agreed to by:

GRANTEE:

CLANCY UTILITY HOLDINGS, LLC,
a Texas limited liability company

By: Shaun Miller
Printed Name: Shaun Miller
Title: President

STATE OF TEXAS §
§
COUNTY OF Dallas §

This instrument was acknowledged before me, on the 13th day of April, 2023, by Shaun Miller, President of Clancy Utility Holdings, LLC, a Texas limited liability company, on behalf of said limited liability company.

RENEE LONG
Notary ID #676415-6
My Commission Expires
June 1, 2025

Notary Public, State of Texas

EXHIBIT "A"
EASEMENT PROPERTY

0.2616 Acres

W. Hammet Survey, Abst. No. 2406
November 30, 2022
21505.71

STATE OF TEXAS §
§
COUNTY OF HAYS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 0.2616 acres situated in the W. Hammet Survey, Abstract No. 2406, Abstract No. 782, Hays County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 0.2616 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N19°30'15"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 2,902.29 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the east corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following seven (7) courses:

1) S60°58'09"W, 23.04 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the right;

2) With the said non-tangent curve to the right, having a central angle of 61°11'32", a radius of 146.42 feet, a chord distance of 149.05 feet (chord bears N77°14'26"W), for an arc distance of 156.37 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the right;

3) With the said compound non-tangent curve to the right, having a central angle of 27°07'15", a radius of 89.00 feet, a chord distance of 41.74 feet (chord bears N38°15'09"W), for an arc distance of 42.13 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the right;

4) With the said compound non-tangent curve to the right, having a central angle of 10°43'16", a radius of 144.96 feet, a chord distance of 27.09 feet (chord bears N15°56'09"W), for an arc distance of 27.12 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

5) S76°28'47"E, 73.83 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

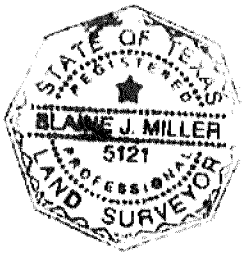
6) N72°32'00"E, 45.03 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the north corner of the herein described tract, from which a 3/8" iron rod found bears N23°00'53"E, 3,676.09 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;

7) S47°34'41"E, 113.86 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 0.2616 acres of land area

The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

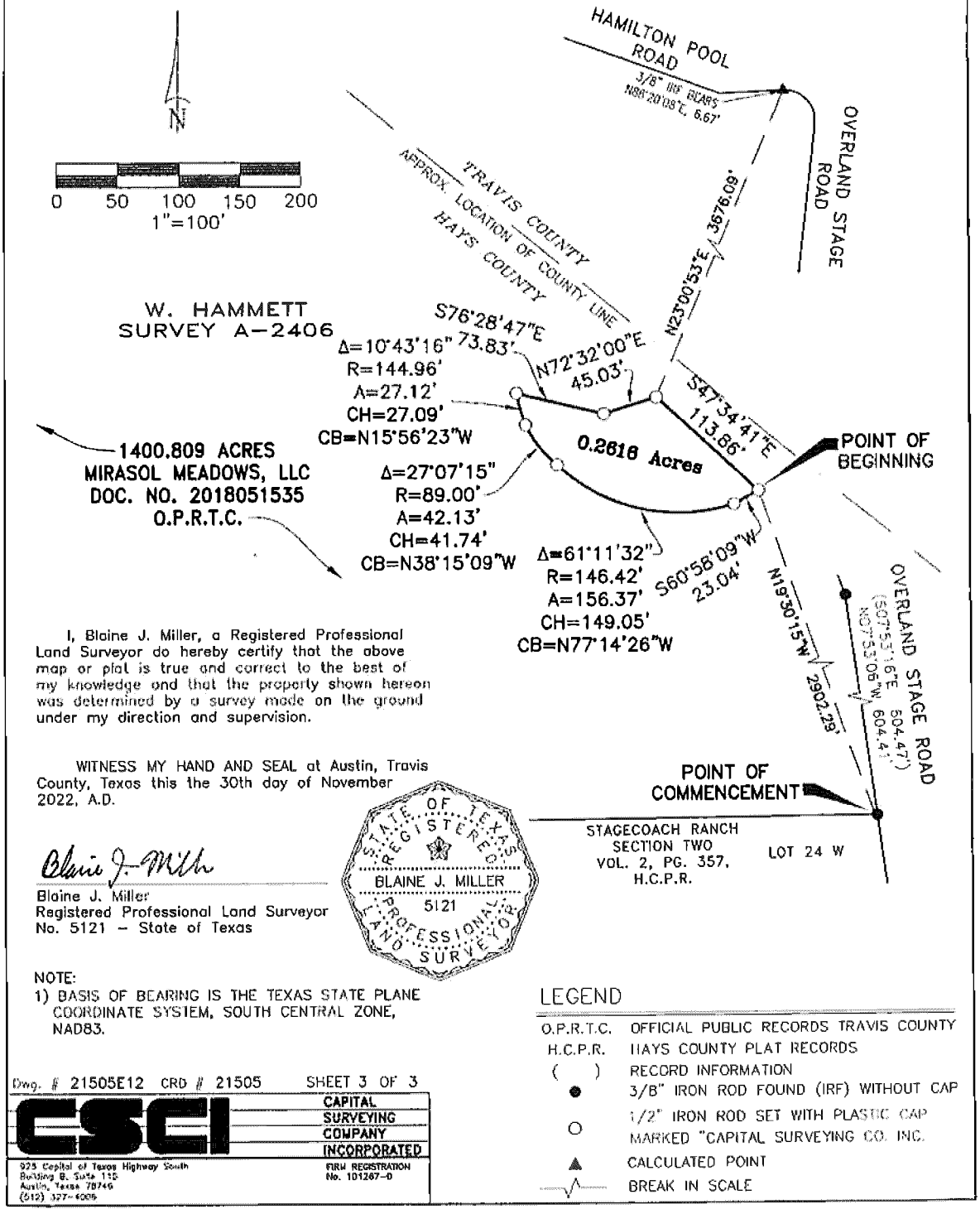
I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 30th day of November, 2022.



Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas

SURVEY OF 0.2616 ACRE (11,394 SQ.FT.) EASEMENT AREA OUT OF THE W. HAMMETT SURVEY, ABSTRACTT No. 2406 HAYS COUNTY, TEXAS



I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 30th day of November 2022, A.D.

STATE OF TEXAS
REGISTERED
BLAINE J. MILLER
5121
PROFESSIONAL
LAND SURVEYOR

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 – State of Texas

NOTE:
1) BASIS OF BEARING IS THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.

LEGEND

O.P.R.T.C.	OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
H.C.P.R.	HAYS COUNTY PLAT RECORDS
( )	RECORD INFORMATION
●	3/8" IRON ROD FOUND (IRF) WITHOUT CAP
○	1/2" IRON ROD SET WITH PLASTIC CAP MARKED "CAPITAL SURVEYING CO. INC."
▲	CALCULATED POINT
	BREAK IN SCALE

Dwg. # 21505E12 CRD # 21505 SHEET 3 OF 3

CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4005
FIRM REGISTRATION No. 101267-0

1.9660 Acres

J.B . Hammett Survey, Abst. No. 636
November 30, 2022
21505.72

STATE OF TEXAS §
§
COUNTY OF HAYS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 1.9660 acres situated in the J. B. Hammett Survey, Abstract No. 636, Hays County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 1.9660 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N47°44'54"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 3,516.78 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the southwest corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following ten (10) courses:

1) N05°02'57"W, 201.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

2) N80°32'38"E, 83.37feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the left;

3) With the said curve to the left, having a central angle of 27°23'49", a radius of 270.00 feet, a chord distance of 127.88 feet (chord N66°50'44"E), for an arc distance of 129.10 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

4) N53°08'49"E, 217.65 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the north corner of the herein described tract, from which a 3/8" iron rod found bears N37°26'11"E, 4328.10 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;;

5) S50°11'28"E, 99.96 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

6) S41°21'48"W, 31.08 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for a point of curvature for a curve to the left;

7) With the said non-tangent curve to the left, having a central angle of 46°49'38", a radius of 118.00 feet, a chord distance of 92.52 feet (chord bears S18°16'59"W), for an arc distance of 95.07 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

8) S04°47'51"E, 37.15 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

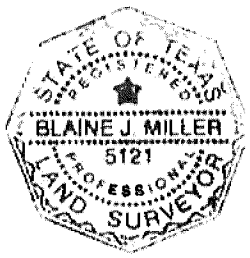
9) S06°44'18"W, 39.44 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

10) S69°25'32"W, 408.01 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 1.9660 acres of land area.

The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

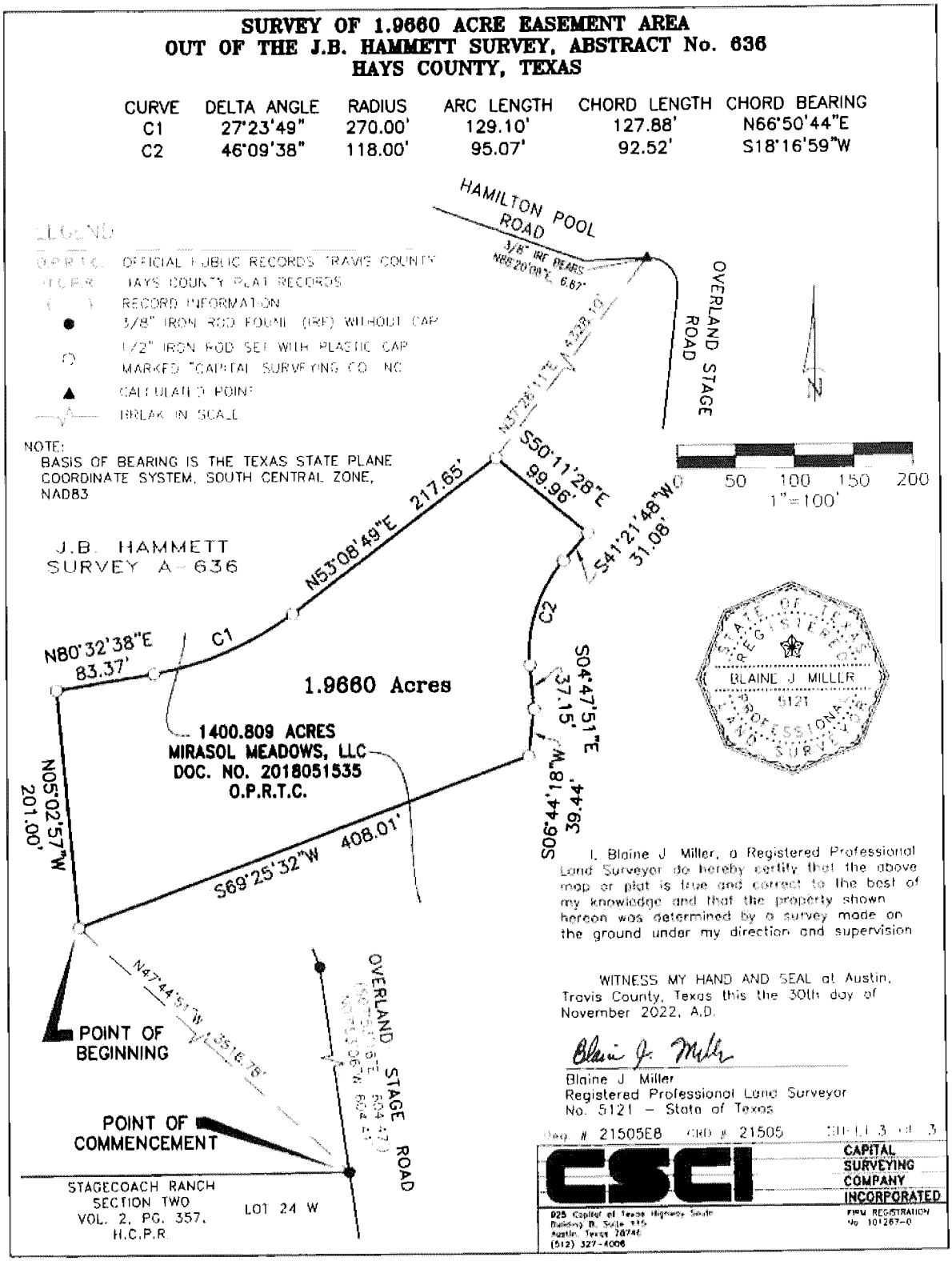
WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 30th day of November, 2022.



Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas

SURVEY OF 1.9660 ACRE EASEMENT AREA
OUT OF THE J.B. HAMMETT SURVEY, ABSTRACT No. 636
HAYS COUNTY, TEXAS

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	27°23'49"	270.00'	129.10'	127.88'	N66°50'44"E
C2	46°09'38"	118.00'	95.07'	92.52'	S18°16'59"W



I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 30th day of November 2022, A.D.

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 – State of Texas

Proj. # 21505E8 CAD # 21505

CAPITAL SURVEYING COMPANY INCORPORATED
825 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101267-0

4.3745 Acres

Page 1 of 5

W. Hammet Survey, Abst. No. 2406
April 3, 2023
21505.71

STATE OF TEXAS §
§
COUNTIES OF HAYS AND TRAVIS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 4.3745 acres situated in the W. Hammet Survey, Abstract No. 2406, Hays County and Travis County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 4.3745 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N15°42'18"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 2,603.48 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature of a curve to the left and the southeast corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following twenty-one (21) courses:

1) With said curve to the left, having a central angle of 31°45'12", a radius of 315.00 feet, a cord distance of 172.35 feet (cord bears S82°37'33"W), for an arc distance of 174.57 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

2) S66°44'57"W, 156.39 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the right;

3) With the said curve to the right, having a central angle of 89°35'08", a radius of 280.00 feet, a chord distance of 394.55 feet (chord bears N68°27'29"W), for an arc distance of 437.80 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of reverse curvature for a curve to the left;

4) With the said curve to the left, having a central angle of 03°42'13", a radius of 3,449.97 feet, a chord distance of 222.96 feet (chord bears N25°31'01"W), for an arc distance of 223.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of reverse curvature for a non-tangent curve to the right;

5) With the said reverse non-tangent curve to the right, having a central angle of 07°23'04", a radius of 180.00 feet, a cord distance of 23.18 feet (chord bears N23°40'35"W), for an arc distance of 23.20 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

6) With the said compound non-tangent curve to the left, having a central angle of 04°37'45", a radius of 490.00 feet, a chord distance of 39.58 feet (chord bears N52°56'42"E), for an arc distance of 39.59 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

7) With the said compound non-tangent curve to the left, having a central angle of 27°12'16", a radius of 531.68 feet, a chord distance of 250.08 feet (chord bears S89°31'04"E), for an arc distance of 252.45 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set the north corner of the herein described tract, from which a 3/8" iron rod found bears N25°13'16"E, 3,741.22 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;

8) S18°08'39"E, 25.49 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the left;

9) With the said non-tangent curve to the left, having a central angle of 16°38'38", a radius of 97.96 feet, a chord distance of 28.36 feet (chord bears S24°27'14"E), for an arc distance of 28.46 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

10) With the said compound non-tangent curve to the left, having a central angle of 20°13'17", a radius of 129.00 feet, a chord distance of 45.29 feet (chord bears S40°52'28"E), for an arc distance of 45.53 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the left;

11) With the said compound non-tangent curve to the left, having a central angle of 61°55'56", a radius of 186.42 feet, a chord distance of 191.83 feet (chord bears S78°08'50"E), for an arc distance of 201.50 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

12) N60°58'09"E, 25.40 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the left;

13) With the said non-tangent curve to the left, having a central angle of 54°24'58", a radius of 57.14 feet, a chord distance of 52.25 feet (chord bears S82°11'26"E), for an arc distance of 54.26 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

14) With the said compound non-tangent curve to the left, having a central angle of 19°29'51", a radius of 275.68 feet, a chord distance of 93.36 feet (chord bears N78°43'08"E), for an arc distance of 93.81 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

15) S56°30'12"E, 22.68 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

16) S33°29'48"W, 11.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

17) S56°30'12"E, 50.88 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

18) S15°51'29"W, 26.48 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

19) S33°29'48"W, 30.84 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

20) S56°53'51"E, 95.53 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

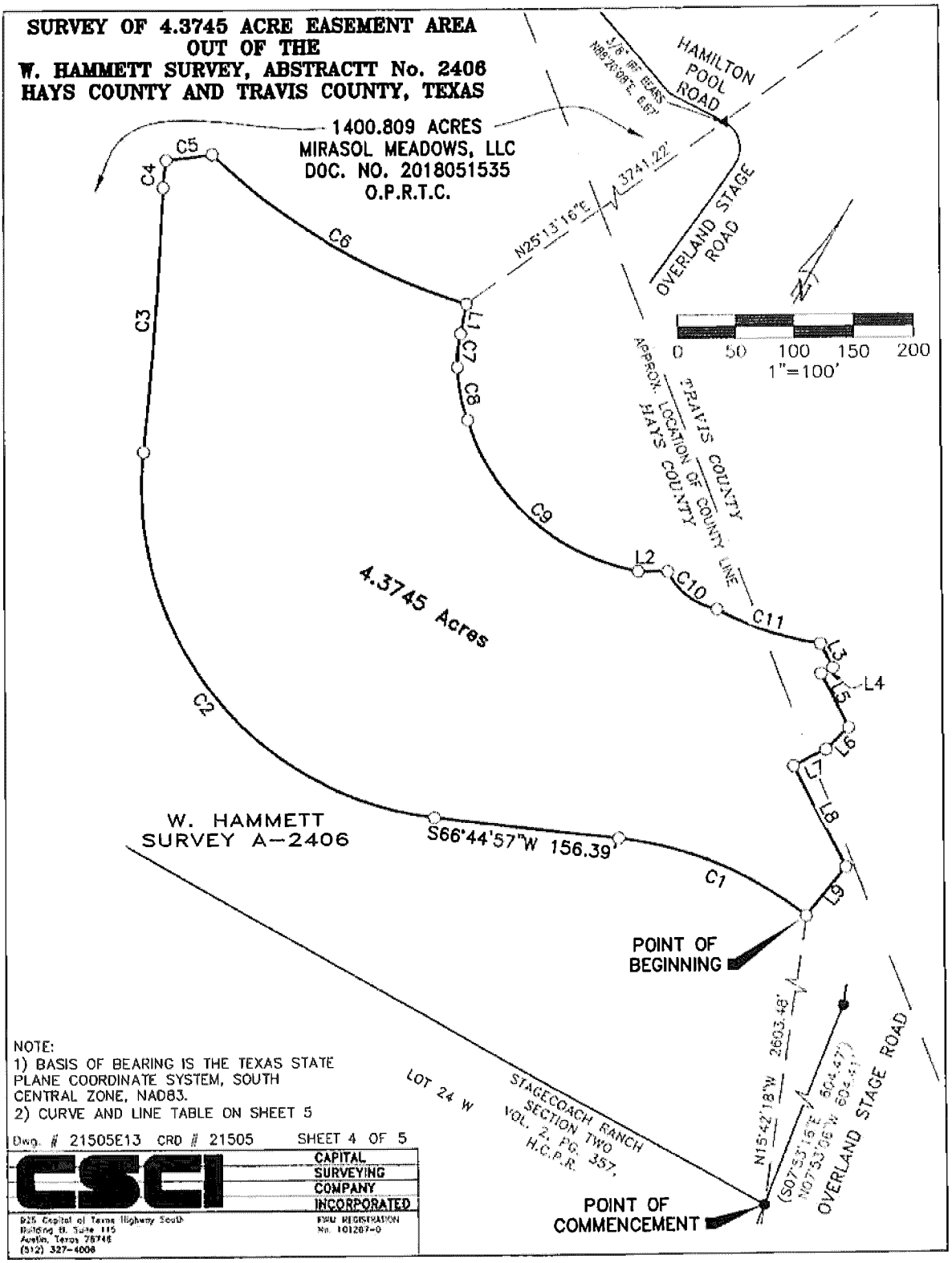
21) S09°07'27"W, 52.54 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 4.3745 acres of land area.

The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 3rd day of April, 2023.

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas


SURVEY OF 4.3745 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
HAYS COUNTY AND TRAVIS COUNTY, TEXAS
1400.809 ACRES
MIRASOL MEADOWS, LLC
DOC. NO. 2018051535
O.P.R.T.C.
HAMILTON POOL ROAD
OVERLAND STAGE ROAD
3741.22'
N25°13'16"E
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
L1
L2
L3
L4
L5
L6
L7
L8
L9
4.3745 Acres
APPROX. LOCATION OF COUNTY LINE
HAYS COUNTY
TRAVIS COUNTY
0 50 100 150 200
1"=100'
W. HAMMETT
SURVEY A-2406
S66°44'57"W 156.39'
POINT OF BEGINNING
POINT OF COMMENCEMENT
2603.48'
N15°42'18"W
(S07°53'15"E 604.47')
(N07°53'06"W 604.47')
OVERLAND STAGE ROAD
LOT 24 W
STAGECOACH RANCH
SECTION TWO
VOL. 2, PG. 357,
H.C.P.R.
NOTE:
1) BASIS OF BEARING IS THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.
2) CURVE AND LINE TABLE ON SHEET 5
Dwg. # 21505E13 CRD # 21505 SHEET 4 OF 5
CSCI
CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101287-0

SURVEY OF 4.3745 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
HAYS COUNTY AND TRAVIS COUNTY, TEXAS

LEGEND

OPRTC	OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
HCPR	HAYS COUNTY PLAT RECORDS
( )	RECORD INFORMATION
●	3/8" IRON ROD FOUND (IRF) WITHOUT CAP
○	1/2" IRON ROD SET WITH PLASTIC CAP MARKED "CAPITAL SURVEYING CO INC"
▲	CALCULATED POINT
	BREAK IN SCALE

I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 3rd day of April 2023. A.D.

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas

STATE OF TEXAS
REGISTERED
BLAINE J. MILLER
5121
PROFESSIONAL
LAND SURVEYOR

CURVE TABLE

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	31°45'12"	315.00'	174.57'	172.35'	S82°37'33"W
C2	89°35'08"	280.00'	437.80'	394.55'	N68°27'29"W
C3	3°42'13"	3449.97'	223.00'	222.96'	N25°31'01"W
C4	7°23'04"	180.00'	23.20'	23.18'	N23°40'35"W
C5	4°37'45"	490.00'	39.59'	39.58'	N52°56'42"E
C6	27°12'16"	531.68'	252.45'	250.08'	S89°31'04"E
C7	16°38'38"	97.96'	28.46'	28.36'	S24°27'14"E
C8	20°13'17"	129.00'	45.53'	45.29'	S40°52'28"E
C9	61°55'56"	186.42'	201.50'	191.83'	S78°08'50"E
C10	54°24'58"	57.14'	54.26'	52.25'	S82°11'26"E
C11	19°29'51"	275.68'	93.81'	93.36'	N78°43'08"E

LINE TABLE

LINE	BEARING	DISTANCE
L1	S18°08'39"E	25.49'
L2	N60°58'09"E	25.40'
L3	S56°30'12"E	22.68'
L4	S33°29'48"W	11.00'
L5	S56°30'12"E	50.88'
L6	S15°51'29"W	26.48'
L7	S33°29'48"W	30.84'
L8	S56°53'51"E	95.53'
L9	S09°07'27"W	52.54'

Dwg # 21505E13 CRD # 21505

CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101267-0

5.8467 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

STATE OF TEXAS §
§
COUNTY OF HAYS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 5.8467 acres situated in the W. Hammet Survey, Abstract No. 2406, J. B. Hammett Survey, Abstract No. 636 and W. & J. Monckton Survey, Abstract No. 782, Hays County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 5.8467 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N40°06'58"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 2,314.84 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the southwest corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following twenty-one (21) courses:

1) S40°21'11"W, 142.03 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

2) S78°47'38"W, 45.07 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

3) N02°54'45"W, 48.46 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

4) N38°22'33"W, 178.19 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

5) N71°12'10"W, 102.97 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

6) N56°29'51"W, 103.31 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

7) N28°05'17"W, 153.65 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

8) S67°20'44"W, 103.21 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

9) N18°32'57"W, 257.93 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the right;

10) With the said curve to the right, having a central angle of 25°17'15", a radius of 380.00 feet, a chord distance of 166.36 feet (chord N05°54'19"W), for an arc distance of 167.71 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

11) N06°44'18"E, 109.99 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

12) N04°47'51"W, 40.99 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the right;

13) With the said curve to the right, having a central angle of 46°09'38", a radius of 80.00 feet, a chord distance of 62.72 feet (chord bears N18°16'59"E), for an arc distance of 64.45 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

14) N41°21'48"E, 23.04 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the left;

15) With the said curve to the left, having a central angle of 15°24'49", a radius of 150.93 feet, a chord distance of 40.48 feet (chord bears N41°20'16"E), for an arc distance of 40.60 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

16) With the said non-tangent compound curve to the left, having a central angle of 09°27'27", a radius of 108.13 feet, a chord distance of 17.83 feet (chord bears N38°23'47"E), for an arc distance of 17.85 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of compound curvature for a non-tangent curve to the left;

17) With the said non-tangent compound curve to the left, having a central angle of 17°22'50", a radius of 490.00 feet, a chord distance of 148.07 feet (chord bears S74°48'08"E), for an arc distance of 148.64 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the northeast corner of the herein described tract, from which a 3/8" iron rod found bears N33°41'02"E, 4237.69 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;

18) S08°28'11"W, 162.28 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

19) S22°55'53"E, 363.47 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for a point of curvature for a curve to the left;

5.8467 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

20) S50°16'29"E, 285.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

21) S31°46'37"E, 261.36 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 5.8467 acres of land area.

The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

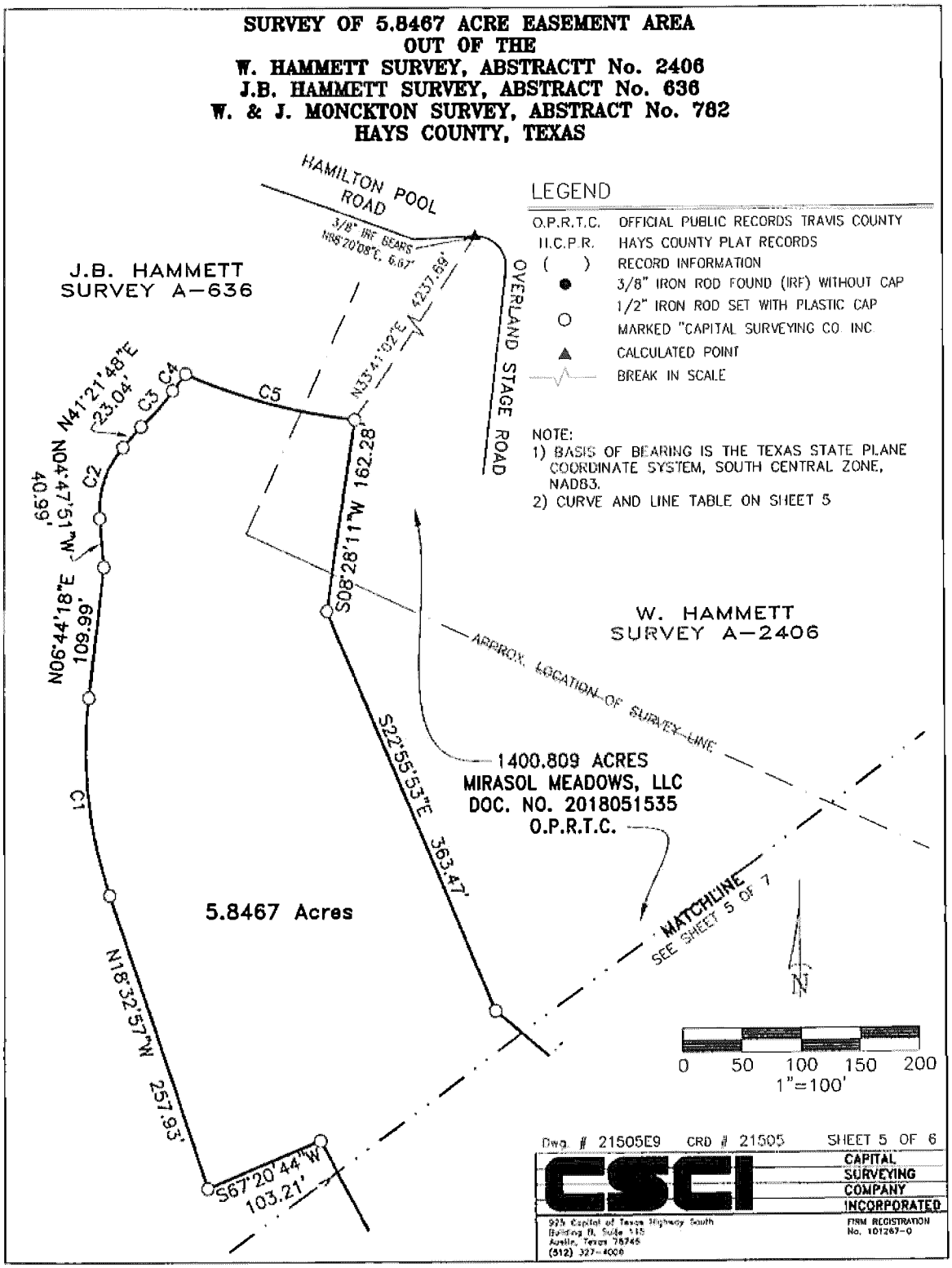
I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 30th day of November, 2022

STATE OF TEXAS
REGISTERED
BLAINE J. MILLER
5121
PROFESSIONAL
LAND SURVEYOR

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas

SURVEY OF 5.8467 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
J.B. HAMMETT SURVEY, ABSTRACT No. 636
W. & J. MONCKTON SURVEY, ABSTRACT No. 782
HAYS COUNTY, TEXAS



SURVEY OF 5.8467 ACRE EASEMENT AREA
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W. HAMMETT SURVEY, ABSTRACTT No. 2406
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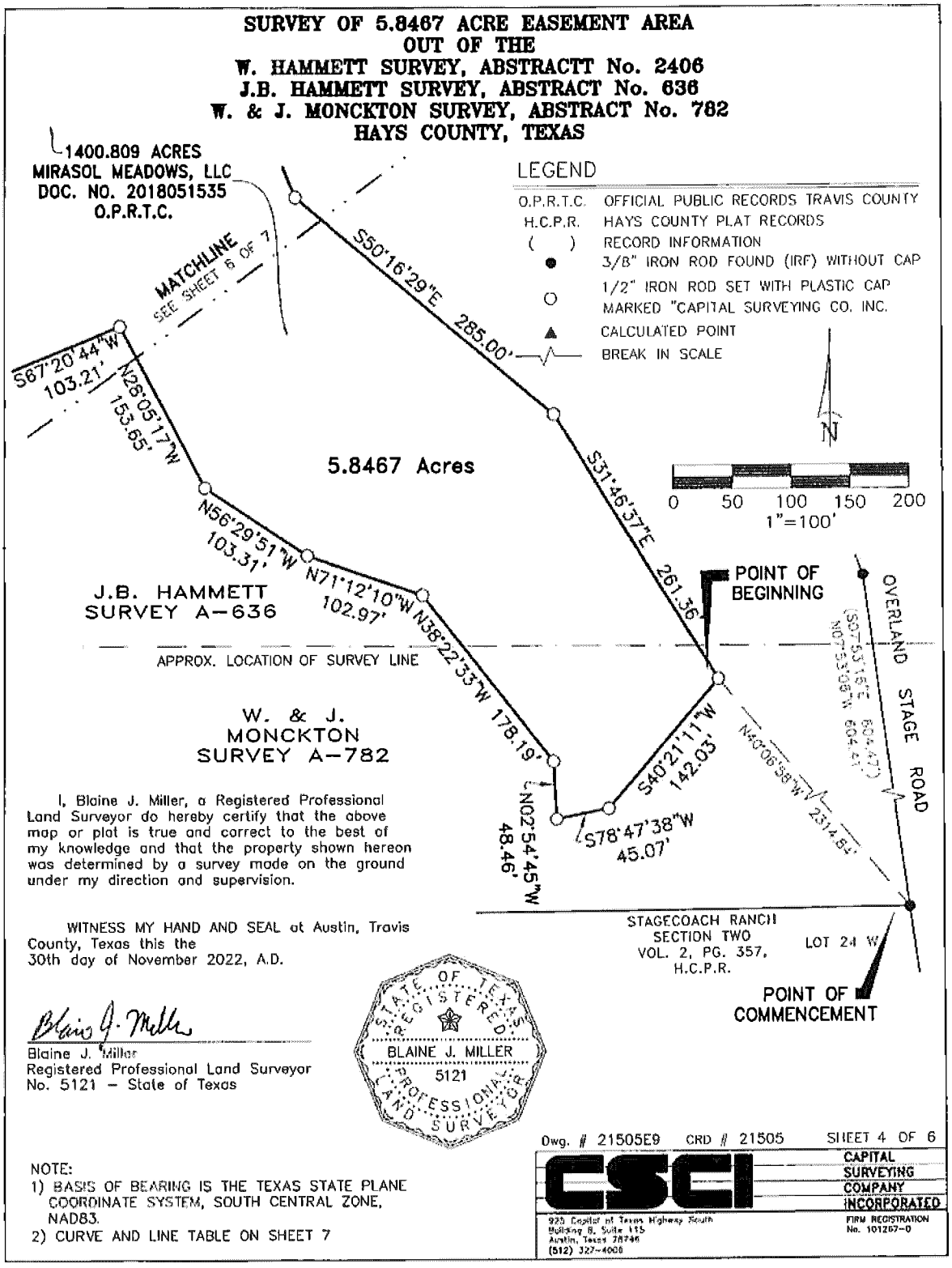
HAYS COUNTY, TEXAS



I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 30th day of November 2022, A.D.

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 – State of Texas

NOTE:
1) BASIS OF BEARING IS THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.
2) CURVE AND LINE TABLE ON SHEET 7

Dwg. # 21505E9 CRD # 21505 SHEET 4 OF 6

CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4008
FIRM REGISTRATION No. 101267-0

SURVEY OF A 5.8467 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY ABSTRACT No. 2406
J.M. HAMMET SURVEY ABSTRACT No. 420
C. & M. R.R. SURVEY ABSTRACT No. 2161
HAYS COUNTY, TEXAS

CURVE TABLE

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	25°17'15"	380.00'	167.71'	166.36'	N05°54'19"W
C2	46°09'38"	80.00'	64.45'	62.72'	N18°16'59"E
C3	15°24'49"	150.93'	40.60'	40.48'	N41°20'16"E
C4	9°27'27"	108.13'	17.85'	17.83'	N38°23'47"E
C5	17°22'50"	490.00'	148.64'	148.07'	S74°48'08"E

Dwg. # 21505E9 CRD # 21505 SHEET 6 OF 6

CAPITAL SURVEYING COMPANY INCORPORATED

925 Capitol of Texas Highway South
Building D, Suite 115
Austin, Texas 78746
(512) 327-4008

FIRM REGISTRATION No. 101267-0

6.8309 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

STATE OF TEXAS §
§
COUNTY OF HAYS §

FIELDNOTE DESCRIPTION, of a tract or parcel of land containing 6.8309 acres situated in the W. Hammet Survey, Abstract No. 2406, J. B. Hammett Survey, Abstract No. 636 and W. & J. Monckton Survey, Abstract No. 782, Hays County, Texas, being a portion of that 1400.809 acre tract conveyed to Mirasol Meadows, LLC, by warranty deed recorded in Document No. 2018051535 of the Official Public Records of Travis County, Texas, the said 6.8309 acre tract is more particularly described by metes and bounds as follows:

COMMENCING at a 3/8" iron rod, without cap, found for a southeast corner of the said 1400.809 acre tract, same being the northeast corner of Lot 24 W, Stagecoach Ranch, Section Two, a subdivision recorded in Book 2, Page 357 of the Plat Records of Hays County, Texas, and being on the existing westerly right-of-way line of Overland Stage Road as shown on said plat of Stagecoach Ranch, Section Two, from which a 3/8" iron rod, without cap, found on the common easterly line of the said 1400.809 acre tract and westerly right-of-way line of Overland Stage Road, bears N07°53'06"W, 604.41 feet;

THENCE, N32°53'56"W, leaving the northerly line of said Lot 24 W, across the said 1400.809 acre tract, for a distance of 2,115.71 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the south corner and POINT OF BEGINNG of the herein described tract;

THENCE, continuing across the said 1400.809 acre tract for the following twenty-four (24) courses:

1) N31°46'37"W, 497.26 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

2) N50°16'28"W, 262.49 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

3) N22°55'53"W, 217.56 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

4) N08°08'02"E, 80.87 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

5) N16°16'09"E, 78.32 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

6) N71°48'31"E, 145.46 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a non-tangent curve to the left and the northeast corner of the herein described tract, from which a 3/8" iron rod found bears N29°07'42"E, 3,924.45 feet to a calculated point for the northeast corner of the aforesaid 1400.809 acre tract, same being a point on the southerly right-of-way line of Hamilton Pool Road, and N88°20'08"E, 6.67 feet;

7) With the said non-tangent curve to the left, having a central angle of 05°05'55", a radius of 220.00 feet, a chord distance of 19.57 feet (chord bears S24°48'33"E), for an arc distance of 19.58 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of reverse curvature for a curve to the right;

8) With the said reverse curve to the right, having a central angle of 03°43'12", a radius of 3410.00 feet, a chord distance of 220.36 feet (chord bears S25°30'25"E), for an arc distance of 220.40 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of reverse curvature for a curve to the left;

9) With the said reverse curve to the left, having a central angle of 89°35'51", a radius of 320.00 feet, a chord distance of 450.96 feet (chord bears S68°27'14"E), for an arc distance of 500.41 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of tangency;

10) N66°44'57"E, 174.75 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for the point of curvature for a curve to the right;

11) With the said curve to the right, having a central angle of 35°02'33", a radius of 230.00 feet, a chord distance of 138.49 feet (chord bears N84°16'13"E), for an arc distance of 140.67 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

12) S51°38'15"W, 332.56 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

13) S24°26'07"W, 80.06 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

14) S65°33'53"E, 20.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

15) S24°26'07"W, 110.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

16) N65°33'53"W, 20.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

17) S24°26'07"W, 29.00 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

18) S65°33'53"E, 1.59 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

19) S32°52'10"W, 10.85 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

20) S24°26'07"W, 9.26 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

6.8309 Acres

W. Hammet Survey, Abst. No. 2406
J.B . Hammett Survey, Abst. No. 636
W. & J. Monckton Survey, Abst. No.782
November 30, 2022
21505.71

21) N65°33'53"W, 1.37 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

22) S32°52'10"W, 68.73 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

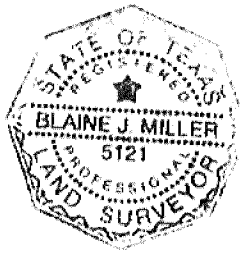
23) S06°44'48"W, 160.52 feet to a 1/2" iron rod with plastic cap marked "Capital Surveying Company, Inc." set for corner;

24) S27°37'21"W, 58.09 feet to the POINT OF BEGINNING, CONTAINING within these metes and bounds 6.8309 acres of land area.

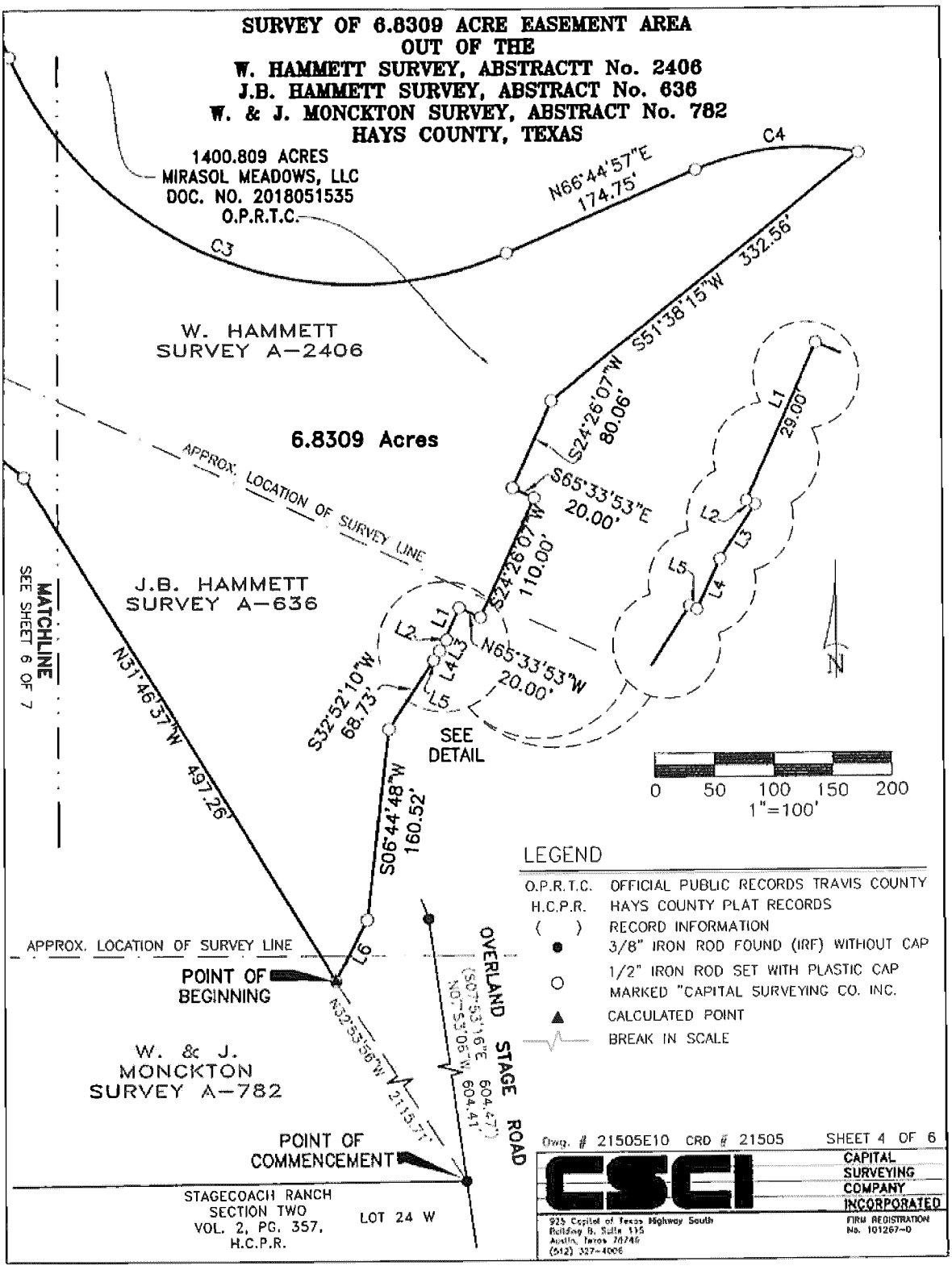
The Bearings shown hereon are grid bearings base on the Texas State Plane Coordinate System, South Central Zone, NAD83 (HARN), derived by GPS observation.

I, Blaine J. Miller, a Registered Professional Land Surveyor, do hereby certify that the above description is true and correct to the best of my knowledge and that the property described herein was determined by a survey made on the ground under my direction and supervision.

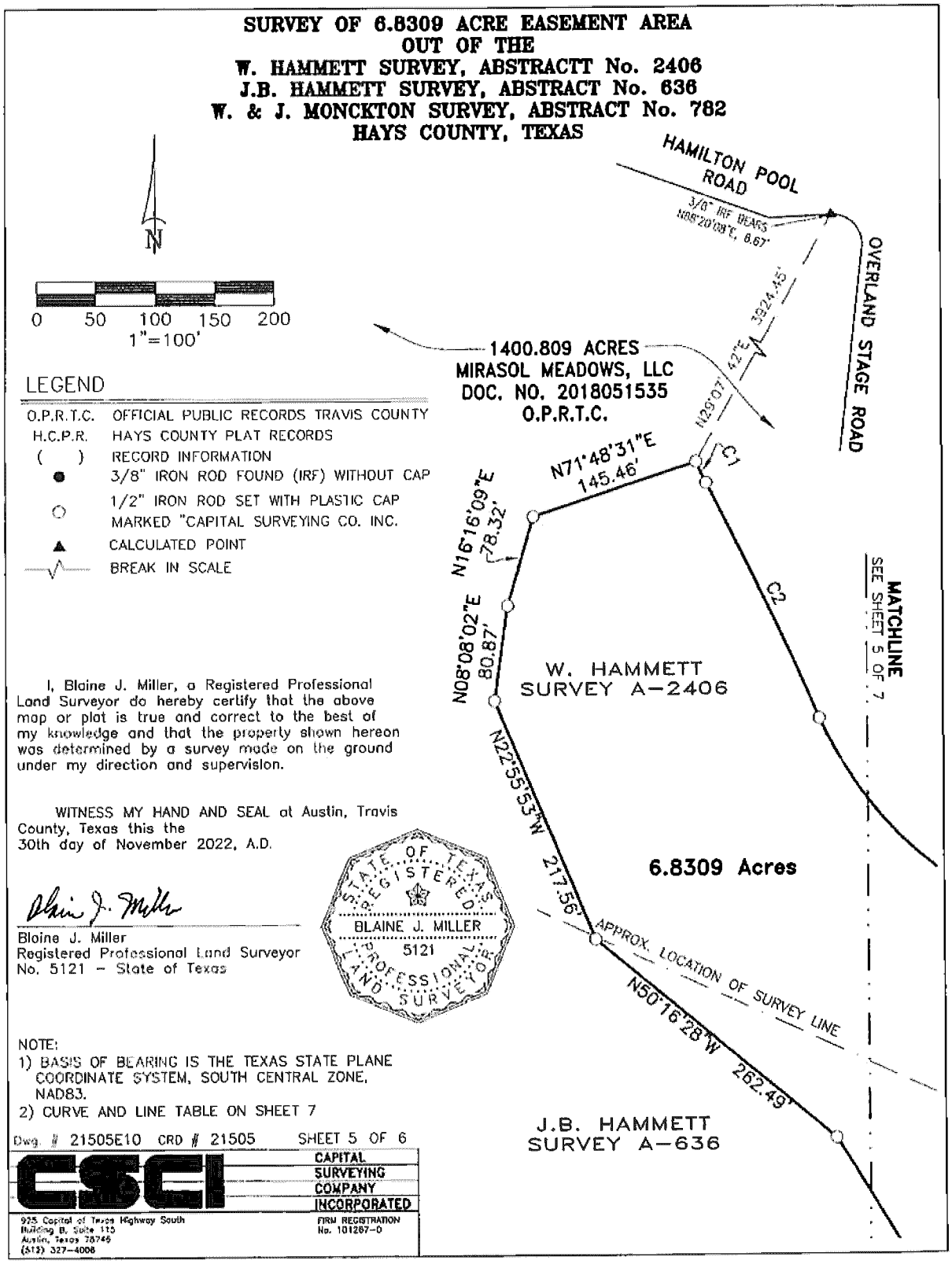
WITNESS MY HAND AND SEAL at Austin, Travis County, Texas, this the 30th day of November, 2022.



Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 - State of Texas


SURVEY OF 6.8309 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
J.B. HAMMETT SURVEY, ABSTRACT No. 636
W. & J. MONCKTON SURVEY, ABSTRACT No. 782
HAYS COUNTY, TEXAS
1400.809 ACRES
MIRASOL MEADOWS, LLC
DOC. NO. 2018051535
O.P.R.T.C.
W. HAMMETT
SURVEY A-2406
6.8309 Acres
APPROX. LOCATION OF SURVEY LINE
J.B. HAMMETT
SURVEY A-636
MATCHLINE
SEE SHEET 6 OF 7
W. & J.
MONCKTON
SURVEY A-782
APPROX. LOCATION OF SURVEY LINE
POINT OF
BEGINNING
POINT OF
COMMENCEMENT
STAGECOACH RANCH
SECTION TWO
VOL. 2, PG. 357,
H.C.P.R.
LOT 24 W
OVERLAND STAGE ROAD
SEE
DETAIL
C3
C4
N66°44'57"E
174.75'
S51°38'15"W
332.56'
S24°26'07"W
80.06'
S65°33'53"E
20.00'
S24°26'07"W
110.00'
N65°33'53"W
20.00'
S32°52'10"W
68.73'
N31°46'37"W
497.26'
S06°44'48"W
160.52'
N32°53'56"W
2115.71'
N07°53'16"E
604.47'
(N07°53'06"W
604.41')
L1
29.00'
L2
L3
L4
L5
L6
0
50
100
150
200
1"=100'
N
LEGEND
O.P.R.T.C. OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
H.C.P.R. HAYS COUNTY PLAT RECORDS
( ) RECORD INFORMATION
3/8" IRON ROD FOUND (IRF) WITHOUT CAP
1/2" IRON ROD SET WITH PLASTIC CAP
MARKED "CAPITAL SURVEYING CO. INC.
CALCULATED POINT
BREAK IN SCALE
Dwg. # 21505E10 CRD # 21505 SHEET 4 OF 6
CSCI
CAPITAL
SURVEYING
COMPANY
INCORPORATED
925 Capitol of Texas Highway South
Building B, Suite 135
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION
No. 101267-0

SURVEY OF 6.8309 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY, ABSTRACTT No. 2406
J.B. HAMMETT SURVEY, ABSTRACT No. 636
W. & J. MONCKTON SURVEY, ABSTRACT No. 782
HAYS COUNTY, TEXAS



LEGEND

O.P.R.T.C.	OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
H.C.P.R.	HAYS COUNTY PLAT RECORDS
( )	RECORD INFORMATION
●	3/8" IRON ROD FOUND (IRF) WITHOUT CAP
○	1/2" IRON ROD SET WITH PLASTIC CAP MARKED "CAPITAL SURVEYING CO. INC.
▲	CALCULATED POINT
	BREAK IN SCALE

I, Blaine J. Miller, a Registered Professional Land Surveyor do hereby certify that the above map or plat is true and correct to the best of my knowledge and that the property shown hereon was determined by a survey made on the ground under my direction and supervision.

WITNESS MY HAND AND SEAL at Austin, Travis County, Texas this the 30th day of November 2022, A.D.

STATE OF TEXAS
REGISTERED
BLAINE J. MILLER
5121
PROFESSIONAL
LAND SURVEYOR

Blaine J. Miller
Registered Professional Land Surveyor
No. 5121 – State of Texas

NOTE:
1) BASIS OF BEARING IS THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.
2) CURVE AND LINE TABLE ON SHEET 7

Dwg. # 21505E10 CRD # 21505 SHEET 5 OF 6

CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building B, Suite 115
Austin, Texas 78746
(512) 327-4008
FIRM REGISTRATION No. 101287-0

SURVEY OF A 6.8309 ACRE EASEMENT AREA
OUT OF THE
W. HAMMETT SURVEY ABSTRACT No. 2406
J.M. HAMMET SURVEY ABSTRACT No. 420
C. & M. R.R. SURVEY ABSTRACT No. 2161
HAYS COUNTY, TEXAS

LINE TABLE

LINE	BEARING	DISTANCE
L1	S24°26'07"W	29.00'
L2	S65°33'53"E	1.59'
L3	S32°52'10"W	10.85'
L4	S24°26'07"W	9.26'
L5	N65°33'53"W	1.37'
L6	S27°37'21"W	58.09'

CURVE TABLE

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	05°05'55"	220.00'	19.58'	19.57'	S24°48'33"E
C2	03°42'12"	3410.00	220.40'	220.36'	S25°30'25"E
C3	89°35'51"	320.00'	500.41'	450.96'	S68°27'14"E
C4	35°02'33"	230.00'	140.67'	138.49'	N84°16'13"E

Dwg. # 21505E10 CRD # 21505 SHEET 6 OF 6

CAPITAL SURVEYING COMPANY INCORPORATED
925 Capital of Texas Highway South
Building II, Suite 115
Austin, Texas 78746
(512) 327-4006
FIRM REGISTRATION No. 101287-0

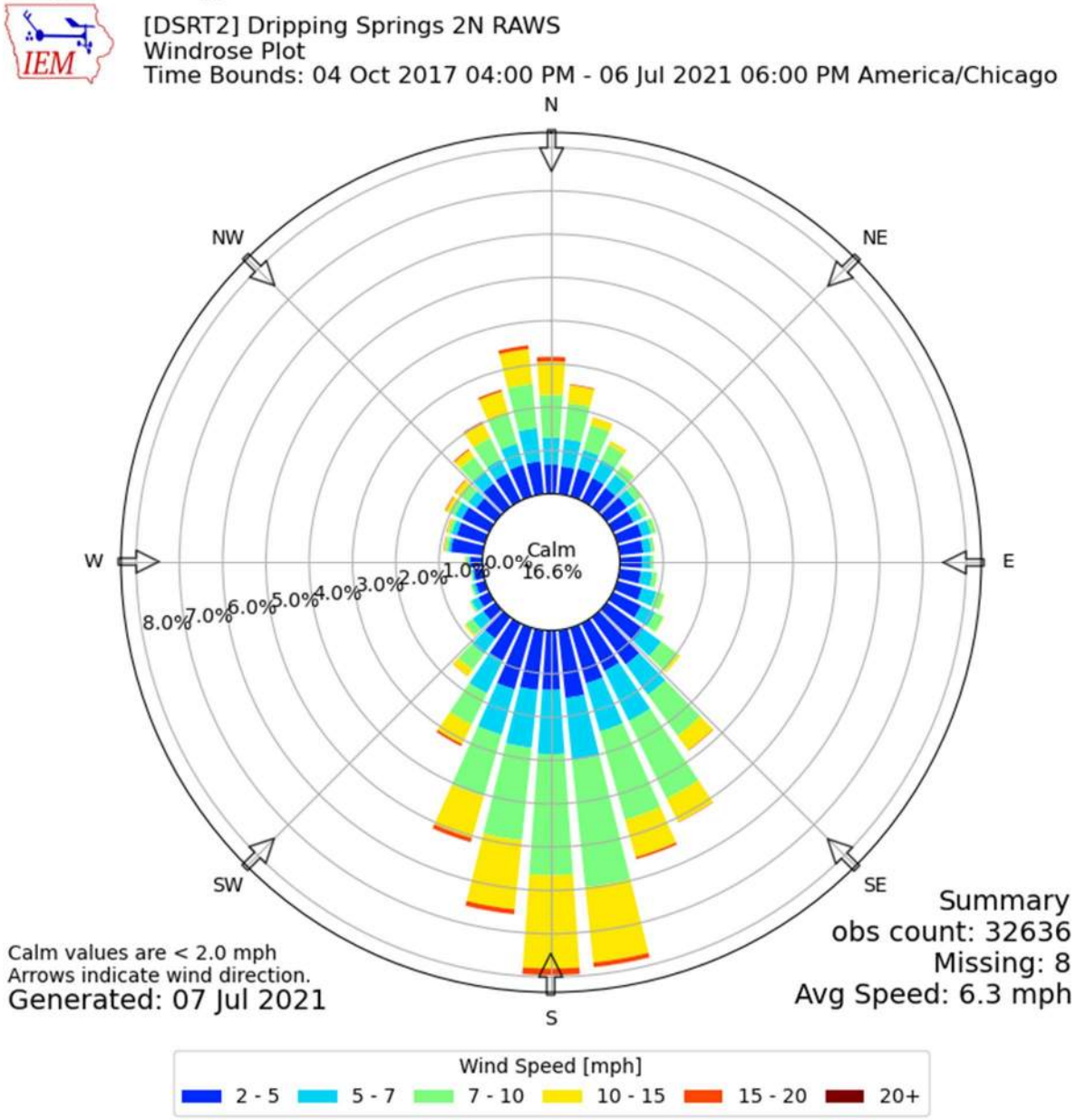
Attachment 22 – Wind Rose

Wind Roses

Scroll down this page for monthly climatologies!

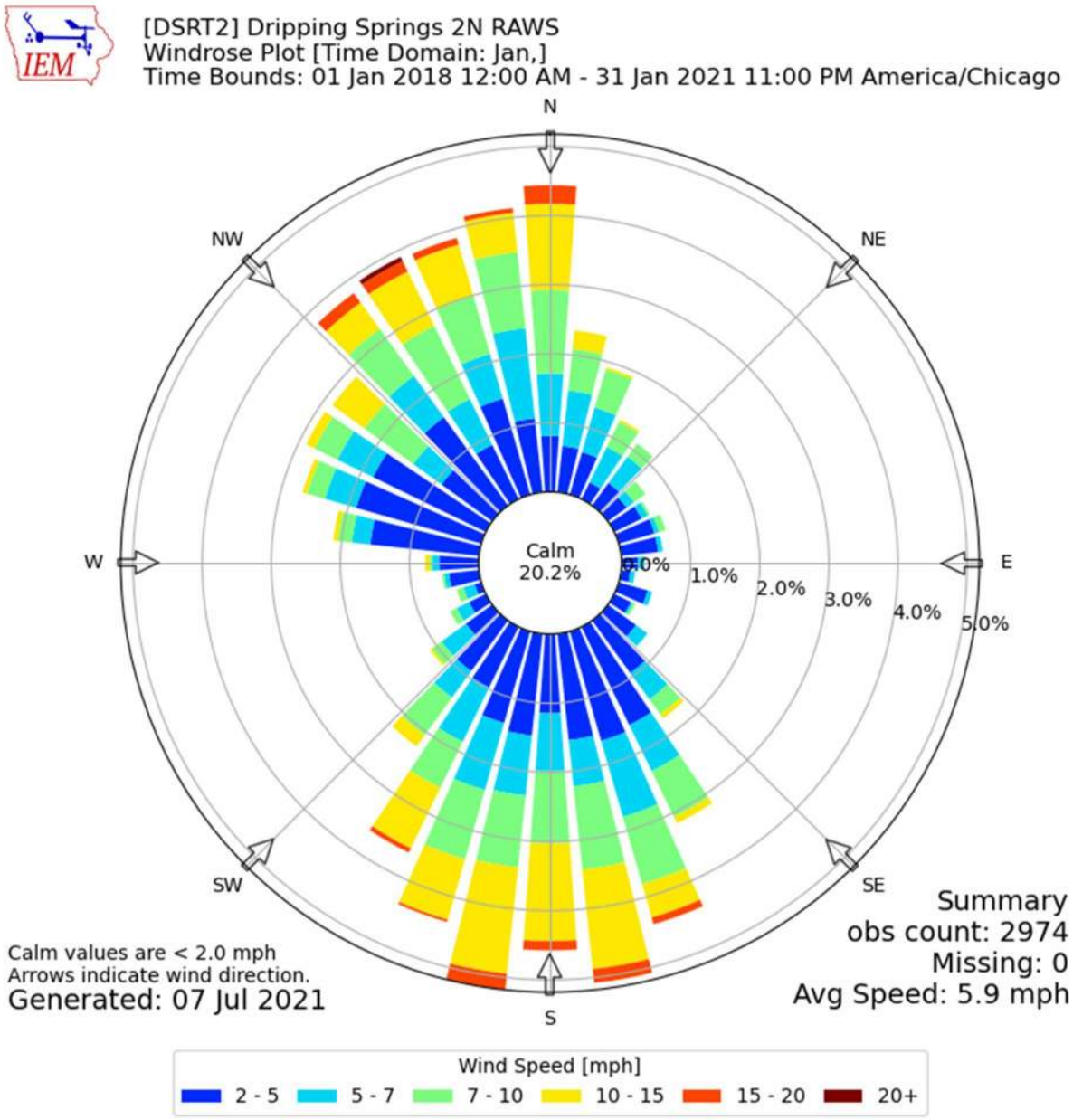
Wind roses are an information packed plot providing frequencies of wind direction and wind speed. A wind rose can quickly indicate the dominant wind directions and the direction of strongest wind speeds. The IEM has generated these wind roses based on our archive. The archive does contain errors and non representative data, so please use care when using these plots. In general, data from the airports is of good quality and representative of the local surrounding area. These images and data are in the public domain, the [disclaimer page] contains more details.

Yearly Climatology:

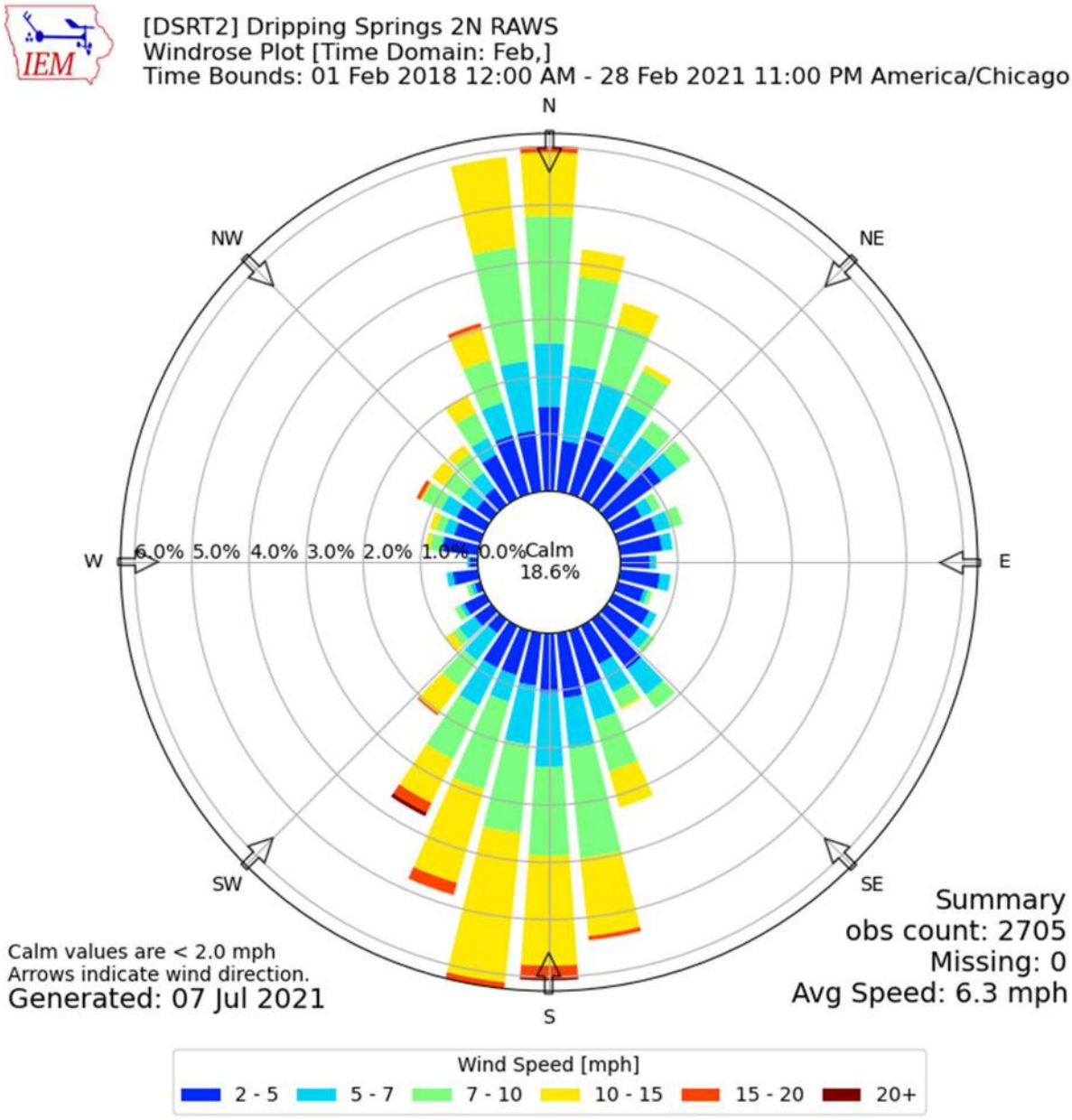


Monthly Climatology: (click thumbnail)

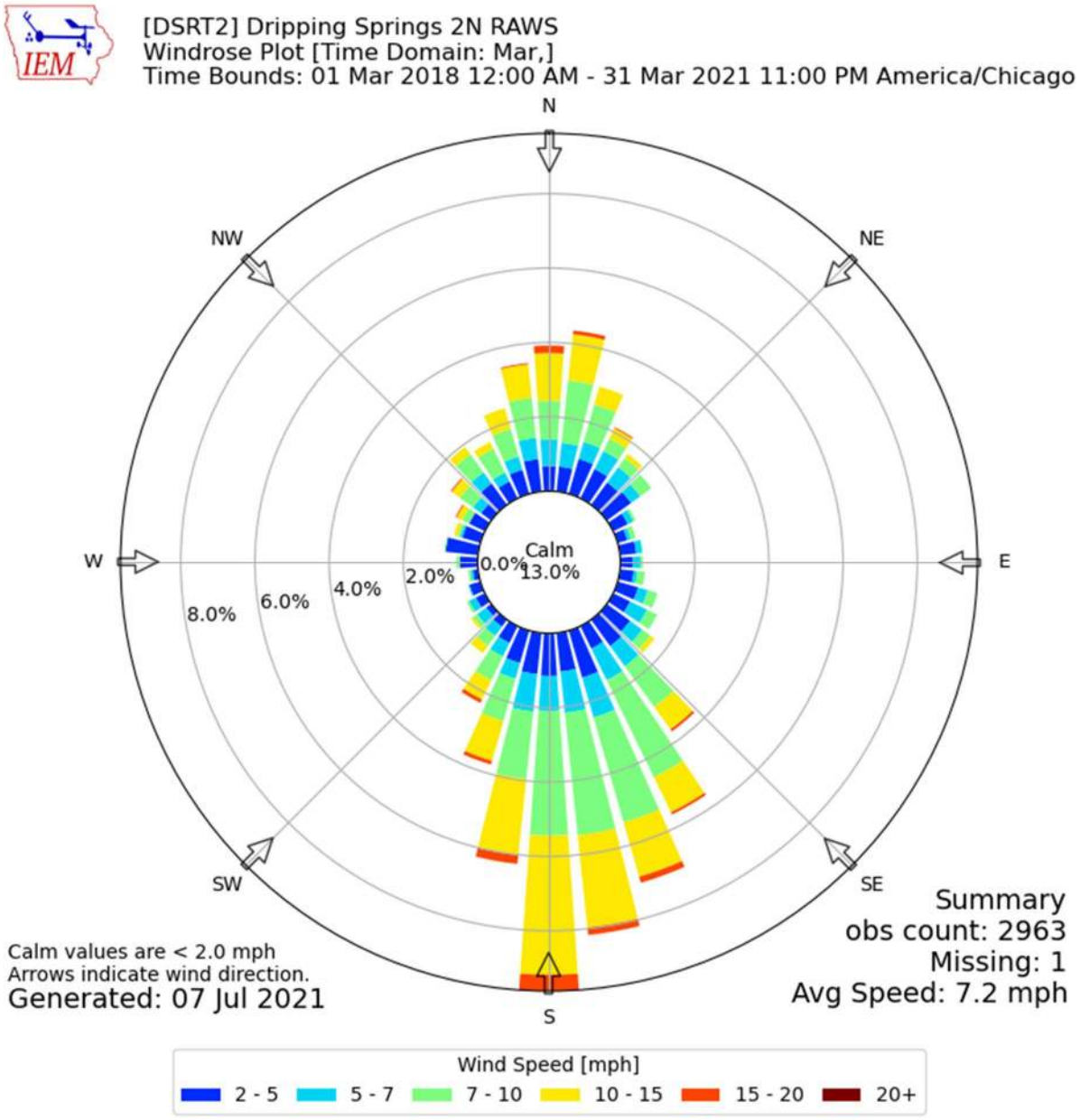
January



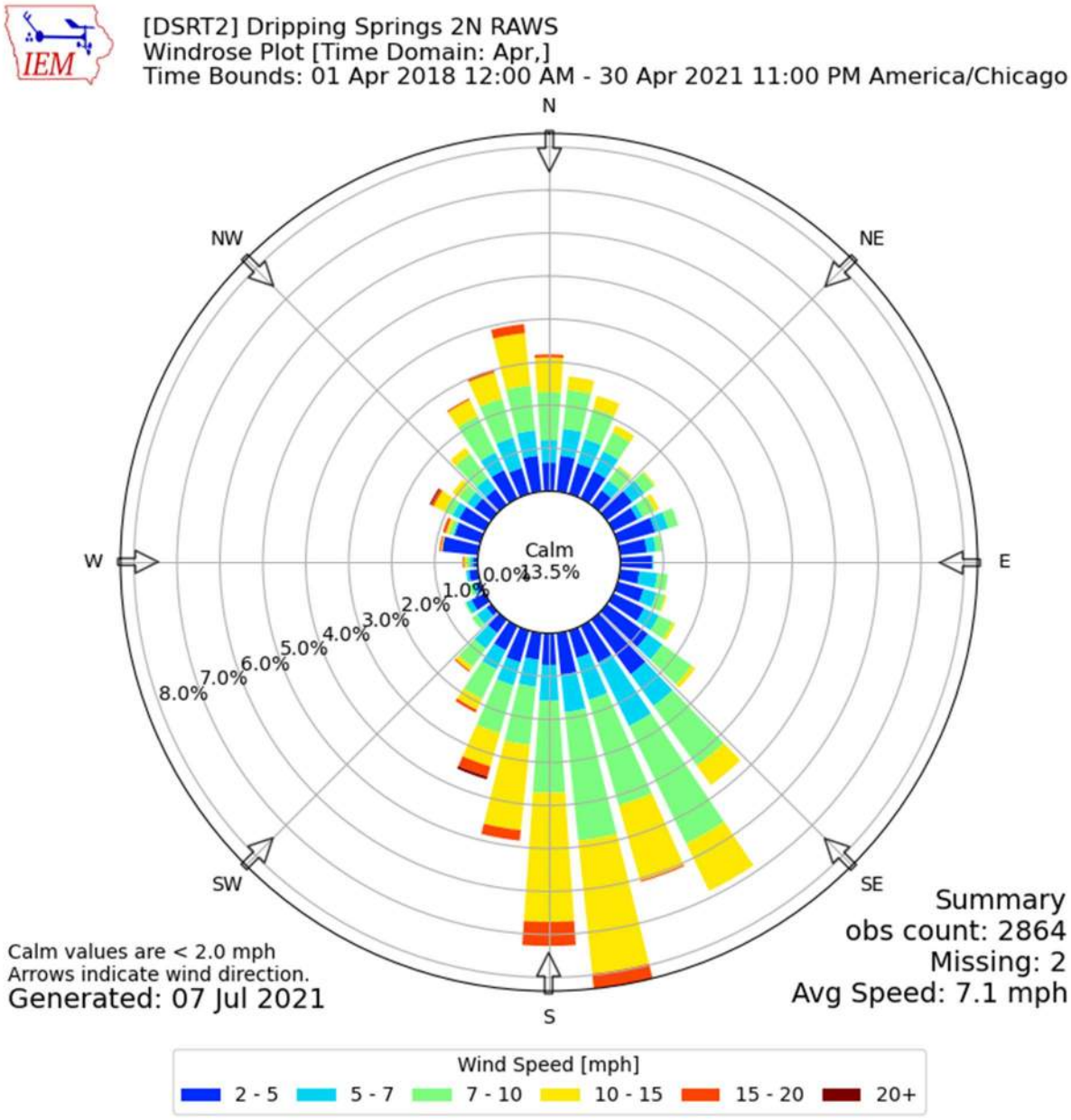
February


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Feb,]
Time Bounds: 01 Feb 2018 12:00 AM - 28 Feb 2021 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
6.0% 5.0% 4.0% 3.0% 2.0% 1.0% 0.0%
Calm
18.6%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2705
Missing: 0
Avg Speed: 6.3 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

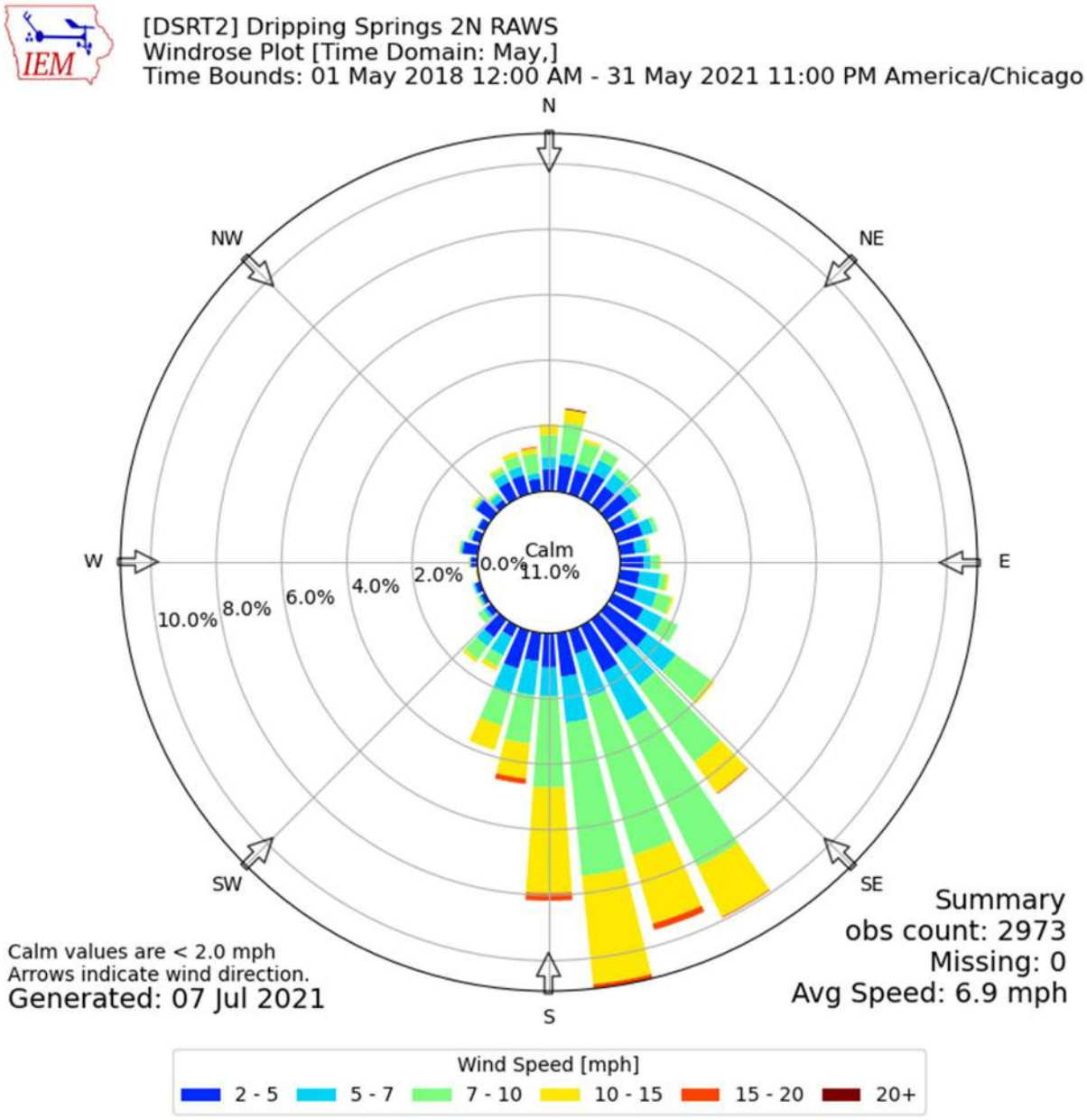
March


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Mar,]
Time Bounds: 01 Mar 2018 12:00 AM - 31 Mar 2021 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
0.0%
13.0%
2.0%
4.0%
6.0%
8.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2963
Missing: 1
Avg Speed: 7.2 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

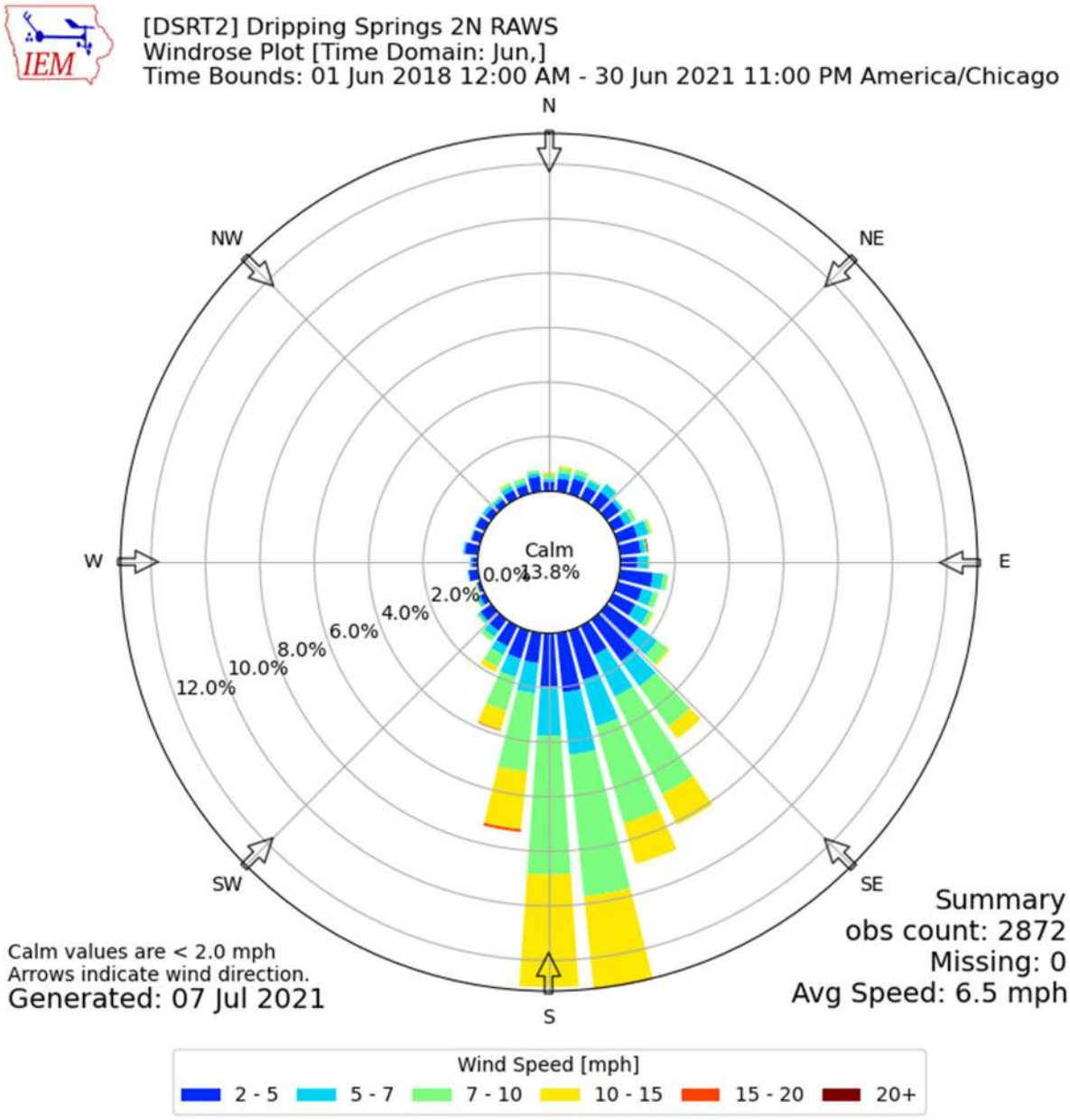
April


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Apr,]
Time Bounds: 01 Apr 2018 12:00 AM - 30 Apr 2021 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
13.5%
0.0%
1.0%
2.0%
3.0%
4.0%
5.0%
6.0%
7.0%
8.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2864
Missing: 2
Avg Speed: 7.1 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

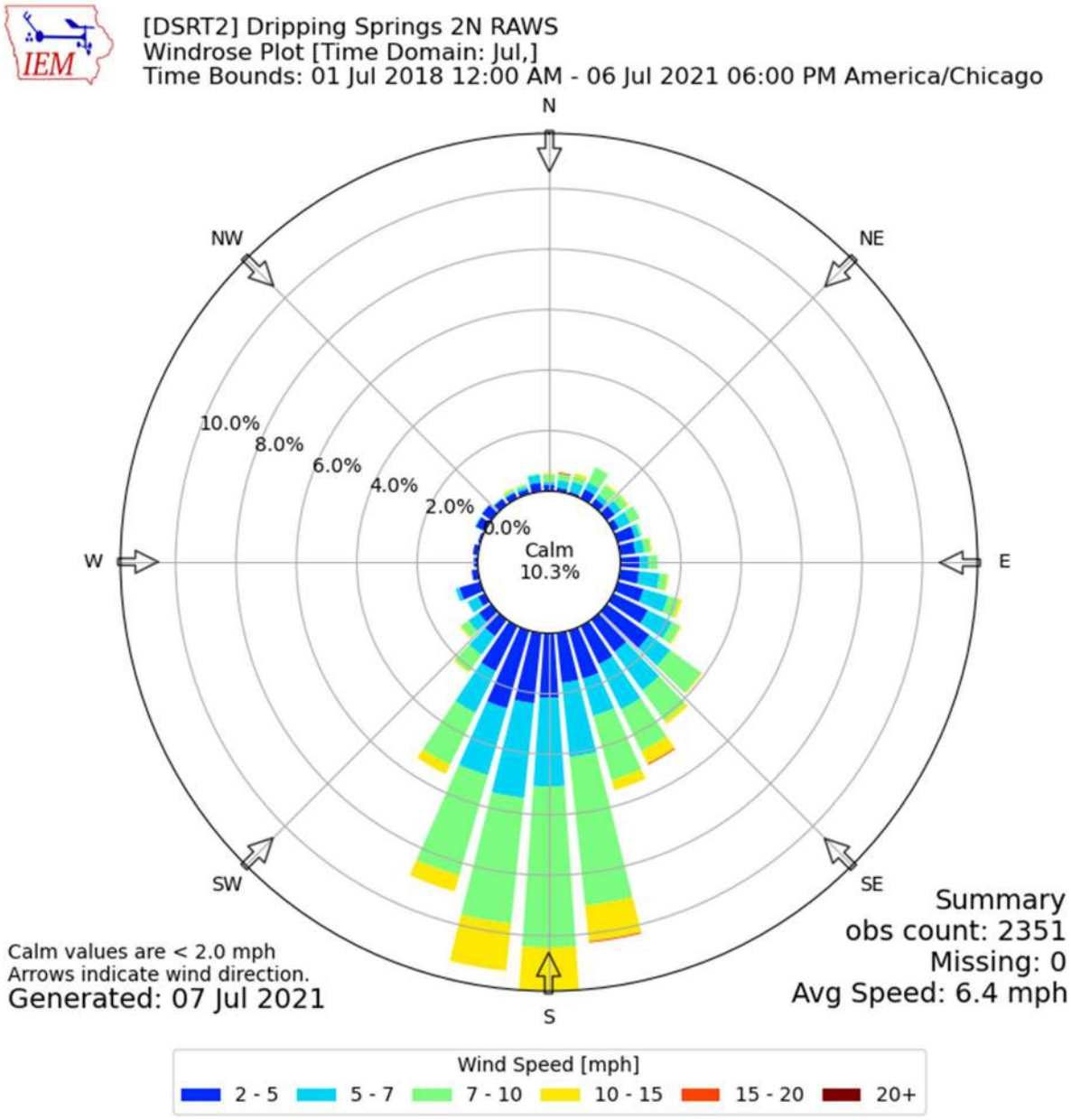
May


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: May,]
Time Bounds: 01 May 2018 12:00 AM - 31 May 2021 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
0.0%
11.0%
2.0%
4.0%
6.0%
8.0%
10.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2973
Missing: 0
Avg Speed: 6.9 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

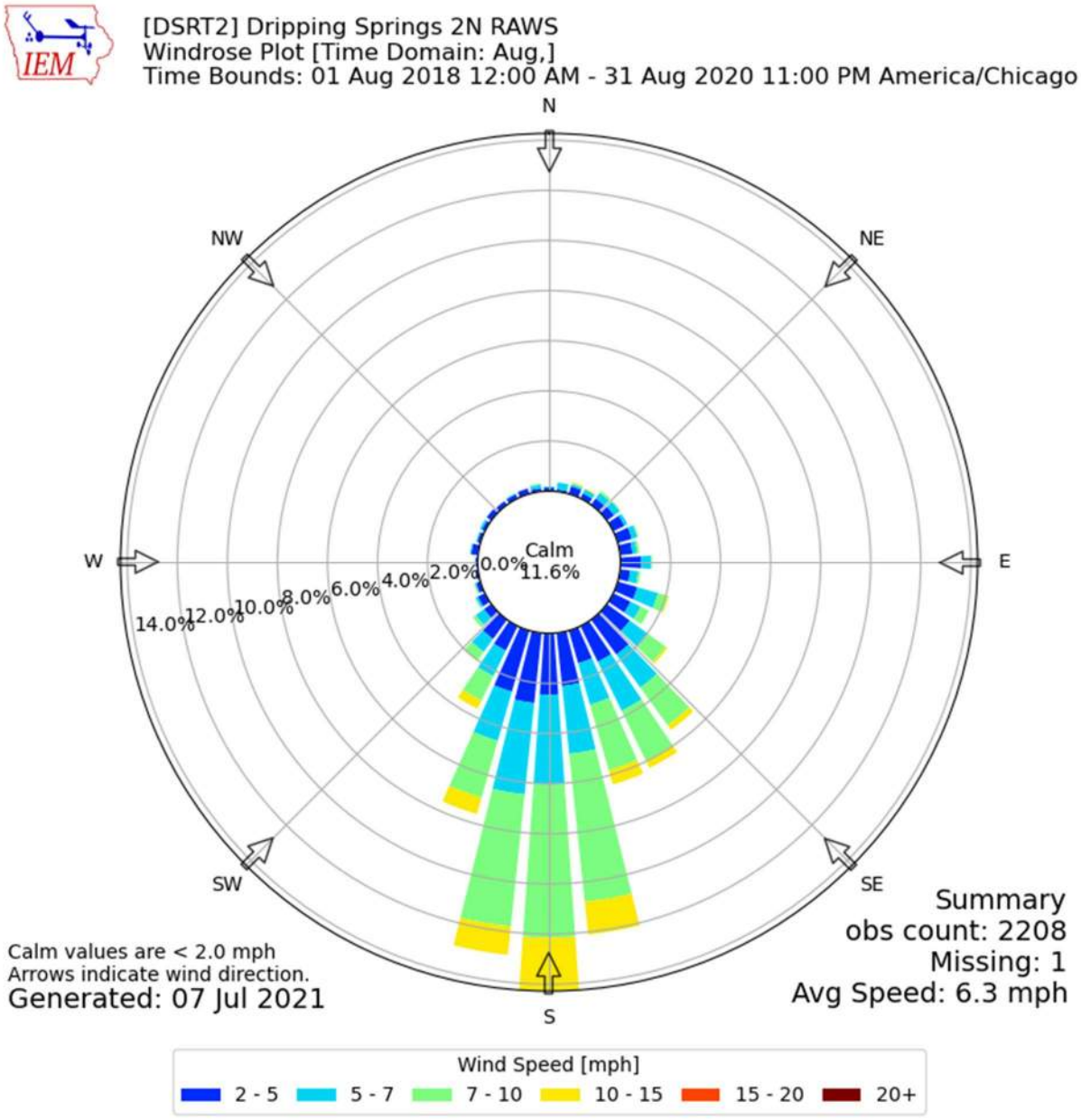
June


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Jun,]
Time Bounds: 01 Jun 2018 12:00 AM - 30 Jun 2021 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
0.0%
13.8%
2.0%
4.0%
6.0%
8.0%
10.0%
12.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2872
Missing: 0
Avg Speed: 6.5 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

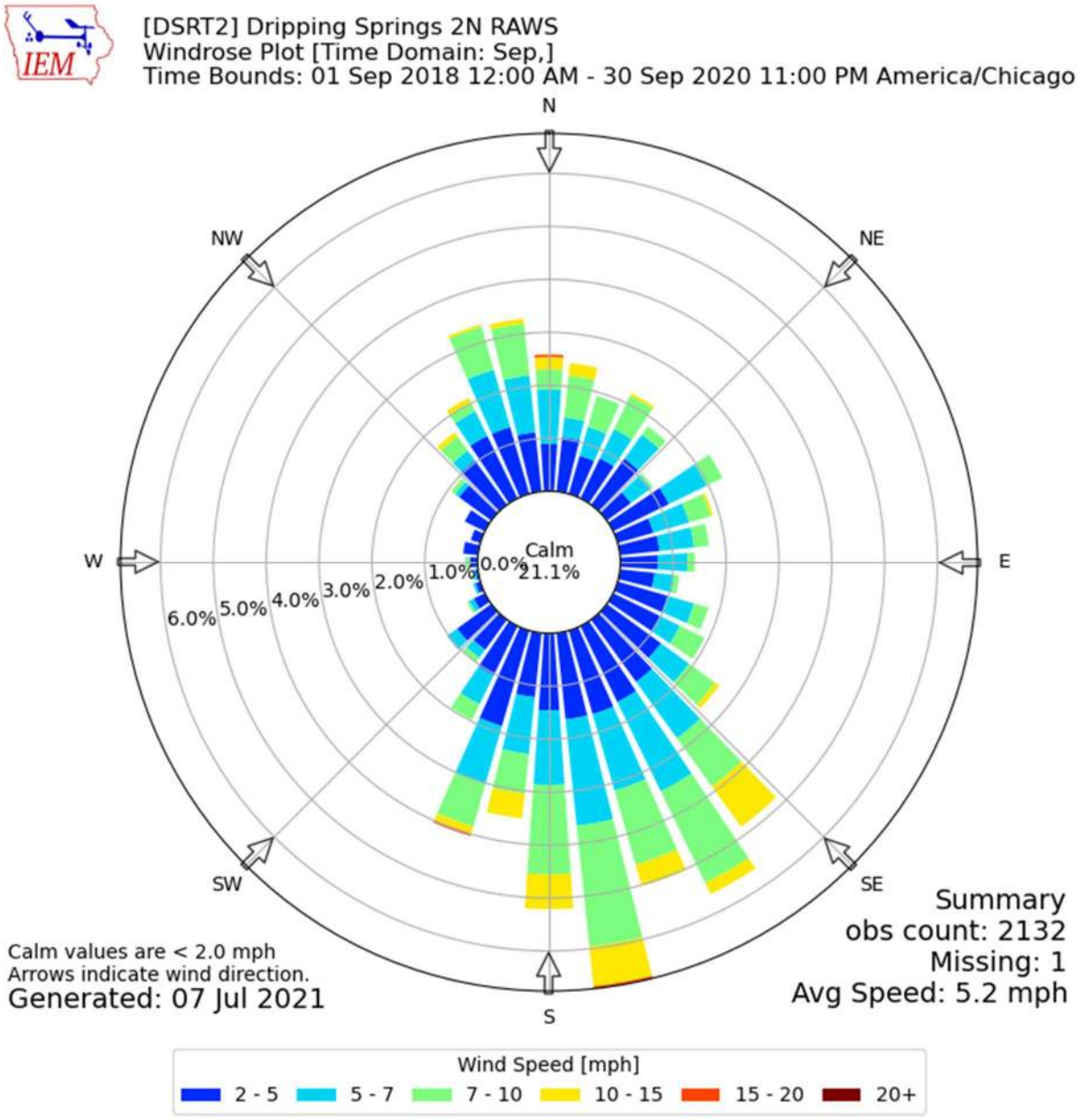
July


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Jul,]
Time Bounds: 01 Jul 2018 12:00 AM - 06 Jul 2021 06:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
Calm
10.3%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2351
Missing: 0
Avg Speed: 6.4 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

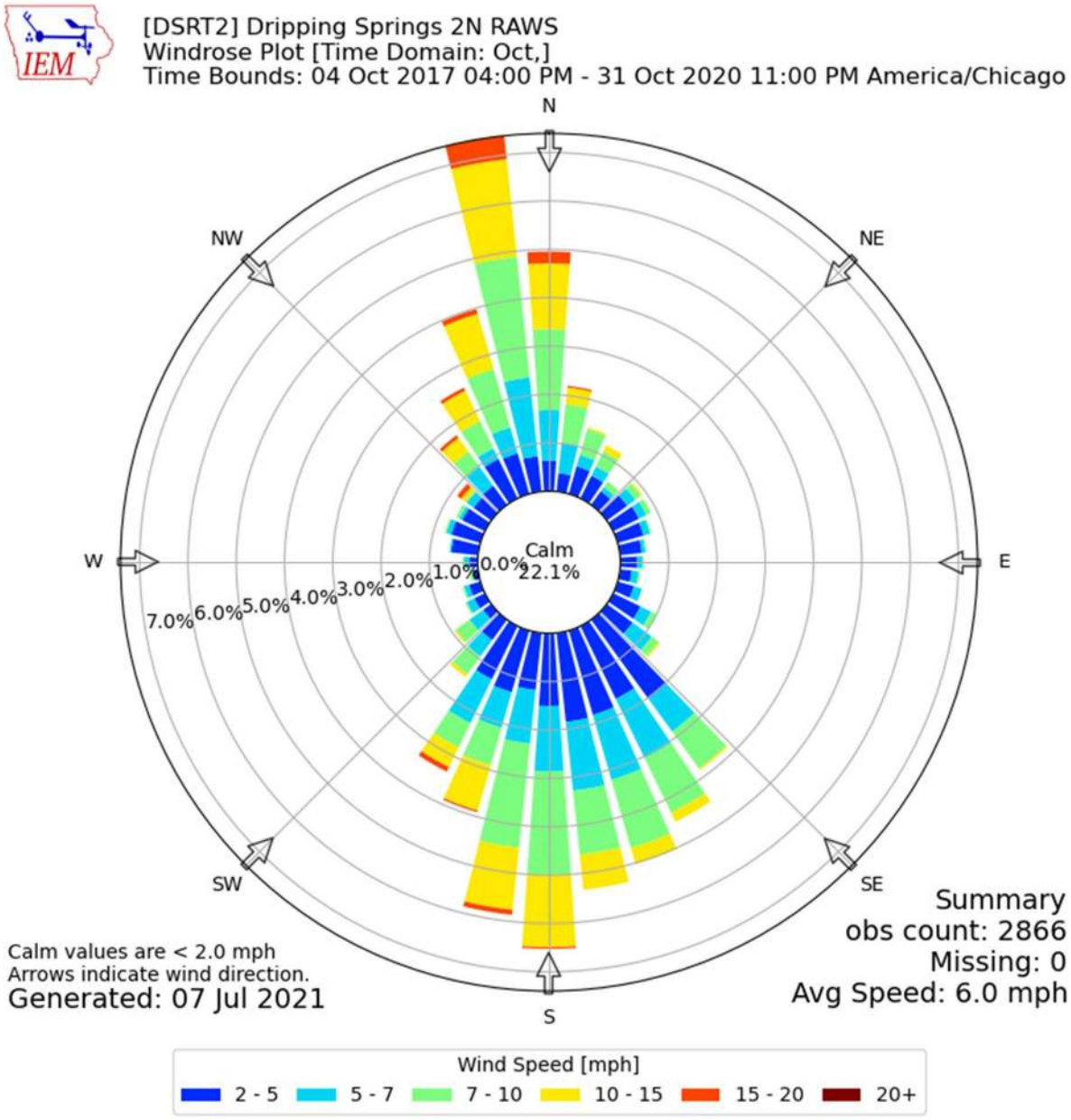
August


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Aug,]
Time Bounds: 01 Aug 2018 12:00 AM - 31 Aug 2020 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
11.6%
0.0%
2.0%
4.0%
6.0%
8.0%
10.0%
12.0%
14.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2208
Missing: 1
Avg Speed: 6.3 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

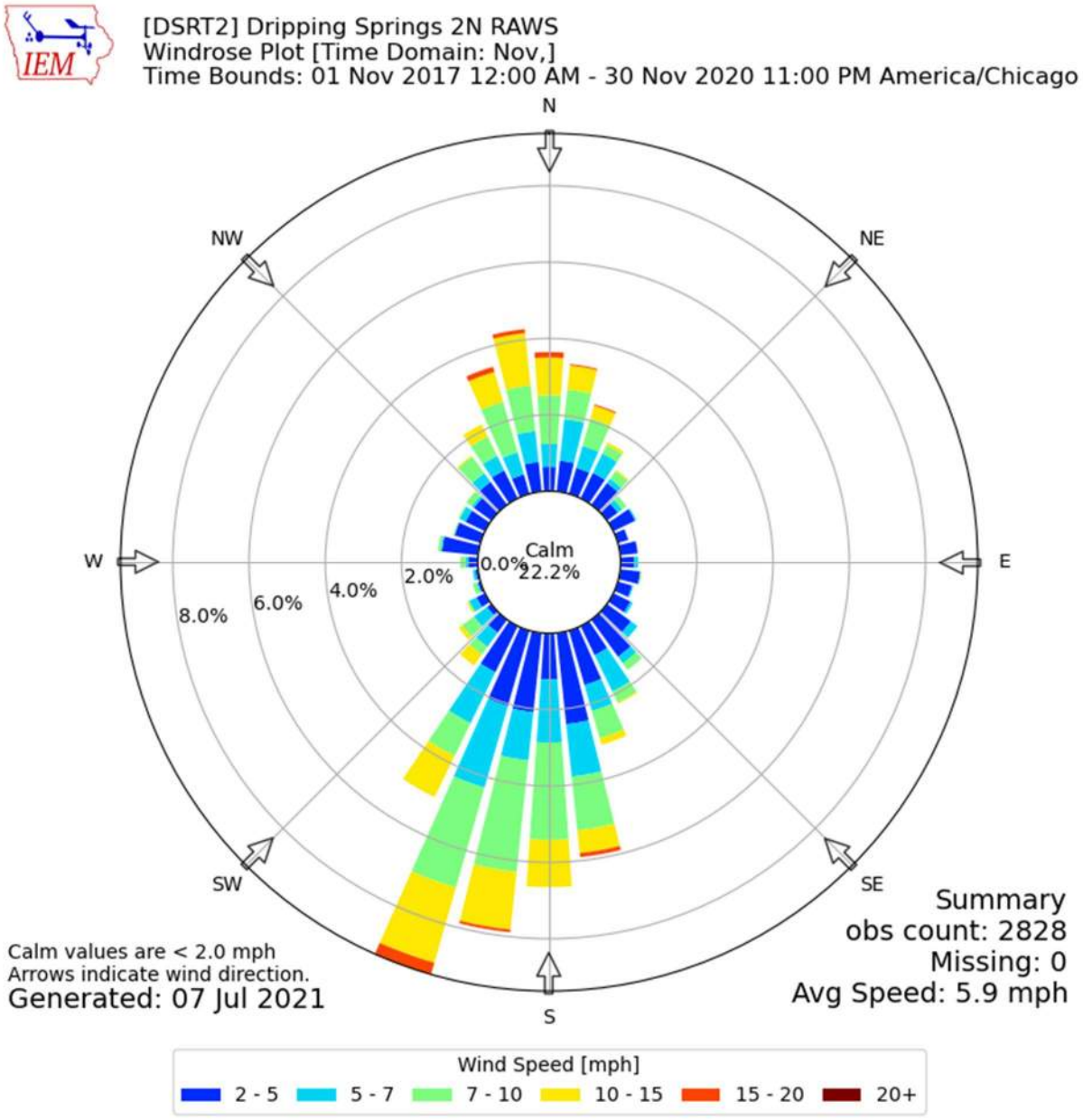
September


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Sep,]
Time Bounds: 01 Sep 2018 12:00 AM - 30 Sep 2020 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
21.1%
0.0%
1.0%
2.0%
3.0%
4.0%
5.0%
6.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2132
Missing: 1
Avg Speed: 5.2 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

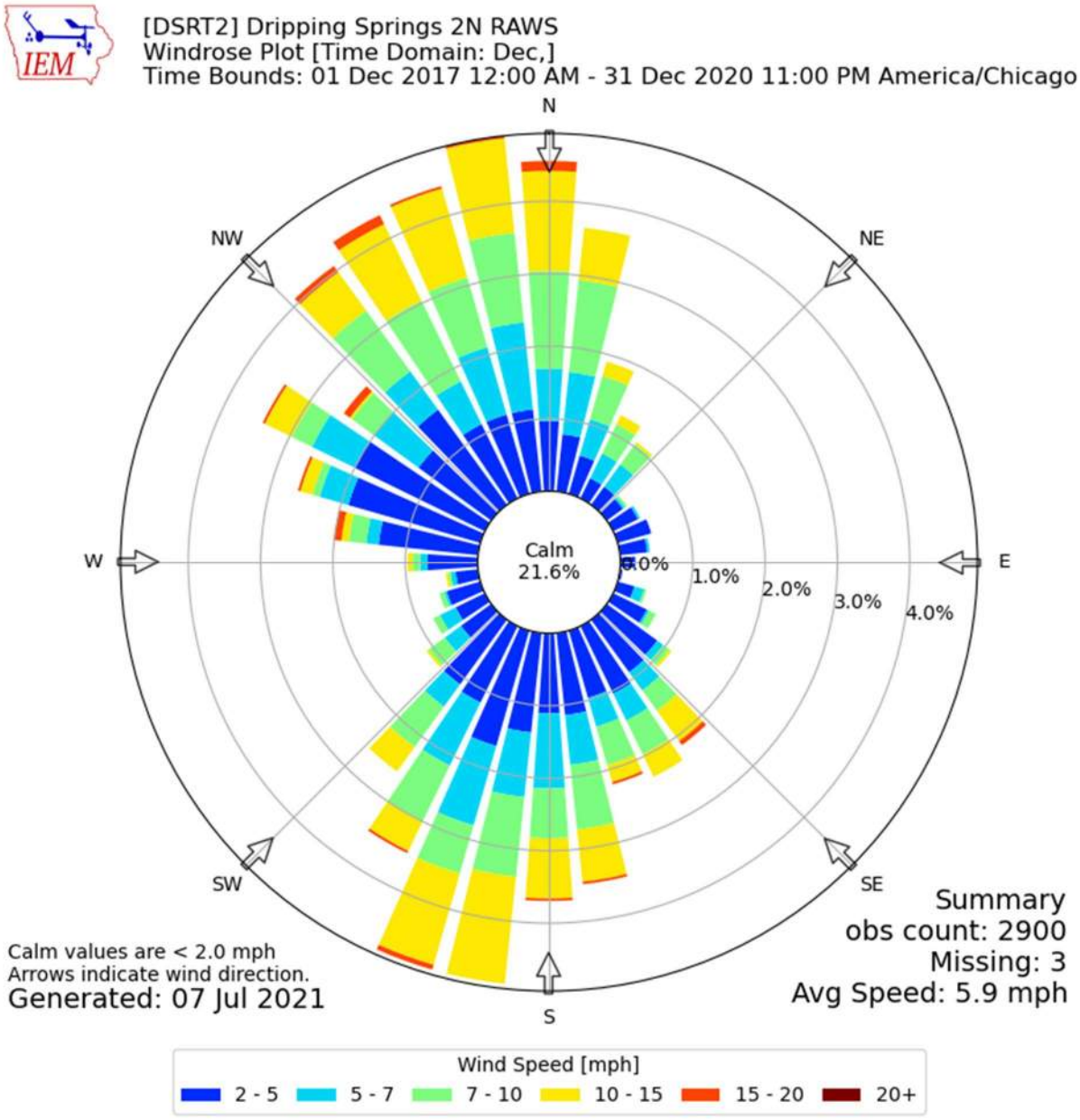
October


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Oct,]
Time Bounds: 04 Oct 2017 04:00 PM - 31 Oct 2020 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
22.1%
0.0%
1.0%
2.0%
3.0%
4.0%
5.0%
6.0%
7.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2866
Missing: 0
Avg Speed: 6.0 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

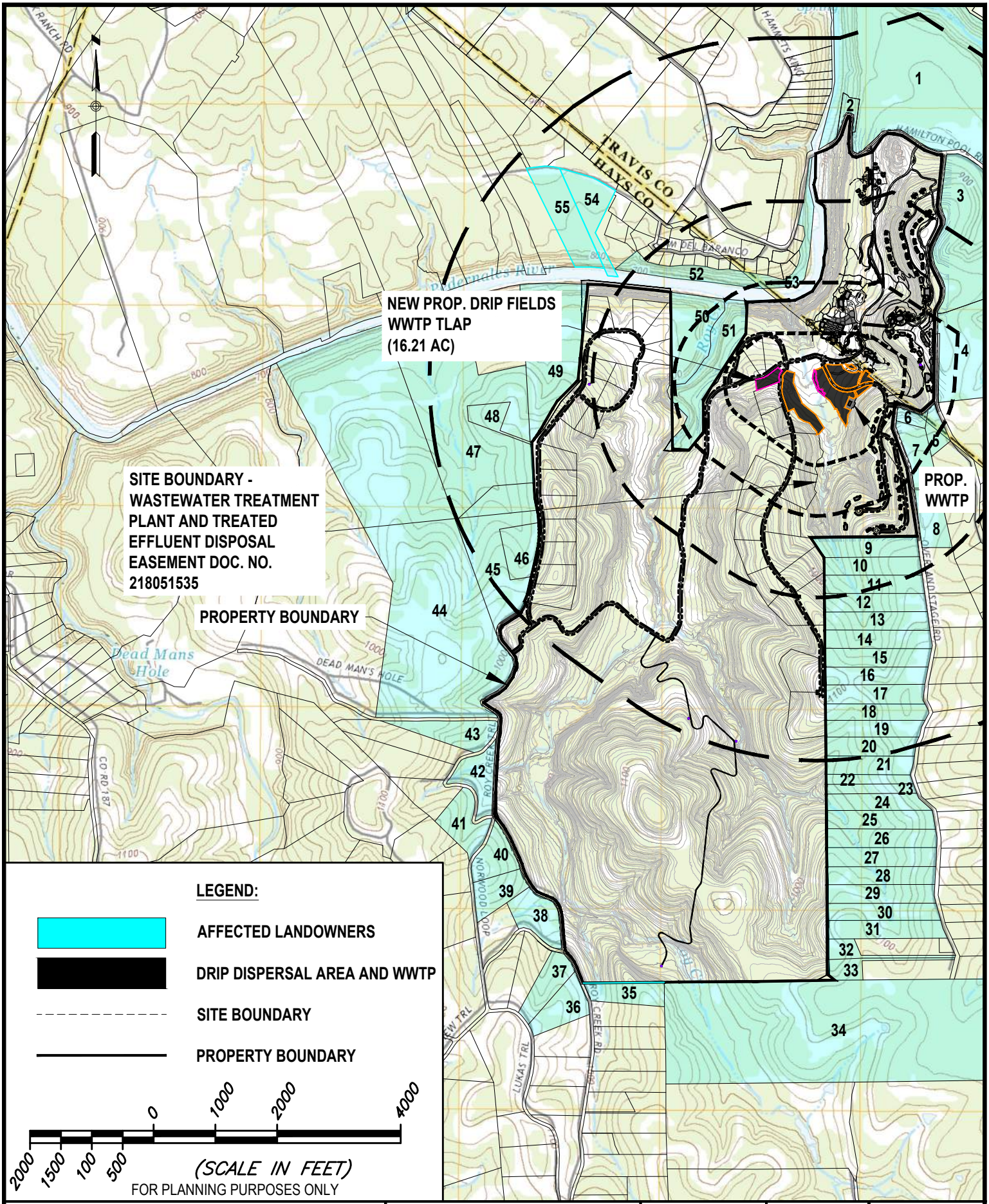
November


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Nov,]
Time Bounds: 01 Nov 2017 12:00 AM - 30 Nov 2020 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
0.0%
22.2%
2.0%
4.0%
6.0%
8.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2828
Missing: 0
Avg Speed: 5.9 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

December


[DSRT2] Dripping Springs 2N RAWS
Windrose Plot [Time Domain: Dec,]
Time Bounds: 01 Dec 2017 12:00 AM - 31 Dec 2020 11:00 PM America/Chicago
N
NE
E
SE
S
SW
W
NW
Calm
21.6%
0.0%
1.0%
2.0%
3.0%
4.0%
Calm values are < 2.0 mph
Arrows indicate wind direction.
Generated: 07 Jul 2021
Summary
obs count: 2900
Missing: 3
Avg Speed: 5.9 mph
Wind Speed [mph]
2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
20+

Attachment 23 – AFFECTED LANDOWNERS' MAP



Murfee Engineering Company Texas Registered Engineering Firm F-353
1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746, (512) 327-9204

MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility
AFFECTED LANDOWNER MAP

JOB NO. 19011.85	SCALE: 1" = 2000'	SHEET: 1 OF 2
DESIGNED BY: ANA		
DRAWN BY: MJS		DATE: 3/29/2023

W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DR

APP000558

PRPERTY LIST					
NO.	LANDOWNER	ADDRESS 1	CITY	STATE	POSTAL CODE
1	TRAVIS COUNTY TRUSTEE - RYAN POPE	517 MARCIA PL	NEW BRAUNFELS	TX	78130
2	TRAVIS COUNTY	110 CEDAR ST	LA PORTE	TX	77571-6412
3	TRAVIS COUNTY	PO BOX 1748	AUSTIN	TX	78767-1748
4	BENTREE RV RESORTS LLC (1803249)	401 STAGECOACH RANCH RD	DRIPPING SPRINGS	TX	78620
5	JOHNSEN, DAVID	900 STAGECOACH RANCH RD	DRIPPING SPRINGS	TX	78620-2313
6	FRANK, RAYMOND E & DANA S	905 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2332
7	REESE, ELIAS & LISA A	6211 STONEHILL DR	DALLAS	TX	75254
8	GILES, DARYL & DURYONNA	1115 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2303
9	DEVORE, ROBERT L	7301 BROKEN ARROW LN	AUSTIN	TX	78745-6473
10	ENDRES, TERRY L & SANGUILY, BETTY ANN	521 WHEDBEE	FORT COLLINS	CO	80524
11	WEBKING, CATHERINE J & SHANNON K MCLENDON	1302 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620
12	WEBKING, CATHERINE J & SHANNON K MCLENDON	1302 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620
13	WILLIAMS, BLAINE T	1316 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620
14	ALLEN, JEFFREY & KELLIE I	1416 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2328
15	MEEKS, TWILA J (LIFE ESTATE) % MEEKS, JOHN L	1502 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2317
16	WRIGHT, TERRI L & BALLARD, FRED	1516 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2317
17	HILL, BRIAN & SHELLEY L	1616 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620
18	HILL, BRIAN & SHELLEY L	1616 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620
19	TYLER, WILLIAM C	1716 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2331
20	TYLER, WILLIAM C	1716 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2331
21	TINNER, THOMAS W	1815 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2318
22	STRAUCH, CHARLES B III	12400 HIGHWAY 71 W STE 350-111	AUSTIN	TX	78738
23	STEWART, CHRIS & SARAH	1820 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2318
24	HOLMES, BARBARA G	400 BRADY LN	AUSTIN	TX	78746
25	MILLWEE, SAMUEL & MARY	4504 TRAIL CREST CIR	AUSTIN	TX	78735-6324
26	BEST SISTERS REAL ESTATE LLC	2718 WOOLRIDGE DR	AUSTIN	TX	78703-1954
27	BEST SISTERS REAL ESTATE LLC	2718 WOOLRIDGE DR	AUSTIN	TX	78703-1954
28	BEST SISTERS REAL ESTATE LLC	2718 WOOLRIDGE DR	AUSTIN	TX	78703-1954
29	DONOVAN, WILLIAM & SHERI K	2316 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2314
30	KELLY, SAM KINNARD & BRITTANY	5708 PAINTED VALLEY DR	AUSTIN	TX	78759-5501
31	FOSTER, DAVID W & PATRICIA A	2516 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620-2338
32	BENNETT, DAVID FITZPATRICK & KAREN MARIE	2616 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620
33	GOWAN, RAYMOND LEONARD	2716 OVERLAND STAGE RD	DRIPPING SPRINGS	TX	78620
34	EAGLE EYE RANCH LP	5924 KRAUSE LN	AUSTIN	TX	78738
35	NICOLAS KENNETH & DEBORAH	611 ROY CREEK TRL	DRIPPING SPRINGS	TX	78620-3300
36	BROUGHTON, BEN M & LORI C	275 LUKAS TRL	DRIPPING SPRINGS	TX	78620
37	MATTHYS, GLENN & BARBARA	2205 TROON DR	LEAGUE CITY	TX	77573-4463
38	SIERRAS, MORIO & TIFFANY	525 HILLVIEW TRL	DRIPPING SPRINGS	TX	78620
39	HALE DAVID & HENRIETTA	5301 ELM ST	COLLEYVILLE	TX	76034
40	SEIFERT STEVEN JAY & MELINDA W	150 NORWOOD LOOP	DRIPPING SPRINGS	TX	78620
41	GRIGSBY, WILL R	7122 VALLECITO DR	AUSTIN	TX	78759-4663
42	CARLISLE JIMMY L & LAURA L	400 ROY CREEK TRL	DRIPPING SPRINGS	TX	78620-2470
43	JANDLE, LEIGH ERIN	310 ROY CREEK TRL	DRIPPING SPRINGS	TX	78620-3316
44	MIRASOL LODGE LLC	4143 MAPLE AVE STE 400	DALLAS	TX	75219-3289
45	CABELA, JOSEPH A & JENNIFER L	220 ROY CREEK TRL	DRIPPING SPRINGS	TX	78620-4197
46	DROP OAK RANCH LLC	220 ROY CREEK TRL	DRIPPING SPRINGS	TX	78620
47	CABELA, JOSEPH A & JENNIFER L	220 ROY CREEK TRL	DRIPPING SPRINGS	TX	78620-4197
48	JJJ ESCAPES LLC	200 ROY CREEK TRL	DRIPPING SPRINGS	TX	78620
49	MURPHREE, DENNIS & JEAN LIVING TRUST	11618 ELM RIDGE RD	SAN ANTONIO	TX	78230-2613
50	ASKINS, JO ELLEN & ETAL	PO BOX 211	SALADO	TX	76571
51	ADAMS, LEW VALENTINE & ADAMS, ZILLA KATHERINE	118 DEERFIELD CV	LAKEWAY	TX	78734-4135
52	LA FAMILIA DE LA TIERRA OWNERS ASSN	24815 HAMILTON POOL RD	ROUND MOUNTAIN	TX	78663-8570
53	LA FAMILIA DE LA TIERRA	24815 HAMILTON POOL RD	ROUND MOUNTAIN	TX	78663-8570
54	ORLANDO DEAN & ROWE BERYL F	3800 FEARLESS TREADWAY	ROUND MOUNTAIN	TX	78663
55	COMBEST, RALPH	3500 FEARLESS TREADWAY	ROUND MOUNTAIN	TX	78663-8529

Murfee Engineering Company
Texas Registered Engineering Firm F-353
1101 Capital of Texas Highway South, Building D, Suite 110
Austin, Texas 78746, (512) 327-9204

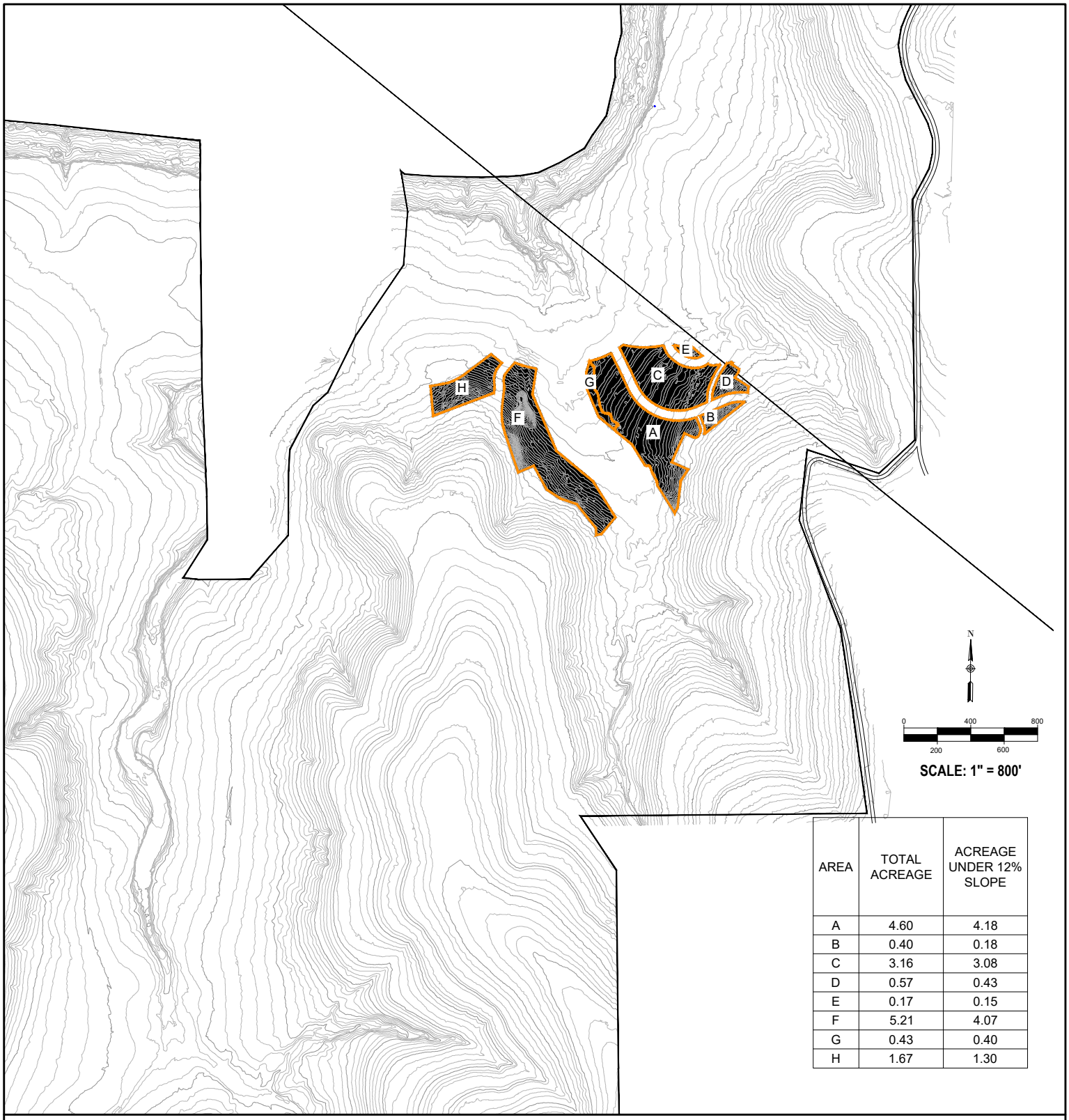
MIRASOL TLAP

Mirasol Springs Ranch Water Reclamation Facility
AFFECTED LANDOWNER LIST

JOB NO. 19011.85	SCALE: NA	SHEET: 2 OF 2
DESIGNED BY: ANA		
DRAWN BY: MJS/RLW		DATE: 3/28/2023

W:\Mirasol\Facilities\Wastewater\TLAP\Exhibits\EXHIBIT-(DRAFT)-TLAP-MIRASOL WW.dwg(PROPERTY LIST)

Attachment 24 – Slope Exhibit



SCALE: 1" = 800'

AREA	TOTAL ACREAGE	ACREAGE UNDER 12% SLOPE
A	4.60	4.18
B	0.40	0.18
C	3.16	3.08
D	0.57	0.43
E	0.17	0.15
F	5.21	4.07
G	0.43	0.40
H	1.67	1.30

MIRASOL TLAP
SLOPE MAP

DESIGNED BY: ANW
DRAWN BY: ANW
CHECKED BY: SJA/RLW
APPROVED BY: ANW
DATE: 4/10/2023

MURFEE ENGINEERING COMPANY
1101 CAPITAL OF TEXAS HIGHWAY SOUTH
BUILDING D, SUITE 110
AUSTIN, TEXAS 78746
(512) 327-9204
TEXAS REGISTERED ENGINEERING FIRM F-353

PLOT DATE: 4/10/2023
FILE PATH: W:\MIRASOL\FACILITIES\WASTEWATER\TLAP\CAD\E-TLAP INDIV AREAS.DWG

Attachment 25 – Public Involvement Form

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☒ New Permit or Registration Application
☐ New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, a Public Involvement Plan is not necessary. Completion of the remaining sections not required.

Section 2. Secondary Screening

☒ Requires public notice,
☒ Considered to have significant public interest, **and**
☒ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all of the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2.

☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste
☐ Radioactive Materials Licensing ☐ Underground Injection Controls

Water Quality

☐ Texas Pollutant Discharge Elimination System (TPDES)

☒ Texas Land Application Permit (TLAP)

☐ State Only Concentrated Animal Feeding Operation (CAFO)

☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

The proposed project will construct water recovery facilities (WRF) and disposal facilities for a proposed development including both residential and commercial facilities. The proposed WRF will treat 39,000 gallons per day using a conventional process that is designed to produce Type I effluent sufficient for using to irrigate common areas. Effluent will initially be discharge to a subsurface drip disposal system with an approximate area of 16.2 acres. Once the effluent quality is proven to meet Section 210 Type I requirements, the effluent will be used to irrigate common areas and other applicable landscape/plantings.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

None
(City)

Travis and Hays Counties
(County)

108.08 and 17.68

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.
☐ City
☐ County
☒ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

See table on last page.

(b) Per capita income for population near the specified location

See table on last page.

(c) Percent of minority population and percent of population by race within the specified location

See table on last page.

(d) Percent of Linguistically Isolated Households by language within the specified location

See table on last page.

(e) Languages commonly spoken in area by percentage

See table on last page.

(f) Community and/or Stakeholder Groups

Save Our Springs;

(g) Historic public interest or involvement

None known

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☐ Yes ☒ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☐ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☐ Yes ☒ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☒ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☒ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office

☐ TCEQ Central Office

☒ Public Place (specify) Bee Cave Public Library and Dripping Springs Community Library

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

Census Information

Characteristic	Hays 108.08	Travis 17.68
(a) % of People over 25 who at least graduated from high school	92.3	98.1
(b) Per capita income for population near the specified location	$98,135	$128,990
(c) Percent of minority population and percent of population by race within the specified location	White - 81.7; Black/African American - 0.1; Hispanic/Latino - 16.8; two or more - 2.3	White - 77.7; Black/African American - 0.04; American Indian/Alaskan Native - 0.1; Asian - 7.9; Hispanic/Latino - 12.1; two or more - 2.2
(d) Percent of Linguistically Isolated Households by language within the specified location	No Data	0
(e) Languages commonly spoken in area by percentage	English - 88.8; Spanish - 10.2; Indo-European - 1.1	English - 84.2; Spanish - 9; Indo-European - 3.9; Asian/Pacific Island - 2.2; Other - 0.7

RESPONSE 1

May 24, 2023

Murfee Engineering Company

May 24th, 2023

VIA HAND DELIVERY

Leah Whallon
Texas Commission on Environmental Quality
Application Review and Processing Team
MC-148
12015 Park 35 Cir
Austin, TX 78753

Re: Application for a New Permit No. WQ0016335001
To Be Issued to Clancy Utility Holdings LLC for Mirasol Springs Ranch Water Reclamation Facility
CN605924489, RN111731972

Ms. Leah Whallon,

The purpose of this letter is to provide a response to the Notice of Deficiency letter sent to Mrs. Andrea Wyatt, P.E. on May 12th, 2023, regarding the administrative completeness review of the Mirasol Springs Ranch Water Reclamation Facility Application for a New Permit. The items requiring additional information or clarification have been addressed and are ready for your review. An updated Administrative Report accompanies this letter and will be submitted to you via hand delivery. If you have any questions regarding this response letter, please do not hesitate to contact me.

1. *An older version of the Administrative Report form was used (rev. date 06/25/2018). Please complete and resubmit the administrative report on the most recent version of the form (rev. date 10/31/2022).*

   Response: **An updated version of the Administrative Report (rev. date 10/31/2022) is attached to this letter for your review.**

2. *Administrative Report 1.0, Section 14*
   A copy of the signature page was provided. Please send the original wet-ink signature page.

   Response: **A copy of the original wet-ink signature page is included in the attached Administrative Report on page 13.**

3. *The following is a portion of the Notice of Receipt of Application and Intent to Obtain a Water Quality Permit (NORI) which contains information relevant to your application. Please read it carefully and indicate if it contains any errors or omissions. The complete notice will be sent to you once the application is declared administratively complete.*

APPLICATION. Clancy Utility Holdings LLC, 4143 Maple Avenue, Suite 400, Dallas, Texas 75219, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Land Application Permit (TLAP) No. WQ0016335001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 39,000 gallons per day via subsurface area drip dispersal system on approximately 16.2 acres. The domestic wastewater treatment facility and disposal area will be located approximately 0.8 miles southwest of the intersection of Hamilton Pool Road and Stagecoach Ranch Road, in Hays and Travis Counties, Texas 78620. TCEQ received this application on May 1, 2023. The permit application will be available for viewing and copying at Dripping Springs Community Library, 501 Sportsplex Drive, Dripping Springs, Texas in Hays County and at Bee Cave Public Library, 4000 Galleria Parkway, Bee Cave, Texas in Travis County prior to the date this notice is published in the newspaper. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.1375,30.328888&level=18

Further information may also be obtained from Clancy Utility Holdings LLC at the address stated above or by calling Mrs. Andrea Wyatt, P.E., Murfee Engineering Company, Inc., at 512-327-9204.

Response: **The portion of the NORI stated above is accurate and does not appear to contain any errors.**

New rule requirements under Title 30 Texas Administrative Code (TAC) Chapter 39 relating to public notices have been implemented. The deficiencies listed below are new items that need to be provided to meet the alternative language requirements.

4. *Administrative Report 1.0, Section 15*
The plain language summary (PLS) is not provided. Please use the attached template to provide a completed PLS.

Response: **The PLS page is included in the attached Administrative Report on page 14.**

5. *Public Involvement Plan (TCEQ-20960)*
Public notice in any alternative language spoken by over 5% of the population as identified in Section 5, Item E is required. Please use the attached templates to provide the NORI and PLS in Spanish.

Response: **According to the Instructions for Completing the Domestic Wastewater Permit Application (TCEQ-10053ins (October 31, 2022)) for Section 8, Item E Bilingual notice requirements, an alternative language is triggered if:**

- **the nearest elementary or middle school, as a part of a larger school district, is required to make a bilingual education program available to qualifying students and**
- **the school either has students enrolled at such a program on-site, or has students who attend such a program at another**

location in satisfaction of the school's obligation to provide such a program.

In the case of this permit application, the closest elementary or middle school is West Cypress Hills Elementary School, and the faculty spoken to has confirmed that this institution does not have a bilingual/ESL coordinator nor a bilingual education program. Therefore, a public notice in an alternative language will not be necessary.

Thank you, Ms. Whallon, for your time and consideration in assisting Mirasol Springs Ranch with this permit application review. Should you have any questions, please feel free to contact me at your convenience at 512-327-9204 below or via e-mail at eparker@murfee.com.

Sincerely,

Evan Parker, E.I.T.

Attachments: Administrative Report (rev. date 10/31/2022)

CC: George Murfee, P.E. – MEC
Andrea Wyatt, P.E. – MEC
Bryce Canady, P.E. – MEC
MEC File: 19011.85

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT: Clancy Utility Holdings, LLC

PERMIT NUMBER: WQ0016335001

Indicate if each of the following items is included in your application.

	Y	N		Y	N
Administrative Report 1.0	☒	☐	Original USGS Map	☒	☐
Administrative Report 1.1	☒	☐	Affected Landowners Map	☒	☐
SPIF	☐	☐	Landowner Disk or Labels	☒	☐
Core Data Form	☒	☐	Buffer Zone Map	☒	☐
Public Involvement Plan Form	☒	☐	Flow Diagram	☒	☐
Technical Report 1.0	☒	☐	Site Drawing	☒	☐
Technical Report 1.1	☒	☐	Original Photographs	☒	☐
Worksheet 2.0	☐	☒	Design Calculations	☒	☐
Worksheet 2.1	☐	☒	Solids Management Plan	☒	☐
Worksheet 3.0	☒	☐	Water Balance	☐	☒
Worksheet 3.1	☐	☒			
Worksheet 3.2	☐	☒			
Worksheet 3.3	☒	☐			
Worksheet 4.0	☐	☒			
Worksheet 5.0	☐	☒			
Worksheet 6.0	☒	☐			
Worksheet 7.0	☒	☐			

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

APPLICATION FOR A DOMESTIC WASTEWATER PERMIT ADMINISTRATIVE REPORT 1.0

If you have questions about completing this form please contact the Applications Review and Processing Team at 512-239-4671.

Section 1. Application Fees (Instructions Page 29)

Indicate the amount submitted for the application fee (check only one).

Flow	New/Major Amendment	Renewal
<0.05 MGD	$350.00 ☒	$315.00 ☐
≥0.05 but <0.10 MGD	$550.00 ☐	$515.00 ☐
≥0.10 but <0.25 MGD	$850.00 ☐	$815.00 ☐
≥0.25 but <0.50 MGD	$1,250.00 ☐	$1,215.00 ☐
≥0.50 but <1.0 MGD	$1,650.00 ☐	$1,615.00 ☐
≥1.0 MGD	$2,050.00 ☐	$2,015.00 ☐

Minor Amendment (for any flow) $150.00 ☐

Payment Information:

Mailed Check/Money Order Number: 56562

Check/Money Order Amount: $350.00

Name Printed on Check: TCEQ Financial Administration Division Cashier's Office MC-214

EPAY Voucher Number: Click here to enter text

Copy of Payment Voucher enclosed? Yes ☐

Section 2. Type of Application (Instructions Page 29)

☐ New TPDES ☒ New TLAP

☐ Major Amendment *with* Renewal ☐ Minor Amendment *with* Renewal

☐ Major Amendment *without* Renewal ☐ Minor Amendment *without* Renewal

☐ Renewal without changes ☐ Minor Modification of permit

For amendments or modifications, describe the proposed changes: Click here to enter text.

For existing permits:

Permit Number: WQ00 Click here to enter text

EPA I.D. (TPDES only): TX Click here to enter text

Expiration Date: Click here to enter text

Section 3. Facility Owner (Applicant) and Co-Applicant Information (Instructions Page 29)

A. The owner of the facility must apply for the permit.

What is the Legal Name of the entity (applicant) applying for this permit?

Clancy Utility Holdings, LLC

(The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/

CN: 605924489

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Shaun Miller

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text

Title: President

B. Co-applicant information. Complete this section only if another person or entity is required to apply as a co-permittee.

What is the Legal Name of the co-applicant applying for this permit?

Click here to enter text

(The legal name must be spelled exactly as filed with the TX SOS, with the County, or in the legal documents forming the entity.)

If the co-applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at: http://www15.tceq.texas.gov/crpub/

CN: Click here to enter text

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

Prefix (Mr., Ms., Miss): Click here to enter text

First and Last Name: Click here to enter text

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text

Title: Click here to enter text

Provide a brief description of the need for a co-permittee: Click here to enter text

C. Core Data Form

Complete the Core Data Form for each customer and include as an attachment. If the customer type selected on the Core Data Form is **Individual**, complete **Attachment 1** of Administrative Report 1.0.

Attachment: Attachment 1: Core Data Form

Section 4. Application Contact Information (Instructions Page 30)

This is the person(s) TCEQ will contact if additional information is needed about this application. Provide a contact for administrative questions and technical questions.

A. Prefix (Mr., Ms., Miss): Mrs.

First and Last Name: Andrea Wyatt

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: Project Engineer

Organization Name: Murfee Engineering Company, Inc.

Mailing Address: 1101 S. Capital of Texas Hwy, Bldg D.

City, State, Zip Code: Austin, TX 78746

Phone No.: 512-327-9204 Ext.: Click here to enter text. Fax No.: 512-327-2947

E-mail Address: awyatt@murfee.com

Check one or both: ☒ Administrative Contact ☒ Technical Contact

B. Prefix (Mr., Ms., Miss): Mr.

First and Last Name: George Murfee

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: President

Organization Name: Murfee Engineering Company, Inc.

Mailing Address: 1101 S. Capital of Texas Hwy, Bldg D.

City, State, Zip Code: Austin, TX 78746

Phone No.: 512-327-9204 Ext.: Click here to enter text. Fax No.: 512-327-2947

E-mail Address: gmurfee@murfee.com

Check one or both: ☒ Administrative Contact ☐ Technical Contact

Section 5. Permit Contact Information (Instructions Page 30)

Provide two names of individuals that can be contacted throughout the permit term.

A. Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Shaun Miller

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: President

Organization Name: Clancy Utility Holdings, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: 214-301-4255 Ext.: Click here to enter text. Fax No.: Not available

E-mail Address: smiller@winnfamily.org

B. Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Jim Truitt

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: Vice President

Organization Name: Clancy Utility Holdings, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: (214) 301-4277 Ext.: Click here to enter text. Fax No.: Not available

E-mail Address: jtruitt@mirasolcapital.com

Section 6. Billing Information (Instructions Page 30)

The permittee is responsible for paying the annual fee. The annual fee will be assessed to permits ***in effect on September 1 of each year***. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (using form TCEQ-20029).

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Jim Truitt

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: Vice President

Organization Name: Clancy Utility Holdings, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: (214) 301-4277 Ext.: Click here to enter text. Fax No.: Not available

E-mail Address: jtruitt@mirasolcapital.com

Section 7. DMR/MER Contact Information (Instructions Page 31)

Provide the name and complete mailing address of the person delegated to receive and submit Discharge Monitoring Reports (EPA 3320-1) or maintain Monthly Effluent Reports.

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Shaun Miller

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: President

Organization Name: Clancy Utility Holdings, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: (214) 301-4277 Ext.: Click here to enter text. Fax No.: Not available

E-mail Address: smiller@winnfamily.org

DMR data is required to be submitted electronically. Create an account at: https://www.tceq.texas.gov/permitting/netdmr/netdmr.html.

Section 8. Public Notice Information (Instructions Page 31)

A. Individual Publishing the Notices

Prefix (Mr., Ms., Miss): Mrs.

First and Last Name: Andrea Wyatt

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: Project Engineer

Organization Name: Murfee Engineering Company

Mailing Address: 1101 S. Capital of Texas Highway, Building D

City, State, Zip Code: Austin, TX, 78746

Phone No.: 512-327-9204 Ext.: 310 Fax No.: 512-327-2947

E-mail Address: awyatt@murfee.com

B. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package

Indicate by a check mark the preferred method for receiving the first notice and instructions:

☒ E-mail Address

☐ Fax

☐ Regular Mail

C. Contact person to be listed in the Notices

Prefix (Mr., Ms., Miss): Mrs.

First and Last Name: Andrea Wyatt

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: Project Engineer

Organization Name: Murfee Engineering Company, Inc.

Phone No.: 512-327-9204 Ext.: 310

E-mail: awyatt@murfee.com

D. Public Viewing Information

If the facility or outfall is located in more than one county, a public viewing place for each county must be provided.

Public building name: Bee Cave Public Library; Dripping Springs Community Library

Location within the building: Public Access Section/ Front Desk

Physical Address of Building: 4000 Galleria Pkwy, Bee Cave, TX 78738; 501 Sportsplex Dr, Dripping Springs, TX 78620

City: Bee Cave, TX; Dripping Springs, TX County: Travis; Hays

Contact Name: Click here to enter text.

Phone No.: 512-757-6620; 512-858-7825 Ext.: Click here to enter text.

E. Bilingual Notice Requirements:

This information **is required** for **new, major amendment, minor amendment or minor modification, and renewal applications**.

This section of the application is only used to determine if alternative language notices will be needed. Complete instructions on publishing the alternative language notices will be in your public notice package.

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine whether an alternative language notices are required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

   ☐ Yes ☒ No

   If **no**, publication of an alternative language notice is not required; **skip to** Section 9 below.

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

   ☐ Yes ☐ No

3. Do the students at these schools attend a bilingual education program at another location?

☐ Yes ☐ No

4. Would the school be required to provide a bilingual education program but the school has waived out of this requirement under 19 TAC §89.1205(g)?

   ☐ Yes ☐ No

5. If the answer is yes to question 1, 2, 3, or 4, public notices in an alternative language are required. Which language is required by the bilingual program? Click here to enter text

F. Public Involvement Plan Form

Complete the Public Involvement Plan Form (TCEQ Form 20960) for each application for a **new permit or major amendment to a permit** and include as an attachment.

Attachment: Attachment 25 – Public Involvement Plan Form

Section 9. Regulated Entity and Permitted Site Information (Instructions Page 33)

A. If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. **RN** Click here to enter text

Search the TCEQ's Central Registry at http://www15.tceq.texas.gov/crpub/ to determine if the site is currently regulated by TCEQ.

B. Name of project or site (the name known by the community where located):

Mirasol Springs Ranch Water Reclamation Facility

C. Owner of treatment facility: Clancy Utility Holdings, LLC

Ownership of Facility: ☐ Public ☒ Private ☐ Both ☐ Federal

D. Owner of land where treatment facility is or will be:

Prefix (Mr., Ms., Miss): Click here to enter text

First and Last Name: Mirasol Springs, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: 214-301-4255 E-mail Address: smiller@winnfamily.org

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Attachment 21: Deed Recorded Easement

E. Owner of effluent disposal site:

Prefix (Mr., Ms., Miss): Click here to enter text

First and Last Name: Mirasol Springs, LLC

Mailing Address: 4143 Maple Avenue, Suite 400

City, State, Zip Code: Dallas, TX 75219

Phone No.: 214-301-4255 E-mail Address: smiller@winnfamily.org

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Attachment 21: Deed Recorded Easement

F. Owner of sewage sludge disposal site (if authorization is requested for sludge disposal on property owned or controlled by the applicant):

Prefix (Mr., Ms., Miss): Click here to enter text

First and Last Name: Click here to enter text

Mailing Address: Click here to enter text

City, State, Zip Code: Click here to enter text

Phone No.: Click here to enter text E-mail Address: Click here to enter text

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Click here to enter text

Section 10. TPDES Discharge Information (Instructions Page 34)

A. Is the wastewater treatment facility location in the existing permit accurate?

☐ Yes ☐ No

If **no**, **or a new permit application**, please give an accurate description:

N/A

B. Are the point(s) of discharge and the discharge route(s) in the existing permit correct?

☐ Yes ☐ No

If **no**, **or a new or amendment permit application**, provide an accurate description of the point of discharge and the discharge route to the nearest classified segment as defined in 30 TAC Chapter 307:

N/A

City nearest the outfall(s): Click here to enter text

County in which the outfalls(s) is/are located: Click here to enter text

Outfall Latitude: Click here to enter text Longitude: Click here to enter text

C. Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

☐ Yes ☐ No

If **yes**, indicate by a check mark if:

☐ Authorization granted ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

Attachment: Click here to enter text.

D. For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge.

N/A

Section 11. TLAP Disposal Information (Instructions Page 36)

A. For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description of the disposal site location:

0.8 mile southwest of the intersection of Hamilton Pool Road and Stagecoach Ranch Road.

B. City nearest the disposal site: Bee Cave, TX

C. County in which the disposal site is located: Travis and Hays

D. Disposal Site Latitude: N30°19'46" ; N30°19'47" Longitude: W98°08'18" ; W98°08'18"

E. For **TLAPs**, describe the routing of effluent from the treatment facility to the disposal site:

Effluent will discharge from plant into an effluent holding tank. It will be pumped into drip irrigation fields from the effluent lift station at various on-site locations.

F. For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained:

Unnamed tributary to Pedernales River.

Section 12. Miscellaneous Information (Instructions Page 37)

A. Is the facility located on or does the treated effluent cross American Indian Land?

☐ Yes ☒ No

B. If the existing permit contains an onsite sludge disposal authorization, is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☐ No ☒ Not Applicable

If No, or if a new onsite sludge disposal authorization is being requested in this permit application, provide an accurate location description of the sewage sludge disposal site.

Click here to enter text

C. Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?

☐ Yes ☒ No

If yes, list each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application:

Click here to enter text

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If **yes**, provide the following information:

Account number: Click here to enter text Amount past due: Click here to enter text

E. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If **yes**, please provide the following information:

Enforcement order number: Click here to enter text Amount past due: Click here to enter text

Section 13. Attachments (Instructions Page 38)

Indicate which attachments are included with the Administrative Report. Check all that apply:

☒ Lease agreement or deed recorded easement, if the land where the treatment facility is located or the effluent disposal site are not owned by the applicant or co-applicant.

☒ Original full-size USGS Topographic Map with the following information:

- Applicant's property boundary
- Treatment facility boundary
- Labeled point of discharge for each discharge point (TPDES only)
- Highlighted discharge route for each discharge point (TPDES only)
- Onsite sewage sludge disposal site (if applicable)
- Effluent disposal site boundaries (TLAP only)
- New and future construction (if applicable)
- 1 mile radius information
- 3 miles downstream information (TPDES only)
- All ponds.

☐ Attachment 1 for Individuals as co-applicants

☐ Other Attachments. Please specify: Attachment 21 – Deed Recorded Easement; Attachment 2 – Original Full-Sized USGS Topographic Map; Attachment 25 – Public Involvement Plan Form

Section 14. Signature Page (Instructions Page 39)

If co-applicants are necessary, each entity must submit an original, separate signature page.

Permit Number: New Permit Application

Applicant: Clancy Utility Holdings, LLC

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code § 305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signatory name (typed or printed): Shaun Miller

Signatory title: President

Signature: Shaun Miller Date: April 25, 2023

(Use blue ink)

Subscribed and Sworn to before me by the said Shaun Miller

on this 25th day of April, 20 23.

My commission expires on the 1st day of June, 20 25.

Renee Long

Notary Public

[SEAL]

Dallas

County, Texas

RENEE LONG
Notary ID #676415-6
My Commission Expires
June 1, 2025

Section 15. Plain Language Summary (Instructions Page 40)

If you are subject to the alternative language notice requirements in 30 Texas Administrative Code §39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS

DOMESTIC WASTEWATER

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.
Clancy Utility Holdings, LLC (CN605924489) proposes to operate Mirasol Springs Ranch Water Reclamation Facility and disposal facilities (RN111731972). an activated sludge treatment system operated as single stage nitrification with tertiary filtration. The facility will be located 0.8 miles southwest of the intersection of Hamilton Pool Road and Stagecoach Ranch Road , in Bee Cave, Travis/Hays County, Texas 78738.

This application is for a new application to discharge at a daily average flow of 39,000 gallons per day of treated domestic wastewater. This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain low levels of Biochemical Oxygen Demand (5-day), Total Suspended Solids (TSS), and Ammonia Nitrogen (NH_3-N). Domestic wastewater will be treated by an activated sludge treatment system operated as single stage nitrification with tertiary filtration. Treatment units include an influent screen, anoxic basin, aeration basin, clarifier, cloth filter, and chlorine contact chamber and the process produces Type I effluent.

DOMESTIC ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

Section 1. Affected Landowner Information (Instructions Page 41)

A. Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable:

- ☒ The applicant's property boundaries
- ☒ The facility site boundaries within the applicant's property boundaries
- ☐ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone
- ☒ The property boundaries of all landowners surrounding the applicant's property (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
- ☐ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream
- ☐ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge
- ☐ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides
- ☒ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
- ☒ The property boundaries of all landowners surrounding the effluent disposal site
- ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
- ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located

B. ☒ Indicate by a check mark that a separate list with the landowners' names and mailing addresses cross-referenced to the landowner's map has been provided.

C. Indicate by a check mark in which format the landowners list is submitted:

☒ USB Drive ☐ Four sets of labels

D. Provide the source of the landowners' names and mailing addresses: Travis and Hays County Central Appraisal District Websites

E. As required by *Texas Water Code § 5.115*, is any permanent school fund land affected by this application?

☐ Yes ☒ No

If **yes**, provide the location and foreseeable impacts and effects this application has on the land(s):

Click here to enter text.

Section 2. Original Photographs (Instructions Page 44)

Provide original ground level photographs. Indicate with checkmarks that the following information is provided.

☒ At least one original photograph of the new or expanded treatment unit location

☒ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.

☒ At least one photograph of the existing/proposed effluent disposal site

☒ A plot plan or map showing the location and direction of each photograph

Section 3. Buffer Zone Map (Instructions Page 44)

A. Buffer zone map. Provide a buffer zone map on 8.5 x 11-inch paper with all of the following information. The applicant's property line and the buffer zone line may be distinguished by using dashes or symbols and appropriate labels.

- The applicant's property boundary;
- The required buffer zone; and
- Each treatment unit; and
- The distance from each treatment unit to the property boundaries.

B. Buffer zone compliance method. Indicate how the buffer zone requirements will be met. Check all that apply.

☒ Ownership

☐ Restrictive easement

☐ Nuisance odor control

☐ Variance

C. Unsuitable site characteristics. Does the facility comply with the requirements regarding unsuitable site characteristic found in 30 TAC § 309.13(a) through (d)?

☒ Yes ☐ No

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CHECKLIST OF COMMON DEFICIENCIES

Below is a list of common deficiencies found during the administrative review of domestic wastewater permit applications. To ensure the timely processing of this application, please review the items below and indicate by checking Yes that each item is complete and in accordance applicable rules at 30 TAC Chapters 21, 281, and 305. If an item is not required this application, indicate by checking N/A where appropriate. Please do not submit the application until the items below have been addressed.

Core Data Form (TCEQ Form No. 10400) ☒ Yes
(Required for all applications types. Must be completed in its entirety and signed. Note: Form may be signed by applicant representative.)

Correct and Current Industrial Wastewater Permit Application Forms ☒ Yes
(TCEQ Form Nos. 10053 and 10054. Version dated 6/25/2018 or later.)

Water Quality Permit Payment Submittal Form (Page 19) ☐ Yes
(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)

7.5 Minute USGS Quadrangle Topographic Map Attached ☒ Yes
(Full-size map if seeking "New" permit. 8 ½ x 11 acceptable for Renewals and Amendments)

Current/Non-Expired, Executed Lease Agreement or Easement Attached ☐ N/A ☒ Yes

Landowners Map ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Things to Know:

- All the items shown on the map must be labeled.
- The applicant's complete property boundaries must be delineated which includes boundaries of contiguous property owned by the applicant.
- The applicant cannot be its own adjacent landowner. You must identify the landowners immediately adjacent to their property, regardless of how far they are from the actual facility.
- If the applicant's property is adjacent to a road, creek, or stream, the landowners on the opposite side must be identified. Although the properties are not adjacent to applicant's property boundary, they are considered potentially affected landowners. If the adjacent road is a divided highway as identified on the USGS topographic map, the applicant does not have to identify the landowners on the opposite side of the highway.

Landowners Cross Reference List ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Landowners Labels or USB Drive attached ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Original signature per 30 TAC § 305.44 – Blue Ink Preferred ☒ Yes
(If signature page is not signed by an elected official or principle executive officer, a copy of signature authority/delegation letter must be attached)

RESPONSE 2

September 20, 2023

RE: Notice of Deficiency_WQ0016335001_Clancy Property

Andrea Wyatt <awyatt@murfee.com>
Wed 9/20/2023 8:50 AM
To:Deba Dutta <Deba.Dutta@tceq.texas.gov>

2 attachments (2 MB)
Site Exhibit-TLAP-Mirasol-230920.pdf; Sheet from Domestic Worksheet 3.0-TLAP-Mirasol-230915.pdf;

Deba,

Attached are the requested exhibit and updated page from the application. I've uploaded the complete, updated application packet to the FTP and added your email using the share function.

I've outlined the drip fields in orange and site boundary in blue to try to make them clearly defined and removed most of the development related detail to simplify the drawing.

Please let me know if you have further questions.

Regards,

Andrea Wyatt

From: Deba Dutta <Deba.Dutta@tceq.texas.gov>
Sent: Tuesday, September 19, 2023 10:26 AM
To: Andrea Wyatt <awyatt@murfee.com>
Cc: Deba Dutta <Deba.Dutta@tceq.texas.gov>
Subject: RE: Notice of Deficiency_WQ0016335001_Clancy Property

Andrea,

- The site drawing is too busy. What are the 4 dotted lines for? Remove them if they are not required for site drawing.
- Service area boundary is not very clear.
- What are the two other black areas with orange boundary lines?
- What are the two black areas with magenta boundaries?
- Remove the word "Proposed" from the drawing.

I will need Domestic Worksheet 3.0 Section 2 – Revised Table 3.0(1), showing the final irrigation area as 16.2 acres (remove min, and planned).

I will also need an electronic copy (PDF/Word) of the revised permit application with all attachments.

Thanks.
Deba

From: Andrea Wyatt <awyatt@murfee.com>
Sent: Monday, September 18, 2023 9:41 AM
To: Deba Dutta <Deba.Dutta@tceq.texas.gov>
Subject: RE: Notice of Deficiency_WQ0016335001_Clancy Property

Deba,

Could you look at the attached exhibit and confirm that it fulfills what you've requested in item2? I want to make sure I have the right information shown.

Thanks!

Andrea Wyatt

From: Deba Dutta <Deba.Dutta@tceq.texas.gov>
Sent: Thursday, September 14, 2023 3:34 PM
To: Andrea Wyatt <awyatt@murfee.com>
Cc: George Murfee <gmurfee@murfee.com>; smiller@winnfamily.org; Deba Dutta <Deba.Dutta@tceq.texas.gov>
Subject: Notice of Deficiency_WQ0016335001_Clancy Property
Importance: High

Good afternoon Andrea.

It was nice to talk to you this afternoon. As was discussed, the subject application is currently under technical review, and the following items must be addressed before the application is considered technically complete. Please send me the below information (preferably via email) as soon as possible, but no later than **COB Thursday; September 21, 2023,** to complete the technical review in a timely manner.

1. There are discrepancies in the irrigation area in the application. During our discussion, you confirmed the irrigation area as 16.2 acres. Provide me Domestic Worksheet 3.0 Section 2 – Revised Table 3.0(1), showing the final irrigation area as 16.2 acres (remove min, and planned).
2. The site map will be part of the permit. Provide me a site map on a 8.5"X11" page zooming in to the boundaries of the treatment plant, disposal area, and applicant's property (the submitted map is not zoomed in, and showing the irrigation area as 16.21 acres).
3. Email me an electronic copy (PDF/Word) of the revised permit application with all attachments for our records. Alternatively, you can share the application via TCEQ FTPS at: https://ftps.tceq.texas.gov/.

Note that the TCEQ may request additional information as necessary to aid in drafting an accurate and representative permit. Feel free to contact me if you have any question.

Thanks.

Deba Dutta
Deba P. Dutta, P.E.
Municipal Permits Team, MC-148
Wastewater Permitting Section
Water Quality Division, TCEQ
12100 Park 35 Circle, Austin, Texas 78753
Phone: 512-239-4608
Email: Deba.Dutta@tceq.texas.gov

DOMESTIC WORKSHEET 3.0

LAND DISPOSAL OF EFFLUENT

The following is required for all permit applications

Renewal, New, and Amendments

Section 1. Type of Disposal System (Instructions Page 77)

Identify the method of land disposal:

- ☐ Surface application
- ☐ Irrigation
- ☐ Drip irrigation system
- ☐ Evaporation
- ☐ Evapotranspiration beds
- ☐ Other (describe in detail): Click here to enter text.
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☒ Subsurface area drip dispersal system

NOTE: All applicants without authorization or proposing new/amended subsurface disposal MUST complete and submit Worksheet 7.0.

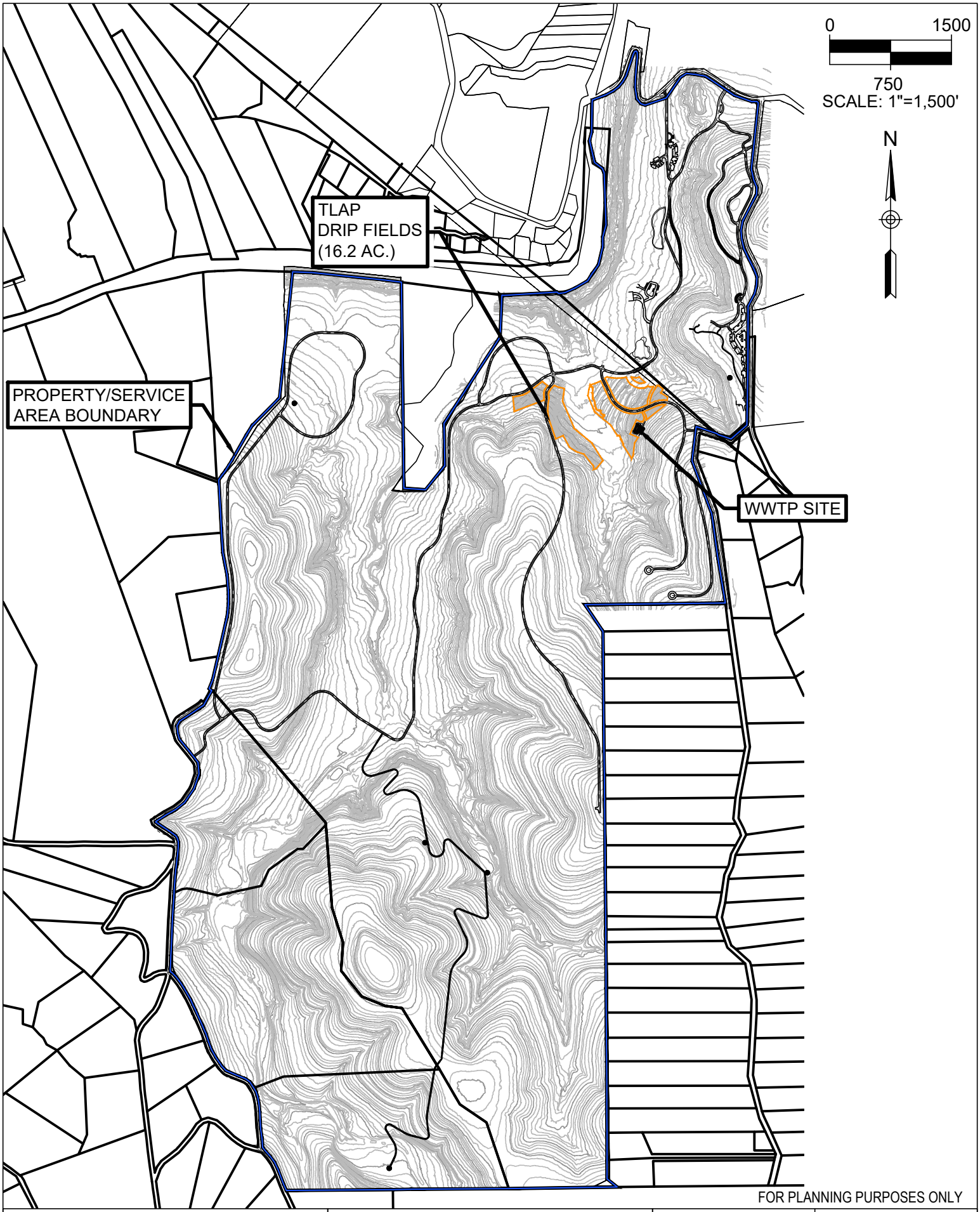
For existing authorizations, provide Registration Number: Click here to enter text.

Section 2. Land Application Site(s) (Instructions Page 77)

In table 3.0(1), provide the requested information for the land application sites. Include the agricultural or cover crop type (wheat, cotton, alfalfa, bermuda grass, native grasses, etc.), land use (golf course, hayland, pastureland, park, row crop, etc.), irrigation area, amount of effluent applied, and whether or not the public has access to the area. Specify the amount of land area and the amount of effluent that will be allotted to each agricultural or cover crop, if more than one crop will be used.

Table 3.0(1) – Land Application Site Crops

Crop Type & Land Use	Irrigation Area (acres)	Effluent Application (GPD)	Public Access? Y/N
Common Area, Pearl Millet and Mixed Native Species	16.2	39,000	Y



FOR PLANNING PURPOSES ONLY

Murfee Engineering Company
Texas Registered Engineering Firm F-353
1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746, (512) 327-9204

MIRASOL TLAP
Mirasol Springs Ranch Water Reclamation Facility
Site Drawing

JOB NO.	23004-220	DESIGNED BY:	ANW
DATE:	9/19/2023	DRAWN BY:	MJS/RLW
SCALE:	AS NOTED	CHECKED BY:	ANW

W:\Mirasol\Facilities\Wastewater\TLAP Exhibits\EXHIBIT (SHEET) - TLAP-MIRASOL SITE.dwg(Site Plan)