



# Administrative Package Cover Page

**This file contains the following documents:**

1. Summary of application (in plain language)
    - English
    - Alternative Language (Spanish)
  2. First Notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
    - English
    - Alternative Language (Spanish)
  3. Application materials
- 



# Portada de Paquete Administrativo

**Este archivo contiene los siguientes documentos:**

1. Resumen en lenguaje sencillo (PLS, por sus siglas en inglés) de la actividad propuesta
  - Inglés
  - Idioma alternativo (español)
2. Primer aviso (NORI, por sus siglas en inglés)
  - Inglés
  - Idioma alternativo (español)
3. Solicitud original



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

## Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements. After filling in the information for your facility delete these instructions.

If you are subject to the alternative language notice requirements in 30 TAC Section 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/STORMWATER

*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 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.*

Sun NG Jelly-Lone Star TX RV LLC (CN605839323) operates Yogi Bears Jellystone Park Camp-Resort Waller (RN101234490), a domestic wastewater treatment plant. The facility is located at 34843 Betka Road, in Waller, Waller County, Texas 77484. The application request is for the renewal to discharge 15,000 gallons in at interim phase via surface irrigation of 7.28 acres and 30,000 gallons per day of treated domestic wastewater in the final phase via surface irrigation of 14.6 acres. This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain five day-day carbonaceous biochemical oxygen demand (CBOD5) and total dissolved solids (TDS). Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Domestic wastewater is treated by an aerobic treatment process. This process includes 2-1,000 gallon and 17-2,000-gallon trash tanks, 14-2,000-gallon equalization tanks and 4-2,500 gallon equalization tanks, 1-aerobic

treatment, 1-clarifier, 1-effluent holding pond, and 1-land application. Wastewater gravity flows or is pumped to trash tanks and then equalization tanks. The equalization tanks store portions of the daily flow to provide for dampening of peak flows. Pumps convey wastewater from the equalization tanks to an extended aeration biological treatment unit. The mixed liquor from the extended aeration treatment unit gravity flows to a clarifier where solids settle and return to the extended aeration unit. Clarified liquids gravity flow to a pump tank for conveying the treated wastewater to an effluent holding pond. Treated water is pumped from the effluent holding pond to a land application area. Waste Activated Sludge will be removed directly from clarifier or biological treatment unit for offsite disposal at a TCEQ approved facility.

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

### AGUAS RESIDUALES DOMÉSTICAS /AGUAS PLUVIALES

*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 es una representación ejecutiva fedérale de la solicitud de permiso.*

Sun NG Jelly-Lone Star TX RV LLC (CN605839323) opera Yogi Bears Jellystone Park Camp-Resort Waller RN101234490, una planta de tratamiento de aguas residuales domésticas . La instalación está ubicada en 34843 Betka Road, en Waller, Condado de Waller, Texas 77484. La solicitud de solicitud es para la renovación para descargar 15,000 galones en la fase intermedia mediante riego superficial de 7,28 acres y 30,000 galones por día de aguas residuales domésticas tratadas en la fase final mediante riego superficial de 14,6 acres.. Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan Demanda bioquímica de oxígeno carbonoso (CBOD5) y sólidos disueltos totales (TDS) de cinco días a día. En el Informe técnico nacional 1.0, sección 7, se incluyen otros contaminantes potenciales. Aguas residuales domésticas . está tratado por un proceso de tratamiento aeróbico. Este proceso incluye 2 tanques de basura de 1,000 galones y 17 tanques de ecualización de 2,000 galones, 14 tanques de ecualización de 2,000 galones y 4 tanques de ecualización de 2,500 galones, 1 tratamiento aeróbico, 1 clarificador, 1 estanque de retención de efluentes y 1 aplicación en tierra. Las aguas residuales fluyen por gravedad o se bombean a los tanques de basura y luego a los tanques de ecualización. Los tanques de ecualización almacenan partes del flujo diario para amortiguar los flujos máximos. Las bombas transportan las aguas residuales desde los tanques de ecualización a una unidad de tratamiento biológico de aireación extendida. El licor mezclado de la unidad de tratamiento de aireación extendida fluye por gravedad a un clarificador donde los sólidos se sedimentan y regresan a la unidad de aireación extendida. Los líquidos clarificados fluyen por gravedad a un tanque de bomba para transportar las aguas residuales tratadas a un estanque de retención de efluentes. El agua tratada se bombea desde el estanque de retención de efluentes a un área de aplicación en tierra. Los lodos activados residuales se eliminarán directamente del clarificador o de la unidad de tratamiento biológico para su eliminación fuera del sitio en una instalación aprobada por TCEQ.



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT RENEWAL

PERMIT NO. WQ0015640001

**APPLICATION.** Sun NG Jelly-Lone Star TX RV LLC, 27777 Franklin Road, Suite 200, Southfield, Michigan 48034, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Land Application Permit (TLAP) No. WQ0015640001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 30,000 gallons per day via surface irrigation of 14.6 acres of non-public access pastureland. The domestic wastewater treatment facility and disposal area are located at 34843 Betka Road, near the city of Waller, in Waller County, Texas 77484. TCEQ received this application on January 10, 2025. The permit application will be available for viewing and copying at Waller County Library, 2331 11th Street, Hempstead, in Waller County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications>. 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=-95.989722,30.021388&level=18>

**ALTERNATIVE LANGUAGE NOTICE.** Alternative language notice in Spanish is available at: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications>.

El aviso de idioma alternativo en español está disponible en

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications>.

**ADDITIONAL NOTICE.** TCEQ's Executive Director has determined the application is administratively complete and will conduct a technical review of the application. After technical review of the application is complete, the Executive Director may prepare a draft permit and will issue a preliminary decision on the application. **Notice of the Application and Preliminary Decision will be published and mailed to those who are on the county-wide mailing list and to those who are on the mailing list for this application. That notice will contain the deadline for submitting public comments.**

**PUBLIC COMMENT / PUBLIC MEETING.** You may submit public comments or request a public meeting on this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public

interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

**OPPORTUNITY FOR A CONTESTED CASE HEARING.** After the deadline for submitting public comments, the Executive Director will consider all timely comments and prepare a response to all relevant and material, or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments, and the Executive Director's decision on the application, will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this application.** If comments are received, the mailing will also provide instructions for requesting reconsideration of the Executive Director's decision and for requesting a contested case hearing. A contested case hearing is a legal proceeding similar to a civil trial in state district court.

**TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST:** your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period and, the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

**TCEQ may act on an application to renew a permit for discharge of wastewater without providing an opportunity for a contested case hearing if certain criteria are met.**

**MAILING LIST.** If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

**INFORMATION AVAILABLE ONLINE.** For details about the status of the application, visit the Commissioners' Integrated Database at [www.tceq.texas.gov/goto/cid](http://www.tceq.texas.gov/goto/cid). Search the database using the permit number for this application, which is provided at the top of this notice.

**AGENCY CONTACTS AND INFORMATION.** All public comments and requests must be submitted either electronically at <https://www14.tceq.texas.gov/epic/eComment/>, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at [www.tceq.texas.gov/goto/pep](http://www.tceq.texas.gov/goto/pep). Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Sun NG Jelly-Lone Star TX RV LLC at the address stated above or by calling Mr. Bruce Thelen, Chief Operating Officer, at 248-208-2651.

Issuance Date: February 5, 2025

# Comisión de Calidad Ambiental del Estado de Texas



## AVISO DE RECIBO DE LA SOLICITUD E INTENCION DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA RENOVACION

PERMISO NO. WQ0015640001

**SOLICITUD.** Sun NG Jelly-Lone Star TX RV LLC, 27777 Franklin Road, Suite 200, Southfield, Michigan 48034 ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para renovar el Permiso No. WQ0015640001 de disposición de aguas residuales para autorizar la disposición de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 30,000 galones por día mediante riego superficial por medio de 14.6 acres. La planta de tratamiento de aguas domésticos residuales y el área de disposición están ubicados en 34843 Betka Road, cerca de la ciudad de Waller, en el Condado de Waller, Texas. La TCEQ recibió esta solicitud el día 10 de enero de 2025. La solicitud para el permiso estará disponible para leerla y copiarla en 2331 11th Street antes de la fecha de publicación de este aviso en el periódico. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.989722,30.021388&level=18>

**AVISO ADICIONAL.** El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que están en la lista de correo de las personas a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.**

**COMENTARIO PUBLICO / REUNION PUBLICA.** Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud. El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

**OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO.**

Después del plazo para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios apropiados y preparará una respuesta a todos los comentarios públicos esenciales, pertinentes, o significativos. **A menos que la solicitud haya sido referida directamente a una audiencia administrativa de lo contencioso, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud serán enviados por correo a todos los que presentaron un comentario público y a las personas que están en la lista para recibir avisos sobre esta solicitud.** Si se reciben comentarios, el aviso también proveerá instrucciones para pedir una reconsideración de la decisión del Director Ejecutivo y para pedir una audiencia administrativa de lo contencioso. Una audiencia administrativa de lo contencioso es un procedimiento legal similar a un procedimiento legal civil en un tribunal de distrito del estado.

**PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, USTED DEBE INCLUIR EN SU SOLICITUD LOS SIGUIENTES DATOS:** su nombre, dirección, y número de teléfono; el nombre del solicitante y número del permiso; la ubicación y distancia de su propiedad/actividad con respecto a la instalación; una descripción específica de la forma cómo usted sería afectado adversamente por el sitio de una manera no común al público en general; una lista de todas las cuestiones de hecho en disputa que usted presente durante el período de comentarios; y la declaración "[Yo/nosotros] solicito/solicitamos una audiencia de caso impugnado". Si presenta la petición para una audiencia de caso impugnado de parte de un grupo o asociación, debe identificar una persona que representa al grupo para recibir correspondencia en el futuro; identificar el nombre y la dirección de un miembro del grupo que sería afectado adversamente por la planta o la actividad propuesta; proveer la información indicada anteriormente con respecto a la ubicación del miembro afectado y su distancia de la planta o actividad propuesta; explicar cómo y porqué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la Comisión. La Comisión sólo puede conceder una solicitud de una audiencia de caso impugnado sobre los temas que el solicitante haya presentado en sus comentarios oportunos que no fueron retirados posteriormente. Si se concede una audiencia, el tema de la audiencia estará limitado a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas a intereses pertinentes y materiales de calidad del agua que se hayan presentado durante el período de comentarios. Si ciertos criterios se cumplen, la TCEQ puede actuar sobre una solicitud para renovar un permiso sin proveer una oportunidad de una audiencia administrativa de lo contencioso.

**LISTA DE CORREO.** Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Además, puede pedir que la TCEQ ponga su nombre en una o más de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos de el solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado específico. Si desea que se

agrega su nombre en una de las listas designe cual lista(s) y envia por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

**CONTACTOS E INFORMACIÓN A LA AGENCIA. Todos los comentarios públicos y solicitudes deben ser presentadas electrónicamente vía <http://www14.tceq.texas.gov/epic/eComment/> o por escrito dirigidos a la Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087.** Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del Sun NG Jelly-Lone Star TX RV LLC a la dirección indicada arriba o llamando a Mr. Bruce Thelen al 248-208-2651.

Fecha de emisión: 5 de febrero de 2025

TCEQ Domestic Wastewater Permit

Sun NG Jelly-Lone Star TX RV LLC

WQ0015640001

Permit Renewal Application



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

**Complete and submit this checklist with the application.**

APPLICANT NAME: Sun NG Jelly-Lone Star TX RV LLC

PERMIT NUMBER (If new, leave blank): WQ00 15640001

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

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

For TCEQ Use Only

Segment Number \_\_\_\_\_ County \_\_\_\_\_  
Expiration Date \_\_\_\_\_ Region \_\_\_\_\_  
Permit Number \_\_\_\_\_





TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

**DOMESTIC WASTEWATER PERMIT APPLICATION  
ADMINISTRATIVE REPORT 1.0**

For any questions about this form, please contact the Applications Review and Processing Team at 512-239-4671.

**Section 1. Application Fees (Instructions Page 26)**

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

Flow	New/Major Amendment	Renewal
<0.05 MGD	\$350.00 <input type="checkbox"/>	\$315.00 <input checked="" type="checkbox"/>
≥0.05 but <0.10 MGD	\$550.00 <input type="checkbox"/>	\$515.00 <input type="checkbox"/>
≥0.10 but <0.25 MGD	\$850.00 <input type="checkbox"/>	\$815.00 <input type="checkbox"/>
≥0.25 but <0.50 MGD	\$1,250.00 <input type="checkbox"/>	\$1,215.00 <input type="checkbox"/>
≥0.50 but <1.0 MGD	\$1,650.00 <input type="checkbox"/>	\$1,615.00 <input type="checkbox"/>
≥1.0 MGD	\$2,050.00 <input type="checkbox"/>	\$2,015.00 <input type="checkbox"/>

Minor Amendment (for any flow) \$150.00 ☐

**Payment Information:**

Mailed      Check/Money Order Number: 2024753  
Check/Money Order Amount: \$315.00  
Name Printed on Check: Sun Communities Operating LP

EPAY      Voucher Number: Click to enter text.

Copy of Payment Voucher enclosed?      Yes ☐

**Section 2. Type of Application (Instructions Page 26)**

a. Check the box next to the appropriate authorization type.

- ☐ Publicly-Owned Domestic Wastewater  
☒ Privately-Owned Domestic Wastewater  
☐ Conventional Wastewater Treatment

b. Check the box next to the appropriate facility status.

- ☒ Active      ☐ Inactive

c. Check the box next to the appropriate permit type.

- ☐ TPDES Permit  
☒ TLAP  
☐ TPDES Permit with TLAP component  
☐ Subsurface Area Drip Dispersal System (SADDS)

d. Check the box next to the appropriate application type

- |   |   |
|---|---|
| <input type="checkbox"/> New                                    |   |
| <input type="checkbox"/> Major Amendment <u>with</u> Renewal    | <input type="checkbox"/> Minor Amendment <u>with</u> Renewal    |
| <input type="checkbox"/> Major Amendment <u>without</u> Renewal | <input type="checkbox"/> Minor Amendment <u>without</u> Renewal |
| <input checked="" type="checkbox"/> Renewal without changes     | <input type="checkbox"/> Minor Modification of permit           |

e. For amendments or modifications, describe the proposed changes: [Click to enter text.](#)

f. For existing permits:

Permit Number: WQ00 15640001

EPA I.D. (TPDES only): TX [Click to enter text.](#)

Expiration Date: July 10, 2025

### Section 3. Facility Owner (Applicant) and Co-Applcant Information (Instructions Page 26)

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

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

Sun NG Jelly-Lone Star TX RV 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: 6039393133

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.

Last Name, First Name: Thelen, Bruce

Title: Chief Operating Officer

Credential:

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 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 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: Click to enter text.

Last Name, First Name: Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

Provide a brief description of the need for a co-permittee: Click 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 A: Core Data Form

## Section 4. Application Contact Information (Instructions Page 27)

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.

Last Name, First Name: Thelen, Bruce

Title: COO

Credential: Click to enter text.

Organization Name: Sun NG Jelly-Lone Star TX RV LLC

Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034

Phone No.: 248-208-2651

E-mail Address: bthelen@suncommunities.com

Check one or both: ☒ Administrative Contact ☐ Technical Contact

B. Prefix: Mr.

Last Name, First Name: Smith, Hank

Title: Director

Credential: P.E.

Organization Name: Atwell LLC

Mailing Address: 1611 W 5th Street, Suite 175 City, State, Zip Code: Austin, TX 78703

Phone No.: 512-695-3914

E-mail Address: hsmith@atwell.com

Check one or both: ☐ Administrative Contact ☒ Technical Contact

## Section 5. Permit Contact Information (Instructions Page 27)

Provide the names and contact information for two individuals that can be contacted throughout the permit term.

A. Prefix: Mr.

Last Name, First Name: Smith, Hank

Title: Director

Credential: P.E.

Organization Name: Atwell LLC

Mailing Address: 1611 W 5th Street, Suite 175 City, State, Zip Code: Austin, TX 78703

Phone No.: 512-695-3914

E-mail Address: hsmith@atwell.com

B. Prefix: Mr. Last Name, First Name: Thelen, Bruce  
Title: COO Credential: [Click to enter text.](#)  
Organization Name: Sun NG Jelly-Lone Star TX RV LLC  
Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034  
Phone No.: 248-208-2651 E-mail Address: bthelen@suncommunities.com

## Section 6. Billing Contact Information (Instructions Page 27)

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. Last Name, First Name: Thelen, Bruce  
Title: COO Credential: [Click to enter text.](#)  
Organization Name: Sun NG Jelly-Lone Star TX RV LLC  
Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034  
Phone No.: 248-208-2651 E-mail Address: bthelen@suncommunities.com

## Section 7. DMR/MER Contact Information (Instructions Page 27)

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

Prefix: Mr. Last Name, First Name: Sabol, Tyler  
Title: Wastewater Treatment Operator, Class C Credential: [Click to enter text.](#)  
Organization Name: TNG Utility  
Mailing Address: PO Box 2749 City, State, Zip Code: Spring, TX 77383  
Phone No.: 281-350-0895 E-mail Address: tarrynf@tng-utility.com

## Section 8. Public Notice Information (Instructions Page 27)

### A. Individual Publishing the Notices

Prefix: Mr. Last Name, First Name: Smith, Hank  
Title: Director Credential: P.E.  
Organization Name: Atwell LLC  
Mailing Address: 1611 W 5th Street, Suite 175 City, State, Zip Code: Austin, TX 78703  
Phone No.: 512-584-8678 E-mail Address: hsmith@atwell.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 permit to be listed in the Notices**

Prefix: Mr.

Last Name, First Name: Thelen, Bruce

Title: COO

Credential: [Click to enter text.](#)

Organization Name: Sun NG Jelly-Lone Star TX RV LLC

Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034

Phone No.: 248-208-2651

E-mail Address: bthelen@suncommunities.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: Waller County Library

Location within the building: [Click to enter text.](#)

Physical Address of Building: 2331 11th Street

City: Hempstead

County: Waller

Contact (Last Name, First Name): [Click to enter text.](#)

Phone No.: 979-826-7658 Ext.: [Click 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? Spanish

#### F. Plain Language Summary Template

Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment.

**Attachment:** B. Plain Language Summary

#### G. 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:** Click to enter text.

## Section 9. Regulated Entity and Permitted Site Information (Instructions Page 29)

A. If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. RN 101234490

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):

Lone Star Jellystone Park Camp Resort

C. Owner of treatment facility: Sun NG Jelly-Lone Star TX RV LLC

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

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

Prefix: Mr.

Last Name, First Name: Thelen, Bruce

Title: COO

Credential: Click to enter text.

Organization Name: Sun NG Jelly-Lone Star TX RV LLC.

Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034

Phone No.: 248-208-2651

E-mail Address: bthelen@suncommunities.com

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 to enter text.

E. Owner of effluent disposal site:

Prefix: Mr.

Last Name, First Name: Thelen, Bruce

Title: COO

Credential: Click to enter text.

Organization Name: Sun NG Jelly-Lone Star TX RV LLC.

Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034

Phone No.: 248-208-2651

E-mail Address: bthelen@suncommunities.com

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 to enter text.

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

Prefix: Click to enter text.

Last Name, First Name: Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

Organization Name: Click to enter text.

Mailing Address: Click to enter text.

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

Phone No.: Click to enter text.

E-mail Address: Click 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 to enter text.

## Section 10. TPDES Discharge Information (Instructions Page 31)

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:

Click to enter text.

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:

Click to enter text.

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

County in which the outfalls(s) is/are located: Click 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 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: [Click to enter text.](#)

## Section 11. TLAP Disposal Information (Instructions Page 32)

- 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:

[Click to enter text.](#)

- B. City nearest the disposal site: Waller

- C. County in which the disposal site is located: Waller

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

Effluent will be pumped to an effluent holding pond for storage. Effluent will be pumped from the effluent storage pond to the land application areas in the southern portion of the park.

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

## Section 12. Miscellaneous Information (Instructions Page 32)

- 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 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 to enter text.](#)

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account number: [Click to enter text.](#)

Amount past due: [Click 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 to enter text.](#)

Amount past due: [Click to enter text.](#)

## Section 13. Attachments (Instructions Page 33)

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: [Click to enter text.](#)

## Section 14. Signature Page (Instructions Page 34)

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

Permit Number: WQ0015640001

Applicant: Sun NG Jelly-Lone Star TX RV 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): Bruce Thelen

Signatory title: Chief Operating Officer

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

1/6/25

(Use blue ink)

Subscribed and Sworn to before me by the said Bruce Thelen

on this 16th day of January, 20 25.

My commission expires on the 15th day of July, 20 30.



[SEAL]

County, Texas Oakland County, Michigan

# ATTACHMENT 1

## INDIVIDUAL INFORMATION

### DOMESTIC WASTEWATER PERMIT APPLICATION 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 application 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 ☐ 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)*

Plain Language Summary ☒ Yes



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

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For any questions about this form, please contact the Domestic Wastewater Permitting Team at 512-239-4671.

The following information is required for all renewal, new, and amendment applications.

### Section 1. Permitted or Proposed Flows (Instructions Page 43)

#### A. Existing/Interim I Phase

Design Flow (MGD): 0.030

2-Hr Peak Flow (MGD): N/A

Estimated construction start date: November 15, 2019

Estimated waste disposal start date: February 14, 2020

#### B. Interim II Phase

Design Flow (MGD): Click to enter text.

2-Hr Peak Flow (MGD): Click to enter text.

Estimated construction start date: Click to enter text.

Estimated waste disposal start date: Click to enter text.

#### C. Final Phase

Design Flow (MGD): Click to enter text.

2-Hr Peak Flow (MGD): Click to enter text.

Estimated construction start date: Click to enter text.

Estimated waste disposal start date: Click to enter text.

#### D. Current Operating Phase

Provide the startup date of the facility: November 15, 2019

### Section 2. Treatment Process (Instructions Page 43)

#### A. Current Operating Phase

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, a description of *each phase* must be provided.**

Wastewater gravity flows or is pumped to trash tanks and then equalization tanks. The equalization tanks store portions of the daily flow to provide for dampening of peak flows. Pumps convey wastewater from the equalization tanks to an extended aeration biological treatment unit. The mixed liquor from the extended aeration treatment unit gravity flows to a clarifier where solids settle and return to the extended aeration unit. Clarified liquids gravity flow to a pump tank for conveying the treated wastewater to an effluent holding pond. Treated water is pumped from the effluent holding pond to a land application area. Waste Activated Sludge will be removed directly from clarifier or biological treatment unit for offsite disposal at a TCEQ approved facility

## 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)
1,000 GALLON TRASH TANKS	2	7.83' X 5' X 5.67'
2,000 GALLON TRASH TANKS	17	12.91' X 5' X 5.91'
2,000 GALLON EQUALIZATION TANKS	14	12.91' X 5' X 5.91'
2,500 GALLON EQUALIZATION TANKS	4	12.91' X 5.67' X 5.67'
AEROBIC TREATMENT	1	40' X 11' X 12'
CLARIFIER	1	10' DIAMETER X 12' HEIGHT
EFFLUENT HOLDING POND	1	189' X 160' X 8'
LAND APPLICATION	1	403'X420',807' X 205',350'X740'

## C. Process Flow Diagram

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

**Attachment:** E. Process Flow Diagram

## Section 3. Site Information and Drawing (Instructions Page 44)

Provide the TPDES discharge outfall latitude and longitude. Enter N/A if not applicable.

- Latitude: [Click to enter text.](#)
- Longitude: [Click to enter text.](#)

Provide the TLAP disposal site latitude and longitude. Enter N/A if not applicable.

- Latitude: 30.017
- Longitude: -95.985

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:** F. Site Drawing

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

Lone Star Jellystone Park Camp Resort – an RV camp resort currently with 435 transient accommodations (RVs and cabins) with an associated water park with fast food service. The area served by the treatment facility will be limited to the Lone Star Jellystone Park Camp Resort.

**Collection System Information for wastewater TPDES permits only:** Provide information for each **uniquely owned** collection system, existing and new, served by this facility, including satellite collection systems. **Please see the instructions for a detailed explanation and examples.**

**Collection System Information**

Collection System Name	Owner Name	Owner Type	Population Served
		Choose an item.	
		Choose an item.	
		Choose an item.	
		Choose an item.	

## Section 4. Unbuilt Phases (Instructions Page 45)

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

**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.**

Click to enter text.

## Section 5. Closure Plans (Instructions Page 45)

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

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

Click to enter text.

## Section 6. Permit Specific Requirements (Instructions Page 45)

**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

If **yes**, provide the date(s) of approval for each phase: August 13th, 2018

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.**



**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.

Click to enter text.

**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

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

Click to enter text.

**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 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 512-239-2335. 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 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 512-239-2335.

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

Click 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 to enter text.](#) or TXRNE [Click 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 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 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 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 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, attach a Sewage Sludge Solids Management Plan. See Example 5 in the instructions.

[Click to enter text.](#)

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

**1. Acceptance of sludge from other WWTPs**

Does or will the facility accept sludge from other treatment plants at the facility site?

☐ Yes ☒ No

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

In addition, provide the date the plant started or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the BOD<sub>5</sub> concentration of the sludge, and the design BOD<sub>5</sub> concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click 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 the date the plant started 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<sub>5</sub> concentration of the septic waste, and the design BOD<sub>5</sub> concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click 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 or will the facility 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 to enter text.

## Section 7. Pollutant Analysis of Treated Effluent (Instructions Page 50)

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). **Water treatment facilities** discharging filter backwash water, complete Table 1.0(3). Provide copies of the laboratory results sheets. **These tables are not applicable for a minor amendment without renewal.** See the instructions for guidance.

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 <sub>5</sub> , mg/l	4.37	4.37	3	Grab	12/3/2024 10:15 AM
Total Suspended Solids, mg/l	31.5	31.5	3	Grab	12/3/2024 10:15 AM
Ammonia Nitrogen, mg/l	24.9	24.9	3	Grab	12/3/2024 10:15 AM
Nitrate Nitrogen, mg/l	68.8	68.8	3	Grab	12/7/2024 4:19 PM
Total Kjeldahl Nitrogen, mg/l	6.72	6.72	3	Grab	12/3/2024 10:15 AM
Sulfate, mg/l	32.1	32.1	3	Grab	12/7/2024 4:19 PM
Chloride, mg/l	125	125	3	Grab	12/7/2024 4:19 PM
Total Phosphorus, mg/l	8.46	8.46	3	Grab	12/3/2024 10:15 AM
pH, standard units	7.38	7.38	3	Grab	12/3/2024 10:15 AM

Dissolved Oxygen*, mg/l	7.31	7.31	3	Grab	12/3/2024 10:15 AM
Chlorine Residual, mg/l	<0.25	0.25	3	Grab	12/3/2024 10:15 AM
<i>E.coli</i> (CFU/100ml) freshwater	<2420	2420	3	Grab	12/3/2024 10:15 AM
Enterococci (CFU/100ml) saltwater	N/A	N/A			
Total Dissolved Solids, mg/l	605	605	3	Grab	12/3/2024 10:15 AM
Electrical Conductivity, µmohs/cm, †	992	992	3	Grab	12/3/2024 10:15 AM
Oil & Grease, mg/l	<5.00	5.00	3	Grab	12/6/2024 7:30 AM
Alkalinity (CaCO <sub>3</sub> )*, mg/l	27.1	27.1	3	Grab	12/3/2024 10:15 AM

\*TPDES permits only

†TLAP permits only

**Table1.0(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 <sub>3</sub> ), mg/l					

## Section 8. Facility Operator (Instructions Page 50)

Facility Operator Name: Tyler Sabol

Facility Operator's License Classification and Level: WWTP Operator Class C

Facility Operator's License Number: WW0075278

## Section 9. Sludge and Biosolids Management and Disposal (Instructions Page 51)

### A. WWTP's Biosolids Management Facility Type

Check all that apply. See instructions for guidance

- ☐ Design flow >= 1 MGD
- ☐ Serves >= 10,000 people
- ☐ Class I Sludge Management Facility (per 40 CFR § 503.9)
- ☐ Biosolids generator

- ☐ Biosolids end user – land application (onsite)
- ☐ Biosolids end user – surface disposal (onsite)
- ☐ Biosolids end user – incinerator (onsite)

## B. WWTP's Biosolids Treatment Process

Check all that apply. See instructions for guidance.

- ☒ Aerobic Digestion
- ☐ Air Drying (or sludge drying beds)
- ☐ Lower Temperature Composting
- ☐ Lime Stabilization
- ☐ Higher Temperature Composting
- ☐ Heat Drying
- ☐ Thermophilic Aerobic Digestion
- ☐ Beta Ray Irradiation
- ☐ Gamma Ray Irradiation
- ☐ Pasteurization
- ☐ Preliminary Operation (e.g. grinding, de-gritting, blending)
- ☐ Thickening (e.g. gravity thickening, centrifugation, filter press, vacuum filter)
- ☐ Sludge Lagoon
- ☐ Temporary Storage (< 2 years)
- ☐ Long Term Storage (>= 2 years)
- ☐ Methane or Biogas Recovery
- ☐ Other Treatment Process: [Click to enter text.](#)

## C. Biosolids Management

Provide information on the *intended* biosolids management practice. Do not enter every management practice that you want authorized in the permit, as the permit will authorize all biosolids management practices listed in the instructions. Rather indicate the management practice the facility plans to use.

### Biosolids Management

Management Practice	Handler or Preparer Type	Bulk or Bag Container	Amount (dry metric tons)	Pathogen Reduction Options	Vector Attraction Reduction Option
Other	Off-site Third-Party Handler or Preparer	<a href="#">Choose an item.</a>		<a href="#">Choose an item.</a>	<a href="#">Choose an item.</a>



Management Practice	Handler or Preparer Type	Bulk or Bag Container	Amount (dry metric tons)	Pathogen Reduction Options	Vector Attraction Reduction Option
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.

If "Other" is selected for Management Practice, please explain (e.g. monofill or transport to another WWTP): Transport Sludge to permitted sludge processing facility. See Attachment S.

#### D. Disposal site

Disposal site name: Grimes County Water Reclamation, LLC.

TCEQ permit or registration number: WQ0015032001

County where disposal site is located: Grimes

#### E. Transportation method

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

Name of the hauler: dba Perez Trucking & Construction

Hauler registration number: 25093

Sludge is transported as a:

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

## Section 10. Permit Authorization for Sewage Sludge Disposal (Instructions Page 53)

#### 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	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Sludge Surface Disposal or Sludge Monofill	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Temporary storage in sludge lagoons	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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 53)

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 to enter text.](#)
- USDA Natural Resources Conservation Service Soil Map:  
**Attachment:** [Click to enter text.](#)
- Federal Emergency Management Map:  
**Attachment:** [Click to enter text.](#)
- Site map:  
**Attachment:** [Click 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 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 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 to enter text.](#)

Total Kjeldahl Nitrogen, mg/kg: [Click to enter text.](#)

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

Phosphorus, mg/kg: [Click to enter text.](#)

Potassium, mg/kg: [Click to enter text.](#)

pH, standard units: [Click to enter text.](#)

Ammonia Nitrogen mg/kg: [Click to enter text.](#)

Arsenic: [Click to enter text.](#)

Cadmium: [Click to enter text.](#)

Chromium: [Click to enter text.](#)

Copper: [Click to enter text.](#)

Lead: [Click to enter text.](#)

Mercury: [Click to enter text.](#)

Molybdenum: [Click to enter text.](#)

Nickel: [Click to enter text.](#)

Selenium: [Click to enter text.](#)

Zinc: [Click to enter text.](#)

Total PCBs: [Click to enter text.](#)

Provide the following information:

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

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

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

## C. Liner information

Does the active/proposed sludge lagoon(s) have a liner with a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec?

☐ Yes ☐ No

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

[Click to enter text.](#)

#### D. Site development plan

Provide a detailed description of the methods used to deposit sludge in the lagoon(s):

[Click to enter text.](#)

Attach the following documents to the application.

- Plan view and cross-section of the sludge lagoon(s)  
**Attachment:** [Click to enter text.](#)
- Copy of the closure plan  
**Attachment:** [Click to enter text.](#)
- Copy of deed recordation for the site  
**Attachment:** [Click to enter text.](#)
- Size of the sludge lagoon(s) in surface acres and capacity in cubic feet and gallons  
**Attachment:** [Click to enter text.](#)
- Description of the method of controlling infiltration of groundwater and surface water from entering the site  
**Attachment:** [Click to enter text.](#)
- Procedures to prevent the occurrence of nuisance conditions  
**Attachment:** [Click 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 to enter text.](#)

## Section 12. Authorizations/Compliance/Enforcement (Instructions Page 55)

### 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 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 to enter text.

## Section 13. RCRA/CERCLA Wastes (Instructions Page 55)

### 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 to enter text.](#)

## Section 14. Laboratory Accreditation (Instructions Page 56)

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: Bruce Thelen

Title: Chief Operating Officer

Signature: 

Date: 1/6/25

# DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

The following is required for renewal, new, and amendment permit applications.

## Section 1. Type of Disposal System (Instructions Page 68)

Identify the method of land disposal:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Surface application                                   | <input type="checkbox"/> Subsurface application                |
| <input type="checkbox"/> Irrigation   | <input type="checkbox"/> Subsurface soils absorption           |
| <input type="checkbox"/> Drip irrigation system   | <input type="checkbox"/> Subsurface area drip dispersal system |
| <input type="checkbox"/> Evaporation  | <input type="checkbox"/> Evapotranspiration beds               |
| <input type="checkbox"/> Other (describe in detail): <a href="#">Click to enter text.</a> |  |

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 to enter text.](#)

## Section 2. Land Application Site(s) (Instructions Page 68)

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 Bermuda Hayland	14.6	30,000	N
Rye Grass Hayland (November – February)	14.6	30,000	N



### Section 3. Storage and Evaporation Lagoons/Ponds (Instructions Page 68)

**Table 3.0(2) – Storage and Evaporation Ponds**

Pond Number	Surface Area (acres)	Storage Volume (acre-feet)	Dimensions	Liner Type
1	0.64	4.1	189' x 160' x 8'	HDPE

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

**Attachment:** U

### Section 4. Flood and Runoff Protection (Instructions Page 68)

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 to enter text.

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

FEMA Firm Panel 48473C0165 (Attachment O)

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

Vegetated earthen berms will be constructed at the upgradient and downgradient limits of the land application areas.

## Section 5. Annual Cropping Plan (Instructions Page 68)

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:** Y

- 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 69)

Attach a USGS map with the following information shown and labeled. If not applicable, provide a detailed explanation indicating why. **Attachment:** W

- 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 radius 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 located within a half-mile radius of the disposal site or property boundaries 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
256295	Irrigation	Y	Cased	Buffer Zone
405145	Public Supply	Y	Cased	Buffer Zone
62681	Public Supply	N	Plugged	N/A
PWS 1	Public Supply	Y	Cased	Buffer Zone
60-57-7AA	Public Supply	Y	Cased	Buffer Zone

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

**Attachment:** [Click to enter text.](#)

## Section 7. Groundwater Quality (Instructions Page 69)

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:** R

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**, provide the proposed location of the monitoring wells or lysimeters on a site map.

**Attachment:** [Click to enter text.](#)

## Section 8. Soil Map and Soil Analyses (Instructions Page 70)

### A. Soil map

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

**Attachment:** S

### 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:** T

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
Wockley Fine Sandy Loam	0-14"	2.7	8.4"	80

## Section 9. Effluent Monitoring Data (Instructions Page 71)

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**

[illegible]

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

Click to enter text.

# Attachments

- A. Core Data Form
- B. Plain Language Summary
- C. USGS Map
- D. Process Flow Diagram
- E. Site Drawing
- F. Affected Landowners Map
- G. Landowner Labels
- H. Original Photographs
- I. Buffer Zone Map
- J. Flood Map
- K. Wind Rose
- L. Solids Management Plan
- M. Groundwater Quality Assessment
- N. USDA Soils Report
- O. Liner Certification
- P. Annual Cropping Plan
- Q. Well and Map Information
- R. Effluent Pollutant Analysis
- S. Water Reclamation Agreement
- T. Design Calculations
- U. Soil Analysis
- V. Water Balance



# TCEQ Core Data Form

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

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input checked="" type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> Other
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN 603939133		RN 101234490

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)			
<input type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership					
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)					
<i>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).</i>					
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>	
Hempstead Yogi, LTD.					
<b>7. TX SOS/CPA Filing Number</b>		<b>8. TX State Tax ID</b> (11 digits)		<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
0800466917		12029691990		202969199	
<b>11. Type of Customer:</b>		<input checked="" type="checkbox"/> Corporation		<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:	
<b>12. Number of Employees</b>				<b>13. Independently Owned and Operated?</b>	
<input type="checkbox"/> 0-20 <input checked="" type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher				<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following					
<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator <input type="checkbox"/> Other:					
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant					
<b>15. Mailing Address:</b>	27777 Franklin Road				
	Suite 200				
	City	Southfield	State	MI	ZIP 48034 ZIP + 4 8205
<b>16. Country Mailing Information</b> (if outside USA)				<b>17. E-Mail Address</b> (if applicable)	
<b>18. Telephone Number</b>		<b>19. Extension or Code</b>		<b>20. Fax Number</b> (if applicable)	

## SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> (If 'New Regulated Entity' is selected, a new permit application is also required.)								
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information								
<i>The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).</i>								
<b>22. Regulated Entity Name</b> (Enter name of the site where the regulated action is taking place.)								
Lone Star Jellystone Park Camp Resort								
<b>23. Street Address of the Regulated Entity:</b>  (No PO Boxes)	34843 Betka Road							
	City	Waller	State	TX	ZIP	77484	ZIP + 4	5289
<b>24. County</b>	Waller							

If no Street Address is provided, fields 25-28 are required.

<b>25. Description to Physical Location:</b>	Southwest of Waller at intersection of Cochran Road and Betka Road							
<b>26. Nearest City</b>					<b>State</b>	<b>Nearest ZIP Code</b>		
Waller					Te	77484		
<i>Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).</i>								
<b>27. Latitude (N) In Decimal:</b>		30.021478			<b>28. Longitude (W) In Decimal:</b>		-95.989738	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds			
<b>29. Primary SIC Code</b> (4 digits)		<b>30. Secondary SIC Code</b> (4 digits)		<b>31. Primary NAICS Code</b> (5 or 6 digits)		<b>32. Secondary NAICS Code</b> (5 or 6 digits)		
7033				721211				
<b>33. What is the Primary Business of this entity?</b> (Do not repeat the SIC or NAICS description.)								
Park camp resort camping and water park								
<b>34. Mailing Address:</b>	34843 Betka Road							
	City	Waller	State	TX	ZIP	77484	ZIP + 4	5289
<b>35. E-Mail Address:</b>								
<b>36. Telephone Number</b>			<b>37. Extension or Code</b>			<b>38. Fax Number</b> (if applicable)		
( 248 ) 208-2651						( ) -		

**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.




<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:
	Renewal			

## **SECTION IV: Preparer Information**

<b>40. Name:</b>	Joey Gallegos		<b>41. Title:</b>	Associate Director
<b>42. Telephone Number</b>	<b>43. Ext./Code</b>	<b>44. Fax Number</b>	<b>45. E-Mail Address</b>	
( 210 ) 367-6270		(   ) -	jgallegos@atwell.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.

<b>Company:</b>	Atwell LLC	<b>Job Title:</b>	Director
<b>Name (In Print):</b>	Hank Smith	<b>Phone:</b>	( 512 ) 695- 3914
<b>Signature:</b>		<b>Date:</b>	1/8/2025



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

## Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements. After filling in the information for your facility delete these instructions.

If you are subject to the alternative language notice requirements in 30 TAC Section 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/STORMWATER

*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 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.*

Sun NG Jelly-Lone Star TX RV LLC (CN603939133) operates Yogi Bears Jellystone Park Camp-Resort Waller (RN101234490), a domestic wastewater treatment plant. The facility is located at 34843 Betka Road, in Waller, Waller County, Texas 77484. The application request is for the renewal to discharge 30,000 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 five day-day carbonaceous biochemical oxygen demand (CBOD5) and total dissolved solids (TDS). Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Domestic wastewater is treated by an aerobic treatment process. This process includes 2-1,000 gallon and 17-2,000-gallon trash tanks, 14-2,000-gallon equalization tanks and 4-2,500 gallon equalization tanks, 1-aerobic treatment, 1-clarifier, 1-effluent holding pond, and 1-land application. Wastewater gravity flows or is pumped to trash tanks and then equalization tanks. The equalization tanks store

portions of the daily flow to provide for dampening of peak flows. Pumps convey wastewater from the equalization tanks to an extended aeration biological treatment unit. The mixed liquor from the extended aeration treatment unit gravity flows to a clarifier where solids settle and return to the extended aeration unit. Clarified liquids gravity flow to a pump tank for conveying the treated wastewater to an effluent holding pond. Treated water is pumped from the effluent holding pond to a land application area. Waste Activated Sludge will be removed directly from clarifier or biological treatment unit for offsite disposal at a TCEQ approved facility.

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

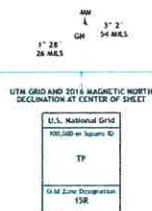
### AGUAS RESIDUALES DOMÉSTICAS /AGUAS PLUVIALES

*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 es una representación ejecutiva fedérale de la solicitud de permiso.*

Sun NG Jelly-Lone Star TX RV LLC (CN603939133) opera Yogi Bears Jellystone Park Camp-Resort Waller RN101234490, una planta de tratamiento de aguas residuales domésticas . La instalación está ubicada en 34843 Betka Road, en Waller, Condado de Waller, Texas 77484. La solicitud es para la renovación del vertido de 30.000 galones diarios de aguas residuales domésticas tratadas. Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

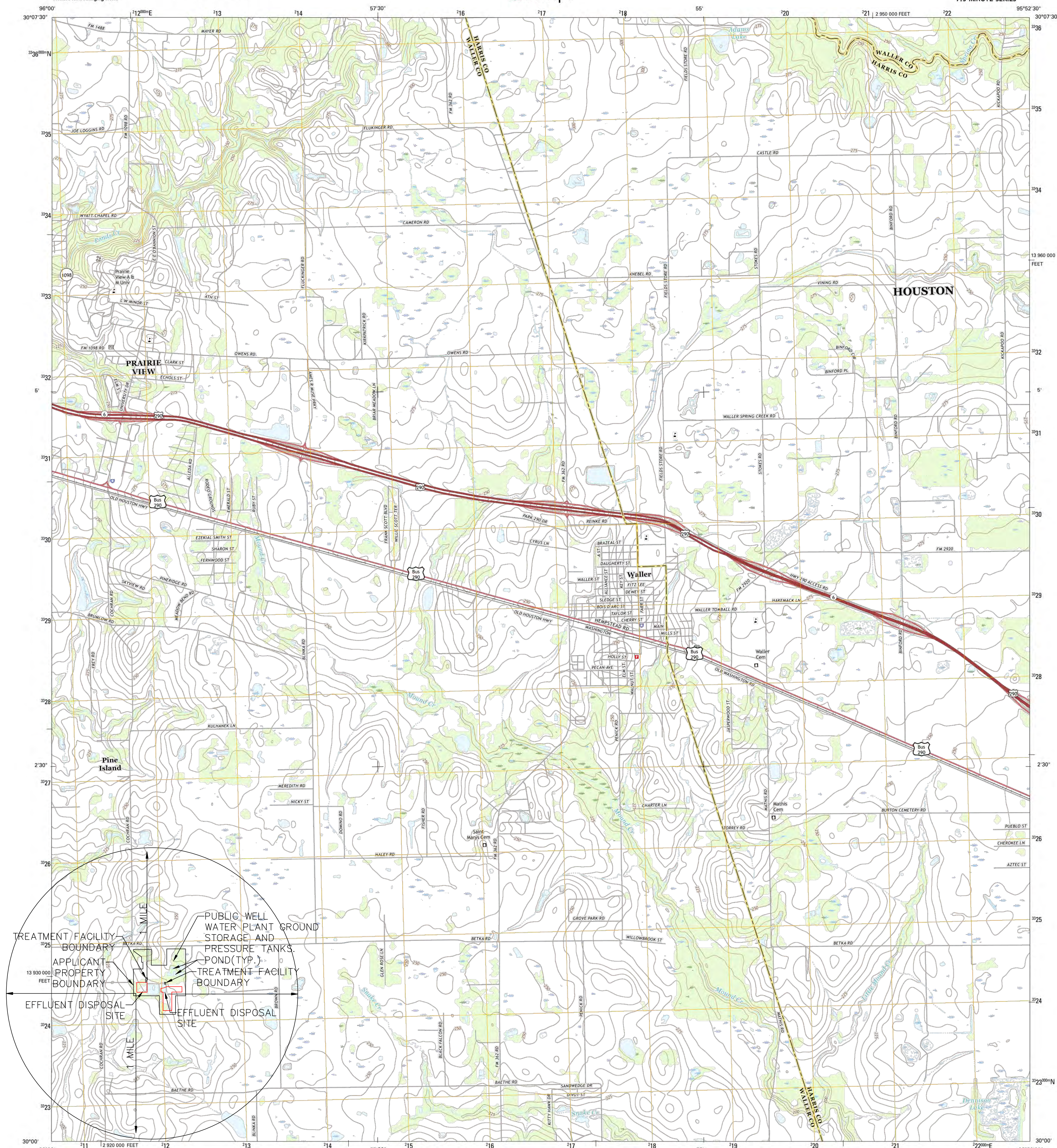
Se espera que las descargas de la instalación contengan Demanda bioquímica de oxígeno carbonoso (CBOD5) y sólidos disueltos totales (TDS) de cinco días a día. En el Informe técnico nacional 1.0, sección 7, se incluyen otros contaminantes potenciales. Aguas residuales domésticas . está tratado por un proceso de tratamiento aeróbico. Este proceso incluye 2 tanques de basura de 1,000 galones y 17 tanques de ecualización de 2,000 galones, 14 tanques de ecualización de 2,000 galones y 4 tanques de ecualización de 2,500 galones, 1 tratamiento aeróbico, 1 clarificador, 1 estanque de retención de efluentes y 1 aplicación en tierra. Las aguas residuales fluyen por gravedad o se bombean a los tanques de basura y luego a los tanques de ecualización. Los tanques de ecualización almacenan partes del flujo diario para amortiguar los flujos máximos. Las bombas transportan las aguas residuales desde los tanques de ecualización a una unidad de tratamiento biológico de aireación extendida. El licor mezclado de la unidad de tratamiento de aireación extendida fluye por gravedad a un clarificador donde los sólidos se sedimentan y regresan a la unidad de aireación extendida. Los líquidos clarificados fluyen por gravedad a un tanque de bomba para transportar las aguas residuales tratadas a un estanque de retención de efluentes. El agua tratada se bombea desde el estanque de retención de efluentes a un área de aplicación en tierra. Los lodos activados residuales se eliminarán directamente del clarificador o de la unidad de tratamiento biológico para su eliminación fuera del sitio en una instalación aprobada por TCEQ.





1" = 4,000'	DESIGNED BY: JWW	DRAWN BY: JTM
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Produced by the United States Geological Survey

World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 15R 10 000-foot ticks: Texas Coordinate System of 1983 (south central zone)

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, October 2014	2014
Roads.....	U.S. Census Bureau, 2014 -	2014
Names.....	GNIS, 2010	2010
Hydroponics.....	Hydroponics, 2010	2010

Hydrography.....National Hydrography Dataset, 2001  
Contours.....National Elevation Dataset, 2001  
Boundaries.....Multiple sources; see metadata file 1972 - 2001

UTM GRID AND 2016 MAGNETIC NORTH  
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID

TP

SCALE 1:24 000

CONTOUR INTERVAL 5 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 0.6.19



1	2	3
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4		5

**ROAD CLASSIFICATION**

Expressway		Local Co
Secondary Hwy		Local Co
Ramp		4WD
 Interstate Route		 US Route

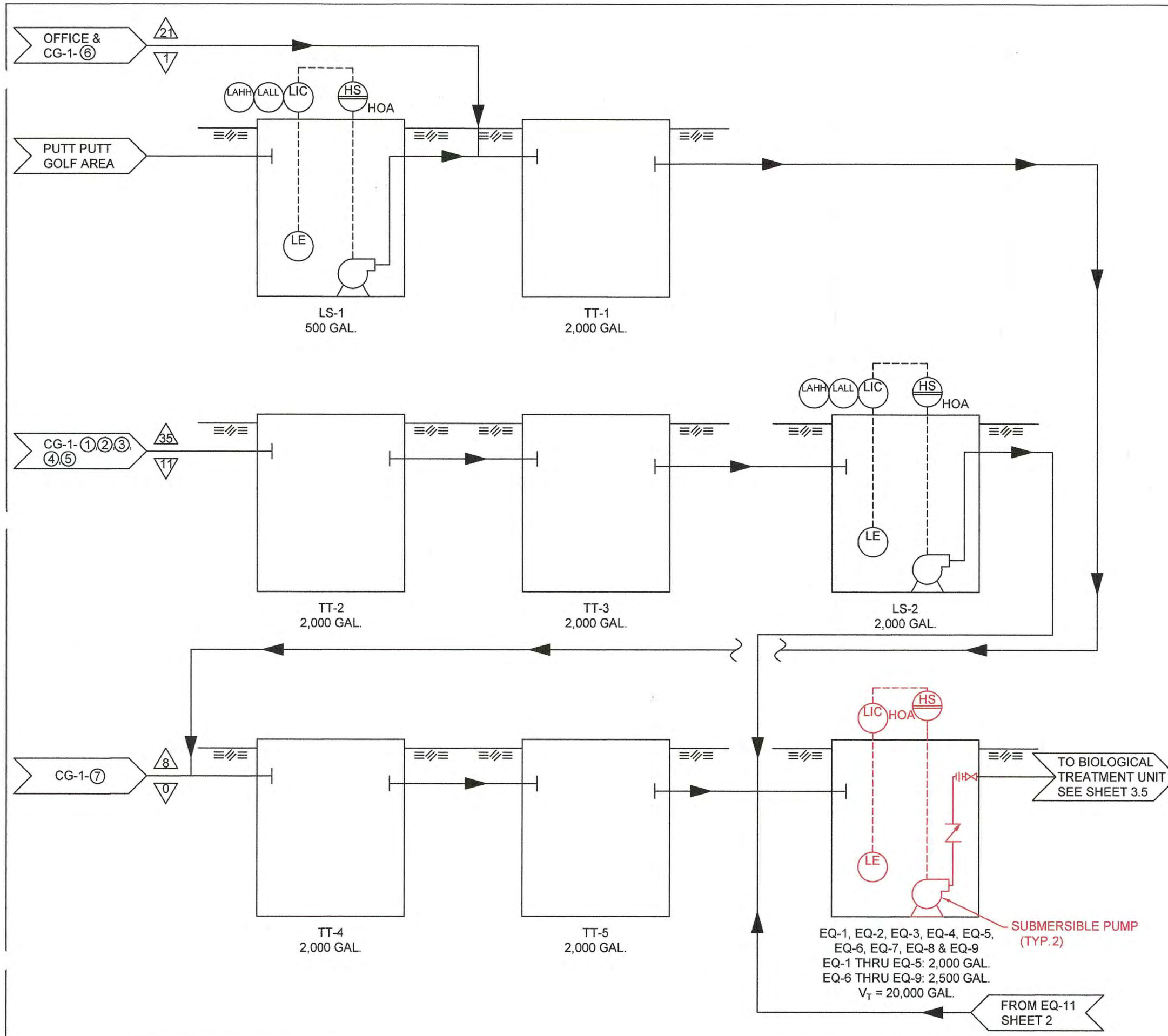
WALLER, TX  
2016

ATTACHMENT B  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 35  
Columbus, Texas 78934  
(979) 732-6997

F-66		
AS SHOWN	DESIGNED BY: JWW	DRAWN BY: JTM





LEGEND:	
→	PROCESS FLOW WITH DIRECTION
—	ELECTRICAL OR SIGNAL
—	PROPOSED
—	COMPRESSED AIR
TT	TRASH TANK
LS	LIFT STATION
CG	CAMP GROUND
EQ	EQUALIZATION TANK
V <sub>T</sub>	TOTAL VOLUME
①	GRAVITY SEWER NUMBER
△	NUMBER OF RV'S ON GRAVITY SEWER
▽	NUMBER OF OTHER CONNECTIONS
⌵	GATE VALVE
⌵	PLUG VALVE
⌵	BALL VALVE
⌵	SOLENOID VALVE
⌵	PRESSURE REGULATOR ADJUSTABLE RANGE
⌵	VACUUM RELIEF VALVE SET AT 15" Hg
⌵	HAND PUMP
CB	CATCH BASIN
⌵	STATIC MIXER
⌵	CHECK VALVE
⌵	INJECTOR/ CHECK VALVE ASSEMBLY
⌵	FLANGED CONNECTION
⌵	HYDRAULIC PUMP
⌵	CLEAR SIGHT GLASS
⌵	BUTTERFLY VALVE
⌵	MOTOR
⌵	FILTER OR SCREEN
⌵	PERISTALTIC METERING PUMP OR DIAPHRAGM PUMP
⌵	CENTRIFUGAL PUMP
⌵	CENTRIFUGAL BLOWER
⌵	VENT W/ 20 MESH SCREEN
HS	HAND SWITCH, ON/OFF
HS	HAND SWITCH, HAND/OFF/AUTO
SS-1	SELECTOR W/ FUNCTION DESIGNATION SEE TABLE SHEET 3
FQI	FLOW ELEMENT/ FLOW TOTALIZING INDICATOR
FIC	FLOW ELEMENT/ FLOW INDICATOR CONTROLLER
LE	LEVEL ELEMENT (LOOP POWERED PRESSURE TRANSDUCER FOR TANKS, FLOATS AT ALL OTHER LOCATIONS)
LIC	LEVEL INDICATOR CONTROLLER
AIC	PH CONTROLLER W/ PH INDICATION
AIR	PH INDICATING RECORDER
AE	PH PROBE ELEMENT
AY	PH CONTROLLER
KY	TIME CONTROLLER
LI	LEVEL INDICATOR
LAH	LEVEL ALARM HIGH HIGH
LL	LEVEL ALARM LOW LOW
LC	LEVEL CONTROLLER
VFD	VARIABLE FREQUENCY DRIVE

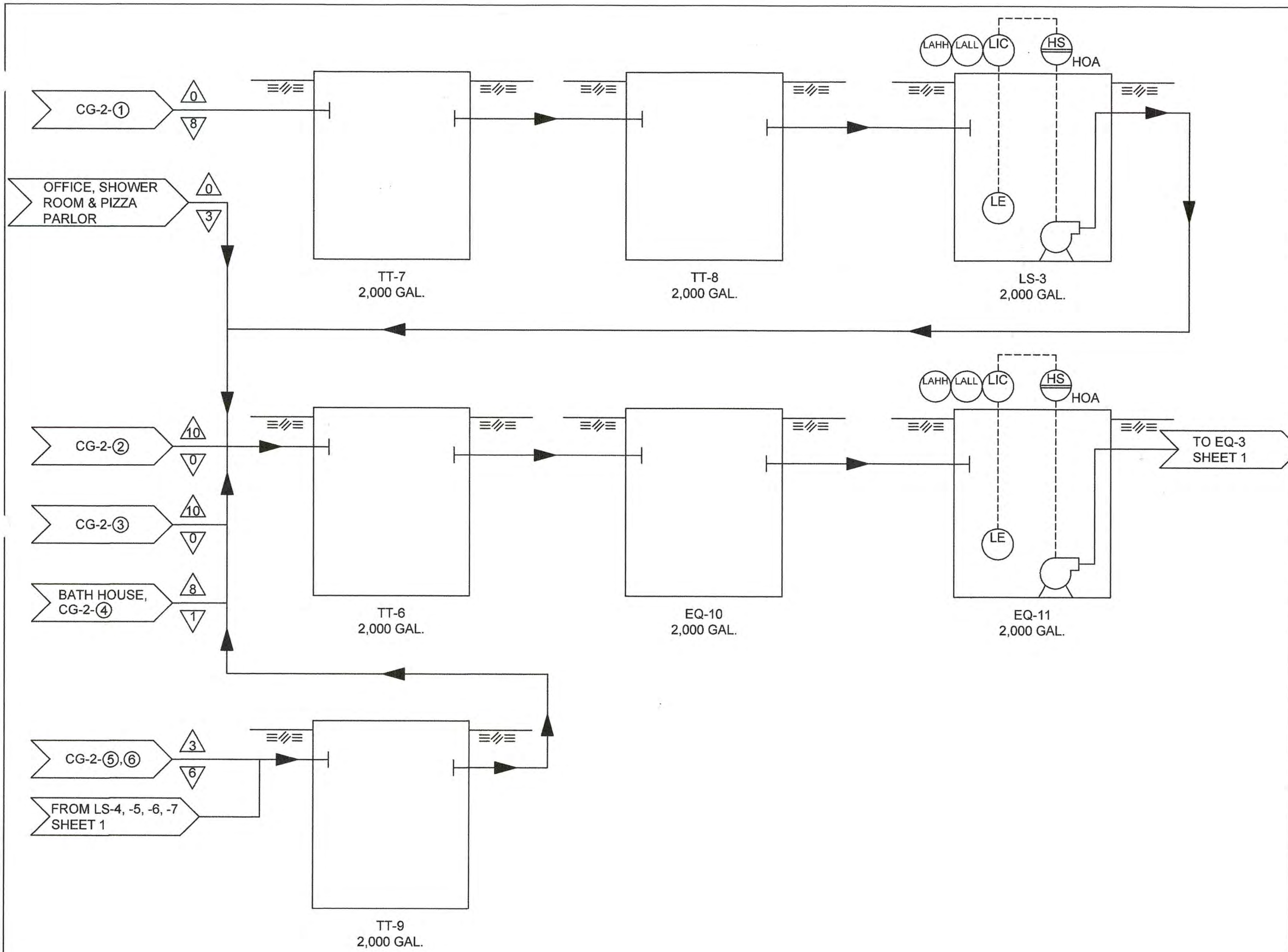


ATTACHMENT D  
PROCESS FLOW DIAGRAM 1  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

N.T.S. DESIGNED BY: JWW DRAWN BY: JTM





**LEGEND:**

→	PROCESS FLOW WITH DIRECTION	HS	HAND SWITCH, ON/OFF
—	ELECTRICAL OR SIGNAL PROPOSED	HS %	HAND SWITCH, HAND/OFF/AUTO
≡≡≡	COMPRESSED AIR	HOA	SELECTOR W/ FUNCTION DESIGNATION SEE TABLE SHEET 3
TT	TRASH TANK	SS-1	SS-1
LS	LIFT STATION	FQI	FLOW ELEMENT/ FLOW TOTALIZING INDICATOR
CG	CAMP GROUND	FE	FLOW ELEMENT/ FLOW INDICATOR CONTROLLER
EQ	EQUALIZATION TANK	FIC	FLOW ELEMENT/ FLOW INDICATOR CONTROLLER
V <sub>T</sub>	TOTAL VOLUME	LE	LEVEL ELEMENT (LOOP POWERED PRESSURE TRANSDUCER FOR TANKS, FLOATS AT ALL OTHER LOCATIONS)
①	GRAVITY SEWER NUMBER	LIC	LEVEL INDICATOR CONTROLLER
△	NUMBER OF RV'S ON GRAVITY SEWER	AIC	PH CONTROLLER W/ PH INDICATION
▽	NUMBER OF OTHER CONNECTIONS	AIR	PH INDICATING RECORDER
⋈	GATE VALVE	AE	PH PROBE ELEMENT
⋈	NORMALLY CLOSED	AY	PH CONTROLLER
⋈	PLUG VALVE	KY	TIME CONTROLLER
⋈	BALL VALVE	LI	LEVEL INDICATOR
⋈	SOLENOID VALVE	AH	LEVEL ALARM HIGH HIGH
⋈	PRESSURE REGULATOR ADJUSTABLE RANGE	AL	LEVEL ALARM LOW LOW
⋈	VACUUM RELIEF VALVE SET AT 15" Hg	LC	LEVEL CONTROLLER
⋈	HAND PUMP	VFD	VARIABLE FREQUENCY DRIVE
CB	CATCH BASIN		
SM	STATIC MIXER		
CV	CHECK VALVE		
ICV	INJECTOR/ CHECK VALVE ASSEMBLY		
FC	FLANGED CONNECTION		
HP	HYDRAULIC PUMP		
CSG	CLEAR SIGHT GLASS		
BV	BUTTERFLY VALVE		
M	MOTOR		
F	FILTER OR SCREEN		
PM	PERISTALTIC METERING PUMP OR DIAPHRAGM PUMP		
CP	CENTRIFUGAL PUMP		
CB	CENTRIFUGAL BLOWER		
V	VENT W/ 20 MESH SCREEN		



*James W. Weishuhn*  
10-18-19

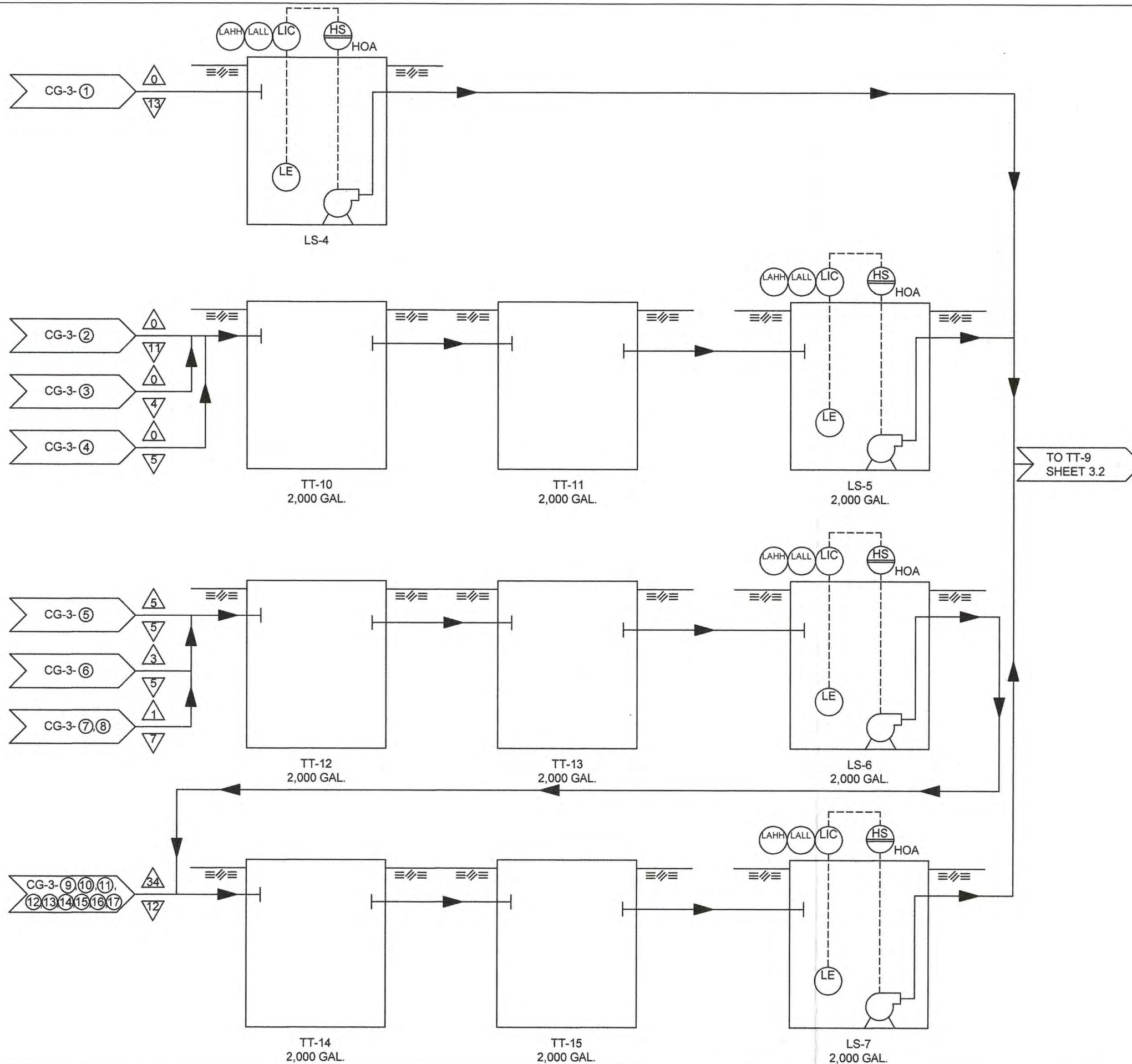
**ATTACHMENT G**  
**PROCESS FLOW DIAGRAM 2**  
**HEMPSTEAD YOGI, LTD.**  
**TLAP MAJOR AMENDMENT APPLICATION**  
**WALLER COUNTY**

---

Weishuhn Engineering Inc.  
 425 Spring St. PO BOX 358  
 Columbus, Texas 78934  
 (979) 732-6997  
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N.T.S.	DESIGNED BY: JWW	DRAWN BY: JTM
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LEGEND:	
→	PROCESS FLOW WITH DIRECTION
—	ELECTRICAL OR SIGNAL
—	PROPOSED
—	COMPRESSED AIR
TT	TRASH TANK
LS	LIFT STATION
CG	CAMP GROUND
EQ	EQUALIZATION TANK
V <sub>T</sub>	TOTAL VOLUME
①	GRAVITY SEWER NUMBER
△	NUMBER OF RV'S ON GRAVITY SEWER
▽	NUMBER OF OTHER CONNECTIONS
⌵	GATE VALVE
⌵	NORMALLY CLOSED
⌵	PLUG VALVE
⌵	BALL VALVE
⌵	SOLENOID VALVE
⌵	PRESSURE REGULATOR ADJUSTABLE RANGE
⌵	VACUUM RELIEF VALVE SET AT 15" Hg
⌵	HAND PUMP
CB	CATCH BASIN
⌵	STATIC MIXER
⌵	CHECK VALVE
⌵	INJECTOR/ CHECK VALVE ASSEMBLY
⌵	FLANGED CONNECTION
⌵	HYDRAULIC PUMP
⌵	CLEAR SIGHT GLASS
⌵	BUTTERFLY VALVE
⌵	MOTOR
⌵	FILTER OR SCREEN
⌵	PERISTALTIC METERING PUMP OR DIAPHRAGM PUMP
⌵	CENTRIFUGAL PUMP
⌵	CENTRIFUGAL BLOWER
⌵	VENT W/ 20 MESH SCREEN
HS	HAND SWITCH, ON/OFF
HS	HAND SWITCH, HAND/OFF/AUTO
SS-1	SELECTOR W/ FUNCTION DESIGNATION SEE TABLE SHEET 3
FQI	FLOW ELEMENT/ FLOW TOTALIZING INDICATOR
FE	FLOW ELEMENT/ FLOW INDICATOR CONTROLLER
LE	LEVEL ELEMENT (LOOP POWERED PRESSURE TRANSDUCER FOR TANKS, FLOATS AT ALL OTHER LOCATIONS)
LIC	LEVEL INDICATOR CONTROLLER
AIC	PH CONTROLLER W/ PH INDICATION
AIR	PH INDICATING RECORDER
AE	PH PROBE ELEMENT
AY	PH CONTROLLER
KY	TIME CONTROLLER
LI	LEVEL INDICATOR
LAHH	LEVEL ALARM HIGH HIGH
LALL	LEVEL ALARM LOW LOW
LC	LEVEL CONTROLLER
VFD	VARIABLE FREQUENCY DRIVE



*James W. Weishuhn*  
10-10-19

ATTACHMENT G  
PROCESS FLOW DIAGRAM 3  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

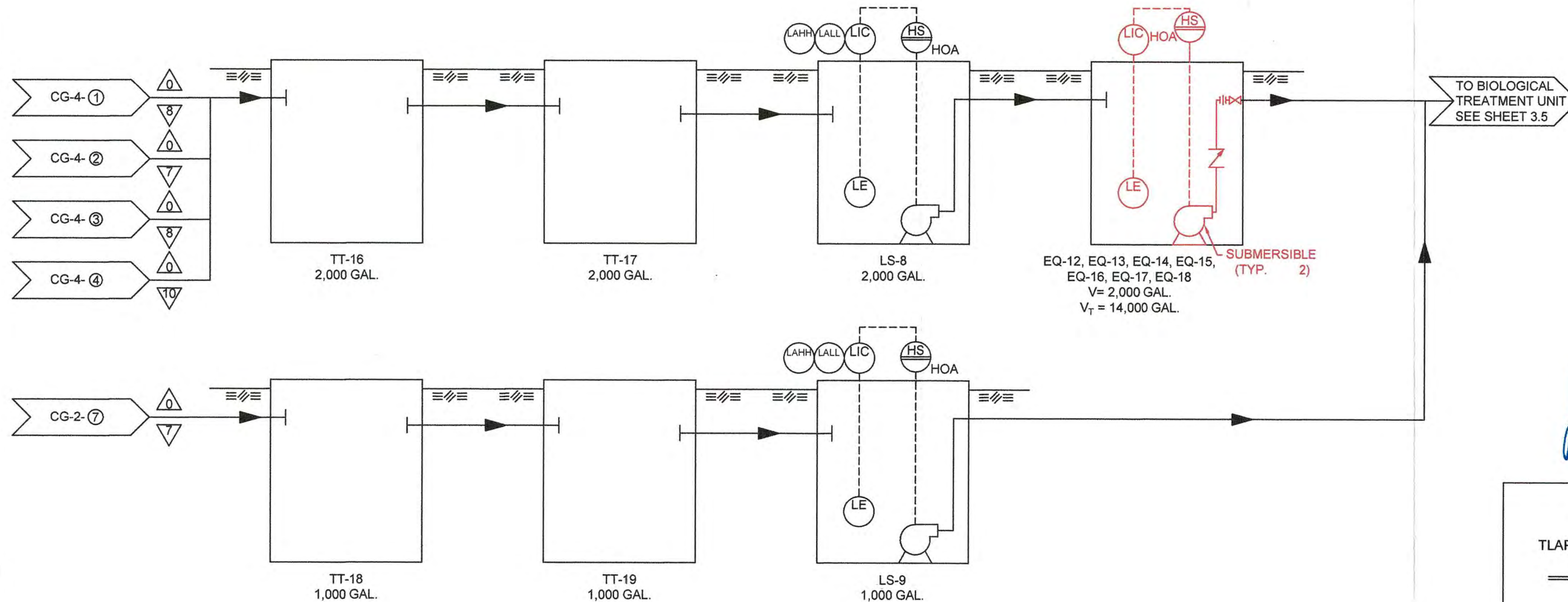
Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

N.T.S. DESIGNED BY: JWW DRAWN BY: JTM



LEGEND:

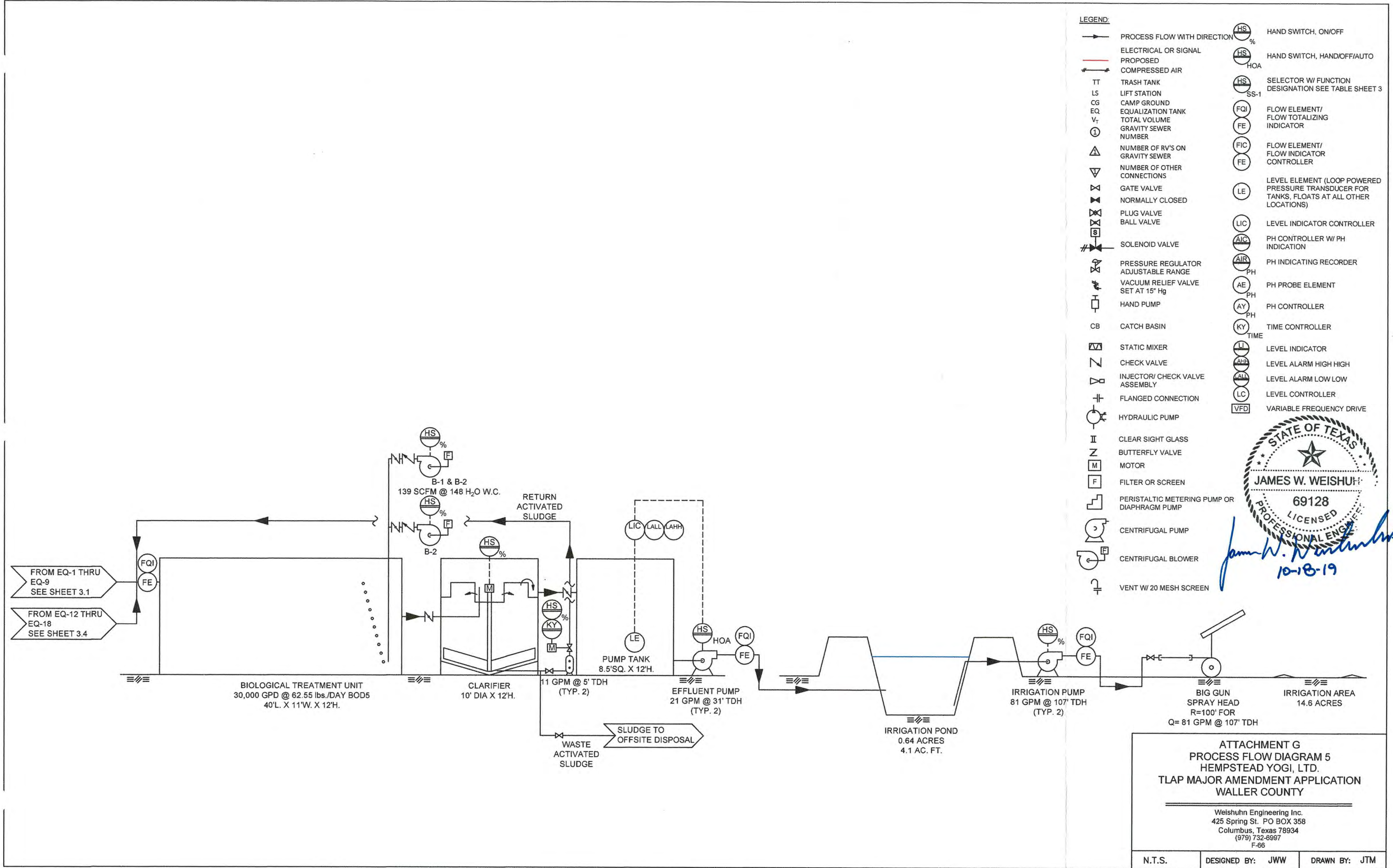
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—	ELECTRICAL OR SIGNAL	HS	HAND SWITCH, HAND/OFF/AUTO	SS-1	CHECK VALVE	LAH	LEVEL ALARM HIGH HIGH
≡≡≡	PROPOSED	SS-1	SELECTOR W/ FUNCTION DESIGNATION SEE TABLE SHEET 3	SS-1	INJECTOR/ CHECK VALVE ASSEMBLY	LAL	LEVEL ALARM LOW LOW
≡≡≡	COMPRESSED AIR	FE	FLOW ELEMENT/ FLOW TOTALIZING INDICATOR	SS-1	FLANGED CONNECTION	LC	LEVEL CONTROLLER
TT	TRASH TANK	FIC	FLOW ELEMENT/ FLOW INDICATOR CONTROLLER	SS-1	HYDRAULIC PUMP	VFD	VARIABLE FREQUENCY DRIVE
LS	LIFT STATION	FE	LEVEL ELEMENT (LOOP POWERED PRESSURE TRANSDUCER FOR TANKS, FLOATS AT ALL OTHER LOCATIONS)	SS-1	CLEAR SIGHT GLASS		
CG	CAMP GROUND	LE	LEVEL INDICATOR CONTROLLER	SS-1	BUTTERFLY VALVE		
EQ	EQUALIZATION TANK	LIC	PH CONTROLLER W/ PH INDICATION	SS-1	MOTOR		
V <sub>T</sub>	TOTAL VOLUME	AIC	PH INDICATING RECORDER	SS-1	FILTER OR SCREEN		
①	GRAVITY SEWER NUMBER	AIR	PH PROBE ELEMENT	SS-1	PERISTALTIC METERING PUMP OR DIAPHRAGM PUMP		
△	NUMBER OF RV'S ON GRAVITY SEWER	AE	PH CONTROLLER	SS-1	CENTRIFUGAL PUMP		
▽	NUMBER OF OTHER CONNECTIONS	AY	TIME CONTROLLER	SS-1	CENTRIFUGAL BLOWER		
×	GATE VALVE	KY		SS-1	VENT W/ 20 MESH SCREEN		
×	NORMALLY CLOSED			SS-1			
×	PLUG VALVE			SS-1			
×	BALL VALVE			SS-1			
×	SOLENOID VALVE			SS-1			
×	PRESSURE REGULATOR ADJUSTABLE RANGE			SS-1			
×	VACUUM RELIEF VALVE SET AT 15" Hg			SS-1			
×	HAND PUMP			SS-1			
CB	CATCH BASIN			SS-1			



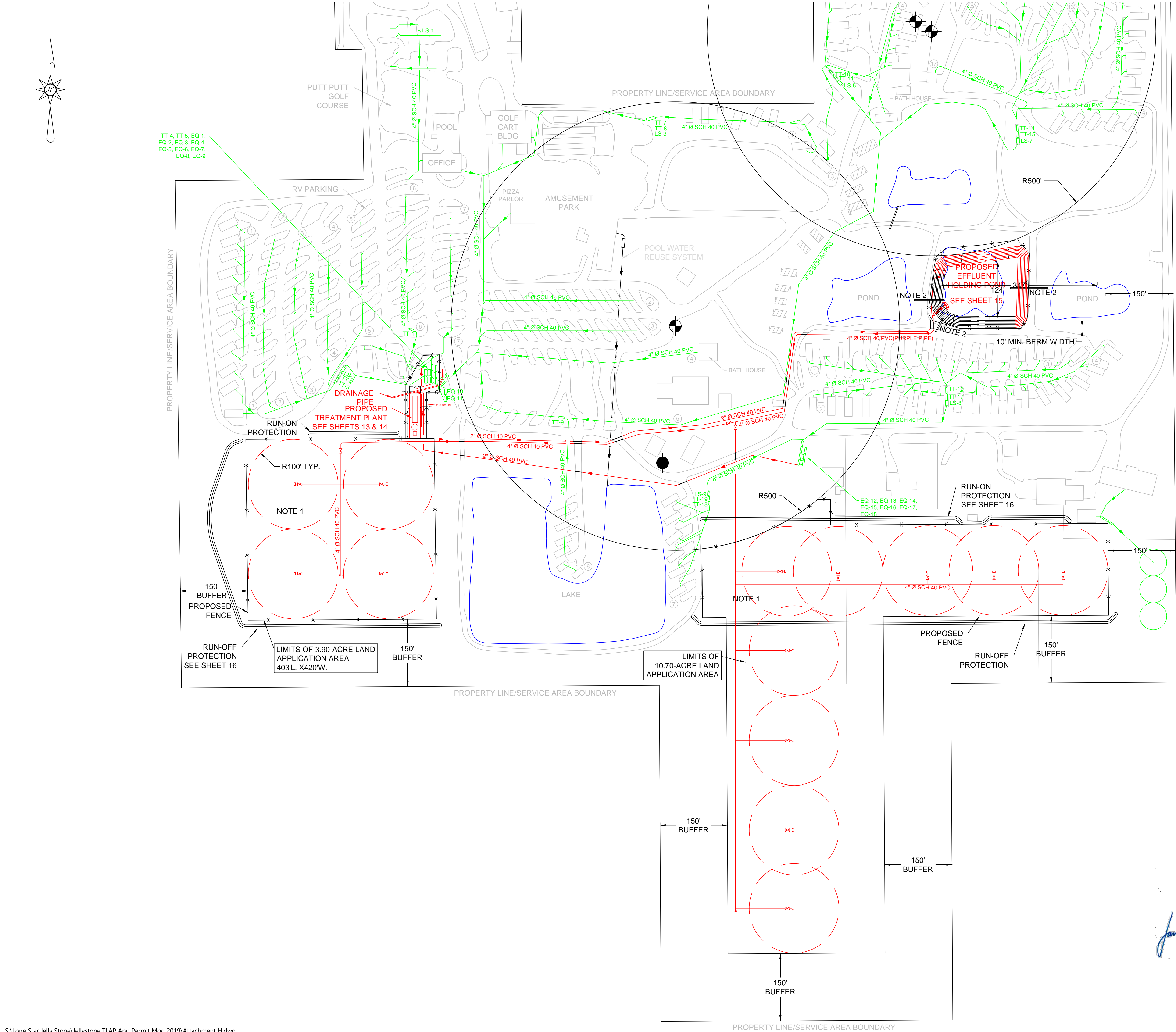
ATTACHMENT G  
PROCESS FLOW DIAGRAM 4  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-8997  
F-66

N.T.S. DESIGNED BY: JWW DRAWN BY: JTM







LEGEND:

- LAKE/POND
- EXISTING SEWER & FLOW DIRECTION
- PROPOSED SEWER & FLOW DIRECTION
- LS LIFT STATION
- TT TRASH TANK
- EQ EQUALIZATION TANK
- CG-1 CAMP GROUND & NUMBER
- ① GRAVITY SEWER NUMBER
- PRIMITIVE CAMPING SHELTER, NO WATER OR WASTEWATER
- TANKS TO BE REMOVED
- PUBLIC WATER WELL
- PRIVATE WATER WELL
- 5 STRAND BARB WIRE FENCE W/ WARNING SIGNS "WASTE WATER APPLICATION AREA- DO NOT ENTER"
- 6' TALL CHAIN LINK FENCE W/ PVC SLATS & 3 STRANDS BARB WIRE ON TOP

NOTES:

- EXIST. SPRAY HEADS TO BE ABANDONED IN-PLACE UPON COMPLETION OF THE PROJECT.
- EXISTING DRAINAGE PIPES TO BE REMOVED

**Weishuhn Engineering, Inc.**  
425 SPRING ST., PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997 Phone  
www.wei-eng.com

R.F. # 66

HEMPSTEAD YOGI, LTD  
LONE STAR JELLYSTONE  
PARK CAMP RESORT  
34843 BETKA ROAD  
WALLER TX 77484  
WALLER COUNTY

**ATTACHMENT E**  
OVERALL SITEPLAN  
SITEPLAN

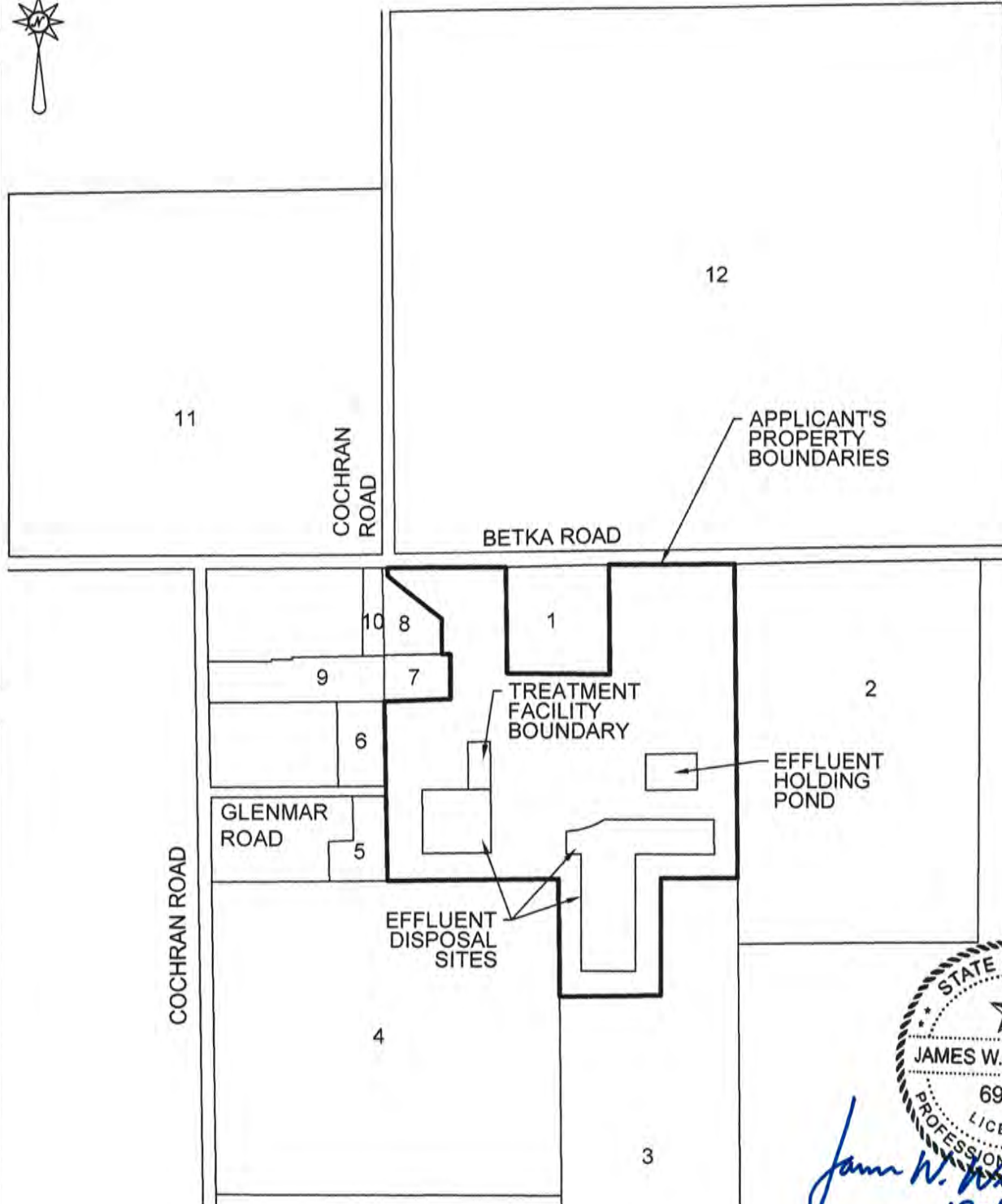
DRAWN BY: J.T.M.	JOB NO:
DESIGNED BY: J.W.W.	DATE: 10/10/2019
APPROVED BY:	SCALE: 1"=100'





**NOTES:**

1. ALL BUFFER ZONES ARE WITHIN APPLICANT'S PROPERTY LIMITS.



*James W. Weishuhn*  
10-13-19

**ATTACHMENT F**  
**ADJACENT LANDOWNER MAP**  
**HEMPSTEAD YOGI, LTD.**  
**TLAP MAJOR AMENDMENT APPLICATION**  
**WALLER COUNTY**

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

## Attachment G: List of Landowners

ALBERT AND CYNTHIA HUFFMAN  
34815 BETKA ROAD  
WALLER, TX 77484-7484

SG RANCHO ESCONDIDO LLC  
PO BOX 40468  
HOUSTON, TX 77240

JERRY P AND SHIRLEY COOPER  
34305 GLENMAR RD.  
WALLER, TX 77484-7484

JANE WOLLGAST ROMERO  
16502 COCHRAN ROAD  
WALLER, TX 77484

GARY AND GLENNA RICE  
34302 GLENMAR ROAD  
WALLER, TX 77484-9439

DAVID CROFT  
34945 BETKA ROAD  
WALLER, TX 77484

SUN COMMUNITIES INC  
27777 FRANKLIN ROAD  
SUITE 200  
SOUTHFIELD, MI 48034

FATHER JOHN WINERY LLC  
2200 BUSINESS CENTER DRIVE  
UNIT 2205  
PEARLAND, TX 77584

BETKA RD

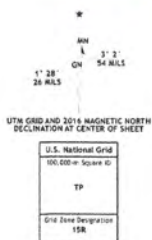
PHOTO 2

PHOTO 4

PHOTO 1

PHOTO 3

PHOTO 5



1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000  
FEET



ATTACHMENT H  
PHOTO MAP  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66





ATTACHMENT E  
PHOTO 1  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

---

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

N.T.S.

DESIGNED BY: JWW

DRAWN BY: JTM





ATTACHMENT E  
PHOTO 2  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

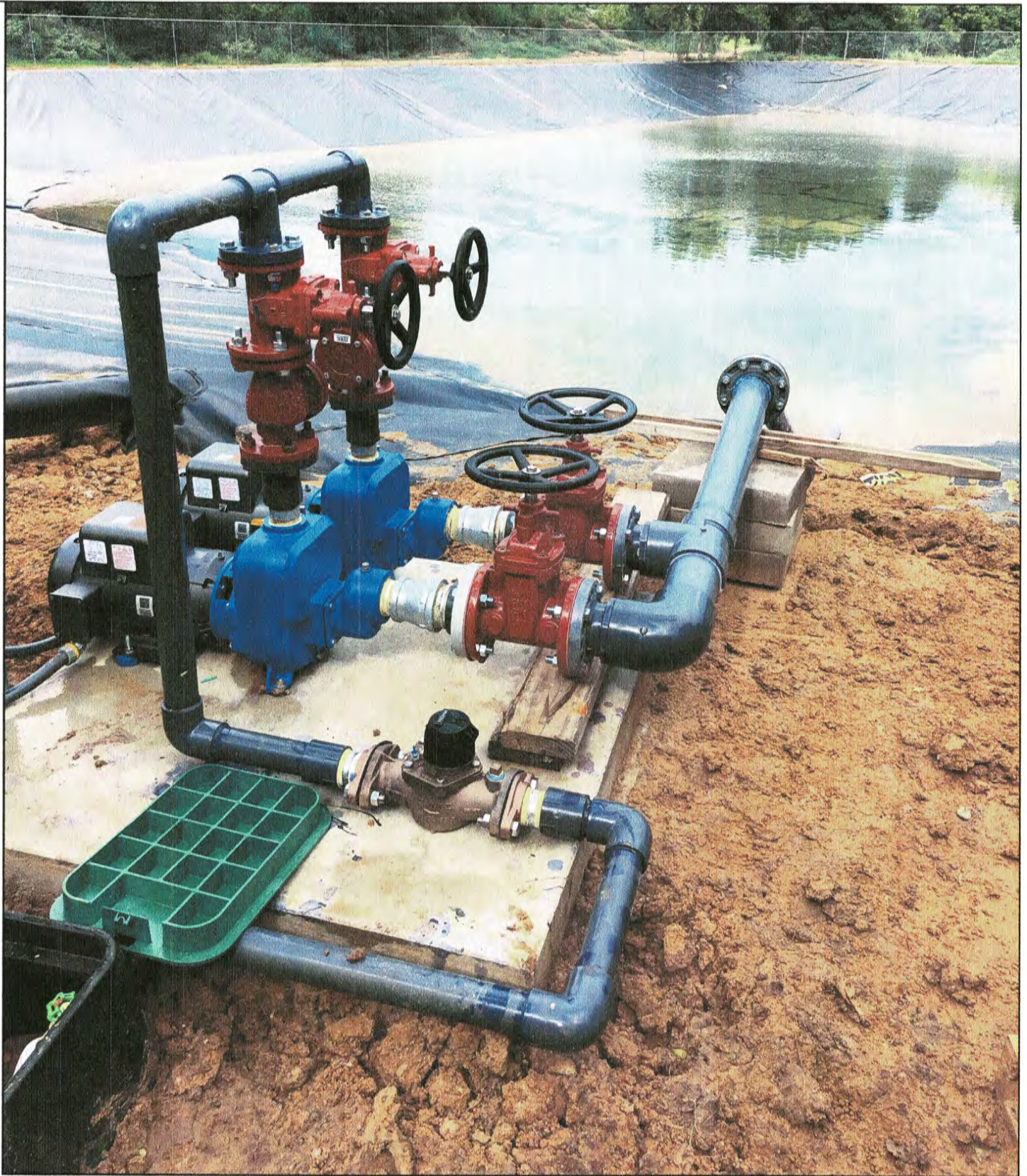
WeiShuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

N.T.S.

DESIGNED BY: JWW

DRAWN BY: JTM





ATTACHMENT E  
PHOTO 3  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

N.T.S.

DESIGNED BY: JWW

DRAWN BY: JTM





ATTACHMENT E  
PHOTO 4  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

N.T.S.

DESIGNED BY: JWW

DRAWN BY: JTM





ATTACHMENT E  
PHOTO 5  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

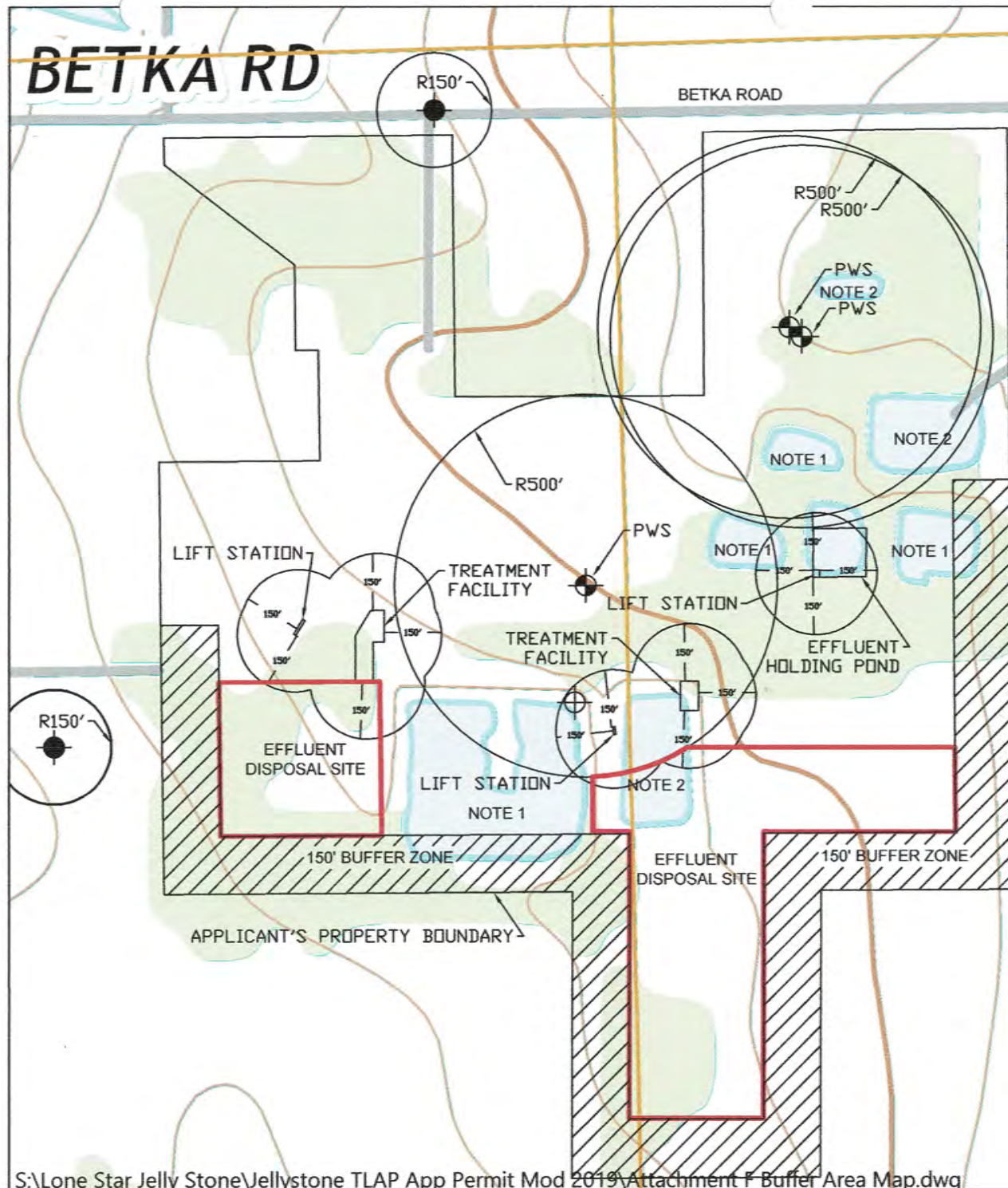
N.T.S.

DESIGNED BY: JWW

DRAWN BY: JTM



# BETKA RD



## NOTES:

1. RECREATION POND
2. WATER FEATURE NO LONGER PRESENT

## LEGEND:

- PUBLIC WATER SUPPLY WELL
- PRIVATE WATER SUPPLY WELL
- PLUGGED WATER WELL



*James W. Weishuhn*  
10-18-19

ATTACHMENT I  
BUFFER AREA MAP  
HEMPSTEAD YOGI, LTD.  
TLAP MAJOR AMENDMENT APPLICATION  
WALLER COUNTY

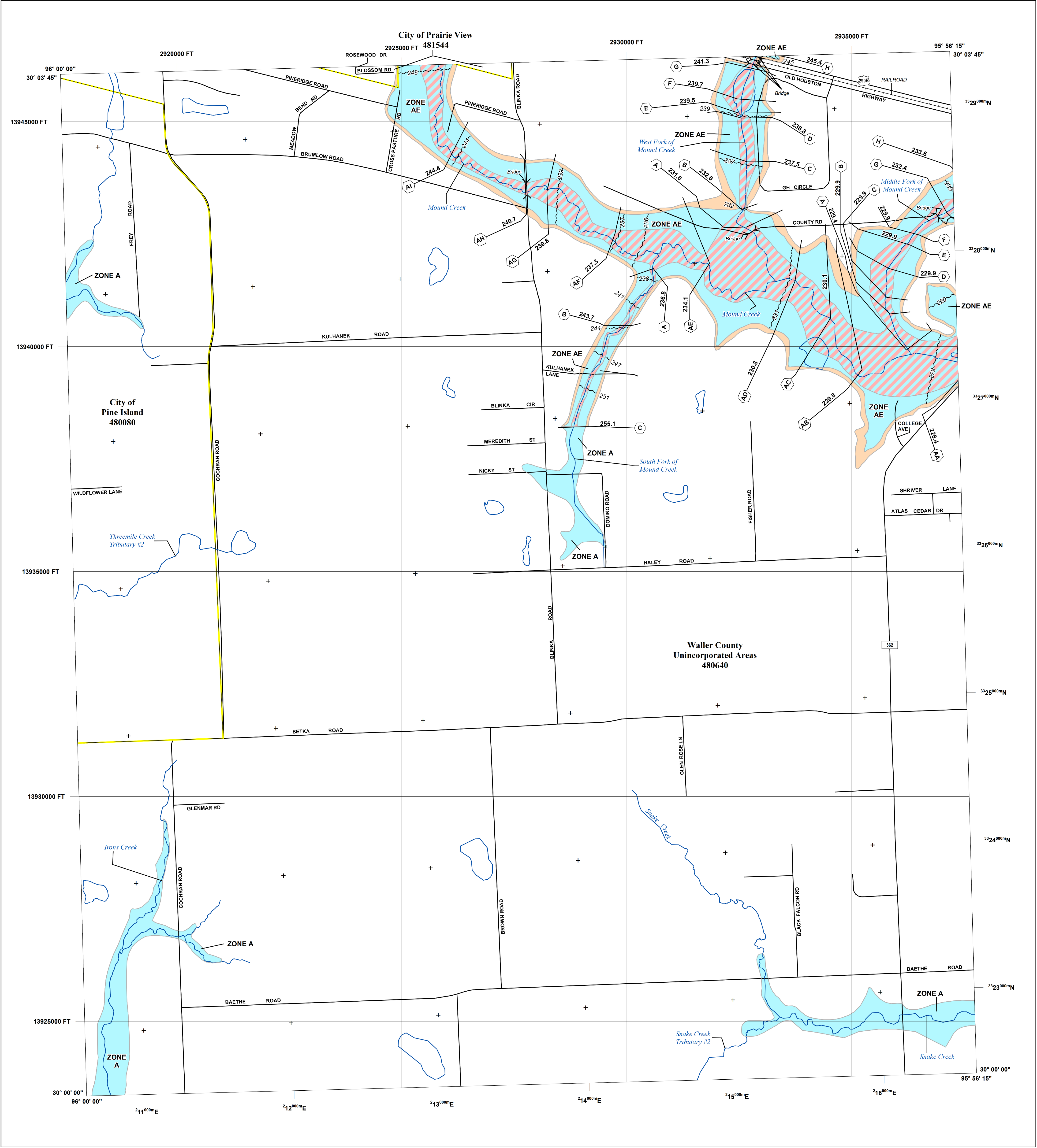
Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

1" = 400'

DESIGNED BY: JWW

DRAWN BY: JTM





FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT  
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTPS://MSC.FEMA.GOV](https://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V,A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		Area with Flood Risk due to Levee Zone D
		Area of Minimal Flood Hazard Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
	Limit of Study	
	Jurisdiction Boundary	

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at <https://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

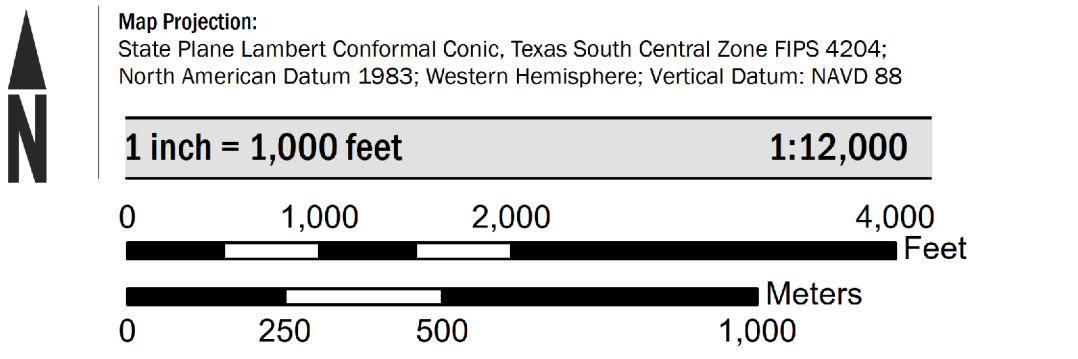
Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

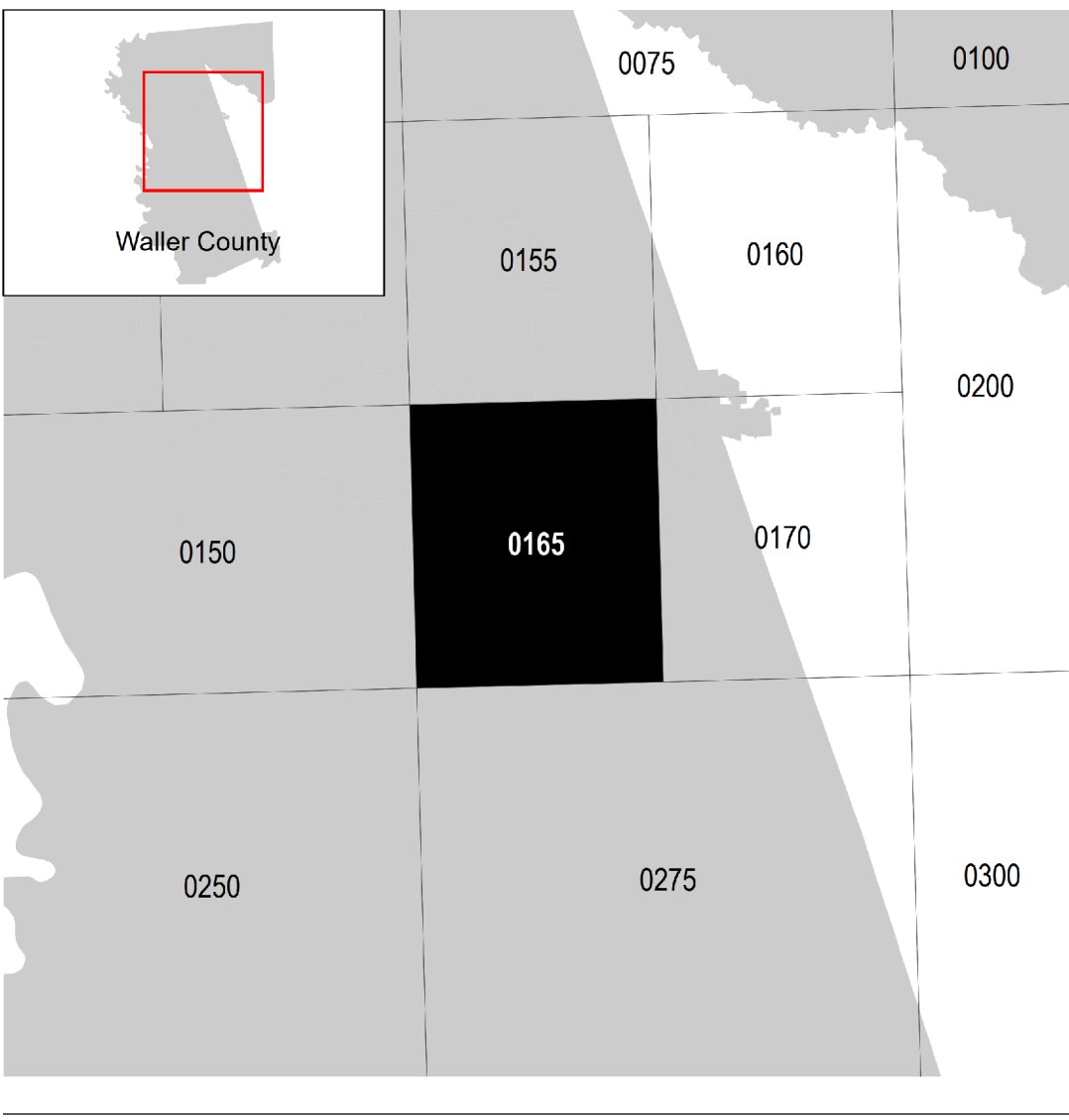
To determine if flood insurance is available in the community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by Waller County and Houston-Galveston Area Council (H-GAC). This dataset was digitized at a scale of at least 1:24,000 from aerial photography dated 2002 and 2004. The Texas Natural Resources Information System (TNRIS) provided the Texas Department of Transportation (TxDOT) GIS data for community boundaries and transportation layers dated 2015.

SCALE



PANEL LOCATOR



**National Flood Insurance Program**

**NATIONAL FLOOD INSURANCE PROGRAM**  
FLOOD INSURANCE RATE MAP

**WALLER COUNTY, TEXAS**  
and Incorporated Areas

PANEL 165 of 425

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
PINE ISLAND, CITY OF	480080	0165	F
PRAIRIE VIEW, CITY OF	481544	0165	F
WALLER COUNTY	480640	0165	F

VERSION NUMBER  
2.3.3.3

MAP NUMBER  
48473C0165F

MAP REVISED  
MAY 16, 2019



IAH Annual 1984-92

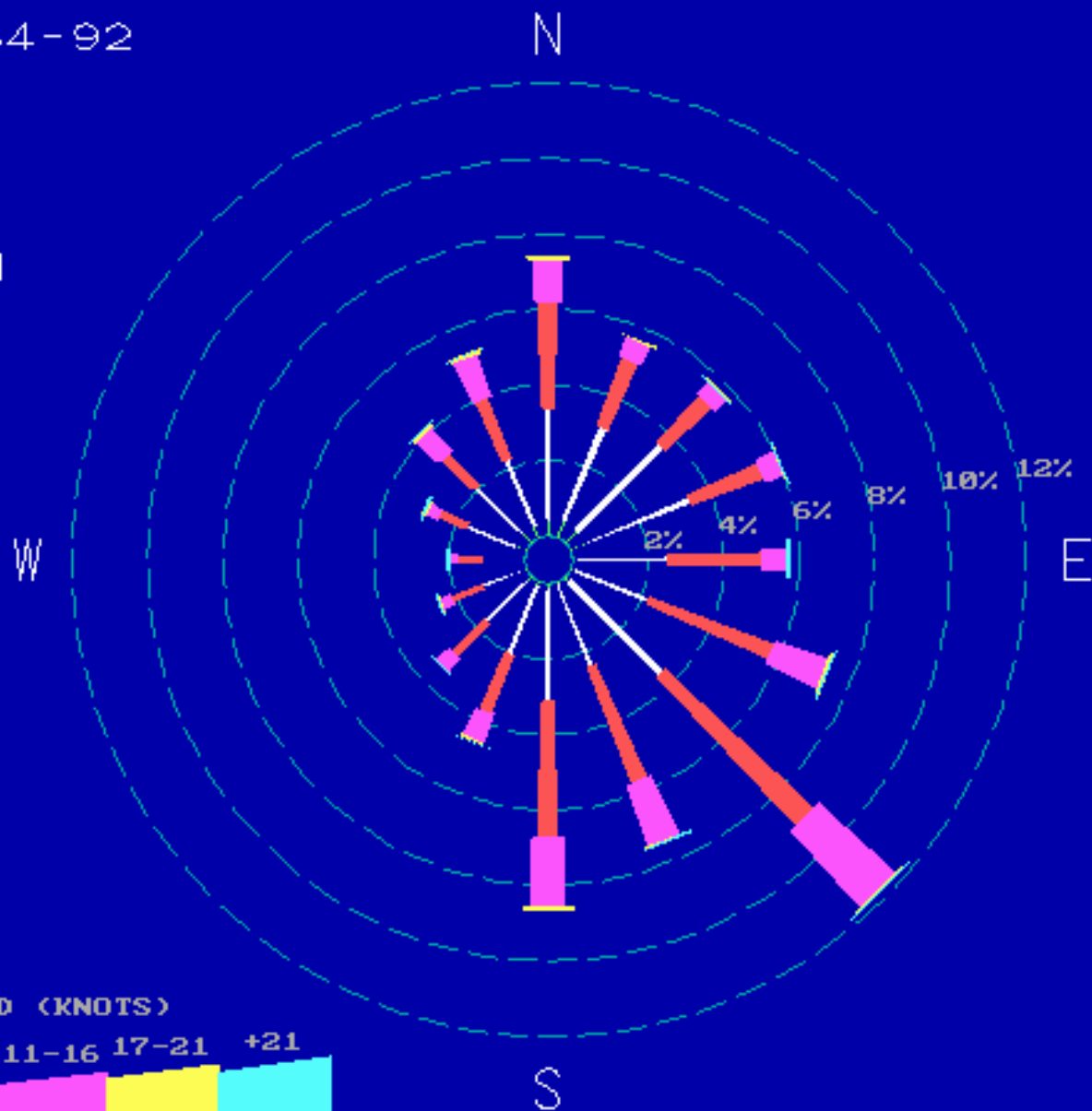
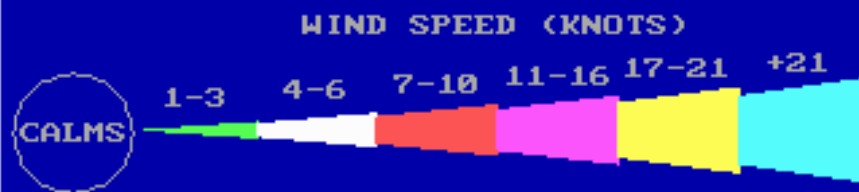
January 1

December 31

Midnight-11 PM

**NOTE:** Frequencies indicate direction from which the wind is blowing.

CALM WINDS 9.18%



ATTACHMENT L: SOLIDS MANAGEMENT PLAN

Sludge Management Plan

Final Phase

Jellystone TPDES Permit Amendment Application

Q	0.03 MGD
BODi	250 mg/L
BODe	10 mg/L
BOD rem	240 mg/L
Sludge Production Rate	0.65 lb TSS / lb BOD removed
Fraction Remaining after Extended Air Solids Reduction	0.3
Density Wet Sludge	0.08 lb/gal.
Sludge Storage Volume Available [a]	2,819 gallons

<u>Solids Generated</u>	<u>100% Flow</u>	<u>75% Flow</u>	<u>50% Flow</u>	<u>25% Flow</u>
Pounds BOD Removed	60.05	45.04	30.02	15.01
Pounds Dry Sludge Produced [b]	11.71	8.78	5.85	2.93
Gallons of Wet Sludge Produced [c]	146.37	109.78	73.18	36.59

<u>Removal Schedule (days)</u>	<u>100% Flow</u>	<u>75% Flow</u>	<u>50% Flow</u>	<u>25% Flow</u>
Days Between Removal	19	26	39	77

Notes

[a] Two aerobic treatment units with 127.7 gallons per inch with maximum sludge thickness of 20".

[b] Assumes that process will produce 0.65 lb TSS/lb BOD removed, and extended air process will remove additional 70 percent

[c] Assumes solids will be present in bottom of unit at 10,000 mg/L

TVSS analysis to be performed weekly. Settled solids to be removed from clarifier to maintain a TVSS concentration of 5,000 mg/L in the biological treatment unit.



*James W. Weishuhn*  
10-18-19  
F-66



Sun NG Jelly-Lone Star TX RV LLC (property) is located in northcentral Waller County, Texas between FM 359 and FM 362 and South of SH 290. The Gulf Coast Aquifer is present in all of Waller County. The Evangeline Aquifer is the upper component of the Gulf Coast Aquifer in the property area and is the source of ground water to the property and adjacent residences. Water is generally good in the aquifer in the area.

The Evangeline aquifer is composed of a thick sequence of alternating beds of sand and clay which overlie the Burkeville aquiclude.

The aquifer is generally present from sea level to a depth of 600-feet bgs. The land surface is about 400-feet bgs. Fresh ground water occurs in the Evangeline aquifer throughout most of the Waller County area. In general, this water is good for municipal, most irrigation, and most industrial purposes. The temperature of the ground water usually increases slightly with depth and the pH ranges from 6.1 to 7.9.

The zone of fresh ground water in Waller Counties is underlain by a zone of slightly saline water, which is, in turn, underlain by zones containing water of even higher salinity. As pumping from the fresh-water zone continues and the artesian pressure in the zone is reduced, the saline water will tend to move vertically upward into the zone of fresh water because of the pressure difference between the fresh- and saline water zones. Encroachment of saline water from the deeper horizons is not believed to be a major problem in Waller County, however, because the vertical permeabilities are, no doubt, much less than horizontal permeabilities, and the amount of water entering a well or group of wells from below will be small relative to the amount of water entering the wells laterally.

Fresh ground water (less than 1,000 ppm dissolved solids) suitable in quantity for irrigation, public supply, and most industrial needs can be found throughout Waller Counties. The zone of fresh water occurs in most of the Evangeline aquifer.

Land use in the area is typically residential, cattle ranching and rice farming. Yogi currently land applies treated domestic wastewater from their wastewater treatment facilities pursuant to 30 TAC 285. There are no oilfield activities in the immediate area of the facility. Accordingly, degradation products of wastewater (nitrates and fecal coliform) are the primary concern with affecting ground water in the area.

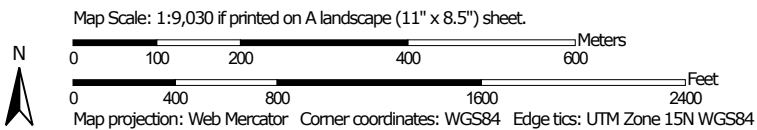
A review of online data resources including the Texas Water Development Board, the Texas Commission on Environmental Quality and the Bluebonnet Ground Water Conservation District was performed to determine the availability of chemical analyses of ground water (specifically nitrates) in the area. Nitrate data was available for Yogi's public water supply well (Well # 405145) which is screened from 341-feet bgs to 361-feet bgs. Nitrate concentrations were less than 0.4 mg/L. The Maximum Concentration Level for nitrate is 10 mg/L. Accordingly, acceptable application of treated wastewater and the clay restrictive units in the aquifer appear to be provide suitable acceptable protection.

Nitrate ground water concentrations were not available for shallow adjacent residential wells. These wells are screened at depths ranging from 200-feet bgs to 300-feet bgs. A simplified cross-section was developed from driller's logs from a nearby well west of the Yogi facility trending east through the Yogi facility then east to a neighboring well. The cross-section is attached and indicates that a restrictive clay layer is present from 78-feet bgs to 102-feet bgs to the west and from the mid-20-feet bgs to in excess of 116-feet bgs to the west. The clay layer is discontinuous on the east side but resumes at a depth of 140-feet bgs to 166-feet bgs. The clay resumes at a depth ranging from a depth of 160-feet bgs to 180-feet and is continuous to a depth of 240-feet bgs. The aquifer sands utilized by the adjacent neighbors are below the restrictive clay layers.

The clay layer presence, thickness and quality is suitable to restrict the movement of treated wastewater from the shallow soils to aquifer bearing sands. Accordingly, it is unlikely that land application rates will affect the shall zones of the ground water bearing unit. The construction of an effluent wastewater holding pond with a liner in accordance with the Texas Commission on Environmental Quality's minimum standards is unlikely to present a concern for the ground water bearing units.

# ATTACHMENT N: USDA SOILS REPORT

## Custom Soil Resource Report Soil Map



**EFFLUENT LAND  
APPLICATION AREA  
(WOCKLEY FINE SANDY  
LOAM, 1 TO 3 PERCENT  
SLOPES)**



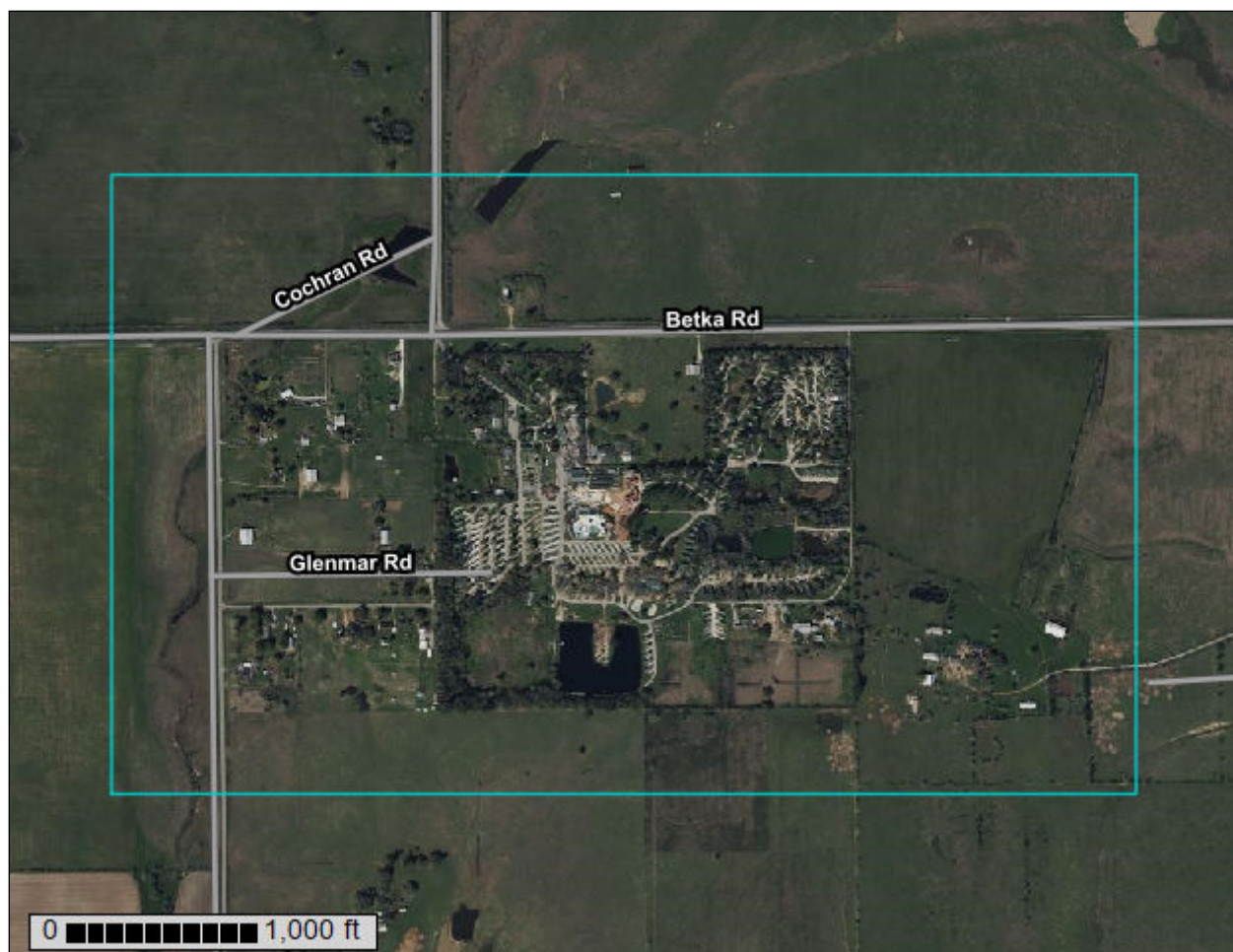
United States  
Department of  
Agriculture

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 Austin and Waller Counties, Texas



# Preface

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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](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

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<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Austin and Waller Counties, Texas.....	13
HoB—Hockley loamy fine sand, 1 to 3 percent slopes.....	13
KeD—Kenney loamy fine sand, 2 to 8 percent slopes.....	14
MvC—Monaville loamy fine sand, 1 to 3 percent slopes.....	15
Wa—Tomball loam, 0 to 1 percent slopes, frequently ponded.....	17
WoA—Wockley fine sandy loam, 0 to 1 percent slopes.....	18
WoB—Wockley fine sandy loam, 1 to 3 percent slopes.....	20
<b>References</b> .....	22
<b>Glossary</b> .....	24

# 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

## Custom Soil Resource Report

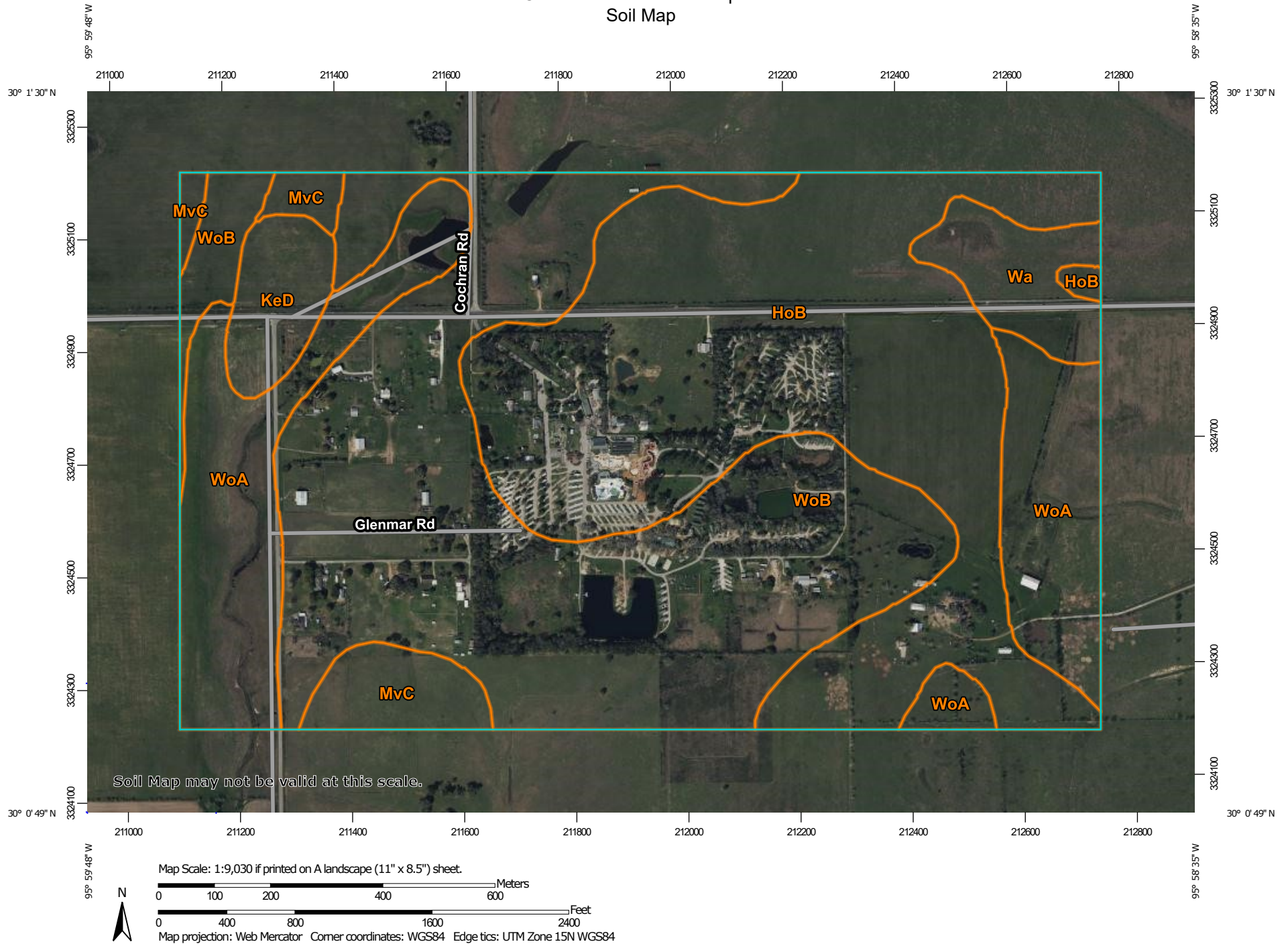
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# 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.


# Custom Soil Resource Report Soil Map



# Custom Soil Resource Report


## 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 1:24,000.

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: Austin and Waller Counties, Texas  
Survey Area Data: Version 22, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 26, 2023—Mar 4, 2023

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
HoB	Hockley loamy fine sand, 1 to 3 percent slopes	140.3	34.9%
KeD	Kenney loamy fine sand, 2 to 8 percent slopes	11.3	2.8%
MvC	Monaville loamy fine sand, 1 to 3 percent slopes	14.3	3.6%
Wa	Tomball loam, 0 to 1 percent slopes, frequently ponded	14.1	3.5%
WoA	Wockley fine sandy loam, 0 to 1 percent slopes	66.7	16.6%
WoB	Wockley fine sandy loam, 1 to 3 percent slopes	155.7	38.7%
<b>Totals for Area of Interest</b>		<b>402.5</b>	<b>100.0%</b>

## 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.

## Austin and Waller Counties, Texas

### HoB—Hockley loamy fine sand, 1 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2v39d  
*Elevation:* 200 to 300 feet  
*Mean annual precipitation:* 41 to 49 inches  
*Mean annual air temperature:* 67 to 70 degrees F  
*Frost-free period:* 240 to 300 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Hockley and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Hockley

##### Setting

*Landform:* Interfluves  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Late pliocene to early pleistocene age loamy fluvio-marine deposits derived from igneous, metamorphic and sedimentary rock

##### Typical profile

*A1 - 0 to 8 inches:* loamy fine sand  
*A2 - 8 to 22 inches:* fine sandy loam  
*Bt - 22 to 35 inches:* sandy clay loam  
*Bt<sub>cv</sub> - 35 to 57 inches:* sandy clay loam  
*B't - 57 to 80 inches:* sandy clay

##### Properties and qualities

*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* About 40 to 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 0.5 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 2.0  
*Available water supply, 0 to 60 inches:* Moderate (about 8.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 3e  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Ecological site:* R150AY741TX - Northern Loamy Prairie  
*Hydric soil rating:* No



## Minor Components

### Wockley

*Percent of map unit:* 10 percent

*Landform:* Flats

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* R150AY741TX - Northern Loamy Prairie

*Hydric soil rating:* No

## KeD—Kenney loamy fine sand, 2 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 2vv2v

*Elevation:* 0 to 260 feet

*Mean annual precipitation:* 40 to 55 inches

*Mean annual air temperature:* 67 to 71 degrees F

*Frost-free period:* 271 to 365 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Kenney and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Kenney

### Setting

*Landform:* Terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Riser

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Parent material:* Loamy alluvium derived from igneous, metamorphic and sedimentary rock

### Typical profile

*A - 0 to 62 inches:* loamy fine sand

*Bt - 62 to 80 inches:* sandy clay loam

### Properties and qualities

*Slope:* 2 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

## Custom Soil Resource Report

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 2.0

*Available water supply, 0 to 60 inches:* Low (about 4.8 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* 4s

*Land capability classification (nonirrigated):* 4s

*Hydrologic Soil Group:* A

*Ecological site:* R150AY543TX - Sandy Prairie

*Hydric soil rating:* No

### **Minor Components**

#### **Fulshear**

*Percent of map unit:* 9 percent

*Landform:* Terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Riser

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* R150AY542TX - Sandy Loam

*Hydric soil rating:* No

#### **Katy**

*Percent of map unit:* 5 percent

*Landform:* Flats

*Landform position (three-dimensional):* Rise

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* R150AY741TX - Northern Loamy Prairie

*Hydric soil rating:* No

#### **Unnamed, hydric**

*Percent of map unit:* 1 percent

*Landform:* Depressions

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Ecological site:* R150AY537TX - Lowland

*Hydric soil rating:* Yes

## **MvC—Monaville loamy fine sand, 1 to 3 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2vv36

*Elevation:* 200 to 320 feet

*Mean annual precipitation:* 40 to 48 inches

*Mean annual air temperature:* 66 to 70 degrees F

*Frost-free period:* 240 to 300 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Monaville and similar soils: 95 percent*

*Minor components: 5 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Monaville**

**Setting**

*Landform: Low hills*

*Landform position (two-dimensional): Shoulder*

*Landform position (three-dimensional): Crest*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Loamy fluviomarine deposits of late pliocene to early pleistocene age*

**Typical profile**

*A - 0 to 15 inches: loamy fine sand*

*E - 15 to 28 inches: loamy fine sand*

*Bt - 28 to 34 inches: sandy clay loam*

*Btv - 34 to 80 inches: sandy clay loam*

**Properties and qualities**

*Slope: 1 to 3 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Moderately well drained*

*Runoff class: Low*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)*

*Sodium adsorption ratio, maximum: 4.0*

*Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)*

**Interpretive groups**

*Land capability classification (irrigated): 3e*

*Land capability classification (nonirrigated): 3e*

*Hydrologic Soil Group: C*

*Ecological site: R150AY543TX - Sandy Prairie*

*Hydric soil rating: No*

**Minor Components**

**Wockley**

*Percent of map unit: 2 percent*

*Landform: Flats*

*Landform position (three-dimensional): Talf*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Ecological site: R150AY741TX - Northern Loamy Prairie*

*Hydric soil rating: No*

**Katy**

*Percent of map unit: 1 percent*

## Custom Soil Resource Report

*Landform:* Flats  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Ecological site:* R150AY741TX - Northern Loamy Prairie  
*Hydric soil rating:* No

### **Cheetham**

*Percent of map unit:* 1 percent  
*Landform:* Low hills  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Ecological site:* R087AY006TX - Sandy  
*Hydric soil rating:* No

### **Mockley**

*Percent of map unit:* 1 percent  
*Landform:* Low hills  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Ecological site:* R150AY741TX - Northern Loamy Prairie  
*Hydric soil rating:* No

## **Wa—Tomball loam, 0 to 1 percent slopes, frequently ponded**

### **Map Unit Setting**

*National map unit symbol:* 2y8ws  
*Elevation:* 200 to 270 feet  
*Mean annual precipitation:* 45 to 49 inches  
*Mean annual air temperature:* 67 to 69 degrees F  
*Frost-free period:* 271 to 300 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Tomball and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Tomball**

#### **Setting**

*Landform:* Open depressions  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave

## Custom Soil Resource Report

*Parent material:* Loamy fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

### Typical profile

*A - 0 to 8 inches:* loam  
*E - 8 to 18 inches:* loam  
*Bt - 18 to 47 inches:* clay loam  
*Btg - 47 to 80 inches:* clay loam

### Properties and qualities

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Maximum salinity:* Nonsaline (0.1 to 1.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 2.0  
*Available water supply, 0 to 60 inches:* High (about 10.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* 5w  
*Land capability classification (nonirrigated):* 5w  
*Hydrologic Soil Group:* D  
*Ecological site:* R150AY537TX - Lowland  
*Hydric soil rating:* Yes

### Minor Components

#### Wockley

*Percent of map unit:* 10 percent  
*Landform:* Flats  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R150AY741TX - Northern Loamy Prairie  
*Hydric soil rating:* No

## WoA—Wockley fine sandy loam, 0 to 1 percent slopes

### Map Unit Setting

*National map unit symbol:* 2th6r  
*Elevation:* 200 to 300 feet  
*Mean annual precipitation:* 41 to 49 inches  
*Mean annual air temperature:* 67 to 70 degrees F  
*Frost-free period:* 240 to 300 days  
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Wockley and similar soils: 90 percent*

*Minor components: 10 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Wockley

#### Setting

*Landform: Flats*

*Landform position (three-dimensional): Dip*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Late pliocene to early pleistocene loamy fluviomarine deposits derived from igneous, metamorphic and sedimentary rock*

#### Typical profile

*A - 0 to 7 inches: fine sandy loam*

*E - 7 to 22 inches: fine sandy loam*

*Btc - 22 to 58 inches: sandy clay loam*

*Btcv - 58 to 80 inches: sandy clay loam*

#### Properties and qualities

*Slope: 0 to 1 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Somewhat poorly drained*

*Runoff class: High*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)*

*Depth to water table: About 6 to 24 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)*

*Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)*

#### Interpretive groups

*Land capability classification (irrigated): 3w*

*Land capability classification (nonirrigated): 3w*

*Hydrologic Soil Group: C/D*

*Ecological site: R150AY741TX - Northern Loamy Prairie*

*Hydric soil rating: No*

### Minor Components

#### Hockley

*Percent of map unit: 8 percent*

*Landform: Hillslopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Ecological site: R150AY741TX - Northern Loamy Prairie*

*Hydric soil rating: No*

#### Tomball

*Percent of map unit: 2 percent*

*Landform: Depressions*

## Custom Soil Resource Report

*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Ecological site:* R150AY537TX - Lowland  
*Hydric soil rating:* Yes

### WoB—Wockley fine sandy loam, 1 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2v39p  
*Elevation:* 200 to 300 feet  
*Mean annual precipitation:* 41 to 49 inches  
*Mean annual air temperature:* 67 to 70 degrees F  
*Frost-free period:* 240 to 300 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Wockley and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Wockley

##### Setting

*Landform:* Flats  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Late pliocene to early pleistocene loamy fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

##### Typical profile

*A - 0 to 14 inches:* fine sandy loam  
*E - 14 to 22 inches:* fine sandy loam  
*Btc - 22 to 49 inches:* sandy clay loam  
*Btcv - 49 to 80 inches:* clay

##### Properties and qualities

*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* About 6 to 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* Moderate (about 8.4 inches)

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* 3w

*Land capability classification (nonirrigated):* 3w

*Hydrologic Soil Group:* C/D

*Ecological site:* R150AY741TX - Northern Loamy Prairie

*Hydric soil rating:* No

### Minor Components

#### Hockley

*Percent of map unit:* 8 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* R150AY741TX - Northern Loamy Prairie

*Hydric soil rating:* No

#### Tomball

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Ecological site:* R150AY537TX - Lowland

*Hydric soil rating:* Yes



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# Glossary

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Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the following National Soil Survey Handbook link: "[National Soil Survey Handbook](#)."

## **ABC soil**

A soil having an A, a B, and a C horizon.

## **Ablation till**

Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

## **AC soil**

A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

## **Aeration, soil**

The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

## **Aggregate, soil**

Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

## **Alkali (sodic) soil**

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

## **Alluvial cone**

A semiconical type of alluvial fan having very steep slopes. It is higher, narrower, and steeper than a fan and is composed of coarser and thicker layers of material deposited by a combination of alluvial episodes and (to a much lesser degree) landslides (debris flow). The coarsest materials tend to be concentrated at the apex of the cone.

**Alluvial fan**

A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

**Alluvium**

Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

**Alpha,alpha-dipyridyl**

A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

**Animal unit month (AUM)**

The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

**Aquic conditions**

Current soil wetness characterized by saturation, reduction, and redoximorphic features.

**Argillic horizon**

A subsoil horizon characterized by an accumulation of illuvial clay.

**Arroyo**

The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in unconsolidated material. It is usually dry but can be transformed into a temporary watercourse or short-lived torrent after heavy rain within the watershed.

**Aspect**

The direction toward which a slope faces. Also called slope aspect.

**Association, soil**

A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

**Available water capacity (available moisture capacity)**

The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

*Very low:* 0 to 3

*Low:* 3 to 6

*Moderate:* 6 to 9

*High:* 9 to 12

*Very high:* More than 12

**Backslope**

The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

**Backswamp**

A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

**Badland**

A landscape that is intricately dissected and characterized by a very fine drainage network with high drainage densities and short, steep slopes and narrow interfluves. Badlands develop on surfaces that have little or no vegetative cover overlying unconsolidated or poorly cemented materials (clays, silts, or sandstones) with, in some cases, soluble minerals, such as gypsum or halite.

**Bajada**

A broad, gently inclined alluvial piedmont slope extending from the base of a mountain range out into a basin and formed by the lateral coalescence of a series of alluvial fans. Typically, it has a broadly undulating transverse profile, parallel to the mountain front, resulting from the convexities of component fans. The term is generally restricted to constructional slopes of intermontane basins.

**Basal area**

The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

**Base saturation**

The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

**Base slope (geomorphology)**

A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

**Bedding plane**

A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology)

from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

**Bedding system**

A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

**Bedrock**

The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

**Bedrock-controlled topography**

A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

**Bench terrace**

A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

**Bisequum**

Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

**Blowout (map symbol)**

A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed. The adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

**Borrow pit (map symbol)**

An open excavation from which soil and underlying material have been removed, usually for construction purposes.

**Bottom land**

An informal term loosely applied to various portions of a flood plain.

**Boulders**

Rock fragments larger than 2 feet (60 centimeters) in diameter.

**Breaks**

A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

**Breast height**

An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

**Brush management**

Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

**Butte**

An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs and characterized by summit width that is less than the height of bounding escarpments; commonly topped by a caprock of resistant material and representing an erosion remnant carved from flat-lying rocks.

**Cable yarding**

A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

**Calcareous soil**

A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

**Caliche**

A general term for a prominent zone of secondary carbonate accumulation in surficial materials in warm, subhumid to arid areas. Caliche is formed by both geologic and pedologic processes. Finely crystalline calcium carbonate forms a nearly continuous surface-coating and void-filling medium in geologic (parent) materials. Cementation ranges from weak in nonindurated forms to very strong in indurated forms. Other minerals (e.g., carbonates, silicate, and sulfate) may occur as accessory cements. Most petrocalcic horizons and some calcic horizons are caliche.

**California bearing ratio (CBR)**

The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

**Canopy**

The leafy crown of trees or shrubs. (See Crown.)

**Canyon**

A long, deep, narrow valley with high, precipitous walls in an area of high local relief.

**Capillary water**

Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

**Catena**

A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

**Cation**

An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

**Cation-exchange capacity**

The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

**Catsteps**

See Terracettes.

**Cement rock**

Shaly limestone used in the manufacture of cement.

**Channery soil material**

Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

**Chemical treatment**

Control of unwanted vegetation through the use of chemicals.

**Chiseling**

Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

**Cirque**

A steep-walled, semicircular or crescent-shaped, half-bowl-like recess or hollow, commonly situated at the head of a glaciated mountain valley or high on the side of a mountain. It was produced by the erosive activity of a mountain glacier. It commonly contains a small round lake (tarn).



**Clay**

As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

**Clay depletions**

See Redoximorphic features.

**Clay film**

A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

**Clay spot (map symbol)**

A spot where the surface texture is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser.

**Claypan**

A dense, compact subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. The layer restricts the downward movement of water through the soil. A claypan is commonly hard when dry and plastic and sticky when wet.

**Climax plant community**

The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

**Coarse textured soil**

Sand or loamy sand.

**Cobble (or cobblestone)**

A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

**Cobbly soil material**

Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

**COLE (coefficient of linear extensibility)**

See Linear extensibility.

**Colluvium**

Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

**Complex slope**

Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

**Complex, soil**

A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

**Concretions**

See Redoximorphic features.

**Conglomerate**

A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

**Conservation cropping system**

Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

**Conservation tillage**

A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

**Consistence, soil**

Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

**Contour stripcropping**

Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

**Control section**

The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

**Coprogenous earth (sedimentary peat)**

A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

**Corrosion (geomorphology)**

A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

**Corrosion (soil survey interpretations)**

Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

**Cover crop**

A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

**Crop residue management**

Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

**Cropping system**

Growing crops according to a planned system of rotation and management practices.

**Cross-slope farming**

Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

**Crown**

The upper part of a tree or shrub, including the living branches and their foliage.

**Cryoturbate**

A mass of soil or other unconsolidated earthy material moved or disturbed by frost action. It is typically coarser than the underlying material.

**Cuesta**

An asymmetric ridge capped by resistant rock layers of slight or moderate dip (commonly less than 15 percent slopes); a type of homocline produced by differential erosion of interbedded resistant and weak rocks. A cuesta has a long, gentle slope on one side (dip slope) that roughly parallels the inclined beds; on the other side, it has a relatively short and steep or clifflike slope (scarp) that cuts through the tilted rocks.

**Culmination of the mean annual increment (CMAI)**

The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

**Cutbanks cave**

The walls of excavations tend to cave in or slough.

**Decreasers**

The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

**Deferred grazing**

Postponing grazing or resting grazing land for a prescribed period.

**Delta**

A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

**Dense layer**

A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

**Depression, closed (map symbol)**

A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage.

**Depth, soil**

Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

**Desert pavement**

A natural, residual concentration or layer of wind-polished, closely packed gravel, boulders, and other rock fragments mantling a desert surface. It forms where wind action and sheetwash have removed all smaller particles or where rock fragments have migrated upward through sediments to the surface. It typically protects the finer grained underlying material from further erosion.

**Diatomaceous earth**

A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

**Dip slope**

A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

**Diversion (or diversion terrace)**

A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

**Divided-slope farming**

A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

**Drainage class (natural)**

Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained*. These classes are defined in the “Soil Survey Manual.”

**Drainage, surface**

Runoff, or surface flow of water, from an area.

**Drainageway**

A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

**Draw**

A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

**Drift**

A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

**Drumlin**

A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

**Duff**

A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

**Dune**

A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

**Earthy fill**

See Mine spoil.

**Ecological site**

An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

**Eluviation**

The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

**Endosaturation**

A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

**Eolian deposit**

Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

**Ephemeral stream**

A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

**Episaturation**

A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

**Erosion**

The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

**Erosion (accelerated)**

Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

**Erosion (geologic)**

Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

**Erosion pavement**

A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

**Erosion surface**

A land surface shaped by the action of erosion, especially by running water.

**Escarpment**

A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

**Escarpment, bedrock (map symbol)**

A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.

**Escarpment, nonbedrock (map symbol)**

A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.

**Esker**

A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left

behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

**Extrusive rock**

Igneous rock derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface.

**Fallow**

Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

**Fan remnant**

A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

**Fertility, soil**

The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

**Fibric soil material (peat)**

The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

**Field moisture capacity**

The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

**Fill slope**

A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

**Fine textured soil**

Sandy clay, silty clay, or clay.

**Firebreak**

An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.



**First bottom**

An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

**Flaggy soil material**

Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

**Flagstone**

A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

**Flood plain**

The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

**Flood-plain landforms**

A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

**Flood-plain splay**

A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

**Flood-plain step**

An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

**Fluvial**

Of or pertaining to rivers or streams; produced by stream or river action.

**Foothills**

A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

**Footslope**

The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

**Forb**

Any herbaceous plant not a grass or a sedge.

**Forest cover**

All trees and other woody plants (underbrush) covering the ground in a forest.

**Forest type**

A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

**Fragipan**

A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

**Genesis, soil**

The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

**Gilgai**

Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

**Glaciofluvial deposits**

Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

**Glaciolacustrine deposits**

Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

**Gleyed soil**

Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

**Graded stripcropping**

Growing crops in strips that grade toward a protected waterway.

**Grassed waterway**

A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

**Gravel**

Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

**Gravel pit (map symbol)**

An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel.

**Gravelly soil material**

Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

**Gravelly spot (map symbol)**

A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments.

**Green manure crop (agronomy)**

A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

**Ground water**

Water filling all the unblocked pores of the material below the water table.

**Gully (map symbol)**

A small, steep-sided channel caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage whereas a rill is of lesser depth and can be smoothed over by ordinary tillage.

**Hard bedrock**

Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

**Hard to reclaim**

Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

**Hardpan**

A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

**Head slope (geomorphology)**

A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

**Hemic soil material (mucky peat)**

Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

**High-residue crops**

Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

**Hill**

A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

**Hillslope**

A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

**Horizon, soil**

A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

*O horizon:* An organic layer of fresh and decaying plant residue.

*L horizon:* A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

*A horizon:* The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon:* The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon:* The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

*C horizon:* The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon:* Soft, consolidated bedrock beneath the soil.

*R layer:* Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

*M layer:* A root-limiting subsoil layer consisting of nearly continuous, horizontally oriented, human-manufactured materials.

*W layer:* A layer of water within or beneath the soil.

## **Humus**

The well decomposed, more or less stable part of the organic matter in mineral soils.

## **Hydrologic soil groups**

Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties include depth to a seasonal high water table, the infiltration rate, and depth to a layer that significantly restricts the downward movement of water. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

## **Igneous rock**

Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

## **Illuviation**

The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.



**Impervious soil**

A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

**Increasesers**

Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasesers commonly are the shorter plants and the less palatable to livestock.

**Infiltration**

The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

**Infiltration capacity**

The maximum rate at which water can infiltrate into a soil under a given set of conditions.

**Infiltration rate**

The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Intake rate**

The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

*Very low:* Less than 0.2

*Low:* 0.2 to 0.4

*Moderately low:* 0.4 to 0.75

*Moderate:* 0.75 to 1.25

*Moderately high:* 1.25 to 1.75

*High:* 1.75 to 2.5

*Very high:* More than 2.5

**Interfluve**

A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

**Interfluve (geomorphology)**

A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

### **Intermittent stream**

A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

### **Invaders**

On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

### **Iron depletions**

See Redoximorphic features.

### **Irrigation**

Application of water to soils to assist in production of crops. Methods of irrigation are:

*Basin:* Water is applied rapidly to nearly level plains surrounded by levees or dikes.

*Border:* Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

*Controlled flooding:* Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

*Corrugation:* Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

*Drip (or trickle):* Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

*Furrow:* Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

*Sprinkler:* Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

*Subirrigation:* Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

*Wild flooding:* Water, released at high points, is allowed to flow onto an area without controlled distribution.

### **Kame**

A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

**Karst (topography)**

A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

**Knoll**

A small, low, rounded hill rising above adjacent landforms.

**Ksat**

See Saturated hydraulic conductivity.

**Lacustrine deposit**

Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

**Lake plain**

A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

**Lake terrace**

A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

**Landfill (map symbol)**

An area of accumulated waste products of human habitation, either above or below natural ground level.

**Landslide**

A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

**Large stones**

Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

**Lava flow (map symbol)**

A solidified, commonly lobate body of rock formed through lateral, surface outpouring of molten lava from a vent or fissure.

**Leaching**

The removal of soluble material from soil or other material by percolating water.

**Levee (map symbol)**

An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.

**Linear extensibility**

Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at  $1/3$ - or  $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

**Liquid limit**

The moisture content at which the soil passes from a plastic to a liquid state.

**Loam**

Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Loess**

Material transported and deposited by wind and consisting dominantly of silt-sized particles.

**Low strength**

The soil is not strong enough to support loads.

**Low-residue crops**

Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

**Marl**

An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

**Marsh or swamp (map symbol)**

A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Not used in map units where the named soils are poorly drained or very poorly drained.

**Mass movement**

A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

**Masses**

See Redoximorphic features.

**Meander belt**

The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

**Meander scar**

A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

**Meander scroll**

One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

**Mechanical treatment**

Use of mechanical equipment for seeding, brush management, and other management practices.

**Medium textured soil**

Very fine sandy loam, loam, silt loam, or silt.

**Mesa**

A broad, nearly flat topped and commonly isolated landmass bounded by steep slopes or precipitous cliffs and capped by layers of resistant, nearly horizontal rocky material. The summit width is characteristically greater than the height of the bounding escarpments.

**Metamorphic rock**

Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

**Mine or quarry (map symbol)**

An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines.

**Mine spoil**

An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

**Mineral soil**

Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.



**Minimum tillage**

Only the tillage essential to crop production and prevention of soil damage.

**Miscellaneous area**

A kind of map unit that has little or no natural soil and supports little or no vegetation.

**Miscellaneous water (map symbol)**

Small, constructed bodies of water that are used for industrial, sanitary, or mining applications and that contain water most of the year.

**Moderately coarse textured soil**

Coarse sandy loam, sandy loam, or fine sandy loam.

**Moderately fine textured soil**

Clay loam, sandy clay loam, or silty clay loam.

**Mollic epipedon**

A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

**Moraine**

In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

**Morphology, soil**

The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

**Mottling, soil**

Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Mountain**

A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can

occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

**Muck**

Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

**Mucky peat**

See Hemic soil material.

**Mudstone**

A blocky or massive, fine grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

**Munsell notation**

A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

**Natric horizon**

A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

**Neutral soil**

A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

**Nodules**

See Redoximorphic features.

**Nose slope (geomorphology)**

A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

**Nutrient, plant**

Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

**Organic matter**

Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

*Very low:* Less than 0.5 percent

*Low:* 0.5 to 1.0 percent

*Moderately low:* 1.0 to 2.0 percent

*Moderate:* 2.0 to 4.0 percent

*High:* 4.0 to 8.0 percent

*Very high:* More than 8.0 percent

**Outwash**

Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

**Outwash plain**

An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

**Paleoterrace**

An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

**Pan**

A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

**Parent material**

The unconsolidated organic and mineral material in which soil forms.

**Peat**

Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

**Ped**

An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedisediment**

A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

**Pedon**

The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation**

The movement of water through the soil.

**Perennial water (map symbol)**

Small, natural or constructed lakes, ponds, or pits that contain water most of the year.

**Permafrost**

Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

**pH value**

A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

**Phase, soil**

A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

**Piping**

Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

**Pitting**

Pits caused by melting around ice. They form on the soil after plant cover is removed.

**Plastic limit**

The moisture content at which a soil changes from semisolid to plastic.

**Plasticity index**

The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

**Plateau (geomorphology)**

A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

**Playa**

The generally dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

**Plinthite**

The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

**Plowpan**

A compacted layer formed in the soil directly below the plowed layer.

**Ponding**

Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

**Poorly graded**

Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

**Pore linings**

See Redoximorphic features.

**Potential native plant community**

See Climax plant community.

**Potential rooting depth (effective rooting depth)**

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

**Prescribed burning**

Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

**Productivity, soil**

The capability of a soil for producing a specified plant or sequence of plants under specific management.

**Profile, soil**

A vertical section of the soil extending through all its horizons and into the parent material.

**Proper grazing use**

Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and



promotes the accumulation of litter and mulch necessary to conserve soil and water.

### **Rangeland**

Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

### **Reaction, soil**

A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

*Ultra acid:* Less than 3.5

*Extremely acid:* 3.5 to 4.4

*Very strongly acid:* 4.5 to 5.0

*Strongly acid:* 5.1 to 5.5

*Moderately acid:* 5.6 to 6.0

*Slightly acid:* 6.1 to 6.5

*Neutral:* 6.6 to 7.3

*Slightly alkaline:* 7.4 to 7.8

*Moderately alkaline:* 7.9 to 8.4

*Strongly alkaline:* 8.5 to 9.0

*Very strongly alkaline:* 9.1 and higher

### **Red beds**

Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

### **Redoximorphic concentrations**

See Redoximorphic features.

### **Redoximorphic depletions**

See Redoximorphic features.

### **Redoximorphic features**

Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
  - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
  - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
  - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
  - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
  - B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

**Reduced matrix**

See Redoximorphic features.

**Regolith**

All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

**Relief**

The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

**Residuum (residual soil material)**

Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

**Rill**

A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

**Riser**

The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

**Road cut**

A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

**Rock fragments**

Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

**Rock outcrop (map symbol)**

An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where "Rock outcrop" is a named component of the map unit.

**Root zone**

The part of the soil that can be penetrated by plant roots.

**Runoff**

The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

**Saline soil**

A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

**Saline spot (map symbol)**

An area where the surface layer has an electrical conductivity of 8 mmhos/cm more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm or less.

**Sand**

As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

**Sandstone**

Sedimentary rock containing dominantly sand-sized particles.

**Sandy spot (map symbol)**

A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer.

**Sapric soil material (muck)**

The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

**Saturated hydraulic conductivity (Ksat)**

The ease with which pores of a saturated soil transmit water. Formally, the proportionality coefficient that expresses the relationship of the rate of water movement to hydraulic gradient in Darcy's Law, a law that describes the rate of water movement through porous media. Commonly abbreviated as "Ksat." Terms describing saturated hydraulic conductivity are:

*Very high:* 100 or more micrometers per second (14.17 or more inches per hour)

*High:* 10 to 100 micrometers per second (1.417 to 14.17 inches per hour)

*Moderately high:* 1 to 10 micrometers per second (0.1417 inch to 1.417 inches per hour)

*Moderately low:* 0.1 to 1 micrometer per second (0.01417 to 0.1417 inch per hour)

*Low:* 0.01 to 0.1 micrometer per second (0.001417 to 0.01417 inch per hour)

*Very low:* Less than 0.01 micrometer per second (less than 0.001417 inch per hour).

To convert inches per hour to micrometers per second, multiply inches per hour by 7.0572. To convert micrometers per second to inches per hour, multiply micrometers per second by 0.1417.

**Saturation**

Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

**Scarification**

The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

**Sedimentary rock**

A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

**Sequum**

A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

**Series, soil**

A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

**Severely eroded spot (map symbol)**

An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which "severely eroded," "very severely eroded," or "gullied" is part of the map unit name.

**Shale**

Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

**Sheet erosion**

The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

**Short, steep slope (map symbol)**

A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.

**Shoulder**

The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

**Shrink-swell**

The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**Shrub-coppice dune**

A small, streamlined dune that forms around brush and clump vegetation.

**Side slope (geomorphology)**

A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

**Silica**

A combination of silicon and oxygen. The mineral form is called quartz.

**Silica-sesquioxide ratio**

The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

**Silt**

As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

**Siltstone**

An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

**Similar soils**

Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

**Sinkhole (map symbol)**

A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

**Site index**

A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

**Slickensides (pedogenic)**

Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

**Slide or slip (map symbol)**

A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces.

**Slope**

The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.



**Slope alluvium**

Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

**Slow refill**

The slow filling of ponds, resulting from restricted water transmission in the soil.

**Slow water movement**

Restricted downward movement of water through the soil. See Saturated hydraulic conductivity.

**Sodic (alkali) soil**

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

**Sodic spot (map symbol)**

An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less.

**Sodicity**

The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of  $\text{Na}^+$  to  $\text{Ca}^{++} + \text{Mg}^{++}$ . The degrees of sodicity and their respective ratios are:

*Slight:* Less than 13:1

*Moderate:* 13-30:1

*Strong:* More than 30:1

**Sodium adsorption ratio (SAR)**

A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

**Soft bedrock**

Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

## **Soil**

A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

## **Soil separates**

Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

*Very coarse sand:* 2.0 to 1.0

*Coarse sand:* 1.0 to 0.5

*Medium sand:* 0.5 to 0.25

*Fine sand:* 0.25 to 0.10

*Very fine sand:* 0.10 to 0.05

*Silt:* 0.05 to 0.002

*Clay:* Less than 0.002

## **Solum**

The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

## **Spoil area (map symbol)**

A pile of earthy materials, either smoothed or uneven, resulting from human activity.

## **Stone line**

In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

## **Stones**

Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

## **Stony**

Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Stony spot (map symbol)**

A spot where 0.01 to 0.1 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones.

**Strath terrace**

A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

**Stream terrace**

One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

**Stripcropping**

Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

**Structure, soil**

The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are:

*Platy*: Flat and laminated

*Prismatic*: Vertically elongated and having flat tops

*Columnar*: Vertically elongated and having rounded tops

*Angular blocky*: Having faces that intersect at sharp angles (planes)

*Subangular blocky*: Having subrounded and planar faces (no sharp angles)

*Granular*: Small structural units with curved or very irregular faces

Structureless soil horizons are defined as follows:

*Single grained*: Entirely noncoherent (each grain by itself), as in loose sand

*Massive*: Occurring as a coherent mass

**Stubble mulch**

Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

**Subsoil**

Technically, the B horizon; roughly, the part of the solum below plow depth.

**Subsoiling**

Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

**Substratum**

The part of the soil below the solum.

**Subsurface layer**

Any surface soil horizon (A, E, AB, or EB) below the surface layer.

**Summer fallow**

The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

**Summit**

The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

**Surface layer**

The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

**Surface soil**

The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

**Talus**

Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

**Taxadjuncts**

Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

**Terminal moraine**

An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

**Terrace (conservation)**

An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field

generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

**Terrace (geomorphology)**

A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

**Terracettes**

Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

**Texture, soil**

The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

**Thin layer**

Otherwise suitable soil material that is too thin for the specified use.

**Till**

Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

**Till plain**

An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

**Tilth, soil**

The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

**Toeslope**

The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

**Topsoil**

The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

**Trace elements**

Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

**Tread**

The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

**Tuff**

A generic term for any consolidated or cemented deposit that is 50 percent or more volcanic ash.

**Upland**

An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

**Valley fill**

The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

**Variegation**

Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

**Varve**

A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

**Very stony spot (map symbol)**

A spot where 0.1 to 3.0 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surface of the surrounding soil is covered by less than 0.01 percent stones.

**Water bars**

Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.



**Weathering**

All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

**Well graded**

Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

**Wet spot (map symbol)**

A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit.

**Wilting point (or permanent wilting point)**

The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

**Windthrow**

The uprooting and tipping over of trees by the wind.

November 1, 2019

Texas Commission on Environmental Quality  
Water Quality Assessment Team (MC-150)  
P.O. Box 13087  
Austin, TX 78711-3087

Texas Commission on Environmental Quality  
Compliance Monitoring Section (MC-224)  
P.O. Box 13087  
Austin, TX 78711-3087

Texas Commission on Environmental Quality  
Regional Office (MC-Region 12)  
5425 Polk St, Ste H  
Houston TX 77023-1452

Re: Newly-Constructed Wastewater Pond Liner Certification, Hempstead Yogi, Ltd,  
Special Provision 10, Permit No. WQ0015640001, 34843 Betka Road, Hempstead, TX,

Dear TCEQ Members:

In accordance with Special Provision 10 of the aforementioned Permit, this correspondence serves as the liner certification for a newly-constructed wastewater effluent holding pond at the aforementioned location. The liner system was constructed at the facility in the summer of 2019 by Mustang Extreme Environmental Services (Mustang). A plan view of the pond is provided as Figure 1 in Attachment A.

A high density polyethylene liner system was installed in the pond because the clay soils at the location did not exhibit permeabilities of  $1 \times 10^{-7}$  cm/s. The liner system consists of the following components:

- Primary (top) liner of 40 mil black smooth high density polyethylene liner;
- Geonet 220 for leachate detection and collection;
- Secondary (bottom) liner of 30 mil black smooth high density polyethylene liner; and
- 4" perforated piping and river rock leak detection system.

Mustang's summary of the work and quality assurance testing is provided in Attachment B. Photographs of the completed work are provided in Attachment C.

The following table summarizes how the liner meets the requirements of 30 TAC 217.203:

<b>30 TAC 217.203 Provision</b>	<b>Rule Description</b>	<b>Description of How Pond/Liner Meets the Rule</b>
(a)	Applicability of Section	Applicability of Rule, No Requirement
(b)	Flow Distribution	Influent and Effluent piping is separated by approximately 100'
(c)	Windbreaks and Screening	Operation of facility has piping on side slopes of pond and will not cause spray
(d)(1)	Liner Permeability	Two layers of high density polyethylene (HDPE) liner were used and they exhibit permeabilities of less than $1 \times 10^{-7}$ cm/s
(d)(2)	Liner Placement	The liner extends from the lowest elevation to the top of the berm and provided for two-feet of liner above normal water elevation in the pond
(d)(3)	Reclaimed Water Requirement	Not applicable, the wastewater is not classified as reclaimed water
(e)(1)	Soil Liner Requirements	Not applicable, a HDPE was installed in the pond
(e)(2)	Soil Liner Construction	Not applicable, a HDPE liner was installed in the pond
(e)(3)(A)	Synthetic Membrane Liners Thickness	A 40 mil and a 30 mil liner HDPE were installed in the pond
(e)(3)(B)	Synthetic Membrane Liner Underdrain and Leak Detection	A layer of geogrid was installed between the 40 mil and the 30 mil HDPE liner. The interstitial space formed by the geogrid is hydraulically connected to river rock and perforated pipe in the southwest corner of the pond. A 6-inch diameter pipe completed at the top of the berm from the perforated pipe present in the river rock provides an operator accessible point to check for the presence of water between the 40 mil and the 30 mil HDPE liners.
(e)(3)(C)	Sunlight Resistance	HDPE is recognized as being sunlight resistant
(e)(3)(D)	Soil Compaction	The HDPE liner was installed over native, undisturbed clay soils
(f)(1)	Embankment Width	The top embankment is a minimum of 10-feet wide
(f)(2)	Embankment Slopes	The embankment slopes are 3:1. This slope is suitable because clay soils are structurally sound on 3:1 slopes and the slope faces are protected from water and wave action by the HDPE liner on the inner slope. Finally, vegetation control is not required on the inner slope faces because of the liner's presence. 3:1 slopes can be traversed by equipment on the outer slopes for vegetation control



(f)(3)	Embankment Slopes	The embankment slopes are 3:1.
(f)(4)	Erosion Protection	The inner slope faces are protected from erosion by the liner. The outer slope faces are protected from erosion by vegetation.
(f)(5)	Topsoil	Clay loam type soil is present on the unlined portions of the embankment
(g)	Disinfection	A detention time of 21 days in a plant-free water with full sun exposure will be provided by the pond
(h)	Sampling Point Significance	The size of the upstream treatment units is not based on the design of the pond.
(i)	Stormwater Drainage	Raised berms decrease the likelihood of stormwater entering into the pond
(j)	Piping	Not applicable, the pond is not a natural system.
(k)(1)	Freeboard	The pond area is less than 20 acres and provides for 2.0-feet of freeboard above the normal operating level. The normal operating level is 3-feet of water depth for one month of flow at 15,000 gpd. The pond depth is 8-feet. Accordingly, 5-feet of free board is provided.
(k)(2)	Freeboard	Not applicable. The pond area is less than 20 acres.
(k)(3)	Constructed Wetland Cell Freeboard	Not applicable. The pond is not a constructed wetland cell.
(l)	Prohibition of Synthetic Liners for Constructed Wetland	Not applicable. The pond is not a constructed wetland cell.

The following table summarizes how the liner meets the requirements of 30 TAC 309.13:

<b>30 TAC 309.13 Provision</b>	<b>Rule Description</b>	<b>Description of How Pond/Liner Meets the Rule</b>
(a)	100-year flood plain	100-year flood plains are not present on the Property. See Attachment D
(b)	Wetlands	Wetlands are not present on the Property. See Attachment E
(c)	Public Water Supply Well Setback	The effluent pond is at least 500-feet from the public water supply well on the Property as shown on Figure 2, Attachment A.
(c)(1)	Private Water Supply Well Setback	The irrigated area is greater than 150-feet from private water supply wells because the irrigated area is set back 150-feet from all property lines and there are no wells in the onsite buffer areas.
(c)(2)	Public Water Supply Tank Setback	The effluent pond is approximately 500-feet from the public water supply tanks as shown on Figure 2, Attachment A.

(c)(3)	Public Water Supply Well Setback	The effluent pond and irrigation area are at least 500-feet from the public water supply well on the Property as shown on Figure 2, Attachment A.
(c)(4)	Public Water Supply Well Setback	The effluent pump station is greater than 300-feet from the public water supply well as shown on Figure 2, Attachment A.
(c)(5)	Surface Water Treatment Plant Setback	Not applicable, there are no surface water treatment plants in the area.
(d)	Recharge Zone Requirements	A 40 mil and a 30 mil HDPE liner were installed for the project.
(e)(1)	Odor Control	The effluent pond does not have zones of anaerobic activity and the effluent pond and the irrigation areas are greater than 150-feet from the property lines as shown on Figure 2, Attachment A.
(e)(2)	Odor Control	This provision is not applicable because treated water will be present in the pond.
(e)(3)	Residential Structures in Buffer Zone	Not Applicable. The buffer zone is owned by the Permittee.
(f)	Buffer Zone Variances	Not Applicable. The wastewater treatment units meet the buffer zone requirements.
(g)	Approved Alternatives	Not Applicable. The Permittee has not requested alternatives.
(h)	Permit Renewal for plans and specifications approved prior to March 1, 1990	Not Applicable. New facility constructed in 2019
(i)	Permit Renewal for plans and specifications approved prior to March 1, 1990	Not Applicable. New facility constructed in 2019

We appreciate the opportunity to submit this certification report to the Texas Commission on Environmental Quality. Please contact me at (979) 732-6997 or by electronic mail at [weishuhnengineering@gmail.com](mailto:weishuhnengineering@gmail.com) with questions or comments.

*Certification*

*I certify that the effluent pond detailed in this submittal was constructed to comply with the standards established in 30 TAC 217.203 and 30 TAC 309.13.*

*James W. Weishuhn*  
*11-1-19*  
*F-66*

James W. Weishuhn, P.E.



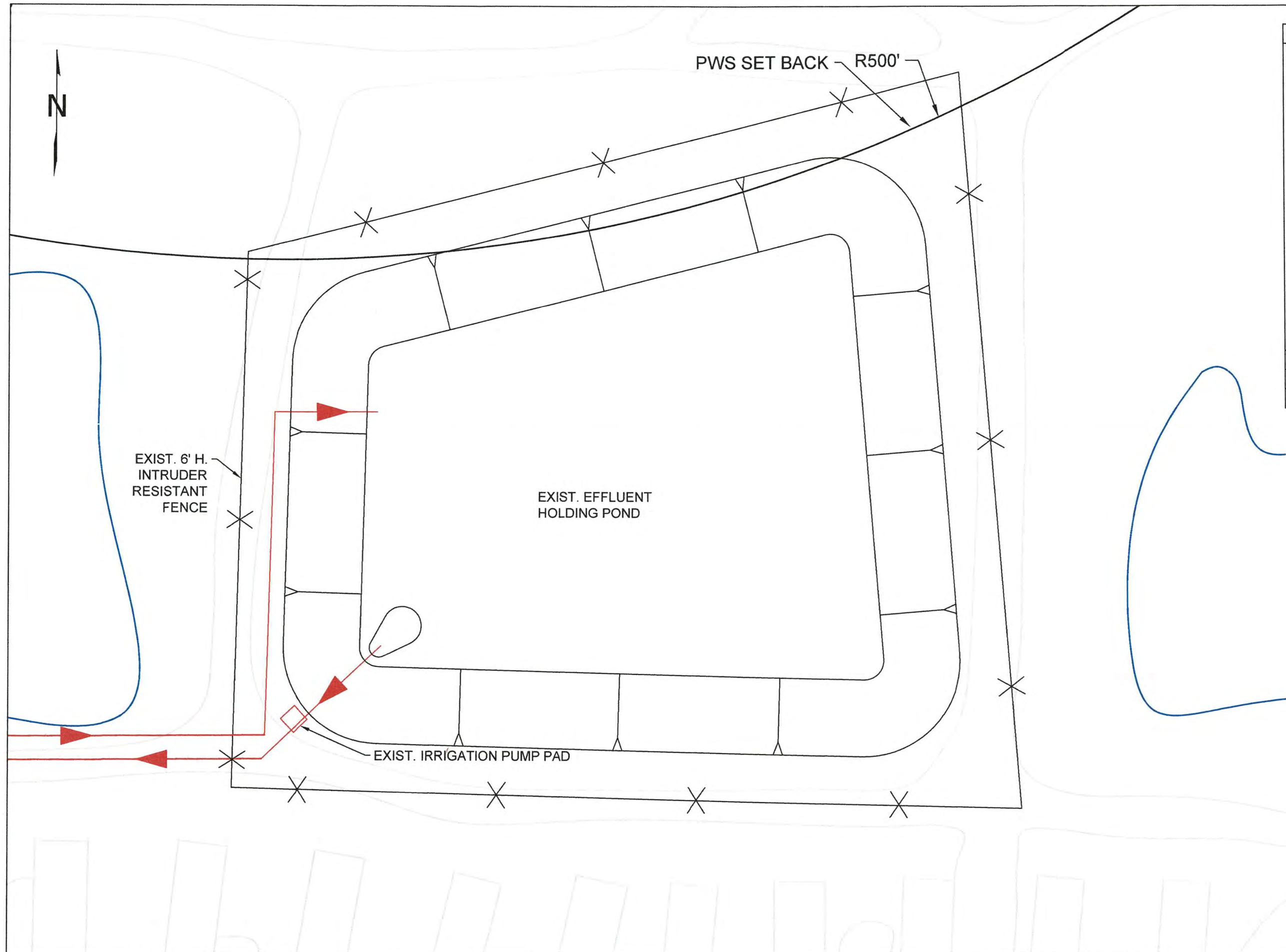
Attachments

cc: Bruce Bryant, Hempstead Yogi, Ltd.

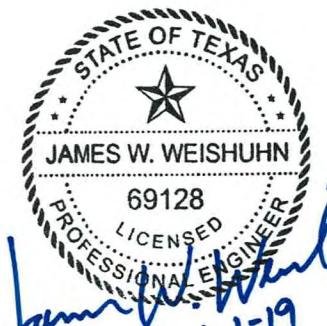


## Attachment A

### Figures



General Notes		
NOTES:		
1.		
No.	Revision/Issue	Date



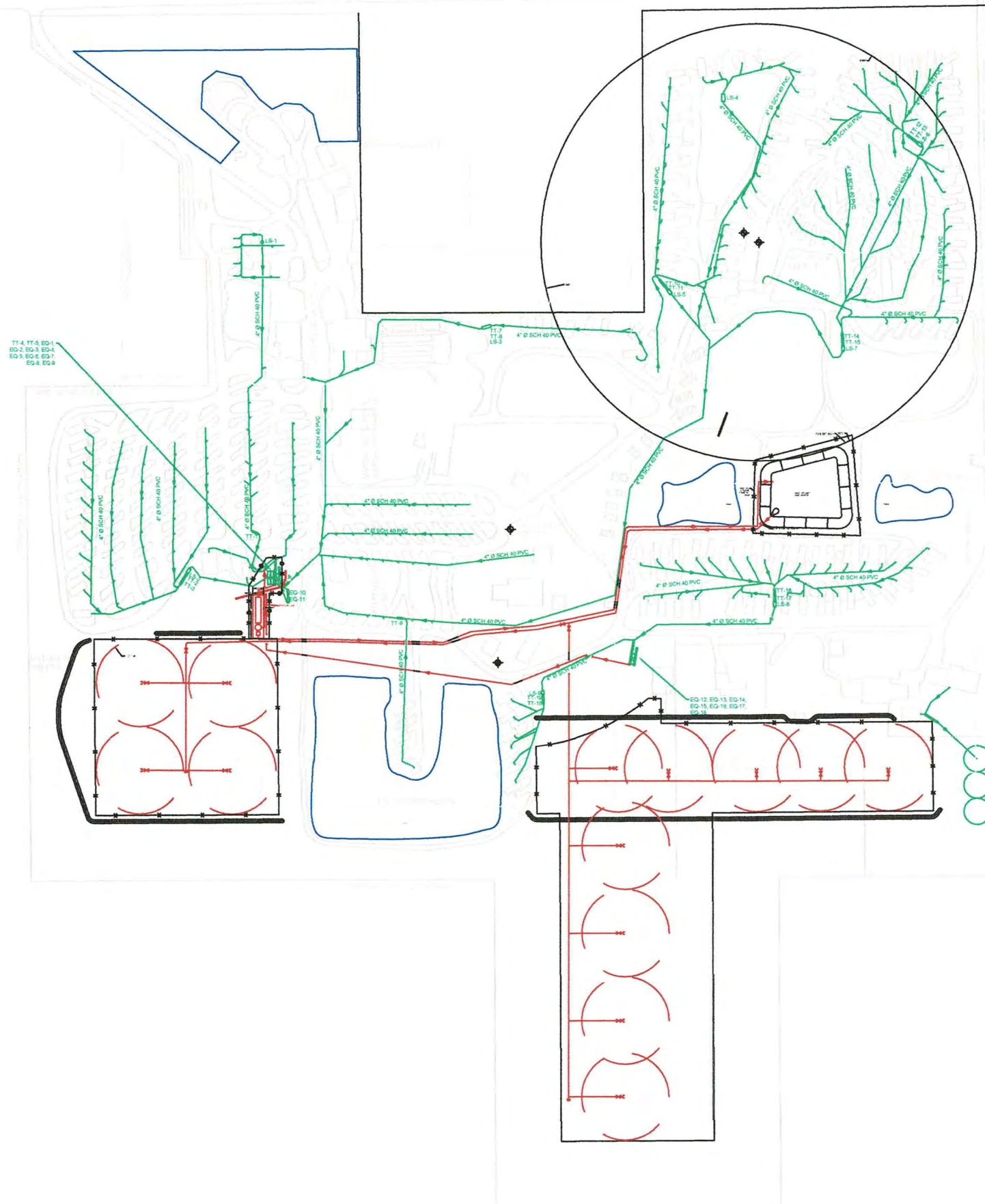
WEISHUHN ENGINEERING, INC  
 425 SPRING STREET  
 COLUMBUS, TEXAS 78934  
 (979) 732-6997  
 R.F. #66

FIGURE 1  
 ENLARGED SITE PLAN

HEMPSTEAD YOGI, LTD  
 LONE STAR JELLYSTONE  
 PARK CAMP RESORT  
 34843 BETKA ROAD  
 WALLER, TX 77484  
 WALLER COUNTY

DESIGNED BY	JWW	Sheet  1
DRAWN BY	JTM	
Date	11/1/2019	
Scale	1"=30'	





# General Notes

## NOTES:

1.

No.	Revision/Issue	Date



WEISHUHN ENGINEERING, INC  
425 SPRING STREET  
COLUMBUS, TEXAS 78934  
(979) 732-6997  
R.F. #66

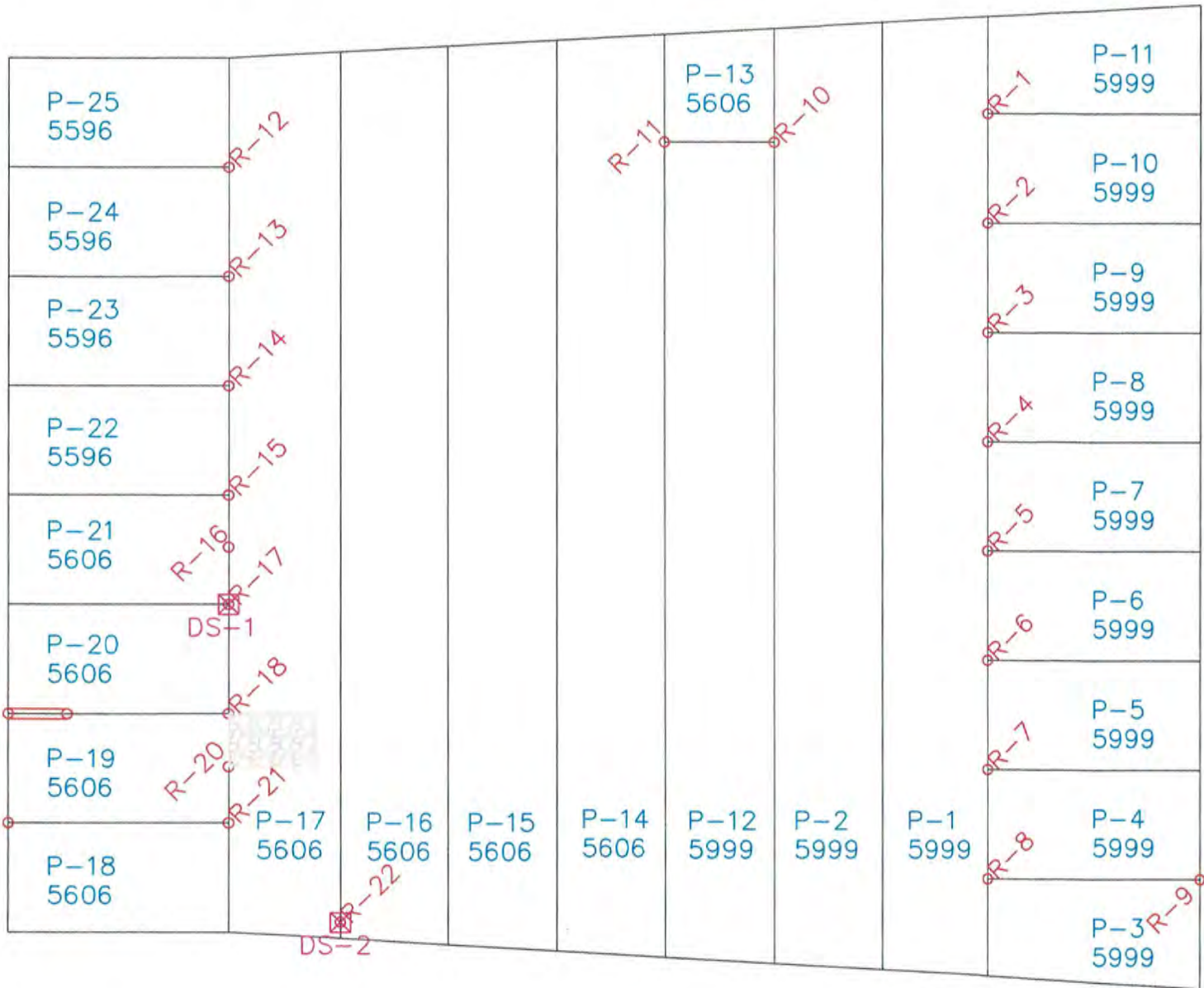
FIGURE 2  
OVERALL SITE PLAN

HEMPSTEAD YOGI, LTD  
LONE STAR JELLYSTONE  
PARK CAMP RESORT  
34843 BETKA ROAD  
WALLER, TX 77484  
WALLER COUNTY

DESIGNED BY	JWW	Sheet  2
DRAWN BY	JTM	
Date	11/1/2019	
Scale	1"=300'	

Attachment B

Contractor's Summary of Work and Quality Control Testing



©COPYRIGHT MUSTANG EXTREME ENVIRONMENTAL SERVICES

W

N

E

S

— LINER SEAMS

SUMP RUB SHEET

VENT

R-108

○ REPAIR

DP-18

☒ DESTRUCT

P-97

5305

PANEL #

ROLL #

EXTRUSION

**MUSTANG**  
extreme  
environmental services

5049 EDWARDS RANCH RD STE 200  
FORT WORTH TX 76109

PHONE: 817-441-1235  
WWW.MUSTANGEXTREME.COM

CUSTOMER: LONESTAR  
YOGI  
40 MIL BLACK SMOOTH HDPE

REVISION: 0  
DATE: JUL 2019  
NOT TO SCALE  
DRAWN BY: TR

SHEET NO.  
2 OF 2

**PRIMARY LINER LAYOUT**





## PRE-WELD QUALIFICATION TESTING

**PROJECT:** Lonestar Yogi  
**MATERIAL TYPE:** 40 Mil Black Smooth HDPE  
**QC TECHNICIAN:** Marvin  
**LAYER:** Primary

DATE	TIME	MACHINE				PEEL	PEEL	PEEL	SHEAR		COMMENTS
		MACH #	TECH	TEMP	PRE-HEAT or SPEED						
7/19/19	0739	4900	RC	860	6.0	71 / 76	71 / 76	74 / 70	71	74	
7/19/19	0743	10	RB	860	6.0	74 / 74	77 / 72	70 / 72	75	73	
7/19/19	0919	10	RB	422	150	64 / EXT	60 / EXT	64 / EXT	64	67	
7/19/19	1030	395	OV	500	150	61 / EXT	60 / EXT	60 / EXT	62	60	





## DESTRUCTIVE SEAM TESTING

**PROJECT:** Lonestar Yogi  
**MATERIAL TYPE:** 40 Mil Black Smooth HDPE  
**QC TECHNICIAN:** Marvin  
**LAYER:** Primary

SAMPLE #	SEAM				PEEL	PEEL	PEEL	SHEAR		COMMENTS
	DATE	SEAM #	MACH #	TECH						
1	7/19/19	20-21	10	RB	60 / 60	63 / 62	60 / 61	63	62	R17
2	7/19/19	16-17	4900	RC	61 / 60	60 / 58	59 / 60	61	61	R22



## INSTALLATION SUMMARY

**PROJECT:** Lonestar Yogi  
**MATERIAL TYPE:** 40 Mil Black Smooth HDPE  
**QC TECHNICIAN:** Marvin  
**LAYER:** Primary

DATE	PANEL #	ROLL #	IN-PLACE		PAY AREA
			LENGTH	WIDTH	
7/19/19	P- 1	5999	198	22.5	4455
7/19/19	P- 2	5999	197	22.5	4433
7/19/19	P- 3	5999	37	22.5	833
7/19/19	P- 4	5999	42	22.5	945
7/19/19	P- 5	5999	42	22.5	945
7/19/19	P- 6	5999	42	22.5	945
7/19/19	P- 7	5999	42	22.5	945
7/19/19	P- 8	5999	42	22.5	945
7/19/19	P- 9	5999	41	22.5	923
7/19/19	P- 10	5999	42	22.5	945
7/19/19	P- 11	5999	32	22.5	720
7/19/19	P- 12	5999	159	22.5	3578
7/19/19	P- 13	5606	35	22.5	788
7/19/19	P- 14	5606	194	22.5	4365
7/19/19	P- 15	5606	191	22.5	4298
7/19/19	P- 16	5606	185	22.5	4163
7/19/19	P- 17	5606	178	22.5	4005
7/19/19	P- 18	5606	26	22.5	585
7/19/19	P- 19	5606	36	22.5	810
7/19/19	P- 20	5606	39	22.5	878
7/19/19	P- 21	5606	39	22.5	878
7/19/19	P- 22	5596	39	22.5	878
7/19/19	P- 23	5596	38	22.5	855
7/19/19	P- 24	5596	32	22.5	720
7/19/19	P- 25	5596	13	7.0	90

TOTAL SQ. FT. 43,920



## REPAIR REPORT

<b>PROJECT:</b>	Lonestar Yogi
<b>MATERIAL TYPE:</b>	40 Mil Black Smooth HDPE
<b>QC TECHNICIAN:</b>	Marvin
<b>LAYER:</b>	Primary

REPAIR						VACUUM TESTING	
#	PANEL(S) or SEAMS(S)	DATE	MACH #	TECH	LOCATION	TECH	DATE
1	1-10-11	7/19/19	10	RB	T	MC	7/19/19
2	1-9-10	7/19/19	10	RB	T	MC	7/19/19
3	1-8-9	7/19/19	10	RB	T	UV	7/19/19
4	1-7-8	7/19/19	10	RB	T	UV	7/19/19
5	1-6-7	7/19/19	10	RB	T	MC	7/19/19
6	1-5-6	7/19/19	10	RB	T	MC	7/19/19
7	1-4-5	7/19/19	10	RB	T	UV	7/19/19
8	1-3-4	7/19/19	10	RB	T	UV	7/19/19
9	3-4	7/19/19	10	RB	EAT	MC	7/19/19
10	2-12-13	7/19/19	10	RB	T	MC	7/19/19
11	12-13-14	7/19/19	10	RB	T	UV	7/19/19
12	17-24-25	7/19/19	395	OV	T	MC	7/19/19
13	17-23-24	7/19/19	395	OV	T	MC	7/19/19
14	17-22-23	7/19/19	395	OV	T	UV	7/19/19
15	17-21-22	7/19/19	395	OV	T	UV	7/19/19
16	17-21	7/19/19	395	OV	10'N OF R17 MD	MC	7/19/19
17	17-20-21	7/19/19	395	OV	T / DS-1	MC	7/19/19
18	17-19-20	7/19/19	395	OV	T	UV	7/19/19
19	19-20	7/19/19	395	OV	WAT	UV	7/19/19
20	17-19	7/19/19	395	OV	10'S OF R18 MD	MC	7/19/19
21	17-18-19	7/19/19	395	OV	T	MC	7/19/19
22	16-17	7/19/19	395	OV	10'N OF SAT / DS-2	UV	7/19/19
23	18-19	7/19/19	395	OV	WAT / PIPE BOOT 6'- 50' FT	UV	7/19/19





## SEAM RECORDING & AIR TEST








**PROJECT:** Lonestar Yogi  
**MATERIAL TYPE:** 40 Mil Black Smooth HDPE  
**QC TECHNICIAN:** Marvin  
**LAYER:** Primary

SEAM				TEST		PRESSURE		LOCATION
SEAM #	DATE	MACH #	TECH	DATE	TIME	MAX	MIN	
1-2	7/19/19	4900	RC	7/19/19	0927	30	29	
2-12	7/19/19	4900	RC	7/19/19	0934	30	30	
2-13	7/19/19	4900	RC	7/19/19	0934	30	30	
12-14	7/19/19	10	RB	7/19/19	0942	30	30	
13-14	7/19/19	10	RB	7/19/19	0942	30	30	
14-15	7/19/19	4900	RC	7/19/19	1000	30	30	
15-16	7/19/19	10	RB	7/19/19	1007	30	29	
16-17	7/19/19	4900	RC	7/19/19	1014	30	30	SAT -R22
16-17	7/19/19	4900	RC	7/19/19	1014	30	30	R22-NAT
12-13	7/19/19	10	RB	7/19/19	0934	30	30	
1-3	7/19/19	10	RB	7/19/19	0825	30	30	
1-4	7/19/19	10	RB	7/19/19	0832	30	30	
1-5	7/19/19	10	RB	7/19/19	0839	30	30	
1-6	7/19/19	10	RB	7/19/19	0856	30	30	
1-7	7/19/19	10	RB	7/19/19	0903	30	30	
1-8	7/19/19	10	RB	7/19/19	0910	30	30	
1-9	7/19/19	10	RB	7/19/19	0917	30	30	
1-10	7/19/19	10	RB	7/19/19	0919	30	30	
1-11	7/19/19	10	RB	7/19/19	0919	30	30	
3-4	7/19/19	10	RB	7/19/19	0925	30	30	
4-5	7/19/19	4900	RC	7/19/19	0832	30	28	
5-6	7/19/19	10	RB	7/19/19	0839	30	29	
6-7	7/19/19	4900	RC	7/19/19	0856	30	29	
7-8	7/19/19	10	RB	7/19/19	0903	30	30	
8-9	7/19/19	4900	RC	7/19/19	0910	30	27	
9-10	7/19/19	10	RB	7/19/19	0917	30	29	
10-11	7/19/19	4900	RC	7/19/19	0919	30	30	
18-19	7/19/19	10	RB	7/19/19	1111	30	30	
19-20	7/19/19	4900	RC	7/19/19	1103	30	29	
20-21	7/19/19	10	RB	7/19/19	1053	30	30	
21-22	7/19/19	4900	RC	7/19/19	1049	30	29	
22-23	7/19/19	4900	RC	7/19/19	1043	30	30	
23-24	7/19/19	4900	RC	7/19/19	1039	30	30	
24-25	7/19/19	4900	RC	7/19/19	1037	30	29	
17-18	7/19/19	4900	RC	7/19/19	1111	30	30	
17-19	7/19/19	4900	RC	7/19/19	1103	30	30	R15-R16
17-19	7/19/19	4900	RC	7/19/19	1103	30	30	R16-R17
17-20	7/19/19	4900	RC	7/19/19	1053	30	30	
17-21	7/19/19	4900	RC	7/19/19	1049	30	30	R18-R20
17-21	7/19/19	4900	RC	7/19/19	1049	30	30	R20-R21
17-22	7/19/19	4900	RC	7/19/19	1043	30	30	
17-23	7/19/19	4900	RC	7/19/19	1039	30	30	
17-24	7/19/19	4900	RC	7/19/19	1037	30	30	
17-25	7/19/19	4900	RC	7/19/19	1039	30	30	

N  
↑

S-15 6850	OR-1							OR-15	S-24 6850
S-14 6850	OR-2							OR-14	S-23 6850
S-13 6850	OR-3							OR-13	S-22 6850
S-12 6850	OR-4							OR-12	S-21 6850
S-11 6850	OR-5							OR-11	S-20 6850
S-10 6950	OR-6							OR-10	S-19 6850
S-9 6989	OR-7							OR-9	S-18 6850
S-8 6989	S-7 6850	S-6 6989	S-5 6989	S-4 6989	S-3 6989	S-2 6989	S-1 6989	OR-8	S-17 6850
									S-16 6989

©COPYRIGHT MUSTANG EXTREME ENVIRONMENTAL SERVICES

	— LINER SEAMS	 VENT	 R-108 REPAIR  DS-18 DESTRUCT	P-97 5305	PANEL # ROLL # EXTRUSION
	 SUMP  RUB SHEET	<h2 style="text-align: center;">SECONDARY LINER LAYOUT</h2>			
SHEET NO. 1 OF 2		5049 EDWARDS RANCH RD STE 200 FORT WORTH TX 76109 PHONE: 817-441-1235 WWW.MUSTANGEXTREME.COM	CUSTOMER: LONGSTAR YOGI 30 MIL BLACK SMOOTH HDPE	REVISION: 0 DATE: JUL 2019 NOT TO SCALE DRAWN BY: TR	





## PRE-WELD QUALIFICATION TESTING

**PROJECT:** Lonestar Yogi  
**MATERIAL TYPE:** 30 Mil Black Smooth HDPE  
**QC TECHNICIAN:** Marvin  
**LAYER:** Secondary

DATE	TIME	MACHINE				PEEL	PEEL	PEEL	SHEAR		COMMENTS
		MACH #	TECH	TEMP	PRE-HEAT or SPEED						
7/18/19	0737	2	RC	850	6.0	47 / 45	51 / 48	52 / 47	52	52	
7/18/19	0747	4901	RB	800	8.6	46 / 52	45 / 51	45 / 54	51	50	
7/18/19	1035	10	OV	430	155	54 / EXT	60 / EXT	61 / EXT	67	63	
7/18/19	1030	10	RB	422	150	63 / EXT	61 / EXT	64 / EXT	62	59	





## INSTALLATION SUMMARY

**PROJECT:** Lonestar Yogi  
**MATERIAL TYPE:** 30 Mil Black Smooth HDPE  
**QC TECHNICIAN:** Marvin  
**LAYER:** Secondary

DATE	PANEL #	ROLL #	IN-PLACE		PAY AREA
			LENGTH	WIDTH	
7/18/19	S- 1	6989	197	22.5	4433
7/18/19	S- 2	6989	195	22.5	4388
7/18/19	S- 3	6989	193	22.5	4343
7/18/19	S- 4	6989	191	22.5	4298
7/18/19	S- 5	6989	189	22.5	4253
7/18/19	S- 6	6989	187	22.5	4208
7/18/19	S- 7	6850	185	22.5	4163
7/18/19	S- 8	6989	25	22.5	563
7/18/19	S- 9	6989	38	22.5	855
7/18/19	S- 10	6850	38	22.5	855
7/18/19	S- 11	6850	41	22.5	923
7/18/19	S- 12	6850	41	22.5	923
7/18/19	S- 13	6850	38	22.5	855
7/18/19	S- 14	6850	36	22.5	810
7/18/19	S- 15	6850	20	22.5	450
7/18/19	S- 16	6989	23	22.5	518
7/18/19	S- 17	6850	40	22.5	900
7/18/19	S- 18	6850	40	22.5	900
7/18/19	S- 19	6850	40	22.5	900
7/18/19	S- 20	6850	40	22.5	900
7/18/19	S- 21	6850	40	22.5	900
7/18/19	S- 22	6850	40	22.5	900
7/18/19	S- 23	6850	40	22.5	900
7/18/19	S- 24	6850	35	22.5	788
TOTAL SQ. FT.					43,920



## REPAIR REPORT

**PROJECT:** Lonestar Yogi  
**MATERIAL TYPE:** 30 Mil Black Smooth HDPE  
**QC TECHNICIAN:** Marvin  
**LAYER:** Secondary

REPAIR							VACUUM TESTING	
#	PANEL(S) or SEAMS(S)	DATE	MACH #	TECH	LOCATION		TECH	DATE
1	7-14-15	7/18/19	10	RB	T		UV	7/18/19
2	7-13-14	7/18/19	10	RB	T		UV	7/18/19
3	7-12-13	7/18/19	10	RB	T		UV	7/18/19
4	7-11-12	7/18/19	10	RB	T		UV	7/18/19
5	7-10-11	7/18/19	10	RB	T		UV	7/18/19
6	7-9-10	7/18/19	10	RB	T		UV	7/18/19
7	7-8-9	7/18/19	10	RB	T		UV	7/18/19
8	1-16-17	7/18/19	10	OV	T		UV	7/18/19
9	1-17-18	7/18/19	10	OV	T		UV	7/18/19
10	1-18-19	7/18/19	10	OV	T		UV	7/18/19
11	1-19-20	7/18/19	10	OV	T		UV	7/18/19
12	1-20-21	7/18/19	10	OV	T		UV	7/18/19
13	1-21-22	7/18/19	10	OV	T		UV	7/18/19
14	1-22-23	7/18/19	10	OV	T		UV	7/18/19
15	1-23-24	7/18/19	10	OV	T		UV	7/18/19



## SEAM RECORDING & AIR TEST

**PROJECT:** Lonestar Yogi  
**MATERIAL TYPE:** 30 Mil Black Smooth HDPE  
**QC TECHNICIAN:** Marvin  
**LAYER:** Secondary

SEAM				TEST		PRESSURE		LOCATION
SEAM #	DATE	MACH #	TECH	DATE	TIME	MAX	MIN	
1-2	7/18/19	2	RC	7/18/19	0805	28	28	
2-3	7/18/19	4901	RB	7/18/19	0809	28	28	
3-4	7/18/19	2	RC	7/18/19	0821	28	27	
4-5	7/18/19	4901	RB	7/18/19	0843	28	28	
5-6	7/18/19	2	RC	7/18/19	0847	28	28	
6-7	7/18/19	2	RC	7/18/19	0919	28	27	
7-8	7/18/19	4901	RB	7/18/19	0920	28	27	
7-9	7/18/19	4901	RB	7/18/19	0928	28	28	
7-10	7/18/19	4901	RB	7/18/19	0925	28	28	
7-11	7/18/19	4901	RB	7/18/19	0928	28	28	
7-12	7/18/19	4901	RB	7/18/19	0953	28	28	
7-13	7/18/19	4901	RB	7/18/19	0937	28	28	
7-14	7/18/19	4901	RB	7/18/19	0941	28	28	
7-15	7/18/19	4901	RB	7/18/19	0950	28	27	
8-9	7/18/19	2	RC	7/18/19	0920	28	27	
9-10	7/18/19	4901	RB	7/18/19	0928	28	27	
10-11	7/18/19	4901	RB	7/18/19	0925	28	27	
11-12	7/18/19	2	RC	7/18/19	0928	28	27	
12-13	7/18/19	4901	RB	7/18/19	0953	28	27	
13-14	7/18/19	4901	RB	7/18/19	0937	28	28	
14-15	7/18/19	2	RC	7/18/19	0941	28	28	
1-16	7/18/19	2	RC	7/18/19	1058	28	28	
1-17	7/18/19	2	RC	7/18/19	1055	28	27	
1-18	7/18/19	2	RC	7/18/19	1053	28	28	
1-19	7/18/19	2	RC	7/18/19	1039	28	28	
1-20	7/18/19	2	RC	7/18/19	1025	28	27	
1-21	7/18/19	2	RC	7/18/19	1021	28	27	
1-22	7/18/19	2	RC	7/18/19	1017	28	27	
1-23	7/18/19	2	RC	7/18/19	1012	28	28	
1-24	7/18/19	2	RC	7/18/19	1008	28	28	
16-17	7/18/19	2	RC	7/18/19	1058	28	27	
17-18	7/18/19	2	RC	7/18/19	1055	28	27	
18-19	7/18/19	2	RC	7/18/19	1053	28	28	
19-20	7/18/19	2	RC	7/18/19	1039	28	28	
20-21	7/18/19	2	RC	7/18/19	1025	28	28	
21-22	7/18/19	2	RC	7/18/19	1021	28	27	
22-23	7/18/19	2	RC	7/18/19	1017	28	27	
23-24	7/18/19	2	RC	7/18/19	1012	28	28	





# Quote

## #200657

5/30/2019

Lonestar Yogi Septic Project 3 layer

**Job Site Address**  
Lonestar Yogi  
Waller TX 77484

**Ordered By**  
Bruce Bryant

**Exp. Close**  
6/18/2019

**Est. Project Start Date**  
6/1/2019

**Sales Rep**  
Dave Ferris

## Item Details:

Quantity	Units	Item	Rate	Amount
40,000	Sq. Ft.	<b>10030000 Liner 30mil HDSmooth Black Nominal</b> Deliver & Supply Liner 30mil HDSmooth Black Nominal	\$0.1656	\$6,624.00
40,000	Sq. Ft.	<b>9045-labor-Liner Labor - Liner</b> Labor to install Liner	\$0.13	\$5,200.00
40,000	Sq. Ft.	<b>40200009 GeoNet 200mil(220) Smooth Black</b> Deliver & Supply GeoNet 200mil(220) Smooth Black	\$0.189	\$7,560.00
40,000	Sq. Ft.	<b>9045-labor-TNC Labor - TNC</b> Labor to install Geonet	\$0.12	\$4,800.00
40,000	Sq. Ft.	<b>10040000 Liner 40mil HDSmooth Black Nominal</b> Deliver & Supply Liner 40mil HDSmooth Black Nominal	\$0.2325	\$9,300.00
40,000	Sq. Ft.	<b>9045-labor-Liner Labor - Liner</b> Labor to install Liner	\$0.13	\$5,200.00
1,400	LF	<b>9044-services-Anchor Trench Anchor Trench</b> Anchor Trench Dug Per Linear Foot	\$2.50	\$3,500.00
1	Each	<b>9044-services-Leak Detection System Leak Detection System (6" Piping, River Rock and Geotextile)</b> Leak Detection. Includes 4" HDPE perforated pipe, drain rock.	\$2,700.00	\$2,700.00
			<b>Subtotal</b>	\$44,884.00
			<b>Tax (8.25%)</b>	\$0.00
			<b>Total</b>	\$44,884.00



200657

Attachment C

Photographs





LEAK  
DETECTION  
SUMP

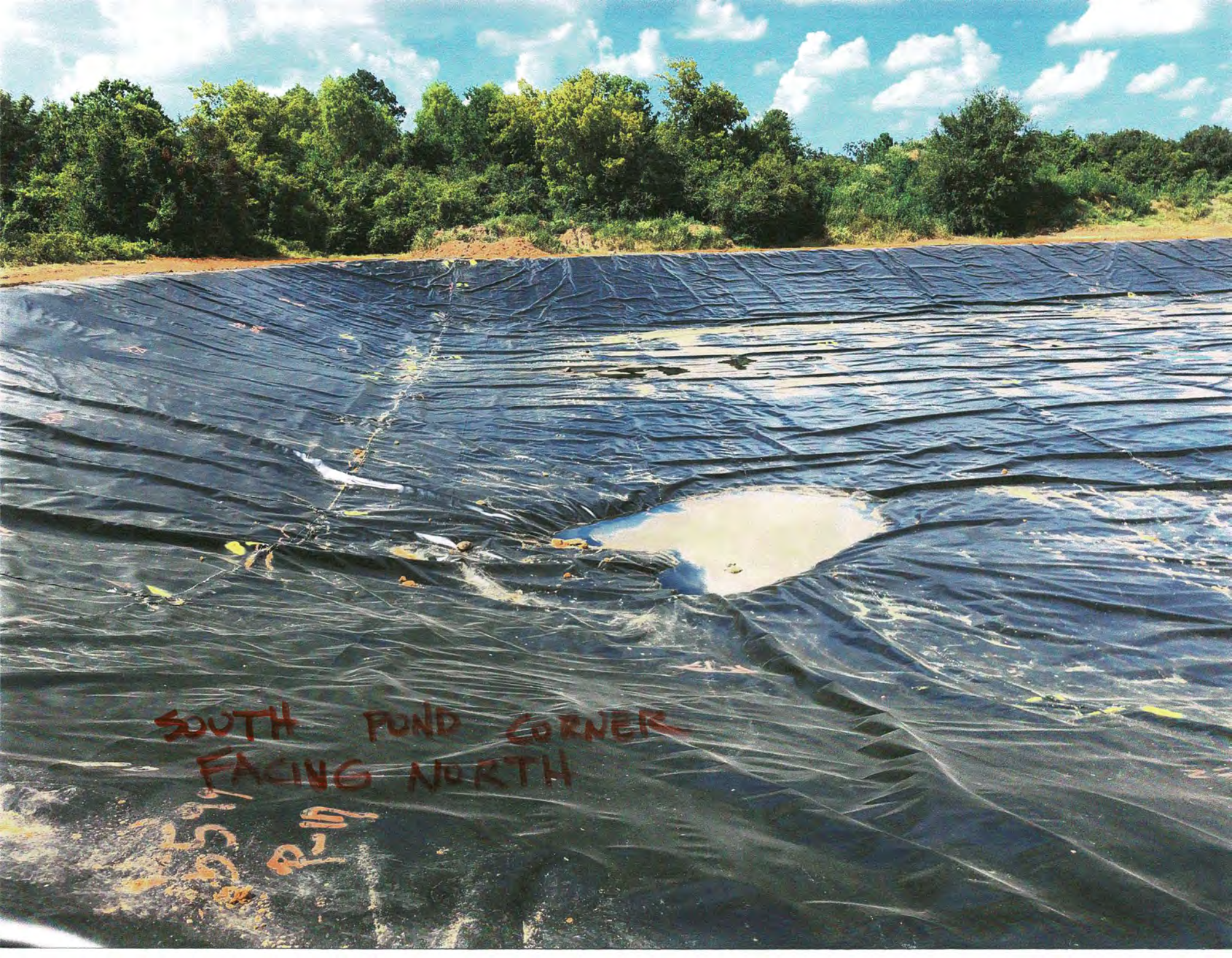
SOUTHWEST POND CORNER  
FACING NORTHEAST





SOUTHWEST POND CORNER  
FACING NORTHEAST





SOUTH POND CORNER  
FACING NORTH

5/21/01



# Annual Cropping Plan

Existing Vegetation (Common Bermuda grass) utilized for hay production is grown on the 14.6 acres of the Land Application Area. The entire 14.6 acres of soil is classified as Wockley Fine Sandy Loam (WOB). See Attached NRCS Web Soil Survey.

The growing season is from April until October.

The irrigation area will be overseeded with Gulf Rye in September to provide for a winter grass capable of providing a water need during November thru February.

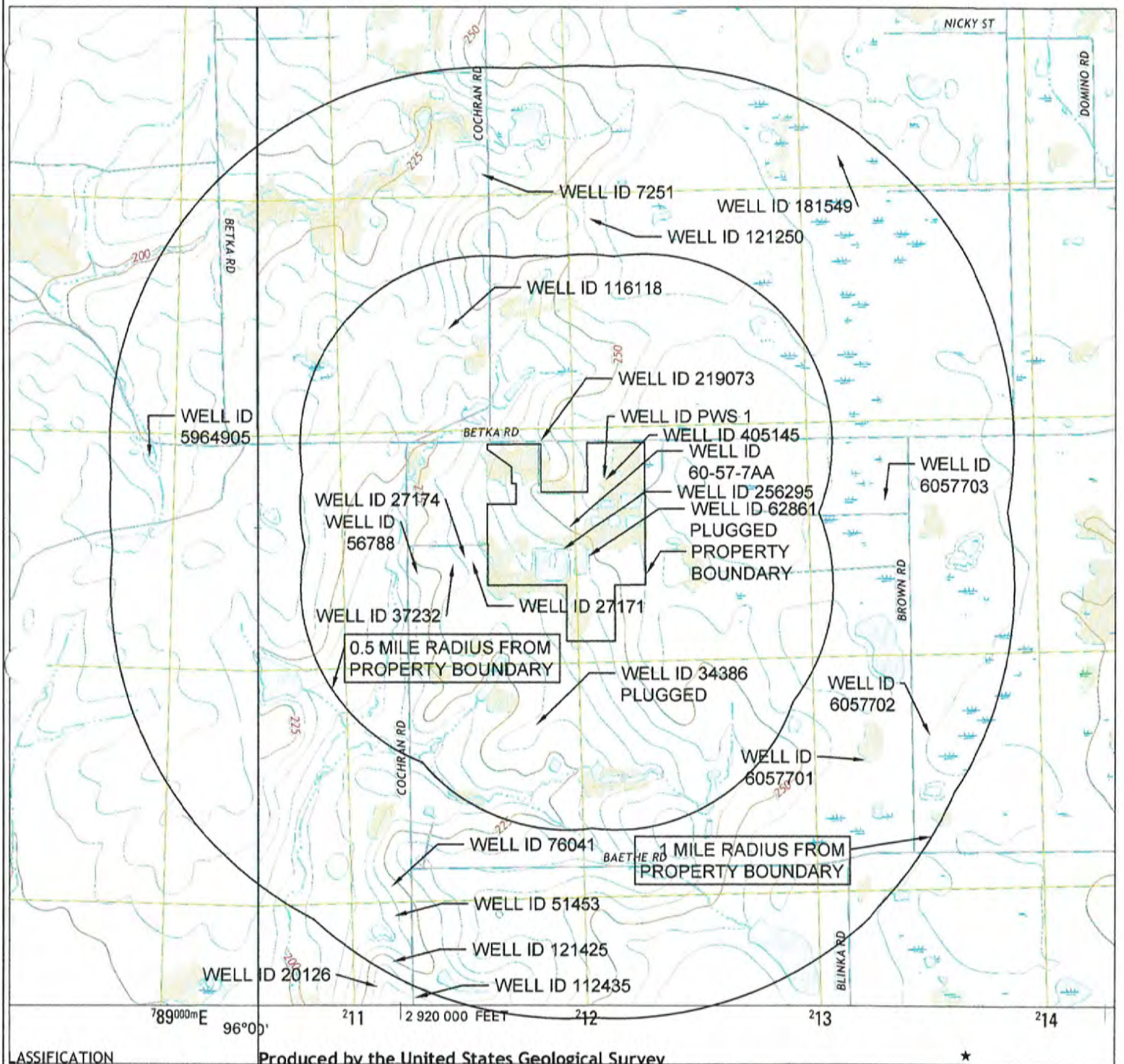
Grass will be harvested when it achieves a height of approximately 12 inches.

The grasses are harvested by cutting, drying, raking, and baling. The harvest goal is two to three cuts per year for a yield of approximately 30 tons of hay per year.

Nitrogen loading requirements are 80 pounds per acre per year. Texas A&M AgriLife Extension indicates that an additional 100 lb/acre may be applied after each harvest. Sufficient Nitrogen is present in the effluent. SUN NG JELLY-LONE STAR TX RV LLC will not supplement additional nitrogen or water to the land application area.

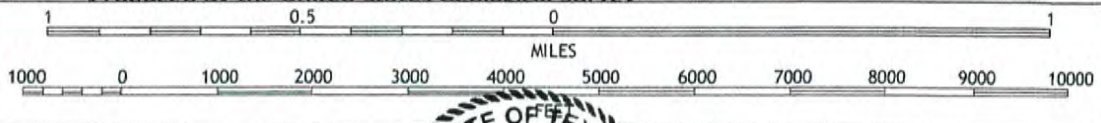
The grasses present are salt tolerant and exhibit tolerances to 10 umhos/cm.

SUN NG JELLY-LONE STAR TX RV LLC does not perform any supplemental watering in the proposed treated wastewater application area.



CLASSIFICATION

Produced by the United States Geological Survey



1" = 28' 26 MILS  
 GN 3' 2" 54 MILS

ID AND 2016 MAGNETIC NORTH  
 AT CENTER OF SHEET

U.S. National Grid  
 100,000-m Square ID  
 TP  
 Grid Zone Designation  
 15R



*James W. Weishuhn*  
 10-18-19

ATTACHMENT Q  
 USGS WELL LOCATION MAP  
 HEMPSTEAD YOGI, LTD.  
 TLAP MAJOR AMENDMENT APPLICATION  
 WALLER COUNTY

Weishuhn Engineering Inc.  
 425 Spring St. PO BOX 358  
 Columbus, Texas 78934  
 (979) 732-6997  
 F-66

AS SHOWN

DESIGNED BY: JWW

DRAWN BY: JTM



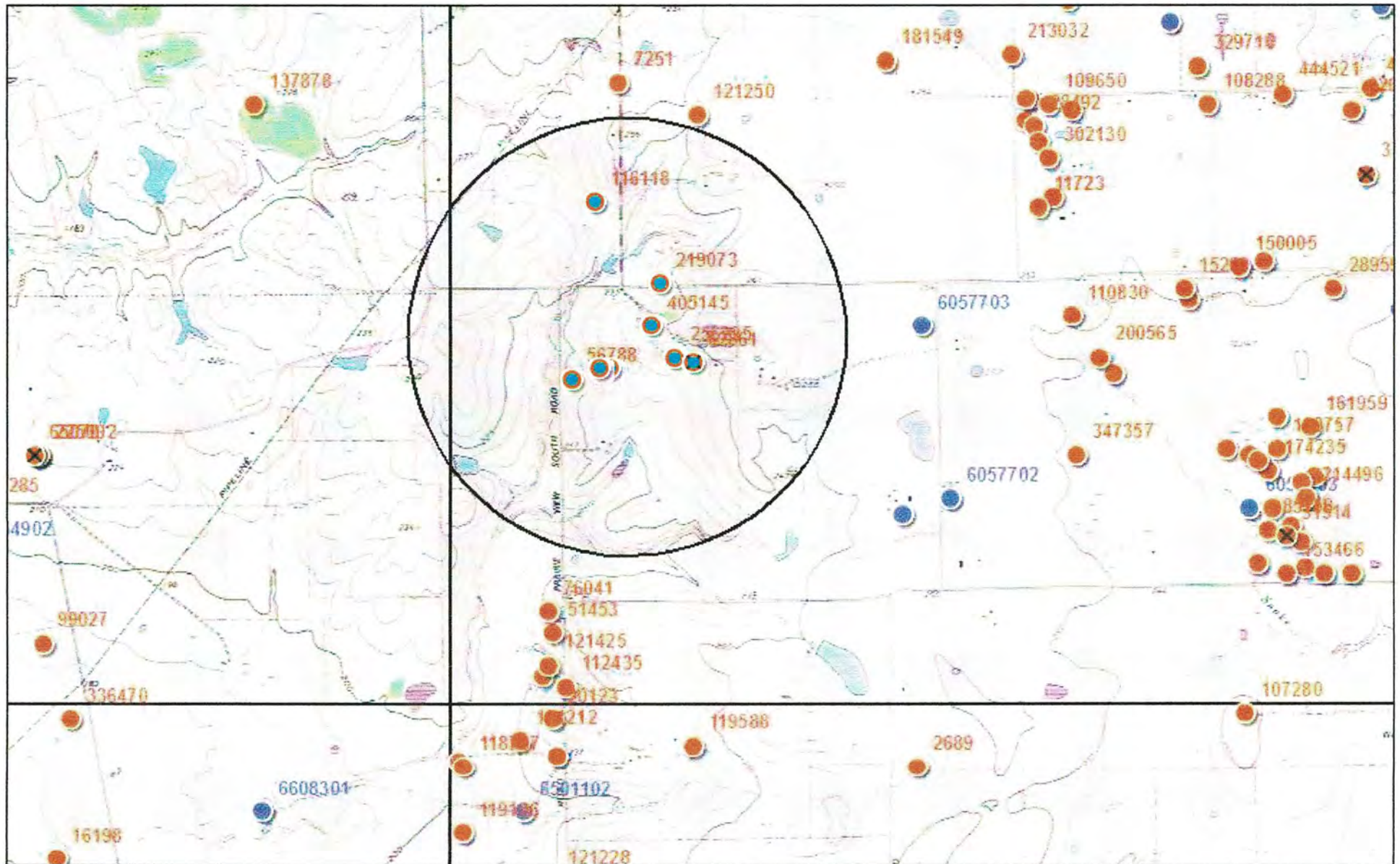
WATER WELL INFORMATION  
Wells with 0.5 mile  
HEMPSTEAD YOGI LTD  
JELLYSTONE PARK CAMP RESORT

Well Report Tracking No.	Well Use/ Producing	Well Type	Best Mgmt Practice	Well Owner	Well Street	Zip Code	Latitude (DD)	Longitude (DD)	Date of Well Completion	Borehole Depth (ft.)	Depth to Water Well Report
27171	Domestic/Y	Cased	Buffer Zone	Cory Johnson	34416 Glenman	77484	30.017222	-95.990556	1-Sep-03	247	96
27174	Domestic/Y	Cased	Buffer Zone	Terry Baggett	Rice Rd.	77484	30.017222	-95.990556	17-Aug-03	240	71
37232	Domestic/Y	Cased	Buffer Zone	John Schulens	34501 Glenmore	77484	30.017222	-95.991111	9-May-04	245	85
56788	Domestic/Y	Cased	Buffer Zone	Richard Walther	16710 Cochran Rd.	77484	30.016667	-95.992778	14-Apr-05	245	84
116118	Domestic/Y	Cased	Buffer Zone	Donald Andrew	16311 FM 362	77484	30.025833	-95.991389	27-Aug-00	343	130
219073	Domestic/Y	Cased	Buffer Zone	CYNTHIA HUFFMAN	34815 BETKA RD.	77484	30.021667	-95.9875	7-Jun-10	280	120
256295	Irrigation/Y	Cased	Buffer Zone	Bryant Management	34843 Betka	77484	30.017778	-95.986667	23-Nov-05	500	111
405145	Public Supply/Y	Cased	Buffer Zone	JELLYSTONE PARK	34843 BETKA RD	77484	30.019444	-95.988056	7-Jul-15	361	125
62681	Plugged	Plugged	NA	Bryant Management	34843 BETKA RD	77484	30.0175	-95.985556	3/3/2010	187	NA
PWS 1*	Public Supply/Y	Cased	Buffer Zone	Bryant Management	34843 BETKA RD	77484	30.020214	-95.984653	UNKNOWN	UNKNOWN	UNKNOWN
60-57-7AA	Public Supply/Y	Cased	Buffer Zone	Bryant Management	34843 BETKA RD	77484	30.018372	-95.986318	3/10/1982	325	105
34386	Monitor/N	Plugged	NA	Bettis Corporation	18703 GH Circle	77484	30.011111	-95.987778	9/26/2009	187	NA

\* Unable to locate a State Well Log for this Public Water Supply Well

Highlighted Wells on Located on the Hempstead Yogi Ltd. property

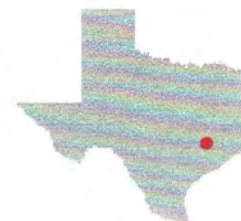
# Hempstead Yogi LTD



**Texas Water  
Development Board**

October 2, 2017

-  Plugging Reports
-  TWDB Groundwater
-  Well Reports



0 0.3 0.6 1.2 mi  
0 0.5 1 2 km

1:36,112

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The data in Water Data Interactive represents the best available information provided by the TWDB and third-party cooperators of the TWDB. The TWDB provides information via this web site as a public service. Neither the State of Texas nor the TWDB assumes any legal liability or responsibility or makes any guarantee or warranties as to the accuracy, completeness or suitability of the information for any particular purpose. The TWDB systematically reviews or removes data discovered to be incorrect. If you find inaccurate information or have questions, please contact WDI-Support@twdb.texas.gov

TEXAS WATER DEVELOPMENT BOARD

## STATE OF TEXAS WELL REPORT for Tracking #27171

Owner:	<b>Cory Johnson</b>	Owner Well #:	<b>No Data</b>
Address:	<b>34416 Glenman Waller, TX 77484</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>34416 Glenman Waller, TX 77484</b>	Latitude:	<b>30° 01' 02" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 26" W</b>
		Elevation:	<b>No Data</b>
Type of Work:	<b>New Well</b>	Proposed Use:	<b>Domestic</b>

Drilling Start Date: **8/27/2003**      Drilling End Date: **9/2/2003**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7</b>	<b>0</b>	<b>247</b>

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>223</b>	<b>26 Cement</b>

Seal Method: **Unknown**

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

Sealed By: **Unknown**

Distance to Septic Field or other  
concentrated contamination (ft.): **70**

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

Method of Verification: **Tape**

Surface Completion: **Alternative Procedure Used**

Water Level:	<b>96 ft. below land surface on 2003-09-02</b>	Measurement Method:	<b>Unknown</b>
--------------	--	---------------------	----------------

Packers: **K 4"x2.5" 216**  
**K 4"x2.5" 217**

Type of Pump:	<b>Submersible</b>	Pump Depth (ft.):	<b>180</b>
---------------	--------------------	-------------------	------------

Well Tests: **Estimated**      **Yield: 30 GPM**



---

Water Quality:	Strata Depth (ft.) <b>No Data</b>	Water Type <b>No Data</b>
----------------	--------------------------------------	------------------------------

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: **Petry Water Well**  
**P.O. Box 798**  
**Waller, TX 77484**

Driller Name: **Paul Hyatt** License Number: **3199**

Comments: **Logged by DT\$.**

---

Lithology:			Casing:			
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA			
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
0	42	Sandy Clay w/ Gravel Layers	4 N	PVC	Csg.	0/223 Sch. 40
42	97	Tan Clay	2.5 N	PVC	Csg.	216/227 Sch. 40
97	108	Fine Brown Sand	2.5 N	PVC	Scr.	227/247 .008
108	120	Coarser Loose Sand				
120	140	Tight Brown Sand				
150	161	Loose Coarse Sand				
161	222	Clay and Shale				
222	247	Medium Gray and Black Sand				

---

**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 #27174

Owner:	<b>Terry Baggett</b>	Owner Well #:	<b>No Data</b>
Address:	<b>P.O. Box 697 Waller, TX 77484</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>Rice Rd. Waller, TX 77484</b>	Latitude:	<b>30° 01' 02" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 26" W</b>
		Elevation:	<b>No Data</b>
Type of Work:	<b>New Well</b>	Proposed Use:	<b>Domestic</b>

Drilling Start Date: **8/12/2003**      Drilling End Date: **8/18/2003**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7</b>	<b>0</b>	<b>240</b>

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Straight Wall**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>203</b>	<b>29 Cement</b>

Seal Method: **Pumped**

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: **None near well**

Surface Completion: **Alternative Procedure Used**

Water Level: **71 ft. below land surface on 2003-08-19**      Measurement Method: **Unknown**

Packers: **K 4"x2.5" 198**  
**K 4"x2.5" 200**

Type of Pump: **Submersible**      Pump Depth (ft.): **180**

Well Tests: **Estimated**      Yield: **50+ GPM**



---

Water Quality:	Strata Depth (ft.) <b>No Data</b>	Water Type <b>No Data</b>
----------------	--------------------------------------	------------------------------

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: **Petry Water Well**  
**P.O. Box 798**  
**Waller, TX 77484**

Driller Name: **Paul Hyatt** License Number: **3199**

Comments: **Logged by DT\$.**

---

Lithology:			Casing:			
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA			
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
0	48	Brown Clay w/ Sand Layers	4 N		PVC Csg.	0/203 Sch. 40
48	78	Tight Brown Sand	2.5 N		PVC Csg.	198/200 Sch. 40
78	102	Brown Clay	2.5 N		PVC Scr.	200/230 .006
102	140	Brown Sand	2.5 N		PVC Csg.	230/240 Sch. 40
140	166	Brown Clay				
166	176	Loose Brown Sand				
176	202	Stiff Clay				
202	230	Medium Tan Sand				
230	240	Same with fine Layers				

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**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 #37232

Owner:	John Schulens	Owner Well #:	30222
Address:	34501 Glenmore Waller, TX 77484	Grid #:	60-57-7
Well Location:	34501 Glenmore Waller, TX 77484	Latitude:	30° 01' 02" N
Well County:	Waller	Longitude:	095° 59' 28" W
		Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Domestic

Drilling Start Date: 5/7/2004      Drilling End Date: 5/10/2004

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	7.25	0	245

Drilling Method: Mud (Hydraulic) Rotary

Borehole Completion: 2 string

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	15	13
	15	225	11

Seal Method: Positive Displacement

Distance to Property Line (ft.): NA

Sealed By: Driller

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

Variance Number: NA

Distance to Septic Tank (ft.): No Data

Method of Verification: NA

Surface Completion: Alternative Procedure Used

Water Level:	85 ft. below land surface on 2004-05-10	Measurement Method:	Unknown
Packers:	4 X 2 1/2 TRI-SEAL 220 FT.		
Type of Pump:	Submersible	Pump Depth (ft.):	180
Well Tests:	Estimated	Yield:	50 GPM

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Water Quality:	Strata Depth (ft.) <b>19</b>	Water Type <b>GOOD</b>
		Chemical Analysis Made: <b>No</b>
	Did the driller knowingly penetrate any strata which contained injurious constituents?: <b>No</b>	

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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: **NORTHWEST WATER WELLS**  
**25143 FM 1488**  
**MAGNOLIA, TX 77355**

Driller Name: **GLEN R. BONDS** License Number: **50950**

Comments: **No Data**

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Lithology:			Casing:		
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA		
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type Setting From/To (ft.)
0	23	clay	4 N	pvc casing	0 225 40
23	105	clay/sand	2 1/2 N	pvc liner	220 225 40
105	186	clay	2 1/2 N	PVC Screen	225 245 008
186	226	clay/sand			
226	245	sand			

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## STATE OF TEXAS WELL REPORT for Tracking #56788

Owner:	<b>Richard Walther</b>	Owner Well #:	<b>No Data</b>
Address:	<b>16710 Cochran Rd. Waller, TX 77484</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>16710 Cochran Rd. Waller, TX 77484</b>	Latitude:	<b>30° 01' 00" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 34" W</b>
		Elevation:	<b>No Data</b>
Type of Work:	<b>New Well</b>	Proposed Use:	<b>Domestic</b>

Drilling Start Date: **4/14/2005**      Drilling End Date: **4/15/2005**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7</b>	<b>0</b>	<b>245</b>

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Fully Pressure Cemented**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>10</b>	<b>8-Redi-mix</b>
	<b>10</b>	<b>235</b>	<b>12-Portland</b>

Seal Method: **Positive Displacement**

Sealed By: **Driller**

Distance to Property Line (ft.): **12**

Distance to Septic Field or other  
concentrated contamination (ft.): **80**

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

Method of Verification: **Measured**

Surface Completion: **Surface Sleeve Installed**

Water Level: **84 ft. below land surface on 2005-04-15**      Measurement Method: **Unknown**

Packers: **4" x 2.5" R x R K-Packer 225'**

Type of Pump: **Submersible**      Pump Depth (ft.): **160**

Well Tests: **Jetted**      Yield: **75 GPM**



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Water Quality:	Strata Depth (ft.) <b>No Data</b>	Water Type <b>No Data</b>
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Chemical Analysis Made: **No**

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

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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: **Waller County Water Wells, Inc.**  
**27742 Roce Rd.**  
**Hockley, TX 77447**

Driller Name: **Donald G. Robinson 2216WPK** License Number: **2216**

Comments: **No Data**

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Lithology: DESCRIPTION & COLOR OF FORMATION MATERIAL			Casing: BLANK PIPE & WELL SCREEN DATA		
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type Setting From/To (ft.)
0	7	Sand	4	New	PVC SCH-40 Casing 0-235
7	98	Clay	2.5	New	PVC SCH-40 Blank 225-235
98	110	Sand	2.5	New	PVC SCH-80 Jayco WOP 235-245 .010
110	117	Clay			
117	146	Sand			
146	213	Clay			
213	245	Sand			

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## STATE OF TEXAS WELL REPORT for Tracking #116118

Owner:	<b>Donald Andrew</b>	Owner Well #:	<b>n/a</b>
Address:	<b>16311 FM 362 Waller, TX 77484</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>16311 FM 362 Waller, TX 77484</b>	Latitude:	<b>30° 01' 33" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 29" W</b>
		Elevation:	<b>No Data</b>
Type of Work:	<b>New Well</b>	Proposed Use:	<b>Domestic</b>

Drilling Start Date: **8/25/2000**      Drilling End Date: **8/28/2000**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7</b>	<b>0</b>	<b>343</b>

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Pressure Cemented**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>10</b>	<b>8 RediMix</b>
	<b>180</b>	<b>343</b>	<b>20 Portland</b>

Seal Method: **Positive Displacement**

Distance to Property Line (ft.): **50+**

Sealed By: **Driller**

Distance to Septic Field or other  
concentrated contamination (ft.): **100+**

Variance Number: **n/a**

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

Method of Verification: **Tape**

Surface Completion: **Alternative Procedure Used**

Water Level: **130 ft. below land surface on 2000-08-28**      Measurement Method: **Unknown**

Packers: **K-Packers RxR (2) 320'**

Type of Pump: **Submersible**      Pump Depth (ft.): **280**

Well Tests: **Jetted**      Yield: **100 GPM after 1 hours, no drawdown specified**

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Water Quality:	Strata Depth (ft.) <b>No Data</b>	Water Type <b>Good</b>
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Chemical Analysis Made: **No**

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

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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: **Kenco Water Well Service**  
**30269 FM 1488 Rd.**  
**Waller, TX 77484**

Driller Name: **Kenneth Robinson** License Number: **2214**

Comments: **This report mailed to TDLR 01/31/2001**

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Lithology:			Casing:			
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA			
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
0	37	Clay	4"	N	PVC	0 - 323 Sch. 40
37	45	Sand	2 1/2"	N	Jayco WOP	323 - 343 .010 gauge
45	52	Sand	2 1/2"	N	PVC Liner	320 - 323 Sch. 40
52	64	Clay, white				
64	87	Sand				
87	97	Sand				
97	103	Clay				
103	127	Clay				
127	149	Sand				
149	169	Clay				
169	189	Clay				
189	194	Clay				
194	201	Sand				
201	211	Clay				
211	212	Clay				
212	231	Sand				
231	251	Clay				
251	273	Sand				

273	282	Sand
282	293	Shale
293	312	Shale
312	333	Sand
333	343	Sand

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## STATE OF TEXAS WELL REPORT for Tracking #219073

Owner: **CYNTHIA HUFFMAN**

Owner Well #: **2-8398**

Address: **34815 BETKA RD.  
WALLER, TX 77484**

Grid #: **60-57-7**

Well Location: **34815 BETKA RD.  
WALLER, TX 77484**

Latitude: **30° 01' 18" N**

Longitude: **095° 59' 15" W**

Well County: **Waller**

Elevation: **No Data**

Type of Work: **New Well**

Proposed Use: **Domestic**

Drilling Start Date: **6/7/2010**

Drilling End Date: **6/8/2010**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7.25</b>	<b>0</b>	<b>280</b>

Drilling Method: **Mud (Hydraulic) Rotary; 2-STRING**

Borehole Completion: **CEMENTED**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>15</b>	<b>13</b>
	<b>145</b>	<b>270</b>	<b>13</b>

Seal Method: **Positive Displacement**

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

Sealed By: **Driller**

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: **Alternative Procedure Used**

Water Level: **120 ft. below land surface on 2010-06-08** Measurement Method: **Unknown**

Packers: **4 X 2 1/2 TRI-SEAL 265 FT.**

Type of Pump: **Submersible** Pump Depth (ft.): **200**

Well Tests: **Estimated** Yield: **50 GPM**



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	Strata Depth (ft.)	Water Type
Water Quality:	20	GOOD
		Chemical Analysis Made: No
	Did the driller knowingly penetrate any strata which contained injurious constituents?:	No

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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: **NORTHWEST WATER WELLS**  
**25143 FM 1488**  
**MAGNOLIA, TX 77355**

Driller Name: **GLEN R. BONDS** License Number: **50950**

Comments: **No Data**

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Lithology:			Casing:			
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA			
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
0	140	CLAY	4	N	PVC CASING	0-270 40
140	180	CLAY/SAND	2 1/2	N	PVC LINER	265-270 40
180	220	CLAY	2 1/2	N	PVC SCREEN	270-280 008
220	260	ROCK/SAND				
260	280	SAND				

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## STATE OF TEXAS WELL REPORT for Tracking #256295

Owner:	<b>Bryant Management</b>	Owner Well #:	<b>1</b>
Address:	<b>213 N Friendswood Dr Friendswood, TX 77546</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>34843 Betka Hempstead, TX</b>	Latitude:	<b>30° 01' 04" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 12" W</b>
		Elevation:	<b>No Data</b>
Type of Work:	<b>New Well</b>	Proposed Use:	<b>Irrigation</b>

Drilling Start Date: **11/15/2005**      Drilling End Date: **11/24/2005**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7</b>	<b>0</b>	<b>260</b>
	<b>4.5</b>	<b>260</b>	<b>500</b>

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **2 String**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>240</b>	<b>38 cement</b>
	<b>260</b>	<b>500</b>	<b>25 cement</b>

Seal Method: **Pumped**

Sealed By: **Driller**

Distance to Property Line (ft.): **15**

Distance to Septic Field or other  
concentrated contamination (ft.): **n/a**

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

Method of Verification: **estimated**

Surface Completion: **Alternative Procedure Used**

Water Level: **111 ft. below land surface on 2005-11-22**      Measurement Method: **Unknown**

Packers: **4x2-1/2 K 233'**  
**4x2-1/2 K 234'**

Type of Pump: **Submersible**      Pump Depth (ft.): **220**

Well Tests: **Jetted**      Yield: **45-50 GPM**

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	Strata Depth (ft.)	Water Type
Water Quality:	<b>240 - 260</b>	<b>Good</b>
		Chemical Analysis Made: <b>No</b>
	Did the driller knowingly penetrate any strata which contained injurious constituents?:	<b>No</b>

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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: **Petry Water Well**  
**P.O. Box 798**  
**Waller, TX 77484**

Driller Name: **Paul Hyatt** License Number: **3199**

Comments: **\$mew**  
**@ Yogi Bear Jellystone Park**

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Lithology:			Casing:			
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA			
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
<b>0</b>	<b>120</b>	<b>Tan Clay with Some Sand Layers</b>	<b>4</b>	<b>New</b>	<b>SCH40 PVC</b>	<b>0 - 240</b>
			<b>2 1/2</b>	<b>New</b>	<b>SCH40 PVC</b>	<b>233 - 240</b>
<b>120</b>	<b>144</b>	<b>Fine Brown Sand with White Clay Layers</b>	<b>2 1/2</b>	<b>New</b>	<b>SCH80 WOP PVC</b>	<b>240 - 260 .008</b>
<b>144</b>	<b>153</b>	<b>Clay</b>				
<b>153</b>	<b>158</b>	<b>Fine Tan Sand</b>				
<b>158</b>	<b>240</b>	<b>Clay &amp; Shale</b>				
<b>240</b>	<b>260</b>	<b>Medium Sand with Some Clay</b>				
<b>260</b>	<b>500</b>	<b>Rock, Clay &amp; Shale</b>				

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## STATE OF TEXAS WELL REPORT for Tracking #405145

Owner:	JELLYSTONE PARK	Owner Well #:	1
Address:	34843 BETKA WALLER, TX 77484	Grid #:	60-57-7
Well Location:	34843 BETKA RD WALLER, TX 77484	Latitude:	30° 01' 10" N
Well County:	Waller	Longitude:	095° 59' 17" W
		Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Public Supply

Drilling Start Date: 5/12/2015

Drilling End Date: 7/8/2015

Plans Approved by TCEQ - YES

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	8.75	0	341
	4.625	341	361

Drilling Method: Mud (Hydraulic) Rotary

Borehole Completion: Straight Wall

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	341	68

Seal Method: Unknown

Distance to Property Line (ft.): >150

Sealed By: Driller

Distance to Septic Field or other  
concentrated contamination (ft.): N/A

Distance to Septic Tank (ft.): No Data

Method of Verification: ESTIMATED

Surface Completion: Surface Slab Installed

Water Level: 125 ft. below land surface on 2015-05-15 Measurement Method: Unknown

Packers: K-PACKER 331

Type of Pump: Submersible Pump Depth (ft.): 252

Well Tests: Jetted Yield: 350 GPM

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Water Quality:	Strata Depth (ft.) <b>No Data</b>	Water Type <b>No Data</b>
	Chemical Analysis Made: <b>Yes</b>	
	Did the driller knowingly penetrate any strata which contained injurious constituents?: <b>No</b>	

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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: **BUSSELL & SONS, LLC**  
**PO BOX 874**  
**TOMBALL, TX 77377**

Driller Name: **CRAIG BUSSELL**

License Number: **2035**

Comments: **^GJU**

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Lithology:			Casing:			
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA			
From (ft)	To (ft)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
0-14		TOP SOIL & CLAY	5	NEW	SDR 17 CASING	0 341
14-21		COARSE SAND	2.5	NEW	SCHEDULE 80 PVC LINER	331 341
21-162		CLAY	2.5	NEW	S.S.R.B. SCREENS	341 351 0.01
162-187		SAND	2.5	NEW	S.S.R.B. SCREENS	351 361 0.012
187-247		CLAY				
247-287		SAND				
287-297		ROCKY				
297-304		CLAY				
304-325		SAND WITH CLAY STRINGERS				
325-361		SAND				



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## STATE OF TEXAS PLUGGING REPORT for Tracking #62861

Owner:	<b>Bryant Manageent</b>	Owner Well #:	<b>No Data</b>
Address:	<b>213 N Friendswood Dr. Friendswood, TX 77546</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>34843 Betha Rd. Waller, TX 77484</b>	Latitude:	<b>30° 01' 03" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 08" W</b>
		Elevation:	<b>No Data</b>
Well Type:	<b>Withdrawal of Water</b>		

### Drilling Information

Company:	<b>No Data</b>	Date Drilled:	<b>No Data</b>
Driller:	<b>No Data</b>	License Number:	<b>No Data</b>
Borehole:	<b>No Data</b>		

### Plugging Information

Date Plugged: **3/4/2010**                      Plugger: **Paul Hyatt**

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:

#### Plug(s) Placed in Well:

Dia (in.)	Top (ft.)	Bottom (ft.)	Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
<b>4</b>	<b>0</b>	<b>187</b>	<b>0</b>	<b>5</b>	<b>5 Cement</b>
			<b>5</b>	<b>187</b>	<b>24 Bentonite</b>

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: **Petry Water Well**  
**PO Box 798**  
**Waller, TX 77484**

Driller Name: **Paul Hyatt**                      License Number: **3199**

Comments: **^EO**

## STATE OF TEXAS WELL REPORT for Tracking #20126

Owner:	<b>SKILLMASTER HOMES</b>	Owner Well #:	<b>No Data</b>
Address:	<b>15641 COCHRAN RD. WALLER, TX 77484</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>15641 COCHRAN RD. WALLER, TX 77484</b>	Latitude:	<b>30° 00' 05" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 40" W</b>
		Elevation:	<b>No Data</b>
Type of Work:	<b>New Well</b>	Proposed Use:	<b>Domestic</b>

Drilling Start Date: **2/12/2003**      Drilling End Date: **2/13/2003**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7.25</b>	<b>0</b>	<b>205</b>

Drilling Method: **Bored; Mud (Hydraulic) Rotary**

Borehole Completion: **TWO-STRING**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>190</b>	<b>12</b>

Seal Method: **PRESSURED  
CEMENT&SURFACE  
GROUTED**

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

Sealed By: **Driller**

Distance to Septic Field or other  
concentrated contamination (ft.): **100**

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

Method of Verification: **TAPE MEASURE**

Surface Completion: **Surface Sleeve Installed**

Water Level: **80 ft. below land surface on 2003-02-13**      Measurement Method: **Unknown**

Packers: **2- 4X2 RXR TRI-SEAL K-PACKERS 185**

Type of Pump: **Submersible**      Pump Depth (ft.): **140**

Well Tests: **Jetted**      Yield: **40 GPM**



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Water Quality:	Strata Depth (ft.) <b>18</b>	Water Type <b>MED-HARD</b>
		Chemical Analysis Made: <b>No</b>
	Did the driller knowingly penetrate any strata which contained injurious constituents?: <b>No</b>	

---

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: **HURST WATER WELLS**  
**25356 DEER TRAIL**  
**HOCKLEY, TX 77447**

Driller Name: **FRELIN PAUL HURST**

License Number: **4741**

Comments: **No Data**

---

Lithology:			Casing:			
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA			
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
0	26	CLAY	4 N		PVC CASING	0-190
26	43	SAND	2 N		PVC PIPE	
43	80	CLAY	2 N		PVC SCREEN	185-205 .008
80	83	LIMESTONE ROCK				
83	120	CLAY				
120	158	SAND				
158	187	CLAY				
187	205	SAND				

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

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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 #121425

Owner:	<b>CARL BARGE</b>	Owner Well #:	<b>7544</b>
Address:	<b>19815 BECKER RD. HOCKELY, TX 77447</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>15789 COCHRAN RD. WALLER, TX 77484</b>	Latitude:	<b>30° 00' 07" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 39" W</b>
		Elevation:	<b>No Data</b>
Type of Work:	<b>New Well</b>	Proposed Use:	<b>Domestic</b>

Drilling Start Date: **8/28/2007**      Drilling End Date: **8/29/2007**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7.25</b>	<b>0</b>	<b>260</b>

Drilling Method: **Mud (Hydraulic) Rotary; 2-STRING**

Borehole Completion: **CEMENTED**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>15</b>	<b>13</b>
	<b>15</b>	<b>240</b>	<b>12</b>

Seal Method: **Positive Displacement**

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

Sealed By: **Driller**

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: **Alternative Procedure Used**

Water Level: **85 ft. below land surface on 2007-08-29**      Measurement Method: **Unknown**

Packers: **4 X 2 1/2 TRI-SEAL 235 FT.**

Type of Pump: **Submersible**      Pump Depth (ft.): **160**

Well Tests: **Estimated**      Yield: **100 GPM**



---

Water Quality:	Strata Depth (ft.) <b>40</b>	Water Type <b>GOOD</b>
		Chemical Analysis Made: <b>No</b>
	Did the driller knowingly penetrate any strata which contained injurious constituents?: <b>No</b>	

---

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: **NORTHWEST WATER WELLS**  
**25143 FM 1488**  
**MAGNOLIA, TX 77355**

Driller Name: **GLEN R. BONDS** License Number: **50950**

Comments: **No Data**

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Lithology:			Casing:			
DESCRIPTION & COLOR OF FORMATION MATERIAL			BLANK PIPE & WELL SCREEN DATA			
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
<b>0</b>	<b>100</b>	<b>CLAY/GRAVEL</b>	<b>4</b>	<b>N</b>	<b>PVC CASING</b>	<b>0-240 40</b>
<b>100</b>	<b>140</b>	<b>SAND</b>	<b>2 1/2</b>	<b>N</b>	<b>PVC LINER</b>	<b>235-240 40</b>
<b>140</b>	<b>195</b>	<b>CLAY/GRAVEL</b>	<b>2 1/2</b>	<b>N</b>	<b>PVC SCREEN</b>	<b>240-260 008</b>
<b>195</b>	<b>220</b>	<b>CLAY/ROCK</b>				
<b>220</b>	<b>260</b>	<b>SAND</b>				

---

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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 #112435

Owner:	<b>Matthew Martinez</b>	Owner Well #:	<b>n/a</b>
Address:	<b>Rt. 1, Box 64M Brookshire, TX 77423</b>	Grid #:	<b>60-57-7</b>
Well Location:	<b>Cochran Rd. Brookshire, TX 77423</b>	Latitude:	<b>30° 00' 03" N</b>
Well County:	<b>Waller</b>	Longitude:	<b>095° 59' 35" W</b>
		Elevation:	<b>No Data</b>
Type of Work:	<b>New Well</b>	Proposed Use:	<b>Domestic</b>

Drilling Start Date: **7/24/2001**      Drilling End Date: **7/25/2001**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>7</b>	<b>0</b>	<b>202</b>

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Pressure Cemented**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>10</b>	<b>8 RediMix</b>
	<b>100</b>	<b>192</b>	<b>12 Portland</b>

Seal Method: **Positive Displacement**

Distance to Property Line (ft.): **50+**

Sealed By: **Driller**

Distance to Septic Field or other  
concentrated contamination (ft.): **n/a**

Variance Number: **n/a**

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

Method of Verification: **Tape**

Surface Completion: **Alternative Procedure Used**

Water Level: **125 ft. below land surface on 2001-07-25**      Measurement Method: **Unknown**

Packers: **K-Packers RxR (2) 188'**

Type of Pump: **Submersible**      Pump Depth (ft.): **180**

Well Tests: **Jetted**      Yield: **40 GPM after 1 hours, no drawdown specified**

---

Water Quality:	Strata Depth (ft.) <b>No Data</b>	Water Type <b>Good</b>
----------------	--------------------------------------	---------------------------

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: **Kenco Water Well Service**  
**30269 FM 1488 Rd.**  
**Waller, TX 77484**

Driller Name: **Kenneth Robinson** License Number: **2214**

Comments: **This report mailed to TDLR 09/14/2001.**  
**Updated lat/long by TWDB on 7/22/2014.**

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Lithology: DESCRIPTION & COLOR OF FORMATION MATERIAL			Casing: BLANK PIPE & WELL SCREEN DATA			
Top (ft.)	Bottom (ft.)	Description	Dia. (in.)	New/Used	Type	Setting From/To (ft.)
0	40	Clay, red	4"	N	PVC	0 - 192 Sch. 40
40	68	Sand & Gravel	2 1/2"	N	PVC Blank	189 - 192 Sch. 40
68	75	Clay	2 1/2"	N	Jayco WOP	192 - 202 .010 gauge
75	87	Clay				
87	155	Clay				
155	179	Sand				
179	184	Clay & Sand				
184	192	Rock				
192	202	Sand				

---

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



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

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

For TDWR use only  
Well No. 60-52-7AA  
Located on map YES  
Received: C.F.S.

1) OWNER SAFARI PINES CAMP Address RT 3 Box 83-A HEMPSTEAD TX 77445  
(Name) (Street or RFD) (City) (State) (Zip)  
2) LOCATION OF WELL:  
County WALLER 6 miles in SW direction from WALLER  
(N.E., S.W., etc.) (Town)  
COCHRAN AT BETKA Rd

Driller must complete the legal description to the right  
with distance and direction from two intersecting sec-  
tion 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.

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:

DIAMETER OF HOLE

Dis. (in.) From (ft.) To (ft.)

9 1/2 Surface 325

Date drilled 3-10-82

7) BOREHOLE COMPLETION:

☐ Open Hole ☐ Straight Wall ☐ Underreamed  
☐ Gravel Packed ☐ Other Cemented

If Gravel Packed give interval ... from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

From (ft.) To (ft.) Description and color of formation material

0	30	CLAY
30	37	SAND
37	87	CLAY - SAND
87	107	CLAY
107	130	CLAY
130	148	SAND
148	159	CLAY
159	170	SAND
170	175	SAND
175	190	CLAY
190	210	CLAY
210	232	SHALE - ROCK
232	235	SHALE
235	247	SAND
247	250	CLAY
250	252	SAND
252	272	SAND
272	285	SHALE + SAND
285	292	SHALE - SAND
292	300	SAND + SHALE
300	302	ROCK
302	312	SAND
312	350	SAND

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dis. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.)		Gage Casing Screen
			From	To	
6	N	PLASTIC CASING	18"	325	Set
4	N	PERF.	325'	350	890
		SCREEN			
		WELL Supplies			
		Houston			

CEMENTING DATA

Cemented from surface ft. to 325 ft.  
Method used pumped THRU CASING  
Cemented by Indv.  
(Company or Individual)

9) WATER LEVEL:

Static level 105 ft. below land surface Date 3-11-82  
Artesian flow \_\_\_\_\_ gpm. Date \_\_\_\_\_

10) PACKERS:

Type Depth

11) TYPE PUMP:

☐ Turbine ☐ Jet ☒ Submersible ☐ Cylinder

☐ Other \_\_\_\_\_

Depth to pump bowls, cylinder, jet, etc., 210 ft.

12) WELL TESTS:

☐ Type Test: ☐ Pump ☐ Bailor ☒ Jetted ☐ Estimated  
Yield: \_\_\_\_\_ gpm with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.

13) WATER QUALITY:

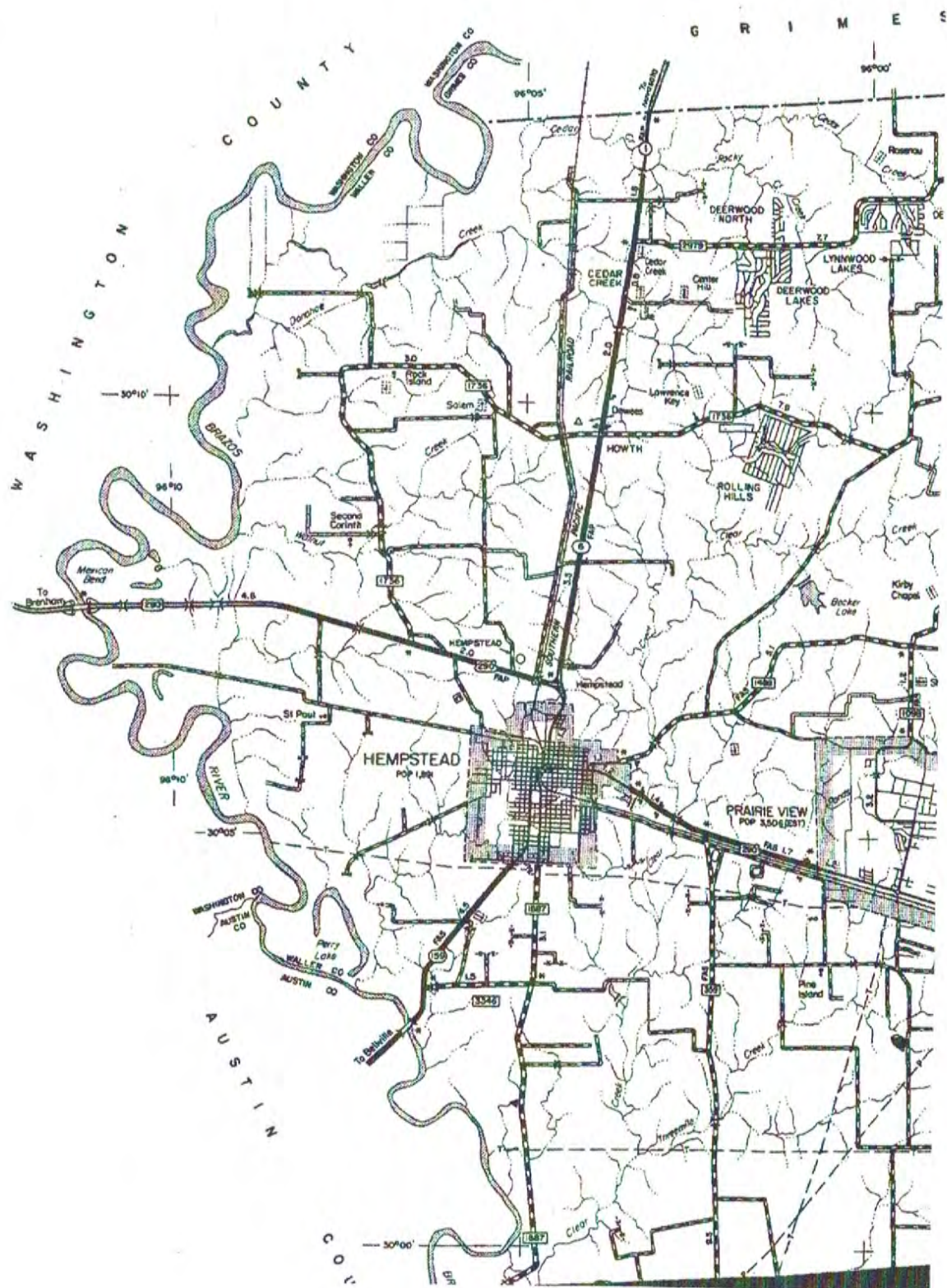
Did you knowingly penetrate a subsurface zone containing undesirable water? ☐ Yes ☒ No  
If yes, submit "REPORT OF UNDESIRABLE WATER"  
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Was a chemical analysis made? ☐ Yes ☒ No

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 Roland R. Robinson Water Well Drillers Registration No. 1267  
(Type or Print)  
ADDRESS RT 1 Box 864 HOCKLEY TEX 77447  
(Street or RFD) (City) (State) (Zip)  
(Signed) Roland R. Robinson R+R WATER WELLS  
(Water Well Driller) (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.





## STATE OF TEXAS PLUGGING REPORT for Tracking #34386

Owner:	Bettis Corporation	Owner Well #:	UNKN-1
Address:	18703 GH Circle Waller, TX 77484	Grid #:	60-57-7
Well Location:	18703 GH Circle Waller, TX 77484	Latitude:	30° 00' 40" N
Well County:	Waller	Longitude:	095° 59' 16" W
		Elevation:	No Data
Well Type:	Monitor		

### Drilling Information

Company:	No Data	Date Drilled:	No Data
Driller:	N/A	License Number:	No Data

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	4		187

### Plugging Information

Date Plugged: 9/29/2006      Plugger: L. Bruce Milton

Plug Method: Tremmie pipe cement from bottom to top

Casing Left in Well:			Plug(s) Placed in Well:		
Dia (in.)	Top (ft.)	Bottom (ft.)	Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
4	0	187	0	187	43 cement bentonite grout

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: Best Drilling Services, Inc.

P.O. Box 845  
Friendswood, TX 77549

Driller Name: L. Bruce Milton      License Number: 4926

Comments: No Data



December 17, 2024

## Laboratory Report

Tarynn Fossati  
TNG Utility  
P.O. Box 2749  
Spring, TX 77383

Report ID: 20241217161921AEN

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Aundra Noe  
Project Manager





TNG Utility  
P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

## Sample Results

Client Sample ID: Outfall 001  
Lab Sample ID: 24K3488-01  
Jellystone - Permit Renewal

[none]

Sample Matrix: Waste Water  
Date Collected: 12/03/2024 10:15  
Collected by: Tyler Sabal

Method	Analyte	*	Result Q	Units	DF	SDL	LRL	Batch	Analyzed	Analyst
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### General Chemistry

SM 2320 B	Alkalinity as CaCO <sub>3</sub>	A	27.1	mg/L	1	10.0	10.0	BHL0807	12/06/2024 10:21	FPN
SM 5210 B	Carbonaceous BOD (CBOD)	A	4.37	mg/L	13514	2.03	2.03	BHL0348	12/09/2024 11:03	BAK
SM 2510 B	Conductivity	A	992	umhos/cm @ 25 °C	1	2.00	2.00	BHL0807	12/06/2024 10:21	FPN
EPA 350.1	Ammonia as N	A	24.9	mg/L	100	1.40	4.00	BHL0394	12/05/2024 13:37	AMM
SM 2540 C	Residue-filterable (TDS)	A	605 B1	mg/L	1	10.0	10.0	BHL0349	12/05/2024 14:18	BP
SM 4500-NH <sub>3</sub> C	Total Kjeldahl Nitrogen - (TKN)	A	6.72	mg/L	1	0.100	1.00	BHL0481	12/05/2024 09:44	ENR
EPA 365.1	Total Phosphorus	A	8.46	mg/L	1	0.117	0.200	BHL0337	12/04/2024 17:08	GJG
SM 2540 D	Residue-nonfilterable (TSS)	A	31.5	mg/L	1	1.00	1.00	BHL0293	12/04/2024 12:00	JRU

### Microbiology

SM 9223 B (Colilert Quanti-Tray)	Escherichia coli (E. coli)	A	>2420	MPN/100 mL	1	1.00	1.00	BHL0291	12/04/2024 17:28	JKB
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### Field

Hach 10360	DO Field	N	7.31	mg/L	1	1.00	1.00	BHL0341	12/03/2024 10:15	CLNT
Calc	Flow Field	N	0.00100	MGD	1	0.00	0.00	BHL0341	12/03/2024 10:15	CLNT
SM 4500-H+ B	pH	A	7.38	pH Units @ 25 °C	1	1.00	1.00	BHL0341	12/03/2024 10:15	CLNT
SM 4500-Cl G	Total Residual Chlorine	A	<0.25 U	mg/L	1	0.25	0.25	BHL0341	12/03/2024 10:15	CLNT

\* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385  
Tel: (936) 321-6060  
Email: lab@nwdls.com  
www. NWDLS.com  
TCEQ TX-C24-00185

TNG Utility  
P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Sample Results**  
**(Continued)**

Client Sample ID: Outfall 001  
Lab Sample ID: 24K3488-01RE1  
Jellystone - Permit Renewal

[none]

Sample Matrix: Waste Water  
Date Collected: 12/03/2024 10:15  
Collected by: Tyler Sabal

Method	Analyte	*	Result Q	Units	DF	SDL	LRL	Batch	Analyzed	Analyst
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**General Chemistry**

EPA 300.0	Chloride (Rerun)	A	125	mg/L	10	0.345	10.0	BHL0426	12/04/2024 18:23	AGZ
EPA 300.0	Nitrate as N (Rerun)	A	68.8	mg/L	10	0.142	1.00	BHL0426	12/04/2024 18:23	AGZ
EPA 300.0	Sulfate (Rerun)	A	32.1	mg/L	10	0.341	10.0	BHL0426	12/04/2024 18:23	AGZ

\* A = Accredited, N = Not Accredited or Accreditation not available



TNG Utility  
P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Sample Results**  
**(Continued)**

Client Sample ID: Outfall 001  
Lab Sample ID: 24L1539-01  
Jellystone - Permit Renewal - Recollect

[none]

Sample Matrix: Waste Water  
Date Collected: 12/06/2024 7:30  
Collected by: Tyler Sabal

Method	Analyte	*	Result Q	Units	DF	SDL	LRL	Batch	Analyzed	Analyst
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**General Chemistry**

EPA 1664A	n-Hexane Extractable Material (O&G)	A	<5.00U	mg/L	1	3.32	5.00	BHL1446	12/11/2024 09:00	IDC
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\* A = Accredited, N = Not Accredited or Accreditation not available



TNG Utility  
P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

## Quality Control

### General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Batch: BHL0272 - EPA 300.0</b>										
<b>Duplicate (BHL0272-DUP1)</b>		<b>Source: 24J1604-03RE1</b>			Prepared & Analyzed: 12/3/2024					
Nitrate as N	0.241		0.100	mg/L		0.233			3.38	15
Sulfate	2.65		1.00	mg/L		2.61			1.22	15
Chloride	16.9		1.00	mg/L		16.8			0.556	15
<b>Duplicate (BHL0272-DUP2)</b>		<b>Source: 24L1196-02</b>			Prepared & Analyzed: 12/3/2024					
Chloride	155		20.0	mg/L		157			1.31	15
Nitrate as N	2.32		0.100	mg/L		2.34			0.816	15
Sulfate	54.9		1.00	mg/L		55.4			0.760	15
<b>MRL Check (BHL0272-MRL1)</b>					Prepared & Analyzed: 12/3/2024					
Nitrate as N	0.130		0.100	mg/L	0.100		130	50-150		
Chloride	1.04		1.00	mg/L	1.00		104	50-150		
Sulfate	1.18		1.00	mg/L	1.00		118	50-150		
<b>Matrix Spike (BHL0272-MS1)</b>		<b>Source: 24J1604-03RE1</b>			Prepared & Analyzed: 12/3/2024					
Sulfate	21.7		1.11	mg/L	22.2	2.61	86.0	80-120		
Nitrate as N	2.15		0.111	mg/L	2.22	0.233	86.3	80-120		
Chloride	11.2	J1	1.11	mg/L	11.1	16.8	NR	80-120		
<b>Matrix Spike (BHL0272-MS2)</b>		<b>Source: 24L1196-02</b>			Prepared & Analyzed: 12/3/2024					
Chloride	13.4	U, J1	22.2	mg/L	11.1	157	NR	80-120		
Sulfate	21.4	J1	1.11	mg/L	22.2	55.4	NR	80-120		
Nitrate as N	2.11	J1	0.111	mg/L	2.22	2.34	NR	80-120		
<b>Batch: BHL0293 - TSS</b>										
<b>Blank (BHL0293-BLK1)</b>		Prepared: 12/3/2024 Analyzed: 12/4/2024								
Residue-nonfilterable (TSS)	<1.00	U	1.00	mg/L						

\* A = Accredited, N = Not Accredited or Accreditation not available





TNG Utility  
P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Quality Control**  
(Continued)

**General Chemistry (Continued)**

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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**Batch: BHL0293 - TSS (Continued)**

**LCS (BHL0293-BS1)**

Prepared: 12/3/2024 Analyzed: 12/4/2024

Residue-nonfilterable (TSS)	98.4		1.00	mg/L	100		98.4	85-115		
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**Duplicate (BHL0293-DUP1)**

**Source: 24L0803-01**

Prepared: 12/3/2024 Analyzed: 12/4/2024

Residue-nonfilterable (TSS)	2.32		1.00	mg/L		2.32			0.00	10
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**Batch: BHL0337 - Phosphorus EPA 365.1**

**LCS (BHL0337-BS1)**

Prepared: 12/3/2024 Analyzed: 12/4/2024

Total Phosphorus	0.254		0.0100	mg/L	0.250		102	90-110		
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**Matrix Spike (BHL0337-MS1)**

**Source: 24L1036-06**

Prepared: 12/3/2024 Analyzed: 12/4/2024

Total Phosphorus	18.9		0.500	mg/L	12.5	7.06	94.8	80-120		
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**Matrix Spike (BHL0337-MS2)**

**Source: 24L1116-04**

Prepared: 12/3/2024 Analyzed: 12/4/2024

Total Phosphorus	15.6		0.500	mg/L	12.5	4.10	92.3	80-120		
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**Matrix Spike Dup (BHL0337-MSD1)**

**Source: 24L1036-06**

Prepared: 12/3/2024 Analyzed: 12/4/2024

Total Phosphorus	19.2		0.500	mg/L	12.5	7.06	96.9	80-120	1.34	20
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**Matrix Spike Dup (BHL0337-MSD2)**

**Source: 24L1116-04**

Prepared: 12/3/2024 Analyzed: 12/4/2024

Total Phosphorus	17.0		0.500	mg/L	12.5	4.10	103	80-120	8.42	20
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**Batch: BHL0348 - CBOD-5210**

**LCS (BHL0348-BS1)**

Prepared: 12/4/2024 Analyzed: 12/9/2024

Carbonaceous BOD (CBOD)	160	J1		mg/L	198		81.0	85-115		
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TNG Utility  
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Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Quality Control**  
(Continued)

**General Chemistry (Continued)**

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Batch: BHL0348 - CBOD-5210 (Continued)</b>										
<b>Duplicate (BHL0348-DUP1)</b>	<b>Source: 24L1131-02</b>		Prepared: 12/4/2024 Analyzed: 12/9/2024							
Carbonaceous BOD (CBOD)	2.86		2.40	mg/L		2.48			14.5	40
<b>Duplicate (BHL0348-DUP2)</b>	<b>Source: 24L1215-02</b>		Prepared: 12/4/2024 Analyzed: 12/9/2024							
Carbonaceous BOD (CBOD)	3.63		2.40	mg/L		3.50			3.70	40
<b>Duplicate (BHL0348-DUP3)</b>	<b>Source: 24L1211-02</b>		Prepared: 12/4/2024 Analyzed: 12/9/2024							
Carbonaceous BOD (CBOD)	6.34	J1	2.40	mg/L		2.96			72.8	40
<b>Duplicate (BHL0348-DUP4)</b>	<b>Source: 24L1020-02</b>		Prepared: 12/4/2024 Analyzed: 12/9/2024							
Carbonaceous BOD (CBOD)	3.45		2.40	mg/L		<2.40			200	40
<b>Duplicate (BHL0348-DUP5)</b>	<b>Source: 24L1210-01</b>		Prepared: 12/4/2024 Analyzed: 12/9/2024							
Carbonaceous BOD (CBOD)	5.93		2.40	mg/L		5.80			2.22	40
<b>Duplicate (BHL0348-DUP6)</b>	<b>Source: 24L1155-02</b>		Prepared: 12/4/2024 Analyzed: 12/9/2024							
Carbonaceous BOD (CBOD)	2.69		2.40	mg/L		<2.40			200	40
<b>Duplicate (BHL0348-DUP7)</b>	<b>Source: 24L1490-05</b>		Prepared: 12/4/2024 Analyzed: 12/9/2024							
Carbonaceous BOD (CBOD)	191		50.0	mg/L		213			11.1	20
<b>Batch: BHL0349 - TDS</b>										
<b>Blank (BHL0349-BLK1)</b>			Prepared: 12/4/2024 Analyzed: 12/5/2024							
Residue-filterable (TDS)	<10.0	U	10.0	mg/L						
<b>LCS (BHL0349-BS1)</b>			Prepared: 12/4/2024 Analyzed: 12/5/2024							
Residue-filterable (TDS)	148		10.0	mg/L	150		98.7	90-110		

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Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Quality Control**  
(Continued)

**General Chemistry (Continued)**

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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**Batch: BHL0349 - TDS (Continued)**

**Duplicate (BHL0349-DUP1)**

**Source: 24L1043-02**

Prepared: 12/4/2024 Analyzed: 12/5/2024

Residue-filterable (TDS)	466		10.0	mg/L		460			1.30	10
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**Batch: BHL0394 - NH3-N SEAL-350.1**

**Matrix Spike (BHL0394-MS1)**

**Source: 24L1019-02**

Prepared & Analyzed: 12/5/2024

Ammonia as N	0.874		0.160	mg/L	0.200	0.676	98.7	90-110		
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**Matrix Spike (BHL0394-MS2)**

**Source: 24K5036-02**

Prepared & Analyzed: 12/5/2024

Ammonia as N	0.277		0.0401	mg/L	0.200	0.0760	100	90-110		
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**Matrix Spike Dup (BHL0394-MSD1)**

**Source: 24L1019-02**

Prepared & Analyzed: 12/5/2024

Ammonia as N	0.894		0.160	mg/L	0.200	0.676	109	90-110	2.27	20
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**Matrix Spike Dup (BHL0394-MSD2)**

**Source: 24K5036-02**

Prepared & Analyzed: 12/5/2024

Ammonia as N	0.279		0.0401	mg/L	0.200	0.0760	101	90-110	0.722	20
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**Batch: BHL0426 - EPA 300.0**

**Duplicate (BHL0426-DUP1)**

**Source: 24J0123-01**

Prepared & Analyzed: 12/4/2024

Nitrate as N	<0.100	U	0.100	mg/L		<0.100				15
Chloride	19.9		1.00	mg/L		19.9			0.0403	15
Sulfate	12.5		1.00	mg/L		12.6			0.247	15

**Duplicate (BHL0426-DUP2)**

**Source: 24E5203-01**

Prepared & Analyzed: 12/4/2024

Chloride	39.4		1.00	mg/L		39.5			0.261	15
Sulfate	3.70		1.00	mg/L		3.70			0.135	15
Nitrate as N	0.104		0.100	mg/L		0.114			9.17	15

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Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Quality Control**  
(Continued)

**General Chemistry (Continued)**

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
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**Batch: BHL0426 - EPA 300.0 (Continued)**

**MRL Check (BHL0426-MRL1)**

Prepared & Analyzed: 12/4/2024

Chloride	1.06		1.00	mg/L	1.00		106	50-150
Sulfate	1.15		1.00	mg/L	1.00		115	50-150
Nitrate as N	0.127		0.100	mg/L	0.100		127	50-150

**Matrix Spike (BHL0426-MS1)**

**Source: 24J0123-01**

Prepared & Analyzed: 12/4/2024

Nitrate as N	2.14		0.111	mg/L	2.22	<0.111	96.4	80-120
Chloride	31.6		1.11	mg/L	11.1	19.9	106	80-120
Sulfate	34.6		1.11	mg/L	22.2	12.6	99.1	80-120

**Matrix Spike (BHL0426-MS2)**

**Source: 24E5203-01**

Prepared & Analyzed: 12/4/2024

Sulfate	25.0		1.11	mg/L	22.2	3.70	95.9	80-120
Chloride	50.6		1.11	mg/L	11.1	39.5	99.9	80-120
Nitrate as N	2.21		0.111	mg/L	2.22	0.114	94.3	80-120

**Batch: BHL0481 - TKN T**

**Blank (BHL0481-BLK1)**

Prepared: 12/4/2024 Analyzed: 12/5/2024

Total Kjeldahl Nitrogen - (TKN)	<1.00	U	1.00	mg/L
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**LCS (BHL0481-BS1)**

Prepared: 12/4/2024 Analyzed: 12/5/2024

Total Kjeldahl Nitrogen - (TKN)	2.58		1.00	mg/L	2.60		99.1	85-115
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**Duplicate (BHL0481-DUP1)**

**Source: 24L0074-01**

Prepared: 12/4/2024 Analyzed: 12/5/2024

Total Kjeldahl Nitrogen - (TKN)	<1.00	U	1.00	mg/L	<1.00			20
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**Matrix Spike (BHL0481-MS1)**

**Source: 24L0074-01**

Prepared: 12/4/2024 Analyzed: 12/5/2024

Total Kjeldahl Nitrogen - (TKN)	1.57	J1	1.00	mg/L	4.00	<1.00	39.2	85-115
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P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Quality Control**  
(Continued)

**General Chemistry (Continued)**

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Batch: BHL0807 - Alkalinity</b>										
<b>Blank (BHL0807-BLK1)</b>										
Conductivity	<2.00	U	2.00	umhos/cm @ 25 °C						
Prepared & Analyzed: 12/6/2024										
<b>LCS (BHL0807-BS1)</b>										
Conductivity	1440			umhos/cm @ 25 °C	1410		102	90-110		
Prepared & Analyzed: 12/6/2024										
<b>QCS (BHL0807-BS2)</b>										
Conductivity	512			umhos/cm @ 25 °C	500		102	90-110		
Prepared & Analyzed: 12/6/2024										
<b>LCS (BHL0807-BS4)</b>										
Alkalinity as CaCO <sub>3</sub>	107			mg/L	100		107	90-110		
Prepared & Analyzed: 12/6/2024										
<b>Duplicate (BHL0807-DUP1)</b>										
<b>Source: 24J0125-03</b>										
Conductivity	614		2.00	umhos/cm @ 25 °C		607			1.15	15
Alkalinity as CaCO <sub>3</sub>	202		10.0	mg/L		202			0.317	15
Prepared & Analyzed: 12/6/2024										
<b>Duplicate (BHL0807-DUP2)</b>										
<b>Source: 24L1447-01</b>										
Conductivity	1400		2.00	umhos/cm @ 25 °C		1380			1.73	15
Alkalinity as CaCO <sub>3</sub>	150		10.0	mg/L		145			3.05	15
Prepared & Analyzed: 12/6/2024										
<b>Batch: BHL1446 - EPA 1664</b>										
<b>Blank (BHL1446-BLK1)</b>										
n-Hexane Extractable Material (O&G)	<5.00	U	5.00	mg/L						
Prepared & Analyzed: 12/11/2024										
<b>LCS (BHL1446-BS1)</b>										
n-Hexane Extractable Material (O&G)	43.0		5.00	mg/L	40.0		107	77.5-114.5		
Prepared & Analyzed: 12/11/2024										

\* A = Accredited, N = Not Accredited or Accreditation not available



TNG Utility  
P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Quality Control**  
(Continued)

**General Chemistry (Continued)**

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BHL1446 - EPA 1664 (Continued)										
LCS Dup (BHL1446-BSD1)					Prepared & Analyzed: 12/11/2024					
n-Hexane Extractable Material (O&G)	39.5		5.00	mg/L	40.0		98.6	77.5-114.5	8.54	20
Matrix Spike (BHL1446-MS1)					Prepared & Analyzed: 12/11/2024					
			Source: 24L1672-04							
n-Hexane Extractable Material (O&G)	46.9	J1	5.00	mg/L	40.0	<5.00	117	77.5-114.5		

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TNG Utility  
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Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Quality Control**  
(Continued)

**Microbiology**

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
<b>Batch: BHL0291 - TC EC Quantitray</b>									
<b>Blank (BHL0291-BLK1)</b>									
Escherichia coli (E. coli)	<1.00	U	1.00	MPN/100 mL					
Prepared: 12/3/2024 Analyzed: 12/4/2024									
<b>Duplicate (BHL0291-DUP1)</b>									
Escherichia coli (E. coli)	4.10		1.00	MPN/100 mL		2.00		68.9	200
Prepared: 12/3/2024 Analyzed: 12/4/2024									
<b>Duplicate (BHL0291-DUP2)</b>									
Escherichia coli (E. coli)	<1.00	U	1.00	MPN/100 mL		<1.00			200
Prepared: 12/3/2024 Analyzed: 12/4/2024									

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TNG Utility  
P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

**Sample Condition Checklist**

**Work Order: 24K3488**

Check Points	
No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

**Work Order: 24L1539**

Check Points	
No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

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TNG Utility  
P.O. Box 2749  
Spring, TX 77383

**Reported:**  
12/17/2024 16:19

## Term and Qualifier Definitions

Item	Definition
B1	Associated method blank is lower than the established quality control criteria.
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

\* A = Accredited, N = Not Accredited or Accreditation not available



# CHAIN OF CUSTODY RECORD

North Water District Laboratory Services  
130 S. Trade Center Pkwy, Conroe Tx 77385  
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

**24K3488**

TCEQ TX-C24-00185

TNG Utility Tarynn Fossati P.O. Box 2749 Spring, TX 77383 Phone: (281) 350-0895	<b>Project Name :</b> Jellystone - Permit Renewal	<b>Schedule Comments:</b>
	<b>Project Comments:</b> DO reading must be recorded before 9am if CL2 not between 1.0 - 4.0 Call Office Mark out Duplicated Outfall samples on the regular chain	

Sample ID	Collection Point	Date/Time Begin	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
24K3488-01	Outfall 001		12/03/2024 1015 <i>EL</i>	AQ Grab	A HDPE 250mL B HDPE 1L C HDPE 250mL H2SO4 D HDPE 250mL E Glass Wide 1L w/ Teflon-lined Lid F HDPE S250mL Na2S2O3 G HDPE 250mL H HDPE 250mL H2SO4 I HDPE 250mL H2SO4 J HDPE 1L	TC EC-9223 Na2S2O3 <10°C O&G-1664 HCl 4°C Alkalinity-2320 4°C CBOD-5210 4°C Chloride IC 300.0 4°C Conductivity-2510 4°C NH3-N SEAL-350.1 H2SO4 4°C Nitrate as N IC 300.0 4°C Sulfate IC 300.0 4°C TDS-2540 4°C TKN T-4500 C H2SO4 4°C Total Phosphorus-365.1- H2SO4 4°C TSS-2540 4°C	DO Field <u>7.31</u> Flow MGD Field <u>0.01</u> pH Field <u>7.30</u> Total Chlorine <u>0.00</u> Residual WW Field

<b>Field Remarks:</b>		<b>Preservation:</b> <u>H2SO4</u> <u>HNO3</u> NaOH Other: <u>HCL</u>		
		<b>(Circle and Write ID)</b> <u>2401096</u> <u>2404969</u> <u>2406698</u>		
Sampler (Signature) <i>[Signature]</i>	Relinquished By: (Signature) <i>[Signature]</i>	Date/Time 12/03/2024	Received By: (Signature) <i>A Eagan</i>	Date/Time 12-3-24
Print Name Tyler Sabal	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Affiliation TNG Utility	Relinquished To Lab By: (Signature) <i>A Eagan</i>	Date/Time 14:30 12-3-24	Received for Laboratory By: (Signature) <i>WMC</i>	Date/Time 1430 12-3-24
Custody Seal: Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: _____ °C
Container Intact: Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: _____

PM Kits

wko\_NWDLS\_COC\_noDate\_LS version 4: 02/22/2021



# CHAIN OF CUSTODY RECORD

North Water District Laboratory Services  
130 S. Trade Center Pkwy, Conroe Tx 77385  
(936) 321-6060 - lab@nwdls.com

TCEQ TX-C24-00185



Page 1 of 1

**24L1539**

TNG Utility Tarynn Fossati P.O. Box 2749 Spring, TX 77383 Phone: (281) 350-0895	<b>Project Name :</b> Jellystone - Permit Renewal - Recollect		<b>Schedule Comments:</b>
	<b>Project Comments:</b>		

Sample ID	Collection Point	Date/Time Begin	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
24L1539-01	Outfall 001		0730 JC 12/6/2024	AQ Grab	A Glass Wide 1L w/ Teflon-lined Lid HCl pH <2	O&G-1664 HCl 4°C	

<b>Field Remarks:</b>				<b>Preservation:</b> H2SO4      HNO3      NaOH      Other: <u>HCl</u>			
				2406698			
Sampler (Signature) 		Relinquished By: (Signature) 		Date/Time 12/6/2024	Received By: (Signature) 	Date/Time 12-6-24/0812	
Print Name Tyler Sabol		Relinquished By: (Signature)		Date/Time	Received By: (Signature)	Date/Time	
Affiliation TNG Utility		Relinquished To Lab By: (Signature) 		Date/Time 12-6-24/1307	Received for Laboratory By: (Signature) 	Date/Time 12-06-24 1307	
Custody Seal: Yes / No		COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No		Temperature: _____ °C	
Container Intact: Yes / No		Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No		Thermometer ID: _____	

wko\_NWDLS\_COC\_noDate\_LS version 4: 02/22/2021

ATTACHMENT S

WATER RECLAMATION/PEREZ TRUCKING &  
CONSTRUCTION

SEPTIC PUMPING SERVICE AGREEMENT

SUN NG JELLY-LONE STAR TX RV, LLC, d/b/a

YOGI BEAR'S JELLYSTONE PARK CAMP-RESORT: WALLER

WALLER, TEXAS

CN605839323

RN101234490

## **Agreement for Waste Activated Sludge Transportation and Disposal Services**

Jesus Perez (dba Perez Trucking & Construction) of Waller, Texas, Waller County, operating under waste hauler permit number 25093 and disposal facility permit number WQ-0015032001 agrees to transport and dispose of domestic wastewater residues and waste activated sludge on an as-needed basis from the following facility for the five year duration of TLAP Renewal Period (\_\_\_\_\_ to \_\_\_\_\_) for:

**SUN NG JELLY-LONE STAR TX RV, LLC d/b/a Yogi Bear's Jellystone Park Camp-Resort: Waller**

Domestic Wastewater Treatment Plants

Treatment Facility Location: 30.017940. -95.988103

Located at 34843 Belka Rd., Waller, TX in Waller County

Operating under TLAP Permit Number to be assigned by TCEQ\_\_\_\_\_

**Contact:** Joe Grandstaff, General Manager  
Yogi Bear's Jellystone Park Camp-Resort: Waller  
34843 Betka Rd., Waller, TX 77484  
jgrandstaff@wallerjellystonepark.com  
(832) 585-9321

**Hauler:** Jesus Perez (dba Perez Trucking & Construction)  
34512 Rodeo Road, Waller, TX 77474  
yperez331@aol.com / perezseptic@gmail.com  
(713) 851-3153

**Disposal Facility:** Grimes County Water Reclamation, LLC  
7063 Clark Rd, Plantersville, TX 77363  
gogreen@txgcwr.com  
(936) 894-0678

By: 

Printed Name: Jesus Perez

Date: 11/30/24



Lonestar Jellystone  
Process Calculations Summary  
10/07/19

Daily Flow (Q)=

BOD Concentration(Per 30 TAC 217.32(a)(3) for Transient Trailer Park) =

Max. Organic Loading for Extended Aeration(Per Figure 30 TAC 217.154(b)(2)) =

Daily BOD Loading to Biological Treatment(Daily Flow x BOD Concentration x  
8.34)/1,000,000

Max. Clarifier Surface Loading Rate (Per Figure 30 TAC 217.154(c)(1)) =

Min. Clarifier Detention Time (Per Figure 30 TAC 217.154(c)(1))=

Actual Clarifier Detention Time

Airflow/BOD Loading in Biological Treatment Unit for Extended Aeration(Per Figure 30  
TAC 217.155(b)(1))

Oxygen Required (O<sub>2</sub>R) in Biological Treatment Unit for Extended Aeration(Per Figure 30  
TAC 217.155(a)(3))=

Actual O<sub>2</sub>R =

Oxygen Required per day = O<sub>2</sub>R\*Daily BOD Loading

Actual Oxygen per day = Actual O<sub>2</sub>R\*Daily BOD Loading

Air Required =

Actual Air Provided (acfm)=  $scfm(P_{std}/(P_{act}-P_{sat}*\phi))(T_{act}/T_{std})$

Mixing Limit Air Required @ 20scfm/1,000cf =

Actual Mixing Limit Air =

Blower Rating =

Reservoir Area =

Irrigation Area =

Monthly Flows based on observed occupancy of the park:

January

February

March

April

May

June

July

August

September

October

November

December

TCEQ Requirement

Actual Provided

30,000 Gallons

250 mg/L

15 lb/day/ 1000 cf

62.55 lb/day

800 gpd/sf

2.2 hours

2.88 hours

3200 scf/day/lb

2.2 lb O<sub>2</sub>/lb BOD<sub>5</sub>

3.14 lb O<sub>2</sub>/lb BOD<sub>5</sub>

138 lb/day

196 lb/day

139 scfm

146 acfm

88 scfm

92 acfm

146 acfm @ 148 in

0.64 Acres

15 Acres

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow

100 % of maximum flow



*James W. Weishuhn*  
10-18-19 F-66

ATTACHMENT T: DESIGN CALCULATIONS

Lonestar Jellystone

Page 2

Flow Calculations Summary

07/19

Future:

Number of Slots =

Design Criteria Flow/Slot (Per 30 TAC 217.32(a)(3) for Transient Trailer Park)=

Future Flow =

Guest (not in RV slots)

Daily Flow/per guest/day

Total Flow =

Contingency =

Total Future Flow =

Say

435 slots

50 gpd/slot

21,750 gpd

200 guest/day

5 gallons

22,750

1.25

28,438 gpd

30,000 gpd



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10-13-19  
F-66

Lonestar Jellystone  
Flow Calculations Summary  
10/07/19

Present:

Small Sewer Plant:

174,180 gallons  
30 days

Flow = 5,806 gpd

Large Sewer Plant:

277,735 gallons  
30 days

Flow = 9,258 gpd

Total Flow = 15,064 gpd  
Number of Slots = 335 slots  
Flow/Slot = 45 gpd/slot

Future:

Number of Slots = 435 slots  
Flow/Slot = 45 gpd/slot  
Design Criteria Flow/Slot = 50 gpd/slot  
Future Flow = 21,750 gpd  
Guest (not in RV slots) 200 guest/day  
Daily Flow/per guest/day 5 gallons  
Total Flow = 22,750  
Contingency = 1.25  
Total Future Flow = 28,438 gpd  
Say 30,000 gpd



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F-66

Trash Tank Sizing Calculations

Design Criteria: Volume = 1 x Daily Flow

Daily Flow = 30,000 Gallons

Existing Volume on Site = 46,000 Gallons

Equalization Tank Sizing Calculations

Design Criteria: Store 1/2 Daily Flow for treatment in 12 hour period assuming a diurnal flow pattern.

Daily Flow = 30,000 Gallons

1/2 Daily Flow = 15,000 Gallons

Existing Volume on Site = 38,000 Gallons

Aerobic Treatment Unit Sizing Calculations

Operate unit in Extended Aeration Mode > cell residence time > 20 days.

30 TAC 217-154(b)(2)

Max. Organic Loading = 15 lb/day/ 1000 cf

Daily BOD Loading = 63 lb/day

Minimum Aeration Volume Required = Daily  
BOD Loading/ Max. Organic Loading

4,170 cf

31,192 Gallons

Dimensions of Aeration Basin

10 'SWD x 11 'W. x 40 'L.

Volume = S.W.D. x W. x L.

4,400 cf

32,912 Gallons

Actual Loading



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69128  
LICENSED PROFESSIONAL ENGINEER  
10-18-19  
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Aeration Volume = Daily BOD Loading/Loading/1000cf

Actual Loading =

14 lb/day/1000cf



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10-18-19  
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Airflow/BOD Loading(Extended Air)(Per Figure 30 TAC 217.155(b)(1)) =

3200 scf/day/lb

Oxygen Required ( $O_2R$ )(Per Figure 30 TAC 217.155(a)(3)) =

2.2 lb  $O_2$ /lb BOD<sub>5</sub>

Actual Oxygen Required

$O_2R = (1.2(BOD_5) + 4.3(NH_3-N))/BOD_5$  (Per Figure 30 TAC 217.155(a)(3))

BOD<sub>5</sub> = BOD<sub>5</sub> Concentration, mg/L

100 mg/L

NH<sub>3</sub>-N = Ammonia nitrogen, mg/L (Per 30 TAC 217.155)

45 mg/L

Actual  $O_2R$  =

3.14 lb  $O_2$ /lb BOD<sub>5</sub>

Oxygen Required per day =  $O_2R$ \*Daily BOD Loading

138 lb/day

Actual Oxygen per day = Actual  $O_2R$ \*Daily BOD Loading

196 lb/day

Min.  $O_2R$  Criteria

138 lb/day  $O_2$

Q based on Min.  $O_2R$  Criteria =

76 scfm

Air Provided

Air Required = Airflow/BOD Loading\*Daily BOD Loading\*(1day/1440 minutes)

Airflow/BOD Loading =

3200 scf/day/lb

Daily BOD Loading =

63 lb/day

Air Required =

139 scfm

(Air Required is > Q based on Min.  $O_2R$  Criteria, Use Air Required)

Actual Air Provided (acfm)=  $scfm(P_{std}/(P_{act}-P_{sat}*\phi))(T_{act}/T_{std})$

146 acfm

scfm (standard cubic feet per minute) =

139 scfm

$P_{std}$  (standard absolute air pressure)

14.7 psia

$P_{act}$  (absolute pressure at actual level) =

14.4 psia



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$P_{sat}$  (saturation pressure at actual temperature) =  
 $\phi$  (actual relative humidity) =  
 $T_{act}$  (actual ambient air temperature)  
 $T_{std}$  (standard temperature)

0.699 psi  
 0.9  
 550 °R  
 560 °R

Mixing Limit Air Requirement =  
 Volume of Aeration Tank =  
 Standard Cubic Feet/Minute (scfm) =

20 scfm/ 1000 cf  
 4400 cf  
 88 scfm

Actual Mixing Limit(acfm)=  $scfm(P_{std}/(P_{act}-P_{sat}*\phi))(T_{act}/T_{std})$   
 scfm (standard cubic feet per minute) =  
 $P_{std}$  (standard absolute air pressure)  
 $P_{act}$  (absolute pressure at actual level) =  
 $P_{sat}$  (saturation pressure at actual temperature) =  
 $\phi$  (actual relative humidity) =  
 $T_{act}$  (actual ambient air temperature)  
 $T_{std}$  (standard temperature)

92 acfm  
 88 scfm  
 14.7 psia  
 14.4 psia  
 0.699 psi  
 0.9  
 550 °R  
 560 °R

Page 5

#### Size Blowers:

Length of Piping  
 Pipe Diameter(D)  
 Blower Rating  
 Water Depth

100 ft.  
 4 in.  
 146 acfm  
 10 ft.

$$\text{Head Loss}(h_L) = 2.74(V/1000)^{1.9}/D^{1.22}$$

$h_L$  =

28 wg

$$\text{Duct Velocity}(V)(\text{ft}/\text{m}) = \text{Blower Rating}(\text{acfm})/\text{Area}(\text{ft}^2)$$

1670 ft/m

$$\text{Area} = \pi r^2$$

0.09 ft<sup>2</sup>

Water Depth Head Loss =

10 ft

120 in.

Blower Rating =  
 Say

146 acfm @ 148 in.  
 146 acfm @ 148 in.



*James W. Weishuhn*  
 10-18-19  
 F-66

Lonestar Jellystone  
Clarifier Sizing Calculations  
10/07/19

Page 6

30 TAC 217.154(c)(1)

Max. Surface Loading Rate =	800 gpd/sf
Min. Detention Time =	2.2 hours
Max Weir Loading Rate	20,000 gpd/lf
Minimum Area = $Q/\text{Loading Rate}$	37.5 sf

Weir Trough Width	2 ft
Provide Clarifier w/ Diameter	10 ft diameter
Effective Diameter	8 ft
Side Wall Height	12 ft
Concrete in Clarifier Height	0.4 ft
Freeboard	2 ft
Side Water Depth	9.6 ft
$A = \pi/4(d)^2$	50.3 sf

Detention Time = $\text{Volume}/Q$	2.88 hours
------------------------------------	------------

Weir Loading =	$Q/L$
$P = 3.14 * D$	25.12 ft
=	1,194 gpd/lf

Volume = $(\pi/4) * d^2 * \text{Water Depth}$	482 cf
$Q =$	30000 gpd
	4011 cf/day

$A = Q/\text{Loading}$	
Loading = Daily Flow/78.5	597 gpd/sf



*James W. Weishuhn*  
10-18-19  
F-66



Lonestar Jellystone  
10/18/2019

Treated Effluent Pond

Reservoir Area = 0.64 Acres

Irrigation Area

Irrigation Area = 14.6 Acres

Daily Flow = 30,000 gpd

CN = 74 Group C, Meadow Continuous Grass, Drained Condition; ENG TECHNOTE 210-18-TX5

CE = 1.08 mmhos/cm

CI = 7 mmhos/cm Bermuda Grass

CI = 5 mmhos/cm Rye Grass

K = 0.85



*James W. Weishuhn*  
10-18-19  
F-666

Column 9 Equation = (Reservoir Area/Irrigation Area)\*(Average Monthly Evaporation)

Water Balance										
ALL UNITS IN INCHES UNLESS NOTED OTHERWISE										
1	2	3	4	5	6	7	8	9	10	11
							Effluent Required			
Month	Avg Rain	Avg Run-off	Avg R <sub>i</sub>	ET	L	TWN	in Root Zone	EFRS	Applied to Land	CFR (in./ac)
Jan	2.97	0.89	2.08	3.00	0.25	3.25	1.17	0.10	1.38	1.48
Feb	2.92	0.86	2.06	3.00	0.26	3.26	1.20	0.11	1.41	1.52
Mar	2.90	0.85	2.05	4.50	0.67	5.17	3.12	0.16	3.67	3.83
Apr	3.46	1.21	2.25	6.00	1.03	7.03	4.79	0.20	5.63	5.83
May	4.67	2.10	2.57	6.00	0.63	6.63	4.06	0.22	4.78	5.00
Jun	3.78	1.44	2.34	6.80	0.81	7.61	5.27	0.28	6.20	6.48
Jul	2.27	0.48	1.79	6.50	0.86	7.36	5.57	0.31	6.56	6.87
Aug	2.55	0.64	1.91	4.50	0.47	4.97	3.06	0.30	3.60	3.90
Sep	3.71	1.39	2.32	5.00	0.49	5.49	3.17	0.24	3.72	3.96
Oct	3.91	1.53	2.38	4.00	0.30	4.30	1.92	0.20	2.25	2.45
Nov	3.48	1.23	2.25	4.50	0.62	5.12	2.86	0.13	3.37	3.50
Dec	3.24	1.06	2.18	3.00	0.23	3.23	1.05	0.07	1.24	1.31
<b>Total</b>	<b>39.86</b>	<b>13.67</b>	<b>26.19</b>	<b>56.80</b>	<b>6.62</b>	<b>63.42</b>	<b>37.23</b>	<b>2.32</b>	<b>43.80</b>	<b>46.12</b>

Storage Volume										
ALL UNITS IN INCHES UNLESS NOTED OTHERWISE										
12	13	14A	14B	15	16	17	18A	18B	19	20
Month	Effluent Received (in/mo)	MRD(%)	Rainfall (Max)	Runoff (Max)	R <sub>i</sub>	Total Available H <sub>2</sub> O	DoM(%)	Net E (Min)	Storage in	AS(ac-in/ac)
Jan	2.30	7.45	5.86	3.07	2.79	5.09	5.28	0.09	1.67	3.40
Feb	2.30	7.33	0.80	0.00	0.80	3.10	5.28	0.10	-0.70	2.71
Mar	2.30	7.28	6.78	3.85	2.93	5.23	7.92	0.16	-0.50	2.21
Apr	2.30	8.68	5.72	2.95	2.77	5.07	10.56	0.17	-2.88	-0.67
May	2.30	11.72	13.87	10.39	3.48	5.78	10.56	0.18	-1.58	-2.25
Jun	2.30	9.48	5.52	2.79	2.73	5.04	11.97	0.22	-3.66	-5.91
Jul	2.30	5.69	0.56	0.01	0.55	2.86	11.44	0.21	-5.92	-11.83
Aug	2.30	6.40	1.37	0.11	1.26	3.57	7.92	0.25	-2.31	-14.14
Sep	2.30	9.31	1.28	0.08	1.20	3.50	8.80	0.22	-2.97	-17.11
Oct	2.30	9.81	10.21	6.94	3.27	5.57	7.04	0.18	0.92	-16.19
Nov	2.30	8.73	5.21	2.53	2.68	4.98	7.92	0.14	-0.71	-16.90
Dec	2.30	8.13	6.07	3.24	2.83	5.13	5.28	0.10	1.73	1.73
<b>Total</b>	<b>27.62</b>	<b>100.00</b>	<b>63.25</b>	<b>35.96</b>	<b>27.29</b>	<b>54.91</b>	<b>100.00</b>	<b>2.01</b>		<b>3.40</b>

Total Storage Volume =

4.1 Acre ft  
1,349,131 Gallons



*James W. Weishuhn*  
10-18-19 F-66



Table 2d —Runoff curve numbers for urban areas<sup>1</sup>

Cover description	Curve numbers for hydrologic soil group—				
Cover type and hydrologic condition	Average percent impervious area <sup>2</sup>	A	B	C	D
<b>Fully developed urban areas (vegetation established)</b>					
Open space (lawns, parks, golf courses, cemeteries, etc.): <sup>3</sup>					
Poor condition (grass cover < 50%)	68	79	86	89	
Fair condition (grass cover 50% to 75%)	49	69	79	84	
Good condition (grass cover > 75%)	39	61	74	80	
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way).	98	98	98	98	
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way).	98	98	98	98	
Paved; open ditches (including right-of-way).	83	89	92	93	
Gravel (including right-of-way)	76	85	89	91	
Dirt (including right-of-way)	72	82	87	89	
Western desert urban areas:					
Natural desert landscaping (pervious areas only). <sup>4</sup>	63	77	85	88	
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders).	96	96	96	96	
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<b>Developing urban areas</b>					
Newly graded areas (pervious areas only, no vegetation). <sup>5</sup>	77	86	91	94	
Idle lands (CN's are determined using cover types similar to those in table 2-2a).					

<sup>1</sup> Average runoff condition,  $I_a = 0.25$ .<sup>2</sup> The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition.<sup>3</sup> CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.<sup>4</sup> Composite CN's for natural desert landscaping should be computed based on the impervious area (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.<sup>5</sup> Composite CN's to use for the design of temporary measures during grading and construction should be computed using the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.



P.O. Box 358 • Columbus, TX 78934-0358 • (979) 732-6997 • wei-eng.com

January 31, 2024

TCEQ Region 12 (MC Region 12)  
Water Quality Compliance Monitoring Team (MC 224)  
5425 Polk St, Ste H  
Houston, Texas 77023-1452

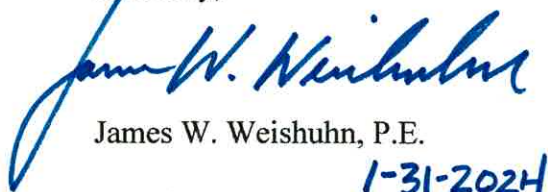
Re: 2023 TLAP, Soil Analytical Data, Sun NG Jelly-Lone Star Tx RV LLC.CN  
605839323, Lone Star Jellystone Park Camp Resort, 34843 Betka Road, Waller, TX,  
77484, RN 101234490. Permit No. WQ0015640001

Dear TCEQ Team Members:

Please find laboratory reported soil analytical results pursuant to the aforementioned Permit. This analytical data submittal is required by Special Provision 4 of the aforementioned Permit. The attached figure presents the discrete soil sample locations utilized to generate the composite samples (by application area) for laboratory analysis.

Please contact me at (979) 732-6997 with questions or comments.

Sincerely,

A handwritten signature in blue ink that reads 'James W. Weishuhn'. The signature is fluid and cursive.

James W. Weishuhn, P.E.

Attachments

1-31-2024



cc: Doug Jeffrey, TNG Utility

REPORT NUMBER

24-018-0151

COMPLETED DATE

Jan 31, 2024

RECEIVED DATE

Jan 18, 2024

ACCOUNT

48430



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PAGE 1/4

TODAY'S DATE

Jan 31, 2024

Weishuhn Engineering Inc  
Barbara Weishuhn  
PO BOX 358  
Columbus TX 78934

IDENTIFICATION

LONE STAR JELLYSTONE

LOC A

## SOIL ANALYSIS REPORT

INFO SHEET: 1669953

INFO SHEET: 1669953

LAB NUMBER  *429*	SAMPLE IDENTIFICATION	ORGANIC MATTER L.O.I. percent	MEHLICH III ICP					pH		CATION EXCHANGE CAPACITY C.E.C.  meq/100g	PERCENT BASE SATURATION (COMPUTED)				
			PHOSPHORUS	POTASSIUM	MAGNESIUM	CALCIUM	SODIUM	SOIL pH 1:1	BUFFER INDEX		% K	% Mg	% Ca	% H	% Na
			P ppm	K ppm	Mg ppm	Ca ppm	Na ppm								
73209	LOCA 0-6"	1.9	41	106	147	970	51		7.0	7.0	3.9	17.5	69.3	6.1	3.2
73210	LOCA 6-18"	1.2	31	80	128	728	55			5.2	3.9	20.5	71.0	0.0	4.6
73211	LOCA18-30"	1.1	15	69	148	721	84			5.4	3.3	22.8	67.1	0.0	6.8

LAB NUMBER *429*	NITRATE-N (FIA)										MEHLICH III ICP						EXCESS LIME RATE	SOLUBLE SALTS 1:1 mmhos/ cm	
	SURFACE			SUBSOIL 1			SUBSOIL 2			Total lbs/A	SULFUR S ppm	ZINC Zn ppm	MANGANESE Mn ppm	IRON Fe ppm	COPPER Cu ppm	BORON B ppm			
	ppm	lbs/A	depth (in)	ppm	lbs/A	depth (in)	ppm	lbs/A	depth (in)										
73209	2	4	0-6							4	16	3.6	23	242	1.3	0.7	L		
73210	1	4	6-18							4	10	0.9	17	201	1.1	0.6	L		
73211	1	4	18-30							4	12	0.8	10	155	1.0	0.6	L		

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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TODAY'S DATE

**Jan 31, 2024**

**Weishuhn Engineering Inc**  
**Barbara Weishuhn**  
**PO BOX 358**  
**Columbus TX 78934**

IDENTIFICATION

**LONE STAR JELLYSTONE****LOC A**

## ADDITIONAL SOIL ANALYSIS

Labnum *429*	Sample ID	Total Kjeldahl Nitrogen Kjeldahl ppm	Total Nitrogen LECO ppm
73209	LOCA 0-6" <i>Depth: 0-6</i>	740	811
73210	LOCA 6-18" <i>Depth: 6-18</i>	430	507
73211	LOCA18-30" <i>Depth: 18-30</i>	450	612

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REPORT NUMBER

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TODAY'S DATE

**Jan 31, 2024**

**Weishuhn Engineering Inc  
Barbara Weishuhn  
PO BOX 358  
Columbus TX 78934**

IDENTIFICATION

**LONE STAR JELLYSTONE****LOC A****SODIUM ADSORPTION RATIO REPORT**

Method Lab Number Units	Sample Id	CALCULATED Sodium Adsorption Ratio	SATURATED PASTE EXTRACTION		
			Sodium (Water Soluble) mg/L	Magnesium (Water Soluble) mg/L	Calcium (Water Soluble) mg/L
42973209	LOCA 0-6"	1.0	49	29	141
42973210	LOCA 6-18"	1.8	52	10	45
42973211	LOCA18-30"	2.9	77	9	40

*The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.*

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REPORT NUMBER  
**24-018-0151**  
COMPLETED DATE  
**Jan 31, 2024**  
RECEIVED DATE  
**Jan 18, 2024**  
ACCOUNT  
**48430**



**Weishuhn Engineering Inc**  
**Barbara Weishuhn**  
**PO BOX 358**  
**Columbus TX 78934**

IDENTIFICATION  
**LONE STAR JELLYSTONE**  
  
**LOC A**

**SOIL FERTILITY RECOMMENDATIONS (POUNDS PER ACRE)**

YOUR SAMPLE NUMBER <small>(LAB NUMBER)</small>	INTENDED CROP	YIELD GOAL	PREVIOUS CROP	SOIL AMENDMENTS				N NITROGEN	P <sub>2</sub> O <sub>5</sub> PHOSPHATE	K <sub>2</sub> O POTASH	Mg MAGNE- SIUM	S SULFUR	Zn ZINC	Mn MANGA- NESE	Fe IRON	Cu COPPER	B BORON
				LIME LBS/A OF	LIME TON	GYP-SUM TONS/A	ELEMENTAL SULFUR LBS/A										
LOCA 0-6"  (42973209)	BERMUDA GRS HAY TON	10.0	BERMUDA GRS HAY TON					445									

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.  
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REPORT NUMBER

24-018-0152

COMPLETED DATE

Jan 26, 2024

RECEIVED DATE

Jan 18, 2024

ACCOUNT

48430



13611 B Street • Omaha, Nebraska 68144-3693 • (402) 334-7770

www.midwestlabs.com

PAGE 1/4

TODAY'S DATE

Jan 26, 2024

Weishuhn Engineering Inc  
Barbara Weishuhn  
PO BOX 358  
Columbus TX 78934

IDENTIFICATION

LONE STAR JELLYSTONE

LOC B

## SOIL ANALYSIS REPORT

INFO SHEET: 1669952

INFO SHEET: 1669952

LAB NUMBER  *429*	SAMPLE IDENTIFICATION	ORGANIC MATTER L.O.I. percent	MEHLICH III ICP					pH		CATION EXCHANGE CAPACITY C.E.C.  meq/100g	PERCENT BASE SATURATION (COMPUTED)				
			PHOSPHORUS	POTASSIUM	MAGNESIUM	CALCIUM	SODIUM	SOIL pH 1:1	BUFFER INDEX		% K	% Mg	% Ca	% H	% Na
			P ppm	K ppm	Mg ppm	Ca ppm	Na ppm								
73212	LOCB 0-6"	1.1	14	63	95	383	21		6.9	3.6	4.5	22.0	53.2	17.8	2.5
73213	LOCB 6-18"	0.3	10	44	55	286	18		6.9	2.8	4.0	16.4	51.1	25.7	2.8
73214	LOCB 18-30	0.8	6	38	82	379	31		6.9	3.4	2.9	20.1	55.7	17.3	4.0

LAB NUMBER  *429*	NITRATE-N (FIA)										MEHLICH III ICP						EXCESS LIME RATE	SOLUBLE SALTS 1:1 mmhos/ cm	
	SURFACE			SUBSOIL 1			SUBSOIL 2			Total lbs/A	SULFUR S ppm	ZINC Zn ppm	MANGANESE Mn ppm	IRON Fe ppm	COPPER Cu ppm	BORON B ppm			
	ppm	lbs/A	depth (in)	ppm	lbs/A	depth (in)	ppm	lbs/A	depth (in)										
73212	1	2	0-6							2	11	0.9	43	155	1.3	0.3	L		
73213	1	4	6-18							4	10	0.4	26	106	1.2	0.1	L		
73214	3	11	18-30							11	11	0.3	16	79	0.9	0.1	L		

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**PAGE 2/4**

TODAY'S DATE

**Jan 26, 2024**

**Weishuhn Engineering Inc**  
**Barbara Weishuhn**  
**PO BOX 358**  
**Columbus TX 78934**

IDENTIFICATION

**LONE STAR JELLYSTONE****LOC B**

## ADDITIONAL SOIL ANALYSIS

Labnum *429*	Sample ID	Total Kjeldahl Nitrogen Kjeldahl ppm	Total Nitrogen LECO ppm
73212	LOCB 0-6" <i>Depth: 0-6</i>	480	517
73213	LOCB 6-18" <i>Depth: 6-18</i>	300	280
73214	LOCB 18-30 <i>Depth: 18-30</i>	290	290

*The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.*

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**PAGE 3/4**

TODAY'S DATE

**Jan 26, 2024**

**Weishuhn Engineering Inc  
Barbara Weishuhn  
PO BOX 358  
Columbus TX 78934**

IDENTIFICATION

**LONE STAR JELLYSTONE****LOC B****SODIUM ADSORPTION RATIO REPORT**

Method Lab Number Units	Sample Id	CALCULATED Sodium Adsorption Ratio	SATURATED PASTE EXTRACTION		
			Sodium (Water Soluble) mg/L	Magnesium (Water Soluble) mg/L	Calcium (Water Soluble) mg/L
42973212	LOCB 0-6"	0.6	18	16	42
42973213	LOCB 6-18"	0.6	17	9	36
42973214	LOCB 18-30	1.1	24	7	26

*The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.*

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REPORT NUMBER  
**24-018-0152**  
COMPLETED DATE  
**Jan 26, 2024**  
RECEIVED DATE  
**Jan 18, 2024**  
ACCOUNT  
**48430**



**Weishuhn Engineering Inc**  
**Barbara Weishuhn**  
**PO BOX 358**  
**Columbus TX 78934**

IDENTIFICATION  
**LONE STAR JELLYSTONE**  
  
**LOC B**

**SOIL FERTILITY RECOMMENDATIONS (POUNDS PER ACRE)**

YOUR SAMPLE NUMBER <small>(LAB NUMBER)</small>	INTENDED CROP	YIELD GOAL	PREVIOUS CROP	SOIL AMENDMENTS				N NITROGEN	P <sub>2</sub> O <sub>5</sub> PHOSPHATE	K <sub>2</sub> O POTASH	Mg MAGNE- SIUM	S SULFUR	Zn ZINC	Mn MANGA- NESE	Fe IRON	Cu COPPER	B BORON
				LIME LBS/A OF	LIME TON	GYP-SUM TONS/A	ELEMENTAL SULFUR LBS/A										
LOCB 0-6"  (42973212)	BERMUDA GRS HAY TON	10.0	BERMUDA GRS HAY TON					450									

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.  
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NOTES:

SOIL SAMPLES WERE COLLECTED  
AT LOCATIONS MARKED ON MAP AT INTERVALS OF  
0"-6", 6"-18", AND 18"-30". SAMPLES WERE  
HOMOGENIZED BY INTERVAL AND SHIPPED  
TO MIDWEST LABS FOR TESTING.

LEGEND

X SOIL SAMPLE LOCATION

SOIL SAMPLE LOCATION MAP  
SUN NG JELLY-LONE STAR RX RV LLC.  
TLAP SPECIAL PROVISION 4  
WALLER COUNTY

Weishuhn Engineering Inc.  
425 Spring St. PO BOX 358  
Columbus, Texas 78934  
(979) 732-6997  
F-66

1"=200'

DESIGNED BY: JWW

DRAWN BY: ZJL

# ATTACHMENT V: WATER BALANCE

Lonestar Jellystone  
10/18/2019

## Treated Effluent Pond

Reservoir Area = 0.64 Acres

## Irrigation Area

Irrigation Area = 14.6 Acres

Daily Flow = 30,000 gpd

CN = 74 Group C, Meadow Continuous Grass, Drained Condition; ENG TECHNOTE 210-18-TX5

CE = 1.08 mmhos/cm

CI = 7 mmhos/cm Bermuda Grass

CI = 5 mmhos/cm Rye Grass

K = 0.85



*James W. Weishuhn*  
10-18-19  
F-66

Column 9 Equation = (Reservoir Area/Irrigation Area)\*(Average Monthly Evaporation)

Water Balance										
ALL UNITS IN INCHES UNLESS NOTED OTHERWISE										
1	2	3	4	5	6	7	8	9	10	11
							Effluent Required			
Month	Avg Rain	Avg Run-off	Avg R <sub>i</sub>	ET	L	TWN	in Root Zone	EFRS	Applied to Land	CFR (in./ac)
Jan	2.97	0.89	2.08	3.00	0.25	3.25	1.17	0.10	1.38	1.48
Feb	2.92	0.86	2.06	3.00	0.26	3.26	1.20	0.11	1.41	1.52
Mar	2.90	0.85	2.05	4.50	0.67	5.17	3.12	0.16	3.67	3.83
Apr	3.46	1.21	2.25	6.00	1.03	7.03	4.79	0.20	5.63	5.83
May	4.67	2.10	2.57	6.00	0.63	6.63	4.06	0.22	4.78	5.00
Jun	3.78	1.44	2.34	6.80	0.81	7.61	5.27	0.28	6.20	6.48
Jul	2.27	0.48	1.79	6.50	0.86	7.36	5.57	0.31	6.56	6.87
Aug	2.55	0.64	1.91	4.50	0.47	4.97	3.06	0.30	3.60	3.90
Sep	3.71	1.39	2.32	5.00	0.49	5.49	3.17	0.24	3.72	3.96
Oct	3.91	1.53	2.38	4.00	0.30	4.30	1.92	0.20	2.25	2.45
Nov	3.48	1.23	2.25	4.50	0.62	5.12	2.86	0.13	3.37	3.50
Dec	3.24	1.06	2.18	3.00	0.23	3.23	1.05	0.07	1.24	1.31
<b>Total</b>	<b>39.86</b>	<b>13.67</b>	<b>26.19</b>	<b>56.80</b>	<b>6.62</b>	<b>63.42</b>	<b>37.23</b>	<b>2.32</b>	<b>43.80</b>	<b>46.12</b>



Storage Volume										
ALL UNITS IN INCHES UNLESS NOTED OTHERWISE										
12	13	14A	14B	15	16	17	18A	18B	19	20
Month	Effluent Received (in/mo)	MRD(%)	Rainfall (Max)	Runoff (Max)	R <sub>i</sub>	Total Available H <sub>2</sub> O	DoM(%)	Net E (Min)	Storage in	AS(ac-in/ac)
Jan	2.30	7.45	5.86	3.07	2.79	5.09	5.28	0.09	1.67	3.40
Feb	2.30	7.33	0.80	0.00	0.80	3.10	5.28	0.10	-0.70	2.71
Mar	2.30	7.28	6.78	3.85	2.93	5.23	7.92	0.16	-0.50	2.21
Apr	2.30	8.68	5.72	2.95	2.77	5.07	10.56	0.17	-2.88	-0.67
May	2.30	11.72	13.87	10.39	3.48	5.78	10.56	0.18	-1.58	-2.25
Jun	2.30	9.48	5.52	2.79	2.73	5.04	11.97	0.22	-3.66	-5.91
Jul	2.30	5.69	0.56	0.01	0.55	2.86	11.44	0.21	-5.92	-11.83
Aug	2.30	6.40	1.37	0.11	1.26	3.57	7.92	0.25	-2.31	-14.14
Sep	2.30	9.31	1.28	0.08	1.20	3.50	8.80	0.22	-2.97	-17.11
Oct	2.30	9.81	10.21	6.94	3.27	5.57	7.04	0.18	0.92	-16.19
Nov	2.30	8.73	5.21	2.53	2.68	4.98	7.92	0.14	-0.71	-16.90
Dec	2.30	8.13	6.07	3.24	2.83	5.13	5.28	0.10	1.73	1.73
<b>Total</b>	<b>27.62</b>	<b>100.00</b>	<b>63.25</b>	<b>35.96</b>	<b>27.29</b>	<b>54.91</b>	<b>100.00</b>	<b>2.01</b>		<b>3.40</b>

Total Storage Volume =

4.1 Acre ft  
1,349,131 Gallons



## Nitrogen Balance

$$L = N/2.7C$$

N

80 lb/ac/year

per soil analyses, attached

N with 20% volatiliz.

96 lb/ac/year

C

13 mg/L

Nitrogen Effluent Concentration

L=

2.7 Annual Liquid Loading Rate in feet Per Year

Month	Percent Flow	Max Flow (gpd)	Days	Total Flow (gallons per month)
Jan	100%	30,000	31	930,000
Feb	100%	30,000	28	840,000
Mar	100%	30,000	31	930,000
Apr	100%	30,000	30	900,000
May	100%	30,000	31	930,000
Jun	100%	30,000	30	900,000
Jul	100%	30,000	31	930,000
Aug	100%	30,000	31	930,000
Sep	100%	30,000	30	900,000
Oct	100%	30,000	31	930,000
Nov	100%	30,000	30	900,000
Dec	100%	30,000	31	930,000

Total Flow (gallons)

10,950,000

Application Area

Liquid Loading

Actual Hydraulic Loading based on flow estimates

gallons

14.6 acres

2.3 feet per year



*James W. Weishuhn*  
10-18-19

## Rainee Trevino

---

**From:** Elizabeth Koroscik <ekoroscik@atwell.com>  
**Sent:** Tuesday, January 28, 2025 11:06 AM  
**To:** Rainee Trevino  
**Cc:** Joey Gallegos; Hank Smith  
**Subject:** Comment Response - Renew Permit No. WQ0015640001  
**Attachments:** 10053 - Domestic Administrative Report.pdf; 10054 - Domestic Technical Report.pdf; 10400 - Core Data Form.pdf; 20972 - Plain Language Summary.pdf; Comment Response.pdf; Municipal Disposal Renewal Spanish NORI.docx; Proof of Payment.pdf

**Categories:** NOD Response Review

Good morning,

Attached is our response to the Notice of Deficiency letter sent on January 16, 2025.

Please let me know if you have any questions or need any additional information.

Thank you.

### Elizabeth Koroscik

Engineer

**ATWELL, LLC**

210.542.7346 Mobile

1611 West 5th Street, Suite 175 | Austin, TX 78703

[www.atwell.com](http://www.atwell.com)

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1/28/2025

Rainee Trevino  
Applications Review and Processing Team (MCI48)  
TCEQ – Water Quality Division

**RE:** Application to Renew Permit No.: WQ0015640001  
Project Number: 24007556

Dear Rainee Trevino,

This letter is in response to your review of the Lone Star Jellystone Park Camp Resort (RN101234490) Permit Renewal. The plans have been revised per the comments in your letter dated 01/16/2025. Below is a list of each comment with our responses in bold.

1. Administrative Report 1.0, Section 1, Application Fees:

The application indicates that a processing fee of \$315.00 was submitted. However, we were unable to verify payment of the application renewal fee. Please submit a complete payment to: TCEQ, Financial Administration Division (MC214), P.O. Box 13088, Austin, Texas 78711-3088. The application cannot be declared administratively complete until the processing fee has been received.

**Response: The check was delivered to the overnight mailing address on January 13, 2025. Attached with this letter is proof of delivery from UPS.**

2. Administrative Report 1.0, Section 3:

The CN provided is incorrect. Please revise the application to reflect the correct CN number.

**Response: CN number has been revised.**

3. Core Data Form, Section II, Item 6:

The Customer Legal Name shows as the previous owner's name. Please submit a revised Core Data Form with the correct Customer Legal Name.

**Response: Customer Legal Name has been updated.**



4. Core Data Form, Section II, Item 7 & 8:

Please provide the correct filing number with the Secretary of State and State Tax ID for Sun NG Jelly-Lone Star TX RV LLC. The ID numbers originally provided are for Hempstead Yogi, LTD.

**Response: Tax ID numbers have been updated accordingly.**

5. Plain Language Summary (PLS):

The PLS submitted has the incorrect CN number. The method of disposal and acreage also must be in the PLS. Please provide a revised PLS with the correct CN, disposal method, and acreage.

**Response: PLS has been updated accordingly.**

6. Technical Report, Section 1:

Please provide the Final Phase Flow.

**Response: Final Phase Flow has been added.**

7. The following is a portion of the 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. Sun NG Jelly-Lone Star TX RV LLC, 27777 Franklin Road, Suite 200, Southfield, Michigan 48034, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Land Application Permit (TLAP) No. WQ0015640001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 15,000 gallons per day via surface irrigation of 7.68 acres of non-public access pastureland in the Interim Phase and the disposal of treated domestic wastewater effluent at a daily average not to exceed 30,000 gallons per day via surface irrigation of 14.6 acres of non-public access pastureland in the final phase. The domestic wastewater treatment facility and disposal area are located at 34843 Betka Road, near the city of Waller, in Waller County, Texas 77484. TCEQ received this application on January 10, 2025. The permit application will be available for viewing and copying at Waller County Library, 2331 11th Street, Hempstead, in Waller County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage:



<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications>. 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=-95.989722,30.021388&level=18>

Further information may also be obtained from Sun NG Jelly-Lone Star TX RV LLC at the address stated above or by calling Mr. Bruce Thelen, COO, at 248-208-2651.

**Response: This NORI is accurate. No changes necessary.**

8. The application indicates that public notices in Spanish are required. After confirming the portion of the NORI above does not contain any errors or omissions, please use the attached template to translate the NORI into Spanish. Only the first and last paragraphs are unique to this application and require translation. Please provide the translated Spanish NORI in a Microsoft Word document.

**Response: Spanish NORI has been included with this comment response.**

Please call or email me with any concerns at 210-367-6270 or [jgallegos@atwell.com](mailto:jgallegos@atwell.com)

Sincerely,

Joey, Gallegos PE  
Associate Director  
512-584-8705 Desk  
210-367-6270 Mobile  
**ATWELL, LLC**

#### Attachments

1. Updated Administrative Report
2. Updated Core Data Form
3. Updated Plain Language Summary
4. Updated Technical Report
5. NORI – Spanish Translation
6. Proof of Payment



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT NAME: Sun NG Jelly-Lone Star TX RV LLC

PERMIT NUMBER (If new, leave blank): WQ00 15640001

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

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

For TCEQ Use Only

Segment Number \_\_\_\_\_ County \_\_\_\_\_  
Expiration Date \_\_\_\_\_ Region \_\_\_\_\_  
Permit Number \_\_\_\_\_



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

**DOMESTIC WASTEWATER PERMIT APPLICATION  
ADMINISTRATIVE REPORT 1.0**

For any questions about this form, please contact the Applications Review and Processing Team at 512-239-4671.

**Section 1. Application Fees (Instructions Page 26)**

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

Flow	New/Major Amendment	Renewal
<0.05 MGD	\$350.00 <input type="checkbox"/>	\$315.00 <input checked="" type="checkbox"/>
≥0.05 but <0.10 MGD	\$550.00 <input type="checkbox"/>	\$515.00 <input type="checkbox"/>
≥0.10 but <0.25 MGD	\$850.00 <input type="checkbox"/>	\$815.00 <input type="checkbox"/>
≥0.25 but <0.50 MGD	\$1,250.00 <input type="checkbox"/>	\$1,215.00 <input type="checkbox"/>
≥0.50 but <1.0 MGD	\$1,650.00 <input type="checkbox"/>	\$1,615.00 <input type="checkbox"/>
≥1.0 MGD	\$2,050.00 <input type="checkbox"/>	\$2,015.00 <input type="checkbox"/>

Minor Amendment (for any flow) \$150.00 ☐

**Payment Information:**

Mailed      Check/Money Order Number: 2024753  
Check/Money Order Amount: \$315.00  
Name Printed on Check: Sun Communities Operating LP

EPAY      Voucher Number: Click to enter text.

Copy of Payment Voucher enclosed?      Yes ☐

**Section 2. Type of Application (Instructions Page 26)**

a. Check the box next to the appropriate authorization type.

- ☐ Publicly-Owned Domestic Wastewater  
☒ Privately-Owned Domestic Wastewater  
☐ Conventional Wastewater Treatment

b. Check the box next to the appropriate facility status.

- ☒ Active      ☐ Inactive



c. Check the box next to the appropriate permit type.

- ☐ TPDES Permit  
☒ TLAP  
☐ TPDES Permit with TLAP component  
☐ Subsurface Area Drip Dispersal System (SADDS)

d. Check the box next to the appropriate application type

- |   |   |
|---|---|
| <input type="checkbox"/> New                                    |   |
| <input type="checkbox"/> Major Amendment <u>with</u> Renewal    | <input type="checkbox"/> Minor Amendment <u>with</u> Renewal    |
| <input type="checkbox"/> Major Amendment <u>without</u> Renewal | <input type="checkbox"/> Minor Amendment <u>without</u> Renewal |
| <input checked="" type="checkbox"/> Renewal without changes     | <input type="checkbox"/> Minor Modification of permit           |

e. For amendments or modifications, describe the proposed changes: [Click to enter text.](#)

f. For existing permits:

Permit Number: WQ00 15640001

EPA I.D. (TPDES only): TX [Click to enter text.](#)

Expiration Date: July 10, 2025

### Section 3. Facility Owner (Applicant) and Co-Applcant Information (Instructions Page 26)

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

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

Sun NG Jelly-Lone Star TX RV 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: 605839323

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.

Last Name, First Name: Thelen, Bruce

Title: Chief Operating Officer

Credential:

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 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 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: Click to enter text.

Last Name, First Name: Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

Provide a brief description of the need for a co-permittee: Click 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 A: Core Data Form

## Section 4. Application Contact Information (Instructions Page 27)

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.

Last Name, First Name: Thelen, Bruce

Title: COO

Credential: Click to enter text.

Organization Name: Sun NG Jelly-Lone Star TX RV LLC

Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034

Phone No.: 248-208-2651

E-mail Address: bthelen@suncommunities.com

Check one or both: ☒ Administrative Contact ☐ Technical Contact

B. Prefix: Mr.

Last Name, First Name: Smith, Hank

Title: Director

Credential: P.E.

Organization Name: Atwell LLC

Mailing Address: 1611 W 5th Street, Suite 175 City, State, Zip Code: Austin, TX 78703

Phone No.: 512-695-3914

E-mail Address: hsmith@atwell.com

Check one or both: ☐ Administrative Contact ☒ Technical Contact

## Section 5. Permit Contact Information (Instructions Page 27)

Provide the names and contact information for two individuals that can be contacted throughout the permit term.

A. Prefix: Mr.

Last Name, First Name: Smith, Hank

Title: Director

Credential: P.E.

Organization Name: Atwell LLC

Mailing Address: 1611 W 5th Street, Suite 175 City, State, Zip Code: Austin, TX 78703

Phone No.: 512-695-3914

E-mail Address: hsmith@atwell.com

B. Prefix: Mr. Last Name, First Name: Thelen, Bruce  
Title: COO Credential: [Click to enter text.](#)  
Organization Name: Sun NG Jelly-Lone Star TX RV LLC  
Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034  
Phone No.: 248-208-2651 E-mail Address: bthelen@suncommunities.com

## Section 6. Billing Contact Information (Instructions Page 27)

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. Last Name, First Name: Thelen, Bruce  
Title: COO Credential: [Click to enter text.](#)  
Organization Name: Sun NG Jelly-Lone Star TX RV LLC  
Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034  
Phone No.: 248-208-2651 E-mail Address: bthelen@suncommunities.com

## Section 7. DMR/MER Contact Information (Instructions Page 27)

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

Prefix: Mr. Last Name, First Name: Sabol, Tyler  
Title: Wastewater Treatment Operator, Class C Credential: [Click to enter text.](#)  
Organization Name: TNG Utility  
Mailing Address: PO Box 2749 City, State, Zip Code: Spring, TX 77383  
Phone No.: 281-350-0895 E-mail Address: tarrynf@tng-utility.com

## Section 8. Public Notice Information (Instructions Page 27)

### A. Individual Publishing the Notices

Prefix: Mr. Last Name, First Name: Smith, Hank  
Title: Director Credential: P.E.  
Organization Name: Atwell LLC  
Mailing Address: 1611 W 5th Street, Suite 175 City, State, Zip Code: Austin, TX 78703  
Phone No.: 512-584-8678 E-mail Address: hsmith@atwell.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 permit to be listed in the Notices**

Prefix: Mr.

Last Name, First Name: Thelen, Bruce

Title: COO

Credential: [Click to enter text.](#)

Organization Name: Sun NG Jelly-Lone Star TX RV LLC

Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034

Phone No.: 248-208-2651

E-mail Address: bthelen@suncommunities.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: Waller County Library

Location within the building: [Click to enter text.](#)

Physical Address of Building: 2331 11th Street

City: Hempstead

County: Waller

Contact (Last Name, First Name): [Click to enter text.](#)

Phone No.: 979-826-7658 Ext.: [Click 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? Spanish

#### F. Plain Language Summary Template

Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment.

**Attachment:** B. Plain Language Summary

#### G. 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:** Click to enter text.

## Section 9. Regulated Entity and Permitted Site Information (Instructions Page 29)

A. If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. RN 101234490

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):

Lone Star Jellystone Park Camp Resort

C. Owner of treatment facility: Sun NG Jelly-Lone Star TX RV LLC

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

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

Prefix: Mr.

Last Name, First Name: Thelen, Bruce

Title: COO

Credential: Click to enter text.

Organization Name: Sun NG Jelly-Lone Star TX RV LLC.

Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034

Phone No.: 248-208-2651

E-mail Address: bthelen@suncommunities.com

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 to enter text.



E. Owner of effluent disposal site:

Prefix: Mr.

Last Name, First Name: Thelen, Bruce

Title: COO

Credential: Click to enter text.

Organization Name: Sun NG Jelly-Lone Star TX RV LLC.

Mailing Address: 27777 Franklin Road, Suite 200 City, State, Zip Code: Southfield, MI 48034

Phone No.: 248-208-2651

E-mail Address: bthelen@suncommunities.com

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 to enter text.

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

Prefix: Click to enter text.

Last Name, First Name: Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

Organization Name: Click to enter text.

Mailing Address: Click to enter text.

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

Phone No.: Click to enter text.

E-mail Address: Click 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 to enter text.

## Section 10. TPDES Discharge Information (Instructions Page 31)

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:

Click to enter text.

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:

Click to enter text.

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

County in which the outfalls(s) is/are located: Click 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 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: [Click to enter text.](#)

## Section 11. TLAP Disposal Information (Instructions Page 32)

- 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:

[Click to enter text.](#)

- B. City nearest the disposal site: Waller

- C. County in which the disposal site is located: Waller

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

Effluent will be pumped to an effluent holding pond for storage. Effluent will be pumped from the effluent storage pond to the land application areas in the southern portion of the park.

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

## Section 12. Miscellaneous Information (Instructions Page 32)

- 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 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 to enter text.](#)

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account number: [Click to enter text.](#)

Amount past due: [Click 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 to enter text.](#)

Amount past due: [Click to enter text.](#)

## Section 13. Attachments (Instructions Page 33)

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: [Click to enter text.](#)

## Section 14. Signature Page (Instructions Page 34)

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

Permit Number: WQ0015640001

Applicant: Sun NG Jelly-Lone Star TX RV 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): Bruce Thelen

Signatory title: Chief Operating Officer

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(Use blue ink)

Subscribed and Sworn to before me by the said \_\_\_\_\_

on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

My commission expires on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public

[SEAL]

\_\_\_\_\_  
County, Texas

# DOMESTIC WASTEWATER PERMIT APPLICATION

## SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

This form applies to TPDES permit applications only. Complete and attach the Supplemental Permit information Form (SPIF) (TCEQ Form 20971).

**Attachment:** [Click to enter text.](#)



# WATER QUALITY PERMIT

## PAYMENT SUBMITTAL FORM

Use this form to submit the Application Fee, if the mailing the payment.

- Complete items 1 through 5 below.
- Staple the check or money order in the space provided at the bottom of this document.
- **Do Not mail this form with the application form.**
- Do not mail this form to the same address as the application.
- Do not submit a copy of the application with this form as it could cause duplicate permit entries.

**Mail this form and the check or money order to:**

*BY REGULAR U.S. MAIL*

Texas Commission on Environmental Quality  
Financial Administration Division  
Cashier's Office, MC-214  
P.O. Box 13088  
Austin, Texas 78711-3088

*BY OVERNIGHT/EXPRESS MAIL*

Texas Commission on Environmental Quality  
Financial Administration Division  
Cashier's Office, MC-214  
12100 Park 35 Circle  
Austin, Texas 78753

**Fee Code: WQP**      **Waste Permit No: WQ0015640001**

1. Check or Money Order Number: [Click to enter text.](#)
2. Check or Money Order Amount: \$315.00
3. Date of Check or Money Order: [Click to enter text.](#)
4. Name on Check or Money Order: [Click to enter text.](#)
5. APPLICATION INFORMATION

Name of Project or Site: Sun NG Jelly-Lone Star TX RV LLC.

Physical Address of Project or Site: 34843 Betka Road, Waller TX 77484

If the check is for more than one application, attach a list which includes the name of each Project or Site (RE) and Physical Address, exactly as provided on the application.

**Staple Check or Money Order in This Space**

# ATTACHMENT 1

## INDIVIDUAL INFORMATION

### DOMESTIC WASTEWATER PERMIT APPLICATION 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 application 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 ☐ 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)*

Plain Language Summary ☒ Yes



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

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For any questions about this form, please contact the Domestic Wastewater Permitting Team at 512-239-4671.

The following information is required for all renewal, new, and amendment applications.

### Section 1. Permitted or Proposed Flows (Instructions Page 43)

#### A. Existing/Interim I Phase

Design Flow (MGD): 0.015

2-Hr Peak Flow (MGD): N/A

Estimated construction start date: August 1, 2019

Estimated waste disposal start date: November 15, 2019

#### B. Interim II Phase

Design Flow (MGD): Click to enter text.

2-Hr Peak Flow (MGD): Click to enter text.

Estimated construction start date: Click to enter text.

Estimated waste disposal start date: Click to enter text.

#### C. Final Phase

Design Flow (MGD): 0.30

2-Hr Peak Flow (MGD): N/A

Estimated construction start date: November 15, 2019

Estimated waste disposal start date: February 14, 2020

#### D. Current Operating Phase

Provide the startup date of the facility: November 15, 2019

### Section 2. Treatment Process (Instructions Page 43)

#### A. Current Operating Phase

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, a description of *each phase* must be provided.**

Wastewater gravity flows or is pumped to trash tanks and then equalization tanks. The equalization tanks store portions of the daily flow to provide for dampening of peak flows. Pumps convey wastewater from the equalization tanks to an extended aeration biological treatment unit. The mixed liquor from the extended aeration treatment unit gravity flows to a clarifier where solids settle and return to the extended aeration unit. Clarified liquids gravity flow to a pump tank for conveying the treated wastewater to an effluent holding pond. Treated water is pumped from the effluent holding pond to a land application area. Waste Activated Sludge will be removed directly from clarifier or biological treatment unit for offsite disposal at a TCEQ approved facility

## 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)
1,000 GALLON TRASH TANKS	2	7.83' X 5' X 5.67'
2,000 GALLON TRASH TANKS	17	12.91' X 5' X 5.91'
2,000 GALLON EQUALIZATION TANKS	14	12.91' X 5' X 5.91'
2,500 GALLON EQUALIZATION TANKS	4	12.91' X 5.67' X 5.67'
AEROBIC TREATMENT	1	40' X 11' X 12'
CLARIFIER	1	10' DIAMETER X 12' HEIGHT
EFFLUENT HOLDING POND	1	189' X 160' X 8'
LAND APPLICATION	1	403'X420',807' X 205',350'X740'

## C. Process Flow Diagram

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

**Attachment:** E. Process Flow Diagram

## Section 3. Site Information and Drawing (Instructions Page 44)

Provide the TPDES discharge outfall latitude and longitude. Enter N/A if not applicable.

- Latitude: [Click to enter text.](#)
- Longitude: [Click to enter text.](#)

Provide the TLAP disposal site latitude and longitude. Enter N/A if not applicable.

- Latitude: 30.017
- Longitude: -95.985

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: F. Site Drawing**

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

Lone Star Jellystone Park Camp Resort – an RV camp resort currently with 435 transient accommodations (RVs and cabins) with an associated water park with fast food service. The area served by the treatment facility will be limited to the Lone Star Jellystone Park Camp Resort.

**Collection System Information for wastewater TPDES permits only:** Provide information for each **uniquely owned** collection system, existing and new, served by this facility, including satellite collection systems. **Please see the instructions for a detailed explanation and examples.**

**Collection System Information**

Collection System Name	Owner Name	Owner Type	Population Served
		Choose an item.	
		Choose an item.	
		Choose an item.	
		Choose an item.	

## Section 4. Unbuilt Phases (Instructions Page 45)

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

**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.**

Click to enter text.

## Section 5. Closure Plans (Instructions Page 45)

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

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

Click to enter text.

## Section 6. Permit Specific Requirements (Instructions Page 45)

**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

If **yes**, provide the date(s) of approval for each phase: August 13th, 2018

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.**

**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.

Click to enter text.

**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

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

Click to enter text.

**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 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 512-239-2335. 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 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 512-239-2335.

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

Click 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 to enter text.](#) or TXRNE [Click 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 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 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 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 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, attach a Sewage Sludge Solids Management Plan. See Example 5 in the instructions.

[Click to enter text.](#)

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

**1. Acceptance of sludge from other WWTPs**

Does or will the facility accept sludge from other treatment plants at the facility site?

☐ Yes ☒ No

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

In addition, provide the date the plant started or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the BOD<sub>5</sub> concentration of the sludge, and the design BOD<sub>5</sub> concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click 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 the date the plant started 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<sub>5</sub> concentration of the septic waste, and the design BOD<sub>5</sub> concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click 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 or will the facility 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 to enter text.

## Section 7. Pollutant Analysis of Treated Effluent (Instructions Page 50)

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). **Water treatment facilities** discharging filter backwash water, complete Table 1.0(3). Provide copies of the laboratory results sheets. **These tables are not applicable for a minor amendment without renewal.** See the instructions for guidance.

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 <sub>5</sub> , mg/l	4.37	4.37	3	Grab	12/3/2024 10:15 AM
Total Suspended Solids, mg/l	31.5	31.5	3	Grab	12/3/2024 10:15 AM
Ammonia Nitrogen, mg/l	24.9	24.9	3	Grab	12/3/2024 10:15 AM
Nitrate Nitrogen, mg/l	68.8	68.8	3	Grab	12/7/2024 4:19 PM
Total Kjeldahl Nitrogen, mg/l	6.72	6.72	3	Grab	12/3/2024 10:15 AM
Sulfate, mg/l	32.1	32.1	3	Grab	12/7/2024 4:19 PM
Chloride, mg/l	125	125	3	Grab	12/7/2024 4:19 PM
Total Phosphorus, mg/l	8.46	8.46	3	Grab	12/3/2024 10:15 AM
pH, standard units	7.38	7.38	3	Grab	12/3/2024 10:15 AM

Dissolved Oxygen*, mg/l	7.31	7.31	3	Grab	12/3/2024 10:15 AM
Chlorine Residual, mg/l	<0.25	0.25	3	Grab	12/3/2024 10:15 AM
<i>E.coli</i> (CFU/100ml) freshwater	<2420	2420	3	Grab	12/3/2024 10:15 AM
Enterococci (CFU/100ml) saltwater	N/A	N/A			
Total Dissolved Solids, mg/l	605	605	3	Grab	12/3/2024 10:15 AM
Electrical Conductivity, µmohs/cm, †	992	992	3	Grab	12/3/2024 10:15 AM
Oil & Grease, mg/l	<5.00	5.00	3	Grab	12/6/2024 7:30 AM
Alkalinity (CaCO <sub>3</sub> )*, mg/l	27.1	27.1	3	Grab	12/3/2024 10:15 AM

\*TPDES permits only

†TLAP permits only

**Table1.0(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 <sub>3</sub> ), mg/l					

## Section 8. Facility Operator (Instructions Page 50)

Facility Operator Name: Tyler Sabol

Facility Operator's License Classification and Level: WWTP Operator Class C

Facility Operator's License Number: WW0075278

## Section 9. Sludge and Biosolids Management and Disposal (Instructions Page 51)

### A. WWTP's Biosolids Management Facility Type

Check all that apply. See instructions for guidance

- ☐ Design flow >= 1 MGD
- ☐ Serves >= 10,000 people
- ☐ Class I Sludge Management Facility (per 40 CFR § 503.9)
- ☐ Biosolids generator

- ☐ Biosolids end user – land application (onsite)
- ☐ Biosolids end user – surface disposal (onsite)
- ☐ Biosolids end user – incinerator (onsite)

## B. WWTP's Biosolids Treatment Process

Check all that apply. See instructions for guidance.

- ☒ Aerobic Digestion
- ☐ Air Drying (or sludge drying beds)
- ☐ Lower Temperature Composting
- ☐ Lime Stabilization
- ☐ Higher Temperature Composting
- ☐ Heat Drying
- ☐ Thermophilic Aerobic Digestion
- ☐ Beta Ray Irradiation
- ☐ Gamma Ray Irradiation
- ☐ Pasteurization
- ☐ Preliminary Operation (e.g. grinding, de-gritting, blending)
- ☐ Thickening (e.g. gravity thickening, centrifugation, filter press, vacuum filter)
- ☐ Sludge Lagoon
- ☐ Temporary Storage (< 2 years)
- ☐ Long Term Storage (>= 2 years)
- ☐ Methane or Biogas Recovery
- ☐ Other Treatment Process: [Click to enter text.](#)

## C. Biosolids Management

Provide information on the *intended* biosolids management practice. Do not enter every management practice that you want authorized in the permit, as the permit will authorize all biosolids management practices listed in the instructions. Rather indicate the management practice the facility plans to use.

### Biosolids Management

Management Practice	Handler or Preparer Type	Bulk or Bag Container	Amount (dry metric tons)	Pathogen Reduction Options	Vector Attraction Reduction Option
Other	Off-site Third-Party Handler or Preparer	<a href="#">Choose an item.</a>		<a href="#">Choose an item.</a>	<a href="#">Choose an item.</a>



Management Practice	Handler or Preparer Type	Bulk or Bag Container	Amount (dry metric tons)	Pathogen Reduction Options	Vector Attraction Reduction Option
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.

If "Other" is selected for Management Practice, please explain (e.g. monofill or transport to another WWTP): Transport Sludge to permitted sludge processing facility. See Attachment S.

#### D. Disposal site

Disposal site name: Grimes County Water Reclamation, LLC.

TCEQ permit or registration number: WQ0015032001

County where disposal site is located: Grimes

#### E. Transportation method

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

Name of the hauler: dba Perez Trucking & Construction

Hauler registration number: 25093

Sludge is transported as a:

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

## Section 10. Permit Authorization for Sewage Sludge Disposal (Instructions Page 53)

#### 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	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Sludge Surface Disposal or Sludge Monofill	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Temporary storage in sludge lagoons	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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 53)

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 to enter text.](#)
- USDA Natural Resources Conservation Service Soil Map:  
**Attachment:** [Click to enter text.](#)
- Federal Emergency Management Map:  
**Attachment:** [Click to enter text.](#)
- Site map:  
**Attachment:** [Click 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 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 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 to enter text.](#)

Total Kjeldahl Nitrogen, mg/kg: [Click to enter text.](#)

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

Phosphorus, mg/kg: [Click to enter text.](#)

Potassium, mg/kg: [Click to enter text.](#)

pH, standard units: [Click to enter text.](#)

Ammonia Nitrogen mg/kg: [Click to enter text.](#)

Arsenic: [Click to enter text.](#)

Cadmium: [Click to enter text.](#)

Chromium: [Click to enter text.](#)

Copper: [Click to enter text.](#)

Lead: [Click to enter text.](#)

Mercury: [Click to enter text.](#)

Molybdenum: [Click to enter text.](#)

Nickel: [Click to enter text.](#)

Selenium: [Click to enter text.](#)

Zinc: [Click to enter text.](#)

Total PCBs: [Click to enter text.](#)

Provide the following information:

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

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

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

## C. Liner information

Does the active/proposed sludge lagoon(s) have a liner with a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec?

☐ Yes ☐ No

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

[Click to enter text.](#)

#### D. Site development plan

Provide a detailed description of the methods used to deposit sludge in the lagoon(s):

[Click to enter text.](#)

Attach the following documents to the application.

- Plan view and cross-section of the sludge lagoon(s)  
**Attachment:** [Click to enter text.](#)
- Copy of the closure plan  
**Attachment:** [Click to enter text.](#)
- Copy of deed recordation for the site  
**Attachment:** [Click to enter text.](#)
- Size of the sludge lagoon(s) in surface acres and capacity in cubic feet and gallons  
**Attachment:** [Click to enter text.](#)
- Description of the method of controlling infiltration of groundwater and surface water from entering the site  
**Attachment:** [Click to enter text.](#)
- Procedures to prevent the occurrence of nuisance conditions  
**Attachment:** [Click 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 to enter text.](#)

## Section 12. Authorizations/Compliance/Enforcement (Instructions Page 55)

### 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 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 to enter text.

## Section 13. RCRA/CERCLA Wastes (Instructions Page 55)

### 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 to enter text.](#)

## Section 14. Laboratory Accreditation (Instructions Page 56)

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: Bruce Thelen

Title: Chief Operating Officer

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# DOMESTIC WASTEWATER PERMIT APPLICATION

## TECHNICAL REPORT 1.1

The following information is required for new and amendment major applications.

### Section 1. Justification for Permit (Instructions Page 57)

#### 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.

[Click to enter text.](#)

#### B. Regionalization of facilities

For additional guidance, please review [TCEQ's Regionalization Policy for Wastewater Treatment](#)<sup>1</sup>.

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 to enter text.](#)

If yes, attach correspondence from the city.

Attachment: [Click 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 to enter text.](#)

##### 2. *Utility CCN areas*

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

☐ Yes ☐ No

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<sup>1</sup> <https://www.tceq.texas.gov/permitting/wastewater/tceq-regionalization-for-wastewater>

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 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 and collection systems that includes each permittee's name and permit number, and an area map showing the location of these facilities and collection systems.

**Attachment:** [Click to enter text.](#)

If **yes**, attach proof of mailing a request for service to each facility and collection system, the letters requesting service, and correspondence from each facility and collection system.

**Attachment:** [Click to enter text.](#)

If the facility or collection system agrees to provide service, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the facility or collection system versus the cost of the proposed facility or expansion.

**Attachment:** [Click to enter text.](#)

## Section 2. Proposed Organic Loading (Instructions Page 59)

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 to enter text.](#)

Average Influent Organic Strength or BOD<sub>5</sub> Concentration in mg/l: [Click to enter text.](#)

Average Influent Loading (lbs/day = total average flow X average BOD<sub>5</sub> conc. X 8.34): [Click to enter text.](#)

Provide the source of the average organic strength or BOD<sub>5</sub> concentration.

[Click 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 <sub>5</sub> Concentration (mg/l)
Municipality		
Subdivision		
Trailer park – transient		
Mobile home park		
School with cafeteria and showers		
School with cafeteria, no showers		
Recreational park, overnight use		
Recreational park, day use		
Office building or factory		
Motel		
Restaurant		
Hospital		
Nursing home		
Other		
TOTAL FLOW from all sources		
AVERAGE BOD <sub>5</sub> from all sources		

## Section 3. Proposed Effluent Quality and Disinfection (Instructions Page 59)

### A. Existing/Interim I Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: [Click to enter text.](#)

Total Suspended Solids, mg/l: [Click to enter text.](#)

Ammonia Nitrogen, mg/l: [Click to enter text.](#)

Total Phosphorus, mg/l: [Click to enter text.](#)

Dissolved Oxygen, mg/l: [Click to enter text.](#)

Other: [Click to enter text.](#)



## B. Interim II Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: [Click to enter text.](#)

Total Suspended Solids, mg/l: [Click to enter text.](#)

Ammonia Nitrogen, mg/l: [Click to enter text.](#)

Total Phosphorus, mg/l: [Click to enter text.](#)

Dissolved Oxygen, mg/l: [Click to enter text.](#)

Other: [Click to enter text.](#)

## C. Final Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: [Click to enter text.](#)

Total Suspended Solids, mg/l: [Click to enter text.](#)

Ammonia Nitrogen, mg/l: [Click to enter text.](#)

Total Phosphorus, mg/l: [Click to enter text.](#)

Dissolved Oxygen, mg/l: [Click to enter text.](#)

Other: [Click to enter text.](#)

## D. Disinfection Method

Identify the proposed method of disinfection.

- ☐ Chlorine: [Click to enter text.](#) mg/l after [Click to enter text.](#) minutes detention time at peak flow

Dechlorination process: [Click to enter text.](#)

- ☐ Ultraviolet Light: [Click to enter text.](#) seconds contact time at peak flow
- ☐ Other: [Click to enter text.](#)

## Section 4. Design Calculations (Instructions Page 59)

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

Attachment: [Click to enter text.](#)

## Section 5. Facility Site (Instructions Page 60)

### 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 to enter text.](#)

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

[Click to enter text.](#)

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 to enter text.](#)

If **no**, provide the approximate date you anticipate submitting your application to the Corps: [Click to enter text.](#)

## B. Wind rose

Attach a wind rose: [Click to enter text.](#)

# Section 6. Permit Authorization for Sewage Sludge Disposal (Instructions Page 60)

## 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)**: [Click 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 the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)**: [Click to enter text.](#)

# Section 7. Sewage Sludge Solids Management Plan (Instructions Page 61)

Attach a solids management plan to the application.

**Attachment:** [Click to enter text.](#)

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 WASTEWATER PERMIT APPLICATION

## WORKSHEET 2.0: RECEIVING WATERS

The following information is required for all TPDES permit applications.

### Section 1. Domestic Drinking Water Supply (Instructions Page 64)

Is there a surface water intake for domestic drinking water supply located within 5 miles downstream from the point or proposed point of discharge?

☐ Yes ☐ No

If **no**, proceed to Section 2. If **yes**, provide the following:

Owner of the drinking water supply: [Click to enter text.](#)

Distance and direction to the intake: [Click to enter text.](#)

Attach a USGS map that identifies the location of the intake.

**Attachment:** [Click to enter text.](#)

### Section 2. Discharge into Tidally Affected Waters (Instructions Page 64)

Does the facility discharge into tidally affected waters?

☐ Yes ☐ No

If **no**, proceed to Section 3. If **yes**, complete the remainder of this section. If no, proceed to Section 3.

#### A. Receiving water outfall

Width of the receiving water at the outfall, in feet: [Click to enter text.](#)

#### B. Oyster waters

Are there oyster waters in the vicinity of the discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from outfall(s).

[Click to enter text.](#)

#### C. Sea grasses

Are there any sea grasses within the vicinity of the point of discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s).

[Click to enter text.](#)

### Section 3. Classified Segments (Instructions Page 64)

Is the discharge directly into (or within 300 feet of) a classified segment?

☐ Yes ☐ No

If **yes**, this Worksheet is complete.

If **no**, complete Sections 4 and 5 of this Worksheet.

### Section 4. Description of Immediate Receiving Waters (Instructions Page 65)

Name of the immediate receiving waters: [Click to enter text.](#)

#### A. Receiving water type

Identify the appropriate description of the receiving waters.

- ☐ Stream
- ☐ Freshwater Swamp or Marsh
- ☐ Lake or Pond

Surface area, in acres: [Click to enter text.](#)

Average depth of the entire water body, in feet: [Click to enter text.](#)

Average depth of water body within a 500-foot radius of discharge point, in feet:  
[Click to enter text.](#)

- ☐ Man-made Channel or Ditch
- ☐ Open Bay
- ☐ Tidal Stream, Bayou, or Marsh
- ☐ Other, specify: [Click to enter text.](#)

#### B. Flow characteristics

If a stream, man-made channel or ditch was checked above, provide the following. For existing discharges, check one of the following that best characterizes the area *upstream* of the discharge. For new discharges, characterize the area *downstream* of the discharge (check one).

- ☐ Intermittent - dry for at least one week during most years
- ☐ Intermittent with Perennial Pools - enduring pools with sufficient habitat to maintain significant aquatic life uses
- ☐ Perennial - normally flowing

Check the method used to characterize the area upstream (or downstream for new dischargers).

- ☐ USGS flow records
- ☐ Historical observation by adjacent landowners
- ☐ Personal observation
- ☐ Other, specify: [Click to enter text.](#)



### C. Downstream perennial confluences

List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point.

[Click to enter text.](#)

### D. Downstream characteristics

Do the receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.)?

☐ Yes ☐ No

If yes, discuss how.

[Click to enter text.](#)

### E. Normal dry weather characteristics

Provide general observations of the water body during normal dry weather conditions.

[Click to enter text.](#)

Date and time of observation: [Click to enter text.](#)

Was the water body influenced by stormwater runoff during observations?

☐ Yes ☐ No

## Section 5. General Characteristics of the Waterbody (Instructions Page 66)

### A. Upstream influences

Is the immediate receiving water upstream of the discharge or proposed discharge site influenced by any of the following? Check all that apply.

☐ Oil field activities

☐ Urban runoff

☐ Upstream discharges

☐ Agricultural runoff

☐ Septic tanks

☐ Other(s), specify: [Click to enter text.](#)

## B. Waterbody uses

Observed or evidences of the following uses. Check all that apply.

- |  |  |
|--|--|
| <input type="checkbox"/> Livestock watering    | <input type="checkbox"/> Contact recreation                                      |
| <input type="checkbox"/> Irrigation withdrawal | <input type="checkbox"/> Non-contact recreation                                  |
| <input type="checkbox"/> Fishing               | <input type="checkbox"/> Navigation  |
| <input type="checkbox"/> Domestic water supply | <input type="checkbox"/> Industrial water supply                                 |
| <input type="checkbox"/> Park activities       | <input type="checkbox"/> Other(s), specify: <a href="#">Click to enter text.</a> |

## C. Waterbody aesthetics

Check one of the following that best describes the aesthetics of the receiving water and the surrounding area.

- ☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional
- ☐ Natural Area: trees and/or native vegetation; some development evident (from fields, pastures, dwellings); water clarity discolored
- ☐ Common Setting: not offensive; developed but uncluttered; water may be colored or turbid
- ☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

# DOMESTIC WASTEWATER PERMIT APPLICATION

## WORKSHEET 2.1: STREAM PHYSICAL CHARACTERISTICS

Required for new applications, major facilities, and applications adding an outfall.

Worksheet 2.1 is not required for discharges to intermittent streams or discharges directly to (or within 300 feet of) a classified segment.

### Section 1. General Information (Instructions Page 66)

Date of study: [Click to enter text.](#) Time of study: [Click to enter text.](#)

Stream name: [Click to enter text.](#)

Location: [Click to enter text.](#)

Type of stream upstream of existing discharge or downstream of proposed discharge (check one).

☐ Perennial ☐ Intermittent with perennial pools

### Section 2. Data Collection (Instructions Page 66)

Number of stream bends that are well defined: [Click to enter text.](#)

Number of stream bends that are moderately defined: [Click to enter text.](#)

Number of stream bends that are poorly defined: [Click to enter text.](#)

Number of riffles: [Click to enter text.](#)

Evidence of flow fluctuations (check one):

☐ Minor ☐ moderate ☐ severe

Indicate the observed stream uses and if there is evidence of flow fluctuations or channel obstruction/modification.

[Click to enter text.](#)

## Stream transects

In the table below, provide the following information for each transect downstream of the existing or proposed discharges. Use a separate row for each transect.

**Table 2.1(1) - Stream Transect Records**

<b>Stream type at transect</b> Select riffle, run, glide, or pool. See Instructions, Definitions section.	<b>Transect location</b>	<b>Water surface width (ft)</b>	<b>Stream depths (ft)</b> at 4 to 10 points along each transect from the channel bed to the water surface. Separate the measurements with commas.
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			
<a href="#">Choose an item.</a>			

## Section 3. Summarize Measurements (Instructions Page 66)

Streambed slope of entire reach, from USGS map in feet/feet: [Click to enter text.](#)

Approximate drainage area above the most downstream transect (from USGS map or county highway map, in square miles): [Click to enter text.](#)

Length of stream evaluated, in feet: [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width, in feet: [Click to enter text.](#)

Average stream depth, in feet: [Click to enter text.](#)

Average stream velocity, in feet/second: [Click to enter text.](#)

Instantaneous stream flow, in cubic feet/second: [Click to enter text.](#)

Indicate flow measurement method (type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Size of pools (large, small, moderate, none): [Click to enter text.](#)

Maximum pool depth, in feet: [Click to enter text.](#)

# DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

The following is required for renewal, new, and amendment permit applications.

## Section 1. Type of Disposal System (Instructions Page 68)

Identify the method of land disposal:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Surface application                                   | <input type="checkbox"/> Subsurface application                |
| <input type="checkbox"/> Irrigation   | <input type="checkbox"/> Subsurface soils absorption           |
| <input type="checkbox"/> Drip irrigation system   | <input type="checkbox"/> Subsurface area drip dispersal system |
| <input type="checkbox"/> Evaporation  | <input type="checkbox"/> Evapotranspiration beds               |
| <input type="checkbox"/> Other (describe in detail): <a href="#">Click to enter text.</a> |  |

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 to enter text.](#)

## Section 2. Land Application Site(s) (Instructions Page 68)

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 Bermuda Hayland	14.6	30,000	N
Rye Grass Hayland (November – February)	14.6	30,000	N



### Section 3. Storage and Evaporation Lagoons/Ponds (Instructions Page 68)

**Table 3.0(2) – Storage and Evaporation Ponds**

Pond Number	Surface Area (acres)	Storage Volume (acre-feet)	Dimensions	Liner Type
1	0.64	4.1	189' x 160' x 8'	HDPE

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

**Attachment:** U

### Section 4. Flood and Runoff Protection (Instructions Page 68)

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 to enter text.

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

FEMA Firm Panel 48473C0165 (Attachment O)

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

Vegetated earthen berms will be constructed at the upgradient and downgradient limits of the land application areas.

## Section 5. Annual Cropping Plan (Instructions Page 68)

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:** Y

- 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 69)

Attach a USGS map with the following information shown and labeled. If not applicable, provide a detailed explanation indicating why. **Attachment:** W

- 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 radius 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 located within a half-mile radius of the disposal site or property boundaries 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
256295	Irrigation	Y	Cased	Buffer Zone
405145	Public Supply	Y	Cased	Buffer Zone
62681	Public Supply	N	Plugged	N/A
PWS 1	Public Supply	Y	Cased	Buffer Zone
60-57-7AA	Public Supply	Y	Cased	Buffer Zone

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

**Attachment:** [Click to enter text.](#)

## Section 7. Groundwater Quality (Instructions Page 69)

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:** R

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**, provide the proposed location of the monitoring wells or lysimeters on a site map.

**Attachment:** [Click to enter text.](#)

## Section 8. Soil Map and Soil Analyses (Instructions Page 70)

### A. Soil map

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

**Attachment:** S

### 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:** T

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
Wockley Fine Sandy Loam	0-14"	2.7	8.4"	80

## Section 9. Effluent Monitoring Data (Instructions Page 71)

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**

[illegible]

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

Click to enter text.



# DOMESTIC WASTEWATER PERMIT APPLICATION

## WORKSHEET 3.1: SURFACE LAND DISPOSAL OF EFFLUENT

The following is required for new and major amendment permit applications. Renewal and minor amendment permit applications may be asked for this worksheet on a case by case basis.

### Section 1. Surface Disposal (Instructions Page 72)

Complete the item that applies for the method of disposal being used.

#### A. Irrigation

Area under irrigation, in acres: [Click to enter text.](#)

Design application frequency:

hours/day [Click to enter text.](#) And days/week [Click to enter text.](#)

Land grade (slope):

average percent (%): [Click to enter text.](#)

maximum percent (%): [Click to enter text.](#)

Design application rate in acre-feet/acre/year: [Click to enter text.](#)

Design total nitrogen loading rate, in lbs N/acre/year: [Click to enter text.](#)

Soil conductivity (mmhos/cm): [Click to enter text.](#)

Method of application: [Click to enter text.](#)

Attach a separate engineering report with the water balance and storage volume calculations, method of application, irrigation efficiency, and nitrogen balance.

**Attachment:** [Click to enter text.](#)

#### B. Evaporation ponds

Daily average effluent flow into ponds, in gallons per day: [Click to enter text.](#)

Attach a separate engineering report with the water balance and storage volume calculations.

**Attachment:** [Click to enter text.](#)

#### C. Evapotranspiration beds

Number of beds: [Click to enter text.](#)

Area of bed(s), in acres: [Click to enter text.](#)

Depth of bed(s), in feet: [Click to enter text.](#)

Void ratio of soil in the beds: [Click to enter text.](#)

Storage volume within the beds, in acre-feet: [Click to enter text.](#)

Attach a separate engineering report with the water balance and storage volume calculations, and a description of the lining.

**Attachment:** [Click to enter text.](#)

#### D. Overland flow

Area used for application, in acres: [Click to enter text.](#)

Slopes for application area, percent (%): [Click to enter text.](#)

Design application rate, in gpm/foot of slope width: [Click to enter text.](#)

Slope length, in feet: [Click to enter text.](#)

Design BOD<sub>5</sub> loading rate, in lbs BOD<sub>5</sub>/acre/day: [Click to enter text.](#)

Design application frequency:

hours/day: [Click to enter text.](#) **And** days/week: [Click to enter text.](#)

Attach a separate engineering report with the method of application and design requirements according to *30 TAC Chapter 217*.

**Attachment:** [Click to enter text.](#)

## Section 2. Edwards Aquifer (Instructions Page 73)

Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

☐ Yes ☐ No

If **yes**, is the facility located on the Edwards Aquifer Recharge Zone?

☐ Yes ☐ No

If **yes**, attach a geological report addressing potential recharge features.

**Attachment:** [Click to enter text.](#)

# DOMESTIC WASTEWATER PERMIT APPLICATION

## WORKSHEET 3.2: SURFACE LAND DISPOSAL OF EFFLUENT

The following **is required** for **new and major amendment** permit applications. Renewal and minor amendments applicants may be asked for the worksheet on a case by case basis.

NOTE: All applicants proposing new/amended subsurface disposal **MUST** complete and submit Worksheet 7.0. This worksheet applies to any subsurface disposal system that **does not meet** the definition of a subsurface area drip dispersal system as defined in *30 TAC Chapter 222, Subsurface Area Drip Dispersal System*.

### Section 1. Subsurface Application (Instructions Page 74)

Identify the type of system:

- ☐ Conventional Gravity Drainfield, Beds, or Trenches (new systems must be less than 5,000 GPD)
- ☐ Low Pressure Dosing
- ☐ Other, specify: [Click to enter text.](#)

Application area, in acres: [Click to enter text.](#)

Area of drainfield, in square feet: [Click to enter text.](#)

Application rate, in gal/square foot/day: [Click to enter text.](#)

Depth to groundwater, in feet: [Click to enter text.](#)

Area of trench, in square feet: [Click to enter text.](#)

Dosing duration per area, in hours: [Click to enter text.](#)

Number of beds: [Click to enter text.](#)

Dosing amount per area, in inches/day: [Click to enter text.](#)

Infiltration rate, in inches/hour: [Click to enter text.](#)

Storage volume, in gallons: [Click to enter text.](#)

Area of bed(s), in square feet: [Click to enter text.](#)

Soil Classification: [Click to enter text.](#)

Attach a separate engineering report with the information required in *30 TAC § 309.20*, excluding the requirements of *§ 309.20 b(3)(A)* and *(B)* design analysis which may be asked for on a case by case basis. Include a description of the schedule of dosing basin rotation.

Attachment: [Click to enter text.](#)

### Section 2. Edwards Aquifer (Instructions Page 74)

Is the subsurface system over the Edwards Aquifer Recharge Zone as mapped by TCEQ?

- ☐ Yes ☐ No

Is the subsurface system over the Edwards Aquifer Transition Zone as mapped by TCEQ?

- ☐ Yes ☐ No

**If yes to either question**, the subsurface system 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 WASTEWATER PERMIT APPLICATION

## WORKSHEET 3.3: SUBSURFACE AREA DRIP DISPERSAL (SADDS) LAND DISPOSAL OF EFFLUENT

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

NOTE: All applicants proposing new/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 75)

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:

B. [Click to enter text.](#) 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.

[Click to enter text.](#)

C. Owner of the subsurface area drip dispersal system: [Click to enter text.](#)

D. 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 to enter text.](#)

E. Owner of the land where the subsurface area drip dispersal system is located: [Click to enter text.](#)

F. 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 to enter text.](#)

## Section 2. Subsurface Area Drip Dispersal System (Instructions Page 75)

### A. Type of system

- ☐ Subsurface Drip Irrigation
- ☐ Surface Drip Irrigation
- ☐ Other, specify: [Click to enter text.](#)

### B. Irrigation operations

Application area, in acres: [Click to enter text.](#)

Infiltration Rate, in inches/hour: [Click to enter text.](#)

Average slope of the application area, percent (%): [Click to enter text.](#)

Maximum slope of the application area, percent (%): [Click to enter text.](#)

Storage volume, in gallons: [Click to enter text.](#)

Major soil series: [Click to enter text.](#)

Depth to groundwater, in feet: [Click to enter text.](#)

### 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: [Click to enter text.](#)

Nitrogen application rate, in lbs/gal/day: [Click to enter text.](#)

### D. Dosing information

Number of doses per day: [Click to enter text.](#)

Dosing duration per area, in hours: [Click to enter text.](#)

Rest period between doses, in hours: [Click to enter text.](#)

Dosing amount per area, in inches/day: [Click to enter text.](#)



Number of zones: [Click to enter text.](#)

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 to enter text.](#)

### Section 3. Required Plans (Instructions Page 75)

#### A. Recharge feature plan

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

**Attachment:** [Click to enter text.](#)

#### B. Soil evaluation

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

**Attachment:** [Click to enter text.](#)

#### C. Site preparation plan

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

**Attachment:** [Click to enter text.](#)

#### D. Soil sampling/testing

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

**Attachment:** [Click to enter text.](#)

### Section 4. Floodway Designation (Instructions Page 76)

#### 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:** [Click to enter text.](#)

### Section 5. Surface Waters in the State (Instructions Page 76)

#### A. Buffer Map

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

**Attachment:** [Click to enter text.](#)

**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 to enter text.](#)

**Section 6. Edwards Aquifer (Instructions Page 76)**

**A.** Is the SADDs located over the Edwards Aquifer Recharge Zone as mapped by TCEQ?

☐ Yes ☐ No

**B.** Is the SADDs located over the Edwards Aquifer Transition Zone as mapped by 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 WASTEWATER PERMIT APPLICATION

## WORKSHEET 4.0: POLLUTANT ANALYSIS 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 minor amendments without renewal.

### Section 1. Toxic Pollutants (Instructions Page 78)

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

Grab ☐ Composite ☐

Date and time sample(s) collected: [Click 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
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

<b>Pollutant</b>	<b>AVG Effluent Conc. (µg/l)</b>	<b>MAX Effluent Conc. (µg/l)</b>	<b>Number of Samples</b>	<b>MAL (µg/l)</b>
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
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
Diuron				0.09
Endosulfan I (alpha)				0.01

<b>Pollutant</b>	<b>AVG Effluent Conc. (µg/l)</b>	<b>MAX Effluent Conc. (µg/l)</b>	<b>Number of Samples</b>	<b>MAL (µg/l)</b>
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
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



<b>Pollutant</b>	<b>AVG Effluent Conc. (µg/l)</b>	<b>MAX Effluent Conc. (µg/l)</b>	<b>Number of Samples</b>	<b>MAL (µg/l)</b>
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
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 to enter text.](#)

**Table 4.0(2)A – Metals, Cyanide, and 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
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
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

<b>Pollutant</b>	<b>AVG Effluent Conc. (µg/l)</b>	<b>MAX Effluent Conc. (µg/l)</b>	<b>Number of Samples</b>	<b>MAL (µg/l)</b>
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
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 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 to enter text.](#)

C. 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 to enter text.](#)

**Table 4.0(2)F – Dioxin/Furan Compounds**

Compound	Toxic Equivalenc y 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 PeCDD	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 HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					0.5
PCB 81	0.0003					0.5
PCB 126	0.1					0.5
PCB 169	0.03					0.5
Total						

# DOMESTIC WASTEWATER PERMIT APPLICATION

## WORKSHEET 5.0: TOXICITY TESTING REQUIREMENTS

The following **is required** for facilities with a current operating design flow of **1.0 MGD or greater**, with an EPA-approved **pretreatment** program (or those required to have one under 40 CFR Part 403), or are required to perform Whole Effluent Toxicity testing. See instructions for further details.

This worksheet is not required minor amendments without renewal.

### Section 1. Required Tests (Instructions Page 88)

Indicate the number of 7-day chronic or 48-hour acute Whole Effluent Toxicity (WET) tests performed in the four and one-half years prior to submission of the application.

7-day Chronic: [Click to enter text.](#)

48-hour Acute: [Click to enter text.](#)

### Section 2. Toxicity Reduction Evaluations (TREs)

Has this facility completed a TRE in the past four and a half years? Or is the facility currently performing a TRE?

☐ Yes ☐ No

**If yes**, describe the progress to date, if applicable, in identifying and confirming the toxicant.

[Click to enter text.](#)

### Section 3. Summary of WET Tests

If the required biomonitoring test information has not been previously submitted via both the Discharge Monitoring Reports (DMRs) and the Table 1 (as found in the permit), provide a summary of the testing results for all valid and invalid tests performed over the past four and one-half years. Make additional copies of this table as needed.

**Table 5.0(1) Summary of WET Tests**

Test Date	Test Species	NOEC Survival	NOEC Sub-lethal

# DOMESTIC WASTEWATER PERMIT APPLICATION

## WORKSHEET 6.0: INDUSTRIAL WASTE CONTRIBUTION

The following is required for all publicly owned treatment works.

### Section 1. All POTWs (Instructions Page 89)

#### A. Industrial users (IUs)

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: [Click to enter text.](#)

Average Daily Flows, in MGD: [Click to enter text.](#)

Significant IUs - non-categorical:

Number of IUs: [Click to enter text.](#)

Average Daily Flows, in MGD: [Click to enter text.](#)

Other IUs:

Number of IUs: [Click to enter text.](#)

Average Daily Flows, in MGD: [Click to enter text.](#)

#### B. Treatment plant interference

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

☐ Yes ☐ No

**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 to enter text.](#)



### C. Treatment plant pass through

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

☐ Yes ☐ No

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 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 90)

### 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 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 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 to enter text.

### Section 3. Significant Industrial User (SIU) Information and Categorical Industrial User (CIU) (Instructions Page 90)

#### A. General information

Company Name: [Click to enter text.](#)

SIC Code: [Click to enter text.](#)

Contact name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Telephone number: [Click to enter text.](#)

Email address: [Click 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).

[Click to enter text.](#)

#### C. Product and service information

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

[Click 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 to enter text.](#)

Discharge Type: ☐ Continuous ☐ Batch ☐ Intermittent

Non-Process Wastewater:

Discharge, in gallons/day: [Click 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: Subcategories: [Click to enter text.](#)

[Click or tap here to enter text.](#) [Click to enter text.](#)

Category: [Click to enter text.](#)

Subcategories: [Click to enter text.](#)

Category: [Click to enter text.](#)

Subcategories: [Click to enter text.](#)

Category: [Click to enter text.](#)

Subcategories: [Click to enter text.](#)

Category: [Click to enter text.](#)

Subcategories: [Click 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 to enter text.](#)

# WORKSHEET 7.0

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

### CLASS V INJECTION WELL INVENTORY/AUTHORIZATION FORM

Submit the completed form 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 92)

**1. TCEQ Program Area**

Program Area (PST, VCP, IHW, etc.): [Click to enter text.](#)

Program ID: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

**2. Agent/Consultant Contact Information**

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

**3. Owner/Operator Contact Information**

☐ Owner ☐ Operator

Owner/Operator Name: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

**4. Facility Contact Information**

Facility Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Location description (if no address is available): [Click to enter text.](#)

Facility Contact Person: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

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

Latitude: [Click to enter text.](#)

Longitude: [Click to enter text.](#)

Method of determination (GPS, TOPO, etc.): [Click to enter text.](#)

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 to enter text.](#)

Number of Injection Wells: [Click to enter text.](#)

7. **Purpose**

Detailed Description regarding purpose of Injection System:

[Click to enter text.](#)

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 to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

License Number: [Click 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 to enter text.](#)

System(s) Construction: [Click to enter text.](#)

### Section 4. Site Hydrogeological and Injection Zone Data

1. Name of Contaminated Aquifer: [Click to enter text.](#)
2. Receiving Formation Name of Injection Zone: [Click to enter text.](#)
3. Well/Trench Total Depth: [Click to enter text.](#)
4. Surface Elevation: [Click to enter text.](#)
5. Depth to Ground Water: [Click to enter text.](#)
6. Injection Zone Depth: [Click to enter text.](#)
7. Injection Zone vertically isolated geologically? ☐ Yes ☐ No  
Impervious Strata between Injection Zone and nearest Underground Source of Drinking Water:  
Name: [Click to enter text.](#)  
Thickness: [Click 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: [Click to enter text.](#)
13. Maximum injection Rate/Volume/Pressure: [Click to enter text.](#)
14. Water wells within 1/4 mile radius (attach map as Attachment I): [Click to enter text.](#)
15. Injection wells within 1/4 mile radius (attach map as Attachment J): [Click to enter text.](#)
16. Monitor wells within 1/4 mile radius (attach drillers logs and map as Attachment K): [Click to enter text.](#)
17. Sampling frequency: [Click to enter text.](#)
18. Known hazardous components in injection fluid: [Click to enter text.](#)

## Section 5. Site History

1. Type of Facility: [Click to enter text.](#)
2. Contamination Dates: [Click to enter text.](#)
3. Original Contamination (VOCs, TPH, BTEX, etc.) and Concentrations (attach as Attachment L): [Click to enter text.](#)
4. Previous Remediation (attach results of any previous remediation as attachment M): [Click to enter text.](#)

**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 WTP 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)



# TCEQ Core Data Form

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

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input checked="" type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> Other
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN 605839323		RN 101234490

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)			
<input type="checkbox"/> New Customer <input checked="" type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership					
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)					
<i>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).</i>					
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>	
Sun NG Jelly-Lone Start TX RV LLC					
<b>7. TX SOS/CPA Filing Number</b>		<b>8. TX State Tax ID</b> (11 digits)		<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
0803763543		32075913965		85-1215922	
<b>11. Type of Customer:</b>		<input checked="" type="checkbox"/> Corporation		<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:	
<b>12. Number of Employees</b>				<b>13. Independently Owned and Operated?</b>	
<input type="checkbox"/> 0-20 <input checked="" type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher				<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following					
<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator <input type="checkbox"/> Other:					
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant					
<b>15. Mailing Address:</b>	27777 Franklin Road				
	Suite 200				
	City	Southfield	State	MI	ZIP 48034 ZIP + 4 8205
<b>16. Country Mailing Information</b> (if outside USA)				<b>17. E-Mail Address</b> (if applicable)	
<b>18. Telephone Number</b>		<b>19. Extension or Code</b>		<b>20. Fax Number</b> (if applicable)	

## SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> (If 'New Regulated Entity' is selected, a new permit application is also required.)								
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information								
<i>The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).</i>								
<b>22. Regulated Entity Name</b> (Enter name of the site where the regulated action is taking place.)								
Lone Star Jellystone Park Camp Resort								
<b>23. Street Address of the Regulated Entity:</b>  (No PO Boxes)	34843 Betka Road							
	City	Waller	State	TX	ZIP	77484	ZIP + 4	5289
<b>24. County</b>	Waller							

If no Street Address is provided, fields 25-28 are required.

<b>25. Description to Physical Location:</b>	Southwest of Waller at intersection of Cochran Road and Betka Road							
<b>26. Nearest City</b>					<b>State</b>	<b>Nearest ZIP Code</b>		
Waller					Te	77484		
<i>Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).</i>								
<b>27. Latitude (N) In Decimal:</b>		30.021478			<b>28. Longitude (W) In Decimal:</b>		-95.989738	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds			
<b>29. Primary SIC Code</b>		<b>30. Secondary SIC Code</b>		<b>31. Primary NAICS Code</b>		<b>32. Secondary NAICS Code</b>		
(4 digits)		(4 digits)		(5 or 6 digits)		(5 or 6 digits)		
7033				721211				
<b>33. What is the Primary Business of this entity?</b> (Do not repeat the SIC or NAICS description.)								
Park camp resort camping and water park								
<b>34. Mailing Address:</b>	34843 Betka Road							
	City	Waller	State	TX	ZIP	77484	ZIP + 4	5289
<b>35. E-Mail Address:</b>								
<b>36. Telephone Number</b>			<b>37. Extension or Code</b>			<b>38. Fax Number</b> (if applicable)		
( 248 ) 208-2651						( ) -		

**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.


<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:
	Renewal			

#### **SECTION IV: Preparer Information**

<b>40. Name:</b>	Joey Gallegos		<b>41. Title:</b>	Associate Director
<b>42. Telephone Number</b>	<b>43. Ext./Code</b>	<b>44. Fax Number</b>	<b>45. E-Mail Address</b>	
( 210 ) 367-6270		(   ) -	jgallegos@atwell.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.

<b>Company:</b>	Atwell LLC	<b>Job Title:</b>	Director
<b>Name (In Print):</b>	Hank Smith	<b>Phone:</b>	( 512 ) 695- 3914
<b>Signature:</b>		<b>Date:</b>	1/8/2025



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

## Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements. After filling in the information for your facility delete these instructions.

If you are subject to the alternative language notice requirements in 30 TAC Section 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/STORMWATER

*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 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.*

Sun NG Jelly-Lone Star TX RV LLC (CN605839323) operates Yogi Bears Jellystone Park Camp-Resort Waller (RN101234490), a domestic wastewater treatment plant. The facility is located at 34843 Betka Road, in Waller, Waller County, Texas 77484. The application request is for the renewal to discharge 30,000 gallons per day of treated domestic wastewater via surface irrigation of 14.6 acres. This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain five day-day carbonaceous biochemical oxygen demand (CBOD5) and total dissolved solids (TDS). Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Domestic wastewater is treated by an aerobic treatment process. This process includes 2-1,000 gallon and 17-2,000-gallon trash tanks, 14-2,000-gallon equalization tanks and 4-2,500 gallon equalization tanks, 1-aerobic treatment, 1-clarifier, 1-effluent holding pond, and 1-land application. Wastewater gravity



flows or is pumped to trash tanks and then equalization tanks. The equalization tanks store portions of the daily flow to provide for dampening of peak flows. Pumps convey wastewater from the equalization tanks to an extended aeration biological treatment unit. The mixed liquor from the extended aeration treatment unit gravity flows to a clarifier where solids settle and return to the extended aeration unit. Clarified liquids gravity flow to a pump tank for conveying the treated wastewater to an effluent holding pond. Treated water is pumped from the effluent holding pond to a land application area. Waste Activated Sludge will be removed directly from clarifier or biological treatment unit for offsite disposal at a TCEQ approved facility.

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

### AGUAS RESIDUALES DOMÉSTICAS /AGUAS PLUVIALES

*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 es una representación ejecutiva fedérale de la solicitud de permiso.*

Sun NG Jelly-Lone Star TX RV LLC (CN605839323) opera Yogi Bears Jellystone Park Camp-Resort Waller RN101234490, una planta de tratamiento de aguas residuales domésticas . La instalación está ubicada en 34843 Betka Road, en Waller, Condado de Waller, Texas 77484. La solicitud es para la renovación de la descarga de 30.000 galones por día de aguas residuales domésticas tratadas mediante riego superficial de 14,6 acres. Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan Demanda bioquímica de oxígeno carbonoso (CBOD5) y sólidos disueltos totales (TDS) de cinco días a día. En el Informe técnico nacional 1.0, sección 7, se incluyen otros contaminantes potenciales. Aguas residuales domésticas . está tratado por un proceso de tratamiento aeróbico. Este proceso incluye 2 tanques de basura de 1,000 galones y 17 tanques de ecualización de 2,000 galones, 14 tanques de ecualización de 2,000 galones y 4 tanques de ecualización de 2,500 galones, 1 tratamiento aeróbico, 1 clarificador, 1 estanque de retención de efluentes y 1 aplicación en tierra. Las aguas residuales fluyen por gravedad o se bombean a los tanques de basura y luego a los tanques de ecualización. Los tanques de ecualización almacenan partes del flujo diario para amortiguar los flujos máximos. Las bombas transportan las aguas residuales desde los tanques de ecualización a una unidad de tratamiento biológico de aireación extendida. El licor mezclado de la unidad de tratamiento de aireación extendida fluye por gravedad a un clarificador donde los sólidos se sedimentan y regresan a la unidad de aireación extendida. Los líquidos clarificados fluyen por gravedad a un tanque de bomba para transportar las aguas residuales tratadas a un estanque de retención de efluentes. El agua tratada se bombea desde el estanque de retención de efluentes a un área de aplicación en tierra. Los lodos activados residuales se eliminarán directamente del clarificador o de la unidad de tratamiento biológico para su eliminación fuera del sitio en una instalación aprobada por TCEQ.

## INSTRUCTIONS

1. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
2. Enter the Customer Number in this section. Each Individual or Organization is issued a unique 11-digit identification number called a CN (e.g. CN123456789).
3. Choose “operates” in this section for existing facility applications or choose “proposes to operate” for new facility applications.
4. Enter the name of the facility in this section. The facility name should match the name associated with the regulated entity number.
5. Enter the Regulated Entity number in this section. Each site location is issued a unique 11-digit identification number called an RN (e.g. RN123456789).
6. Choose the appropriate article (a or an) to complete the sentence.
7. Enter a description of the facility in this section. For example: steam electric generating facility, nitrogenous fertilizer manufacturing facility, etc.
8. Choose “is” for an existing facility or “will be” for a new facility.
9. Enter the location of the facility in this section.
10. Enter the City nearest the facility in this section.
11. Enter the County nearest the facility in this section.
12. Enter the zip code for the facility address in this section.
13. Enter a summary of the application request in this section. For example: renewal to discharge 25,000 gallons per day of treated domestic wastewater, new application to discharge process wastewater and stormwater on an intermittent and flow-variable basis, or major amendment to reduce monitoring frequency for pH, etc. If more than one outfall is included in the application, provide applicable information for each individual outfall.
14. List all pollutants expected in the discharge from this facility in this section. If applicable, refer to the pollutants from any federal numeric effluent limitations that apply to your facility.
15. Enter the discharge types from your facility in this section (e.g., stormwater, process wastewater, once through cooling water, etc.)
16. Choose the appropriate verb tense to complete the sentence.
17. Enter a description of the wastewater treatment used at your facility. Include a description of each process, starting with initial treatment and finishing with the outfall/point of disposal. Use additional lines for individual discharge types if necessary.

Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at [WO-ARPTeam@tceq.texas.gov](mailto:WO-ARPTeam@tceq.texas.gov) or by phone at (512) 239-4671.

### **Example 1: Industrial Wastewater TPDES Application (ENGLISH)**

*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 TAC 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.*

ABC Corporation (CN600000000) operates the Starr Power Station (RN10000000000), a two-unit gas-fired electric generating facility. Unit 1 has a generating capacity of 393 megawatts (MWs) and Unit 2 has a generating capacity of 528 MWs. The facility is located at 1356 Starr Street, near the City of Austin, Travis County, Texas 78753.

This application is for a renewal to discharge 870,000,000 gallons per day of once through cooling water, auxiliary cooling water, and also authorizes the following waste streams monitored inside the facility (internal outfalls) before it is mixed with the other wastewaters authorized for discharge via main Outfall 001, referred to as “previously monitored effluents” (low-volume wastewater, metal-cleaning waste, and stormwater (from diked oil storage area yards and storm drains)) via Outfall 001. Low-volume waste sources, metal-cleaning waste, and stormwater drains on a continuous and flow-variable basis via internal Outfall 101.

The discharge of once through cooling water via Outfall 001 and low-volume waste and metal-cleaning waste via Outfall 101 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: free available chlorine, total residual chlorine, total suspended solids, oil and grease, total iron, total copper, and pH. Temperature is also expected from these discharges. Additional potential pollutants are included in the Industrial Wastewater Application Technical Report, Worksheet 2.0.

Cooling water and boiler make-up water are supplied by Lake Starr Reservoir. The City of Austin municipal water plant (CN600000000, PWS 00000) supplies the facility’s potable water and serves as an alternate source of boiler make-up water. Water from the Lake Starr Reservoir is withdrawn at the intake structure and treated with sodium hypochlorite to prevent biofouling and sodium bromide as a chlorine enhancer to improve efficacy and then passed through condensers and auxiliary equipment on a once-through basis to cool equipment and condense exhaust steam.

Low-volume wastewater from blowdown of boiler Units 1 and 2 and metal-cleaning wastes receive no treatment prior to discharge via Outfall 101. Plant floor and equipment drains and stormwater runoff from diked oil storage areas, yards, and storm drains are routed through an oil and water separator prior to discharge via Outfall 101. Domestic wastewater, blowdown, and backwash water from the service water filter, clarifier, and sand filter are routed to the Starr Creek Domestic Sewage Treatment Plant, TPDES Permit No. WQ0010000001, for treatment and disposal. Metal-cleaning waste from equipment cleaning is generally disposed of off-site.

## **Example 2: Domestic Wastewater TPDES Renewal application**

*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.*

The City of Texas (CN000000000) operates the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the complete mix mode. The facility is located at 123 Texas Street, near the City of More Texas, Texas County, Texas 71234.

This application is for a renewal to discharge at an annual average flow of 1,200,000 gallons per day of treated domestic wastewater via Outfalls 001 and 002.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>), total suspended solids (TSS), ammonia nitrogen (NH<sub>3</sub>-N), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent and Domestic Worksheet 4.0 in the permit application package. Domestic wastewater is treated by an activated sludge process plant and the treatment units include a bar screen, a grit chamber, aeration basins, final clarifiers, sludge digesters, a belt filter press, chlorine contact chambers and a dechlorination chamber.

## **Example 3: Domestic Wastewater TPDES New Application**

*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.*

The City of Texas (CN000000000) proposes to operate the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the extended aeration mode. The facility will be located at 123 Texas Street, in the City of More Texas, Texas County, Texas 71234.

This application is for a new application to discharge at a daily average flow of 200,000 gallons per day of treated domestic wastewater.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>), total suspended solids (TSS), ammonia nitrogen (NH<sub>3</sub>-N), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent in the permit application package. Domestic wastewater will be treated by an activated sludge process plant and the treatment units will include a bar screen, a grit chamber, aeration basins, final clarifiers, sludge digesters, a belt filter press, chlorine contact chambers and a dechlorination chamber.

## **Example 4: Domestic Wastewater TLAP Renewal application**

*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.*

The City of Texas (CN000000000) operates the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the complete mix mode. The facility is located at 123 Texas Street, near the City of More Texas, Texas County, Texas 71234.

This application is for a renewal to dispose a daily average flow not to exceed 76,500 gallons per day of treated domestic wastewater via public access subsurface drip irrigation system with a minimum area of 32 acres. This permit will not authorize a discharge of pollutants into water in the state.

Land application of domestic wastewater from the facility are expected to contain five-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent in the permit application package. Domestic wastewater is treated by an activated sludge process plant and the treatment units include a bar screen, an equalization basin, an aeration basin, a final clarifier, an aerobic sludge digester, tertiary filters, and a chlorine contact chamber. In addition, the facility includes a temporary storage that equals to at least three days of the daily average flow.



# Comisión de Calidad Ambiental del Estado de Texas



## AVISO DE RECIBO DE LA SOLICITUD E INTENCION DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA RENOVACION

PERMISO NO. WQ00\_\_\_\_\_

**SOLICITUD.** Sun NG Jelly-Lone Star TX RV LLC, 27777 Franklin Road, Suite 200, Southfield, Michigan 48034 ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para renovar el Permiso No. WQ0015640001 de disposición de aguas residuales para autorizar la disposición de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 30,000 galones por día por medio de 14,6 acres. La planta de tratamiento de aguas domésticos residuales y el área de disposición están ubicados en 34843 Betka Road, Waller, en el Condado de Waller, Texas. La TCEQ recibió esta solicitud el día 10 de enero de 2025. La solicitud para el permiso estará disponible para leerla y copiarla en 2331 11th Street antes de la fecha de publicación de este aviso en el periódico. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud.  
<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications>.

**AVISO ADICIONAL.** El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que están en la lista de correo de las personas a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.**

**COMENTARIO PUBLICO / REUNION PUBLICA.** Usted puede presentar **comentarios públicos o pedir una reunión pública sobre esta solicitud.** El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

**OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO.** Después del plazo para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios apropiados y preparará una respuesta a todo los comentarios públicos esenciales, pertinentes, o significativos. **A menos que la solicitud haya sido referida directamente a una audiencia administrativa de lo contencioso, la respuesta a los**

**comentarios y la decisión del Director Ejecutivo sobre la solicitud serán enviados por correo a todos los que presentaron un comentario público y a las personas que están en la lista para recibir avisos sobre esta solicitud. Si se reciben comentarios, el aviso también proveerá instrucciones para pedir una reconsideración de la decisión del Director Ejecutivo y para pedir una audiencia administrativa de lo contencioso.** Una audiencia administrativa de lo contencioso es un procedimiento legal similar a un procedimiento legal civil en un tribunal de distrito del estado.

**PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, USTED DEBE INCLUIR EN SU SOLICITUD LOS SIGUIENTES DATOS:** su nombre, dirección, y número de teléfono; el nombre del solicitante y número del permiso; la ubicación y distancia de su propiedad/actividad con respecto a la instalación; una descripción específica de la forma cómo usted sería afectado adversamente por el sitio de una manera no común al público en general; una lista de todas las cuestiones de hecho en disputa que usted presente durante el período de comentarios; y la declaración "[Yo/nosotros] solicito/solicitamos una audiencia de caso impugnado". Si presenta la petición para una audiencia de caso impugnado de parte de un grupo o asociación, debe identificar una persona que representa al grupo para recibir correspondencia en el futuro; identificar el nombre y la dirección de un miembro del grupo que sería afectado adversamente por la planta o la actividad propuesta; proveer la información indicada anteriormente con respecto a la ubicación del miembro afectado y su distancia de la planta o actividad propuesta; explicar cómo y por qué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la Comisión. La Comisión sólo puede conceder una solicitud de una audiencia de caso impugnado sobre los temas que el solicitante haya presentado en sus comentarios oportunos que no fueron retirados posteriormente. Si se concede una audiencia, el tema de la audiencia estará limitado a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas a intereses pertinentes y materiales de calidad del agua que se hayan presentado durante el período de comentarios. *[For renewal applications that **do not** include a major amendment, include the following sentence:]* Si ciertos criterios se cumplen, la TCEQ puede actuar sobre una solicitud para renovar un permiso sin proveer una oportunidad de una audiencia administrativa de lo contencioso.

**LISTA DE CORREO.** Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Además, puede pedir que la TCEQ ponga su nombre en una o más de las listas de correos siguientes (1) la lista de correo permanente para recibir los avisos de el solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado específico. Si desea que se agregue su nombre en una de las listas designe cual lista(s) y envía por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

**CONTACTOS E INFORMACIÓN A LA AGENCIA.** Todos los comentarios públicos y

**solicitudes deben ser presentadas electrónicamente vía**  
**<http://www14.tceq.texas.gov/epic/eComment/> o por escrito dirigidos a la**  
**Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087.** Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del Sun NG Jelly-Lone Star TX RV LLC a la dirección indicada arriba o llamando a Mr. Bruce Thelen al 248-208-2651.

Fecha de emisión \_\_\_\_\_ *[Date notice issued]*

## Rainee Trevino

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**From:** Elizabeth Koroscik <ekoroscik@atwell.com>  
**Sent:** Wednesday, January 29, 2025 11:13 AM  
**To:** Rainee Trevino  
**Cc:** Joey Gallegos; Hank Smith  
**Subject:** Re: Comment Response - Renew Permit No. WQ0015640001  
**Attachments:** B 20972 - Plain Language Summary.pdf

Thank you for the clarification. Attached is the updated PLS.

Let me know if there's any additional information required.

**Elizabeth Koroscik**  
Engineer  
**ATWELL, LLC**  
210.542.7346 Mobile

---

**From:** Rainee Trevino <Rainee.Trevino@tceq.texas.gov>  
**Sent:** Wednesday, January 29, 2025 9:58 AM  
**To:** Elizabeth Koroscik <ekoroscik@atwell.com>  
**Cc:** Joey Gallegos <jgallegos@atwell.com>; Hank Smith <hsmith@atwell.com>  
**Subject:** RE: Comment Response - Renew Permit No. WQ0015640001

Good morning,

Thank you for your response.

I have reviewed the responses and corrected items. All items are sufficient except for the Plain Language Summary (PLS). It is missing the disposal method and acreage for the Interim phase. Please submit a revised PLS by tomorrow 1/30/2025 as this is the deadline for a complete response.

Please let me know if you have any questions.

Regards,

**Rainee Trevino**  
Water Quality Division | ARP Team  
Texas Commission on Environmental Quality  
512-239-4324





## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

## Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements. After filling in the information for your facility delete these instructions.

If you are subject to the alternative language notice requirements in 30 TAC Section 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/STORMWATER

*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 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.*

Sun NG Jelly-Lone Star TX RV LLC (CN605839323) operates Yogi Bears Jellystone Park Camp-Resort Waller (RN101234490), a domestic wastewater treatment plant. The facility is located at 34843 Betka Road, in Waller, Waller County, Texas 77484. The application request is for the renewal to discharge 15,000 gallons in at interim phase via surface irrigation of 7.28 acres and 30,000 gallons per day of treated domestic wastewater in the final phase via surface irrigation of 14.6 acres. This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain five day-day carbonaceous biochemical oxygen demand (CBOD5) and total dissolved solids (TDS). Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Domestic wastewater is treated by an aerobic treatment process. This process includes 2-1,000 gallon and 17-2,000-gallon trash tanks, 14-2,000-gallon equalization tanks and 4-2,500 gallon equalization tanks, 1-aerobic

treatment, 1-clarifier, 1-effluent holding pond, and 1-land application. Wastewater gravity flows or is pumped to trash tanks and then equalization tanks. The equalization tanks store portions of the daily flow to provide for dampening of peak flows. Pumps convey wastewater from the equalization tanks to an extended aeration biological treatment unit. The mixed liquor from the extended aeration treatment unit gravity flows to a clarifier where solids settle and return to the extended aeration unit. Clarified liquids gravity flow to a pump tank for conveying the treated wastewater to an effluent holding pond. Treated water is pumped from the effluent holding pond to a land application area. Waste Activated Sludge will be removed directly from clarifier or biological treatment unit for offsite disposal at a TCEQ approved facility.



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

### AGUAS RESIDUALES DOMÉSTICAS /AGUAS PLUVIALES

*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 es una representación ejecutiva fedérale de la solicitud de permiso.*

Sun NG Jelly-Lone Star TX RV LLC (CN605839323) opera Yogi Bears Jellystone Park Camp-Resort Waller RN101234490, una planta de tratamiento de aguas residuales domésticas . La instalación está ubicada en 34843 Betka Road, en Waller, Condado de Waller, Texas 77484. La solicitud de solicitud es para la renovación para descargar 15,000 galones en la fase intermedia mediante riego superficial de 7,28 acres y 30,000 galones por día de aguas residuales domésticas tratadas en la fase final mediante riego superficial de 14,6 acres.. Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan Demanda bioquímica de oxígeno carbonoso (CBOD5) y sólidos disueltos totales (TDS) de cinco días a día. En el Informe técnico nacional 1.0, sección 7, se incluyen otros contaminantes potenciales. Aguas residuales domésticas . está tratado por un proceso de tratamiento aeróbico. Este proceso incluye 2 tanques de basura de 1,000 galones y 17 tanques de ecualización de 2,000 galones, 14 tanques de ecualización de 2,000 galones y 4 tanques de ecualización de 2,500 galones, 1 tratamiento aeróbico, 1 clarificador, 1 estanque de retención de efluentes y 1 aplicación en tierra. Las aguas residuales fluyen por gravedad o se bombean a los tanques de basura y luego a los tanques de ecualización. Los tanques de ecualización almacenan partes del flujo diario para amortiguar los flujos máximos. Las bombas transportan las aguas residuales desde los tanques de ecualización a una unidad de tratamiento biológico de aireación extendida. El licor mezclado de la unidad de tratamiento de aireación extendida fluye por gravedad a un clarificador donde los sólidos se sedimentan y regresan a la unidad de aireación extendida. Los líquidos clarificados fluyen por gravedad a un tanque de bomba para transportar las aguas residuales tratadas a un estanque de retención de efluentes. El agua tratada se bombea desde el estanque de retención de efluentes a un área de aplicación en tierra. Los lodos activados residuales se eliminarán directamente del clarificador o de la unidad de tratamiento biológico para su eliminación fuera del sitio en una instalación aprobada por TCEQ.