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

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. Applicants may modify the template as necessary to accurately describe their 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 the applicant 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.

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
Enter 'INDUSTRIAL' or 'DOMESTIC' here 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.

Port Arthur Cogeneration, LCC (CN606313211) proposes to operate Port Arthur Cogeneration (RN112061098), an electric power plant servicing the Motiva Enterprises Refinery. The facility will be located at 2555 Savannah Ave, in Port Arthur, Jefferson County, Texas 77640. This application is for a new natural gas power plant that will discharge approximately 2,380,000 gallons of treated process water per day from cooling water, boiler blowdown, and general washing and plant activities as well as variable amounts of stormwater through Outfall 001.

Discharges from the facility are expected to contain suspended solids, oil and grease, ammonia, phosphate, zinc, iron, and free chlorine. Cooling water, boiler blowdown, and general plant service water are subject to subject to federal effluent limitation guidelines at 40 CFR Part 423. Intake water supplied by the Lower Neches Vally Authority will be treated by clarification, reverse osmosis, deionization, demineralization before being used for cooling water and boiler supply and blowdown. Wastewater is then transferred to the oil/water

separator before going to wastewater collection and discharged through Outfall 001. Domestic water and sewage is treated off-site at the City of Port Arthur Main Wastewater Treatment Center .

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

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí **/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.

Port Arthur Cogeneration, LCC (CN606313211) propone operar Port Arthur Cogeneration (RN112061098), una planta de energía eléctrica que abastece la refinería Motiva Enterprises. La instalación estará ubicada en 2555 Savannah Ave, en la ciudad de Port Arthur, Condado de Jefferson, Texas 77640. Esta solicitud es para una nueva planta de energía de gas natural que descargara aproximadamente 2,380,000 galones de agua de proceso tratadas por día provenientes del agua de torres de enfriamiento, purga de caldera, lavado y actividades generales de la planta, así como cantidades variables de aguas pluviales a través de Outfall 001.

Se espera que las descargas de la instalación contengan solidos suspendidos, aceites y grasas, amoníaco, fosfato, cinc, hierro y cloro. Aguas proveniente de Torres de enfriamiento, purga de caldera y aguas de las actividades generales de la planta, son sujetas a las pautas federales de limitación de efluentes en 40 CFR Parte 423. La toma de agua será suministrada por Neches Vally Authority. estará tratado por processo de clarificación, ósmosis inversa, desionización y desmineralización antes de ser utilizada para el agua de enfriamiento y el suministro y purga de calderas. Las aguas residuales se transfieren al separador de aceite/agua antes de ir a la recolección de aguas residuales y ser descargadas a través del Outfall 001. El agua doméstica y las aguas residuales son tratadas fuera del sitio en el Centro de Tratamiento de Aguas Residuales de la Ciudad de Port Arthur.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

PROPOSED PERMIT NO. WQ0005469000

APPLICATION. Port Arthur Cogeneration, LLC, 609 Main Street, Suite 3525, Houston, Texas 77002, and Motiva Enterprises LLC, 2555 Savannah Avenue, Port Arthur, Texas 77640, which will operate a natural gas fueled electric generation facility, have applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005469000 (EPA I.D. No. TX0146773) to authorize the discharge of treated wastewater and stormwater at a volume not to exceed a daily average flow of 1,590,000 gallons per day. The facility will be located at 2555 Savannah Avenue, near the city of Port Arthur, in Jefferson County, Texas 77640. The discharge route will be from the plant site to Alligator Bayou (Main Canal D), thence to Taylor Bayou Tidal (Jefferson County Drainage District No. 7 Main Outfall Canal) portion of the Intracoastal Waterway Tidal. TCEQ received this application on October 9, 2024. The permit application will be available for viewing and copying at Port Arthur Public Library, 4615 9th Avenue, Port Arthur, in Jefferson 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/tpdes-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=-93.97585,29.87781&level=18

The application is subject to the goals and policies of the Texas Coastal Management Program and must be consistent with the applicable Coastal Management Program goals and policies.

ALTERNATIVE LANGUAGE NOTICE. Alternative language notice in Spanish is available at: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.
El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-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.**

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. 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. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Port Arthur Cogeneration, LLC and Motiva Enterprises LLC at the address stated above or by calling Ms. Brita Minin, Terracon Consultants, Inc., at 713-329-2561.

Issuance Date: December 23, 2024

Comisión de Calidad Ambiental del Estado de Texas

AVISO DE RECIBO DE LA SOLICITUD Y
EL INTENTO DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA

PERMISO PROPUESTO NO. WQ0005469000

SOLICITUD. Port Arthur Cogeneration, LLC, 609 Main Street, Suite 3525, Houston, Texas 77002, y Motiva Enterprises LLC, 2555 Savannah Avenue, Port Arthur, Texas 77640, que operará una instalación de generación eléctrica a gas natural han solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para el propuesto Permiso No. WQ0005469000 (EPA I.D. No. TX0146773) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la descarga de aguas residuales tratadas y aguas pluviales en un volumen que no sobrepasa un flujo promedio diario de 1,590,000 galones por día. La planta estará ubicada 2555 Savannah Avenue, cerca de la ciudad de Port Arthur en el Condado de Jefferson, Texas 77640. La ruta de descarga estará del sitio de la planta a Alligator Bayou (canal principal D), de allí hasta la sección de marea de Taylor Bayou (canal de salida principal del distrito de drenaje del condado de Jefferson N.º 7) del canal de Intracoastal Waterway Tidal. La TCEQ recibió esta solicitud el 9 de octubre de 2024. La solicitud para el permiso estará disponible para leerla y copiarla en la Biblioteca Pública de Port Arthur, 4615 9th Avenue, Port Arthur, en el condado de Jefferson, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications. 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=-93.97585,29.87781&level=18

El Director Ejecutivo de la TCEQ ha revisado esta medida para ver si está de acuerdo con los objetivos y las regulaciones del Programa de Administración Costero de Texas (CMP) de acuerdo con las regulaciones del Consejo Coordinador de la Costa (CCC) y ha determinado que la acción es conforme con las metas y regulaciones pertinentes del CMP.

AVISO DE IDIOMA ALTERNATIVO. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-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 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.

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 del solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado especifico. Si desea que se agrega 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.

INFORMACIÓN DISPONIBLE EN LÍNEA. Para detalles sobre el estado de la solicitud, favor de visitar la Base de Datos Integrada de los Comisionados en www.tceq.texas.gov/goto/cid. Para buscar en la base de datos, utilizar el número de permiso para esta solicitud que aparece en la parte superior de este aviso.

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 Port Arthur Cogeneration, LLC y Motiva Enterprises LLC a la dirección indicada arriba o llamando a Ms. Brita Minin, Terracon Consultants, Inc. al 713-329-2561.

Fecha de emisión el 23 de diciembre de 2024

Administrative
Form 10411

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the industrial wastewater permit application.

APPLICANT NAME: Port Arthur Cogeneration, LLC

PERMIT NUMBER (If new, leave blank): WQ00 Click to enter text.

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

	Y	N		Y	N
Administrative Report 1.0	☒	☐	Worksheet 8.0	☐	☒
Administrative Report 1.1	☒	☐	Worksheet 9.0	☐	☒
SPIF	☒	☐	Worksheet 10.0	☐	☒
Core Data Form	☒	☐	Worksheet 11.0	☒	☐
Public Involvement Plan Form	☒	☐	Worksheet 11.1	☐	☒
Plain Language Summary	☒	☐	Worksheet 11.2	☒	☐
Technical Report 1.0	☒	☐	Worksheet 11.3	☐	☒
Worksheet 1.0	☒	☐	Original USGS Map	☒	☐
Worksheet 2.0	☐	☒	Affected Landowners Map	☒	☐
Worksheet 3.0	☐	☒	Landowner Disk or Labels	☒	☐
Worksheet 3.1	☐	☒	Flow Diagram	☒	☐
Worksheet 3.2	☐	☒	Site Drawing	☒	☐
Worksheet 3.3	☐	☒	Original Photographs	☒	☐
Worksheet 4.0	☒	☐	Design Calculations	☒	☐
Worksheet 4.1	☒	☐	Solids Management Plan	☐	☒
Worksheet 5.0	☐	☒	Water Balance	☒	☐
Worksheet 6.0	☐	☒			
Worksheet 7.0	☒	☐			

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

This report is required for all applications for TPDES permits and TLAPs, except applications for oil and gas extraction operations subject to 40 CFR Part 435. Contact the Applications Review and Processing Team at 512-239-4671 with any questions about completing this report.

Applications for oil and gas extraction operations subject to 40 CFR Part 435 must use the Oil and Gas Exploration and Production Administrative Report (TCEQ Form-20893 and 20893-inst[1]).

Item 1. Application Information and Fees (Instructions, Page 26)

a. Complete each field with the requested information, if applicable.

Applicant Name: Port Arthur Cogeneration, LLC

Permit No.: WQ000Click to enter text.

EPA ID No.: TX0Click to enter text.

Expiration Date: Click to enter text.

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

☒ Industrial Wastewater (wastewater and stormwater)

☐ Industrial Stormwater (stormwater only)

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

☐ Active ☒ Inactive

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

☒ TPDES Permit ☐ TLAP ☐ TPDES with TLAP component

e. Check the box next to the appropriate application type.

☒ New

☐ Renewal with changes ☐ Renewal without changes

☐ Major amendment with renewal ☐ Major amendment without renewal

☐ Minor amendment without renewal

☐ Minor modification without renewal

f. If applying for an amendment or modification, describe the request: N/A

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

[1] https://www.tceq.texas.gov/publications/search_forms.html

g. Application Fee

EPA Classification	New	Major Amend. (with or without renewal)	Renewal (with or without changes)	Minor Amend. / Minor Mod. (without renewal)
Minor facility not subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	☐ $350	☐ $350	☐ $315	☐ $150
Minor facility subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	☒ $1,250	☐ $1,250	☐ $1,215	☐ $150
Major facility	N/A [2]	☐ $2,050	☐ $2,015	☐ $450

h. Payment Information

Mailed

Check or money order No.: Click to enter text.

Check or money order amt.: Click to enter text.

Named printed on check or money order: Click to enter text.

Epay

Voucher number: Click to enter text.

Copy of voucher attachment: Click to enter text.

Item 2. Applicant Information (Instructions, Pages 26)

a. Customer Number, if applicant is an existing customer: CNClick to enter text.

Note: Locate the customer number using the TCEQ's Central Registry Customer Search[3].

b. Legal name of the entity (applicant) applying for this permit: Port Arthur Cogeneration, LLC

Note: The owner of the facility must apply for the permit. The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: Mr. Full Name (Last/First Name): Greg Calhoun

Title: Managing Director Credential: Click to enter text.

d. Will the applicant have overall financial responsibility for the facility?

☒ Yes ☐ No

[2] All facilities are designated as minors until formally classified as a major by EPA.

[3] https://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 3. Co-applicant Information (Instructions, Page 27)

☒ Check this box if there is no co-applicant.; otherwise, complete the below questions.

a. Legal name of the entity (co-applicant) applying for this permit: Click to enter text.

Note: The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

b. Customer Number (if applicant is an existing customer): CNClick to enter text.

Note: Locate the customer number using the TCEQ's Central Registry Customer Search.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: Click to enter text. Full Name (Last/First Name): Click to enter text.

Title: Click to enter text. Credential: Click to enter text.

d. Will the co-applicant have overall financial responsibility for the facility?

☐ Yes ☐ No

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 4. Core Data Form (Instructions, Pages 27)

a. Complete one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: 1-Core Data Form (10400)

Item 5. Application Contact Information (Instructions, Page 27)

Provide names of two individuals who can be contact for additional information about this application. Indicate if the individual can be contact about administrative or technical information, or both.

a. ☒ Administrative Contact . ☐ Technical Contact

Prefix: Mr. Full Name (Last/First Name): Zeeshan Mahmood

Title: Vice President Infrastructure Investments Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 832 207 0211 Email: zeeshan.mahmood@fengate.com

b. ☒ Administrative Contact ☒ Technical Contact

Prefix: Mr. Full Name (Last/First Name): Alex Brosseau

Title: Vice President Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 604-353-0740 Email: alex.brosseau@fengate.com

Attachment: N/A

Item 6. Permit Contact Information (Instructions, Page 28)

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

a. Prefix: Mr. Full Name (Last/First Name): John Gilbreath

Title: Managing Partner Credential: Click to enter text.

Organization Name: AOS Energy Partners

Mailing Address: 9852 S 97th Ave Circle City/State/Zip: Papillion, NE 68046-4933

Phone No: 402-926-9760 Email: jgilbreath@aosenergypartners.com

b. Prefix: Ms. Full Name (Last/First Name): Brita Minin

Title: Environmental Consultant Credential: GIT

Organization Name: Terracon Consultants, Inc

Mailing Address: 11555 Clay Rd. Suite 100 City/State/Zip: Houston, TX 77002

Phone No: 713-329-2561 Email: brita.minin@terracon.com

Attachment: N/A

Item 7. Billing Contact Information (Instructions, Page 28)

The permittee is responsible for paying the annual fee. The annual fee will be assessed for 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 (form TCEQ-20029).

Provide the complete mailing address where the annual fee invoice should be mailed and the name and phone number of the permittee's representative responsible for payment of the invoice.

Prefix: Mr. Full Name (Last/First Name): Jeffery Feng

Title: Associate Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 832-998-1556 Email: jeffrey.feng@fengate.com

Item 8. DMR/MER Contact Information (Instructions, Page 28)

Provide the name and mailing address of the person delegated to receive and submit DMRs or MERs. **Note:** DMR data must be submitted through the NetDMR system. An electronic reporting account can be established once the facility has obtained the permit number.

Prefix: Mr. Full Name (Last/First Name): Alex Brosseau

Title: Vice President Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 604-353-0740 Email: alex.brosseau@fengate.com

Item 9. Notice Information (Instructions, Pages 28)

a. Individual Publishing the Notices

Prefix: Ms. Full Name (Last/First Name): Brita Minin

Title: Environmental Consultant Credential: GIT

Organization Name: Terracon Consultants, Inc.

Mailing Address: 11555 Clay Rd. Suite 100 City/State/Zip: Houston, TX 77043

Phone No: 713-329-2561 Email: brita.minin@terracon.com

b. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package (only for NORI, NAPD will be sent via regular mail)

☒ E-mail: brita.minin@terracon.com

☐ Fax: Click to enter text.

☐ Regular Mail (USPS)

Mailing Address: Click to enter text.

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

c. Contact in the Notice

Prefix: Ms. Full Name (Last/First Name): Brita Minin

Title: Environmental Consultant Credential: GIT

Organization Name: Terracon Consultants, Inc.

Phone No: 713-329-2561 Email: brita.minin@terracon.com

d. Public Viewing Location Information

Note: If the facility or outfall is located in more than one county, provide a public viewing place for each county.

Public building name: Port Arthur Public Library Location within the building: Public Notice Viewing Area

Physical Address of Building: 4615 9th Ave, Port Arthur, TX 77642

City: Port Arthur County: Jefferson County

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.

Call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine if an alternative language notice(s) is 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 Item 8 (Regulated Entity and Permitted Site Information.)

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 ☒ N/A

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: 2 – Plain Language Summary (20972)

g. Complete one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment and include as an attachment. Attachment: 3 – Public Involvement Plan (PIP) (20960)

Item 10. Regulated Entity and Permitted Site Information (Instructions Page 29)

a. TCEQ issued Regulated Entity Number (RN), if available: RNClick to enter text.

Note: If your business site is part of a larger business site, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search the TCEQ's Central Registry to determine the RN or to see if the larger site may already be registered as a Regulated Entity. If the site is found, provide the assigned RN.

b. Name of project or site (the name known by the community where located): Port Arthur Cogeneration, LLC

c. Is the location address of the facility in the existing permit the same?

☐ Yes ☐ No ☒ N/A (new permit)

Note: If the facility is located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County, additional information concerning protection of the Edwards Aquifer may be required.

d. Owner of treatment facility:

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: Port Arthur Cogeneration, LLC

Mailing Address: 609 Main St, Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 832-294-8992 Email: greg.calhoun@fengate.com

e. Ownership of facility: ☐ Public ☒ Private ☐ Both ☐ Federal

f. Owner of land where treatment facility is or will be: Motiva Enterprises, LLC

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: Motiva Enterprises, LLC

Mailing Address: 500 Dallas Street City/State/Zip: Houston, Texas 77002

Phone No: Click to enter text. Email: Click to enter text.

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years (In some cases, a lease may not suffice - see instructions). Attachment: 4 – Long Term Lease Agreement - Draft

g. Owner of effluent TLAP disposal site (if applicable): N/A

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: N/A

Mailing Address: N/A City/State/Zip: N/A

Phone No: N/A Email: N/A

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

h. Owner of sewage sludge disposal site (if applicable):

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: N/A

Mailing Address: N/A City/State/Zip: N/A

Phone No: N/A Email: N/A

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

Item 11. TDPES Discharge/TLAP Disposal Information (Instructions, Page 31)

a. Is the facility located on or does the treated effluent cross Native American Land?

☐ Yes ☒ No

b. Attach an original full size USGS Topographic Map (or an 8.5"×11" reproduced portion for renewal or amendment applications) with all required information. Check the box next to each item below to confirm it has been included on the map.

☒ One-mile radius

☒ Applicant's property boundaries

☒ Labeled point(s) of discharge

☒ Effluent disposal site boundaries

☒ Sewage sludge disposal site

☒ Three-miles downstream information

☒ Treatment facility boundaries

☒ Highlighted discharge route(s)

☒ All wastewater ponds

☒ New and future construction

Attachment: 5 – USGS Topographic Map

c. Is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☒ No or New Permit

If no, or a new application, provide an accurate location description: N/A

d. Are the point(s) of discharge in the existing permit correct?

☐ Yes ☒ No or New Permit

If no, or a new application, provide an accurate location description: Treated process water from the proposed outfall (Outfall 001) will discharge at 29.878183˚, -93.978300˚ directly into Alligator Bayou (Segment 0702A) just downstream of Jefferson County Drainage District No. 7 Main Canal D.

e. Are the discharge route(s) in the existing permit correct?

☐ Yes ☒ No or New Permit

If no, or a new permit, provide an accurate description of the discharge route: Treated process water from the proposed outfall (Outfall 001) will discharge at 29.878183˚, -93.978300˚ directly into Alligator Bayou (Segment 0702A) just downstream of Jefferson County Drainage District No. 7 Main Canal D. Approximately 1.25 miles downstream from the discharge point Alligator Bayou confluences with the Intercoastal Waterway (Segment 0702).

f. City nearest the outfall(s): City of Port Arthur

g. County in which the outfalls(s) is/are located: Jefferson County

h. 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, attach copies of letters that show proof of contact and provide the approval letter upon receipt. Attachment: 6 - Request for Authorization – Jefferson County Drainage District No. 7

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

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

☐ Yes No or New Permit ☒ N/A

If no, or a new application, provide an accurate location description: N/A

j. City nearest the disposal site: N/A

k. County in which the disposal site is located: N/A

l. For TLAPs, describe how effluent is/will be routed from the treatment facility to the disposal site: N/A

m. For TLAPs, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: N/A

Item 12. Miscellaneous Information (Instructions, Page 33)

a. 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: N/A

b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account no.: N/A

Total amount due: N/A

c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Enforcement order no.: N/A

Amount due: N/A

Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ000Click to enter text.

Applicant Name: Port Arthur Cogeneration, LLC

Certification: I, Greg Calhoun, 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): Greg Calhoun

Signatory title: Managing Director

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

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

INDUSTRIAL WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

Item 1. Affected Landowner Information (Instructions, Page 35)

a. Attach a landowner map or drawing, with scale, as applicable. Check the box next to each item to confirm it has been provided.

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

Attachment: 7 – Affected Landowner Map

b. Check the box next to the format of the landowners list:

☐ Readable/Writeable CD ☒ Four sets of labels

Attachment: 8 – Landowners List – Labels 9 – Cross Referenced Landowner List

d. Provide the source of the landowners' names and mailing addresses: Jefferson County Appraisal District

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

☐ Yes ☒ No

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

Item 2. Original Photographs (Instructions, Page 37)

Provide original ground level photographs. Check the box next to each of the following items to indicate it is included.

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

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

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

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

Attachment: 10 – Photograph Log

INDUSTRIAL 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: 11 – Supplemental Permit Information Form (SPIF) (20971)

WATER QUALITY PERMIT

PAYMENT SUBMITTAL FORM

Use this form to submit the Application Fee, if mailing the payment. (Instructions, Page 36-37)

- 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 **Permit No:** WQ000Click to enter text.

1. Check or Money Order Number: Click to enter text.
2. Check or Money Order Amount: $1,250
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: Port Arthur Cogeneration, LLC

   Physical Address of Project or Site: 2555 Savannah Ave, Port Arthur, TX 77640

   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.
   Attachment: N/A

Staple Check or Money Order in This Space

ATTACHMENT 1

INDIVIDUAL INFORMATION

Item 1. Individual information (Instructions, Page 38)

Complete this attachment if the facility applicant or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

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

Full legal name (first, middle, and last): Click to enter text.

Driver's License or State Identification Number: Click to enter text.

Date of Birth: Click to enter text.

Mailing Address: Click to enter text.

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

Phone No.: Click to enter text.

Fax No.: Click to enter text.

E-mail Address: Click to enter text.

CN: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST OF COMMON DEFICIENCIES

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

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

☒ Correct and Current Industrial Wastewater Permit Application Forms
(TCEQ Form Nos. 10055 and 10411. Version dated 5/10/2019 or later.)

☒ Water Quality Permit Payment Submittal Form (Page 14)
(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)

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

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

☐ N/A ☒ Landowners Map
(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.

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

☐ N/A ☒ Landowners Labels or CD-RW attached
(See instructions for landowner requirements.)

☒ Original signature per 30 TAC § 305.44 – Blue Ink Preferred
(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

Technical Form
10055

Explore with us

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

The following information **is required** for all applications for a TLAP or an individual TPDES discharge permit.

For **additional information** or clarification on the requested information, please refer to the Instructions for Completing the Industrial Wastewater Permit Application[1] available on the TCEQ website. Please contact the Industrial Permits Team at 512-239-4671 with any questions about this form.

If more than one outfall is included in the application, provide applicable information for each individual outfall. **If an item does not apply to the facility, enter N/A** to indicate that the item has been considered. Include separate reports or additional sheets as **clearly cross-referenced attachments** and provide the attachment number in the space provided for the item the attachment addresses.

NOTE: This application is for an industrial wastewater permit only. Additional authorizations from the TCEQ Waste Permits Division or the TCEQ Air Permits Division may be needed.

Item 1. Facility/Site Information (Instructions, Page 39)

a. Describe the general nature of the business and type(s) of industrial and commercial activities. Include all applicable SIC codes (up to 4).

The proposed facility will function as a gas power plant that generates electricity using natural gas as its primary fuel source. The plant will involve the combustion of natural gas to produce steam, which then drives turbines connected to generators to generate electricity for sale to the adjacent Motiva refinery. SIC Code 4911: Electric Services, Establishments engaged in the generation, transmission, and/or distribution of electric energy for sale.

b. Describe all wastewater-generating processes at the facility.

Cooling Tower: water for cooling purposes. This water, after absorbing heat from the power generation process, becomes heated and is recycled in a closed-loop cooling system but still generates wastewater through evaporation and blowdown processes. Boiler and Evaporation Cooler Blowdown: blowdown to remove concentrated dissolved solids and impurities from boiler and cooler water to prevent scale formation and maintain boiler efficiency. Blowdown water is discharged as wastewater. Filtration High Purity Treatment Waste: high-purity water for various purposes, such as boiler feedwater, steam generation, and equipment cooling. To achieve the required level of purity, water treatment processes such as reverse osmosis (RO), deionization (DI), and demineralization are employed. General Plant Operations and Washdowns: Various other plant operations, such as equipment cleaning, and maintenance activities. Stormwater Runoff: Rainwater or stormwater runoff from the gas power plant site.

[1] https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES_industrial_wastewater_steps.html

c. Provide a list of raw materials, major intermediates, and final products handled at the facility.

Materials List

Raw Materials	Intermediate Products	Final Products
Natural Gas	Heat	Electricity
Refinery Fuel Gas		Steam
Raw Water	Potable Water	Process Wastewater
	Service Water	
	Demineralized Water	

Attachment: N/A

d. Attach a facility map (drawn to scale) with the following information:

- Production areas, maintenance areas, materials-handling areas, waste-disposal areas, and water intake structures.
- The location of each unit of the WWTP including the location of wastewater collection sumps, impoundments, outfalls, and sampling points, if significantly different from outfall locations.

Attachment: 12 – Facility Map

e. Is this a new permit application for an existing facility?

☐ Yes ☒ No

If **yes**, provide background discussion: N/A

f. Is/will the treatment facility/disposal site be located above the 100-year frequency flood level.

☒ Yes ☐ No

List source(s) used to determine 100-year frequency flood plain: FEMA National Flood Hazard Layer

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are used/proposed to prevent flooding (including tail water and rainfall run-on controls) of the treatment facility and disposal area: N/A

Attachment: N/A

g. For **new** or **major amendment** permit applications, will any construction operations result in a discharge of fill material into a water in the state?

☒ Yes ☐ No ☐ N/A (renewal only)

h. If **yes** to Item 1.g, has the applicant applied for a USACE CWA Chapter 404 Dredge and Fill permit?

☐ Yes ☒ No

If **yes**, provide the permit number: N/A

If **no**, provide an approximate date of application submittal to the USACE: 6/30/2024

Item 2. Treatment System (Instructions, Page 40)

a. List any physical, chemical, or biological treatment process(es) used/proposed to treat wastewater at this facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

The Facility proposes that raw water will be initially treated at the Clarifier where water enters and is treated with chemicals including sulfuric acid, and sodium hypochlorite. Heavier particles settle to the bottom as sludge, while clearer water exits. Sludge from the clarifier is fed into the thickener where solids settle further using a polymer, and the clarified overflow is recycled. Water from the previous processes (clarifier, thickener) is collected to minimize water usage and manage process water. Sludge from the thickener is pumped into the filter press where solids are captured in filters and liquid (filtrate) is expelled. The filter cake will be disposed of as solid waste. From there the water goes to the cooling tower where it is further treated with sodium bisulfite, anti-foam, dispersant/corrosion inhibitor, sulfuric acid, scale inhibitor, and sodium hypochlorite, or through the Ultrafiltration (UF) system where the water is treated with sulfuric acid, sodium hypochlorite, and citric acid and then pressurized and forced through a semi-permeable membrane, allowing water molecules to pass while rejecting salts and contaminants. The UF water is stored inside of the Service Water Tank before either the blowdown tank or through the two-stage Reverse Osmosis (RO) System. Sodium bisulfite, sulfuric acid, and scale inhibitor are also used at this stage. Following RO water is then sent to the Demineralization process where water passes through ion exchange resins which exchange cations and anions for hydrogen and hydroxide ions, producing purified water. Purified process water is heated to generate steam, where ammonia and phosphate are used, and then cooled through the cooling tower. Wastewater from the boilers and other plant services are sent to the Oil/Water Separator where oil floats to the surface and is skimmed off, while water exits from the bottom to Wastewater Collection before being discharged through Outfall 001. Chemicals like corrosion inhibitors, scale inhibitors, biocides, and pH adjusters are added to the water to optimize conditions for equipment and prevent damage.

b. Attach a flow schematic **with a water balance** showing all sources of water and wastewater flow into the facility, wastewater flow into and from each treatment unit, and wastewater flow to each outfall/point of disposal.

Attachment: 13 – Water Balance

Item 3. Impoundments (Instructions, Page 40)

Does the facility use or plan to use any wastewater impoundments (e.g., lagoons or ponds?)

☐ Yes ☒ No

If **no**, proceed to Item 4. If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a - 3.e** for **new or proposed** impoundments. **NOTE:** See instructions, Pages 40-42, for additional information on the attachments required by Items 3.a – 3.e.

a. Complete the table with the following information for each existing, new, or proposed impoundment. Attach additional copies of the Impoundment Information table, if needed.

   Use Designation: Indicate the use designation for each impoundment as Treatment (**T**), Disposal (**D**), Containment (**C**), or Evaporation (**E**).

   Associated Outfall Number: Provide an outfall number if a discharge occurs or will occur.

   Liner Type: Indicate the liner type as Compacted clay liner (**C**), In-situ clay liner (**I**), Synthetic/plastic/rubber liner (**S**), or Alternate liner (**A**). **NOTE:** See instructions for further detail on liner specifications. If an alternate liner (A) is selected, include an attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

   Leak Detection System: If any leak detection systems are in place/planned, enter **Y** for yes. Otherwise, enter **N** for no.

   Groundwater Monitoring Wells and Data: If groundwater monitoring wells are in place/planned, enter **Y** for yes. Otherwise, enter **N** for no. Attach any existing groundwater monitoring data.

   Dimensions: Provide the dimensions, freeboard, surface area, storage capacity of the impoundments, and the maximum depth (not including freeboard). For impoundments with irregular shapes, submit surface area instead of length and width.

   Compliance with 40 CFR Part 257, Subpart D: If the impoundment is required to be in compliance with 40 CFR Part 257, Subpart D, enter **Y** for yes. Otherwise, enter **N** for no.

   Date of Construction: Enter the date construction of the impoundment commenced (mm/dd/yy).

Impoundment Information

Parameter	**Pond #**	**Pond #**	**Pond #**	**Pond #**
Use Designation: (T) (D) (C) or (E)				
Associated Outfall Number				
Liner Type (C) (I) (S) or (A)				
Alt. Liner Attachment Reference				
Leak Detection System, Y/N				
Groundwater Monitoring Wells, Y/N				
Groundwater Monitoring Data Attachment				
Pond Bottom Located Above The Seasonal High-Water Table, Y/N				
Length (ft)				
Width (ft)				
Max Depth From Water Surface (ft), Not Including Freeboard				

Parameter	Pond #	Pond #	Pond #	Pond #
Freeboard (ft)				
Surface Area (acres)				
Storage Capacity (gallons)				
40 CFR Part 257, Subpart D, Y/N				
Date of Construction				

Attachment: Click to enter text.

The following information (**Items 3.b – 3.e**) is required only for **new or proposed** impoundments.

b. For new or proposed impoundments, attach any available information on the following items. If attached, check **yes** in the appropriate box. Otherwise, check **no** or **not yet designed**.

1. Liner data

☐ Yes ☐ No ☐ Not yet designed

2. Leak detection system or groundwater monitoring data

☐ Yes ☐ No ☐ Not yet designed

3. Groundwater impacts

☐ Yes ☐ No ☐ Not yet designed

NOTE: Item b.3 is required if the bottom of the pond is not above the seasonal high-water table in the shallowest water-bearing zone.

Attachment: Click to enter text.

For TLAP applications: Items 3.c – 3.e are **not required**, continue to Item 4.

c. Attach a USGS map or a color copy of original quality and scale which accurately locates and identifies all known water supply wells and monitor wells within ½-mile of the impoundments.

Attachment: Click to enter text.

d. Attach copies of State Water Well Reports (e.g., driller's logs, completion data, etc.), and data on depths to groundwater for all known water supply wells including a description of how the depths to groundwater were obtained.

Attachment: Click to enter text.

e. Attach information pertaining to the groundwater, soils, geology, pond liner, etc. used to assess the potential for migration of wastes from the impoundments or the potential for contamination of groundwater or surface water.

Attachment: Click to enter text.

Item 4. Outfall/Disposal Method Information (Instructions, Page 42)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge, and for each point of disposal for TLAP operations.

If there are more outfalls/points of disposal at the facility than the spaces provided, copies of pages 6 and/0r numbered accordingly (i.e., page 6a, 6b, etc.) may be used to provide information on the additional outfalls.

For TLAP applications: Indicate the disposal method and each individual irrigation area **I**, evaporation pond **E**, or subsurface drainage system **S** by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area in the space provided for **Outfall** number (e.g. **E1** for evaporation pond 1, **I2** for irrigation area No. 2, etc.).

Outfall Longitude and Latitude

Outfall No.	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
001	29.878183˚	-93.978300˚

Outfall Location Description

Outfall No.	Location Description
001	Northwest corner of the Facility along the south bank of the Main Outfall Canal

Description of Sampling Point(s) (if different from Outfall location)

Outfall No.	Description of sampling point
001	Wastewater treatment discharge bypass valve

Outfall Flow Information – Permitted and Proposed

Outfall No.	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)	Anticipated Discharge Date (mm/dd/yy)
001	-	-	1.59	2.38	06-01-25

Outfall Discharge – Method and Measurement

Outfall No.	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
001	Y	Y	Magnetic Flow Meter

Outfall Discharge – Flow Characteristics

Outfall No.	Intermittent Discharge? Y/N	Continuous Discharge? Y/N	Seasonal Discharge? Y/N	Discharge Duration (hrs/day)	Discharge Duration (days/mo)	Discharge Duration (mo/yr)
001	N	Y	Y	24	31	12

Outfall Wastestream Contributions

Outfall No. 001

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Cooling Tower	1.724	72.4
Reverse Osmosis Wastewater	0.614	25.8
General Service Water	0.036	1.5
Boilers	0.007	0.3

Outfall No. Click to enter text.

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow

Outfall No. Click to enter text.

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow

Attachment: N/A

Item 5. Blowdown and Once-Through Cooling Water Discharges (Instructions, Page 43)

a. Indicate if the facility currently or proposes to:

☒ Yes ☐ No Use cooling towers that discharge blowdown or other wastestreams

☒ Yes ☐ No Use boilers that discharge blowdown or other wastestreams

☐ Yes ☒ No Discharge once-through cooling water

NOTE: If the facility uses or plans to use cooling towers or once-through cooling water, Item 12 **is required**.

b. If **yes** to any of the above, attach an SDS with the following information for each chemical additive.

- Manufacturers Product Identification Number
- Product use (e.g., biocide, fungicide, corrosion inhibitor, etc.)
- Chemical composition including CASRN for each ingredient
- Classify product as non-persistent, persistent, or bioaccumulative
- Product or active ingredient half-life
- Frequency of product use (e.g., 2 hours/day once every two weeks)
- Product toxicity data specific to fish and aquatic invertebrate organisms
- Concentration of whole product or active ingredient, as appropriate, in wastestream.

In addition to each SDS, attach a summary of the above information for each specific wastestream and the associated chemical additives. Specify which outfalls are affected.

Attachment: 14 – SDS Sheets and Summary

c. Cooling Towers and Boilers

If the facility currently or proposes to use cooling towers or boilers that discharge blowdown or other wastestreams to the outfall(s), complete the following table.

Cooling Towers and Boilers

Type of Unit	Number of Units	Daily Avg Blowdown (gallons/day)	Daily Max Blowdown (gallons/day)
Cooling Towers	1	862,128	1,724,112
Boilers	2	6,137	6,798

Item 6. Stormwater Management (Instructions, Page 44)

Will any existing/proposed outfalls discharge stormwater associated with industrial activities, as defined at *40 CFR § 122.26(b)(14)*, commingled with any other wastestream?

☒ Yes ☐ No

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in a manner which may result in exposure of the activities or materials to stormwater: Outdoor industrial activities involve the delivery, storage, and handling of fuels such as natural gas, diesel, and oil. Chemicals used for water treatment, cleaning, and maintenance are stored and handled in tanks outdoors. Operations and maintenance of cooling towers and regular maintenance of equipment and facilities. Collection, storage, and disposal of solid wastes from the water treatment process.

Item 7. Domestic Sewage, Sewage Sludge, and Septage Management and Disposal (Instructions, Page 44)

Domestic Sewage - Waste and wastewater from humans or household operations that is discharged to a wastewater collection system or otherwise enters a treatment works.

a. Check the box next to the appropriate method of domestic sewage and domestic sewage sludge treatment or disposal. Complete Worksheet 5.0 or Item 7.b if directed to do so.

☒ Domestic sewage is routed (i.e., connected to or transported to) to a WWTP permitted to receive domestic sewage for treatment, disposal, or both. Complete Item 7.b.

☐ Domestic sewage disposed of by an on-site septic tank and drainfield system. Complete Item 7.b.

☐ Domestic and industrial treatment sludge ARE commingled prior to use or disposal.

☐ Industrial wastewater and domestic sewage are treated separately, and the respective sludge IS NOT commingled prior to sludge use or disposal. Complete Worksheet 5.0.

☐ Facility is a POTW. Complete Worksheet 5.0.

☐ Domestic sewage is not generated on-site.

☐ Other (e.g., portable toilets), specify and Complete Item 7.b: Click to enter text.

b. Provide the name and TCEQ, NPDES, or TPDES Permit No. of the waste-disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TCEQ Registration No. of the hauler.

Domestic Sewage Plant/Hauler Name

Plant/Hauler Name	Permit/Registration No.
CITY OF PORT ARTHUR WATER TREATMENT PLANT	TXG640021

Item 8. Improvements or Compliance/Enforcement Requirements (Instructions, Page 45)

a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?

☐ Yes ☒ No

b. Has the permittee completed or planned for any improvements or construction projects?

☐ Yes ☒ No

c. If **yes** to either 8.a **or** 8.b, provide a brief summary of the requirements and a status update: N/A

Item 9. Toxicity Testing (Instructions, Page 45)

Have any biological tests for acute or chronic toxicity been made on any of the discharges or on a receiving water in relation to the discharge within the last three years?

☐ Yes ☒ No

If **yes**, identify the tests and describe their purposes: N/A

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** N/A

Item 10. Off-Site/Third Party Wastes (Instructions, Page 45)

a. Does or will the facility receive wastes from off-site sources for treatment at the facility, disposal on-site via land application, or discharge via a permitted outfall?

☐ Yes ☒ No

If **yes**, provide responses to Items 10.b through 10.d below.

If **no**, proceed to Item 11.

b. Attach the following information to the application:

- List of wastes received (including volumes, characterization, and capability with on-site wastes).
- Identify the sources of wastes received (including the legal name and addresses of the generators).
- Description of the relationship of waste source(s) with the facility's activities.

Attachment: Click to enter text.

c. Is or will wastewater from another TCEQ, NPDES, or TPDES permitted facility commingled with this facility's wastewater after final treatment and prior to discharge via the final outfall/point of disposal?

☐ Yes ☐ No

If **yes**, provide the name, address, and TCEQ, NPDES, or TPDES permit number of the contributing facility and a copy of any agreements or contracts relating to this activity.

Attachment: Click to enter text.

d. Is this facility a POTW that accepts/will accept process wastewater from any SIU and has/is required to have an approved pretreatment program under the NPDES/TPDES program?

☐ Yes ☐ No

If **yes**, **Worksheet 6.0** of this application **is required**.

Item 11. Radioactive Materials (Instructions, Page 46)

a. Are/will radioactive materials be mined, used, stored, or processed at this facility?

☐ Yes ☒ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L.

Radioactive Materials Mined, Used, Stored, or Processed

Radioactive Material Name	Concentration (pCi/L)

b. Does the applicant or anyone at the facility have any knowledge or reason to believe that radioactive materials may be present in the discharge, including naturally occurring radioactive materials in the source waters or on the facility property?

☐ Yes ☐ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L. Do not include information provided in response to Item 11.a.

Radioactive Materials Present in the Discharge

Radioactive Material Name	Concentration (pCi/L)

Item 12. Cooling Water (Instructions, Page 46)

a. Does the facility use or propose to use water for cooling purposes?

☒ Yes ☐ No

If **no**, stop here. If **yes**, complete Items 12.b thru 12.f.

b. Cooling water is/will be obtained from a groundwater source (e.g., on-site well).

☐ Yes ☒ No

If **yes**, stop here. If **no**, continue.

c. Cooling Water Supplier

1. Provide the name of the owner(s) and operator(s) for the CWIS that supplies or will supply water for cooling purposes to the facility.

Cooling Water Intake Structure(s) Owner(s) and Operator(s)

CWIS ID	01	02 (ALT)		
Owner	Port Arthur Cogeneration	Motiva Enterprises		
Operator	Port Arthur Cogeneration	Motiva Enterprises		

2. Cooling water is/will be obtained from a Public Water Supplier (PWS)

☐ Yes ☒ No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS No. N/A

3. Cooling water is/will be obtained from a reclaimed water source?

☐ Yes ☒ No

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here: N/A

4. Cooling water is/will be obtained from an Independent Supplier

☐ Yes ☒ No

If **no**, proceed to Item 12.d. If **yes**, provide the actual intake flow of the Independent Supplier's CWIS that is/will be used to provide water for cooling purposes and proceed: N/A

d. 316(b) General Criteria

1. The CWIS(s) used to provide water for cooling purposes to the facility has or will have a cumulative design intake flow of 2 MGD or greater.

☒ Yes ☐ No

2. At least 25% of the total water withdrawn by the CWIS is/will be used at the facility exclusively for cooling purposes on an annual average basis.

☒ Yes ☐ No

3. The CWIS(s) withdraw(s)/propose(s) to withdraw water for cooling purposes from surface waters that meet the definition of Waters of the United States in *40 CFR § 122.2*.

   ☒ Yes ☐ No

   If **no**, provide an explanation of how the waterbody does not meet the definition of Waters of the United States in *40 CFR § 122.2*: N/A

If **yes** to all three questions in Item 12.d, the facility **meets** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA. Proceed to **Item 12.f**.

If **no** to any of the questions in Item 12.d, the facility **does not meet** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA; however, a determination is required based upon BPJ. Proceed to **Item 12.e**.

e. The facility does not meet the minimum requirements to be subject to the fill requirements of Section 316(b) **and uses**/proposes **to use cooling towers**.

   ☒ Yes ☐ No

   If **yes**, stop here. If **no**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ.

f. Oil and Gas Exploration and Production

   1. The facility is subject to requirements at 40 CFR Part 435, Subparts A or D.

      ☐ Yes ☒ No

      If **yes**, continue. If **no**, skip to Item 12.g.

   2. The facility is an existing facility as defined at 40 CFR § 125.92(k) or a new unit at an existing facility as defined at 40 CFR § 125.92(u).

      ☐ Yes ☒ No

      If **yes**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ. If **no**, skip to Item 12.g.3.

g. Compliance Phase and Track Selection

   1. Phase I – New facility subject to 40 CFR Part 125, Subpart I

      ☒ Yes ☐ No

      If **yes**, check the box next to the compliance track selection, attach the requested information, and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

      ☒ Track I – AIF greater than 2 MGD, but less than 10 MGD

      - Attach information required by *40 CFR §§ 125.86(b)(2)-(4)*.

      ☐ Track I – AIF greater than 10 MGD

      - Attach information required by *40 CFR § 125.86(b)*.

      ☐ Track II

      - Attach information required by *40 CFR § 125.86(c)*.

      Attachment: 15 - Track I Application Requirements – CFR 125.86(b)(1)-(4)

2. Phase II – Existing facility subject to 40 CFR Part 125, Subpart J

   ☐ Yes ☒ No

   If **yes**, complete Worksheets 11.0 through 11.3, as applicable.

3. Phase III – New facility subject to 40 CFR Part 125, Subpart N

   ☐ Yes ☒ No

   If **yes**, check the box next to the compliance track selection and provide the requested information.

   ☐ Track I – Fixed facility

   - Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

   ☐ Track I – Not a fixed facility

   - Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Item 2 (except CWIS latitude/longitude under Item 2.a).

   ☐ Track II – Fixed facility

   - Attach information required by 40 CFR § 125.136(c) and complete Worksheet 11.0, Items 2 and 3.

   Attachment: Click to enter text.

Item 13. Permit Change Requests (Instructions, Page 48)

This item is only applicable to existing permitted facilities.

a. Is the facility requesting a **major amendment** of an existing permit?

   ☐ Yes ☒ No

   If **yes**, list each request individually and provide the following information: 1) detailed information regarding the scope of each request and 2) a justification for each request. Attach any supplemental information or additional data to support each request.

Click to enter text.

b. Is the facility requesting any **minor amendments** to the permit?

   ☐ Yes ☐ No

If **yes**, list and describe each change individually.

Click to enter text.

c. Is the facility requesting any **minor modifications** to the permit?

☐ Yes ☐ No

If **yes**, list and describe each change individually.

Click to enter text.

Item 14. Laboratory Accreditation (Instructions, Page 49)

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: Greg Calhoun

Title: Managing Director

Signature: _____

Date: _____

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 1.0: EPA CATEGORICAL EFFLUENT GUIDELINES

This worksheet **is required** for all applications for TPDES permits for discharges of wastewaters subject to EPA categorical effluent limitation guidelines (ELGs).

Item 1. Categorical Industries (Instructions, Page 53)

Is this facility subject to any 40 CFR categorical ELGs outlined on page 53 of the instructions?

☒ Yes ☐ No

If **no**, this worksheet is not required. If **yes**, provide the appropriate information below.

40 CFR Effluent Guideline

Industry	40 CFR Part
STEAM ELECTRIC POWER GENERATION POINT SOURCE	423

Item 2. Production/Process Data (Instructions, Page 54)

NOTE: For all TPDES permit applications requesting individual permit coverage for discharges of oil and gas exploration and production wastewater (discharges into or adjacent to water in the state, falling under the Oil and Gas Extraction Effluent Guidelines – 40 CFR Part 435), see Worksheet 12.0, Item 2 instead.

a. Production Data

Provide appropriate data for effluent guidelines with production-based effluent limitations.

Production Data

Subcategory	Actual Quantity/Day	Design Quantity/Day	Units
N/A			

b. Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing Data (40 CFR Part 414)

Provide each applicable subpart and the percent of total production. Provide data for metal-bearing and cyanide-bearing wastestreams, as required by *40 CFR Part 414, Appendices A and B*.

Percentage of Total Production

Subcategory	Percent of Total Production	Appendix A and B - Metals	Appendix A - Cyanide
N/A			

c. Refineries (40 CFR Part 419)

Provide the applicable subcategory and a brief justification.

N/A

Item 3. Process/Non-Process Wastewater Flows (Instructions, Page 54)

Provide a breakdown of wastewater flow(s) generated by the facility, including both process and non-process wastewater flow(s). Specify which wastewater flows are to be authorized for discharge under this permit and the disposal practices for wastewater flows, excluding domestic, which are not to be authorized for discharge under this permit.

Cooling Tower: water for cooling purposes. This water, after absorbing heat from the power generation process, becomes heated and is recycled in a closed-loop cooling system but still generates wastewater through evaporation and blowdown processes. Boiler and Evaporation Cooler Blowdown: blowdown to remove concentrated dissolved solids and impurities from boiler and cooler water to prevent scale formation and maintain boiler efficiency. Blowdown water is discharged as wastewater. Filtration Backwash: filtration systems to remove suspended solids, particulates, and other impurities from water used in cooling systems or other processes. During backwashing, water is reversed through the filter media to dislodge and flush out accumulated solids. High Purity Treatment Waste: high-purity water for various purposes, such as boiler feedwater, steam generation, and equipment cooling. To achieve the

required level of purity, water treatment processes such as reverse osmosis (RO), deionization (DI), and demineralization are employed. General Plant Operations and Washdowns: Various other plant operations, such as equipment cleaning, and maintenance activities. Stormwater Runoff: Rainwater or stormwater runoff from the gas power plant site. All above wastewater process are to be directed and then treated onsite through a wastewater treatment process, discharges from the wastewater treatment plant are to be authorized by this permit.

Item 4. New Source Determination (Instructions, Page 54)

Provide a list of all wastewater-generating processes subject to EPA categorical ELGs, identify the appropriate guideline Part and Subpart, and provide the date the process/construction commenced.

Wastewater Generating Processes Subject to Effluent Guidelines

Process	EPA Guideline Part	EPA Guideline Subpart	Date Process/ Construction Commenced
Low Volume Waste Sources	423	423.12(b)(3)	TBD
Metal Cleaning	423	423.12(b)(5)	TBD
Once Through Cooling Water	423	423.12(b)(6)	TBD
Cooling Tower Blowdown	423	423.12(b)(7)	TBD
Flue Gas Desulfurization (FGD)	423	423.12(b)(11)	TBD

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 **is required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

Item 1. General Testing Requirements (Instructions, Page 55)

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): TBD

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm. **Attachment:** Click to enter text.

Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** 16 - Correspondence with the TCEQ – Pollutant Analysis

TABLE 1 and TABLE 2 (Instructions, Page 58)

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

Table 1 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (mg/L)**	**Sample 2 (mg/L)**	**Sample 3 (mg/L)**	**Sample 4 (mg/L)**
BOD (5-day)				
CBOD (5-day)				
Chemical oxygen demand				
Total organic carbon				
Dissolved oxygen				
Ammonia nitrogen				
Total suspended solids				
Nitrate nitrogen				
Total organic nitrogen				
Total phosphorus				
Oil and grease				
Total residual chlorine				

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total dissolved solids				
Sulfate				
Chloride				
Fluoride				
Total alkalinity (mg/L as CaCO3)				
Temperature (˚F)				
pH (standard units)				

Table 2 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

TABLE 3 (Instructions, Page 58)

Completion of Table 3 **is required** for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 **is required** for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (µg/L)***	**Sample 2 (µg/L)***	**Sample 3 (µg/L)***	**Sample 4 (µg/L)***	**MAL (µg/L)***
Acrylonitrile					50
Anthracene					10
Benzene					10
Benzidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
Bis(2-chloroethyl)ether					10
Bis(2-ethylhexyl)phthalate					10
Bromodichloromethane [Dichlorobromomethane]					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane [Dibromochloromethane]					10
Chloroform					10
Chrysene					5
m-Cresol [3-Methylphenol]					10
o-Cresol [2-Methylphenol]					10
p-Cresol [4-Methylphenol]					10
1,2-Dibromoethane					10
m-Dichlorobenzene [1,3-Dichlorobenzene]					10
o-Dichlorobenzene [1,2-Dichlorobenzene]					10
p-Dichlorobenzene [1,4-Dichlorobenzene]					10
3,3'-Dichlorobenzidine					5
1,2-Dichloroethane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1-Dichloroethene [1,1-Dichloroethylene]					10
Dichloromethane [Methylene chloride]					20
1,2-Dichloropropane					10
1,3-Dichloropropene [1,3-Dichloropropylene]					10
2,4-Dimethylphenol					10
Di-n-Butyl phthalate					10
Ethylbenzene					10
Fluoride					500
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Methyl ethyl ketone					50
Nitrobenzene					10
N-Nitrosodiethylamine					20
N-Nitroso-di-n-butylamine					20
Nonylphenol					333
Pentachlorobenzene					20
Pentachlorophenol					5
Phenanthrene					10
Polychlorinated biphenyls (PCBs) (**)					0.2
Pyridine					20
1,2,4,5-Tetrachlorobenzene					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethene [Tetrachloroethylene]					10
Toluene					10
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10
Trichloroethene [Trichloroethylene]					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
2,4,5-Trichlorophenol					50
TTHM (Total trihalomethanes)					10
Vinyl chloride					10

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Pages 58-59)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. **Tributyltin**

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

☐ Manufacturers and formulators of tributyltin or related compounds.

☐ Painting of ships, boats and marine structures.

☐ Ship and boat building and repairing.

☐ Ship and boat cleaning, salvage, wrecking and scaling.

☐ Operation and maintenance of marine cargo handling facilities and marinas.

☐ Facilities engaged in wood preserving.

☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. **Enterococci (discharge to saltwater)**

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. E. coli (discharge to freshwater)

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1**	**Sample 2**	**Sample 3**	**Sample 4**	**MAL**
Tributyltin (µg/L)					0.010
Enterococci (cfu or MPN/100 mL)					N/A
E. coli (cfu or MPN/100 mL)					N/A

TABLE 5 (Instructions, Page 59)

Completion of Table 5 **is required** for all **external outfalls** which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

☒ N/A

Table 5 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (µg/L)***	**Sample 2 (µg/L)***	**Sample 3 (µg/L)***	**Sample 4 (µg/L)***	**MAL (µg/L)***
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

Pollutant	**Sample 1 (µg/L)***	**Sample 2 (µg/L)***	**Sample 3 (µg/L)***	**Sample 4 (µg/L)***	**MAL (µg/L)***
Endosulfan I (*alpha*)					0.01
Endosulfan II (*beta*)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (*alpha*)					0.05
Hexachlorocyclohexane (*beta*)					0.05
Hexachlorocyclohexane (*gamma*) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 59)

Completion of Table 6 **is required** for all **external outfalls**.

Table 6 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutants	**Believed Present**	**Believed Absent**	**Sample 1 (mg/L)**	**Sample 2 (mg/L)**	**Sample 3 (mg/L)**	**Sample 4 (mg/L)**	**MAL (µg/L)***
Bromide	☐	☐					400
Color (PCU)	☐	☐					—
Nitrate-Nitrite (as N)	☐	☐					—
Sulfide (as S)	☐	☐					—
Sulfite (as SO3)	☐	☐					—
Surfactants	☐	☐					—
Boron, total	☐	☐					20
Cobalt, total	☐	☐					0.3
Iron, total	☐	☐					7
Magnesium, total	☐	☐					20
Manganese, total	☐	☐					0.5
Molybdenum, total	☐	☐					1
Tin, total	☐	☐					5
Titanium, total	☐	☐					30

TABLE 7 (Instructions, Page 60)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

Industrial Category	40 CFR Part	Volatiles Table 8	Acids Table 9	Bases/ Neutrals Table 10	Pesticides Table 11
☐ Adhesives and Sealants		☐ Yes	☐ Yes	☐ Yes	No
☐ Aluminum Forming	467	☐ Yes	☐ Yes	☐ Yes	No
☐ Auto and Other Laundries		☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Battery Manufacturing	461	☐ Yes	No	☐ Yes	No
☐ Coal Mining	434	No	No	No	No
☐ Coil Coating	465	☐ Yes	☐ Yes	☐ Yes	No
☐ Copper Forming	468	☐ Yes	☐ Yes	☐ Yes	No
☐ Electric and Electronic Components	469	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Electroplating	413	☐ Yes	☐ Yes	☐ Yes	No
☐ Explosives Manufacturing	457	No	☐ Yes	☐ Yes	No
☐ Foundries		☐ Yes	☐ Yes	☐ Yes	No
☐ Gum and Wood Chemicals - Subparts A,B,C,E	454	☐ Yes	☐ Yes	No	No
☐ Gum and Wood Chemicals - Subparts D,F	454	☐ Yes	☐ Yes	☐ Yes	No
☐ Inorganic Chemicals Manufacturing	415	☐ Yes	☐ Yes	☐ Yes	No
☐ Iron and Steel Manufacturing	420	☐ Yes	☐ Yes	☐ Yes	No
☐ Leather Tanning and Finishing	425	☐ Yes	☐ Yes	☐ Yes	No
☐ Mechanical Products Manufacturing		☐ Yes	☐ Yes	☐ Yes	No
☐ Nonferrous Metals Manufacturing	421,471	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	☐ Yes	☐ Yes	☐ Yes	No
☐ Ore Mining - Subpart B	440	No	☐ Yes	No	No
☐ Organic Chemicals Manufacturing	414	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Paint and Ink Formulation	446,447	☐ Yes	☐ Yes	☐ Yes	No
☐ Pesticides	455	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Petroleum Refining	419	☐ Yes	No	No	No
☐ Pharmaceutical Preparations	439	☐ Yes	☐ Yes	☐ Yes	No
☐ Photographic Equipment and Supplies	459	☐ Yes	☐ Yes	☐ Yes	No
☐ Plastic and Synthetic Materials Manufacturing	414	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Plastic Processing	463	☐ Yes	No	No	No
☐ Porcelain Enameling	466	No	No	No	No
☐ Printing and Publishing		☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Pulp and Paperboard Mills - Subpart C	430	☐ *	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subparts F, K	430	☐ *	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	☐ Yes	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts I, J, L	430	☐ Yes	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subpart E	430	☐ Yes	☐ Yes	☐ Yes	☐ *
☐ Rubber Processing	428	☐ Yes	☐ Yes	☐ Yes	No
☐ Soap and Detergent Manufacturing	417	☐ Yes	☐ Yes	☐ Yes	No
☒ Steam Electric Power Plants	423	☒ Yes	☒ Yes	No	No
☐ Textile Mills (Not Subpart C)	410	☐ Yes	☐ Yes	☐ Yes	No
☐ Timber Products Processing	429	☐ Yes	☐ Yes	☐ Yes	☐ Yes

* Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Page 60)

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

Table 8 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (µg/L)***	**Sample 2 (µg/L)***	**Sample 3 (µg/L)***	**Sample 4 (µg/L)***	**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 [1,1-Dichloroethene]					10
1,2-Dichloropropane					10
1,3-Dichloropropylene [1,3-Dichloropropene]					10
Ethylbenzene					10
Methyl bromide [Bromomethane]					50
Methyl chloride [Chloromethane]					50
Methylene chloride [Dichloromethane]					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethylene [Tetrachloroethene]					10
Toluene					10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10
Trichloroethylene [Trichloroethene]					10
Vinyl chloride					10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	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
Pentachlorophenol					5
Phenol					10
2,4,6-Trichlorophenol					10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acenaphthene					10
Acenaphthylene					10
Anthracene					10
Benzidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]					10
Benzo(ghi)perylene					20
Benzo(k)fluoranthene					5
Bis(2-chloroethoxy)methane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroethyl)ether					10
Bis(2-chloroisopropyl)ether					10
Bis(2-ethylhexyl)phthalate					10
4-Bromophenyl phenyl ether					10
Butylbenzyl phthalate					10
2-Chloronaphthalene					10
4-Chlorophenyl phenyl ether					10
Chrysene					5
Dibenzo(a,h)anthracene					5
1,2-Dichlorobenzene [o-Dichlorobenzene]					10
1,3-Dichlorobenzene [m-Dichlorobenzene]					10
1,4-Dichlorobenzene [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 Azobenzene)					20
Fluoranthene					10
Fluorene					10
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Indeno(1,2,3-cd)pyrene					5
Isophorone					10
Naphthalene					10
Nitrobenzene					10
N-Nitrosodimethylamine					50

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
N-Nitrosodi-n-propylamine					20
N-Nitrosodiphenylamine					20
Phenanthrene					10
Pyrene					10
1,2,4-Trichlorobenzene					10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Aldrin					0.01
alpha-BHC [alpha-Hexachlorocyclohexane]					0.05
beta-BHC [beta-Hexachlorocyclohexane]					0.05
gamma-BHC [gamma-Hexachlorocyclohexane]					0.05
delta-BHC [delta-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

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
PCB 1260					0.2
PCB 1016					0.2
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: Click to enter text.

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 59-60)

Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- ☐ 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- ☐ 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- ☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- ☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CASRN 299-84-3
- ☐ 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- ☐ hexachlorophene (HCP) CASRN 70-30-4
- ☐ None of the above

Description: Click to enter text.

Does the applicant or anyone at the facility 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 the effluent proposed for discharge?

☐ Yes ☐ No

Description: Click to enter text.

If **yes** to either Items a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	1.0					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.03					50
2,3,4,7,8-PeCDF	0.3					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					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 **is required** for all **external outfalls** as directed below. (Instructions, Pages 60-61)

Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

☐ Yes ☐ No

Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☐ No

If **yes** to either Items a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND APPLICATION OF EFFLUENT

This worksheet **is required** for all applications for a permit to disposal of wastewater by land application (i.e., TLAP)).

Item 1. Type of Disposal System (Instructions, Page 69)

Check the box next to the type of land disposal requested by this application:

- ☐ Irrigation
- ☐ Evaporation
- ☐ Evapotranspiration beds
- ☐ Drip irrigation system
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☐ Surface application
- ☐ Other, specify: Click to enter text.

Item 2. Land Application Area (Instructions, Page 69)

Land Application Area Information

Effluent Application (gallons/day)	Irrigation Acreage (acres)	Describe land use & indicate type(s) of crop(s)	Public Access? (Y/N)

Item 3. Annual Cropping Plan (Instructions, Page 69)

Attach the required cropping plan that includes each of the following:

- Cool and warm season plant species
- Breakdown of acreage and percent of total acreage for each crop
- Crop growing season
- Harvesting method/number of harvests
- Minimum/maximum harvest height
- Crop yield goals
- Soils map
- Nitrogen requirements per crop
- Additional fertilizer requirements
- Supplemental watering requirements
- Crop salt tolerances
- Justification for not removing existing vegetation to be irrigated

Attachment:

Item 4. Well and Map Information (Instructions, Page 70)

a. Check each box to confirm the required information is shown and labeled on the attached USGS map:

☐ The exact boundaries of the land application area

☐ On-site buildings

☐ Waste-disposal or treatment facilities

☐ Effluent storage and tailwater control facilities

☐ Buffer zones

☐ All surface waters in the state onsite and within 500 feet of the property boundaries

☐ All water wells within ½-mile of the disposal site, wastewater ponds, or property boundaries

☐ All springs and seeps onsite and within 500 feet of the property boundaries

Attachment: Click to enter text.

b. List and cross reference all water wells located on or within 500 feet of the disposal site, wastewater ponds, or property boundaries in the following table. Attach additional pages as necessary to include all of the wells.

Well and Map Information Table

Well ID	Well Use	Producing? Y/N/U	Open, cased, capped, or plugged?	Proposed Best Management Practice

Attachment: Click to enter text.

c. Groundwater monitoring wells or lysimeters are/will be installed around the land application site or wastewater ponds.

☐ Yes ☐ No

If **yes**, provide the existing/proposed location of the monitoring wells or lysimeters on the site map attached for Item 4.a. Additionally, attach information on the depth of the wells or lysimeters, sampling schedule, and monitoring parameters for TCEQ review, possible modification, and approval.

Attachment: Click to enter text.

d. Attach a short groundwater technical report using *30 TAC § 309.20(a)(4)* as guidance.
Attachment:

Item 5. Soil Map and Soil Information (Instructions, Page 71)

Check each box to confirm that the following information is attached:

a. ☐ USDA NRCS Soil Survey Map depicting the area to be used for land application with the locations identified by fields and crops.

b. ☐ Breakdown of acreage and percent of total acreage for each soil type.

c. ☐ Copies of laboratory soil analyses. **Attachment:** Click to enter text.

Item 6. Effluent Monitoring Data (Instructions, Page 72)

a. Completion of Table 14 **is required** for all **renewal** and **major amendment** applications. Complete the table with monitoring data for the previous two years for all parameters regulated in the current permit. An additional table has been provided with blank headers for parameters regulated in the current permit which are not listed in Table 14.

Table 14 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Date (mo/yr)	Daily Avg Flow (gpd)	BOD5 (mg/L)	TSS (mg/L)	Nitrogen (mg/L)	Conductivity (mmhos/cm)	Total acres irrigated	Hydraulic Application rate (acre-feet/month)

Date (mo/yr)	Daily Avg Flow (gpd)	BOD5 (mg/L)	TSS (mg/L)	Nitrogen (mg/L)	Conductivity (mmhos/cm)	Total acres irrigated	Hydraulic Application rate (acre-feet/month)

b. Use this table to provide effluent analysis for parameters regulated in the current permit which are not listed in Table 14.

Additional Parameter Effluent Analysis

Date (mo/yr)							

c. Attach an explanation of all persistent excursions to permitted parameters and corrective actions taken. **Attachment:** Click to enter text.

Item 7. Pollutant Analysis (Instructions, Page 72)

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): Click to enter text.

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Complete Tables 15 and 16.

Table 15 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (mg/L)**	**Sample 2 (mg/L)**	**Sample 3 (mg/L)**	**Sample 4 (mg/L)**
BOD (5-day)				
CBOD (5-day)				
Chemical oxygen demand				
Total organic carbon				
Dissolved oxygen				
Ammonia nitrogen				
Total suspended solids				
Nitrate nitrogen				
Total organic nitrogen				
Total phosphorus				
Oil and grease				
Total residual chlorine				
Total dissolved solids				
Sulfate				
Chloride				
Fluoride				
Total alkalinity (mg/L as CaCO3)				
Temperature (˚F)				
pH (standard units)				

Table 16 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (µg/L)**	**Sample 2 (µg/L)**	**Sample 3 (µg/L)**	**Sample 4 (µg/L)**	**MAL (µg/L)**
Aluminum, total					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.1: SURFACE LAND APPLICATION AND APPLICATION

This worksheet **is required** for all applications for a permit to disposal of wastewater by surface land application or evaporation.

Item 1. Edwards Aquifer (Instructions, Page 73)

a. Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

☐ Yes ☐ No

If **no**, proceed to Item 2. If **yes**, complete Items 1.b **and** 1.c.

b. Check the box next to the subchapter applicable to the facility.

☐ 30 TAC Chapter 213, Subchapter A

☐ 30 TAC Chapter 213, Subchapter B

c. If *30 TAC Chapter 213, Subchapter A* applies, attach **either**: 1) a Geologic Assessment (if conducted in accordance with *30 TAC § 213.5*) **or** 2) a report that contains the following:

- A description of the surface geological units within the proposed land application site and wastewater pond area.
- The location and extent of any sensitive recharge features in the land application site and wastewater pond area
- A list of any proposed BMPs to protect the recharge features.

Attachment: Click to enter text.

Item 2. Surface Spray/Irrigation (Instructions, Page 73)

a. Provide the following information on the irrigation operations:

Area under irrigation (acres): Click to enter text.

Design application rate (acre-ft/acre/yr): Click to enter text.

Design application frequency (hours/day): Click to enter text.

Design application frequency (days/week): Click to enter text.

Design total nitrogen loading rate (lbs nitrogen/acre/year): 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.

Irrigation efficiency (percent): Click to enter text.

Effluent conductivity (mmhos/cm): Click to enter text.

Soil conductivity (mmhos/cm): Click to enter text.

Curve number: Click to enter text.

Describe the application method and equipment: Click to enter text.

b. Attach a detailed engineering report which includes a water balance, storage volume calculations, and a nitrogen balance. **Attachment:** Click to enter text.

Item 3. Evaporation Ponds (Instructions, Page 74)

a. Daily average effluent flow into ponds: Click to enter text. gallons per day

b. Attach a separate engineering report of evaporation calculations for average long-term and worst-case critical conditions. **Attachment:** Click to enter text.

Item 4. Evapotranspiration Beds (Instructions, Page 74)

a. Provide the following information on the evapotranspiration beds:

Number of beds: Click to enter text.

Area of bed(s) (acres): Click to enter text.

Depth of bed(s) (feet): Click to enter text.

Void ratio of soil in the beds: Click to enter text.

Storage volume within the beds (include units): Click to enter text.

Description of any lining to protect groundwater: Click to enter text.

b. Attach a certification by a licensed Texas professional engineer that the liner meets TCEQ requirements. **Attachment:** Click to enter text.

c. Attach a separate engineering report with water balance, storage volume calculations, and description of the liner. **Attachment:** Click to enter text.

Item 5. Overland Flow (Instructions, Page 74)

a. Provide the following information on the overland flow:

Area used for application (acres): Click to enter text.

Slopes for application area (percent): Click to enter text.

Design application rate (gpm/foot of slope width): Click to enter text.

Slope length (feet): Click to enter text.

Design BOD5 loading rate (lbs BOD5/acre/day): Click to enter text.

Design application frequency (hours/day): Click to enter text.

Design application frequency (days/week): Click to enter text.

b. Attach a separate engineering report with the method of application and design requirements according to *30 TAC § 217.212*. **Attachment:** Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.2: SUBSURFACE IRRIGATION (NON-DRIP)

This worksheet **is required** for all applications for a permit to disposal of wastewater by subsurface land application.

☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 75)

a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?

☐ Yes ☐ No

b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?

☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Subsurface Application (Instructions, Page 75)

a. Check the box next to the type of subsurface land disposal system requested:

☐ Conventional drainfield, beds, or trenches

☐ Low pressure dosing

☐ Other: Click to enter text.

b. Provide the following information on the irrigation operations:

Application area (acres): Click to enter text.

Area of drainfield (square feet): Click to enter text.

Application rate (gal/square ft/day): Click to enter text.

Depth to groundwater (feet): Click to enter text.

Area of trench (square feet): Click to enter text.

Dosing duration per area (hours): Click to enter text.

Number of beds: Click to enter text.

Dosing amount per area (inches/day): Click to enter text.

Soil infiltration rate (inches/hour): Click to enter text.

Storage volume (gallons): Click to enter text.

Area of bed(s) (square feet): Click to enter text.

Soil classification: Click to enter text.

c. Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation. **Attachment:** Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.3: SUBSURFACE AREA DRIP DISPERSAL SYSTEMS

This worksheet **is required** for all applications for a permit to dispose of wastewater using a subsurface area drip dispersal system (SADDS).

☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 76)

a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?

☐ Yes ☐ No

b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?

☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Administrative Information (Instructions, Page 76)

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: Click to enter text.

b. The owner of the land where the WWTF is/will be located is the same as the owner of the WWTF.

☐ 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 WWTF is/will be located: Click to enter text.

c. Provide the legal name of the owner of the SADDS: Click to enter text.

d. The owner of the SADDS is the same as the owner of the WWTF or the site where the WWTF is/will be located.

☐ Yes ☐ No

If **no**, identify the legal name 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. Provide the legal name of the owner of the land where the SADDS is located: Click to enter text.

f. The owner of the land where the SADDS is/will be located is the same as owner of the WWTF, the site where the WWTF is located, or the owner of the SADDS.

☐ Yes ☐ No

If **no**, provide the legal 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.

Item 3. SADDS (Instructions, Page 77)

a. Check the box next to the type SADDS requested by this application:

☐ Subsurface drip/trickle irrigation

☐ Surface drip irrigation

☐ Other: Click to enter text.

b. Attach a description of the SADDS proposed/used by the facility (see instructions for guidance). **Attachment:** Click to enter text.

c. Provide the following information on the SADDS:

Application area (acres): Click to enter text.

Soil infiltration rate (inches/hour): Click to enter text.

Average slope of the application area: Click to enter text.

Maximum slope of the application area: Click to enter text.

Storage volume (gallons): Click to enter text.

Major soil series: Click to enter text.

Depth to groundwater (feet): Click to enter text.

Effluent conductivity (mmhos/cm): Click to enter text.

d. The facility is/will be located west of the boundary shown in *30 TAC § 222.83* **and** using a vegetative cover of non-native grasses over seeded with cool-season grasses.

☐ Yes ☐ No

If **yes**, the facility may propose a hydraulic application rate up to, but not to exceed, 0.1 gal/ft^2/day.

e. The facility is/will be located east of the boundary shown in *30 TAC § 222.83* **or** is the facility proposing 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.

f. The facility has or plans to submit an alternative method to calculate the hydraulic application rate for approval by the ED.

☐ Yes ☐ No

If **yes**, provide the following information on the hydraulic application rates:

- Hydraulic application rate (gal/square foot/day): Click to enter text.
- Nitrogen application rate (gal/square foot/day): Click to enter text.

g. Provide the following dosing information:

Number of doses per day: Click to enter text.

Dosing duration per area (hours): Click to enter text.

Rest period between doses (hours): Click to enter text.

Dosing amount per area (inches/day): Click to enter text.

Number of zones: Click to enter text.

h. The system is/will be a surface drip irrigation system using existing native vegetation as a crop?

☐ Yes ☐ No

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

- A vegetation survey by a certified arborist describing the percent canopy cover and relative percentage of major overstory and understory plant species.

  Attachment: Click to enter text.

- Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation.

  Attachment: Click to enter text.

Item 4. Required Plans (Instructions, Page 78)

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

Attachment: Click to enter text.

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

Attachment: Click to enter text.

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

Attachment: Click to enter text.

d. Provide soil sampling and testing with all information required in *30 TAC § 222.157*.

Attachment: Click to enter text.

Item 5. Flood and Run-On Protection (Instructions, Page 79)

a. Is the existing/proposed SADDS located within the 100-year frequency flood level?

☐ Yes ☐ No

Source: Click to enter text.

If **yes**, describe how the site will be protected from inundation: Click to enter text.

b. Is the existing/proposed SADDS within a designated floodway?

☐ Yes ☐ No

If **yes**, attach either the FEMA flood map or alternate information used to make this determination. **Attachment:** Click to enter text.

Item 6. Surface Waters in The State (Instructions, Page 79)

a. Attach a buffer map which shows the appropriate buffers on surface waters in the state, water wells, and springs/seeps. **Attachment:** Click to enter text.

b. The facility has or plans to request a buffer variance from water wells or waters in the state?

☐ Yes ☐ No

If **yes**, attach the additional information required in *30 TAC § 222.81(c)*. **Attachment:** Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.0: RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

Item 1. Domestic Drinking Water Supply (Instructions, Page 80)

a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

☐ Yes ☒ No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

1. The legal name of the owner of the drinking water supply intake: Click to enter text.
2. The distance and direction from the outfall to the drinking water supply intake: Click to enter text.

b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

☐ Check this box to confirm the above requested information is provided.

Item 2. Discharge Into Tidally Influenced Waters (Instructions, Page 80)

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3.

a. Width of the receiving water at the outfall: Click to enter text. feet

b. Are there oyster reefs in the vicinity of the discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: Click to enter text.

c. Are there sea grasses within the vicinity of the point of discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: Click to enter text.

Item 3. Classified Segment (Instructions, Page 80)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

☐ Yes ☒ No

If **yes**, stop here and do not complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

Item 4. Description of Immediate Receiving Waters (Instructions, Page 80)

a. Name of the immediate receiving waters: Jefferson County Drainage District 7 Main Canal "D"

b. Check the appropriate description of the immediate receiving waters:

☐ Lake or Pond

- Surface area (acres): Click to enter text.
- Average depth of the entire water body (feet): Click to enter text.
- Average depth of water body within a 500-foot radius of the discharge point (feet): Click to enter text.

☒ Man-Made Channel or Ditch

☐ Stream or Creek

☐ Freshwater Swamp or Marsh

☐ Tidal Stream, Bayou, or Marsh

☐ Open Bay

☐ Other, specify:

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c – 4.g below:

c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

☐ Intermittent (dry for at least one week during most years)

☐ Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)

☒ Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

☐ USGS flow records

☒ personal observation

☒ historical observation by adjacent landowner(s)

☒ other, specify: historical satellite imagery

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Alligator Bayou and Main Outfall Canal (0702A), Intercoastal Waterway Tidal (0702)

e. 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**, describe how: The immediate receiving water, DD7 Main "D", has been reinforced on the banks with crushed stone. After joining Alligator Bayou, the channel is naturally vegetated on the banks and significantly wider, yes still channelized. The channel then joins Taylor Bayou after the levee and becomes a Tidal Stream with naturally occurring meandering and cuts.

f. General observations of the water body during normal dry weather conditions: Jefferson County DD7 Main Canal "D" is a manmade channel with existing industrial activity from the surrounding refinery and industrial activity including other wastewater outfalls, flow control weirs. and drainage pumps.

Date and time of observation: 7/11/24 approximately 9am

g. The water body was influenced by stormwater runoff during observations.

☐ Yes ☒ No

If **yes**, describe how: Click to enter text.

Item 5. General Characteristics of Water Body (Instructions, Page 81)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

☐ oil field activities
☒ urban runoff
☐ agricultural runoff
☐ septic tanks
☒ upstream discharges
☐ other, specify: Click to enter text.

b. Uses of water body observed or evidence of such uses (check all that apply):

☐ livestock watering
☒ industrial water supply
☐ non-contact recreation
☐ irrigation withdrawal
☐ domestic water supply
☐ navigation
☐ contact recreation
☐ picnic/park activities
☐ fishing
☐ other, specify: Click to enter text.

c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

☐ **Wilderness:** outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional

☐ **Natural Area:** trees or native vegetation common; 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

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.1: WATERBODY PHYSICAL CHARACTERISTICS

The following information **is required** for new applications, EPA-designated Major facilities, and major amendment applications requesting to add an outfall if the receiving waters are perennial or intermittent with perennial pools (including impoundments) for a TDPES permit.

Complete the transects downstream of the existing or proposed discharges.

Item 1. Data Collection (Instructions, Page 82)

a. Date of study: 7/11/24 Time of study: 9:00am – 10:00am

Waterbody name: Jefferson County DD7 Main Canal "D"

General location: Approximately 100 feet upstream of the confluence of Main Canal "D" and Alligator Bayou along the southeast bank.

b. Type of stream upstream of an existing discharge or downstream of a proposed discharge (check only one):

☒ perennial ☐ intermittent with perennial pools ☐ impoundment

c. No. of defined stream bends:

Well: Click to enter text. Moderately: Click to enter text. Poorly: Click to enter text.

d. No. of riffles: Click to enter text.

e. Evidence of flow fluctuations (check one):

☐ Minor ☒ Moderate ☐ Severe

f. Provide the observed stream uses and where there is evidence of channel obstructions/modifications: The channel is currently being utilized for industrial and stormwater discharges, many modifications and infrastructure features are present. Due to the nature of the location and characteristics of the water body (restricted access and non-wadable) a formal stream survey and assessment was not conducted. The information provided is what was observed from the proposed outfall location and desktop review.

g. Complete the following table with information regarding the transect measurements.

Stream Transect Data

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**								
Proposed Outfall	Riffle	109									
90 feet downstream at Alligator Bayou juncture	Riffle	90									
100 feet downstream at	Run	240									

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**								
Alligator Bayou											
400 feet downstream at Alligator Bayou and HW 82	Glide	200									
1,200 feet downstream to 2nd pipeline crossing	Glide	215									

* riffle, run, glide, or pool
** channel bed to water surface

Item 2. Summarize Measurements (Instructions, Page 83)

Provide the following information regarding the transect measurements:

Streambed slope of entire reach (from USGS map in ft. /ft.): 0 ft/ 1,200 ft

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): 5 sq. miles

Length of stream evaluated (ft): 1,200 ft

Number of lateral transects made: 0

Average stream width (ft): 191

Average stream depth (ft): Not attainable due to lack of wadable stream

Average stream velocity (ft/sec): 8 ft/sec

Instantaneous stream flow (ft^3/sec): Unavailable

Indicate flow measurement method (VERY IMPORTANT – type of meter, floating chip timed over a fixed distance, etc.): floating chip timed over fixed distance

Flow fluctuations (i.e., minor, moderate, or severe): moderate

Size of pools (i.e., large, small, moderate, or none): none

Maximum pool depth (ft): none

Total number of stream bends: 1

Number well defined: 0

Number moderately defined: 0

Number poorly defined: 1

Total number of riffles: 2

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 5.0: SEWAGE SLUDGE MANAGEMENT AND DISPOSAL

The following information **is required** for all TPDES permit applications that meet the conditions as outlined in Technical Report 1.0, Item 7.

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

☐ Yes ☐ No

b. Does or will the facility discharge in the Lake Houston watershed?

☐ Yes ☐ No

If **yes** to either Item 1.a **or** 1.b, attach a solids management plan. **Attachment:** Click to enter text.

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

☐ Permitted landfill

☐ Marketing and distribution by the permittee, attach Form TCEQ-00551

☐ Registered land application site, attach Form TCEQ-00565

☐ Processed by the permittee, attach Form TCEQ-00744

☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744

☐ Transported to another WWTP

☐ Beneficial land application, attach Form TCEQ-10451

☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment: Click to enter text.

b. Provide the following information for each disposal site:

Disposal site name: Click to enter text.

TCEQ Permit/Registration Number: Click to enter text.

County where disposal site is located: Click to enter text.

c. Method of sewage sludge transportation:

☐ truck ☐ train ☐ pipe ☐ other: Click to enter text.

TCEQ Hauler Registration Number: Click to enter text.

d. Sludge is transported as a:

☐ liquid ☐ semi-liquid ☐ semi-solid ☐ solid

e. Purpose of land application: ☐ reclamation ☐ soil conditioning ☐ N/A

f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment: Click to enter text.

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

☐ Marketing and distribution by the permittee, attach Form TCEQ-00551

☐ Processed by the permittee, attach Form TCEQ-00744

☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744

☐ Beneficial land application, attach Form TCEQ-10451

☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment: Click to enter text.

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit**. New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 6.0: INDUSTRIAL WASTE CONTRIBUTION

The following information **is required** for all applications for publicly-owned treatment works (POTWs).

For an explanation of the terms used in this worksheet, refer to the General Definitions on pages 4-12 and the Definitions Relating to Pretreatment on pages 13-14 of the Instructions.

Item 1. All POTWs (Instructions, Page 86)

a. Complete the following table with the number of each type of industrial users (IUs) that discharge to the POTW and the daily average flows from each.

Industrial User Information

Type of Industrial User	Number of Industrial Users	Daily Average Flow (gallons per day)
CIU		
SIU – Non-categorical		
Other IU		

b. In the past three years, has the POTW experienced treatment plant interference?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, nature of interference, and probable cause(s) and possible source(s) of each interference event. Include the names of the IU(s) that may have caused the interference: Click to enter text.

c. In the past three years, has the POTW experienced pass-through?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, pollutants passing through the treatment plant, and probable cause(s) and possible source(s) of each pass-through event. Include the names of the IU(s) that may have caused the pass-through: Click to enter text.

d. Does the POTW have, or is it required to develop, an approved pretreatment program?

☐ Yes ☐ No

If **yes**, answer all questions in Item 2 and skip Item 3.

If **no**, skip Item 2 and answer all questions in Item 3 for each SIU and CIU.

Item 2. POTWs With Approved Pretreatment Programs or Those Required To Develop A Pretreatment Program (Instructions, Page 86)

a. Have there been any substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ) for approval according to *40 CFR § 403.18*?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all substantial modifications that have not been submitted to the TCEQ and the purpose of the modifications.

Attachment: Click to enter text.

b. Have there been any non-substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ)?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all non-substantial modifications that have not been submitted to the TCEQ and the purpose of the modification.

Attachment: Click to enter text.

c. List all parameters measured above the MAL in the POTW's effluent monitoring during the last three years:

Effluent Parameters Measured Above the MAL

Pollutant	Concentration	MAL	Units	Date

Attachment: Click to enter text.

d. Has any SIU, CIU, or other IU caused or contributed to any other problems (excluding interference or pass-through) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including date(s), duration, description of problems, and probable pollutants. Include the name(s) of the SIU(s)/CIU(s)/other IU(s) that may have caused or contributed to any of the problems: Click to enter text.

Item 3. Significant Industrial User and Categorical Industrial User Information (Instructions, Pages 88-87)

POTWs that **do not** have an approved pretreatment program **are required** to provide the following information for each SIU and CIU:

a. Mr. or Ms.: Click to enter text. First/Last Name: Click to enter text.

Organization Name: Click to enter text. SIC Code: Click to enter text.

Phone number: Click to enter text. Email address: Click to enter text.

Physical Address: Click to enter text. City/State/ZIP Code: Click to enter text.

Attachment: Click to enter text.

b. Describe the industrial processes or other activities that affect or contribute to the SIU(s) or CIU(s) discharge (e.g., process and non-process wastewater): Click to enter text.

c. Provide a description of the principal products(s) or service(s) performed: Click to enter text.

d. Flow rate information

Flow Rate Information

Effluent Type	Discharge Day (gallons per day)	Discharge Frequency (Continuous, batch, or intermittent)
Process Wastewater		
Non-process Wastewater		

e. Pretreatment Standards

1. Is the SIU or CIU subject to technology-based local limits as defined in the application instructions?

   ☐ Yes ☐ No

2. Is the SIU subject to categorical pretreatment standards?

   ☐ Yes ☐ No

   If **yes**, provide the category and subcategory or subcategories in the SIUs Subject To Categorical Pretreatment Standards table.

SIUs Subject to Categorical Pretreatment Standards

Category in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR

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

   ☐ Yes ☐ No

   If **yes**, provide a description of each episode, including dates, duration, description of problems, and probable pollutants, and include the name(s) of the SIU(s)/CIU(s) that may have caused or contributed to the problem(s): Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 7.0: STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges consisting of **either**: 1) solely of stormwater discharges associated with industrial activities, as defined in *40 CFR § 122.26(b)(14)(i-xi)*, **or** 2) stormwater discharges associated with industrial activities and any of the listed allowable non-stormwater discharges, as defined in the MSGP (TXR05000), Part II, Section A, Item 6.

Discharges of stormwater as defined in *40 CFR § 122.26 (b)(13)* are not required to obtain authorization under a TPDES permit (see exceptions at *40 CFR §§ 122.26(a)(1)* and *(9)*). Authorization for discharge may be required from a local municipal separate storm sewer system.

Item 1. Applicability (Instructions, Page 89)

Do discharges from any of the existing/proposed outfalls consist either 1) solely of stormwater discharges associated with industrial activities **or** 2) stormwater discharges associated with industrial activities and any of the allowable non-stormwater discharges?

☒ Yes ☐ No

If **no**, stop here. If **yes**, proceed as directed.

Item 2. Stormwater Coverage (Instructions, Page 89)

List each existing/proposed stormwater outfall at the facility and indicate which type of authorization covers or is proposed to cover discharges.

Authorization Coverage

Outfall	Authorization under MSGP	Authorized Under Individual Permit
001	☐	☒
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

If **all** existing/proposed outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) are **authorized under the MSGP**, **stop** here.

If **seeking authorization** for any outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) **under an individual permit**, **proceed**.

NOTE: The following information is required for each existing/proposed stormwater outfall for which the facility is seeking individual permit authorization under this application

Item 3. Site Map (Instructions, Page 90)

Attach a site map or maps (drawn to scale) of the entire facility with the following information.

- the location of each stormwater outfall to be covered by the permit
- an outline of the drainage area that is within the facility's boundary and that contributes stormwater to each outfall to be covered by the permit
- connections or discharge points to municipal separate storm sewer systems
- locations of all structures (e.g. buildings, garages, storage tanks)
- structural control devices that are designed to reduce pollution in discharges of stormwater associated with industrial activities
- process wastewater treatment units (including ponds)
- bag house and other air treatment units exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)
- landfills; scrapyards; surface water bodies (including wetlands)
- vehicle and equipment maintenance areas
- physical features of the site that may influence discharges of stormwater associated with industrial activities or contribute a dry weather flow
- locations where spills or leaks of reportable quality (as defined in *30 TAC § 327.4*) have occurred during the three years before this application was submitted to obtain coverage under an individual permit
- processing areas, storage areas, material loading/unloading areas, and other locations where significant materials are exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)

☒ Check the box to confirm all above information was provided on the facility site map(s).

Attachment: 17 – Facility Map - Stormwater

Item 4. Facility/Site Information (Instructions, Page 90)

a. Provide the area of impervious surface and the total area drained by each stormwater outfall requested for authorization by this permit application.

Impervious Surfaces

Outfall	Area of Impervious Surface (include units)	Total Area Drained (include units)
001	Approximately 25 acers	Approximately 33 acres

b. Provide the following local area rainfall information and the source of the information.

Wettest month: June

Average rainfall for wettest month (total inches): 6.61 in.

25-year, 24-hour rainfall (inches): 12.6 in.

Source: National Weather Service / NOAA

c. Attach an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation. **Attachment:** 18 - Inventory of Exposed Materials and Narrative of Exposed Activities

d. Attach narrative descriptions of the industrial processes and activities involving the materials in the above-listed inventory that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff (see instructions for guidance). **Attachment:** 18 - Inventory of Exposed Materials and Narrative of Exposed Activities

e. Describe any BMPs and controls the facility uses/proposes to prevent or effectively reduce pollution in stormwater discharges from the facility: Good Housekeeping Measures will be employed to prevent stormwater pollution.

Item 5. Pollutant Analysis (Instructions, Page 91)

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): N/A

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Complete Table 17 as directed on page 92 of the Instructions.

Table 17 for Outfall No.: Click to enter text.

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
pH (standard units)	(max)	—	(min)	—		—
Total suspended solids						—
Chemical oxygen demand						—
Total organic carbon						—
Oil and grease						—
Arsenic, total						0.0005
Barium, total						0.003
Cadmium, total						0.001
Chromium, total						0.003
Chromium, trivalent						—
Chromium, hexavalent						0.003

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
Copper, total						0.002
Lead, total						0.0005
Mercury, total						0.000005
Nickel, total						0.002
Selenium, total						0.005
Silver, total						0.0005
Zinc, total						0.005

* Taken during first 30 minutes of storm event

** Flow-weighted composite sample

d. Complete Table 18 as directed on pages 92-94 of the Instructions.

Table 18 for Outfall No.: Click to enter text.

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled

* Taken during first 30 minutes of storm event

** Flow-weighted composite sample

Attachment: Click to enter text.

Item 6. Storm Event Data (Instructions, Page 93)

Provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted:

Date of storm event: N/A

Duration of storm event (minutes): Click to enter text.

Total rainfall during storm event (inches): Click to enter text.

Number of hours the between beginning of the storm measured and the end of the previous measurable storm event (hours): Click to enter text.

Maximum flow rate during rain event (gallons/minute): Click to enter text.

Total stormwater flow from rain event (gallons): Click to enter text.

Provide a description of the method of flow measurement or estimate:

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 8.0: AQUACULTURE

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges of aquaculture wastewater.

Item 1. Facility/Site Information (Instructions, Page 94)

a. Complete the following table with information regarding production ponds, raceways, and fabricated tanks at the facility.

Production Pond Descriptions

Number of Ponds	Dimensions (include units)	Area of Each Pond (include units)	Number of Ponds x Area of Ponds (include Units)

Total surface area of all ponds: Click to enter text.

Raceway Descriptions

Number of Raceways	Dimensions (include units)

Fabricated Tank Descriptions

Number of Tanks	Dimensions (include units)

b. Does the facility have a TPWD-approved emergency plan?

☐ Yes ☐ No

If **yes**, attach a copy of the approved plan.

Attachment: Click to enter text.

c. Does the facility have an aquatic plant transplant authorization?

☐ Yes ☐ No

If **yes**, attach a copy of the authorization letter.

Attachment: Click to enter text.

d. Provide the number of aquaculture facilities located within 25-miles of this facility: Click to enter text.

Item 2. Species Identification (Instructions, Page 95)

Complete the following table regarding each species raised, source, origin, and disease status of the stock. Identify and attach copies of any current relevant authorizations or permits that authorize the species.

Stock Species Information

Species	Source of Stock	Origin of Stock	Disease Status	Authorizations

Attachment: Click to enter text.

Item 3. Stock Management Plan (Instructions, Page 95)

Attach a detailed stock management plan: Click to enter text.

Item 4. Water Treatment and Discharge Description (Instructions, Page 96)

Attach a detailed description of the discharge practices and water treatment process(es): Click to enter text.

Item 5. Solid Waste Management (Instructions, Page 96)

Attach a description of the solid waste-disposal practices: Click to enter text.

Item 6. Site Assessment Report (Instructions, Page 96)

All new and expanding commercial shrimp facilities located/to be located within the coastal zone must attach a detailed site assessment report which identifies sensitive aquatic habitats within the coastal zone: Click to enter text.

WORKSHEET 9.0

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_____

Item 1. General Information (Instructions Page 99)

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.

Item 2. Proposed Down Hole Design

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

Down Hole Design Table

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

Item 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.

Item 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. Attach a list of contaminants and the levels (ppm) in contaminated aquifer as Attachment E.
9. Attach the Horizontal and Vertical extent of contamination and injection plume as Attachment F.
10. Attach Formation (Injection Zone) Water Chemistry (Background levels) TDS, etc., 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.

Item 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.
4. Previous Remediation. Attach results of any previous remediation as Attachment M.

NOTE: Authorization Form should be completed in detail and authorization given by the TCEQ before construction, operation, and/or conversion can begin. Attach additional pages as necessary.

Item 6. CLASS V INJECTION WELL DESIGNATIONS

5A07 Heat Pump/AC return (IW used for groundwater to heat 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 Stormwater 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 groundwater withdrawal)

5W09 Untreated Sewage

5W10 Large Capacity Cesspools (Cesspools that are designed for 5,000 gpd or greater)

5W11 Large Capacity Septic systems (Septic systems designed for 5,000 gpd or greater)

5W12 WTTP disposal

5W20 Industrial Process Waste-disposal Wells

5W31 Septic System (Well Disposal method)

5W32 Septic System Drainfield Disposal

5X13 Mine Backfill (IW used to control subsidence, dispose of mining byproducts, 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)

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 10.0: QUARRIES IN THE JOHN GRAVES SCENIC RIVERWAY

This worksheet **is required** for all applications for individual permits for a municipal solid waste facility or mining facility located within a Water Quality Protection Area in the John Graves Scenic Riverway. **Note: Review 30 TAC §§ 311.71-311.82 thoroughly prior to completing any portion of this worksheet.**

Item 1. Exclusions (Instructions, Page 100)

a. Is this a municipal solid waste facility?

☐ Yes ☐ No

b. Has this quarry been in operation since January 1, 1994 without cessation of operation for more than 30 consecutive days and under the same ownership?

☐ Yes ☐ No

c. Is this a coal mine?

☐ Yes ☐ No

d. Is this facility mining clay and/or shale for use in manufacturing structural clay products?

☐ Yes ☐ No

If **yes** to **any** above question, **stop here**. The facility is required to maintain documentation, as outlined in *30 TAC § 311.72(c)*, at the facility to demonstrate the exclusion(s).

Item 2. Location of the Quarry (Instructions, Page 101)

Check the box next to the distance between the quarry and the nearest navigable water body:

☐ < 200 feet ☐ 200 feet – 1,500 feet ☐ 1,500 feet – 1 mile ☐ > 1 mile

NOTE: The construction or operation of any new quarry or expansion of any existing quarry **is prohibited** within 200 feet of any water body located within a Water Quality Protection Area in the John Graves Scenic Riverway.

Item 3. Additional Requirements (Instructions, Page 101)

Use the table in the Instructions to determine if additional application requirements apply to the facility based on distance between the quarry and the nearest waterway. Attach as appropriate or enter N/A.

a. Attach a Restoration Plan: Click to enter text.

b. Amount of Financial Assurance for Restoration: $ Click to enter text.

Mechanism: Click to enter text.

c. Attach a Technical Demonstration: Click to enter text.

d. Attach a Reclamation Plan: Click to enter text.

e. Amount of Financial Assurance for Reclamation: $ Click to enter text.

Mechanism: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 11.0: COOLING WATER SYSTEM INFORMATION

This worksheet **is required** for all TPDES permit applications **that meet the conditions outlined in Technical Report 1.0, Item 12.**

Item 1. Cooling Water System Data (Instructions, Page 104)

a. Complete the following table with information regarding the cooling water system.

Cooling Water System Data

Parameter	Volume (include units)
Total DIF	11.7096 MGD
Total AIF	4.4278 MGD
Intake Flow Use(s) (%)	
Contact cooling	85
Non-contact cooling	0
Process Wastewater	12
Other	3

b. Attach the following information:

1. A narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).

2. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.

3. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).

4. Design and engineering calculations prepared by a qualified professional and data to support the information provided in above item a.

5. Previous year (a minimum of 12 months) of AIF data.

6. A narrative description of existing or proposed impingement and entrainment technologies or operation measures and a summary of their performance, including, but not limited to, reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

Attachment: 19 – Cooling Water System Data

Item 2. Cooling Water Intake Structure(s) Data (Instructions, Page 105)

a. Complete the following table with information regarding each cooling water intake structure (this includes primary and make-up CWIS(s)).

Cooling Water Intake Structure(s) Data

CWIS ID	CWIS 01 RAW WATER	CWIS 02 RAW WATER (ALT)		
DIF (include units)	10.0368 MGD	1.6728 MGD		
AIF (include units)	4.4278 MGD	TBD		
Intake Flow Use(s) (%)				
Contact cooling	85	85		
Non-contact cooling	0	0		
Process Wastewater	12	12		
Other	3	3		
Latitude (decimal degrees)	29.905313˚	29.899937˚		
Longitude (decimal degrees)	-93.969306˚	-93.955673˚		

b. Attach the following information regarding the CWIS(s):

1. A narrative description of the configuration of each CWIS, annual and daily operation, including any seasonal changes, and where it is located in the water body and in the water column.

2. Engineering calculations for each CWIS.

Attachment: 20 – Cooling Water Intake Structure Data (CWIS)

Item 3. Source Water Physical Data (Instructions, Page 105)

a. Complete the following table with information regarding the CWIS(s) source waterbody (this includes primary and make-up CWIS(s)).

Source Waterbody Data

CWIS ID	CWIS 01 RAW WATER	CWIS 02 RAW WATER (ALT)		
Source Waterbody	Port Arthur Canal LNVRA	Motiva Enterprises Reclaimed Water		
Mean Annual Flow	75 cfs	Not Available		
Source	LNVA			

b. Attach the following information regarding the source waterbody.

1. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports this determination of the water body type where each cooling water intake structure is located.

2. A narrative description of the source waterbody's hydrological and geomorphological features.

3. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. **NOTE:** The source waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.

4. A description of the methods used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

Attachment: 21 - Source Waterbody Data

Item 4. Operational Status (Instructions, Page 106)

a. Is this application for a power production or steam generation facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.b. If **yes**, provide the following information as an attachment:

1. Describe the operating status of each individual unit, including age, capacity utilization rate (or equivalent) for the previous five years (a minimum of 60 months), and any seasonal changes in operation.

2. Describe any extended or unusual outages or other factors which significantly affect current data for flow, impingement, entrainment.

3. Identify any operating unit with a capacity utilization rate of less than 8 percent averaged over a contiguous period of two years (a minimum of 24 months).

4. Describe any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes of fuel type.

Attachment: N/A

b. Process Units

1. Is this application for a facility which has process units that use cooling water (other than for power production or steam generation)?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, continue.

2. Does the facility use or intend to use reductions in flow or changes in operations to meet the requirements of *40 CFR § 125.94(c)*?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, attach descriptions of the following information:

- Individual production processes and product lines
- The operating status, including age of each line and seasonal operation
- Any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors
- Any major upgrades completed within the last 15 years and plans or schedules for decommissioning or replacement of process units or production processes and product lines.

Attachment: Click to enter text.

c. Is this an application for a nuclear power production facility?

☐ Yes ☒ No

If **no**, proceed to Item 4.d. If **yes**, attach a description of completed, approved, or scheduled upgrades and the Nuclear Regulatory Commission relicensing status for each unit at the facility.

Attachment: Click to enter text.

d. Is this an application for a manufacturing facility?

☐ Yes ☒ No

If **no**, proceed to Worksheet 11.1. If **yes**, attach descriptions of current and future production schedules and any plans or schedules for any new units planned within the next five years (a minimum of 60 mos)

Attachment: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 11.1: IMPINGEMENT MORTALITY

This worksheet **is required** for all TPDES permit applications **that meet the conditions outlined in Technical Report 1.0, Item 12.** Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID:

Item 1. Impingement Compliance Technology Selection (Instructions, Page 107)

Check the box next to the method of compliance for the Impingement Mortality Standard selected by the facility.

☐ Closed-cycle recirculating system(CCRS) [*40 CFR § 125.94(c)(1)*]
☐ 0.5 ft/s Through-Screen Design Velocity [*40 CFR § 125.94(c)(2)*] – Proceed to Worksheet 11.2
☐ 0.5 ft/s Through Screen Actual Velocity [*40 CFR § 125.94(c)(3)*]
☐ Existing offshore velocity cap [*40 CFR § 125.94(c)(4)*] – Proceed to Worksheet 11.2
☐ Modified traveling screens [*40 CFR § 125.94(c)(5)*]
☐ System of technologies [*40 CFR § 125.94(c)(6)*]
☐ Impingement mortality performance standard [*40 CFR § 125.94(c)(7)*]
☐ De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]
☐ Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

If 0.5 ft/s Through-Screen Design Velocity [*40 CFR § 125.94(c)(2)*] or existing offshore velocity cap [*40 CFR § 125.94(c)(4)*] was selected, proceed to Worksheet 11.2. Otherwise, continue to Item 2.

Item 2. Impingement Compliance Technology Information (Instructions, Page 107)

Complete the following sections based on the selection made for item 1 above.

a. CCRS [*40 CFR § 125.94(c)(1)*]

☐ Check this box to confirm the CWS meets the definition of CCRS located at *40 CFR § 125.91(c)* and provide a response to the following questions.

1. Does the facility use or propose to use a CWIS to replenish water losses to the CWS?

   ☐ Yes ☐ No

   If **no**, proceed to item a.2. If **yes**, provide the following information as an attachment and continue.

   - CWIS ID
   - 12 months of intake flow data for any CWIS used for make-up intake flows to replenish cooling water losses, excluding intakes for losses due to blowdown, drift, or evaporation.

- A narrative description of any physical or operational measures taken to minimize make-up withdraws.

Attachment: Click to enter text.

NOTE: Do not complete a separate Worksheet 11.1 for a make-up CWIS.

2. Does the facility use or propose to use cooling towers?

☒ Yes ☐ No

If **no**, proceed to Worksheet 11.2. If **yes**, provide the following information and proceed to Worksheet 11.2.

- Average number of cycles of concentration (COCs) prior to blowdown:

Average COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Attach COC monitoring data for each cooling tower from the previous year (a minimum of 12 months): Click to enter text.
- Maximum number of COCs each cooling tower can accomplish based on design of the system.

Calculated COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Describe conditions that may limit the number of COCs prior to blowdown, if any, including but not limited to permit conditions: Click to enter text.

b. 0.5 ft/s Through Screen Actual Velocity [*40 CFR § 125.94(c)(3)*]

Provide daily intake flow measurement monitoring data from the previous year (a minimum of 12 months) as an attachment and proceed to Worksheet 11.2.

Attachment: Click to enter text.

c. Modified traveling screens [*40 CFR § 125.94(c)(5)*]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the modified traveling screens and associated equipment.
2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: Click to enter text.

d. System of technologies [*40 CFR § 125.94(c)(6)*] or impingement mortality performance standard [*40 CFR § 125.94(c)(7)]*

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the system of technologies used or proposed for use by the facility to

achieve compliance with the impingement mortality standard.

2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods.

3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: Click to enter text.

e. De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]

Provide the following information and proceed to Worksheet 11.2.

1. Attach monitoring data from the previous year (a minimum of 12 months) of intake flow measured at a frequency of 1/day on days of operation.

   Attachment: Click to enter text.

2. If the rate of impingement caused by the CWIS is extremely low (at an organism or age-one equivalent count), attach supplemental information to Worksheet 11.0, item 1.b.6. to support this determination.

   Attachment: Click to enter text.

f. Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

Attach monthly utilization data from the previous 2 years (a minimum of 24 months) for each operating unit and proceed to Worksheet 11.2.

Attachment: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 11.2: SOURCE WATER BIOLOGICAL DATA

This worksheet **is required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** source waterbody of a CWIS for which a facility has selected an Impingement Mortality Technology Option described at *40 CFR §§ 125.94(c)(1)-(7)*.

Name of source waterbody: Lower Neches Valley River Authority Drainage Channel

Item 1. Species Management (Instructions, Page 109)

a. The facility has obtained an incidental take permit for its cooling water intake structure(s) from the USFWS or the NMFS.

☐ Yes ☒ No

If yes, attach any information submitted in order to obtain that permit, which may be used to supplement the permit application information requirements of paragraph *40 CFR § 125.95(f)*.

Attachment: N/A

b. Is the facility requesting a waiver from application requirements at *40 CFR § 122.21(r)(4)* in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent?

☐ Yes ☒ No

If **yes**, attach a copy of the most recent managed fisheries report to TPWD, or equivalent.

Attachment: N/A

c. There are no federally listed threatened or endangered species or critical habitat designations within the source water body.

☒ True ☐ False

Item 2. Source Water Biological Data (Instructions, Page 109)

New Facilities (Phase I, Track I and II)

- Provide responses to all items in this section and stop.

Existing Facilities (Phase II)

- If the answer to **1.b.** above was **no**, provide responses to all items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **true**, do not complete any items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **false**, attach a response for any item in this section that is not contained within the most recent TPWD, or equivalent and proceed to Worksheet 11.3.

Attachment: 22 – Source Water Biological Data

a. A list of the data requested at *40 CFR § 122.21(r)(4)(ii)* through *(vi)* that are not available, and efforts made to identify sources of the data.

b. Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.
   - all life stages and their relative abundance,
   - identification of all species and life stages that would be most susceptible to impingement and entrainment,
   - forage base,
   - significance to commercial fisheries,
   - significance to recreational fisheries,
   - primary period of reproduction,
   - larval recruitment, and
   - period of peak abundance for relevant taxa.

c. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the CWIS(s).

d. Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the CWIS(s).

e. Documentation of any public participation or consultation with federal or state agencies undertaken.

The following is required for existing facilities only. Include the following information with the above listed attachment.

f. Identify any protective measures and stabilization activities that have been implemented and provide a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.

g. A list of fragile species, as defined at *40 CFR § 125.92(m)*, at the facility. The applicant need only identify those species not already identified as fragile at *40 CFR § 125.92(m)*.

NOTE: New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 11.3: ENTRAINMENT

This worksheet **is required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: Click to enter text.

Item 1. Applicability (Instructions, Page 111)

Is the AIF of the CWIS identified above greater than, or equal to, 125 MGD?

☐ Yes ☒ No

- If **no** or the facility has selected **CCRS** [*40 CFR § 125.94(c)(1)*] for the impingement mortality compliance method, complete Item 2 and stop here.
- If **yes** and the facility is **seeking a waiver** from application requirements in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent, complete item 2 and stop.
- If **yes** and the facility is **not seeking a waiver** from application requirements in accordance *with 40 CFR § 125.95*, complete item 2 and provide any required and completed studies listed in item 3. For any required studies in item 3 that are not complete, provide a detailed explanation for the delay and an anticipated schedule for completion and submittal.

Item 2. Existing Entrainment Performance Studies (Instructions, Page 111)

Attach any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies.

Attachment: Click to enter text.

Item 3. Facility Entrainment Performance Studies (Instructions, Page 111)

a. Attach an entrainment characterization study, as described at *40 CFR § 122.21(r)(9)*: Click to enter text.

b. Attach a comprehensive feasibility study, as described as *40 CFR § 122.21(r)(10)*: Click to enter text.

c. Attach a benefits valuation study, as described as *40 CFR § 122.21(r)(11)*: Click to enter text.

d. Attach a non-water quality environmental and other impacts study, as described as *40 CFR § 122.21(r)(12)*: Click to enter text.

e. Attach a peer review analysis, as described as *40 CFR § 122.21(r)(13)*: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 12.0: OIL AND GAS EXPLORATION, DEVELOPMENT, AND PRODUCTION WASTEWATER DISCHARGES

This worksheet **is required** for all TPDES permit applications that are subject to Effluent Limitation Guidelines in 40 CFR Part 435.

Item 1. Operational Information (Instructions, Page 112)

a. Is the wastewater from an oil and gas exploration, development, or production facility located west of the 98th meridian?

☐ Yes ☐ No

If yes, continue to the next question. If no, skip to Item 2 relating to Production/Process Data.

b. Provide justification for how the wastewater is/will be used for agriculture or wildlife propagation.

Click to enter text.

Item 2. Production/Process Data (Instructions, Page 112)

a. Provide the applicable 40 CFR Part 435 Subpart(s).

Click to enter text.

b. Describe if the permit being sought is for discharges from exploration, development, production, or for a combination of more than one of those activities.

Click to enter text.

c. Provide information on all waste-streams generated and specify which waste-streams you are requesting to be authorized for discharge.

Wastestreams Generated

Wastestream	Requesting authorization to discharge? (Yes/No)	Volume (MGD)	% of Total Flow

d. Describe how the facility will manage wastestreams for which discharge authorization is not being sought.

Click to enter text.

Attachment: Click to enter text.

e. Provide information on miscellaneous discharges.

Click to enter text.

Attachment: Click to enter text.

f. List of chemicals that are in use, or will be used, downhole. Provide the category, concentration used/to be used, and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: Click to enter text.

g. **List of chemicals that are in use, or will be used, to treat the wastewater to be discharged under this authorization. Provide the concentration used/to be used and purpose of using the chemical. Attach a safety data sheet for each chemical listed.**

Water Treatment Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: Click to enter text.

Item 3. Pollutant Analysis (Instructions, Page 113)

Tables 1, 2, 6, and 7 located in Worksheet 2.0 are required. In addition, Table 19 below is required and must be completed for each outfall and submitted with this application. The remaining tables in Worksheet 2.0, are required as applicable.

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): Click to enter text.

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm. **Attachment:** Click to enter text.

d. Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** Click to enter text.

Table 19 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (mg/L)***	**Sample 2 (mg/L)***	**Sample 3 (mg/L)***	**Sample 4 (mg/L)***
Calcium				
Potassium				
Sodium				

*Indicate units if different from mg/L.

ATTACHMENTS

ATTACHMENT 01 -
Core Data Form

TCEQ Use Only

TCEQ Core Data Form

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

1.1 SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)		
☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)		
☐ Renewal (*Core Data Form should be submitted with the renewal form*)		☐ Other
2. Customer Reference Number (*if issued*)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (*if issued*)
CN		RN

1.2 SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	07/18/2024

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (*if applicable*)
0805645883	32096144921		

11. Type of Customer:	☐ Corporation	☐ Individual	Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other		☐ Sole Proprietorship	☒ Other: LLC

12. Number of Employees	13. Independently Owned and Operated?
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher	☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*								
☐ Owner ☐ Occupational Licensee	☐ Operator ☐ Responsible Party	☒ Owner & Operator ☐ VCP/BSA Applicant					☐ Other:	
15. Mailing Address:	609 Main St Suite 3525							
	City	Houston	State	TX	ZIP	77002	ZIP + 4	

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(832) 249-8992		( ) -

1.3 SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*							
☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information							
The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).							
22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*							
Port Arthur Cogeneration							
23. Street Address of the Regulated Entity: *(No PO Boxes)*	2555 Savannah Ave						
	City	Port Arthur	State	TX	ZIP	77642	ZIP + 4
24. County	Jefferson						

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

25. Description to Physical Location:	Located inside of the Motiva Enterprrises Refinery
26. Nearest City	State Nearest ZIP Code

Port Arthur	TX	77640

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).

27. Latitude (N) In Decimal:	29.877810°	28. Longitude (W) In Decimal:	-93.975859°

Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
4911		221112	

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

Electric Power Generation

34. Mailing Address:	609 Main St Suite 3525						
	City	Houston	State	TX	ZIP	77002	ZIP + 4	

35. E-Mail Address:	greg.calhoun@fengate.com

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(832) 294-8992		( ) -

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

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil

☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Brita Minin	41. Title:	Environmental Consultant
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(713) 329-2561		( ) -	brita.minin@terracon.com

SECTION V: Authorized Signature

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

Company:	Port Arthur Cogeneration, LLC	Job Title:	Managing Director
Name *(In Print):*	Greg Calhoun	Phone:	(832) 294- 8992
Signature:		Date:	

ATTACHMENT 02 - Plain Language Summary

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. Applicants may modify the template as necessary to accurately describe their 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 the applicant 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.

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
Enter 'INDUSTRIAL' or 'DOMESTIC' here 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.

Port Arthur Cogeneration, LCC (2. Enter Customer Number here (i.e., CN6########)) proposes to operate Port Arthur Cogeneration (5. Enter Regulated Entity Number here (i.e., RN1########)), an electric power plant servicing the Motiva Enterprises Refinery. The facility will be located at 2555 Savannah Ave, in Port Arthur, Jefferson County, Texas 77640. This application is for a new natural gas power plant that will discharge approximately 2,380,000 gallons of treated process water per day from cooling water, boiler blowdown, and general washing and plant activities as well as variable amounts of stormwater through Outfall 001.

Discharges from the facility are expected to contain suspended solids, oil and grease, ammonia, phosphate, zinc, iron, and free chlorine. Cooling water, boiler blowdown, and general plant service water are subject to subject to federal effluent limitation guidelines at 40 CFR Part 423. Intake water supplied by the Lower Neches Vally River Authority will be treated by clarification, reverse osmosis, deionization, demineralization before being used for cooling water and boiler supply and blowdown. Wastewater is then transferred to the

oil/water separator before going to wastewater collection and discharged through Outfall 001. Domestic water and sewage is treated off-site at the City of Port Arthur Wastewater Treatment Center .

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

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí **/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.

Port Arthur Cogeneration, LCC (2. Introduzca el número de cliente aquí (es decir, CN6########).) propone operar Port Arthur Cogeneration 5. Introduzca el número de entidad regulada aquí (es decir, RN1########), una planta de energía eléctrica que abastece la refinería Motiva Enterprises. La instalación estará ubicada en 2555 Savannah Ave, en la ciudad de Port Arthur, Condado de Jefferson, Texas 77640. Esta solicitud es para una nueva planta de energía de gas natural que descargara aproximadamente 2,380,000 galones de agua de proceso tratadas por día provenientes del agua de torres de enfriamiento, purga de caldera, lavado y actividades generales de la planta, así como cantidades variables de aguas pluviales a través de Outfall 001. *<<Para las solicitudes de TLAP incluya la siguiente oración, de lo contrario, elimine:>>* Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan solidos suspendidos, aceites y grasas, amoníaco, fosfato, cinc, hierro y cloro. Aguas proveniente de Torres de enfriamiento, purga de caldera y aguas de las actividades generales de la planta, son sujetas a las pautas federales de limitación de efluentes en 40 CFR Parte 423. La toma de agua será suministrada por Neches Vally River Authority. estará tratado por processo de clarificación, ósmosis inversa, desionización y desmineralización antes de ser utilizada para el agua de enfriamiento y el suministro y purga de calderas. Las aguas residuales se transfieren al separador de aceite/agua antes de ir a la recolección de aguas residuales y ser descargadas a través del Outfall 001. El agua doméstica y las aguas residuales son tratadas fuera del sitio en el Centro de Tratamiento de Aguas Residuales de la Ciudad de Port Arthur.

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 WQ-ARPTeam@tceq.texas.gov or by phone at (512) 239-4671.

Example

Individual Industrial Wastewater 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 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.

ATTACHMENT 03 -
Public Involvement Plan

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☒ New Permit or Registration Application

☐ New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☐ Considered to have significant public interest, **and**

☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☒ Texas Pollutant Discharge Elimination System (TPDES)

- ☐ Texas Land Application Permit (TLAP)
- ☐ State Only Concentrated Animal Feeding Operation (CAFO)
- ☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

The proposed electric power generation facility will utilize raw canal water that will be initially treated and used for the cooling tower where it is further treated. Water is stored before either being used at the blowdown tank or through the two-stage reverse osmosis (RO) system. RO water is then sent to the demineralization process producing purified water. Purified process water is heated to generate steam, where ammonia and phosphate are used, and then cooled through the cooling tower. Wastewater from the boilers and other plant services are sent to the oil/water Separator then water exits to wastewater collection before being discharged through Outfall 001. Chemicals like corrosion inhibitors, scale inhibitors, biocides, and pH adjusters are added to the water to optimize conditions for equipment and prevent damage.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

Port Arthur

(City)

Jefferson

(County)

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☐ City ☐ County ☒ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

36%

(b) Per capita income for population near the specified location

$24,065

(c) Percent of minority population and percent of population by race within the specified location

84% minority population
38% Black or African American, 38% Hispanic, 6% Asian,

(d) Percent of Linguistically Isolated Households by language within the specified location

8%

(e) Languages commonly spoken in area by percentage

English 77%, Spanish 18%, Other 4%

(f) Community and/or Stakeholder Groups

Motiva, Texaco, Port Arthur Community Action Network

(g) Historic public interest or involvement

Unknown

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☒ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☒ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☐ Yes ☐ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper
☐ Posted on Commissioner's Integrated Database Website
☐ Mailed by TCEQ's Office of the Chief Clerk
☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office ☐ TCEQ Central Office
☐ Public Place (specify)

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☒ Yes ☐ No

What types of notice will be provided?

☒ Publish in alternative language newspaper
☐ Posted on Commissioner's Integrated Database Website
☐ Mailed by TCEQ's Office of the Chief Clerk
☐ Other (specify)

ATTACHMENT 04 -
Lease Agreement

LAND LEASE

Between

MOTIVA ENTERPRISES LLC

and

_____

This land lease ("Lease") is made and entered into as of the _____ day of _____, 202__ ("Effective Date"), by and between MOTIVA ENTERPRISES LLC, a Delaware limited liability company, with an office located at 500 Dallas Street, Houston, Texas 77002 ("Lessor") _____, a _____, with an office located at _____ ("Lessee"). Lessee and Lessor are sometimes referred to herein as a "Party" or the "Parties".

RECITALS

A. Lessee has entered into that certain Power & Steam Sales Agreement (the "Agreement") of even date herewith with Lessor, pursuant to which Lessee will supply electric power, ancillary services and steam to Buyer's Refinery located or to be located on that certain tract of land described in Exhibit A attached hereto (the "Land") from the Facility.

B. Lessee requires this Lease in order to set forth its rights with respect to the Leased Land (as hereinafter defined) which Leased Land is located within the Land. This Lease shall be effective as of the Effective Date. Capitalized terms used in this Lease but not defined herein shall have the respective meanings set forth in the Agreement.

NOW THEREFORE, in consideration of the mutual terms, covenants, conditions and agreements set forth in this Lease and the Agreement to be kept and performed, the parties agree as follows:

Article I. RECORDATION

Section 1.01 Memorandum of Lease. This Lease shall not be recorded. To establish Lessee's leasehold rights and its title to the Leased Land, Lessor and Lessee shall simultaneously execute and acknowledge an appropriate Memorandum of Lease, which shall be recorded in the real property records of Jefferson County, Texas; and a restated Memorandum of Lease shall be executed, acknowledged and recorded simultaneously with the execution of any amendment of this Lease modifying the Leased Land or the easements granted pursuant to Section 7.02. In the event of a discrepancy between the provisions of such Memorandum of Lease and this Lease, the provisions of

this Lease shall prevail. Recordation of the Memorandum of Lease shall be at the expense of Lessee.

Article II. DEMISE OF LEASED LAND

Section 2.01 Leased Land. Lessor hereby leases to Lessee and Lessee hereby hires from Lessor, the surface of that certain property (sometimes individually and collectively, the "Leased Land") together with all rights and privileges appurtenant thereto, but excluding any and all mineral, water and subsurface rights, situated in Jefferson County, Texas, and more particularly described in Exhibit B and depicted on Exhibit B-1, each attached hereto and made a part hereof.

Article III. PERMITTED USE

Section 3.01 Permitted Use. Lessee may use and occupy the Leased Land for the sole purpose of the operation, maintenance, improvement, modification, expansion, reconstruction, dismantlement, and removal of the Facility and Seller's Interconnection Facilities (the "Permitted Use"). Lessee shall use the Leased Land for the Permitted Use and for no other purpose or uses.

Section 3.02 Prohibited Uses. Without limiting the foregoing, Lessee shall not use the Leased Land or the Facility and Seller's Interconnection Facilities for any unlawful purpose and shall not permit any act to be done or any condition to exist arising out of its possession, occupation or use of the Leased Land, or relating to the Facility and Seller's Interconnection Facilities which may violate any requirements of a Governmental Instrumentality, or which may be contrary to any provision of an insurance policy of Lessee affecting or pertaining to the Leased Land or the Facility and Seller's Interconnection Facilities. Lessee shall utilize Lessee's Easements (as hereinafter defined) and operate the Leased Land at all times in compliance with the terms of any encumbrances affecting the Leased Land applicable thereto. During an emergency situation, Lessee shall cooperate with Lessor and abide by Lessor's then current emergency procedures which may involve the curtailment of services and utilities.

Article IV. TITLE AND CONDITION

Section 4.01 Title. Lessor makes no representations or warranties as to the state of the title to the Leased Land, except that fee title of the Leased Land is duly vested in Lessor, that it is duly authorized and entitled to execute this Lease and that the Leased Land is not subject to any mortgage, judgment or other lien or encumbrance created by, through or under Lessor or any predecessor in title, except as referenced in Section 4.02.

Section 4.02 Encumbrances. The Leased Land is subject to (a) all zoning regulations, building restrictions, and other laws and regulations now in effect or which may in the

future be adopted by any Governmental Instrumentality having jurisdiction, (b) any and all matters that a true and correct survey would reveal, and (c) those easements, rights-of-way, licenses, and other encumbrances identified in Exhibit C attached hereto and made a part hereof.

Section 4.03 Environmental Condition. Lessee acknowledges that the Leased Land is the site of previous and current industrial activity and that Lessee has had the opportunity to inspect the Leased Land. Lessor warrants that, to Lessor's knowledge, the Leased Land is in material compliance with all requirements of a Governmental Instrumentality and Environmental Laws and that there are no conditions in, at, on, or under the Leased Land that may require the reporting, investigation, monitoring, removal, cleanup, remediation, restoration or correction of any environmental condition to meet the requirements of Environmental Laws.

Section 4.04 Quiet Enjoyment. If Lessee complies with all the terms and conditions of this Lease, Lessee may occupy and enjoy the Leased Land for the Lease Term, in accordance with the provisions of this Lease.

Section 4.05 No Liens. Lessor shall not be liable for any labor or services performed or rendered or materials supplied or furnished, by Lessee to the Leased Land, and no mechanic's or other liens with respect thereto shall be permitted to attach to or affect the fee estate or other estate or interest of Lessor in and to the Leased Land. Lessee shall not create or permit to be created any lien, mortgage, deed of trust, charge or other encumbrance (each, a "Lien"), that attaches to or affects any part of Buyer's Refinery or the fee estate or other estate or interest of Lessor in and to the Leased Land. If any Lien arises and is filed against all or any part of Buyer's Refinery or the fee estate or other estate or interest of Lessor in and to the Leased Land as a result of Lessee's actions, work or as a result of any claim against Lessee or any subtenant of Lessee, Lessee shall cause such Lien to be discharged by payment, satisfaction or posting of bond within ten (10) Business Days after the date Lessee or Lessor receives notice of such filing. If Lessee fails to cause any such Lien to be discharged within the permitted time, Lessor may cause it to be discharged and may make any payment which Lessor, in Lessor's sole judgment, considers necessary, desirable or proper in order to do so. If Lessor makes any such payment, all amounts paid by Lessor shall bear interest at the highest rate allowed by law from the date of payment by Lessor and shall be payable by Lessee to Lessor upon demand. The Lessor acknowledges the Lessee's intention to enter into the Financing and hereby consents to the creation of a leasehold mortgage or any other such lien or encumbrance on the Lessee's leasehold interest in the Leased Land in favor of the Lenders and the Lenders' Agent.

Article V. **TERM**

Section 5.01 **Term**. The term of this Lease shall commence on the Effective Date and shall continue in effect for twenty-five (25) year(s) unless (i) the Facility is acquired by Lessor or (ii) this Lease is terminated sooner as provided in this Lease. In the event that the Agreement is renewed in accordance with Section [2.1] of the Agreement, this Lease shall also automatically renew for up to four (4) consecutive periods of five (5) years such that the term of this Lease shall at all times be the same as the term under the Agreement.

Article VI. **RENT**

Section 6.01 **Rent**. During the term of this Agreement Lessee shall pay ten dollars ($10.00) per year as rent.

Section 6.02 **Payment of Costs**. Except as specifically otherwise provided in this Lease or the Agreement, Lessee shall be responsible for payment of all costs, expenses, and obligations of every kind or nature, relating to the Leased Land or the Facility and Seller's Interconnection Facilities that may arise or become due during the Lease Term and apportioned to the Lease Term, and Lessor shall not be required to provide any services (except the Utilities and Additional Site Services as provided in Article VII) or do any act or thing with respect to the Leased Land or the Facility and Seller's Interconnection Facilities.

Section 6.03 **Additional Costs**. Lessee shall be responsible for the payment of certain Impositions under Article VIII and those costs and expenses as specified under Article VII.

Section 6.04 **Reimbursement for Costs**. In accordance with its entitlement to reimbursement for all Flow-Through Costs under Section [10.3(c)] of the Agreement, Lessee shall send Lessor a monthly invoice for any Impositions and any other amounts paid under Sections 6.02 or Section 6.03 above, together with an itemized statement supporting the amount invoiced. Lessee shall, upon the request of Lessor, supply Lessor with supporting data relating to any amount invoiced by Lessee. Payment by Lessor of any such invoices shall be due within ten (10) Business Days after receipt of the invoice and late payments will bear interest, which shall accrue at one (1) month Term SOFR plus three percent (3%) unless another rate is specified. "Term SOFR" means the Term Secured Overnight Financing Rate administered and published by CME Group Benchmark Administration Limited for any other person which takes over the administration or publication of that rate (for a one (1) month period (before any correction, recalculation of republication by the administrator) on the first banking day of the month in which payment was due. Interest shall accrue from day to day and the total interest due shall be calculated by multiplying the unpaid amount by the interest rate by the number of days between the due date and the date of payment and dividing by 360 days.

Article VII. **UTILITIES, SERVICES AND LICENSES**

Section 7.01 Utilities and Site Services. Lessee shall be responsible for securing the necessary utilities for use in Lessee's operation of the Facility and Seller's Interconnection Facilities. Lessor:

(a) shall provide the Additional Site Services to Lessee for use at the Leased Land as more specifically set forth on Exhibit D; and

(b) shall grant, at no cost to Lessee, such access licenses, consents, approvals, permits, and other permissions (at locations to be mutually determined by Lessor and Lessee) as are reasonably necessary for Lessee to access any third party supplied utilities and services for the purposes of Permitted Use.

Section 7.02 Easements.

(a) Lessee's Easements. Lessor hereby grants to Lessee the following easements with respect to the Land (collectively, "Lessee's Easements"): (i) to the extent public rights-of-way are not available to the Leased Land, a non-exclusive easement and right of ingress and egress in, and access and passage to, along and over the roads and drives, depicted on Exhibit E attached hereto, located on the Land as reasonably necessary to access the Leased Land (the location of which shall be determined by Lessor in its reasonable discretion), until such time as public rights-of-way to the Leased Land are available and (ii) non-exclusive easements located on the Land for the installation and operation of pipelines and equipment for the Facility and Seller's Interconnection Facilities, including but not limited to water pipelines, gas pipelines, conduits, powerlines, and communication lines as depicted on Exhibit F attached hereto.

(b) Lessor's Easements. Lessor hereby reserves: (i) a non-exclusive easement over the portion of the Leased Land as may be reasonably necessary for the use of existing or future improvements on the Land and Buyer's Refinery, (ii) a non-exclusive easement over, under and across the Leased Land to accommodate the location of existing and future underground and above-ground piping, conduits and related equipment and other facilities serving Buyer's Refinery and (iii) an access easement over the Leased Land as may be reasonably necessary in the event of an emergency at Buyer's Refinery (collectively, "Lessor's Easements"), it being agreed that Lessor may install and construct such infrastructure on the Leased Land so long as the construction of such infrastructure, during and after Lessor's construction, does not materially interfere with Lessee's Permitted Use. Lessor shall construct and maintain any equipment or structures that are built on Lessor's Easements in accordance with Good Engineering and Construction Practices and shall be fully liable for any and all Claims that may arise in relation to such equipment and structures.

(c) Surface State Only. No estate for years or interest in realty shall pass to Lessee hereby, other than the above-described leasehold interest in the Leased Land and the Lessee's Easements, and Lessee shall have no interest whatsoever in any oil, gas and other minerals in and under, and that may be produced from, the Land or any other portion of Buyer's Refinery and no right to use all or any portion of Buyer's Refinery or Lessee's Easements for the purpose of mining, drilling or exploring for oil, gas or other minerals, other than as granted or permitted hereunder.

(d) Easements Non-Exclusive. Lessee acknowledges and agrees that Lessee's Easements are non-exclusive and Lessor may grant to third parties, additional easements, licenses and rights-of-way over, above, below and across the Land, including the area comprising Lessee's Easements, so long as such additional easements, licenses or rights-of-way do not interfere with Lessee's right to use Lessee's Easements hereunder.

Section 7.03 Lessor Inspection. Lessor hereby reserves and Lessee hereby grants to Lessor a right of access upon the Leased Land, subject to reasonable prior notices and mutual agreement as to the scheduling of any such activities, (i) for the periodic inspection of the Leased Land and (ii) for inspection of Lessee's dismantling of the Facility and Seller's Interconnection Facilities at the expiration or earlier termination of this Lease, if applicable; provided, however, that in exercising any such rights Lessor shall not prevent or unreasonably interfere with Lessee's possession or use of the Leased Land.

Article VIII. REAL ESTATE TAXES

Section 8.01 Payment of Impositions. During the Lease Term, Lessee shall promptly pay before delinquency, all "Impositions" (as defined in Section 8.03) upon the Facility and Seller's Interconnection Facilities, except that Lessor shall promptly pay before delinquency (a) all real and personal property taxes and assessments upon Buyer's Refinery pursuant to Section 8.02, including, without limitation, the Leased Land (until such time as a separate tax parcel(s) can be established for the Leased Land), as provided in Section 8.02, and (b) all applicable taxes on equipment Lessor owns which is located upon the Land. Lessee shall be responsible for annual real property, ad valorem, and personal property tax filings and assessed value negotiations with the Jefferson County Appraisal District pertaining to the Facility and Seller's Interconnection Facilities and the Leased Land during the Lease Term.

Section 8.02 Real and Personal Property Taxes. Lessor shall be responsible for real property and ad valorem taxes and assessments upon Buyer's Refinery, including the Leased Land (until such time as a separate tax parcel(s) can be established for the Leased Land), including possessory interest, real property, ad valorem, and personal property taxes, assessments, charges and levies, whether general or special, together

with all interest and penalties thereon. In the event that a separate tax parcel(s) is established for the Leased Land and Lessee fails to pay any real property, in-lieu-of property tax payments or ad valorem taxes and assessments upon the Leased Land or the Facility and Seller's Interconnection Facilities on or prior to their due dates, then upon ten (10) Business Days' prior written notice to Lessee, Lessor shall have the right to pay such taxes and assessments and upon written notice from Lessor (including evidence of payment), Lessee shall not be required to reimburse Lessor for any amounts paid by Lessor.

Section 8.03 **Impositions Defined**. "Impositions" mean all taxes (including possessory interest, In-lieu-of property tax payments, real property, ad valorem, and personal property taxes), assessments, charges, levies, whether general or special, together with all interest and penalties thereon, imposed by any Governmental Instrumentality pursuant to law as a result of Lessee's ownership of the Facility and Seller's Interconnection Facilities which may be levied, assessed, charged or imposed, or may be or become a lien or charge upon the Leased Land, or any part thereof, or upon the leasehold estate hereby created. Lessee shall have the right to pay in installments any Impositions which may be so payable. Impositions shall be apportioned to the Lease Term.

Section 8.04 **Separate Assessment**. The parties shall work together in using commercially reasonable efforts to cause the Leased Land and the Facility and Seller's Interconnection Facilities to be assessed and taxed separate and apart from the other properties and interests of Lessor for purposes of real estate taxes and to be separately assessed for other Impositions. If for any reason it is not possible to create separate assessments for the Facilities and the Leased Land, then Lessee agrees to reimburse Lessor for its allocable share of any impositions levied thereon. Upon written notice from Lessor (including evidence of payment). Lessee shall reimburse Lessor for any impositions within ten (10) days of such notice. Any failure by Lessee to reimburse Lessor shall bear interest at Term SOFR plus three percent (3%).

Section 8.05 **Proration**. For the year 20___ and any year in which this Lease terminates, Impositions shall be prorated proportionately between the parties based on the time Lessee is in possession of the Leased Land.

Section 8.06 **Tax Relief and Financing**. Lessor shall cooperate with Lessee's reasonable requests in connection with (i) any efforts that Lessee may undertake to obtain tax relief (such as a tax abatement) with respect to the Facility and Seller's Interconnection Facilities or (ii) any financing by Lessee of the Facility and Seller's Interconnection Facilities.

Article IX. MAINTENANCE AND REPAIRS; SIGNAGE; FENCING

Section 9.01 Maintenance and Repairs. Lessee at Lessee's sole cost and expense, shall at all times during the Lease Term, keep the Leased Land and the Facility and Seller's Interconnection Facilities in a safe and properly maintained condition. Lessee shall promptly make all necessary and appropriate repairs, replacements, and renewals of the Facility and Seller's Interconnection Facilities, and keep and maintain the Facility and Seller's Interconnection Facilities in good order, condition, and repair (ordinary wear and tear excepted), and in such condition as may be required by applicable requirements of a Governmental Instrumentality and Permits.

Section 9.02 Signage; Fencing. Lessee may not erect any signage on the Leased Land without Lessor's written consent. The size, design, configuration and placement of any such sign shall be subject to Lessor's prior written approval, which approval may be withheld in Lessor's sole discretion. Lessee shall be required to erect gated fencing along the perimeter of the Leased Land during and after construction so as to segregate the Leased Land from Buyer's Refinery. Lessee shall not be permitted to access Buyer's Facility or install any gates from the Leased Land to Buyer's Refinery or the Land, it being understood that (a) the only gates to the Leased Land and the Facility and Seller's Interconnection Facilities shall be from its public access from Highway 82, (b) the height, materials, design and placement of all such fencing and gates shall comply with the requirements specified in Exhibit G and be reasonably acceptable to Lessor and (c) any access to Buyer's Facility by Lessee shall be controlled by Lessor at Lessor's sole discretion. The installation, construction, erection, maintenance, repair and removal of any such fencing and gates shall be the obligation of Lessee. Upon termination of this Lease, Lessee shall remove all such fencing and gates and repair any damage caused by such removal, except as otherwise mutually agreed by the Parties.

Article X. INSPECTION OF AND ACCESS TO LEASED LAND BY LESSOR

Section 10.01 Lessor's Right of Entry. Lessor shall have the right to enter the Leased Land at any time and from time to time upon reasonable prior notice (except no notice shall be required in the case of emergency), for the purpose of inspecting and examining the condition of the Leased Land and Lessee's Easements; provided, however, that in exercising any such rights Lessor shall not prevent or unreasonably interfere with Lessee's possession or use of the Leased Land for the stated purpose.

Section 10.02 Safety and Environmental. Without limiting the foregoing and subject to the conditions and limitations set forth in Section 10.01 above, Lessor shall have the right to enter the Leased Land to inspect for (a) environmental compliance, (b) proper handling of Hazardous Substances, and (c) safety and emergency compliance as provided.

Article XI. PLANNING AND PERMITTING

Section 11.01 Planning. Lessee shall apply for and attempt to obtain as promptly as reasonably possible issuance of all Permits from Governmental Instrumentalities, including land use planning and zoning. Lessee will not apply for or implement any land use planning or zoning requests without the prior written approval of Lessor, acting reasonably, and Lessor agrees to provide timely cooperation to Lessee with respect to these requests. Lessee agrees to apply for only those government approvals necessary to perform its commitments pursuant to the Agreement or to otherwise effectuate the purposes and intents of the Agreement.

Section 11.02 Permitting. Lessee shall be responsible for obtaining and maintaining all necessary Permits (including environmental Permits) necessary to operate the Facility and Seller's Interconnection Facilities on the Leased Land. Lessee shall not make any modifications to any Permits (including environmental Permits) without Lessor's written consent, which consent shall not be unreasonably withheld or delayed. In the event this Lease is terminated for any reason, Lessee shall cooperate with Lessor to have ownership of all Permits transferred to Lessor as permitted by law.

Article XII. ENVIRONMENTAL COMPLIANCE AND RESPONSIBILITY

Section 12.01 Review, Planning and Cooperation. Lessee shall submit for Lessor's information any plans for environmental remediation on the Leased Land. Lessee shall submit for Lessor's prior written approval any plans for environmental remediation on the Leased Land, which approval shall not be unreasonably withheld or delayed.

Section 12.02 Lessee's Responsibilities. Lessee shall be responsible for all environmental remediation arising from any release to or presence in the environment of any Hazardous Substances at or from the Leased Land or Lessee's Easements occurring on and after the Effective Date, and arising out of Lessee's possession, occupation or use of the Leased Land, and shall indemnify Lessor of any claims relating to such environmental remediation. Lessee shall promptly commence, and diligently pursue to completion, at its sole cost and expense, all environmental remediation required by Environmental Laws with respect to any such release to or presence in the environment of Hazardous Substances.

Section 12.03 Lessee's Failure to Perform. If, with respect to environmental remediation for which Lessee is responsible hereunder, in Lessor's reasonable judgement (a) Lessee has failed to promptly or satisfactorily perform environmental remediation, and (b) such action is (i) required by Environmental Laws or any Governmental Instrumentality, or (ii) necessary to protect human health or the environment, then Lessor shall have the right, upon reasonable prior notice, to enter the Leased Land and conduct environmental

remediation; provided, however, that in exercising any such right Lessor shall use reasonable efforts not to interfere with Lessee's possession or use of the Leased Land.

Section 12.04 Environmental Remediation. In the event Lessor performs environmental remediation for which Lessee is responsible pursuant to Section 12.02 above, but fails to perform in accordance with Section 12.03 above, the reasonable costs and expenses associated with such environmental remediation, including the time of Lessor's employees on a fully costed basis, shall be paid by Lessee. As between the parties, any environmental remediation conducted by either Party shall be deemed satisfactorily completed if the environmental remediation is conducted in material compliance with all Environmental Laws.

Section 12.05 Lessor's Responsibility. Lessor shall be responsible for the costs of environmental remediation arising from any release to or presence in the environment of any Hazardous Substances at, on or under the Leased Land arising from Lessor's performance under this Lease or arising out of the possession, occupation and use of the Leased Land by Lessor or its predecessors in title prior to the Effective Date or the possession, occupation or use of the remaining portions of Buyer's Refinery by Lessor or its predecessors in title, and shall indemnify Lessee for any claims relating to such environmental remediation.

Section 12.06 Environmental Laws and Permits. Lessee, at its sole cost and expense, shall promptly comply with all Permits (including Permits required by Environmental Laws) and Environmental Laws now and hereafter enacted or promulgated that apply to the Facility and Seller's Interconnection Facilities. Lessee shall keep and maintain the Leased Land in compliance with, and shall not cause the Leased Land to be in violation of any Environmental Laws or any Permits (including environmental Permits). Notwithstanding the foregoing, Lessor shall remain liable, at its sole cost and expense, for any non-compliance with Environmental Laws and Permits to the extent due to environmental conditions or pollution or contamination, arising from Lessor's performance under this Lease or from the possession, occupation and use of the Leased Land or Buyer's Refinery by Lessor or its predecessors in title prior to the Effective Date.

Section 12.07 Air Permits. Without limiting the foregoing, Lessee will secure and maintain any and all air emissions Permits from the Texas Commission on Environmental Quality covering the Leased Land and/or the Facility. Lessee will provide Lessor with a copy of Lessee's air emission Permit(s) and notify Lessor of any proposed changes to said Permit(s).

Section 12.08 Underground Storage Tanks. Lessee shall not install any underground storage tanks at the Leased Land or Lessee's Easements, without Lessor's written consent.

Article XIII. HANDLING OF HAZARDOUS SUBSTANCES

Section 13.01 Notice of Release.

(a) **By Lessee.** Lessee shall promptly notify Lessor of any Release to, or presence in, the environment of any Hazardous Substance, or of any other substance that may present a significant safety or health risk to the employees, invitees, or contractors or either Lessor or Lessee, including, without Limitation, any Release to the environment that must be reported pursuant to 40 CFR Part 302 and/or 40 CFR Part 355, relating to, arising out of or in connection with Lessee's possession, occupation or use of the Leased Land.

(b) **By Lessor.** Lessor shall promptly notify Lessee of any Release to, or presence in, the environment of any Hazardous Substance, or of any other substance that may present a significant safety or health risk to the employees, invitees, or contractors of Lessee, arising out of Lessor's operations at Buyer's Refinery.

Section 13.02 Restrictions. Lessee hereby covenants that during the Lease Term, Lessee shall not cause any Hazardous Substances to be placed, held, or located in, on or about the Leased Land or any part thereof, except as may be required or necessary in compliance with Applicable Law for the Permitted Use. In addition, Lessee shall promptly provide Lessor with copies of any and all reports prepared to comply with EPCRA (Emergency Planning and Community Right-To-Know Act) sections 311, 312 and 313.

Section 13.03 No Disposal on Site. No disposal of waste of any kind shall be permitted on the Land, the Leased Land or Lessee's Easements, regardless of whether such waste is a Hazardous Substance, and even if such disposal would be otherwise permitted by Environmental Laws. Waste may be held temporarily on-site for only such time as is reasonably required while awaiting shipping for treatment, off-site storage, recycling, or disposal.

Article XIV. INSURANCE

Section 14.01 General. Lessee shall procure and cause its Subcontractors to procure and maintain in force and effect throughout the entire term of this Lease (and/or so long as any Lessee is using or occupying any portion of the Leased Land or the Land) insurance coverage as described below with insurance companies acceptable to Lessor, acting reasonably. All costs and deductible amounts in respect of insurance policies of Lessee shall be the responsibility and obligation of Lessee, provided that such costs shall be reimbursable to Lessee by Lessor in accordance with Section [10.3(c)] of the Agreement, and all deductibles shall be subject to Lessor's reasonable approval. Prior to entering the Leased Land or Lessee's Easements, Lessee must deliver to Lessor certificate(s) of insurance for itself and its contractors, naming Lessor and any other parties Lessor may reasonably designate as additional insureds, but only to the extent of Lessee's obligations

under this Lease. The limits set forth below are minimum limits and shall not be construed to limit Lessee's liability hereunder:

(a) Workers' Compensation insurance complying with the laws of the state or states having jurisdiction over each employee and Employer's Liability insurance with limits of $1,000,000 per accident for bodily injury or disease.

(b) Commercial General Liability insurance on an occurrence form with a combined single limit of $5,000,000 each occurrence; and for project specific, an annual aggregate of $5,000,000. Coverage must include premises/operations, products/completed operations, and sudden and accidental pollution.

(c) Auto Liability insurance covering owned, non-owned, and hired vehicles with a limit of $1,000,000 per occurrence or as required by law, whichever is higher.

(d) The Sudden and Accidental Pollution, which may be a separate, stand-alone policy but must still meet the $5,000,000 minimum limit requirement. If the coverage is written on a claims-made policy form, the coverage must be maintained for two (2) years following completion of the Work contemplated under this Agreement.

(e) Excess or Umbrella Liability Insurance with limits of not less than $25,000,000 each occurrence; and

(f) any other insurance Lessor may reasonably require.

(g) Lessee, on behalf of itself and its Subcontractors, hereby waives, and shall (and does hereby) require its (and its Subcontractors') insurers to waive in each of the above policies, any rights of subrogation or recovery either may have against Lessor. For avoidance of all doubt, Lessee hereby waives any and all rights of recovery against Lessor in connection with any loss suffered by Lessee that is covered under any of the above policies (or any other insurance policies maintained by Lessee).

(h) Regardless of the insurance requirements above, the insolvency, bankruptcy, or failure of any such insurance company providing insurance for Lessee or its Subcontractors, or the failure of any such insurance company to pay claims that occur, such requirements, insolvency, bankruptcy or failure shall not be held to waive any of the provisions hereof.

(i) Lessee agrees, upon Lessor's request, to submit a certified copy of its insurance policies for inspection by Lessor.

(j) Notwithstanding anything to the contrary contained herein, Lessee's insurance hereunder shall be primary to, and without any right to contribution from, any insurance maintained by Lessor from time to time.

(k) Lessee shall require all of its Subcontractors to provide adequate insurance coverage, all to be endorsed with the waiver of subrogation wording referenced in subsection (g) above; any deficiency in the coverage, policy limits or endorsements of said Subcontractors, shall be the sole responsibility of Lessee.

Section 14.02 Additional Insureds. The insurance policies set forth in Sections 14.01(b), (d) and (e) shall name Lessor as additional insured as respects Lessee's obligations under this Lease with terms equivalent to ISO CG 20 26 11 85 and allow for separation of insureds. Any such insurance shall be regarded as primary insurance underlying any other insurance available to Lessee. All insurance policies maintained by Lessee hereunder and any other insurance maintained by Lessee applicable to Lessee's performance under this Lease or the Agreement shall provide a waiver of subrogation in favor of Lessor (and its members, subsidiaries and Affiliates).

Section 14.03 Separate from Indemnity. The insurance provisions of this Article XIV are entirely separate and distinct from, and independent of, the indemnity provisions of this Lease, and it is not intended that the insurance and indemnity provisions should be construed together, nor is it intended that the insurance provisions limit, restrict, diminish or otherwise modify the indemnity provisions, whether by limitation of the extent of protection afforded to Lessor or otherwise.

Article XV. DAMAGE OR DESTRUCTION

Section 15.01 Casualty and Other Damage. If, during the Lease Term, there occurs any damage to or destruction of the Facility or Seller's Interconnection Facilities, or any part thereof, resulting from any fire or other casualty, Lessee shall give prompt notice thereof to Lessor, and Lessee shall immediately take such action as is reasonably necessary to assure that neither the Leased Land, Lessee's Easements nor the Facility and Seller's Interconnection Facilities constitutes a nuisance or otherwise present a health or safety hazard, such work to be accomplished at Lessee's sole cost and expense, unless it is finally determined that such damage or destruction was due to the Gross Negligence, willful misconduct or fraud of the Lessee.

Section 15.02 Repair and Restoration. In the event of the destruction of more than thirty percent (30%) of the Facility and Seller's Interconnection Facilities after the 20th year of the term of this Lease, Lessee shall, at its sole option, either (i) remove such Facility and Seller's Interconnection Facilities and restore the Leased Land in accordance with Section 17.02, and thereupon terminate this Lease with respect to such Facility and Seller's Interconnection Facilities, or (ii) rebuild such Facility and Seller's Interconnection Facilities at its sole cost and expense as soon as reasonably possible. In the event of (i) the destruction of thirty percent (30%) or less of the Facility and Seller's Interconnection Facilities after the 20th year of the term of this Lease, or (ii) any destruction prior to the 20th year of the term of this Lease, Lessee shall rebuild such Facility and Seller's

Interconnection Facilities as soon as reasonably possible at its sole cost and expense. Unless such work is expressly provided to be at Lessee's sole cost and expense, such work shall be (i) subject to the Lessor and Lessee agreeing to a Change Order under the Agreement that includes an adjustment to the Contract Price, or (ii) at Lessee's sole cost and expense if it is finally determined that such damage or destruction was due to the negligence, willful misconduct or fraud of the Lessee.

Section 15.03 Insurance Proceeds. The foregoing obligations shall not be contingent upon the availability of any insurance proceeds. If there is any shortfall between the costs incurred and the available insurance proceeds, Lessee will make up such shortfall with its own funds where such work is the Lessee's responsibility.

Section 15.04 Waivers. Any additional rent or other sums and charges payable by Lessee under this Lease shall not abate hereunder by reason of any such damage to or destruction of the Facility and Seller's Interconnection Facilities. Lessee hereby waives any rights now or hereafter conferred upon it by statue or other law to receive any suspension, diminution, abatement or reduction of additional rent or other sums and charges payable by Lessee under this Lease on account of any such destruction or damage.

Article XVI. ASSIGNMENT

Section 16.01 Assignment.

(a) This Lease shall not be assignable or transferable by either Lessor or Lessee without the prior written consent of the other, which consent shall not be unreasonably withheld, conditioned or delayed and any attempted assignment or transfer without such consent shall be void; provided that (i) Lessor shall be permitted to assign this Lease to any of its Affiliates or any Person acquiring all or a substantial portion of Buyer's Refinery, and (ii) Lessee shall be permitted to assign this Lease to any of its Affiliates. All covenants and provisions of this Lease by and for the benefit of the parties hereto shall bind and inure to the benefit of their respective successors and assigns as permitted by the provisions of this Section.

(b) Subject to the terms of any Financing Consent, Lessee will be entitled, without restriction, to make one or more assignments of the Lease and/or any or all of its rights and entitlements hereunder to or for the benefit of the Lenders or the Lenders' Agent, or grant to the Lenders or the Lenders' Agent the Security in and to all or a portion of Seller's right, title and interest in and to the Lease.

(c) The assigning party making an assignment of this Lease shall also cause the Agreement to be assigned and assumed by the same assignee.

Article XVII. **SURRENDER**

Section 17.01 Surrender of Leased Land. At the expiration or termination of this Lease, Lessee shall immediately surrender and deliver up the Leased Land to Lessor; provided that the Lessee's Easements shall continue, and the Lessee shall continue to have full access to the Leased Lands, for the duration of time required for Lessee to satisfy its obligations under Section 17.02.

Section 17.02 Removal and Restoration. Unless Lessor has elected to have Lessee convey the Facility and Seller's Interconnection Facilities to Lessor by notifying Lessee at least sixty (60) days prior to the expiration of this Lease (in which event Lessee shall convey such Facilities to Lessor for no compensation), Lessee shall, within a reasonable period of time following the effective date of termination or expiration of this Lease, and in any case within twelve (12) months of the effective date of termination or expiration of this Lease, at Lessee's sole cost and expense, (a) dismantle and remove from the Leased Land, the Facility and Seller's Interconnection Facilities, excluding all foundations, concrete pads and footings, and the metering equipment described in Section [6] of the Agreement and (b) restore the Leased Land to substantially the same condition as of the Effective Date, leaving the same clear of all debris and rubble and in a relatively smooth and level condition. If Lessee does not remove the Facility and Seller's Interconnection Facilities prior to the twelfth (12^{th}) month after the expiration of this Lease, the Facility and Seller's Interconnection Facilities shall be conclusively deemed to have been conveyed back to Lessor without compensation or, at Lessor's option, abandoned, and Lessor may remove the Facility and Seller's Interconnection Facilities and repair any damage caused by such removal and dispose of or store the Facility and Seller's Interconnection Facilities at Lessee's sole cost and expense. Lessee shall promptly, and in any case within thirty (30) days of invoice, reimburse Lessor for the costs directly incurred to perform any investigation, characterization, monitoring, response or remediation required by Applicable Law due directly to any environmental release of Hazardous Substances at the Leased Land or in Lessee's Easements in violation of environmental laws. In connection with the foregoing, the Parties shall execute and deliver to each other appropriate quit claim deeds, assignments and other instruments reasonably requested to effectuate the terms of this Lease.

Section 17.03 No Merger. No merger shall occur of this Lease or of Lessee's leasehold estate under this Lease, with the ownership of any portion or any interest in the Leased Land, by reason of a surrender of the Leased Land or by virtue of the fact that the same Person or entity may acquire, own or hold (directly or indirectly) this Lease or rights and interests created by this Lease, together with an ownership, leasehold or other right or interest in the Leased Land.

Article XVIII. **SAFETY**

Section 18.01 Safety and Security Requirements. Lessee agrees that it will abide and operate in accordance with Buyer's Refinery guidelines attached hereto and made a part hereof as Exhibit H.

Article XIX. **INDEMNIFICATION**

Section 19.01 Lessee Indemnity. Lessee shall be responsible for and shall indemnify, reimburse and save harmless Lessor, its Affiliates and their respective directors, officers and employees (collectively, the "Lessor Indemnitees") from and against any and all Claims (including third party Claims) that may be brought against any member of the Lessor Indemnitees as a direct result of any matter or thing arising out of, resulting from, attributable to or connected with a breach by Lessee of any of its obligations under this Lease, or Lessee's willful misconduct, fraud or negligence. In the event of contributory negligence of Lessor Indemnitees, then such Lessor Indemnitees shall not be indemnified hereunder in the proportion that the Lessor Indemnitees' negligence contributed to any indemnified Claim.

Section 19.02 Lessor Indemnity. Lessor shall be responsible for and shall indemnify, reimburse and save harmless Lessee, its Affiliates and their respective directors, officers and employees ("Lessee Indemnitees") from and against any and all Claims (including third party Claims) that may be brought against any member of the Lessee Indemnitees as a direct result of any matter or thing arising out of, resulting from, attributable to or connected with a breach by the Lessor of any of its obligations under this Lease, willful misconduct, fraud or negligence. In the event of contributory negligence of the Lessee Indemnities, then such Lessee Indemnitees shall not be indemnified hereunder in the proportion that the Lessee Indemnitees' negligence contributed to any indemnified Claim.

Section 19.03 Pollution and Contamination. Notwithstanding anything to the contrary contained in this Lease or the Agreement, and without limiting the generality of Section 19.01 and Section 19.02, Lessee shall defend, indemnify, release, and hold harmless the Lessor Indemnitees from and against any loss, damage, expense, fines, penalties, or any other costs associated with pollution or contamination, including, without limitation, environmental remediation, arising out of Lessee's performance under this Lease, or Lessee's possession, occupation or use of the Leased Land or the Facility and Seller's Interconnection Facilities; provided that, Lessee shall have no obligation to defend, indemnify, release, or hold harmless the Lessor Indemnitees with respect to, and any loss, damage, expense, fines, penalties, or any other costs, associated with (i) any pre-existing (as of the Effective Date), unknown, or third party pollution or contamination, (ii) any pollution or contamination migrating or having migrated on, under, or to the

Leased Land from any other location and (iii) any pollution or contamination arising out of the Lessor's performance under this Lease, the possession, occupation or use of the Leased Land prior to the Effective Date, or the possession, occupation or use of the remaining portions of Buyer's Refinery, by Lessor or its predecessors in title.

Section 19.04 Procedure. Each party hereto shall promptly give the other party notice in writing of any claim made or proceedings commenced against a third party for which such party claims to be entitled to indemnification under this Lease. Such notice shall state with as much detail as is reasonably practicable the facts and circumstances giving rise to the claim and shall be given as soon as possible after the party becomes aware of such claim or proceeding. Each of the Lessor and Lessee shall confer with the other party concerning the defense of any such claim or proceeding. Notwithstanding the foregoing, neither party shall effect settlement or compromise of any claim or proceeding without having obtained the prior written consent of the other party, which shall not be unreasonably withheld or delayed. However, if a party's insurer(s) has agreed to provide defense and indemnification of any such claim or proceeding, then such insurer(s) shall retain the sole right to effect settlement and compromise of any such claim or proceeding.

Article XX. GENERAL PROVISIONS

Section 20.01 Choice of Law. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS WITHOUT REGARD TO ITS CONFLICT OF LAWS PRINCIPLES.

Section 20.02 No Conveyance. It is understood and agreed that this Lease is not a conveyance of the Land covered hereunder, nor any interest in the oil, gas or other minerals in, on or under same.

Section 20.03 Entire Agreement. This Lease, the exhibits hereto and the other Project Agreements set forth the entire agreement between Lessor and Lessee with respect to the subject matter of this Lease, and supersede all prior and contemporaneous understandings, negotiations, representations, warranties, or agreements, both written and oral, with respect to the subject matter of this Lease.

Section 20.04 Binding Agreement. The provisions of this Lease shall be binding upon and inure to the benefit of the successors and permitted assigns of the respective Parties hereto.

Section 20.05 Termination. Subject to the rights and priorities of the Lenders and the Lenders' Agent under any Financing Consent, Lessor shall have the right to terminate this Lease without liability or penalty to Lessee in the event of the termination of the Agreement; provided that, if Lessor exercises the Purchase Option for the early termination of the Agreement, Lessor shall not have the right to terminate this Lease

without liability or penalty to the terminating party prior to the Lessor paying to Lessee the applicable Buy-Out Price. Either party to this Lease shall have the right to terminate this Lease without liability or penalty:

(a) if the other party shall make a general assignment for the benefit of its creditors, or shall file a voluntary petition in bankruptcy, or shall be adjudicated bankrupt or insolvent, or shall file any petition or answer seeking, consenting to, or acquiescing in reorganization, arrangement, adjustment, composition, liquidation, dissolution or similar relief under any present or future statute, law or regulation, or shall file an answer admitting or failing to deny the material allegations of a petition against it for any such relief, or shall admit in writing its inability to pay its debts as they mature, or shall fail to pay its debts as they mature; or

(b) if any proceeding against the other party seeking any of the relief mentioned in Section 20.05(a) shall have been commenced and shall not have been stayed or dismissed within sixty (60) days after commencement; or

(c) if a trustee, receiver or liquidator of either party or of any substantial part of the properties or assets of such party shall be appointed with the consent or acquiescence of such party, or if any such appointment, if not so consented to or acquiesced in, shall remain unvacated or unstayed for a period of sixty (60) days; or

(d) if either party shall be liquidated or dissolved, or shall begin proceedings toward such liquidation or dissolution.

Section 20.06 Surrender. All property constructed, installed, or placed in, upon or under the Leased Land by Lessee shall be and remain Lessee's property, and Lessee shall have the obligation to remove all of the same as soon as reasonably practicable after any termination of this Lease, as provided in this Lease.

Section 20.07 Waiver; Consent. One or more waivers of the breach of any term or covenant of this Lease by either Party shall not be construed as a waiver of a subsequent breach of the same covenant or term. The consent or approval by either Party of any act by the other Party requiring such consent or approval shall not be deemed to waive or render unnecessary the consent or approval of any subsequent act.

Section 20.08 Parties' Relationship. This Lease is entered into by the Parties solely for purposes described herein and to define the rights, obligations, and liabilities of the Parties associated therewith. Nothing contained in this Lease shall be deemed or construed to make Lessee or its employees, consultants, Subcontractors and agents the employee or agent of Lessor, or to create any partnership, joint venture, or other association between the Parties hereto.

Section 20.09 Notices. All notices, requests, demands or other communications hereunder shall be in writing and, addressed as follows:

If to Lessor:

Motiva Enterprises LLC
500 Dallas
One Allen Center
Houston Texas 77002
Attn: Land Manager
e-mail: _____

With a copy to: motiva-legal@motiva.com

If to Lessee:

_____
_____
_____
Attn: _____
e-mail: _____

All notices, requests, demands, and other communications must be in writing and shall be deemed to have been served if delivered by hand, e-mail or sent by certified United States mail, return receipt requested, with proper postage prepaid.

Section 20.10 Joint Drafting. This Lease has been jointly drafted, negotiated and agreed upon by Lessor and Lessee. Any rule of contract interpretation that provides that ambiguity shall be construed against the drafting Party is inapplicable to this Lease. Each of Lessor and Lessee acknowledges that it has been represented by legal counsel in connection with the negotiation and execution of this Lease or that it has had an opportunity to engage such counsel.

Section 20.11 Severability. If any provision of this Lease is held to be illegal, invalid, or unenforceable under present or future laws, such provision shall be fully severable, and this Lease shall be construed and enforced as if such illegal, invalid, or unenforceable provision had never comprised a part of the Lease, and the remaining provisions of the Lease shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provision or by its severance from this Lease.

Section 20.12 Survival. Expiration or termination of this Lease shall not serve to terminate the provisions of this Lease which expressly or by their nature survive in order to effectuate

the intent of the Parties. Such surviving provisions shall continue in full force and effect subsequent to and notwithstanding the expiration or termination of this Lease until such obligations are satisfied in full or by their nature expire, if they expire.

Section 20.13 Authority. Each of Lessor and Lessee warrants and represents unto the other that it has full right and authority to execute, deliver and perform its duties and obligations under this Lease and that the person executing this Lease on behalf of such Party was authorized to do so.

Section 20.14 Counterparts; Electronic Means. This Lease may be executed in multiple counterparts, which together shall be deemed one and the same instrument. This Lease may be executed by a Party's signature transmitted by electronic means, including by facsimile or e-mail ("Electronic Means"), and copies of this Lease executed and delivered by Electronic Means have the same force and effect as copies executed and delivered with original signatures. All Parties may rely upon signatures transmitted by Electronic Means as if such signatures were originals. Any Party executing and delivering this Lease by Electronic Means, at the request of any other Party, shall promptly deliver a counterpart signature page of this Lease containing said Party's original signature. A signature page transmitted by Electronic Means may be introduced into evidence in any proceeding arising out of or related to this Agreement as if it were an original signature page.

Section 20.15 Estoppel Certificates. Each of Lessee and Lessor shall, without charge, at any time and from time to time within 10 days of any request by the other Party, execute and deliver to the requesting Party, any mortgagee of such Party, or any potential mortgagee, purchaser, subtenant, sub-subtenant or assignee, such estoppel certificates in form reasonably acceptable to the requesting Party certifying as to the existence of such facts as may be reasonably requested, including the validity of this Lease and the non-existence of an event of default.

Article XXI. DISPUTE RESOLUTION

Section 21.01 Procedure. In the event a dispute arises between Lessor and Lessee regarding the application or interpretation, breach, performance, enforcement, termination, or validity of any provision of this Lease("Dispute"), the Parties agree to use the procedures in this Article XXI to resolve any such Disputes.

Section 21.02 Initial Resolution Attempts. If the Parties have been unable to informally resolve the Dispute, the aggrieved Party may send a Notice to the other Party specifically stating the complaining Party's claim, proposing a desired resolution, and designating a Person authorized to settle the Dispute. The receiving Party shall reply with the designation of a Person authorized to settle the Dispute and list two (2) alternative dates

(both of which must be within thirty (30) Days after receipt of the Notice provided for in this Section 21.02) for meeting at a mutually agreeable location.

Section 21.03 Arbitration.

(a) If the Dispute has not been resolved within thirty (30) Days after the Notice and the Parties do not thereafter consent in writing to extend such thirty (30) Day negotiation period, then such Dispute shall be determined by arbitration administered by the American Arbitration Association in accordance with its Commercial Arbitration Rules (the "Rules"). If the Agreement is in effect at such time, then the Dispute hereunder shall be joined with any related dispute under the Agreement, and in any event Section 20 of the Agreement shall apply to arbitration procedures in lieu of this Section 21.03. Otherwise, subsections (b) and (c) below shall apply.

(b) The arbitration tribunal shall consist of three (3) arbitrators, elected and replaced in accordance with this section and, as applicable, the Rules. Each Party involved in the Dispute shall have the right to appoint one (1) arbitrator. The two (2) arbitrators shall be appointed within ten (10) Days from the Notice mentioned in subsection (a) above. The two (2) arbitrators appointed shall appoint the third (3rd) arbitrator, who shall preside over the arbitration tribunal, within ten (10) days from their appointment. In case of failure in the appointment of any arbitrator, the arbitrator shall be appointed by the American Arbitration Association pursuant to the Rules;

(c) The arbitration shall be conducted in the City of Houston, Texas.

Section 21.04 Attorneys' Fees. If action or proceeding relating to this Lease is brought by either Party against the other Party hereto, the prevailing Party shall be entitled to recover reasonable attorneys' fees, costs and disbursements as may be permitted by the arbitration tribunal (in addition to any other relief to which the prevailing Party may be entitled).

[*Signature Page Follows*]

"Lessee"

_____

By:_____

Name:_____

Title:_____

"Lessor"

MOTIVA ENTERPRISES LLC

By:_____

Name:_____

Title:_____

Exhibits

A	Buyer's Refinery Tract
B	Leased Land Metes and Bounds
B-1	Leased Land Survey
C	Encumbrances
D	Lessor Site Services
E	Access Easements
F	Pipeline, Power Line and Communication Line Easements
G	Fence Specifications
H	Buyer's Refinery Safety Guidelines

Exhibit A

Buyer's Refinery Tract

Exhibit B

Leased Land Metes and Bounds

Exhibit B-1

Leased Land Survey

Exhibit C

Encumbrances

Exhibit D

Lessor Site Services

[Clarified water]

Exhibit E

Access Easements

Exhibit F

Pipeline, Power Line and Communication Line Easements

Exhibit G

Fence Specifications

Exhibit H

Buyer's Refinery Safety Guidelines

ATTACHMENT 05 - USGS Topographic Map

SOURCE: U.S.G.S. TOPOGRAPHIC QUADRANGLE MAPS (2023)

LEGEND

- SITE BOUNDARY
- DISCHARGE ROUTE
- 1 MILE AND 3 MILES RADIUS

N

Project Mngr:	BEM	Project No.	92247254
Drawn By:	PSB	Scale:	1" = 5,000'
Checked By:	BEM	File No.	
Approved By:	RDC	Date:	07/03/2024

Terracon
11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043
PH. (713) 690-8989 FAX. (713) 690-8787

USGS TOPOGRAPHIC MAP

PORT ARTHUR COGENERATION, LLC
PORT ARTHUR COGENERATION PROJECT
2555 Savannah Ave, Port Arthur, TX 77640

ATT 5

ATTACHMENT 06 - MS4 Authorization Contact Letter

LOWER NECHES VALLEY AUTHORITY

INTAKE STRUCTURE GUIDELINES

AND CONSTRUCTION REQUIREMENTS

Rev. 2024.01.12

LOWER NECHES VALLEY AUTHORITY

INTAKE STRUCTURE GUIDELINES AND CONSTRUCTION REQUIREMENTS

Table of Contents

Attachments

A. LNVA Standard Industrial Raw Water Supply Contract

B. LNVA Engineering Requirements for Intake Structures

C. Example Intake Structure Design

D. LNVA Standard Levee Penetration Backfill Detail

E. LNVA Canal Water Quality Report

F. Engineering Plan Review Checklist

LOWER NECHES VALLEY AUTHORITY

INTAKE STRUCTURE GUIDELINES AND CONSTRUCTION REQUIREMENTS

Overview

The enclosed requirements are intended for use by third parties (the Applicant) constructing structures on or across Lower Neches Valley Authority (LNVA) right-of-way (ROW). These requirements are intended to 1) Protect the interests of LNVA and maintain its ability to own, operate, and maintain the canal system and all its appurtenant structures and operations; 2) Allow for construction by third parties so as not to unreasonably interfere with or prevent private interest development; and 3) Provide basic information and process framework for Applicants inquiring about crossing or constructing improvements on LNVA ROW.

The Process

An Applicant should first contact the LNVA ROW Manager, Kevin Gomez, at (409) 892-4011 to discuss the relative scope of the proposed project and identify the desired timeline for construction to ensure expectations are reasonably aligned. The LNVA ROW Manager will review the general framework of the permitting process with the Applicant and provide a copy of this document for review by the Applicant and its consultants. The LNVA ROW Manager will serve as the Applicant's point of contact throughout the permitting process.

Prior to receiving water from LNVA, the Applicant must complete two (2) milestones: 1) Obtain approved engineering construction plans, and 2) Obtain an approved water supply contract (the Agreement).

The permitting process for a new customer intake structure can take as little as two (2) months to complete; however, oftentimes the process takes longer either due to multiple legal reviews and iterations during the contract review phase or multiple engineering reviews due to incomplete submissions. LNVA's Board of Directors generally meets monthly on the third Tuesday of the month. Agreements presented to the Board for consideration will typically need to be administratively complete at least one (1) week prior to the board meeting date. Please consider these limitations when planning the permitting timeline.

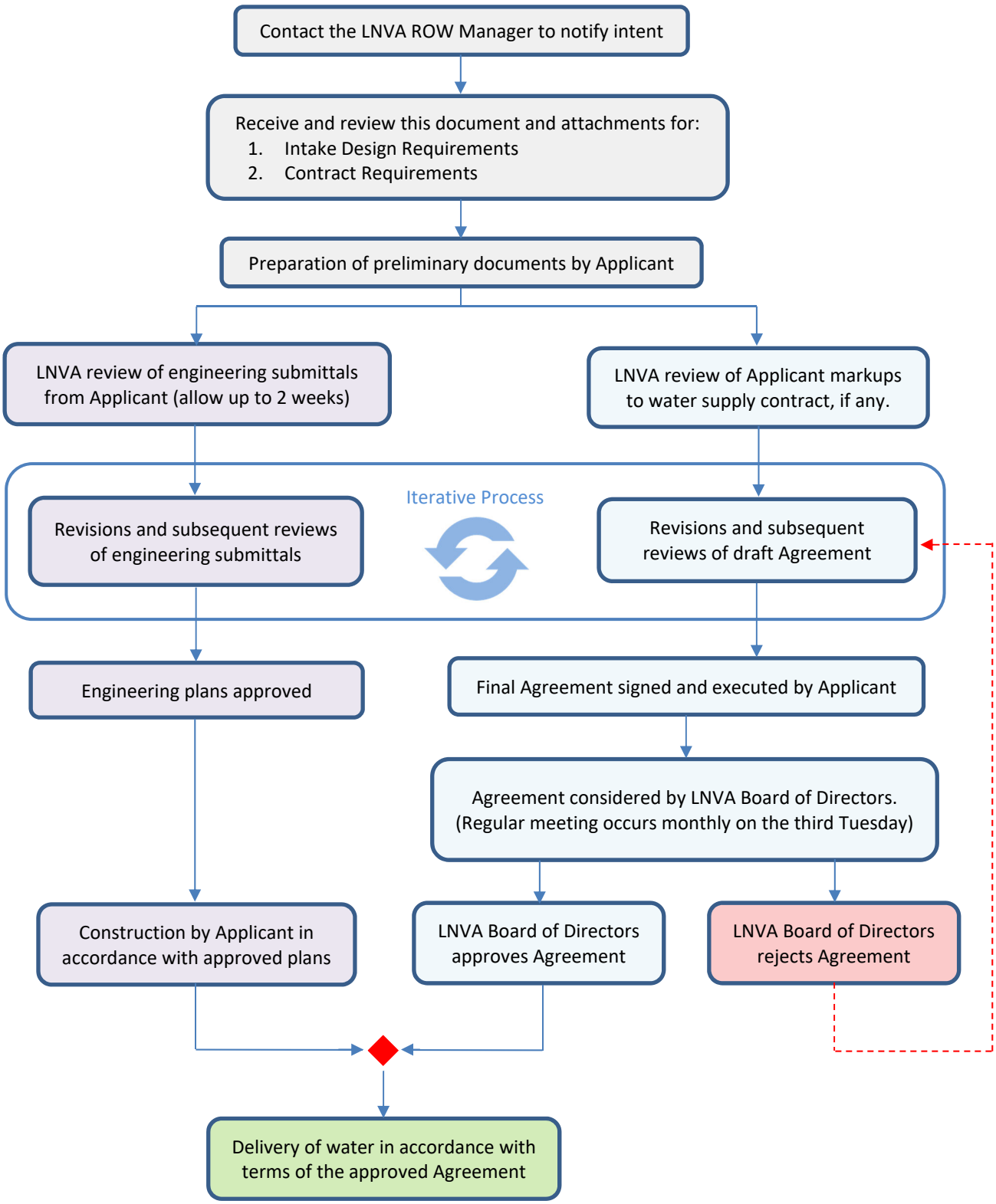
After engineering plans are approved, the construction will be required to be periodically inspected by LNVA Staff to ensure the construction complies with the approved plans. Specific hold-points may be identified and stipulated as a condition of approval during the plan review process. These inspections are provided by LNVA's designated representative at no cost to the Applicant. It will be the Applicant, or its designated agent's, responsibility to notify LNVA of commencement of construction, and subsequent timing of any required hold point inspections.

Water Rates & Water Quality Data

Current LNVA water rates may be viewed online at the following link: https://lnva.dst.tx.us/water-rates/. Water quality data may be viewed at the following link: https://lnva.dst.tx.us/canal-water-quality/. More detailed water quality data may be obtained by submitting a written request to the LNVA ROW Manager specifying desired parameters.

Permitting Flowchart

Note: Permitting and construction of the intake structure may track independently from the execution of a raw water supply agreement at Applicant's discretion. Approval of engineering plans does not guarantee a water supply contract.



LOWER NECHES VALLEY AUTHORITY

ATTACHMENT A

LNVA Standard Industrial Raw Water Supply Contract

Lower Neches Valley Authority
Industrial
Raw Water Supply Contract

LOWER NECHES VALLEY AUTHORITY

INDUSTRIAL RAW WATER SUPPLY CONTRACT

TABLE OF CONTENTS

LIST OF EXHIBITS

THE STATE OF TEXAS	**§**	**INDUSTRIAL**
	§	**RAW WATER SUPPLY**
COUNTY OF JEFFERSON	**§**	**CONTRACT**

This Industrial Raw Water Supply Contract ("Agreement") is made and entered into this ____ day of_____, 20__ by and between the **Lower Neches Valley Authority** ("LNVA"), a political subdivision of the State of Texas, having offices in Jefferson County, Texas, and the _____ ("Customer"), a Delaware limited liability company,

RECITALS

1. LNVA is a political subdivision of the State of Texas, being a conservation and reclamation district created and governed by the provisions of Article 8280-103, Vernon's Revised Civil Statues, as amended, and Chapter 8504 Texas Special District Local Laws Code and pursuant to Article 16, Section 59, of the Texas Constitution.

2. LNVA owns and operates water supply facilities including the LNVA System and is authorized under the provisions of Certificates of Adjudication Nos. 06-4411, as amended, issued by the Texas Commission on Environmental Quality or its predecessor agencies to appropriate public waters of the State of Texas.

3. Customer proposes to purchase untreated water from LNVA for industrial and ancillary domestic use at Customer's plant.

4. Customer wants to purchase, and LNVA is willing to sell, raw water from the LNVA System subject to the terms and conditions of this Agreement.

5. Customer will take water from the LNVA System subject to all applicable rules and regulations of LNVA, state and federal agencies, and the water rights associated with the LNVA System.

AGREEMENT

For and in consideration of the mutual promises, covenants, obligations, and benefits described in this Agreement, LNVA and Customer agree as follows:

SECTION 1. DEFINITIONS.

1) "Agreement" shall mean this Industrial Raw Water Supply Contract including exhibits and any amendments thereto.

2) “Water” shall mean raw, untreated water from the LNVA System.

3) "Point(s) of Delivery" shall mean the point or points at which Customer withdraws Water from the LNVA System.

4) "Effective Date" shall mean the Effective Date of this Agreement. The Effective Date is _____ ____, 20__.

5) “LNVA Rate” the rate at which Customer will pay LNVA for Water taken from the LNVA System up to 1.05 times the Monthly Allocation of the Annual Contract Quantity as shown in Exhibit 5. The LNVA Rate may be modified from time to time as specified in Section 8 and will be published annually as set by the Board and is contained in Exhibit 2.

6) “Excess Water Rate” the rate at which Customer will pay LNVA for Water taken from the LNVA System in excess of 1.05 times the Monthly Contract Quantity shown in Exhibit 5. The Excess Water Rate may be modified from time to time as specified in Section 8, and will be published annually and is contained in Exhibit 2.

7) "Maximum Diversion Rate" shall mean [redacted] gallons per minute and is the maximum rate at which Customer may withdraw Water from the LNVA System as measured at the Point of Delivery.

8) "Annual Contract Quantity” shall be the quantity of Water described in Exhibit 5, unless modified pursuant to Section 7.

9) "Minimum Monthly Payment" shall be the Monthly Allocation of the Annual Contract Quantity as shown in Exhibit 5 times the LNVA Rate.

10) "Maximum Monthly Amount" shall mean 1.05 times Monthly Allocation of the Annual Contract Quantity for the Month as stated in Exhibit 5..

11) "LNVA System" shall mean the facilities owned and operated by LNVA used to provide Water to LNVA's customers including but not limited to water rights, reservoirs, pumps, canals, flumes, and meters.

12) "Fiscal Year" shall mean a one-year period beginning on January 1 and ending on December 31 of the same calendar year.

13) "Commission" shall mean the Texas Commission on Environmental Quality and its predecessor and successor agencies.

SECTION 2. TERM.

This Agreement shall be in effect from the Effective Date until _____ ___, 2028 ("Initial Term") and shall remain in force for successive one year periods unless and until terminated as provided in the next two succeeding sentences. Customer may terminate this Agreement as of the expiration date of the Initial Term or as of the expiration of any successive one year periods as noted above, by giving 12 months prior written notice to LNVA. LNVA's termination rights remain as identified in Section 22 of this Agreement.

SECTION 3. EQUITY.

Customer acknowledges that it will accrue no equity or any other interest in the LNVA System or any other assets of LNVA as a result of payment or other performance of Customer under this Agreement.

SECTION 4. VOLUME.

Subject to the limitations and conditions described in this Agreement and Certificate(s) of Adjudication No. 06-4411, as amended, LNVA agrees to sell Customer Water from the LNVA System at the Point of Delivery in an amount not to exceed the Annual Contract Quantity. Customer shall not take more than the Annual Contract Quantity without the prior written consent of LNVA.

SECTION 5. RATES AND COMPENSATION.

Customer agrees to pay LNVA at the times and in the manner hereinafter prescribed the following:

Beginning with the Effective Date, Customer shall pay, on a monthly basis, an amount equal to the greater of the Minimum Monthly Payment or the LNVA Rate and Excess Water Rate as described in Section 7 times the amount of Water actually taken during a month.

SECTION 6. BILLING AND PAYMENT.

A. As used in this Agreement, the term "month" shall mean a period beginning at 8:00 a.m. on the first day of each succeeding calendar month and ending at 8:00 a.m. of the first day of the following month or on the meter reading on or about the first of each month for the preceding month..

B.. LNVA shall render to Customer at Customer's offices at the address shown in the Signature Block of this agreement, (or such other place as designated by Customer), on or before the 10th day of each calendar month, a statement for the amount due under Section 5 for Water taken during the preceding month. Payment of such statement shall be due and payable at the LNVA's office at 7850 Eastex Freeway, Beaumont, TX 77708 (or such other place as designated by LNVA) on or before the 10th day after receipt of such statement.

SECTION 7. TAKING EXCESS WATER.

In the event Customer diverts more than Maximum Monthly Amount during a month, Customer shall pay LNVA for the Water used above the Maximum Monthly Amount at the Excess Water Rate.

SECTION 8. RATE ADJUSTMENT

At least once per year, the LNVA Board of Directors will review the LNVA Rate and the

Excess Water Rate. It is expressly understood and agreed that, LNVA, with 30 days notice, shall have the right at any time during the term of this Agreement to change the rates charged its customers for Water, and in the event, such rates are lowered, Customer shall have the advantage of same immediately when they become effective, and if said rates are made higher or different, the Customer hereby agrees to pay for Water under such higher or different rates, if taken.

SECTION 9. MEASURING EQUIPMENT.

LNVA will provide at Customer's sole cost for any metering and diversion equipment needed under this Agreement to measure and provide Water to Customer. LNVA has heretofore furnished and installed at the Point of Delivery of Water for Customer's operations, the meter or meters and other equipment so installed, and denominated herein as the Customer's meters. The meters so installed shall be and remain the property of LNVA and be operated and maintained by LNVA, and the same shall be used in determining the quantity of Water delivered to Customer under this Agreement and the following provisions in reference thereto shall apply:

LNVA shall arrange for the reading, calibrating and adjustment of the metering equipment. For the purpose of this contract the original record of readings of the meter or meters shall be the journal or other record book of LNVA in its office into which the records of the employees or agents of LNVA who takes meter readings is or may be transcribed and LNVA will, upon request, give Customer a copy of such journal or record book or permit Customer to have access to same at the office of LNVA during business hours.

Not more than once each calendar year, on a date as near the last day of the month as practicable, LNVA must calibrate its meters if requested by Customer to do so, in the presence of representatives of Customer, and the parties shall jointly observe any adjustments which are made to the meters, should such adjustments be necessary. If the customer has provided and installed check meters, the check meters shall also be calibrated by LNVA in the presence of representatives of Customer and the parties shall jointly observe any adjustments, should such adjustments be necessary. If Customer shall request LNVA to calibrate its meters and LNVA shall have given Customer notice of the time when any such calibration is to be made a sufficient length of time in advance to enable Customer to have its representatives present, and if representatives are not present

at the time set, LNVA may proceed with said calibration and adjustments in the absence of Customer's representatives.

If either party at any time observes a variation between the delivery meter or meters and the check meter or meters, if any such check meter or meter is or are installed, it will promptly notify the other party and the parties will then cooperate to secure an immediate calibration test and joint observation of any adjustment and the meter or meters shall then be adjusted to accuracy. Each party shall give to the other party forty-eight (48) hour notice of the time of all tests of meters so that the other party may conveniently have its representatives present.

If, upon any test, the percentage of inaccuracy of any metering equipment is found to be in excess of two percent (2%), registrations thereof shall be corrected for a period extending back to the time such inaccuracy occurred, if such time is ascertainable, and if not ascertainable, then back one-half (½) of the time elapsed since the last date of calibration. If, for any reason, any meters are out of service and/or out of repair so that the amount of Water delivered cannot be ascertained or computed from the readings thereof, the Water delivered through the period such meters are out of service and/or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available, using the first of the following methods which is feasible:

A. By using the registration of any check meter or meters if installed and accurately registering;

B. By correcting the error if the percentage of error is ascertainable by calibration test or mathematical calculation; or

C. By estimating the quantity of delivery by deliveries during preceding periods under similar conditions when the meter or meters was or were registering accurately.

Customer may, at its option and expense, install and operate check meters to check each LNVA meter but measurement of Water for the purpose of this agreement shall be by the LNVA's meters only, except in case hereinabove specifically provided to the contrary. Check meters shall be subject at all reasonable times to inspection and examination of LNVA, but the reading, calibration and adjustment shall be done only by Customer.

SECTION 10. DISPUTE REGARDING PAYMENT.

If Customer, at any time, disputes the amount to be paid by it to LNVA, Customer shall nevertheless promptly make the disputed payment or payments; but, if it is subsequently determined by agreement or court decision that the disputed amount paid by Customer should have been less or more, LNVA shall promptly revise and reallocate Customer' payments in a manner that Customer or LNVA will recover the amount due.

If a court, the Commission, or any federal or state regulatory authority finds that LNVA's rates or policies for delivering Water to Customer under this Agreement are unreasonable or otherwise unenforceable, LNVA has the option to terminate this Agreement without liability to Customer. By signing this Agreement, Customer stipulates and agrees that LNVA and its other customers will be prejudiced if Customer avoids the obligation to pay the rates for Water specified in this Agreement while accepting the benefits of obtaining Water from the LNVA. Nothing in this Agreement shall be construed as constituting an undertaking by LNVA to furnish Water to Customer except pursuant to the terms of this Agreement. If Customer initiates or participates in any proceeding regarding LNVA's rates and policies under this Agreement and advocates a position that is adverse to LNVA and LNVA prevails, Customer shall pay LNVA for its expenses, including attorneys' fees, in the proceeding within fifteen (15) days after LNVA's demand for payment. Customer stipulates and agrees that the rates and policies specified in this Agreement are just, reasonable, and without discrimination.

SECTION 11. POINT(S) OF DELIVERY.

A narrative description of the location of the Point(s) of Delivery and a vicinity map that shows the location of the Point(s) of Delivery are attached as Exhibit 1 to this Agreement. Customer shall provide, at Customer' expense, the facilities required to divert and transport Water to Customer' place of treatment and/or use.

SECTION 12. RESPONSIBILITY FOR WATER.

Once the Water supplied hereunder to Customer passes through the Point(s) of Delivery, Customer hereby agrees to save and hold LNVA harmless from all claims, demands, and causes of action which may be asserted by anyone on account of the quality, transportation and delivery of said Water. Further, in consideration for receiving the Water, Customer releases, waives, discharges and covenants not to sue the LNVA, The State of Texas, their

officers, agents, servants, or employees (hereinafter referred to as Releasees) from any and all liability, claims, demands, actions and causes of action whatsoever arising out of or related to any loss, damage, or injury, including death, that may be sustained by Customer or its employees, or any of the property belonging to Customer, whether caused by any sole or comparative negligence of the Releasees, or otherwise, for supplying and/or not supplying the Water or for any other cause.

SECTION 13. PURPOSE AND PLACE OF USE.

Customer shall use the Water purchased from LNVA under this Agreement for industrial purposes and ancillary domestic uses only at Customer's facilities, the location of which are shown by map attached as Exhibit 1 to this Agreement. Customer is hereby prohibited from selling raw Water to other users. If a facility purchasing Water from the LNVA System is sold to one or more entities, these entities and their successors can continue to use Water from the LNVA System upon notification of the LNVA and the signing of a LNVA Industrial Contract.

SECTION 14. COMMISSION RULES.

The effectiveness of this Agreement is dependent upon LNVA and Customer complying with the rules of the Commission, specifically including the rules codified as Texas Administrative Code, Title 30, §§ 295.101 and 297.101-.108 as of the effective date of this Agreement.

SECTION 15. REGULATORY REQUIREMENTS.

This Agreement is subject to all applicable federal, state, and local laws and any applicable ordinances, rules, orders, and regulations of any local, state, or federal governmental authority having jurisdiction. However, nothing contained in this Agreement shall be construed as a waiver of any right to question or contest any law, ordinance, order, rule, or regulation in any forum having jurisdiction, and LNVA and Customer each agree to make a good faith effort to support proposed laws and regulations which would be consistent with the performance of this Agreement in accordance with its terms.

SECTION 16. WATER CONSERVATION PLANS.

Customer shall cooperate with and assist LNVA in its efforts to develop and implement plans, programs, and rules to develop water resources and to promote practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve

the efficiency in use of water, or increase the recycling and reuse of water. LNVA's obligations under this Agreement shall be subject to Customer preparing and implementing a water conservation plan or water conservation measures, as well as implementing any water conservation plans and drought contingency plans adopted by LNVA and required or approved by the Commission, the Texas Water Development Board, or any other federal, state, or local regulatory authority with power to require or approve water conservation and drought contingency plans. Upon execution of this Agreement, Customer shall submit its' water conservation plan and/or water conservation measures to LNVA for its review and approval.

If Customer is granted the right to and does resell LNVA's Water, Customer shall require through a contract condition that any successive user of LNVA's Water must implement water conservation measures that comply with the State's, the LNVA's, and Customer' water conservation plans, programs, and rules.

SECTION 17. SOURCE AND ADEQUACY OF SUPPLY.

Water supplied by LNVA to Customer under this Agreement shall be from the LNVA System and from no other source, unless LNVA, at its sole discretion, decides to supply Water from another source available to LNVA. LNVA and Customer hereby agree that Customer shall have no right or entitlement to any portion of LNVA's Water in the LNVA System after the expiration of the term of this Agreement. LNVA will use its best efforts to remain in a position to furnish raw Water sufficient for the reasonable demands of Customer. LNVA's agreement to provide Water to Customer shall not be deemed a guarantee on LNVA's part that any particular quantity of Water will be available, and the quantity of Water taken shall at all times be subject to the right of LNVA to reduce said quantity of Water as the LNVA, in its sole judgment, may deem necessary in order to meet the LNVA's commitments under its existing contracts, comply with any order of any court or administrative body having appropriate jurisdiction, reduce flooding, or prevent injury.

LNVA has adopted a Water Conservation and Drought Contingency Plan. If Customer fails to implement LNVA's and its own Drought Contingency Plan when trigger conditions occur, LNVA's General Manager is authorized to institute rationing pursuant to any applicable wholesale Water contracts, including this Agreement, as well as to enforce any contractual, statutory, or common law

remedies available to LNVA necessary to protect the public welfare. LNVA's Water made available to Customer when Customer is not in compliance with LNVA's Water Conservation and Drought Contingency Plan will be reduced to the amount of Water that the LNVA's General Manager estimates would be necessary to satisfy Customer' demand if Customer was operating in compliance with both LNVA's and Customer' Drought Contingency Plans.

LNVA's rights to maintain and operate the reservoirs owned or used by LNVA and its Water transportation facilities and at any and all times in the future to impound and release Waters thereby in any lawful manner and to any lawful extent LNVA may see fit is recognized by Customer, and, except as otherwise provided herein, there shall be no obligation hereunder upon LNVA to release or not to release any impounded Waters at any time or to maintain any Waters at any specified level. Further, if the permitted yield of the LNVA System is reduced by Commission, LNVA reserves the right to decrease the Annual Quantity by a like percentage.

SECTION 18. RAW WATER QUALITY.

THE WATER WHICH THE LNVA OFFERS TO SELL TO CUSTOMER IS NON-POTABLE, RAW, AND UNTREATED. CUSTOMER HAS SATISFIED ITSELF THAT SUCH WATER IS SUITABLE FOR ITS NEEDS. THE LNVA EXPRESSLY DISCLAIMS ANY WARRANTY AS TO THE QUALITY OF THE RAW WATER OR SUITABILITY OF THE RAW WATER FOR ITS INTENDED PURPOSE. THE LNVA EXPRESSLY DISCLAIMS THE WARRANTIES OF MERCHANTABILITY AND FITNESS. CUSTOMER AGREES THAT ANY VARIATION IN THE QUALITY OR CHARACTERISTICS OF THE RAW WATER OFFERED FOR SALE AS PROVIDED BY THIS AGREEMENT SHALL NOT ENTITLE CUSTOMER TO AVOID OR LIMIT ITS OBLIGATION TO MAKE PAYMENTS PROVIDED FOR BY THIS AGREEMENT. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED IN THIS AGREEMENT. CUSTOMER ASSUMES FULL RESPONSIBILITY WITH RESPECT TO THE TREATMENT OF THE WATER PRIOR TO ITS DISTRIBUTION FOR HUMAN CONSUMPTION OR ANY OTHER USES.

SECTION 19. RETURN FLOWS.

Customer acknowledges that some of the Water supplied to it by LNVA may be returned to watercourses in the Neches River Basin, adjacent coastal basins, or associated bay and estuary

systems as return flows. LNVA and Customer believe that the most economical means for meeting some of the future demands of the LNVA's customers may involve the use of return flows to extend or enhance the yield of LNVA's Water supplies. Customer agrees that it will provide LNVA with a monthly report on the return flows resulting from Customer's use of Water under this Agreement and that LNVA has the right, subsequent to Customer' use of Water purchased from LNVA, to make whatever reuse of the Water LNVA deems desirable. Customer will receive no compensation, credit, or off-set for making return flows available to LNVA.

SECTION 20. OTHER CHARGES.

In the event that any sales or use taxes, or taxes, assessments, storage fees, storage assessments or charges of any similar nature are imposed on diverting, storing, delivering, gathering, impounding, taking, selling, using, or consuming the Water received by Customer from the LNVA System, the amount of the tax, assessment, or charge shall be borne by Customer, in addition to all other charges, and whenever LNVA shall be required to pay, collect, or remit any tax, assessment, or charge on Water received by Customer, then Customer shall promptly pay or reimburse LNVA for the tax, assessment, or charge in the manner directed by LNVA. Rates are set with fuel prices at a forecasted index price. Notwithstanding anything contained herein to the contrary, the LNVA reserves the right to charge to, and collect from BUYER a "fuel surcharge". The fuel surcharge will be an additional charge to BUYER from all other fees and charges charged and incurred under this Contract. It is acknowledged, understood agreed that LNVA's water rates are set with fuel prices at a forecasted index price, and sometimes these forecasted index prices are too low to cover anticipated LNVA costs. If fuel prices exceed the forecasted values, the excess fuel cost over the forecast will be prorated among all customers within their class based on proportionate use, and the proportional excess cost will be charged to BUYER as a fuel surcharge. BUYER hereby agrees to pay all LNVA fuel surcharges charged or incurred during the Contract term.

SECTION 21. DEFAULT IN PAYMENTS.

All amounts due and owing to LNVA by Customer shall, if not paid when due, bear interest at the Texas post-judgment interest rate set out in TEX. FIN. CODE ANN. § 304.003 (Vernon Supp.

1998), or any successor statute, from the date when due until paid, provided that such rate shall never be usurious or exceed the maximum rate permitted by law. If any amount due and owing by Customer to LNVA is placed with an attorney for collection, Customer shall pay to LNVA, in addition to all other payments provided for by this Agreement, including interest, LNVA's collection expenses, including court costs, attorneys' fees, and expenses. LNVA shall, to the extent permitted by law, suspend delivery of Water from the LNVA System to Customer if Customer remains delinquent in any payments due hereunder for a period of sixty (60) days and shall not resume delivery of Water while Customer is so delinquent and may, at its option, terminate this Agreement without further liability to Customer. LNVA shall pursue all legal remedies against Customer to enforce and protect the rights of LNVA, LNVA's customers, and the holders of LNVA's bonds. It is understood that the foregoing provisions are for the benefit of the holders of the LNVA's bonds.

SECTION 22. TERMINATION.

If LNVA decides to terminate this Agreement, as provided by this Agreement, LNVA shall deliver written notice of the decision to Customer. Customer shall discontinue taking Water from LNVA under this Agreement within one hundred eighty (180) days after LNVA delivers written notice to Customer.

SECTION 23. WAIVER AND AMENDMENT.

Failure to enforce or the waiver of any provision of this Agreement or any breach or nonperformance by LNVA or Customer shall not be deemed a waiver by Customer or LNVA of the right in the future to demand strict compliance and performance of any provision of this Agreement. Regardless of any provision contained in this Agreement to the contrary, any right or remedy or any default under this Agreement, except the right of LNVA to receive the Annual Payment which shall never be determined to be waived, shall be deemed to be conclusively waived unless asserted by a proper proceeding at law or in equity within two (2) years plus one (1) day after the occurrence of the default.

No officer or agent of LNVA or Customer is authorized to waive or modify any provision of this Agreement. No modifications to or rescission of this Agreement may be made except by a written document signed by LNVA's and Customer' authorized representatives.

SECTION 24. REMEDIES.

It is not intended hereby to specify (and this Agreement shall not be considered as specifying) an exclusive remedy for any default, but all such other remedies (other than termination) existing at law or in equity may be availed of by any party hereto and shall be cumulative. Recognizing, however, that failure in the performance of any party's obligations hereunder could not be adequately compensated in money damages alone, each party agrees in the event of any default on its part that each party shall have available to it the equitable remedy of mandamus and specific performance, in addition to any other legal or equitable remedies (other than termination) which also may be available to LNVA. Nothing in the agreement should be construed as a waiver or relinquishment of LNVA's statutory or governmental immunities.

SECTION 25. FORCE MAJEURE.

If, for any reason of force majeure, either LNVA or Customer shall be rendered unable, wholly or in part, to carry out its obligation under this Agreement, other than the obligation of Customer to make the payments required under the terms of this Agreement, then if the party shall give notice of the reasons in writing to the other party within a reasonable time after the occurrence of the event or cause relied on, the obligation of the party giving the notice, so far as it is affected by the "force majeure," shall be suspended during the continuance of the inability then claimed, but for no longer period. The term "force majeure," as used in this Agreement, shall mean acts of God, strikes, lockouts, or other industrial disturbances, acts of public enemy, orders or actions of any kind of government of the United States or of the State of Texas, or any civil or military authority, insurrections, riots, epidemics, land-slides, lightning, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraints of government and people, civil disturbances, explosions, breakage or accident to dams, machinery, pipelines, canals, or other structures, partial or entire failure of Water supply, including pollution (accidental or intentional), and any inability on the part of LNVA to deliver Water, or of Customer to receive Water, on account of any other cause not reasonably within the control of the party claiming the inability.

SECTION 26. NON-ASSIGNABILITY.

Customer understands and agrees that any assignment of rights or delegation of duties under

this Agreement is void without the prior written consent of LNVA.

SECTION 27. NO THIRD-PARTY BENEFICIARIES.

This Agreement shall inure only to the benefit of the parties hereto and third persons not privy hereto shall not, in any form or manner, be considered a third-party beneficiary of this Agreement. Each party hereto shall be solely responsible for the fulfillment of its customer contracts or commitments, and LNVA shall not be construed to be responsible for Customer' contracts or commitments by virtue of this Agreement or any provision contained herein.

SECTION 28. RELATIONSHIP OF THE PARTIES.

This Agreement is by and between LNVA and Customer and is not intended, and shall not be construed to create, the relationship of agent, servant, employee, partnership, joint venture, or association as between LNVA and Customer nor between LNVA and any officer, employee, contractor, or representative of LNVA. No joint employment is intended or created by this Agreement for any purpose. Customer agrees to so inform its employees, agents, contractors, and subcontractors who are involved in the implementation of or construction under this Agreement.

SECTION 29. SOLE AGREEMENT.

This Agreement constitutes the sole and only agreement of Customer and LNVA and supersedes any prior understanding or oral or written agreements between LNVA and Customer respecting the subject matter of this Agreement, including any oral or written agreement with LNVA that Customer obtained by assignment.

SECTION 30. SEVERABILITY.

The provisions of this Agreement are severable, and if, for any reason, any one or more of the provisions contained in this Agreement shall be held to be invalid, illegal, or unenforceable in any respect, the invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and this Agreement shall remain in effect and be construed as if the invalid, illegal, or unenforceable provision had never been contained in the Agreement.

SECTION 31. NOTICES.

All notices, payments, and communications (collectively "notices") required or allowed by

this Agreement shall be in writing and be given by hand-delivery or by depositing the notice in the United States mail, postage prepaid, registered or certified, with return receipt requested, and addressed to the party to be notified. Notice deposited in the mail in the previously described manner shall be conclusively deemed to be effective from and after the expiration of three (3) days after the notice is deposited in the mail. For purposes of notice, the addresses of and the designated representative for receipt of notice for each of the parties shall be shown above the signatures of the individuals who signed this Agreement on behalf of LNVA and Customer. Either party may change its address by giving written notice of the change to the other party at least fifteen (15) days before the change becomes effective.

SECTION 32. PLACE OF PERFORMANCE.

All acts performable under the terms of this Agreement and all amounts due under this Agreement, including, but not limited to, payments due under this Agreement or damages for the breach of this Agreement, shall be paid and be due in Jefferson County, Texas, said Jefferson County, Texas, being the place of performance agreed to by the parties to this Agreement. In the event that any legal proceeding is brought to enforce this Agreement or any provision hereof, the same shall be brought in Jefferson County, Texas.

SECTION 33. DUPLICATE ORIGINALS.

Customer and LNVA, acting under the authority of their respective governing bodies, shall authorize the execution of this Agreement in several counterparts, each of which shall be an original. Customer shall submit written evidence in the form of bylaws, charters, resolutions, or other written documentation specifying the authority of Customer's representative to sign this Agreement, which evidence shall be attached to this Agreement as Exhibit 3.

EFFECTIVE as of the date signed by the authorized representative of LNVA.

Lower Neches Valley Authority
7850 Eastex Freeway
Beaumont, TX 77708
Attn.: General Manager

BY:
TITLE: General Manager
DATE:

Company Name
Address
Attn:

BY:
TITLE:
DATE:

Exhibit 1 Location of Point(s) of Delivery

Use a Google Earth Picture of meter locations

Exhibit 2 Water Rates for the Year and Volume for the Year

Water Rate 2024……...$0.44 per 1000 gallons
Excess Water Rate for 2024…….$0.88 per 1000 gallons

Exhibit 3 Location Map of Service Area

Exhibit 4 Authorization to Execute on Behalf of the of Customer

[To be provided by Customer]
[Resolution, minutes or action authorizing contract]

Exhibit 5 Monthly Allocation of Annual Quantity

Monthly Allocation for the Year 2023	
Month	**Gallons of Water**
January	**0 gal**
February	**0 gal**
March	**0 gal**
April	**0 gal**
May	**0 gal**
June	**0 gal**
July	**0 gal**
August	**0 gal**
September	**0 gal**
October	**0 gal**
November	**0 gal**
December	**0 gal**
Total Annual 2023 Contract Quantity	**0 gal**

Monthly Allocation for the Year 2024	
Month	**Gallons of Water**
January	**0 gal**
February	**0 gal**
March	**0 gal**
April	**0 gal**
May	**0 gal**
June	**0 gal**
July	**0 gal**
August	**0 gal**
September	**0 gal**
October	**0 gal**
November	**0 gal**
December	**0 gal**
Total Annual 2024 Contract Quantity	**0 gal**

Monthly Allocation for the Year 2025	
Month	**Gallons of Water**
January	**0 gal**
February	**0 gal**
March	**0 gal**
April	**0 gal**
May	**0 gal**
June	**0 gal**
July	**0 gal**
August	**0 gal**
September	**0 gal**
October	**0 gal**
November	**0 gal**
December	**0 gal**
Total Annual 2025 Contract Quantity	**0 gal**

LOWER NECHES VALLEY AUTHORITY

ATTACHMENT B

LNVA Engineering Requirements for Intake Structures

LNVA Engineering Requirements for Intake Structures

The following requirements are provided as a resource for the Applicant. Please share this document and Attachment F – Engineering Plan Review Checklist with the intake structure design engineer for consideration prior to the initial plan submittal. These requirements do not cover all possible scenarios but serve to allow the Applicant to address some of the more common comments prior to the initial submittal.

Design Requirements

1) Levee Accessibility: Keep a low profile thereby allowing LNVA equipment to pass on the levee over the intake structure for maintenance. A minimum 16-foot travel width on the levee top is preferred.
2) Hydraulics: Minimize the structure's protrusion into the canal. This includes the temporary dewatering method required to construct the intake structure. Each situation is subject to review and approval, but generally the installation contractor will be allowed to construct a vertical wall cofferdam (e.g. sheetpile) extending from the levee bank to approximately 1/3 the distance across the canal to facilitate construction dewatering.
3) Bar Screens: Both floating and submerged vegetation are present in the canal system. LNVA recommends a 2-inch (2") bar screen be incorporated into the structure. This design has proven adequate for most intakes. The bar screen should be removable for maintenance and cleaning.
4) Sedimentation: Sedimentation build-up will occur. Ensure the intake structure bottom slab and pipe flowline are not susceptible to plugging from sedimentation. Successful existing designs include a curb on the floor in front of the bar screen to help prevent siltation from migrating into the intake pipe. Refer to Attachment C - Example Intake Structure Design.

Meter Requirements

1) Provide a fully wetted electromagnetic meter (e.g. Endress-Hauser: Promag W400). Mount the meter using a flanged spool piece for ease in serviceability.
2) The custody transfer meter shall be fully accessible to LNVA staff. Metering locations are preferably fenced off from the rest of the facility with a direct access gate provided from the LNVA right-of-way. Per the raw water contract, the custody transfer meter is purchased and installed by the Customer, but the meter then becomes property of LNVA to maintain and calibrate.
3) Provide a lockable and fully operational meter bypass. The meter becomes property of LNVA and may need to be removed from service for maintenance or calibration. The bypass assembly will allow for uninterrupted service in the event the meter must be pulled for any reason.

Backfill Requirements

1) Refer to Attachment D - LNVA Standard Levee Penetration Backfill Detail for backfill requirements related to pipe penetration(s) through the LNVA levee. The provided detail should be included on relevant plan sheet(s).
2) All general levee backfill shall be made utilizing heavy clay material (USCS Classification CH; Plasticity Index > 50) compacted in maximum 8-inch (8") loose lifts to 95% of standard proctor density. At LNVA's sole discretion, native levee embankment may be used as backfill material in the levee zone. Under no circumstances shall a typical "60/40" mix be used as backfill in the levee zone or in LNVA ROW.

LNVA
LOWER NECHES VALLEY AUTHORITY

Plan Requirements

1) Submit the following sheets at a minimum:
    a. Project Cover Sheet.
    b. Site Plan showing the location of the intake structure and meter location.
    c. Plan and profile of the proposed intake structure.
    d. Structural details for the proposed intake structure.
    e. Meter piping assembly, including bypass assembly.
    f. Construction sequencing plan, including dewatering plan and applicable details.

2) Refer to Attachment F – Engineering Plan Review Checklist for an indication of typical items to be checked during LNVA's plan review.

3) Coordinate with LNVA's ROW Manager for access to survey the water surface elevation at the proposed intake location. The surveyor should document the date and time the survey was performed. Provide this data to LNVA as soon as possible so that LNVA can provide the canal water level operational criteria for use in plan development.

4) Insert the following signature block onto each sheet subject to LNVA review and approval.

    APPROVED BY:

    _____
    Lower Neches Valley Authority Date

5) Include the following notes displayed in a prominent area on at least one (1) plan sheet related to civil construction of the structure.

    LNVA General Construction Notes

    a. LNVA 24-Hr Water Level Emergency contact is (409) 892-1805.

    b. The contractor(s) performing work in LNVA right-of-way (ROW) must provide satisfactory proof of insurance naming LNVA as an additional insured to LNVA ROW Manager, Kevin Gomez at kevin.gomez@LNVA.dst.tx.us, prior to performing any work on LNVA ROW.

    c. The Customer shall contact LNVA's ROW Manager, Kevin Gomez at (409) 892-4011, a minimum of 48-hours prior to mobilizing onto LNVA ROW. No work shall take place on LNVA ROW without prior notice or without approved plans.

    d. The Customer is responsible for notifying LNVA of any hold-point inspections required as a condition of its permit a minimum of 48-hours in advance, including for the following activities:
        i. Installation of temporary cofferdam in canal (all types).
        ii. Excavation of levee embankment.
        iii. Installation and backfill of pipe penetration through levee.
        iv. Intake formwork and reinforcing steel inspection (prior to concrete placement). Water-stop material should be installed for inspection at all planned cold joints.

    e. The Customer will be responsible for providing as-built record drawings of all plan sheets previously approved by LNVA prior to receiving water delivery.

f. The Contractor shall verify site elevations against the following established LNVA benchmark. Notify LNVA immediately of any apparent discrepancies prior to proceeding with work.

Monument ID: _____

Elevation: _____ NAVD88, Geoid 12B

Location Name: _____

GPS Location: _____ °N _____ °W

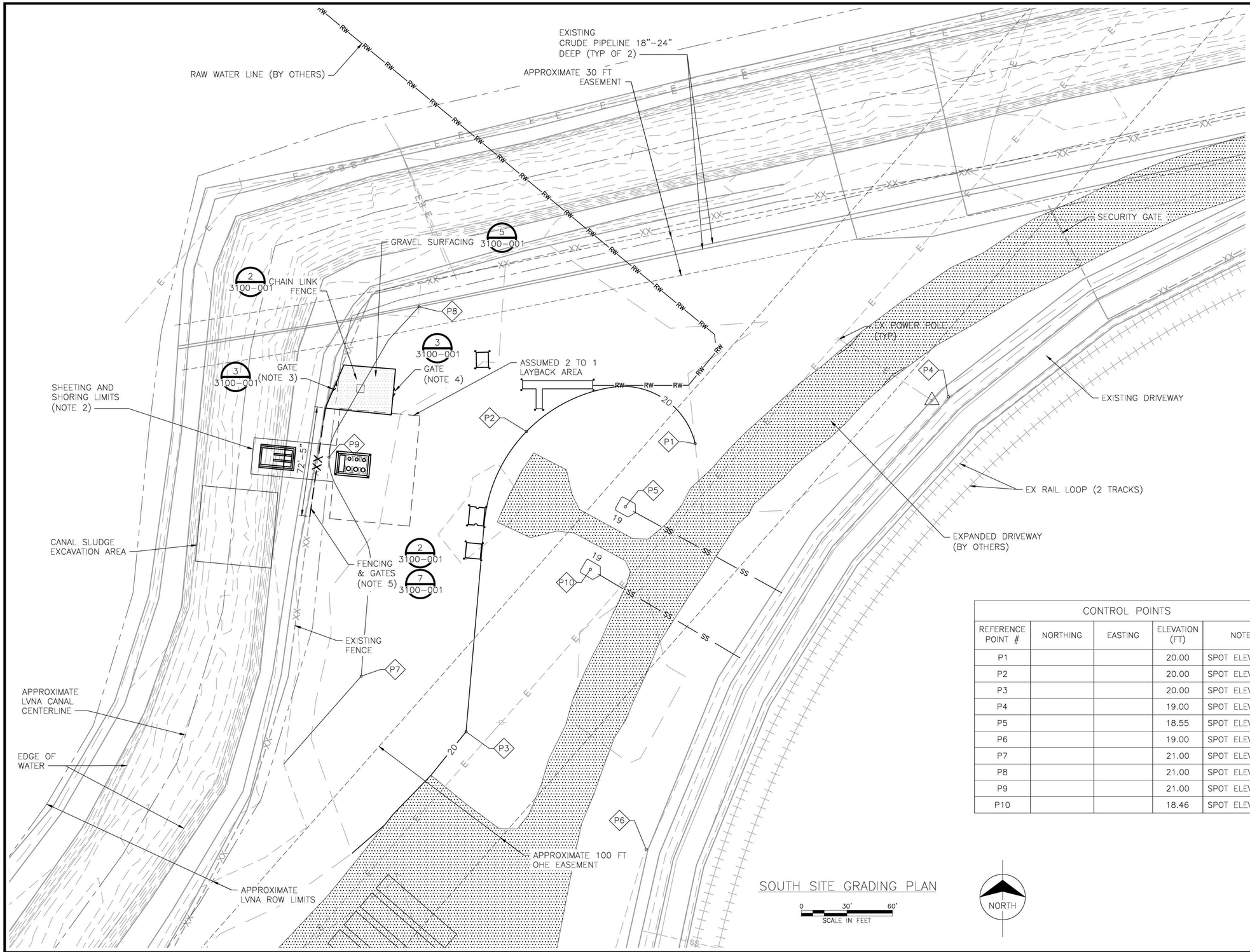
(Information to be provided by LNVA)

g. All references to water surface elevations provided by LNVA were obtained on the basis of NAVD88, Geoid 12B. Correlation of local or plan elevations is the sole responsibility of the Customer. LNVA makes no representations as to the accuracy of correlations made by Customer or its representative. In the event LNVA specifies a minimum clearance or separation regarding construction, that minimum clearance or separation shall govern in the event of a discrepancy between LNVA and Customer elevations as shown on the plans. Customer shall solely bear the cost for adjustments necessitated by any apparent discrepancy.

LNVA
LOWER NECHES VALLEY AUTHORITY

ATTACHMENT C

Example Intake Structure Design



NOTES:

1. REFER TO SECTION 31 50 00 FOR SITE PREPARATION AND EARTHWORK REQUIREMENTS.
2. REFER TO SECTION 31 41 00 FOR TEMPORARY EXCAVATION SUPPORT SYSTEM REQUIREMENTS.
3. REMOVE 30 FT SECTION OF EXISTING CHAIN LINK FENCE. INSTALL SINGLE SWING GATE FOR LNVA METER ACCESS.
4. INSTALL SINGLE SWING GATE FOR OWNER METER ACCESS.
5. REMOVE AND REPLACE EXISTING 8–FT CHAIN LINK FENCE. INSTALL DOUBLE SWING GATE.

CONTROL POINTS				
REFERENCE POINT #	NORTHING	EASTING	ELEVATION (FT)	NOTE
P1			20.00	SPOT ELEVATION
P2			20.00	SPOT ELEVATION
P3			20.00	SPOT ELEVATION
P4			19.00	SPOT ELEVATION
P5			18.55	SPOT ELEVATION
P6			19.00	SPOT ELEVATION
P7			21.00	SPOT ELEVATION
P8			21.00	SPOT ELEVATION
P9			21.00	SPOT ELEVATION
P10			18.46	SPOT ELEVATION

SOUTH SITE GRADING PLAN

0 30' 60'
SCALE IN FEET

NORTH

NOTES/REFERENCE DRAWINGS

NOTE: THIS DOCUMENT IS PROVIDED FOR REFERENCE ONLY TO DISPLAY A TYPICAL INTAKE DESIGN EMPLOYED ON THE LNVA CANAL SYSTEM. ELEVATIONS AND DIMENSIONS SHOWN HEREON ARE STRICTLY FOR REFERENCE AND SHALL NOT BE ASSUMED FOR USE ON OTHER PROJECTS.

REV	DESCRIPTION	BY	DATE	CHK'D	APP'D

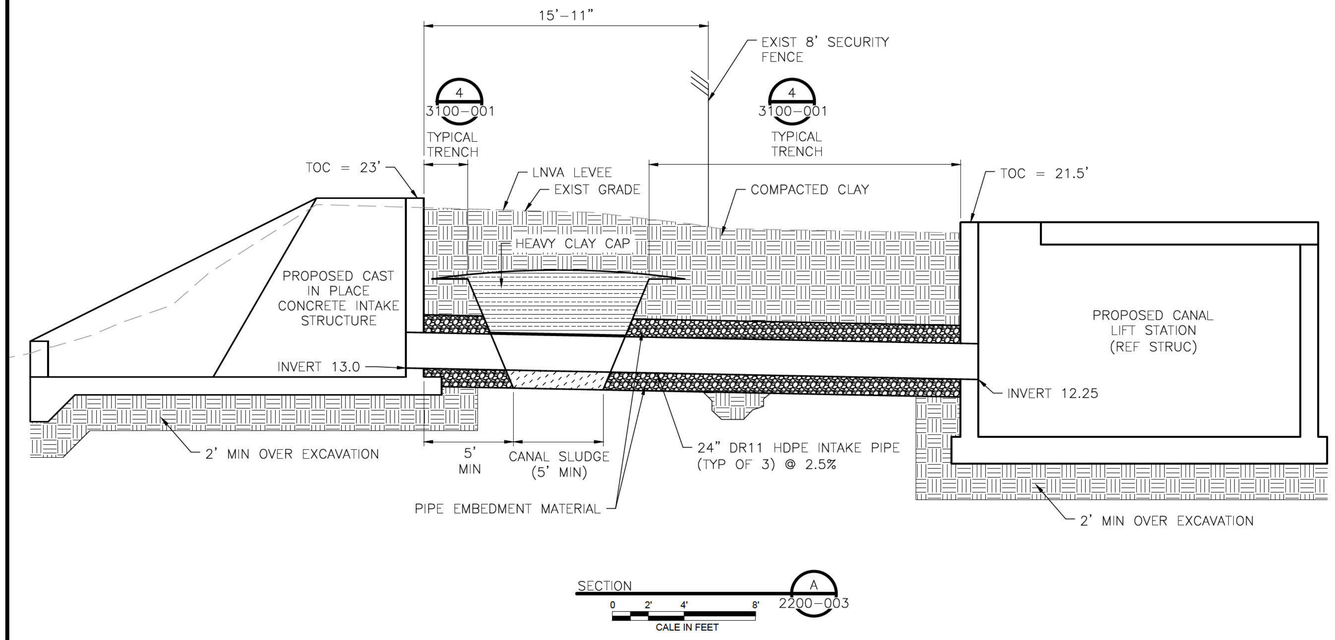
FACILITY CODE OR ACCOUNT NO:
CONSTRUCTION YEAR:

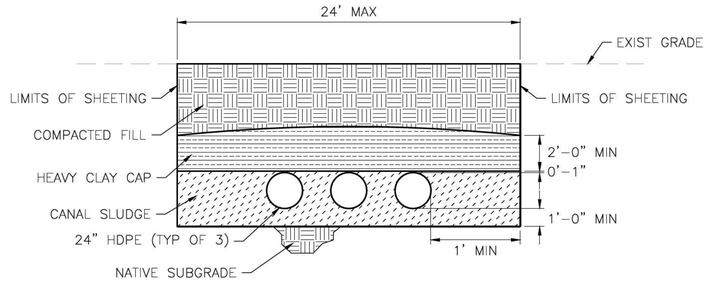
	BY	DATE
DRAWN		
CHECK		
APPROVED		

SCALE: NTS

CIVIL GRADING PLAN
SOUTH SITE

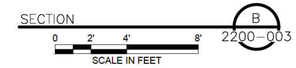
OLD DRAWING NO.

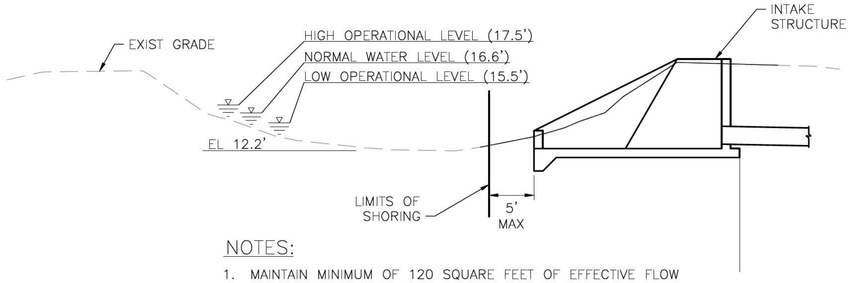




BACKFILL WITHIN THE LNVA CANAL AND BERM SHALL BE AS FOLLOWS:

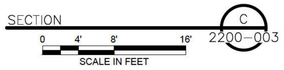
1. INSTALL COMPACTED FILL (HEAVY CLAY) IN 6 TO 8-INCH LOOSE LIFTS TO 1-FT BELOW THE PIPE PENETRATION.
2. BACKFILL AROUND PIPE WITH CANAL SLUDGE TAKEN FROM THE BOTTOM OF THE EXISTING CANAL TO AT LEAST 1-INCH ABOVE TOP OF PIPE. AN LNVA REPRESENTATIVE SHALL BE ON SITE TO WITNESS AND ASSIST WITH BACKFILLING PROCEDURE.
3. BACKFILL OVER THE CANAL SLUDGE LAYER WITH A HEAVY CLAY CAP A MINIMUM OF 2-FT ABOVE THE TOP OF PIPE. INSTALLATION IN LIFTS IS NOT REQUIRED DUE TO THE INSTABILITY OF THE UNDERLYING CANAL SLUDGE.
4. ONCE THE HEAVY CLAY CAP IS INSTALLED, INSTALL COMPACTED FILL (HEAVY CLAY) UNTIL THE LEVEE IS BROUGHT BACK UP TO ITS EXISTING GRADE.
5. LEVEE EXCAVATION SPOILS MAY BE REUSED FOR BACKFILL SUBJECT TO INSPECTION BY LNVA'S REPRESENTATIVE TO DETERMINE ITS SUITABILITY.
6. REFER TO SECTION 31 20 50 FOR ADDITIONAL BACKFILL AND COMPACTION REQUIREMENTS.
7. HEAVY CLAY AND COMPACTED FILL MAY BE EXCAVATED MATERIAL FROM LEVEE EXCAVATION UPON APPROVAL BY LNVA.

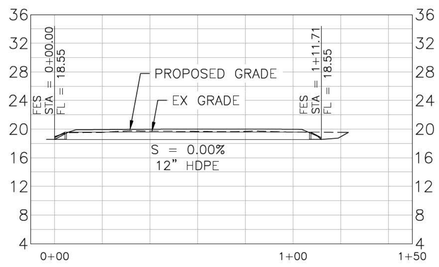


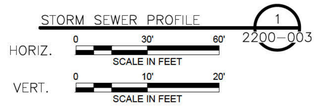


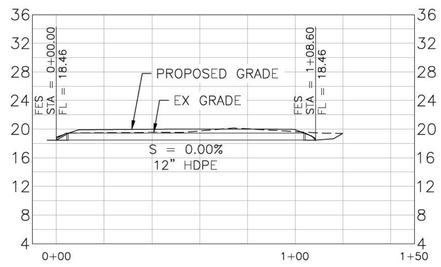
NOTES:

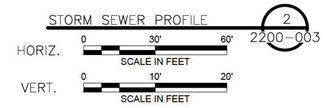
1. MAINTAIN MINIMUM OF 120 SQUARE FEET OF EFFECTIVE FLOW AREA WITH 0.2' MAX HEAD RISE AT NORMAL WATER LEVEL











NOTES/REFERENCE DRAWINGS

NOTE: THIS DOCUMENT IS PROVIDED FOR REFERENCE ONLY TO DISPLAY A TYPICAL INTAKE DESIGN EMPLOYED ON THE LNVA CANAL SYSTEM. ELEVATIONS AND DIMENSIONS SHOWN HEREON ARE STRICTLY FOR REFERENCE AND SHALL NOT BE ASSUMED FOR USE ON OTHER PROJECTS.

REV	DESCRIPTION	BY	DATE	CHK'D	APP'D

FACILITY CODE OR ACCOUNT NO:
CONSTRUCTION YEAR:

	BY	DATE
DRAWN		
CHECK		
APPROVED		

SCALE: NTS

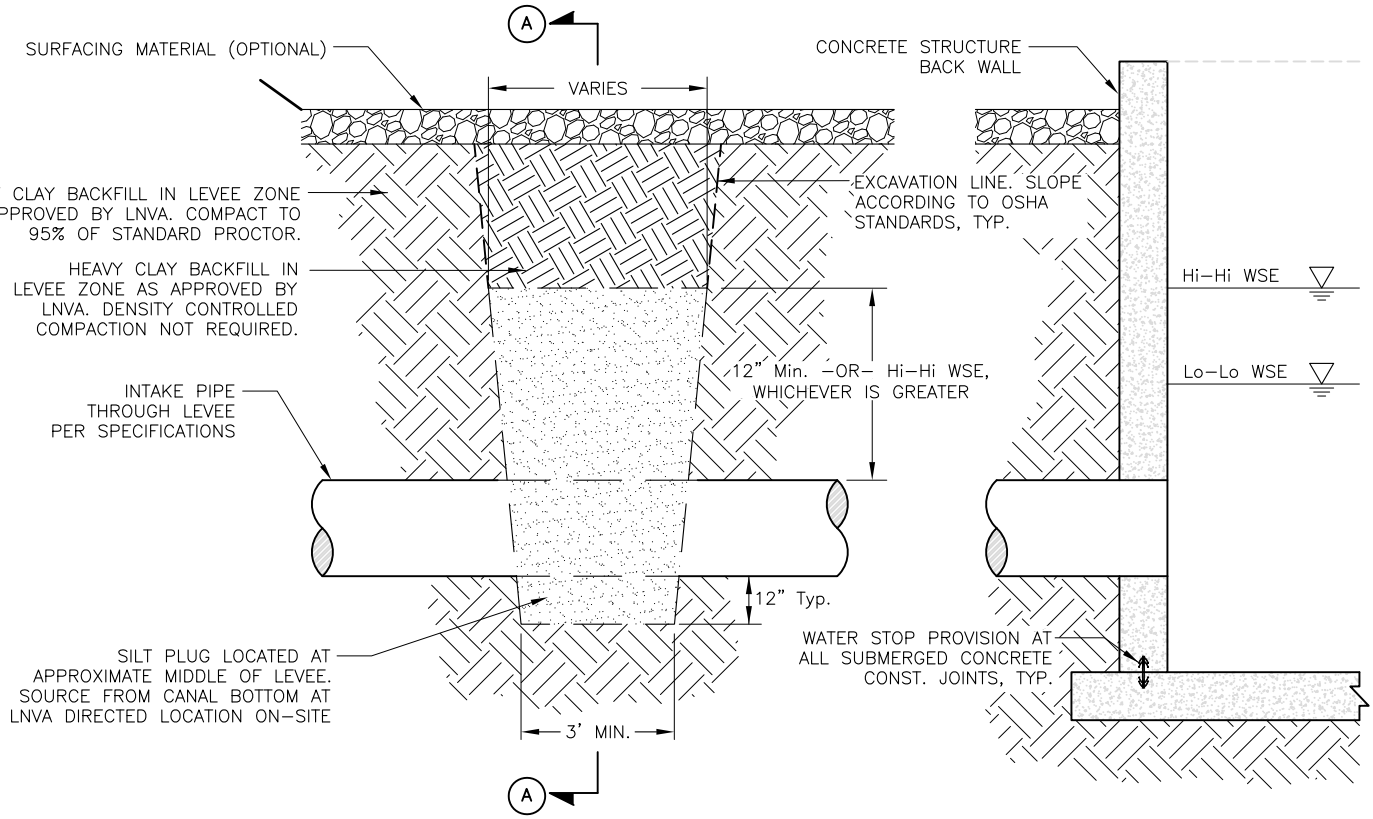
CIVIL SECTIONS & PROFILES
SOUTH SITE

OLD DRAWING NO.

LNVA
LOWER NECHES VALLEY AUTHORITY

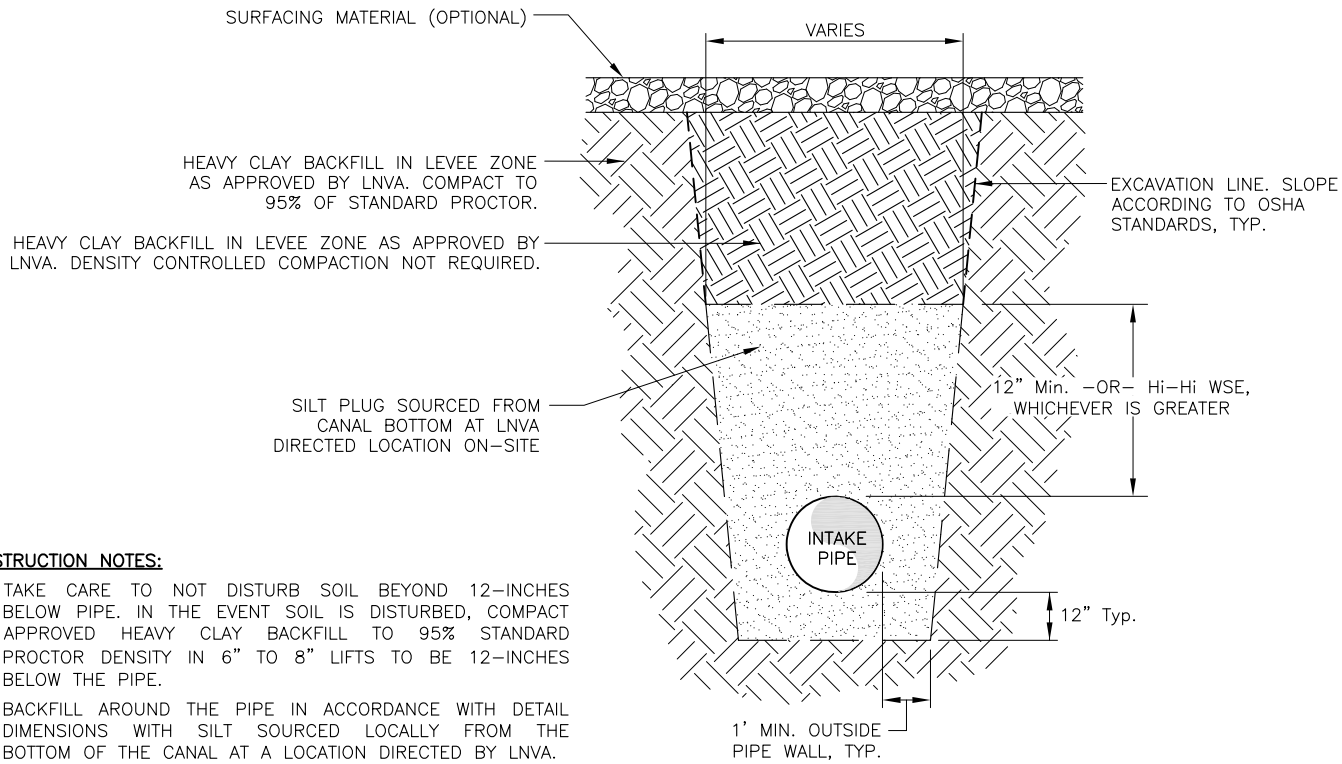
ATTACHMENT D

LNVA Standard Levee Penetration Backfill Detail



LEVEE PENETRATION BACKFILL DETAIL

SCALE: 1/4"=1'



A SECTION VIEW

SCALE: 1/4"=1'

CONSTRUCTION NOTES:

1. TAKE CARE TO NOT DISTURB SOIL BEYOND 12–INCHES BELOW PIPE. IN THE EVENT SOIL IS DISTURBED, COMPACT APPROVED HEAVY CLAY BACKFILL TO 95% STANDARD PROCTOR DENSITY IN 6" TO 8" LIFTS TO BE 12–INCHES BELOW THE PIPE.
2. BACKFILL AROUND THE PIPE IN ACCORDANCE WITH DETAIL DIMENSIONS WITH SILT SOURCED LOCALLY FROM THE BOTTOM OF THE CANAL AT A LOCATION DIRECTED BY LNVA.
3. PLACE A HEAVY CLAY CAP OVER THE SILT PLUG BACKFILL. DENSITY CONTROLLED BACKFILL IS NOT REQUIRED FOR THIS STEP DUE TO THE NATURE OF THE UNDERLYING SILT PLUG.
4. BACKFILL ALL LEVEE AREAS NOT OVER TOP OF THE SILT PLUG TO 95% STANDARD PROCTOR DENSITY IN 6" to 8" LIFTS TO RETURN LEVEE SURFACE TO ITS PRE–EXISITNG GRADE. MATERIAL SHALL BE HEAVY CLAY. CONTRACTOR MAY RE–USE NATIVE MATERIAL IF APPROVED AT SOLE DISCRETION OF LNVA'S REPRESENTATIVE.

LNVA
LOWER NECHES VALLEY AUTHORITY

LNVA
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ATTACHMENT E

LNVA Canal Water Quality Report

LOWER NECHES VALLEY AUTHORITY

CANAL WATER QUALITY REPORT

Sample ID: D240111341
Location: Neches Main Canal @ Office
Date: 01/11/2024
Time: 0935
Source: Neches River

Secchi: 0.26 m
Pressure: 29.8 in Hg
Weather: Partly Cloudy
Wind: Strong
Days Since Precipitation: 3

Laboratory Notes:

Parameter	Recent Values	Min	-1σ†	Historical Average*	+1σ†	Max
Alkalinity, Total (mg/L)	23	10	15	22	28	45
Chloride (mg/L)	14.3	5	8.4	13.2	18.1	79.5
Color, True (pcu)	35	5	33	83	134	257
Conductivity (µS/cm)	146	38	99	132	164	382
DO (% saturation)	92	27	63	75	88	109
DO (mg/L)	10	2.3	5	6.8	8.5	12.5
Hardness (mg/L)	44	5	27	34	41	89
Iron (mg/L)	1.28	0.02	1.07	1.66	2.25	6.65
Manganese (mg/L)	0.11	0.02	0.05	0.09	0.13	0.4
pH (units)	7.2	5.4	6.4	6.9	7.3	8.1
Silica (mg/L)	12.5	0.1	7.3	9.7	12.1	18
Sulfate (mg/L)	22.4	5	11.9	18.2	24.5	36.2
Tannins & Lignins (mg/L)	0.6	0.2	0.5	1.2	2	4.1
Temperature (°C)	11.5	5.9	15.3	22.1	28.9	33.5
TOC (mg/L)	6.9	0.5	7.3	12	16.7	29.4
TSS (mg/L)	16.8	5	8.3	18.7	29.1	94
Turbidity (NTU)	20.5	9	18	29.1	40.3	177

9	Calcium (mg/L)	calculated as mole weight of calcium carbonate
95	TDS (mg/L)	calculated at 0.65 conductivity

* Historical values are from March 13th, 2007 to January 11th, 2023 at Neches Main Canal @ Office.
† A number of parameters do not follow normal distributions, such as Tannins & Lignins, TSS, and True Color
‡ Max conductance date coincides with Hurricane Ike.

LNVA
LOWER NECHES VALLEY AUTHORITY

ATTACHMENT F

Engineering Plan Review Checklist

LOWER NECHES VALLEY AUTHORITY

Engineering Plan Review Checklist

The plans shall be reviewed for general conformance to the following points. This list is not all-inclusive and additional comments or questions may be derived from the review of the plans.

General

- ☐ Plan sheets are signed and sealed by a registered professional engineer authorized to practice in the State of Texas.
- ☐ The LNVA signature block is included on each sheet subject to LNVA review and approval. Sheets requiring specific approval include but are not limited to the civil site plan, structure plan/profile and details, temporary dewatering plan, and meter piping layout(s).
- ☐ The LNVA General Construction notes are included in a prominent area on at least one (1) plan sheet related to civil construction of the structure.
- ☐ The plans exhibit evidence the canal was cross-sectioned by topographic surveying at the proposed structure location.

Documentation

- ☐ LNVA's canal is identified will ALL of the following:
  - Canal name, flow direction, ROW/easement width, ROW/easement county deed records information.
- ☐ GPS coordinates of proposed intake are provided on relevant plan sheet(s). Additionally, provide GPS coordinates for meter location if not placed in vicinity of intake structure.
- ☐ Date and time of local topographic surveying of the canal water surface elevation is indicated to allow LNVA to verify the accuracy of local Hi-Hi and Lo-Lo water surface elevations depicted.
- ☐ The plans indicate LNVA "Hi-Hi" and "Lo-Lo" water surface elevations using this specific terminology. (i.e. generic "high" and "low" terms are not acceptable as they have distinctly different meanings from "Hi-Hi" and "Lo-Lo" on the LNVA canal system.)

Access & Maintenance

- ☐ Existing levee top width is called out at the location of the proposed structure. Preferably the levee width is depicted in a profile section view.
- ☐ The proposed intake structure section leaves a minimum of 16-feet of unobstructed access behind the structure for maintenance access purposes.

Intake Structure

- ☐ The intake structure should protrude above the surrounding levee top by a minimum of 12-inches or otherwise be clearly and permanently marked to help prevent accidental damage by maintenance equipment.
- ☐ The intake structure walls incorporate a water-stop design at all concrete cold joints (typically a specific-purpose pre-formed rubber or PVC material).
- ☐ The intake is oriented perpendicular to the flow of the canal, or as close to perpendicular as possible in the event of difficult canal geometry.
- ☐ The material of construction is relatively permanent and not likely to cause concern for prolonged maintenance in the canal system (e.g. concrete intake structure).
- ☐ The intake design incorporates the use of a removable bar screen (max. 2" openings) for prevention of floating and submerged debris from entering the intake chamber.
- ☐ The intake design incorporates the use of a floor curb at the mouth of the structure (typ. 2-ft tall) to help prevent migration of silt into the intake.
- ☐ The plans depict a strategy for canal water management during construction. Previous successful water management strategies have included a temporary sheetpile cofferdam around the proposed structure. When possible, temporary sheetpile cofferdams should project no further than 1/3 the distance across the canal water surface.

- ☐ No site improvement drainage flows into the canal.
- ☐ No process water or filter backwash system is recirculated back into the canal.
- ☐ LNVA's standard 'Levee Penetration Backfill Detail' is provided and referenced in appropriate location(s).
- ☐ If intake design includes a "wet well" on customer's site, ensure top wall of wet well exceeds LNVA Hi-Hi water surface elevation by a minimum of 12-inches.

Metering

- ☐ Meter configuration includes a lockable and fully operational bypass to allow for meter replacement or repair.
- ☐ Meter type, size, and model are provided. LNVA requires a fully wetted electromagnetic meter. LNVA recommends the Endress Hauser Promag W400 series meter mounted to a manufactured spool piece for ease of removal for maintenance.
- ☐ Plans provide unobstructed access to the meter location for LNVA personnel and the proposed access path is indicated on the plans. If proposed access path requires traversing across property not owned by LNVA, then a duly recorded access easement is provided complete with County Deed Records information.
- ☐ Meter location is gated off from main facility in a manner to avoid LNVA personnel from having to check-in or participate in lengthy safety briefings to gain access to meter location.

Minin, Brita

From: Ryan Ard <ryan.ard@lnva.dst.tx.us>
Sent: Monday, August 12, 2024 12:23 PM
To: 'John Gilbreath'; Heath Thompson
Cc: Kevin Gomez; Scott Hall; Minin, Brita
Subject: RE: Cogen Project - LNVA Water Supply

John,

Please accept this email as acknowledgement that your team has begun discussions with LNVA re: a raw water intake structure. LNVA will continue to work with your team to approve an intake design meeting LNVA's construction criteria.

Thank You,

Ryan A. Ard, PE
Engineering Manager
409.892.4011 office
409.550.4320 mobile
www.lnva.dst.tx.us

From: John Gilbreath <jgilbreath@aosenergypartners.com>
Sent: Monday, August 12, 2024 11:07 AM
To: Heath Thompson <heath.thompson@lnva.dst.tx.us>
Cc: Ryan Ard <ryan.ard@lnva.dst.tx.us>; Kevin Gomez <kevin.gomez@lnva.dst.tx.us>; Scott Hall <scott.hall@lnva.dst.tx.us>; Minin, Brita <Brita.Minin@terracon.com>
Subject: Re: Cogen Project - LNVA Water Supply

LNVA Team -

Could you send me an email confirming that we've begun correspondence with you all on a potential water intake structure? We need an email confirmation of such in order to file our wastewater permit application. Copying our environmental consultant Terracon here as well - they are assisting us with the wastewater permit application process. Please and thank you.

On Tue, Mar 5, 2024 at 12:09 PM Heath Thompson <heath.thompson@lnva.dst.tx.us> wrote:

> John,
>
> I also had an early discussion with Gerald Hill (Gerald.Hill@motiva.com).
>
> Thanks,
>
> Heath
>
> ---
>
> From: Ryan Ard <ryan.ard@lnva.dst.tx.us>
> Sent: Tuesday, March 5, 2024 11:26 AM
> To: 'John Gilbreath' <jgilbreath@aosenergypartners.com>; Heath Thompson <heath.thompson@lnva.dst.tx.us>
> Cc: Jeff.Mulder <jeff.mulder@kiewit.com>; scott.gawer <scott.gawer@kiewit.com>; Kevin Gomez

<kevin.gomez@lnva.dst.tx.us>; Scott Hall <scott.hall@lnva.dst.tx.us>
Subject: RE: Cogen Project - LNVA Water Supply

John,

My notes have Jennifer McKee on the meeting list for Motiva (Jennifer.Mckee@Motiva.com). The meeting was organized by Keith Zotzky of Arceneaux, Wilson, & Cole (local engineering firm).

Ryan A. Ard, PE

Engineering Manager

409.892.4011 office

409.550.4320 mobile

www.lnva.dst.tx.us

From: John Gilbreath <jgilbreath@aosenergypartners.com>
Sent: Tuesday, March 5, 2024 10:45 AM
To: Heath Thompson <heath.thompson@lnva.dst.tx.us>
Cc: Jeff.Mulder <jeff.mulder@kiewit.com>; scott.gawer <scott.gawer@kiewit.com>; Kevin Gomez <kevin.gomez@lnva.dst.tx.us>; Ryan Ard <ryan.ard@lnva.dst.tx.us>; Scott Hall <scott.hall@lnva.dst.tx.us>
Subject: Re: Cogen Project - LNVA Water Supply

Heath and LNVA Team -

Do you guys recall who specifically at Motiva you were talking to about the new intake project shown in the attached? The Motiva folks we are working with (Ryan Miller, Chad Allen, Kevin Taylor, Ben Miller, and a few others) are not aware of such project and we're just collectively trying to figure out whether we can utilize that location. We suspect that the party that approached was someone previously looking at developing the project (prior to us being awarded development rights), but just want to make sure. Please let us know. Thank you.

On Thu, Feb 15, 2024 at 4:41 PM Heath Thompson <heath.thompson@lnva.dst.tx.us> wrote:

> John,
>
> Noon works with us. Let's meet at the Saltgrass Steakhouse in Port Arthur for lunch as its closer to the site.
>
> Thanks,
>
> Heath
>
> ---
>
> **From:** John Gilbreath <jgilbreath@aosenergypartners.com>
> **Sent:** Thursday, February 15, 2024 4:30 PM
> **To:** Heath Thompson <heath.thompson@lnva.dst.tx.us>
> **Cc:** Jeff.Mulder <jeff.mulder@kiewit.com>; scott.gawer <scott.gawer@kiewit.com>; Kevin Gomez <kevin.gomez@lnva.dst.tx.us>; Ryan Ard <ryan.ard@lnva.dst.tx.us>; Scott Hall <scott.hall@lnva.dst.tx.us>
> **Subject:** Re: Cogen Project - LNVA Water Supply
>
> Could we actually plan for Noon on Friday instead? We could either meet at your office or somewhere nearby for lunch and then maybe head to the site? Let us know if that works for you.
>
> On Thu, Feb 15, 2024 at 11:59 AM Heath Thompson <heath.thompson@lnva.dst.tx.us> wrote:
>
> > That time frame works for us. Where do you want to meet?
> >
> > Heath
> >
> > Sent from my iPhone
> >
> > > On Feb 15, 2024, at 10:26 AM, John Gilbreath <jgilbreath@aosenergypartners.com> wrote:

Heath - If it works for you guys, we were thinking of trying to do the site visit on the water intake around 11 am or 11:30 that day. Does that work for your team?

On Wed, Feb 14, 2024 at 11:28 AM Heath Thompson <heath.thompson@lnva.dst.tx.us> wrote:

> John,
>
> Friday the 23rd will be better for us for a site visit. Please let us know what time works best.
>
> Thanks,
>
> Heath
>
> ---
>
> **From:** John Gilbreath <jgilbreath@aosenergypartners.com>
> **Sent:** Wednesday, February 14, 2024 9:32 AM
> **To:** Heath Thompson <heath.thompson@lnva.dst.tx.us>; Jeff.Mulder <jeff.mulder@kiewit.com>; Scott.Gawer <scott.gawer@kiewit.com>; Kevin Gomez <kevin.gomez@lnva.dst.tx.us>; Ryan Ard <ryan.ard@lnva.dst.tx.us>; Scott Hall <scott.hall@lnva.dst.tx.us>
> **Subject:** Fwd: Cogen Project - LNVA Water Supply
>
> Heath -
>
> If you could provide us the contract in Word form, that would be helpful. Also, I think we're at a point where we're beginning to dial in the location of the intake. We're actually going to be in town next week (Thursday 2/22 and Friday 2/23) and wanted to see if your team has any availability to meet. We could try to make that happen on site so we can go look at the physical location of the intake. Or we're happy to come to your offices. Let us know what might work for you.

---------- Forwarded message ---------
From: Heath Thompson <heath.thompson@lnva.dst.tx.us>
Date: Fri, Jan 12, 2024 at 1:38 PM
Subject: RE: Cogen Project - LNVA Water Supply
To: John Gilbreath <jgilbreath@aosenergypartners.com>
Cc: Jeff.Mulder <jeff.mulder@kiewit.com>, Scott.Gawer <scott.gawer@kiewit.com>, Kevin Gomez <kevin.gomez@lnva.dst.tx.us>, Ryan Ard <ryan.ard@lnva.dst.tx.us>, Scott Hall <scott.hall@lnva.dst.tx.us>

John,

Its good to hear from you, and I hope y'all had a good holiday season. To answer (a) and (b), I've attached a document that further helps walk you through the process and includes the most recent water quality results. The requirements and process are generally the same as described on the phone call. Ryan put this document together after speaking with y'all the first time. Should you need the contract in a word document, Kevin can provide that to you. For (c), we have water level sensors on different segments of our canal system, and each has an operational Lo/Hi level for alarm notification. When you start to dial in the location of your intake, we can correlate those operational ranges. I believe we discussed a withdrawal point on our Gulf Canal, southwest of Motiva's location. In general, our canal levels can fluctuate about one foot; however, we ask you design the intake as low as you can (within reason) in case of an extreme emergency. We'd be happy to discuss in further detail.

Thank you,

Heath Thompson, P.E.

Water Supply Manager

Lower Neches Valley Authority

Cell – (409) 937-4139

Office – (409) 892-4011

From: John Gilbreath <jgilbreath@aosenergypartners.com>
Sent: Thursday, January 11, 2024 3:24 PM

To: Heath Thompson <heath.thompson@lnva.dst.tx.us>
Cc: Jeff.Mulder <jeff.mulder@kiewit.com>; Scott.Gawer <scott.gawer@kiewit.com>; Kevin Gomez <kevin.gomez@lnva.dst.tx.us>; Ryan Ard <ryan.ard@lnva.dst.tx.us>
Subject: Re: Cogen Project - LNVA Water Supply

Heath and LNVA Team -

Happy New Year. I hope you are all doing well. We have been engaged by Motiva to proceed with FEL-3 work on the cogeneration project noted below on an exclusive basis. We'd like to begin by getting an update on the information you previously provided. In particular, we'd like to (a) make sure we have the latest and greatest water quality data (guessing you have a more recent report than the attached), (b) understand whether or not any of the LNVA Canal Intake Guidelines or the overall process that you described have changed, and (c) understand fluctuations in reservoir levels so we can appropriately factor into the intake design. We'd also like to begin zeroing in on a specific location for the intake - we'll provide some options as a starting point. Please let us know how soon you can provide feedback on items (a) and (b) above. Happy to jump on the phone as well if you'd like. Just let us know. Looking forward to working with you all on this project.

On Tue, May 10, 2022 at 4:17 PM Heath Thompson <heath.thompson@lnva.dst.tx.us> wrote:

> John,
>
> Attached are the LNVA intake guidelines, as well as our latest water quality report. Please let me know if you have any questions with these or need the actual data.
>
> To simply recap the approval process:
>
> 1. You'll submit an intake design to LNVA staff. We do want to see the dewatering plan.
> 2. When LNVA staff approves the design, we'll issue an informal design approval, usually via email.
> 3. Submit a signed contract to present to the LNVA Board for approval (meet on the 3rd Tuesday of the month), which is used as our formal approval.
> 4. Once the contract is approved, LNVA staff will give the 'ok' to begin construction.

Thank you,

Heath Thompson, P.E.

Water Supply Manager

Lower Neches Valley Authority

Cell – (409) 937-4139

Office – (409) 892-4011

From: John Gilbreath <jgilbreath@aosenergypartners.com>
Sent: Monday, May 9, 2022 4:00 PM
To: Heath Thompson <heath.thompson@lnva.dst.tx.us>; Jeff.Mulder <jeff.mulder@kiewit.com>; Kevin Gomez <kevin.gomez@lnva.dst.tx.us>; Scott.Gawer <scott.gawer@kiewit.com>; John Gilbreath <jgilbreath@aosenergypartners.com>
Subject: Re: Cogen Project - LNVA Water Supply

Heath - Thanks for chatting with us last week. Were you going to send over the design guidelines for the intake structures? I think you mentioned some reference doc that you could share with us. Please let us know.

On Thu, May 5, 2022 at 12:01 PM <jgilbreath@aosenergypartners.com> wrote:

> Heath / Kevin -
>
> See below a list of questions / topics that we'd like to discuss on the call this afternoon:
>
> 1. After further calculations / design changes, we'll actually require capacity of up to 5,550 gpm (not 4000 gpm) instantaneous. It will be lower on average but that is the max flow rate. Will there be any restrictions on that number (continuous, weekly, monthly, yearly)?
> 2. Do you have any intake design recommendations (depth, size, location) that you can provide?

3. How have customers crossed the adjoining road and canal? Bore? Bridge?
4. Is power available at the facility to run the pumps? Or must we also provide power?
5. What does the application process look like? How long does it typically take? What deliverables do you need from us to get started / along the way?

Cogen Project - LNVA Water Supply

When	Thu May 5, 2022 2pm – 2:30pm Central Time - Chicago
Where	Via Google Meet (map)
Joining info	Join with Google Meet meet.google.com/vzx-yuzg-pxq Join by phone (US) +1 916-836-2651 (PIN: 909876320) More phone numbers
Who	• jgilbreath@aosenergypartners.com - organizer • kevin.gomez@lnva.dst.tx.us • scott.gawer@kiewit.com • heath.thompson@lnva.dst.tx.us • jeff.mulder@kiewit.com

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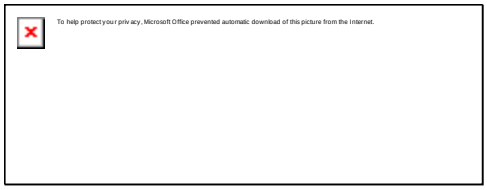

John Gilbreath
Managing Partner, AOS Energy Partners

402-926-9760
jgilbreath@aosenergypartners.com
www.aosenergypartners.com

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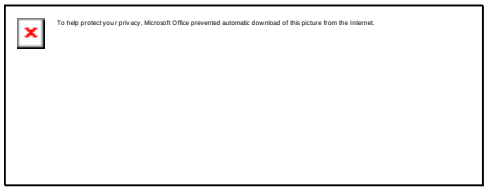

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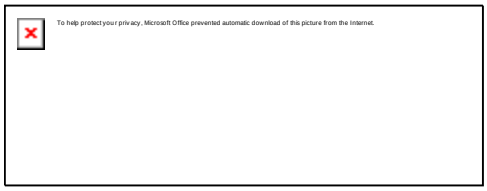

John Gilbreath
Managing Partner, AOS Energy Partners

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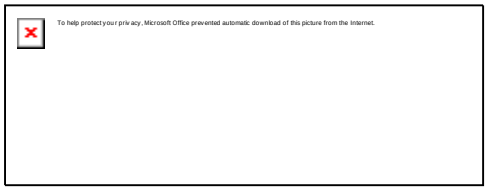

John Gilbreath
Managing Partner, AOS Energy Partners

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jgilbreath@aosenergypartners.com
www.aosenergypartners.com

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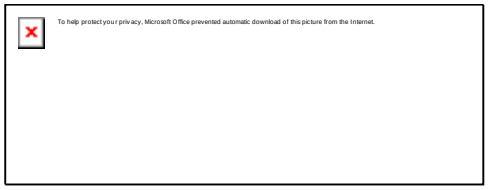

John Gilbreath
Managing Partner, AOS Energy Partners

402-926-9760
jgilbreath@aosenergypartners.com
www.aosenergypartners.com

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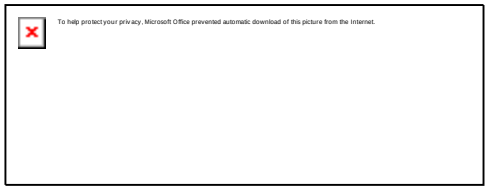
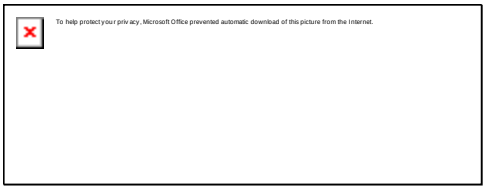


John Gilbreath
Managing Partner, AOS Energy Partners

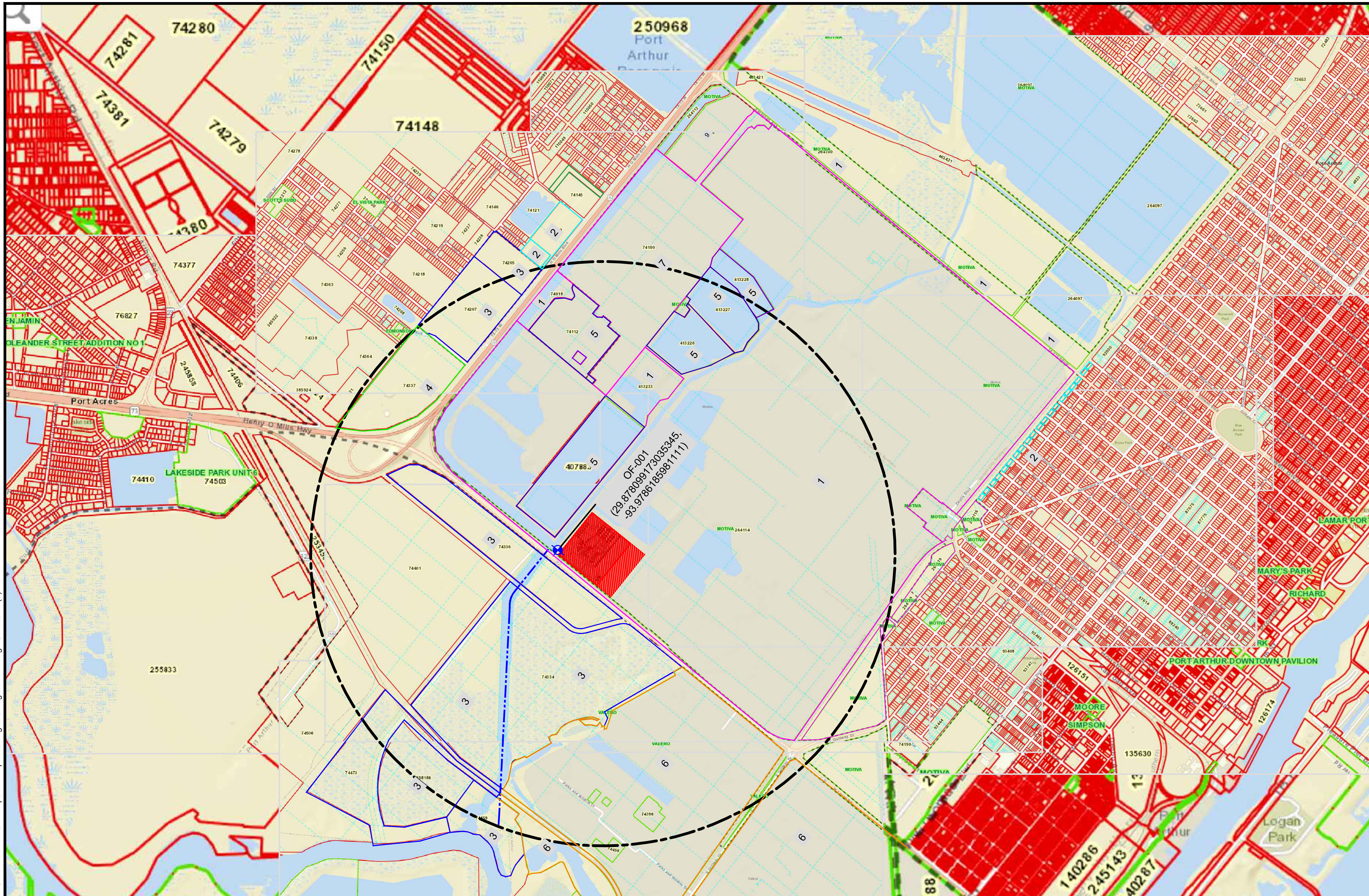
402-926-9760
jgilbreath@aosenergypartners.com
www.aosenergypartners.com

--



John Gilbreath
Managing Partner, AOS Energy Partners
402-926-9760
jgilbreath@aosenergypartners.com
www.aosenergypartners.com

ATTACHMENT 07-
One-Mile Adjacent
Land Owner Map



LEGEND

- WASTEWATER TREATMENT PLANT LOCATION
- PROPERTY BOUNDARY
- OUTFALL

1	264115	MOTIVA ENTERPRISES LLC
5	413226	AFTON CHEMICAL ADDITIVES CORP
1	413233	MOTIVA ENTERPRISES LLC
5	74113	AFTON CHEMICAL ADDITIVES CORP
1	264119	MOTIVA ENTERPRISES LLC
1	264114	MOTIVA ENTERPRISES LLC
9	74018	MOTIVA CHEMICALS LLC
1	264100	MOTIVA ENTERPRISES LLC
5	407883	AFTON CHEMICAL ADDITIVES CORP
5	413227	AFTON CHEMICAL ADDITIVES CORP
5	413228	AFTON CHEMICAL ADDITIVES CORP
9	74100	MOTIVA CHEMICALS LLC
5	74112	AFTON CHEMICAL ADDITIVES CORP
6	264181	PREMCOR REFINING GROUP INC
1	264123	THEMOTIVA ENTERPRISES LLC
1	264121	MOTIVA ENTERPRISES LLC
1	264117	MOTIVA ENTERPRISES LLC
1	264116	MOTIVA ENTERPRISES LLC
2	92587	CITY OF PORT ARTHUR
2	92573	CITY OF PORT ARTHUR
2	92520	CITY OF PORT ARTHUR
2	92509	CITY OF PORT ARTHUR
2	92428	CITY OF PORT ARTHUR
2	92419	CITY OF PORT ARTHUR
2	92312	CITY OF PORT ARTHUR
2	92302	CITY OF PORT ARTHUR
2	92169	CITY OF PORT ARTHUR
9	74019	MOTIVA CHEMICALS LLC
3	74336	TEXACO DOWNSTREAM PROP INC
3	74334	TEXACO DOWNSTREAM PROP INC
3	74401	TEXACO DOWNSTREAM PROP INC
7	74119	JEFFERSON CO DRAINAGE DIST 7

0 1000 2000

APPROXIMATE SCALE: 1"=2000'

C:\Users\psbelloni\OneDrive - Terracon Consultants Inc\Desktop\cad template\Fengate\Fengate WW.dwg : OWNERS (2)

REV.	DATE	BY	DESCRIPTION

Terracon

11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043
PH. (713) 690-8989 FAX. (713) 690-8787

N

ONE-MILE ADJACENT LAND OWNER MAP

PORT ARTHUR COGENERATION, LLC
PORT ARTHUR COGENERATION PROJECT

HOUSTON 2555 Savannah Ave, Port Arthur, TX 77640 TEXAS

DESIGNED BY:	BEM
DRAWN BY:	PSB
APPVD. BY:	RDC
SCALE:	AS SHOWN
DATE:	07/03/2024
JOB NO.	92247254
ACAD NO.	Fengate WW.dwg
SHEET NO.:	1 OF 1

ATTACHMENT 08-
Land Owner List and Mailing Labels

MOTIVA ENTERPRISES LLC - 264115
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP - 413226
1000 N SOUTH ST PASADENA TX 77503-2516

MOTIVA ENTERPRISES LLC - 413233
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP - 74113
1000 N SOUTH ST PASADENA TX 77503-2516

MOTIVA ENTERPRISES LLC - 264119
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264114
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA CHEMICALS LLC - 74018
ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264100
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP - 407883
1000 N SOUTH ST PASADENA TX 77503-2516

AFTON CHEMICAL ADDITIVES CORP - 413227
1000 N SOUTH ST PASADENA TX 77503-2516

AFTON CHEMICAL ADDITIVES CORP - 413228
1000 N SOUTH ST PASADENA TX 77503-2516

MOTIVA CHEMICALS LLC - 74100
ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP - 74112
1000 N SOUTH ST PASADENA TX 77503-2516

PREMCOR REFINING GROUP INC THE - 264181
ACCOUNTS PAYABLE PO BOX 690110 SAN ANTONIO TX 78269-0110

MOTIVA ENTERPRISES LLC - 264123
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264121
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264117
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264116
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

CITY OF PORT ARTHUR - 92587
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92573
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92520
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92509
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92428
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92419
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92312
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92302
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92169
PO BOX 1089 PORT ARTHUR TX 77641-1089

MOTIVA CHEMICALS LLC - 74019
ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727

TEXACO DOWNSTREAM PROP INC - 74336
PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285

TEXACO DOWNSTREAM PROP INC - 74334
PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285

MOTIVA ENTERPRISES LLC - 264115
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP - 413226
1000 N SOUTH ST PASADENA TX 77503-2516

MOTIVA ENTERPRISES LLC - 413233
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP - 74113
1000 N SOUTH ST PASADENA TX 77503-2516

MOTIVA ENTERPRISES LLC - 264119
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264114
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA CHEMICALS LLC - 74018
ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264100
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP - 407883
1000 N SOUTH ST PASADENA TX 77503-2516

AFTON CHEMICAL ADDITIVES CORP - 413227
1000 N SOUTH ST PASADENA TX 77503-2516

AFTON CHEMICAL ADDITIVES CORP - 413228
1000 N SOUTH ST PASADENA TX 77503-2516

MOTIVA CHEMICALS LLC - 74100
ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP - 74112
1000 N SOUTH ST PASADENA TX 77503-2516

PREMCOR REFINING GROUP INC THE - 264181
ACCOUNTS PAYABLE PO BOX 690110 SAN ANTONIO TX 78269-0110

MOTIVA ENTERPRISES LLC - 264123
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264121
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264117
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

MOTIVA ENTERPRISES LLC - 264116
PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727

CITY OF PORT ARTHUR - 92587
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92573
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92520
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92509
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92428
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92419
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92312
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92302
PO BOX 1089 PORT ARTHUR TX 77641-1089

CITY OF PORT ARTHUR - 92169
PO BOX 1089 PORT ARTHUR TX 77641-1089

MOTIVA CHEMICALS LLC - 74019
ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727

TEXACO DOWNSTREAM PROP INC - 74336
PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285

TEXACO DOWNSTREAM PROP INC - 74334
PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285

TEXACO DOWNSTREAM PROP INC - 74401 PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

ATTACHMENT 09- Cross Referenced Landowner List

Prop ID	Property	Property Use	Legal Desc	Owner1	Owner1 Address	Owner ID
264115	D4	UNDEVELOPE	TRACT 6 M(	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
413226	F6	RESERVOIRS	PT LTS 3-5-	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516	216163
413233	F6	RESERVOIRS	PT L5 B6 R(	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
74113	F5	OPERATING L	PT LTS 4&5	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516	216163
264119	C2	COMMERCIAI	TRACT 10 N	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
264114	D4	UNDEVELOPE	TRACT 5 M(	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
74018	F5	OPERATING L	PT BK 6 RG	MOTIVA CHEMICALS LLC	ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727	696207
264100	F5	OPERATING L	TRACT 2 M(	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
407883	F6	RESERVOIRS	PT LTS 5-6-	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516	216163
413227	F6	RESERVOIRS	PT LTS 2-3-	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516	216163
413228	F6	RESERVOIRS	PT LTS 1&8	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516	216163
74100	F5	OPERATING L	PT BK 6 RG	MOTIVA CHEMICALS LLC	ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727	696207
74112	D4	UNDEVELOPE	PT LTS 4&5	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516	216163
264181	F5	OPERATING L	TRACT 23	PREMCOR REFINING GROUP INC THE	ACCOUNTS PAYABLE PO BOX 690110 SAN ANTONIO TX 78269-0110	440869
264123	D4	UNDEVELOPE	TRACT 13 N	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
264121	C2	COMMERCIAI	TRACT 11 N	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
264117	C2	COMMERCIAI	TRACT 8 M(	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
264116	D4	UNDEVELOPE	TRACT 7 M(	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727	399421
92587	CC	VACANT CITY	LT 2 & LT 3	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
92573	CC	VACANT CITY	LT 2 & LT 3	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
92520	CC	VACANT CITY	LT 2 & LT 3	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
92509	CC	VACANT CITY	LT 2 & LT 3	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
92428	CC	VACANT CITY	LT 2 & LT 3	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
92419	CC	VACANT CITY	LT 2 & LT 3	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
92312	CC	VACANT CITY	LT 2 & LT 3	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
92302	CC	VACANT CITY	N 12 1/2' O	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
92169	CC	VACANT CITY	ALL OF LTS	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089	450415
74019	D4	UNDEVELOPE	PT L6-7-8 B	MOTIVA CHEMICALS LLC	ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727	696207
74336	D4	UNDEVELOPE	TR 42-2(83.	TEXACO DOWNSTREAM PROP INC	PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285	299075
74334	D1	5+ ACRES PA	TR 42-A(67	TEXACO DOWNSTREAM PROP INC	PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285	299075
74401	D1	5+ ACRES PA	PT TR 1-42(	TEXACO DOWNSTREAM PROP INC	PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285	299075

ATTACHMENT 10-
Photograph Log

PHOTOGRAPH LOG

Photograph #1 Description: Location of proposed facility (currently vacant land) Location: 29.878239, -93.978117 Facing SE Date: 07/11/2024	

Photograph #2 Description: Location of proposed outfall location Location: 29.878233, -93.978250 Facing SW Date: 07/11/2024	

Photograph #3 Description: View of downstream area of proposed outfall. Location: 29.878233, -93.978250 Facing SW Date: 07/11/2024	

Photograph #4 Description: View of downstream area of proposed outfall. Location: 29.878233, -93.978250 Facing NW Date: 07/11/2024	

Photograph #5 Description: View of downstream area of proposed outfall. (View from top of bank) Location: 29.878233, -93.978250 Facing SW Date: 07/11/2024	

Photograph #6 Description: View of downstream area of proposed outfall. (View from top of bank) Location: 29.878233, -93.978250 Facing NW Date: 07/11/2024	

Photograph #7 Description: View of upstream area of proposed outfall. Location: 29.878233, -93.978250 Facing NE Date: 07/11/2024	

Photograph #8 Description: View of upstream area of proposed outfall. (View from top of bank) Location: 29.878233, -93.978250 Facing N Date: 07/11/2024	

Photograph #9 Description: View of upstream of proposed outfall. (View from HW 82) Location: 29.877300, -93.978300 Facing SW Date: 07/11/2024	

Photograph #10 Description: Proposed intake structure location**.** Location: 29.904978, -93.968989 Facing NE Date: 07/11/2024	

Photograph #11 Description: Downstream of proposed intake structure location**.** Location: 29.904978, -93.968989 Facing NW Date: 07/11/2024	

Photograph #12 Description: Downstream of proposed intake structure location Location: 29.904978, -93.968989 Facing W Date: 07/11/2024	

Photograph #13

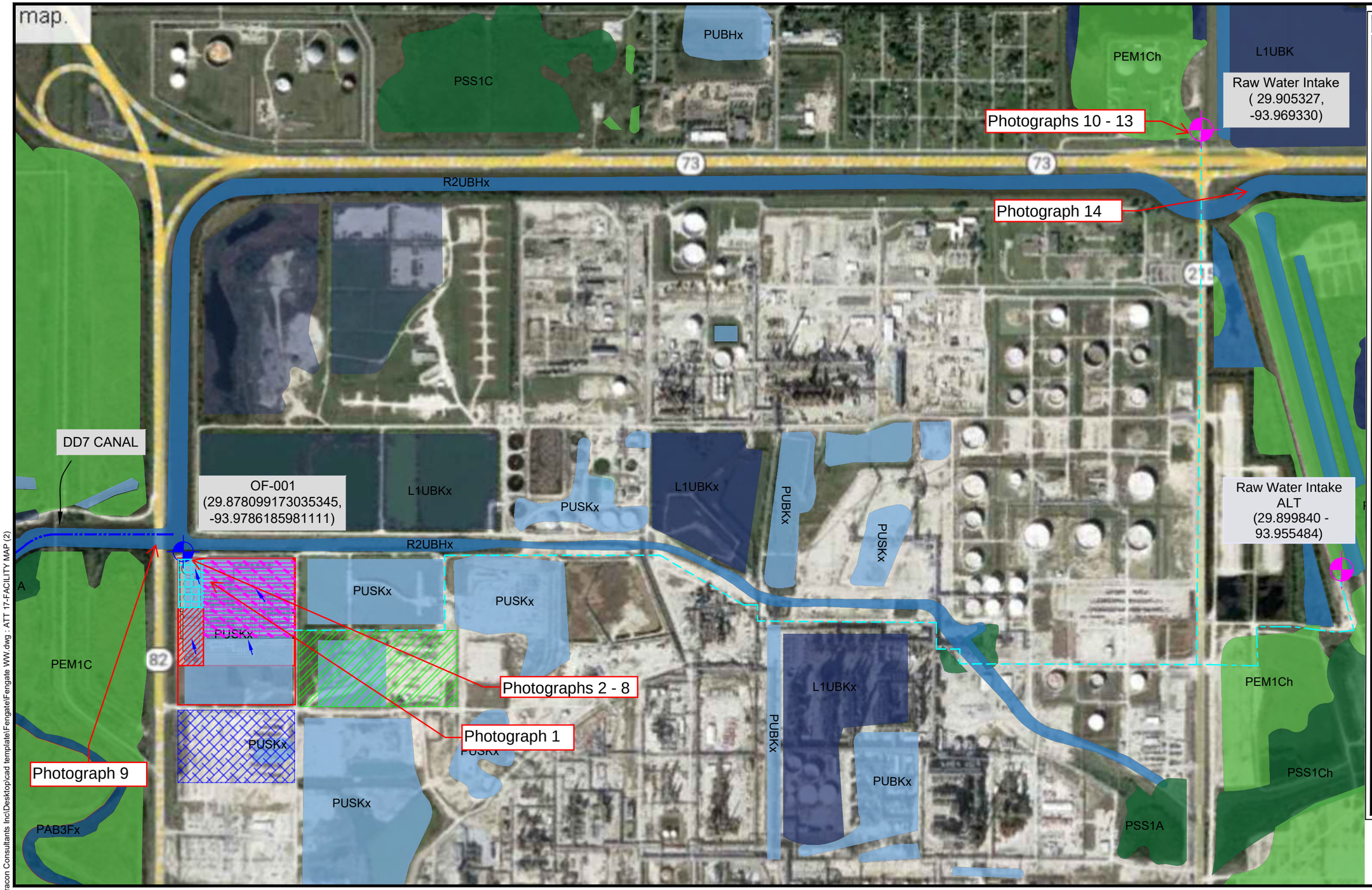
Description:
Upstream of proposed intake structure location (source water continues under freeway through culverts).

Location:
29.904978, -93.968989
Facing NE

Date: 07/11/2024

Photograph #14 Description: Opposite of freeway, upstream of proposed intake structure location Location: 29.904844, -93.968861 Facing E Date: 07/11/2024	

map.



LEGEND

- WASTEWATER TREATMENT PLANT
- POWER GENERATION AREA
- CHEMICAL STORAGE AREA
- LAYDOWN AREA
- PARKING AREA
- PROPERTY BOUNDARY
- OUTFALL
- FLOW DIRECTION
- RAW WATER INTAKE
- RAW WATER LINE INTAKE
- RECEIVING WATER

WETLAND

- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- LAKE
- RIVERINE

0 450 900

APPROXIMATE SCALE: 1"=900'

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REV.	DATE	BY	DESCRIPTION

Terracon
11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043
PH. (713) 690-8989 FAX. (713) 690-8787

ATTACHMENT 17 - SITE FACILITY MAP

PORT ARTHUR COGENERATION, LLC

PORT ARTHUR COGENERATION PROJECT

2555 Savannah Ave, Port Arthur, TX 77640

HOUSTON TEXAS

DESIGNED BY:	BEM
DRAWN BY:	PSB
APPVD. BY:	RDC
SCALE:	AS SHOWN
DATE:	07/03/2024
JOB NO.	92247254
ACAD NO.	Fengate WW.dwg
SHEET NO.:	1 OF 1

ATTACHMENT 11-
SPIF

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

FOR AGENCIES REVIEWING DOMESTIC OR INDUSTRIAL TPDES WASTEWATER PERMIT APPLICATIONS

TCEQ USE ONLY:

Application type: ____Renewal ____Major Amendment ____Minor Amendment ____New

County: _____ Segment Number: _____

Admin Complete Date: _____

Agency Receiving SPIF:

_____ Texas Historical Commission _____ U.S. Fish and Wildlife

_____ Texas Parks and Wildlife Department _____ U.S. Army Corps of Engineers

This form applies to TPDES permit applications only. (Instructions, Page 53)

Complete this form as a separate document. TCEQ will mail a copy to each agency as required by our agreement with EPA. If any of the items are not completely addressed or further information is needed, we will contact you to provide the information before issuing the permit. Address each item completely.

Do not refer to your response to any item in the permit application form. Provide each attachment for this form separately from the Administrative Report of the application. The application will not be declared administratively complete without this SPIF form being completed in its entirety including all attachments. Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at WQ-ARPTeam@tceq.texas.gov or by phone at (512) 239-4671.

The following applies to all applications:

1. Permittee: Port Arthur Cogeneration, LLC

   Permit No. WQ00 Click here to enter text EPA ID No. TX Click here to enter text

   Address of the project (or a location description that includes street/highway, city/vicinity, and county):

   Inside of the Motiva Enterprises Refinery located at 2555 Savannah Ave. Port Arthur Texas 77060

Provide the name, address, phone and fax number of an individual that can be contacted to answer specific questions about the property.

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

First and Last Name: Brita Minin

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

Title: Environmental Consultant

Mailing Address: 11555 Clay Road Suite 100

City, State, Zip Code: Houston, TX 77043

Phone No.: 713-329-2561 Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: brita.minin@terracon.com

2. List the county in which the facility is located: Jefferson County
3. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

Privately owned by Motiva Enterprises

4. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the classified segment number.

The proposed outfall will discharge directly into Jefferson County Drainage District 7 Main Outfall Canal D approximately 150 feet from the confluence with Alligator Bayou Stream Segment No. 702A. Alligator Bayou flows south approximately 1.25 before discharging into the Intercoastal Waterway Segment No. 0702.

5. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report).

Provide original photographs of any structures 50 years or older on the property.

Does your project involve any of the following? Check all that apply.

- ☒ Proposed access roads, utility lines, construction easements
- ☐ Visual effects that could damage or detract from a historic property's integrity
- ☐ Vibration effects during construction or as a result of project design
- ☐ Additional phases of development that are planned for the future
- ☐ Sealing caves, fractures, sinkholes, other karst features

☒ Disturbance of vegetation or wetlands

1. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features):

Approximately 20 acres of land will be cleared and graded and about one foot of topsoil will be removed to uncover previously stabilized cemented rock before the construction of the power plant. One wastewater discharge outfall will be installed on the bank of the channel as well as one intake structure will be installed on the LNVRA canal adjacent to the Motiva property.

2. Describe existing disturbances, vegetation, and land use:

The large parcel of land is owned and operated by Motiva Enterprises and has been used as an oil refinery for over 100 years. The 20-acre plot within this parcel that will be developed for this project at one time was utilized as a wastewater retention pond but was filled and stabilized with cemented crushed stone and a layer of cover soil. Vegetation has since grown over the soil and currently is a vacant grass area.

THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

3. List construction dates of all buildings and structures on the property:

No current buildings in project area.

4. Provide a brief history of the property, and name of the architect/builder, if known.

The oil and gas refinery has been at this site for over 100 years. The builder is unknown.

ATTACHMENT 12-
Facility Map

ATTACHMENT 13-
Flow Schematic with Water Balance

DD7 CANAL

OF-001
(29.878099173035345,
-93.9786185981111)

82

LEGEND

- WASTEWATER TREATMENT PLANT
- POWER GENERATION AREA
- CHEMICAL STORAGE AREA
- LAYDOWN AREA
- PARKING AREA
- PROPERTY BOUNDARY
- OUTFALL
- FLOW DIRECTION
- RAW WATER INTAKE
- RAW WATER LINE INTAKE
- RECEIVING WATER

0 250 500

APPROXIMATE SCALE: 1"=500'

C:\Users\psbelloni\OneDrive - Terracon Consultants Inc\Desktop\cad template\Fengate\Fengate WW.dwg - ATT 12-FACILITY MAP (3)

REV.	DATE	BY	DESCRIPTION

Terracon
11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043
PH. (713) 690-8989 FAX. (713) 690-8787

ATTACHMENT 12 - SITE FACILITY MAP

PORT ARTHUR COGENERATION, LLC
PORT ARTHUR COGENERATION PROJECT

2555 Savannah Ave, Port Arthur, TX 77640

HOUSTON TEXAS

DESIGNED BY:	BEM
DRAWN BY:	PSB
APPVD. BY:	RDC
SCALE:	AS SHOWN
DATE:	07/03/2024
JOB NO.	92247254
ACAD NO.	Fengate WW.dwg
SHEET NO.:	1 OF 1

PROJECT NAME: FENGATE - MOTIVA, THUNDERSTRUCK COGENERATION PROJECT

PROJECT NO.: 20054000

CALC NO.: 20054000-WB-001

CALC TITLE: WATER MASS BALANCE

ASSUMPTIONS:

ASM #	Description	Verified By	Date

SUMMARY:

This water balance includes a process flow diagram, estimated stream flow rates, and estimated water qualities for a variety of operating scenarios as extracted from the Kiewit heat balance calculations. This information is used to determine the cycles of concentration for evaporative equipment and associated limiting constituents, and verification and sizing of water/wastewater treatment equipment. All flows are time averaged and provided in gallons per minute (gpm). Some operating scenarios will require higher flows for shorter durations compared to steady state values. Design conditions for pumps, sumps, piping, and other plant equipment should not be based solely on the flows in this evaluation.

REFERENCES:

Not Attached

A) EPRI, "Comprehensive Cycle Chemistry Guidelines for Combined Cycle/Heat Recovery Steam Generators (HRSGs)", 2020
B) Kiewit, "Estimated Performance -- 320 MW Option F, 2x1 GE 7F.04 -- Rev. C",developed by BJScrivner, dated 02.15.2022
C) GE (from Magnolia Power), "Water Supply Requirement for Gas Turbine Inlet Air Evaporative Coolers", July 2019
D) SPX, "Cooling Tower Water Conditions" and clarification email, October 2018
E) Lower Neches Valley Authority (LNVA), "Canal Water Quality Report", provided by Client, dated 05.02.2022
F) Target wastewater discharge conditions, provided by Texas Commission on Environmental Quality (TCEQ), dated 03.19.2024
G) Kiewit, "Water Treatment System" Wiki page, last updated 03.25.2024
H) Kiewit, "Water Balance" Lessons Learned search, dated 04.01.2024
J) Kiewit, "Water Balance Standard Design Parameters", Rev.2 pulled on 04.01.2024
K) James McDonald, "pH & Total Alkalinity", originally published: CSTN - January 2004

DESIGN BASIS:

1) The following items are standard Kiewit design bases:
   - Constituents not provided in water analyses, or provided with values below detectable limits, are expected to have no impact on water treatment design.
   - Temperature calculations are outside the scope of the calculation, with exception to steam cycle blowdown quenching and scaling calculations.
   - Quenched steam cycle blowdown flows are estimated. Formal calculation developed by design team will supersede water balance flows.
   - Misc. steam cycle losses are intended to account for water loss from leak sources (i.e. vent steam, valves, etc.), which are typical for all steam-generating units during normal operation.
   - Steam cycle sampling losses are intended to account for water loss through the sampling process.
   - Stormwater flows are not included in this evaluation.
2) This calculation does not consider wastewater discharge temperatures or any associated discharge temperature limits.
3) Water treatment equipment shall be provided to produce demineralized water that meets EPRI guidelines. (Ref. A)
4) Per EPRI guidelines (Ref. A), condensate/feedwater chemistry regime shall be AVT(O) and with AVT boiler treatment, which would be met by dosing aqueous ammonia. Additional treatment, like trisodium phosphate, is not expected for this application.
5) Case data for steam cycle and circulating water conditions are based on information provided in the Kiewit Option F heat balances. (Ref B)
6) Kiewit HB Case F-3 is utilized for the water quality evaluation - 100% load, 59°F and 60% RH, evap cooler online, and duct firing offline. (Ref. B)
7) Turbine evaporative cooler circulating water / blowdown shall not exceed the requirements provided by GE (Ref. C)
8) Circulating water / cooling tower blowdown quality shall not exceed the typical guidelines from SPX. (Ref. D)
9) Source water (canal water) quality values are based on the most recent and maximum values from the Lower Neches Valley Authority (LNVA). (Ref. E)
   - Magnesium hardness for most recent data was calculated by taking the difference of total hardness and calcium hardness.
   - Ratio of calcium hardness to total hardness was for the most recent data was used to estimate calcium and magnesium hardness for the maximum data.
   - Total dissolved solids for maximum data were calculated based on 0.65*Conductivity relationship from most recent data.
   - Sodium was adjusted for most recent and maximum data sets to balance cations and anions.
10) Process wastewater collected for discharge shall not exceed the values provided by Client. (Ref. F)
11) The following items act as a summary of the Design Parameters:

Parameter	Units	Value	Reference	Note(s)
Bulk Solids Density	kg/L	2.5	Engg. Jgmt.	Used for RWT recovery rates
Bulk Liquid Density	kg/L	1.0	Engg. Jgmt.	Used for RWT recovery rates
Clarifier Underflow - Solids Concentration	wt%	0.5%	Engg. Jgmt.	Used for RWT recovery rates
Recovery Rate - Clarifier	%	98.0%	---	User calculated value
Clarifier Effluent - Suspended Solids	mg/L	10.0	G	Typical for various clarifier types
Clarifier Effluent - Iron	µg/L	300.0	Engg. Jgmt.	Past vendor guarantee + 50% margin
Clarifier Effluent - Manganese	µg/L	100.0	Engg. Jgmt.	Past vendor guarantee
Thickener Underflow - Solids Concentration		3.0%	Engg. Jgmt.	Used for RWT recovery rate calculations
Recovery Rate - Thickener	%	83.0%	---	User calculated value
Filter Cake - Solids Concentration		20.0%	Engg. Jgmt.	Used for RWT recovery rate calculations
Filter Press Operating Days per Week	days/wk	5.0	Engg. Jgmt.	Weekday operation only
Filter Press Operating Hours per Day	hr/day	8.0	Engg. Jgmt.	First shift operation only
Recovery Rate - Filter Press	%	96.0%	---	User calculated value
Recovery Rate - UF System	%	90.0%	J	Kiewit Standard
UF System Effluent - Suspended Solids	mg/L	1.0	G	Typical for low TSS treatment
UF System Effluent - Organic Carbon	mg/L	3.0	Engg. Jgmt.	Per WAVE, recommended limit for RO

11) *Continued…* The following items act as a summary of the Design Parameters:

UF System Effluent - Iron	µg/L	50.0	Checklist	Per checklist, recommended limit for RO
UF System Effluent - Manganese	µg/L	50.0	Checklist	Per checklist, recommended limit for RO
Recovery Rate - Filtration System	%	90.0%	J	Kiewit Standard
Recovery Rate - FPRO System	%	80.0%	Engg. Jgmt.	Increased for low TDS source water
RO Concentrate - Suspended Solids	mg/L	0.0	Engg. Jgmt.	TSS removed by filter or membranes
Recovery Rate - SPRO System	%	90.0%	J	Kiewit Standard
Recovery Rate - EDI System	%	95.0%	J	Kiewit Standard
Demin Water - Sodium, as Na	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Sulfates, as SO4	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Chlorides, as Cl	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Silica, as SiO2	mg/L	0.010	A	EPRI Guideline for steam cycle makeup
Demin Water - Hardness, as CaCO3	mg/L	ND	A	EPRI Guideline for steam cycle makeup
Demin Water - Total Organic Carbon	mg/L	0.100	A	EPRI Guideline for steam cycle makeup
Demin Water - Specific Conductivity	µS/cm	0.010	A	EPRI Guideline for steam cycle makeup
OWS Effluent - Suspended Solids	mg/L	50.0	G	Typical for Kiewit OWS units
OWS Effluent - Oil & Grease	mg/L	10.0	Engg. Jgmt.	Typical specified requirement
Misc. Service Water Demand	gpm	25.0	J	Kiewit Standard
Potable/Sanitary Water Demand	gpm	2.0	J	Kiewit Standard
Steam Cycle Sampling Losses	gpm	6.0	Engg. Jgmt.	Matches multiple past water balances
Misc. Steam Cycle Losses	gpm	5.0	J	Kiewit Standard
Steam Cycle Blowdown Rate	%	2.0%	J	Kiewit Standard
Blowdown Tank Operating Pressure	psia	17.0	J	Kiewit Standard
Steam Cycle Blowdown - Ammonia	mg/L	2.0	Engg. Jgmt.	Most of ammonia volatilizes with LP steam
Quench Water Temperature	°F	70.0	J	Kiewit Standard
Quenched Blowdown Temperature	°F	140.0	J	Kiewit Standard
Circulating Water - Alkalinity	mg/L	150.0	K	Calculated based pH 7.9 target in tower

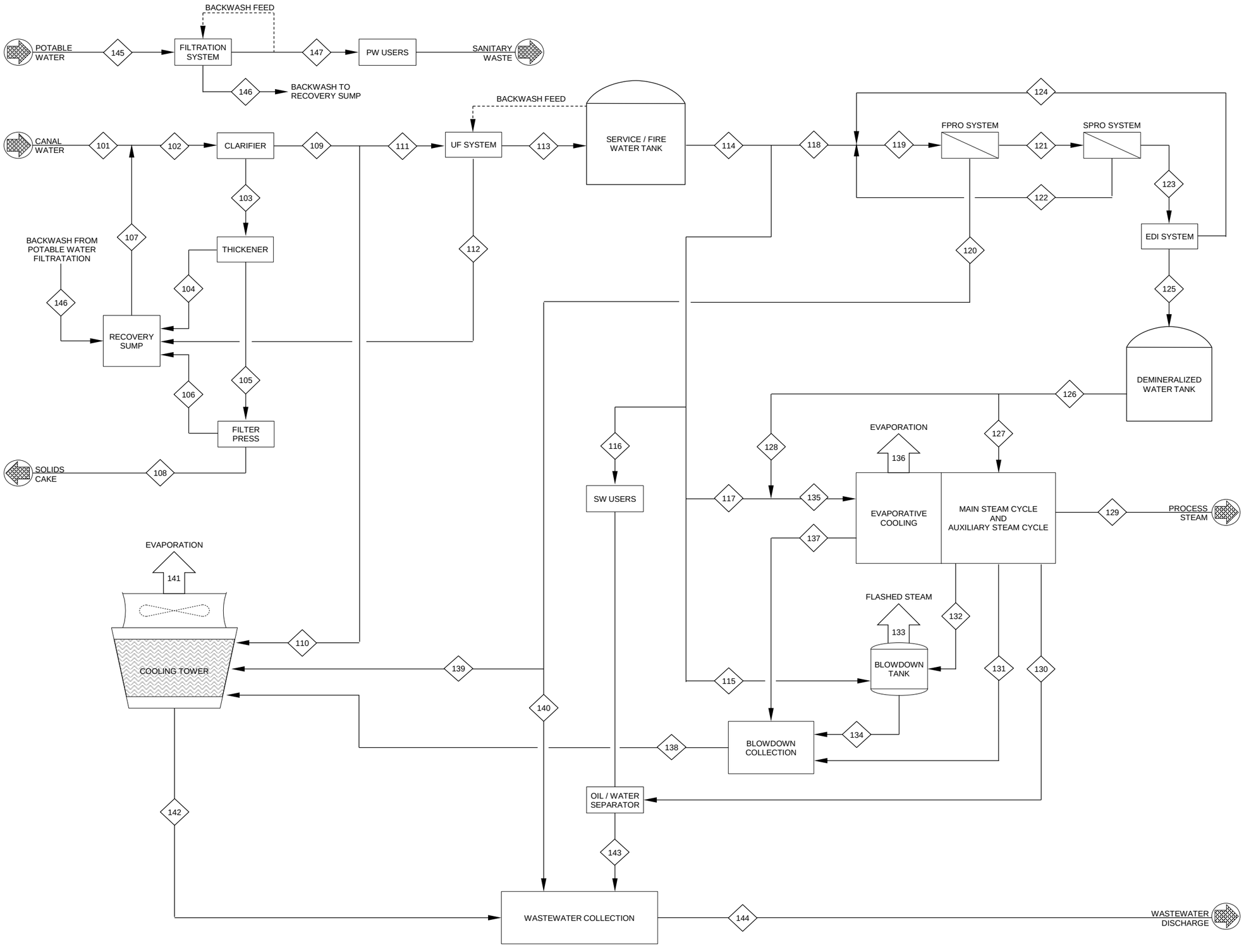
RESULTS:

1) See attached sheets for detailed information.
2) Raw, service, and demineralized water treatment equipment shown will meet the plant water user requirements.
3) Except for total alkalinity, the wastewater discharge requirements can be met without treatment during normal operation. The worst case wastewater quality is not expected to occur due to equalization in the wastewater collection before discharge. Alkalinity reduction could likely be achieved by dosing acid to the wastewater prior to discharge. Hydrochloric or other non-sulfur based acid is preferred due to discharge requirement on sulfates. Further evaluation will be required after receiving "firm" wastewater discharge requirements.
4) The main limiting constituent for the turbine evaporative cooler is manganese. For the average source water, the scaling indices show a corrosive environment at the design cycles of concentrations - trade off for meeting manganese requirement. For the maximum source water, the LSI is slightly exceeded with the other two scaling indices being in the recommended range - deemed acceptable for this evaluation.
5) Cooling tower guideline exceedance for silica and manganese will be addressed with scale/corrosion inhibitor dosing to the tower basin.
6) A summary of major system conditions are outlined below, including cycles of concentration for evaporative cooling equipment, water blend rates, and flowrates:

Case / Option Description	**OPTION F**		**OPTION F**	
Source Water Quality	**AVERAGE**		**MAXIMUM**	
Evap Cooler Cycles of Conc.	**4.0**		**4.0**	
Evap Cooler Demin Water Blend	**0.0%**		**0.0%**	
Cooling Tower Cycles of Conc.	**4.0**		**2.5**	
Flow Designation	**MINIMUM**	**MAXIMUM**	**MINIMUM**	**MAXIMUM**
CANAL WATER DEMAND	2,599	3,317	2,705	3,916
CLARIFIED WATER DEMAND	2,804	3,458	3,006	4,057
SERVICE WATER DEMAND	1,269	2,749	1,269	2,749
DEMINERALIZED WATER DEMAND	912	2,063	912	2,063
WASTEWATER DISCHARGE	213	629	356	1,227

REVISION HISTORY:

Rev.	Description	Prepared By	Checked By	Approved By	Issue Date
A	ISSUED FOR INFORMATION - Original transmittal to Client	Lucas.Davis	Charles.Statler		



NOTES

1. ACTUAL PIPE ROUTING AND PROCESS FLOW LOCATIONS SUBJECT TO CHANGE
2. LARGE ARROWS DESIGNATE STREAMS ENTERING / EXITING THE PROJECT BOUNDARY LIMITS.
3. DASHED LINES REPRESENT "NORMALLY NO FLOW" (NNF) CONDITION.

- PRELIMINARY -
NOT FOR CONSTRUCTION / PERMITTING

REV	DESIGN BY	CHECKED BY	DATE
A	ISSUED FOR INFORMATION		
	L. DAVIS	C. STATLER	04/02/24

FENGATE - MOTIVA
THUNDERSTRUCK COGENERATION PROJECT

Kiewit

WATER MASS BALANCE
BLOCK FLOW DIAGRAM

ORIGINATOR	L. DAVIS	DRAWING NUMBER
LEAD ENG	E. VANZONNEVELD	20054000-WB-001 SHEET 1 OF 3
ENG MGR	J. MULDER	
PROJ MGR	J. MULDER	

ESTIMATED STREAM FLOWRATES - AVERAGE SOURCE WATER QUALITY

PLANT DESIGN		Case F-1	Case F-1B	Case F-2	Case F-3	Case F-3B	Case F-4	Case F-5	Case F-5B	Case F-6	OPTION F - 320 MW 2x1 CC / COGENERATION GE 7F.04	
AMBIENT CONDITIONS		95°F / 50%RH	95°F / 50%RH	95°F / 50%RH	59°F / 60%RH	59°F / 60%RH	59°F / 60%RH	15°F / 13%RH	15°F / 13%RH	15°F / 13%RH		
EVAP COOLER STATUS		Evap On	Evap Off	Evap On	Evap On	Evap Off	Evap On	Evap Off	Evap Off	Evap Off		
DUCT BURNER STATUS		Unfired	Unfired	Fired to 1603F	Unfired	Unfired	Fired to 1596F	Unfired	Unfired	Fired to 1596F		
TYPE OF SOURCE FUEL		Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas		
PLANT CAPACITY		320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW		
QUANTITY OF CTs OPERATING		2	2	1	2	2	1	2	2	1		
STREAM	**PARAMETER**	**Case F-1**	**Case F-1B**	**Case F-2**	**Case F-3**	**Case F-3B**	**Case F-4**	**Case F-5**	**Case F-5B**	**Case F-6**	**MINIMUM (NOTE 2)**	**MAXIMUM (NOTE 2)**
101	CANAL WATER DEMAND	3,113.4	2,887.0	3,317.2	2,737.4	2,706.9	2,952.1	2,718.6	2,705.2	2,598.7	2,598.7	3,317.2
102	CLARIFIER FEED	3,488.4	3,253.0	3,528.5	3,103.4	3,068.9	3,208.7	3,082.1	3,066.9	2,861.5	2,861.5	3,528.5
103	CLARIFIER BLOWDOWN	69.8	65.1	70.6	62.1	61.4	64.2	61.6	61.3	57.2	57.2	70.6
104	THICKENER DECANTATE	57.9	54.0	58.6	51.5	50.9	53.3	51.2	50.9	47.5	47.5	58.6
105	THICKENER BLOWDOWN	11.9	11.1	12.0	10.6	10.4	10.9	10.5	10.4	9.7	9.7	12.0
106	FILTER PRESS FILTRATE	11.4	10.6	11.5	10.1	10.0	10.5	10.1	10.0	9.3	9.3	11.5
107	RECOVERY SUMP DISCHARGE	375.0	365.9	211.3	366.0	361.9	256.6	363.5	361.7	262.8	211.3	375.0
108	SOLIDS CAKE TO DISPOSAL	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
109	CLARIFIED WATER DEMAND	3,418.6	3,187.9	3,457.9	3,041.4	3,007.5	3,144.5	3,020.5	3,005.6	2,804.3	2,804.3	3,457.9
110	CLARIFIED WATER TO COOLING TOWER	363.9	177.2	2,047.9	0.0	0.0	1,218.4	0.0	0.0	747.0	177.2	2,047.9
111	CLARIFIED WATER TO ULTRAFILTRATION SYSTEM	3,054.7	3,010.7	1,410.0	3,041.4	3,007.5	1,926.1	3,020.5	3,005.6	2,057.3	1,410.0	3,054.7
112	ULTRAFILTER BACKWASH	305.5	301.1	141.0	304.1	300.7	192.6	302.0	300.6	205.7	141.0	305.5
113	ULTRAFILTER EFFLUENT	2,749.3	2,709.7	1,269.0	2,737.2	2,706.7	1,733.5	2,718.4	2,705.0	1,851.6	1,269.0	2,749.3
114	SERVICE WATER DEMAND	2,749.3	2,709.7	1,269.0	2,737.2	2,706.7	1,733.5	2,718.4	2,705.0	1,851.6	1,269.0	2,749.3
115	SERVICE WATER MAKE-UP TO SC BDN QUENCH	30.9	27.7	35.5	31.8	26.8	38.7	30.5	26.3	39.8	26.3	39.8
116	SERVICE WATER MAKE-UP TO SW USERS	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
117	SERVICE WATER MAKE-UP TO EVAPORATIVE COOLING	29.6	0.0	29.6	14.7	0.0	14.7	0.0	0.0	0.0	14.7	29.6
118	SERVICE WATER MAKE-UP TO DWT SYSTEM	2,663.8	2,656.9	1,178.9	2,665.8	2,654.9	1,655.1	2,662.9	2,653.8	1,786.8	1,178.9	2,665.8
119	FIRST PASS RO FEED	3,013.3	3,005.6	1,333.6	3,015.6	3,003.3	1,872.3	3,012.4	3,002.0	2,021.3	1,333.6	3,015.6
120	FIRST PASS RO CONCENTRATE	602.7	601.1	266.7	603.1	600.7	374.5	602.5	600.4	404.3	266.7	603.1
121	FIRST PASS RO EFFLUENT	2,410.7	2,404.5	1,066.9	2,412.5	2,402.7	1,497.8	2,409.9	2,401.6	1,617.0	1,066.9	2,412.5
122	SECOND PASS RO CONCENTRATE	241.1	240.4	106.7	241.2	240.3	149.8	241.0	240.2	161.7	106.7	241.2
123	SECOND PASS RO EFFLUENT	2,169.6	2,164.0	960.2	2,171.2	2,162.4	1,348.0	2,168.9	2,161.4	1,455.3	960.2	2,171.2
124	EDI CONCENTRATE / DRAINS	108.5	108.2	48.0	108.6	108.1	67.4	108.4	108.1	72.8	48.0	108.6
125	EDI EFFLUENT / DEMIN WATER PRODUCED	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
126	DEMINERALIZED WATER DEMAND	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
127	DEMIN WATER MAKE-UP TO STEAM CYCLE	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
128	DEMIN WATER MAKE-UP TO EVAPORATIVE COOLING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	PROCESS STEAM TO COGENERATION	1,998.8	1,998.8	837.7	1,998.8	1,998.8	1,204.2	1,998.8	1,998.8	1,305.5	837.7	1,998.8
130	MISCELLANEOUS STEAM CYCLE LOSSES	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
131	STEAM CYCLE SAMPLING BLOWDOWN	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
132	STEAM CYCLE BLOWDOWN	51.3	46.0	63.5	52.8	44.4	65.5	50.6	43.5	66.1	43.5	66.1
133	FLASHED STEAM FROM HRSG BLOWDOWN TANK	24.2	21.7	32.4	25.0	20.9	31.5	23.9	20.5	31.2	20.5	32.4
134	QUENCHED STEAM CYCLE BLOWDOWN	57.9	52.0	66.6	59.6	50.3	72.7	57.2	49.3	74.7	49.3	74.7
135	MAKE-UP TO EVAPORATIVE COOLING	29.6	0.0	29.6	14.7	0.0	14.7	0.0	0.0	0.0	14.7	29.6
136	EVAPORATIVE COOLING EVAPORATION LOSSES	22.2	0.0	22.2	11.0	0.0	11.0	0.0	0.0	0.0	11.0	22.2
137	EVAPORATIVE COOLING BLOWDOWN	7.4	0.0	7.4	3.7	0.0	3.7	0.0	0.0	0.0	3.7	7.4
138	BLOWDOWN COLLECTION DISCHARGE	71.3	58.0	80.0	69.3	56.3	82.3	63.2	55.3	80.7	55.3	82.3
139	FPRO CONCENTRATE TO COOLING TOWER	602.7	601.1	266.7	583.0	287.5	374.5	348.2	128.3	404.3	128.3	602.7
140	FPRO CONCENTRATE TO WASTEWATER	0.0	0.0	0.0	20.1	313.1	0.0	254.3	472.1	0.0	20.1	472.1
141	COOLING TOWER EVAPORATION LOSSES	778.4	627.2	1,796.0	489.2	257.9	1,256.4	308.5	137.7	923.9	137.7	1,796.0
142	COOLING TOWER BLOWDOWN	259.5	209.1	598.7	163.1	86.0	418.8	102.8	45.9	308.0	45.9	598.7
143	OIL / WATER SEPARATOR DISCHARGE	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
144	WASTEWATER DISCHARGE	289.5	239.1	628.7	213.2	429.1	448.8	387.1	548.0	338.0	213.2	628.7
145	UNTREATED WATER DEMAND	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
146	FILTRATION BACKWASH	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
147	POTABLE WATER DEMAND	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

NOTES

1. ALL FLOWS IN GALLONS PER MINUTE (GPM). SOME OPERATING SCENARIOS WILL REQUIRE HIGHER FLOWS FOR SHORTER DURATIONS COMPARED TO STEADY STATE VALUES. DESIGN CONDITIONS FOR PUMPS, SUMPS, PIPING, AND OTHER PLANT EQUIPMENT SHOULD NOT BE BASED SOLEY ON THE FLOWS IN THIS EVALUATION.
2. MINIMUM AND MAXIMUM COLUMNS REPRESENT MINIMUM/MAXIMUM VALUES FROM ALL HEAT BALANCE CASES WHILE ONLY SPECIFIC CASES ARE SHOWN.
3. CTG WASH WATER FLOWS AND OTHER INSTANTANEOUS DEMANDS ARE MET BY UTILIZING THE RESPECTIVE SERVICE OR DEMIN WATER STORAGE TANK VOLUMES.
4. FLOWS ARE PRELIMINARY AND ARE SUBJECT TO THE FINAL DESIGN.

- PRELIMINARY -
NOT FOR CONSTRUCTION / PERMITTING

REV	DESIGN BY	CHECKED BY	DATE
A	ISSUED FOR INFORMATION		
	L. DAVIS	C. STATLER	04/02/24

FENGATE - MOTIVA
THUNDERSTRUCK COGENERATION PROJECT

Kiewit

WATER MASS BALANCE
ESTIMATED STREAM FLOWRATES

ORIGINATOR	L. DAVIS	DRAWING NUMBER
LEAD ENG	E. VANZONNEVELD	20054000-WB-001
ENG MGR	J. MULDER	SHEET 2 OF 3
PROJ MGR	J. MULDER	

ESTIMATED STREAM FLOWRATES - MAXIMUM SOURCE WATER QUALITY

PLANT DESIGN		Case F-1	Case F-1B	Case F-2	Case F-3	Case F-3B	Case F-4	Case F-5	Case F-5B	Case F-6	OPTION F - 320 MW 2x1 CC / COGENERATION GE 7F.04	
AMBIENT CONDITIONS		95°F / 50%RH	95°F / 50%RH	95°F / 50%RH	59°F / 60%RH	59°F / 60%RH	59°F / 60%RH	15°F / 13%RH	15°F / 13%RH	15°F / 13%RH		
EVAP COOLER STATUS		Evap On	Evap Off	Evap On	Evap On	Evap Off	Evap On	Evap Off	Evap Off	Evap Off		
DUCT BURNER STATUS		Unfired	Unfired	Fired to 1603F	Unfired	Unfired	Fired to 1596F	Unfired	Unfired	Fired to 1596F		
TYPE OF SOURCE FUEL		Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas		
PLANT CAPACITY		320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW		
QUANTITY OF CTs OPERATING		2	2	1	2	2	1	2	2	1		
STREAM	**PARAMETER**	**Case F-1**	**Case F-1B**	**Case F-2**	**Case F-3**	**Case F-3B**	**Case F-4**	**Case F-5**	**Case F-5B**	**Case F-6**	**MINIMUM (NOTE 2)**	**MAXIMUM (NOTE 2)**
101	CANAL WATER DEMAND	3,372.9	3,096.2	3,915.9	2,880.4	2,706.9	3,371.0	2,718.6	2,705.2	2,906.7	2,705.2	3,915.9
102	CLARIFIER FEED	3,753.2	3,466.3	4,139.3	3,249.3	3,068.9	3,636.0	3,082.1	3,066.9	3,175.8	3,066.9	4,139.3
103	CLARIFIER BLOWDOWN	75.1	69.3	82.8	65.0	61.4	72.7	61.6	61.3	63.5	61.3	82.8
104	THICKENER DECANTATE	62.3	57.5	68.7	53.9	50.9	60.4	51.2	50.9	52.7	50.9	68.7
105	THICKENER BLOWDOWN	12.8	11.8	14.1	11.0	10.4	12.4	10.5	10.4	10.8	10.4	14.1
106	FILTER PRESS FILTRATE	12.3	11.3	13.5	10.6	10.0	11.9	10.1	10.0	10.4	10.0	13.5
107	RECOVERY SUMP DISCHARGE	380.2	370.1	223.4	368.9	361.9	265.1	363.5	361.7	269.0	223.4	380.2
108	SOLIDS CAKE TO DISPOSAL	0.5	0.5	0.6	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.6
109	CLARIFIED WATER DEMAND	3,678.1	3,397.0	4,056.5	3,184.3	3,007.5	3,563.3	3,020.5	3,005.6	3,112.3	3,005.6	4,056.5
110	CLARIFIED WATER TO COOLING TOWER	623.4	386.3	2,646.5	143.0	0.0	1,637.2	0.0	0.0	1,054.9	143.0	2,646.5
111	CLARIFIED WATER TO ULTRAFILTRATION SYSTEM	3,054.7	3,010.7	1,410.0	3,041.4	3,007.5	1,926.1	3,020.5	3,005.6	2,057.3	1,410.0	3,054.7
112	ULTRAFILTER BACKWASH	305.5	301.1	141.0	304.1	300.7	192.6	302.0	300.6	205.7	141.0	305.5
113	ULTRAFILTER EFFLUENT	2,749.3	2,709.7	1,269.0	2,737.2	2,706.7	1,733.5	2,718.4	2,705.0	1,851.6	1,269.0	2,749.3
114	SERVICE WATER DEMAND	2,749.3	2,709.7	1,269.0	2,737.2	2,706.7	1,733.5	2,718.4	2,705.0	1,851.6	1,269.0	2,749.3
115	SERVICE WATER MAKE-UP TO SC BDN QUENCH	30.9	27.7	35.5	31.8	26.8	38.7	30.5	26.3	39.8	26.3	39.8
116	SERVICE WATER MAKE-UP TO SW USERS	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
117	SERVICE WATER MAKE-UP TO EVAPORATIVE COOLING	29.6	0.0	29.6	14.7	0.0	14.7	0.0	0.0	0.0	14.7	29.6
118	SERVICE WATER MAKE-UP TO DWT SYSTEM	2,663.8	2,656.9	1,178.9	2,665.8	2,654.9	1,655.1	2,662.9	2,653.8	1,786.8	1,178.9	2,665.8
119	FIRST PASS RO FEED	3,013.3	3,005.6	1,333.6	3,015.6	3,003.3	1,872.3	3,012.4	3,002.0	2,021.3	1,333.6	3,015.6
120	FIRST PASS RO CONCENTRATE	602.7	601.1	266.7	603.1	600.7	374.5	602.5	600.4	404.3	266.7	603.1
121	FIRST PASS RO EFFLUENT	2,410.7	2,404.5	1,066.9	2,412.5	2,402.7	1,497.8	2,409.9	2,401.6	1,617.0	1,066.9	2,412.5
122	SECOND PASS RO CONCENTRATE	241.1	240.4	106.7	241.2	240.3	149.8	241.0	240.2	161.7	106.7	241.2
123	SECOND PASS RO EFFLUENT	2,169.6	2,164.0	960.2	2,171.2	2,162.4	1,348.0	2,168.9	2,161.4	1,455.3	960.2	2,171.2
124	EDI CONCENTRATE / DRAINS	108.5	108.2	48.0	108.6	108.1	67.4	108.4	108.1	72.8	48.0	108.6
125	EDI EFFLUENT / DEMIN WATER PRODUCED	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
126	DEMINERALIZED WATER DEMAND	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
127	DEMIN WATER MAKE-UP TO STEAM CYCLE	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
128	DEMIN WATER MAKE-UP TO EVAPORATIVE COOLING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	PROCESS STEAM TO COGENERATION	1,998.8	1,998.8	837.7	1,998.8	1,998.8	1,204.2	1,998.8	1,998.8	1,305.5	837.7	1,998.8
130	MISCELLANEOUS STEAM CYCLE LOSSES	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
131	STEAM CYCLE SAMPLING BLOWDOWN	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
132	STEAM CYCLE BLOWDOWN	51.3	46.0	63.5	52.8	44.4	65.5	50.6	43.5	66.1	43.5	66.1
133	FLASHED STEAM FROM HRSG BLOWDOWN TANK	24.2	21.7	32.4	25.0	20.9	31.5	23.9	20.5	31.2	20.5	32.4
134	QUENCHED STEAM CYCLE BLOWDOWN	57.9	52.0	66.6	59.6	50.3	72.7	57.2	49.3	74.7	49.3	74.7
135	MAKE-UP TO EVAPORATIVE COOLING	29.6	0.0	29.6	14.7	0.0	14.7	0.0	0.0	0.0	14.7	29.6
136	EVAPORATIVE COOLING EVAPORATION LOSSES	22.2	0.0	22.2	11.0	0.0	11.0	0.0	0.0	0.0	11.0	22.2
137	EVAPORATIVE COOLING BLOWDOWN	7.4	0.0	7.4	3.7	0.0	3.7	0.0	0.0	0.0	3.7	7.4
138	BLOWDOWN COLLECTION DISCHARGE	71.3	58.0	80.0	69.3	56.3	82.3	63.2	55.3	80.7	55.3	82.3
139	FPRO CONCENTRATE TO COOLING TOWER	602.7	601.1	266.7	603.1	373.5	374.5	451.0	174.2	404.3	174.2	603.1
140	FPRO CONCENTRATE TO WASTEWATER	0.0	0.0	0.0	0.0	227.2	0.0	151.4	426.2	0.0	151.4	426.2
141	COOLING TOWER EVAPORATION LOSSES	778.4	627.2	1,796.0	489.2	257.9	1,256.4	308.5	137.7	923.9	137.7	1,796.0
142	COOLING TOWER BLOWDOWN	518.9	418.2	1,197.3	326.1	171.9	837.6	205.7	91.8	615.9	91.8	1,197.3
143	OIL / WATER SEPARATOR DISCHARGE	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
144	WASTEWATER DISCHARGE	548.9	448.2	1,227.3	356.1	429.1	867.6	387.1	548.0	645.9	356.1	1,227.3
145	UNTREATED WATER DEMAND	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
146	FILTRATION BACKWASH	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
147	POTABLE WATER DEMAND	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

NOTES

1. ALL FLOWS IN GALLONS PER MINUTE (GPM). SOME OPERATING SCENARIOS WILL REQUIRE HIGHER FLOWS FOR SHORTER DURATIONS COMPARED TO STEADY STATE VALUES. DESIGN CONDITIONS FOR PUMPS, SUMPS, PIPING, AND OTHER PLANT EQUIPMENT SHOULD NOT BE BASED SOLEY ON THE FLOWS IN THIS EVALUATION.
2. MINIMUM AND MAXIMUM COLUMNS REPRESENT MINIMUM/MAXIMUM VALUES FROM ALL HEAT BALANCE CASES WHILE ONLY SPECIFIC CASES ARE SHOWN.
3. CTG WASH WATER FLOWS AND OTHER INSTANTANEOUS DEMANDS ARE MET BY UTILIZING THE RESPECTIVE SERVICE OR DEMIN WATER STORAGE TANK VOLUMES.
4. FLOWS ARE PRELIMINARY AND ARE SUBJECT TO THE FINAL DESIGN.

- PRELIMINARY -
NOT FOR CONSTRUCTION / PERMITTING

REV	DESIGN BY	CHECKED BY	DATE
A	ISSUED FOR INFORMATION		
	L. DAVIS	C. STATLER	04/02/24

FENGATE - MOTIVA
THUNDERSTRUCK COGENERATION PROJECT

Kiewit

WATER MASS BALANCE
ESTIMATED STREAM FLOWRATES

ORIGINATOR	L. DAVIS	DRAWING NUMBER
LEAD ENG	E. VANZONNEVELD	20054000-WB-001
ENG MGR	J. MULDER	SHEET 2 OF 3
PROJ MGR	J. MULDER	

ATTACHMENT 14-
SDS Summary

ATTACHMENT 15-
Track II
Requirements

SDS Sheets and Chemical Summary

Process	Chemical	Use	Frequency
Circulating Water	Scale/Corrosion Inhibitor	Scale/Corrosion Inhibitor	Continuously
	Sodium Hypochlorite		Continuously
	Non-Oxidizing Biocide		Continuously
	Sulfuric Acid (93%)		Continuously
	Sodium Bisulfite	Dechlorination	Continuously
	Sodium Permanganate		Continuously
	Hydrogen Peroxide		Continuously
	Aluminum Sulfate, Ferric Chloride, Magnesium Chloride, Non-Oxidizing Biocide, Polyaluminum Chloride, Sodium Bromide		Continuously
	RO Antiscalant, Biodispersant, Calcium Hydroxide, Citric Acid, Ferric Sulfate, Ferrous Sulfate, Polymer, Potassium Alum, Potassium Permanganate, Sodium Carbonate.		Continuously
Condensate/Aux Boiler Cycle	Ammonia (19%)		Continuously
	Phosphate		Continuously
All suppliers and quantities including vender supplied SDS sheets will be determined at a later date.			

Track I requirements for new facilities that withdraw greater than 2 MGD and less than 10 MGD

(1)	You must design and construct each cooling water intake structure at your facility to a maximum through-screen design intake velocity of 0.5 ft/s;	1 gallon = 0.133681 ft^3 DIF = 6,970.00 gpm 1 min = 60 sec $\frac{0.133681\ ft^3\ x\ 6{,}970\ gpm}{60\ seconds}$ Flow Rate = 15.53 ft^3/s Velocity = 0.5ft/s Area = Flow Rate /Velocity Area = $\frac{15.53 ft^3/s}{0.5 ft/s}$ Area = 31.06 ft^2 $Diameter = \left(\sqrt{A/\pi}\right) x\ 2$ $Diameter = \left(\sqrt{\frac{31.06}{\pi}}\right) x\ 2$ $Diameter = \sqrt{9.89}\ x\ 2$ Diameter = 6.29 feet or 75.46 inches Should the intake pipe draw the proposed 6,970.00 gpm it will be designed at no less than 75.46 inches in diameter to achieve the required intake velocity of a maximum 0.5 ft/s.
(2)	You must design and construct your cooling water intake structure such that the total design intake flow from all cooling water intake structures at your facility meets the following requirements:	
(i)	For cooling water intake structures located in a freshwater river or stream, the total design intake flow must be no greater than five (5) percent of the source water annual mean flow;	Source Water Annual Mean Flow is not available.

(3)	You must select and implement design and construction technologies or operational measures for minimizing impingement mortality of fish and shellfish if:	
(i)	There are threatened or endangered or otherwise protected federal, state, or tribal species, or critical habitat for these species, within the hydraulic zone of influence of the cooling water intake structure;	No threatened or endangered or otherwise protected federal, state, or tribal species, or critical habitat for these species is anticipated to be affected.
(ii)	Based on information submitted by any fishery management agency(ies) or other relevant information, there are migratory and/or sport or commercial species of impingement concern to the Director that pass through the hydraulic zone of influence of the cooling water intake structure; or	No migratory and/or sport or commercial species of impingement concern to the Director is anticipated to be affected.
(iii)	It is determined by the Director, based on information submitted by any fishery management agency(ies) or other relevant information, that the proposed facility, after meeting the technology-based performance requirements in paragraphs (c)(1) and (2) of this section, would still contribute unacceptable stress to the protected species, critical habitat of those species, or species of concern;	
(4)	You must select and implement design and construction technologies or operational measures for minimizing entrainment of entrainable life stages of fish and shellfish;	Intake structure will be designed for minimizing entrainment of entrainable life stages of fish and shellfish.

ATTACHMENT 16-
TCEQ
Correspondence

TCEQ Correspondence –

On May 15, 2024 Brita Minin of Terracon Consultants spoke with a Wastwater Permitting representative at the TCEQ Conference and Trade Fair at the TCEQ Wastewater Permitting Info Session in Austin, Texas. She was informed that if a facility is seeking authorization and is not currently operational then sampling and reporting to the TCEQ will take place at the time of initial operation.

ATTACHMENT 17-
Facility Maps

map.

PSS1C
PUBHx
PEM1Ch
L1UBK
Raw Water Intake
(29.905327,
-93.969330)
73
73
R2UBHx
21
DD7 CANAL
OF-001
(29.878099173035345,
-93.9786185981111)
L1UBKx
PUSKx
L1UBKx
PUBKx
PUSKx
R2UBHx
Raw Water Intake
ALT
(29.899840 -
93.955484)
A
PUSKx
PUSKx
PEM1C
82
PUSKx
L1UBKx
PEM1Ch
PUSKx
PUSKx
PUBKx
PUBKx
PSS1Ch
PUSKx
PSS1A
PAB3Fx

LEGEND

- WASTEWATER TREATMENT PLANT
- POWER GENERATION AREA
- CHEMICAL STORAGE AREA
- LAYDOWN AREA
- PARKING AREA
- PROPERTY BOUNDARY
- OUTFALL
- FLOW DIRECTION
- RAW WATER INTAKE
- RAW WATER LINE INTAKE
- RECEIVING WATER

WETLAND

- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- LAKE
- RIVERINE

0 450 900

APPROXIMATE SCALE: 1"=900'

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REV.	DATE	BY	DESCRIPTION

Terracon
11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043
PH. (713) 690-8989 FAX. (713) 690-8787

ATTACHMENT 17 - SITE FACILITY MAP

PORT ARTHUR COGENERATION, LLC

PORT ARTHUR COGENERATION PROJECT

2555 Savannah Ave, Port Arthur, TX 77640

HOUSTON TEXAS

DESIGNED BY:	BEM
DRAWN BY:	PSB
APPVD. BY:	RDC
SCALE:	AS SHOWN
DATE:	07/03/2024
JOB NO.	92247254
ACAD NO.	Fengate WW.dwg
SHEET NO.:	1 OF 1

LEGEND

- WASTEWATER TREATMENT PLANT LOCATION
- LAYDOWN AREA
- PARKING AREA
- PROPERTY BOUNDARY
- OUTFALL
- FLOW DIRECTION
- RAW WATER INTAKE
- RAW WATER LINE INTAKE
- RECEIVING WATER

WETLAND

- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- LAKE
- RIVERINE

0 150 300

APPROXIMATE SCALE: 1"=300'

REV.	DATE	BY	DESCRIPTION

Terracon
11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043
PH. (713) 690-8989 FAX. (713) 690-8787

ATTACHMENT 17A - SITE FACILITY DETAIL

PORT ARTHUR COGENERATION, LLC
PORT ARTHUR COGENERATION PROJECT

2555 Savannah Ave, Port Arthur, TX 77640

HOUSTON TEXAS

DESIGNED BY:	BEM
DRAWN BY:	PSB
APPVD. BY:	RDC
SCALE:	AS SHOWN
DATE:	07/03/2024
JOB NO.	92247254
ACAD NO.	Fengate WW.dwg
SHEET NO.:	1 OF 1

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ATTACHMENT 18- Inventory of Exposed Materials and Activities

Inventory of Exposed Materials

Material	Location	Outfall No.	Container Type	Estimated Quantity	Transfer/ Handling Method	Material Potentially Exposed To Storm Events? Yes/No	Stormwater Pollutants/ Indicators
Blowdown and Drains Tank	TBD	001	Steel AST	1	Pumps and Pipe	Yes	TSS, pH, Metals*, O&G
Fuel Gas Drains Tank	TBD	001	Steel AST	1	Pumps and Pipe	Yes	TSS, pH, Metals*, O&G
Ammonia	TBD	001	Steel AST	1	Pumps and Pipe	Yes	pH
Plant Trash/Recycling	TBD	001	Dumpsters and Roll-off Bins	TBD	Truck/Manual	Yes	TSS, pH, Metals*, O&G
Wooden Pallets	TBD	001	N/A	TBD	Forklift	Yes	TSS
Metal Equipment	TBD	001	N/A	TBD	Forklift/Truck	Yes	Metal, TSS, O&G
Wastewater Treatment Tanks – Clarifier	WWTP	001	Open Tank	1	Pumps and Pipe	Yes	TSS, pH, Metals*, O&G
Wastewater Treatment Tanks – Thickener	WWTP	001	Open Tank	1	Pumps and Pipe	Yes	TSS, pH, Metals*, O&G

O&G – Oil and Grease
TSS – Total Suspended Solids
Metals* - Possible pollutant from deterioration of metal container

ATTACHMENT 19-
Cooling Water
System Information

Narrative Description of Outdoor Activities and Process

Corrosion-resistant pipelines and valve stations handle incoming natural gas, supported by advanced drainage systems to manage precipitation effectively. Initial processing units utilize weatherproof materials and integrated drainage networks to safeguard against water ingress.

Further along the processing chain, separators and condensate towers are constructed with stainless steel and specialized coatings, complemented by rainwater diversion channels and spill containment features.

Main turbine and generator units are housed in durable enclosures with efficient ventilation systems, operating under controlled environmental conditions.

Potential pollution sources may include:

- Chemical Storage and Handling: Stormwater can pick up contaminants from chemicals used for water treatment or plant operations, such as flocculants, disinfectants, and cleaning agents.
- Fuel Storage Areas: Oil and fuel storage areas pose a risk of contaminating stormwater with hydrocarbons and other petroleum-based pollutants.
- Cooling Water Systems: Water used for cooling in power generation can pick up pollutants like oils, greases, and heavy metals from equipment leaks or operational discharges.
- Stormwater Collection Systems: If stormwater collection systems are not properly managed, they can accumulate pollutants from various surfaces (like rooftops and paved areas) and transport them to water bodies.
- Maintenance and Vehicle Operation: Maintenance activities and vehicle operation around the power plant can introduce pollutants like oils, solvents, and heavy metals into stormwater.
- Wastewater Treatment Plant Effluents: Despite treatment, effluents from the water treatment plant can still contain residual pollutants that may be discharged into stormwater during heavy rain events or overflow situations.
- Atmospheric Deposition: Pollutants from the air, such as particulate matter and chemicals, can be washed into stormwater during rain events, especially in areas with high industrial activity.
- Spills and Accidental Releases: Accidental spills of chemicals or fuels can result in immediate contamination of stormwater if not promptly contained and cleaned up.

To mitigate stormwater pollution from such sources, the facility will implement a stormwater management plan, which may include containment measures, regular inspections, spill prevention and response protocols, and treatment systems to remove pollutants before discharge.

Cooling Water System Information

1. Narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).

The natural gas cogeneration power plant utilizes a combined heat and power process to generate electricity and capture waste heat to power additional power generation. The cooling water system is crucial in such plants to manage the heat generated during electricity generation and ensure efficient operation of the plant.

Cooling Water Intake Structure:

Purpose: The intake structure draws water from the Lower Neches Valley Authority channel at Raw Water Intake and Raw Water Intake ALT (Figure 1) to provide cooling water for the plant.

Components: The intake structure will be designed to meet quality standards and will include screens and velocity caps to prevent debris and aquatic life from entering the system as discussed in Attachment 15 – Track II Requirements. Engineering Design Requirements for the raw water intake pumps are included in Figure 3.

Cooling Water Circulation:

Water is pumped from the intake structure to the plant's water treatment system before being transferred to heat exchangers or condensers, where it absorbs heat from the turbine exhaust or waste heat from the engine. Heat exchangers transfer heat from the hot process water (from the power generation process) to the cooling water. Condensers condense steam from the turbine back into water using the cooling water as a heat sink. Excess heat is removed via a cooling tower. The tower allows heat exchange between the cooling water and the atmosphere through evaporation and convection. This system reduces the temperature of the cooling water before it is recirculated back to the heat exchangers or condensers. A preliminary overview of the water system is included in Figure 2.

Treatment and Discharge:

Cooling water is treated through chemical treatment and filtration systems to control fouling, corrosion, and biological growth. After absorbing heat from the plant processes, the cooling water is recirculated back into the cooling system. Wastewater from blowdown, maintenance, or general service water will be discharged into the Jefferson County DD7 Canal "D" at Outfall 001.

Annual Operation:

Water temperature in the intake source can vary seasonally, affecting the efficiency of heat exchange. During hotter months, cooling systems may need to work harder to maintain optimal operating temperatures. Regular maintenance of pumps, heat exchangers, condensers, and cooling towers is essential to ensure efficient operation and prolong equipment lifespan. Periodic cleaning of intake screens and monitoring of water quality help prevent fouling and maintain system efficiency. Maintenance activities may result in blowdown and other water discharges creating an increase in make-up water. The cooling water intake structure is directly linked to the plant's cooling water system, providing a continuous supply of make-up water for heat exchange purposes.

2. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.

Figure 1 includes the above information. The position of the intake pipe within the water column has yet to be determined in accordance with Lower Neches Valley River Authority intake structure design requirements.

3. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).

Circulating water will be reused and make-up water will be minimized to the extent allowed by process quality.

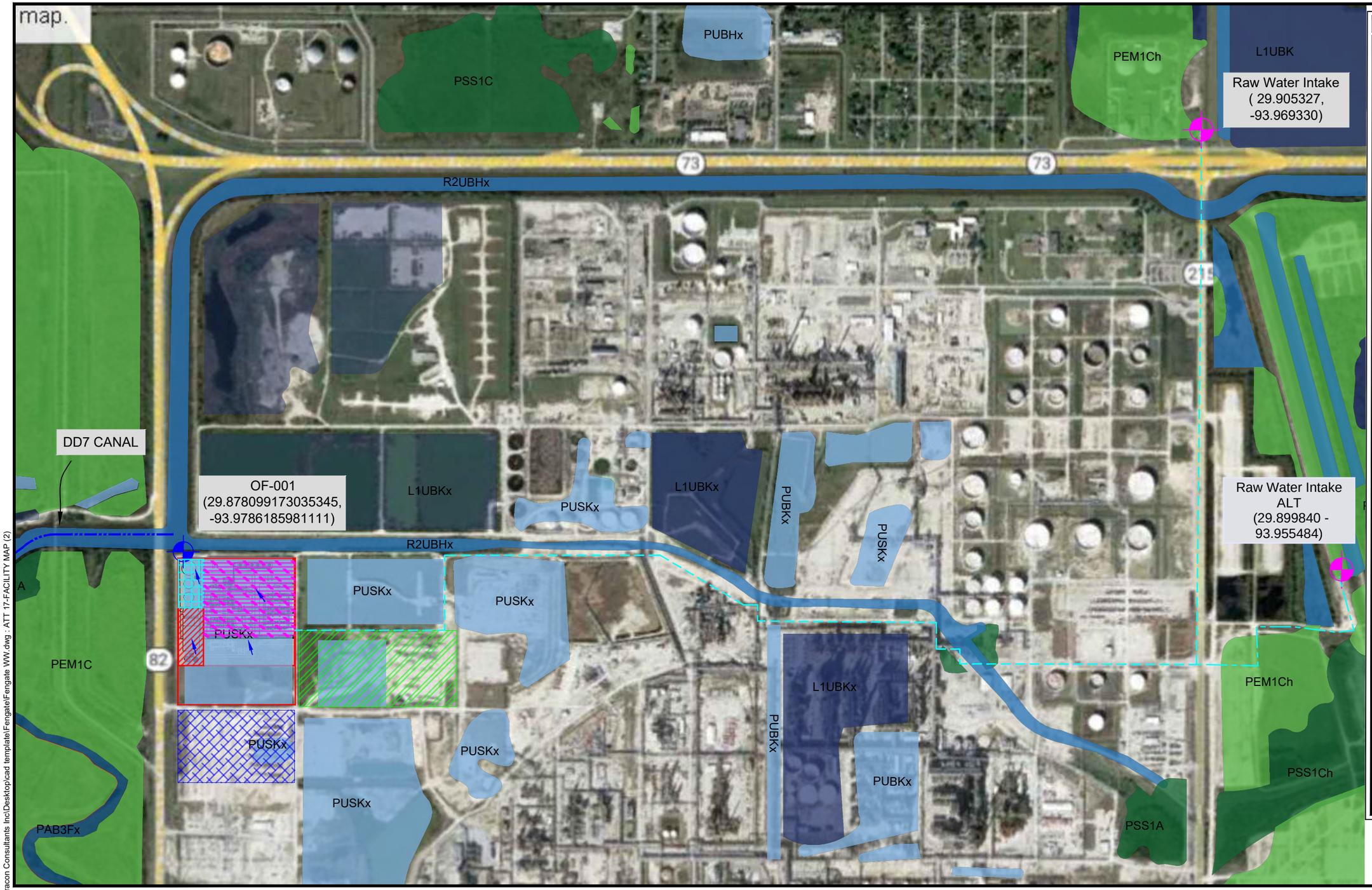
4. Design and engineering calculations prepared by a qualified professional and data to support the information provided in the technical report.

Cooling Water System Data

Parameter	Volume (include units)	Reference
Total DIF	11.7096 MGD	*Engineering Design Requirements (EDR) for Raw Water Intake Pumps*, Prepared by Kiewit
Total AIF	4.4278 MGD	*Water Mass Balance*, Prepared by Kiewit
Intake Flow Use(s) (%)		*Water Mass Balance*, Prepared by Kiewit
Contact cooling	85	
Non-contact cooling	0	
Process Wastewater	12	
Other	3	

- Figure 1 – *Site Overview*, Prepared by Terracon Consultants, Inc.
- Figure 2 – *Water Mass Balance*, Prepared by Kiewit
- Figure 3 – *Engineering Design Requirements (EDR) for Raw Water Intake Pumps*, Prepared by Kiewit
- Figure 4 – *Engineering Design Requirements (EDR) for Circulating Water Pumps*, Prepared by Kiewit
- Figure 5 - *Circulating Water Quality*, Prepared by Kiewit
- Figure 6 – *Piping and Instrumentation Diagram RWS – Raw Water System*, Prepared by Kiewit

map.



LEGEND

- WASTEWATER TREATMENT PLANT
- POWER GENERATION AREA
- CHEMICAL STORAGE AREA
- LAYDOWN AREA
- PARKING AREA
- PROPERTY BOUNDARY
- OUTFALL
- FLOW DIRECTION
- RAW WATER INTAKE
- RAW WATER LINE INTAKE
- RECEIVING WATER

WETLAND

- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- LAKE
- RIVERINE

0 450 900

APPROXIMATE SCALE: 1"=900'

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REV.	DATE	BY	DESCRIPTION

Terracon

11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043

PH. (713) 690-8989 FAX. (713) 690-8787

ATTACHEMNT 19/ ATTACHMENT 20 - FIGURE 1

PORT ARTHUR COGENERATION, LLC
PORT ARTHUR COGENERATION PROJECT

2555 Savannah Ave, Port Arthur, TX 77640

HOUSTON TEXAS

DESIGNED BY:	BEM
DRAWN BY:	PSB
APPVD. BY:	RDC
SCALE:	AS SHOWN
DATE:	07/03/2024
JOB NO.	92247254
ACAD NO.	Fengate WW.dwg
SHEET NO.:	1 OF 1

ATTACHEMNT 19/ ATTACHMENT 20 - FIGURE 2

PROJECT NAME: FENGATE - MOTIVA, THUNDERSTRUCK COGENERATION PROJECT

PROJECT NO.: 20054000

CALC NO.: 20054000-WB-001

CALC TITLE: WATER MASS BALANCE

ASSUMPTIONS:

ASM #	Description	Verified By	Date

SUMMARY:

This water balance includes a process flow diagram, estimated stream flow rates, and estimated water qualities for a variety of operating scenarios as extracted from the Kiewit heat balance calculations. This information is used to determine the cycles of concentration for evaporative equipment and associated limiting constituents, and verification and sizing of water/wastewater treatment equipment. All flows are time averaged and provided in gallons per minute (gpm). Some operating scenarios will require higher flows for shorter durations compared to steady state values. Design conditions for pumps, sumps, piping, and other plant equipment should not be based solely on the flows in this evaluation.

REFERENCES:

Not Attached

A) EPRI, "Comprehensive Cycle Chemistry Guidelines for Combined Cycle/Heat Recovery Steam Generators (HRSGs)", 2020
B) Kiewit, "Estimated Performance -- 320 MW Option F, 2x1 GE 7F.04 -- Rev. C",developed by BJScrivner, dated 02.15.2022
C) GE (from Magnolia Power), "Water Supply Requirement for Gas Turbine Inlet Air Evaporative Coolers", July 2019
D) SPX, "Cooling Tower Water Conditions" and clarification email, October 2018
E) Lower Neches Valley Authority (LNVA), "Canal Water Quality Report", provided by Client, dated 05.02.2022
F) Target wastewater discharge conditions, provided by Texas Commission on Environmental Quality (TCEQ), dated 03.19.2024
G) Kiewit, "Water Treatment System" Wiki page, last updated 03.25.2024
H) Kiewit, "Water Balance" Lessons Learned search, dated 04.01.2024
J) Kiewit, "Water Balance Standard Design Parameters", Rev.2 pulled on 04.01.2024
K) James McDonald, "pH & Total Alkalinity", originally published: CSTN - January 2004

DESIGN BASIS:

1) The following items are standard Kiewit design bases:
   - Constituents not provided in water analyses, or provided with values below detectable limits, are expected to have no impact on water treatment design.
   - Temperature calculations are outside the scope of the calculation, with exception to steam cycle blowdown quenching and scaling calculations.
   - Quenched steam cycle blowdown flows are estimated. Formal calculation developed by design team will supersede water balance flows.
   - Misc. steam cycle losses are intended to account for water loss from leak sources (i.e. vent steam, valves, etc.), which are typical for all steam-generating units during normal operation.
   - Steam cycle sampling losses are intended to account for water loss through the sampling process.
   - Stormwater flows are not included in this evaluation.
2) This calculation does not consider wastewater discharge temperatures or any associated discharge temperature limits.
3) Water treatment equipment shall be provided to produce demineralized water that meets EPRI guidelines. (Ref. A)
4) Per EPRI guidelines (Ref. A), condensate/feedwater chemistry regime shall be AVT(O) and with AVT boiler treatment, which would be met by dosing aqueous ammonia. Additional treatment, like trisodium phosphate, is not expected for this application.
5) Case data for steam cycle and circulating water conditions are based on information provided in the Kiewit Option F heat balances. (Ref B)
6) Kiewit HB Case F-3 is utilized for the water quality evaluation - 100% load, 59°F and 60% RH, evap cooler online, and duct firing offline. (Ref. B)
7) Turbine evaporative cooler circulating water / blowdown shall not exceed the requirements provided by GE (Ref. C)
8) Circulating water / cooling tower blowdown quality shall not exceed the typical guidelines from SPX. (Ref. D)
9) Source water (canal water) quality values are based on the most recent and maximum values from the Lower Neches Valley Authority (LNVA). (Ref. E)
   - Magnesium hardness for most recent data was calculated by taking the difference of total hardness and calcium hardness.
   - Ratio of calcium hardness to total hardness was for the most recent data was used to estimate calcium and magnesium hardness for the maximum data.
   - Total dissolved solids for maximum data were calculated based on 0.65*Conductivity relationship from most recent data.
   - Sodium was adjusted for most recent and maximum data sets to balance cations and anions.
10) Process wastewater collected for discharge shall not exceed the values provided by Client. (Ref. F)
11) The following items act as a summary of the Design Parameters:

Parameter	Units	Value	Reference	Note(s)
Bulk Solids Density	kg/L	2.5	Engg. Jgmt.	Used for RWT recovery rates
Bulk Liquid Density	kg/L	1.0	Engg. Jgmt.	Used for RWT recovery rates
Clarifier Underflow - Solids Concentration	wt%	0.5%	Engg. Jgmt.	Used for RWT recovery rates
Recovery Rate - Clarifier	%	98.0%	---	User calculated value
Clarifier Effluent - Suspended Solids	mg/L	10.0	G	Typical for various clarifier types
Clarifier Effluent - Iron	µg/L	300.0	Engg. Jgmt.	Past vendor guarantee + 50% margin
Clarifier Effluent - Manganese	µg/L	100.0	Engg. Jgmt.	Past vendor guarantee
Thickener Underflow - Solids Concentration		3.0%	Engg. Jgmt.	Used for RWT recovery rate calculations
Recovery Rate - Thickener	%	83.0%	---	User calculated value
Filter Cake - Solids Concentration		20.0%	Engg. Jgmt.	Used for RWT recovery rate calculations
Filter Press Operating Days per Week	days/wk	5.0	Engg. Jgmt.	Weekday operation only
Filter Press Operating Hours per Day	hr/day	8.0	Engg. Jgmt.	First shift operation only
Recovery Rate - Filter Press	%	96.0%	---	User calculated value
Recovery Rate - UF System	%	90.0%	J	Kiewit Standard
UF System Effluent - Suspended Solids	mg/L	1.0	G	Typical for low TSS treatment
UF System Effluent - Organic Carbon	mg/L	3.0	Engg. Jgmt.	Per WAVE, recommended limit for RO

11) *Continued…* The following items act as a summary of the Design Parameters:

UF System Effluent - Iron	µg/L	50.0	Checklist	Per checklist, recommended limit for RO
UF System Effluent - Manganese	µg/L	50.0	Checklist	Per checklist, recommended limit for RO
Recovery Rate - Filtration System	%	90.0%	J	Kiewit Standard
Recovery Rate - FPRO System	%	80.0%	Engg. Jgmt.	Increased for low TDS source water
RO Concentrate - Suspended Solids	mg/L	0.0	Engg. Jgmt.	TSS removed by filter or membranes
Recovery Rate - SPRO System	%	90.0%	J	Kiewit Standard
Recovery Rate - EDI System	%	95.0%	J	Kiewit Standard
Demin Water - Sodium, as Na	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Sulfates, as SO4	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Chlorides, as Cl	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Silica, as SiO2	mg/L	0.010	A	EPRI Guideline for steam cycle makeup
Demin Water - Hardness, as CaCO3	mg/L	ND	A	EPRI Guideline for steam cycle makeup
Demin Water - Total Organic Carbon	mg/L	0.100	A	EPRI Guideline for steam cycle makeup
Demin Water - Specific Conductivity	µS/cm	0.010	A	EPRI Guideline for steam cycle makeup
OWS Effluent - Suspended Solids	mg/L	50.0	G	Typical for Kiewit OWS units
OWS Effluent - Oil & Grease	mg/L	10.0	Engg. Jgmt.	Typical specified requirement
Misc. Service Water Demand	gpm	25.0	J	Kiewit Standard
Potable/Sanitary Water Demand	gpm	2.0	J	Kiewit Standard
Steam Cycle Sampling Losses	gpm	6.0	Engg. Jgmt.	Matches multiple past water balances
Misc. Steam Cycle Losses	gpm	5.0	J	Kiewit Standard
Steam Cycle Blowdown Rate	%	2.0%	J	Kiewit Standard
Blowdown Tank Operating Pressure	psia	17.0	J	Kiewit Standard
Steam Cycle Blowdown - Ammonia	mg/L	2.0	Engg. Jgmt.	Most of ammonia volatilizes with LP steam
Quench Water Temperature	°F	70.0	J	Kiewit Standard
Quenched Blowdown Temperature	°F	140.0	J	Kiewit Standard
Circulating Water - Alkalinity	mg/L	150.0	K	Calculated based pH 7.9 target in tower

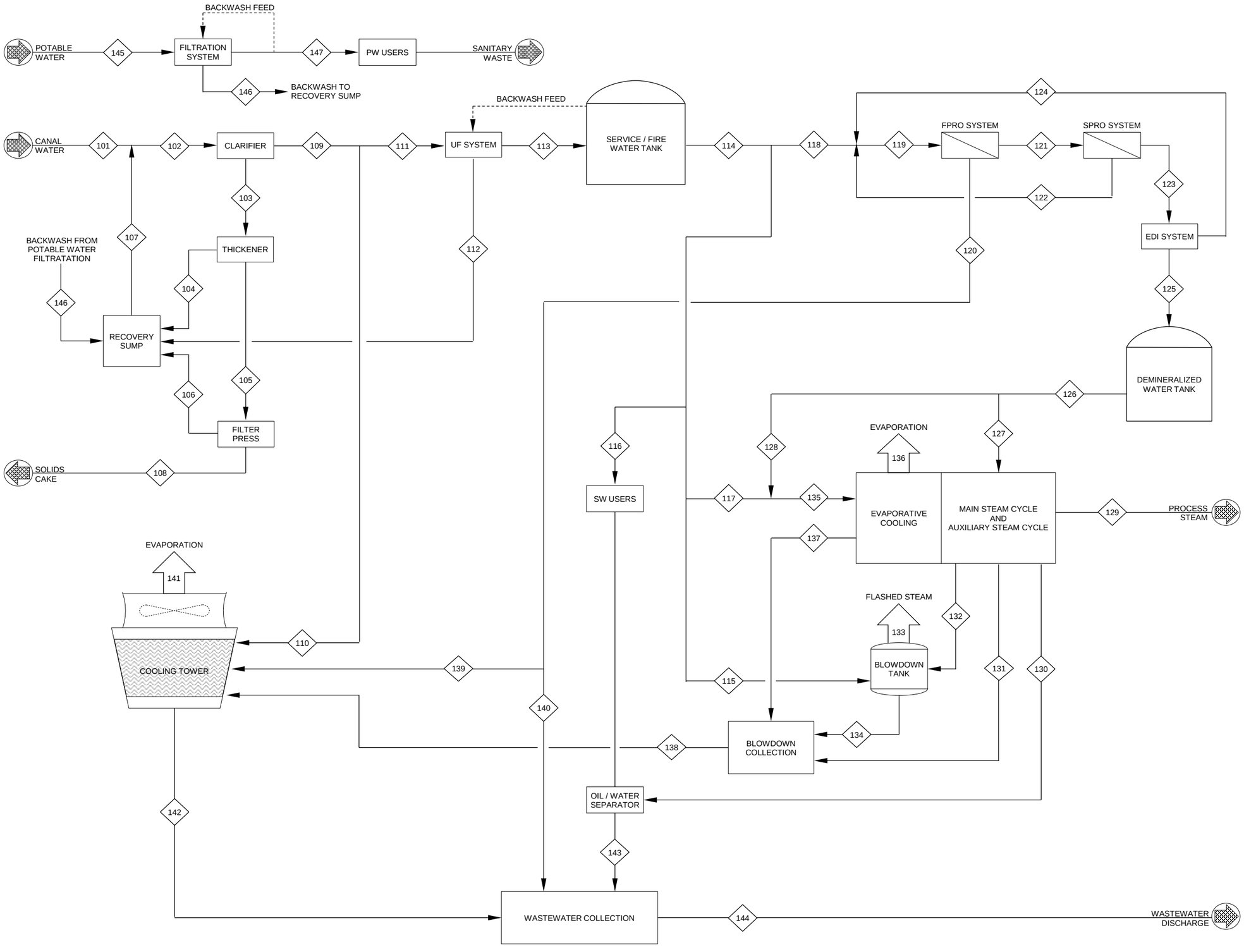
RESULTS:

1) See attached sheets for detailed information.
2) Raw, service, and demineralized water treatment equipment shown will meet the plant water user requirements.
3) Except for total alkalinity, the wastewater discharge requirements can be met without treatment during normal operation. The worst case wastewater quality is not expected to occur due to equalization in the wastewater collection before discharge. Alkalinity reduction could likely be achieved by dosing acid to the wastewater prior to discharge. Hydrochloric or other non-sulfur based acid is preferred due to discharge requirement on sulfates. Further evaluation will be required after receiving "firm" wastewater discharge requirements.
4) The main limiting constituent for the turbine evaporative cooler is manganese. For the average source water, the scaling indices show a corrosive environment at the design cycles of concentrations - trade off for meeting manganese requirement. For the maximum source water, the LSI is slightly exceeded with the other two scaling indices being in the recommended range - deemed acceptable for this evaluation.
5) Cooling tower guideline exceedance for silica and manganese will be addressed with scale/corrosion inhibitor dosing to the tower basin.
6) A summary of major system conditions are outlined below, including cycles of concentration for evaporative cooling equipment, water blend rates, and flowrates:

Case / Option Description	**OPTION F**		**OPTION F**	
Source Water Quality	**AVERAGE**		**MAXIMUM**	
Evap Cooler Cycles of Conc.	**4.0**		**4.0**	
Evap Cooler Demin Water Blend	**0.0%**		**0.0%**	
Cooling Tower Cycles of Conc.	**4.0**		**2.5**	
Flow Designation	**MINIMUM**	**MAXIMUM**	**MINIMUM**	**MAXIMUM**
CANAL WATER DEMAND	2,599	3,317	2,705	3,916
CLARIFIED WATER DEMAND	2,804	3,458	3,006	4,057
SERVICE WATER DEMAND	1,269	2,749	1,269	2,749
DEMINERALIZED WATER DEMAND	912	2,063	912	2,063
WASTEWATER DISCHARGE	213	629	356	1,227

REVISION HISTORY:

Rev.	Description	Prepared By	Checked By	Approved By	Issue Date
A	ISSUED FOR INFORMATION - Original transmittal to Client				



NOTES

1. ACTUAL PIPE ROUTING AND PROCESS FLOW LOCATIONS SUBJECT TO CHANGE
2. LARGE ARROWS DESIGNATE STREAMS ENTERING / EXITING THE PROJECT BOUNDARY LIMITS.
3. DASHED LINES REPRESENT "NORMALLY NO FLOW" (NNF) CONDITION.

- PRELIMINARY -
NOT FOR CONSTRUCTION / PERMITTING

REV	DESIGN BY	CHECKED BY	DATE
A	ISSUED FOR INFORMATION		
	L. DAVIS	C. STATLER	04/02/24

FENGATE - MOTIVA
THUNDERSTRUCK COGENERATION PROJECT

Kiewit

WATER MASS BALANCE
BLOCK FLOW DIAGRAM

ORIGINATOR	L. DAVIS	DRAWING NUMBER
LEAD ENG	E. VANZONNEVELD	20054000-WB-001 SHEET 1 OF 3
ENG MGR	J. MULDER	
PROJ MGR	J. MULDER	

ESTIMATED STREAM FLOWRATES - MAXIMUM SOURCE WATER QUALITY

PLANT DESIGN		Case F-1	Case F-1B	Case F-2	Case F-3	Case F-3B	Case F-4	Case F-5	Case F-5B	Case F-6	OPTION F - 320 MW 2x1 CC / COGENERATION GE 7F.04	
AMBIENT CONDITIONS		95°F / 50%RH	95°F / 50%RH	95°F / 50%RH	59°F / 60%RH	59°F / 60%RH	59°F / 60%RH	15°F / 13%RH	15°F / 13%RH	15°F / 13%RH		
EVAP COOLER STATUS		Evap On	Evap Off	Evap On	Evap On	Evap Off	Evap On	Evap Off	Evap Off	Evap Off		
DUCT BURNER STATUS		Unfired	Unfired	Fired to 1603F	Unfired	Unfired	Fired to 1596F	Unfired	Unfired	Fired to 1596F		
TYPE OF SOURCE FUEL		Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas		
PLANT CAPACITY		320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW		
QUANTITY OF CTs OPERATING		2	2	1	2	2	1	2	2	1		
STREAM	**PARAMETER**	**Case F-1**	**Case F-1B**	**Case F-2**	**Case F-3**	**Case F-3B**	**Case F-4**	**Case F-5**	**Case F-5B**	**Case F-6**	**MINIMUM (NOTE 2)**	**MAXIMUM (NOTE 2)**
101	CANAL WATER DEMAND	3,372.9	3,096.2	3,915.9	2,880.4	2,706.9	3,371.0	2,718.6	2,705.2	2,906.7	2,705.2	3,915.9
102	CLARIFIER FEED	3,753.2	3,466.3	4,139.3	3,249.3	3,068.9	3,636.0	3,082.1	3,066.9	3,175.8	3,066.9	4,139.3
103	CLARIFIER BLOWDOWN	75.1	69.3	82.8	65.0	61.4	72.7	61.6	61.3	63.5	61.3	82.8
104	THICKENER DECANTATE	62.3	57.5	68.7	53.9	50.9	60.4	51.2	50.9	52.7	50.9	68.7
105	THICKENER BLOWDOWN	12.8	11.8	14.1	11.0	10.4	12.4	10.5	10.4	10.8	10.4	14.1
106	FILTER PRESS FILTRATE	12.3	11.3	13.5	10.6	10.0	11.9	10.1	10.0	10.4	10.0	13.5
107	RECOVERY SUMP DISCHARGE	380.2	370.1	223.4	368.9	361.9	265.1	363.5	361.7	269.0	223.4	380.2
108	SOLIDS CAKE TO DISPOSAL	0.5	0.5	0.6	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.6
109	CLARIFIED WATER DEMAND	3,678.1	3,397.0	4,056.5	3,184.3	3,007.5	3,563.3	3,020.5	3,005.6	3,112.3	3,005.6	4,056.5
110	CLARIFIED WATER TO COOLING TOWER	623.4	386.3	2,646.5	143.0	0.0	1,637.2	0.0	0.0	1,054.9	143.0	2,646.5
111	CLARIFIED WATER TO ULTRAFILTRATION SYSTEM	3,054.7	3,010.7	1,410.0	3,041.4	3,007.5	1,926.1	3,020.5	3,005.6	2,057.3	1,410.0	3,054.7
112	ULTRAFILTER BACKWASH	305.5	301.1	141.0	304.1	300.7	192.6	302.0	300.6	205.7	141.0	305.5
113	ULTRAFILTER EFFLUENT	2,749.3	2,709.7	1,269.0	2,737.2	2,706.7	1,733.5	2,718.4	2,705.0	1,851.6	1,269.0	2,749.3
114	SERVICE WATER DEMAND	2,749.3	2,709.7	1,269.0	2,737.2	2,706.7	1,733.5	2,718.4	2,705.0	1,851.6	1,269.0	2,749.3
115	SERVICE WATER MAKE-UP TO SC BDN QUENCH	30.9	27.7	35.5	31.8	26.8	38.7	30.5	26.3	39.8	26.3	39.8
116	SERVICE WATER MAKE-UP TO SW USERS	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
117	SERVICE WATER MAKE-UP TO EVAPORATIVE COOLING	29.6	0.0	29.6	14.7	0.0	14.7	0.0	0.0	0.0	14.7	29.6
118	SERVICE WATER MAKE-UP TO DWT SYSTEM	2,663.8	2,656.9	1,178.9	2,665.8	2,654.9	1,655.1	2,662.9	2,653.8	1,786.8	1,178.9	2,665.8
119	FIRST PASS RO FEED	3,013.3	3,005.6	1,333.6	3,015.6	3,003.3	1,872.3	3,012.4	3,002.0	2,021.3	1,333.6	3,015.6
120	FIRST PASS RO CONCENTRATE	602.7	601.1	266.7	603.1	600.7	374.5	602.5	600.4	404.3	266.7	603.1
121	FIRST PASS RO EFFLUENT	2,410.7	2,404.5	1,066.9	2,412.5	2,402.7	1,497.8	2,409.9	2,401.6	1,617.0	1,066.9	2,412.5
122	SECOND PASS RO CONCENTRATE	241.1	240.4	106.7	241.2	240.3	149.8	241.0	240.2	161.7	106.7	241.2
123	SECOND PASS RO EFFLUENT	2,169.6	2,164.0	960.2	2,171.2	2,162.4	1,348.0	2,168.9	2,161.4	1,455.3	960.2	2,171.2
124	EDI CONCENTRATE / DRAINS	108.5	108.2	48.0	108.6	108.1	67.4	108.4	108.1	72.8	48.0	108.6
125	EDI EFFLUENT / DEMIN WATER PRODUCED	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
126	DEMINERALIZED WATER DEMAND	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
127	DEMIN WATER MAKE-UP TO STEAM CYCLE	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
128	DEMIN WATER MAKE-UP TO EVAPORATIVE COOLING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	PROCESS STEAM TO COGENERATION	1,998.8	1,998.8	837.7	1,998.8	1,998.8	1,204.2	1,998.8	1,998.8	1,305.5	837.7	1,998.8
130	MISCELLANEOUS STEAM CYCLE LOSSES	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
131	STEAM CYCLE SAMPLING BLOWDOWN	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
132	STEAM CYCLE BLOWDOWN	51.3	46.0	63.5	52.8	44.4	65.5	50.6	43.5	66.1	43.5	66.1
133	FLASHED STEAM FROM HRSG BLOWDOWN TANK	24.2	21.7	32.4	25.0	20.9	31.5	23.9	20.5	31.2	20.5	32.4
134	QUENCHED STEAM CYCLE BLOWDOWN	57.9	52.0	66.6	59.6	50.3	72.7	57.2	49.3	74.7	49.3	74.7
135	MAKE-UP TO EVAPORATIVE COOLING	29.6	0.0	29.6	14.7	0.0	14.7	0.0	0.0	0.0	14.7	29.6
136	EVAPORATIVE COOLING EVAPORATION LOSSES	22.2	0.0	22.2	11.0	0.0	11.0	0.0	0.0	0.0	11.0	22.2
137	EVAPORATIVE COOLING BLOWDOWN	7.4	0.0	7.4	3.7	0.0	3.7	0.0	0.0	0.0	3.7	7.4
138	BLOWDOWN COLLECTION DISCHARGE	71.3	58.0	80.0	69.3	56.3	82.3	63.2	55.3	80.7	55.3	82.3
139	FPRO CONCENTRATE TO COOLING TOWER	602.7	601.1	266.7	603.1	373.5	374.5	451.0	174.2	404.3	174.2	603.1
140	FPRO CONCENTRATE TO WASTEWATER	0.0	0.0	0.0	0.0	227.2	0.0	151.4	426.2	0.0	151.4	426.2
141	COOLING TOWER EVAPORATION LOSSES	778.4	627.2	1,796.0	489.2	257.9	1,256.4	308.5	137.7	923.9	137.7	1,796.0
142	COOLING TOWER BLOWDOWN	518.9	418.2	1,197.3	326.1	171.9	837.6	205.7	91.8	615.9	91.8	1,197.3
143	OIL / WATER SEPARATOR DISCHARGE	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
144	WASTEWATER DISCHARGE	548.9	448.2	1,227.3	356.1	429.1	867.6	387.1	548.0	645.9	356.1	1,227.3
145	UNTREATED WATER DEMAND	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
146	FILTRATION BACKWASH	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
147	POTABLE WATER DEMAND	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

NOTES

1. ALL FLOWS IN GALLONS PER MINUTE (GPM). SOME OPERATING SCENARIOS WILL REQUIRE HIGHER FLOWS FOR SHORTER DURATIONS COMPARED TO STEADY STATE VALUES. DESIGN CONDITIONS FOR PUMPS, SUMPS, PIPING, AND OTHER PLANT EQUIPMENT SHOULD NOT BE BASED SOLEY ON THE FLOWS IN THIS EVALUATION.
2. MINIMUM AND MAXIMUM COLUMNS REPRESENT MINIMUM/MAXIMUM VALUES FROM ALL HEAT BALANCE CASES WHILE ONLY SPECIFIC CASES ARE SHOWN.
3. CTG WASH WATER FLOWS AND OTHER INSTANTANEOUS DEMANDS ARE MET BY UTILIZING THE RESPECTIVE SERVICE OR DEMIN WATER STORAGE TANK VOLUMES.
4. FLOWS ARE PRELIMINARY AND ARE SUBJECT TO THE FINAL DESIGN.

- PRELIMINARY -
NOT FOR CONSTRUCTION / PERMITTING

REV	DESIGN BY	CHECKED BY	DATE
A	ISSUED FOR INFORMATION		
	L. DAVIS	C. STATLER	04/02/24

FENGATE - MOTIVA
THUNDERSTRUCK COGENERATION PROJECT

Kiewit

WATER MASS BALANCE
ESTIMATED STREAM FLOWRATES

ORIGINATOR	L. DAVIS	DRAWING NUMBER
LEAD ENG	E. VANZONNEVELD	20054000-WB-001
ENG MGR	J. MULDER	SHEET 2 OF 3
PROJ MGR	J. MULDER	

ENGINEERING DESIGN REQUIREMENTS (EDR)
GENERAL SERVICE PUMPS

Description - RAW WATER INTAKE (1Z-RWS-PMP-01A/B)	Units	Quantity
1. **SCOPE:**	S=Seller, P=Purchaser, O=Option	
Quantity of RAW WATER INTAKE PUMPS (1Z-RWS-PMP-01A/B)		2
Pump Capacity (per pump)	%	100
Location (Indoor, Outdoor)		Outdoors
Skid Mounted		No
Skid to be Insulated		No
Skid Tag Number		N/A
Skid Pipe Code		1BAA11
2. **DESIGN CONSIDERATIONS:**	S=Seller, P=Purchaser, O=Option	
Performance Summary Case		
Pumped Fluid		Water
Water Specific Gravity @ Normal Operating Temperature		1.0
Base Case Guaranteed Case		
Pumps in Operation		1
Pump Capacity point #1	gpm	3485
Pump TDH point #1	ft	140
Guaranteed Maximum Head Rise-to-Shutoff	%	140
Maximum Recirculation Flow Rate	gpm	S
NPSHA	ft	LATER
* Above numbers indicate pressures seen at the discharges and suctions. Delta between the discharges and suctions must be taken to achieve developed head by pump		
** Case are the Base/Guaranteed cases; however, the flows and corresponding discharge heads shown on the curves shall meet or exceed the flow and discharge head requirements of all operating cases		
Operating Temperature Range	°F	40
	°F	75
Design Temperature	°F	95
Minimum total head developed at shutoff conditions at design speed as a percent of the total head at the design point	% (by ea. Pump)	See Section M1
Maximum total head developed at shutoff conditions at design speed as a percent of the total head at the design point	% (by ea. Pump)	See Section M1
3. **MATERIALS:**	S=Seller, P=Purchaser, O=Option	
Casing Material		A536 65-45-12 Ductile Iron
Shaft Material		1045 Steel
Shaft Sleeve Required		N/A
Shaft Sleeve Material		N/A
Impeller Material		A48 Cast Iron
Casing Wear Ring Material		S
4. **GUARANTEED NOISE REQUIREMENTS:**	S=Seller, P=Purchaser, O=Option	
Near Field Limit (3 ft distance and 5 ft above grade)	dBA	85
5. **Motor Data**		
Voltage/Phase/Frequency		460/3/60
Pump Synchronous Speed	RPM	1800
6. **Freeze Protection for Instrumentation**		
		Yes

ENGINEERING AND DESIGN REQUIREMENTS (EDR)
CIRCULATING WATER PUMPS

Item	Description	(English) Units	Circulating Water Pumps Quantity	Aux Circulating Water Pump Quantity
1.00	**Circulating Water Pumps**			
1.01	Scope			
	Number of Circulating Water Pumps		2	1
	Tag Numbers		1Z-CWS-PMP-01A/B	1Z-CWS-PMP-02
	Number of Electric Motor Drivers		2	1
	Motor Driver Space Heater (Yes / No)		Yes	Yes
	VFD required for Motor? / Rated For?		No	No
	Pump Configuration		Vertical Wet	Vertical Wet
	Pump Discharge w.r.t. Floor Level (Above / Below)		Above	Above
	Number of Stages		Multistage	Multistage
	Pull-Out Design Required (Yes / No)		Yes	Yes
	Pump Capacity (Per Pump)	%	50	100
	Spare Pump(s)		N/A	N/A
	Spare Pull-Out Element(s) (Yes / No)		No	No
	Spare Motor(s) (Yes / No)		No	No
1.02	Design			
	Guaranteed Capacity @ Guaranteed Head (each)	GPM @ ft	51,716	10,000
	Guaranteed Head (TDH) @ Guaranteed Capacity	ft	86	65
	Referenced to Low Water Level (LWL)			
	All losses up to the discharge flange shall be included in Seller's design			
	At Design Flow Rate, TDH is within (x)% of Design TDH	%	+ 6% / - 0%	+ 6% / - 0%
	At Design TDH, Flow is within (x)% of Design Flow	%	+ 10% / - 0%	+ 10% / - 0%
	At Pump Shutoff, TDH is within (x)% of Expected TDH	%	+ 0% / - 5%	+ 0% / - 5%
	Maximum Total Dynamic Head (TDH) @ Minimum Flow:	ft @ GPM	By Seller	By Seller
	High Water Level (HWL) (From Bottom of Baseplate):	ft	LATER	LATER
	Normal Water Level (NWL) (From Bottom of Baseplate):	ft	LATER	LATER
	Low Water Level (LWL) (From Bottom of Baseplate):	ft	LATER	LATER
	Design Fluid Temperature (Min / Max / Design)	°F	40 / 87 / 120	40 / 87 / 120
	Normal Operating Temperature Range	°F	LATER	LATER
	Pumping Fluid	Fluid / S.G.	Circulating Water / 1.0	Circulating Water / 1.0
	Maximum Pump Speed	RPM	1200	1200
	Motor Cooling (Air / Integrated Water / Internal Coolant / External Coolant)		Air	Air
	Minimum Discharge Nozzle Loading Design (F_x / F_y / F_z)	lb	8,000	2,500
	Minimum Discharge Nozzle Loading Design (M_x / M_y / M_z)	ft-lb	30,000	2,500

ENGINEERING AND DESIGN REQUIREMENTS (EDR)
CIRCULATING WATER PUMPS

Item	Description	(English) Units	Circulating Water Pumps Quantity	Aux Circulating Water Pump Quantity
1.03	Operating Conditions			
	Shutoff Head	ft	Seller	Seller
	Percent of Max Total Design Point TDH at Shutoff Condition	%	Less than 180%	Less than 180%
	Near Field Limit (free-field, 3 ft (1 m) horizontal distance and 5 ft (1.5 m) above base plate)	dBA	85	85
	Far Field Limit (free-field, 400 ft (120 m) horizontal distance and 5 ft (1.5 m) above base plate)	dBA	Seller	Seller
	Location (Indoors / Outdoors)		Outdoors	Outdoors
	Maximum Particle Size to Pass	in	1	1
	Impeller Balancing Grade (ISO 1940)	G6.3	per M1	per M1
	Circulating Water Quality		See Appendix A	See Appendix A
	Prime Mover Pump Motor Operation	VAC	6600	6600
	No Rotating Assembly f_c within % of operating speed	%	25	25
	Column Velocity at Design Flow Rate	ft/s	10	10
	Suction Bell Inlet Velocity at Design Flow Rate	ft/s	5	5
	Suction Specific speed shall not vary more than (x)% from FD	%	10	10
1.04	Materials		ASTM # / Trade Name	
	Pump Bowls		Carbon Steel ASTM A36	Carbon Steel ASTM A36
	Pump Column		Carbon Steel ASTM A36	Carbon Steel ASTM A36
	Discharge Head Assembly and Column		Carbon Steel ASTM A36	Carbon Steel ASTM A36
	Line Shaft		Stainless Steel ASTM A582 Type 416 Turned and Ground	Stainless Steel ASTM A582 Type 416 Turned and Ground
	Impellers		Stainless Steel ASTM A582 Type 416 Turned and Ground	Stainless Steel ASTM A582 Type 416 Turned and Ground
	Bearings, Above/Below Low Water Level		Cutless Rubber, Water Lubricated	Cutless Rubber, Water Lubricated
	Bearings, Bowl		Bronze, Water Lubricated	Bronze, Water Lubricated
	Bearings, Suction Bell		Bronzed Fitted Permanently Lubricated	Bronzed Fitted Permanently Lubricated
	Shaft Sleeves		ASTM A276 Type 304 Condition A	ASTM A276 Type 304 Condition A
	Mounting Flange and Soleplate		Carbon Steel ASTM A36 with Epoxy Coating	Carbon Steel ASTM A36 with Epoxy Coating
	Wear Rings		Compatible with impeller, Cast Iron A48-Class 30	Compatible with impeller, Cast Iron A48-Class 30
	Impeller Castings		ASTM A240 Type 316L SS, Auxiliary circulating water pump impeller casing shall be A216 CS	ASTM A240 Type 316L SS, Auxiliary circulating water pump impeller casing shall be A216 CS
1.05	Field Services			
	Erection Support	man-days	LATER	LATER
	Commissioning / Startup	man-days	LATER	LATER
	Operator Training	man-days	LATER	LATER

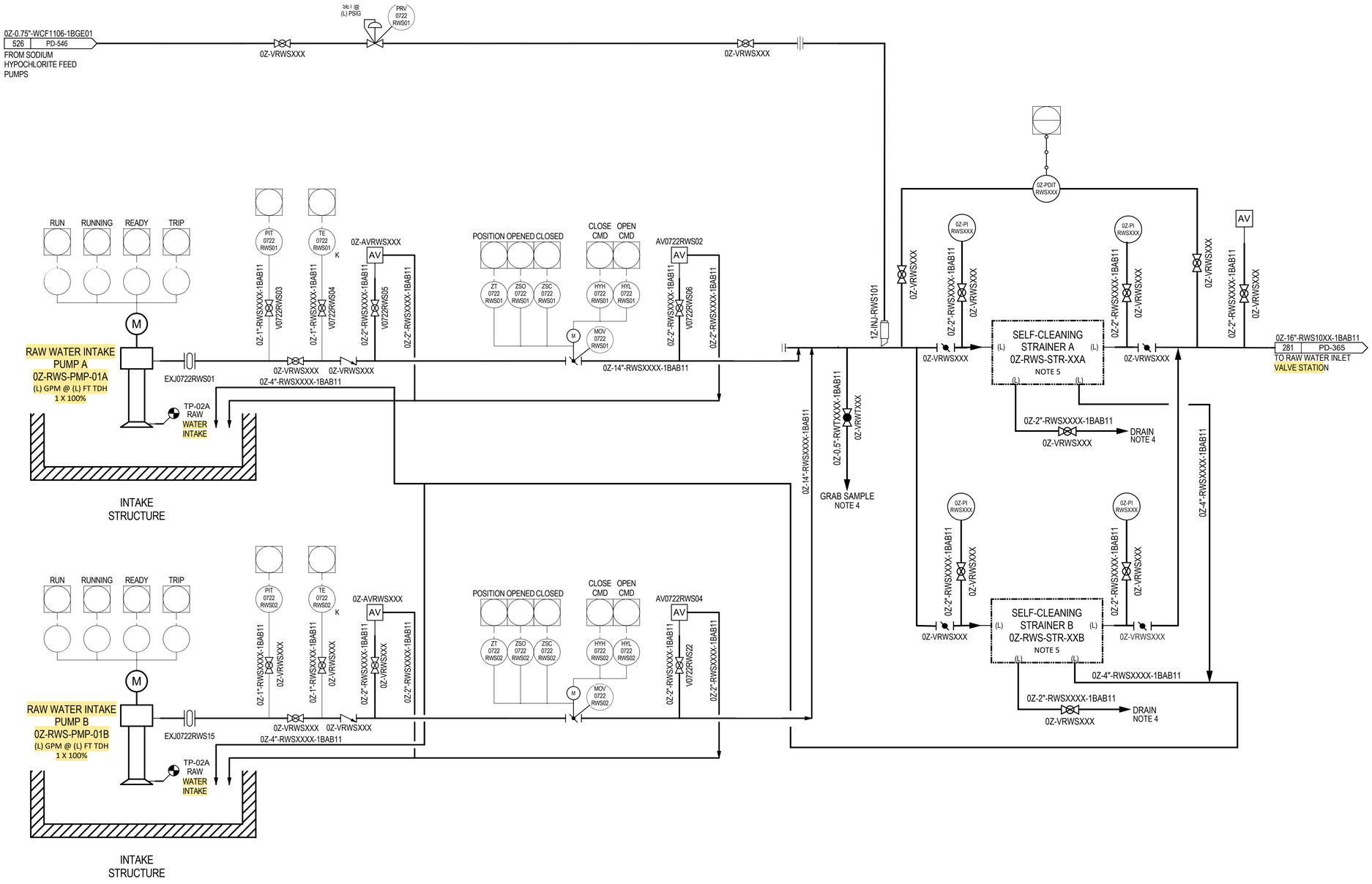
ATTACHEMNT 19 / ATTACHMENT 20 - FIGURE 5

STREAM DESCRIPTION		COOLING TOWER MAKEUP		COOLING TOWER CIRCULATING WATER	
CONSTITUENT	**UNITS**	**AS SUCH**	**AS CaCO3**	**AS SUCH**	**AS CaCO3**
CALCIUM, Ca	ppm	32.1	80.1	80.2	200.3
MAGNESIUM, Mg	ppm	56.2	231.5	140.6	578.8
SODIUM, Na	ppm	170.6	371.4	426.5	928.4
M-ALKALINITY, M-ALK	ppm		157.6		150.0
BICARBONATE, HCO3	ppm	192.1	157.6	182.9	150.0
SULFATES, SO4	ppm	127.0	132.4	551.7	574.9
CHLORIDES, Cl	ppm	278.5	393.1	696.2	982.7
SILICA, SiO2	ppm	63.4	52.8	158.6	132.1
TOTAL HARDNESS	ppm		311.7		779.1
pH		7.0		7.9	
SPECIFIC CONDUCTIVITY	µS/cm	1,337.4		3,343.5	
TOTAL DISSOLVED SOLIDS, TDS	ppm	869.5		2,173.7	
TOTAL SUSPENDED SOLIDS, TSS	ppm	1.8		4.5	
AMMONIA, NH3	ppm	0.1		0.4	
TOTAL ORGANIC CARBON, TOC	ppm	14.9		37.2	
IRON, Fe	ppb	218.9		547.3	
MANGANESE, Mn	ppb	183.9		459.6	
AVAILABLE CHLORINE, FREE	ppm			1.0	

ATTACHEMNT 19 / ATTACHMENT 20 - FIGURE 6

NOTES:

1. SEE KIEWIT DWG: (L)
   SEE VENDOR DWG: (L)
2. INSULATE AND/ OR HEAT TRACE PER MECHANICAL DETAIL.
3. ADD BIRD SCREEN TO THE END OF THE OVERFLOW PIPE.
4. THREADED CAP TO BE INSTALLED DURING SHIPPING FOR THREAD PROTECTION AND REMOVED AFTER INSTALLATION.
5. SEE KIEWIT DWG: (L)
   SEE VENDOR DWG: (L)



- PRELIMINARY -
NOT FOR CONSTRUCTION

REV	DESIGN BY	CHECKED BY	DATE
A	Issued for Review		
	E. VanZonneveld	S. Gawer	4/26/2024

FENGATE - MOTIVA

THUNDERSTRUCK COGENERATION PROJECT

Kiewit

PIPING AND INSTRUMENTATION DIAGRAM
RWS - RAW WATER SYSTEM

ENGINEER/DESIGN ORIGINATOR	E. VanZonneveld
LEAD ENG	S. Gawer
ENG MGR	J. Mulder
PROJ MGR	J. Mulder

DRAWING NUMBER

20054000-PD-360

ATTACHMENT 20- Cooling Water Intake Structure (CWIS) Data

Cooling Water Intake Structure (CWIS) Data

1. CWIS 01 RAW WATER – The proposed facility includes the construction and installation of an intake structure on the Lower Neches Valley Authority (LNVA) canal system located near the Port Arthur Water Treatment Facility at the intersection of State Highway 73 and Highway 215 (Figure 1). The intake structure will be located off the southern bank of the canal approximately 200 feet from the LNVA levee west of HW 73. The structure will be built to LNVA requirements. The height of the structure within the water column has yet to be determined.

2. CWIS 02 RAW WATER (ALT) – Clarified water supplied and treated within the existing Motiva facility is an alternative source for service and demineralized water supply. This existing pump structure is located within the Motiva facility on the east bank of the termination of the canal connected to the LNVA levee referred to in CWIS 01 approximately 0.85 miles east.

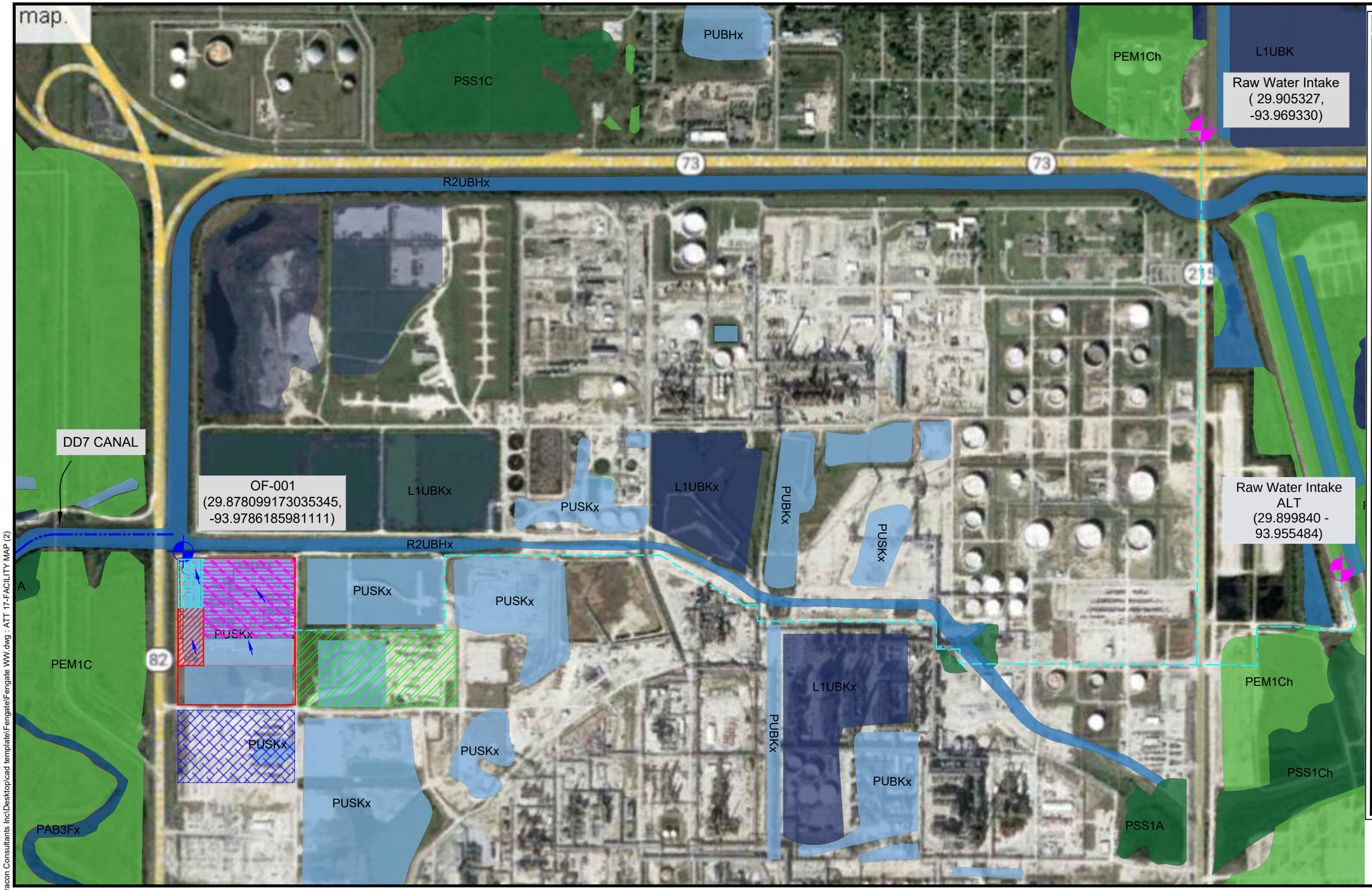
Cooling Water Intake Structure(s) Data

CWIS ID	CWIS 01 RAW WATER	CWIS 02 RAW WATER (ALT)	Calculation	Reference
DIF (include units)	10.0368 MGD	1.6728 MGD	2 $Pumps$ (3,485 gpm × 60min × 24hr = 10,036,800 $gallons/day$) Current Motiva Raw Water Supply = 1.6728 MGD	Figure 3, *Raw Water Pump Design*, Prepared by Kiewit
AIF (include units)	4.4278 MGD	TBD	Average of Canal Water Demand under multiple scenarios. 3,074.87 gpm × 60min × 24hr = 4,427,800 $gallons/day$	Figure 2, *Water Mass Balance*, Prepared by Kiewit

Intake Flow Use(s) (%)				Figure 2, *Water Mass Balance*, Prepared by Kiewit
Contact cooling	85	85		
Non-contact cooling	0	0		
Process Wastewater	12	12		
Other	3	3		
Latitude (decimal degrees)	29.905313°	29.899937°		Figure 1, *Site Overview*, Prepared by Terracon Consultants, Inc.
Longitude (decimal degrees)	-93.969306°	-93.955673°		Figure 1, *Site Overview*, Prepared by Terracon Consultants, Inc.

- Figure 1 – *Site Overview*, Prepared by Terracon Consultants, Inc.
- Figure 2 – *Water Mass Balance*, Prepared by Kiewit
- Figure 3 – *Engineering Design Requirements (EDR) for Raw Water Intake Pumps*, Prepared by Kiewit
- Figure 4 – *Engineering Design Requirements (EDR) for Circulating Water Pumps*, Prepared by Kiewit
- Figure 5 - *Circulating Water Quality*, Prepared by Kiewit
- Figure 6 – *Piping and Instrumentation Diagram RWS – Raw Water System*, Prepared by Kiewit

map.



LEGEND

- WASTEWATER TREATMENT PLANT
- POWER GENERATION AREA
- CHEMICAL STORAGE AREA
- LAYDOWN AREA
- PARKING AREA
- PROPERTY BOUNDARY
- OUTFALL
- FLOW DIRECTION
- RAW WATER INTAKE
- RAW WATER LINE INTAKE
- RECEIVING WATER

WETLAND

- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- LAKE
- RIVERINE

0 450 900

APPROXIMATE SCALE: 1"=900'

C:\Users\psbelloni\OneDrive - Terracon Consultants Inc\Desktop\cad template\Fengate\Fengate WW.dwg : ATT 17-FACILITY MAP (2)

REV.	DATE	BY	DESCRIPTION

Terracon

11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043

PH. (713) 690-8989 FAX. (713) 690-8787

ATTACHEMNT 19/ ATTACHMENT 20 - FIGURE 1

PORT ARTHUR COGENERATION, LLC
PORT ARTHUR COGENERATION PROJECT

2555 Savannah Ave, Port Arthur, TX 77640

HOUSTON TEXAS

DESIGNED BY:	BEM
DRAWN BY:	PSB
APPVD. BY:	RDC
SCALE:	AS SHOWN
DATE:	07/03/2024
JOB NO.	92247254
ACAD NO.	Fengate WW.dwg
SHEET NO.:	1 OF 1

ATTACHEMNT 19/ ATTACHMENT 20 - FIGURE 2

PROJECT NAME: FENGATE - MOTIVA, THUNDERSTRUCK COGENERATION PROJECT

PROJECT NO.: 20054000

CALC NO.: 20054000-WB-001

CALC TITLE: WATER MASS BALANCE

ASSUMPTIONS:

ASM #	Description	Verified By	Date

SUMMARY:

This water balance includes a process flow diagram, estimated stream flow rates, and estimated water qualities for a variety of operating scenarios as extracted from the Kiewit heat balance calculations. This information is used to determine the cycles of concentration for evaporative equipment and associated limiting constituents, and verification and sizing of water/wastewater treatment equipment. All flows are time averaged and provided in gallons per minute (gpm). Some operating scenarios will require higher flows for shorter durations compared to steady state values. Design conditions for pumps, sumps, piping, and other plant equipment should not be based solely on the flows in this evaluation.

REFERENCES:

Not Attached

A) EPRI, "Comprehensive Cycle Chemistry Guidelines for Combined Cycle/Heat Recovery Steam Generators (HRSGs)", 2020
B) Kiewit, "Estimated Performance -- 320 MW Option F, 2x1 GE 7F.04 -- Rev. C",developed by BJScrivner, dated 02.15.2022
C) GE (from Magnolia Power), "Water Supply Requirement for Gas Turbine Inlet Air Evaporative Coolers", July 2019
D) SPX, "Cooling Tower Water Conditions" and clarification email, October 2018
E) Lower Neches Valley Authority (LNVA), "Canal Water Quality Report", provided by Client, dated 05.02.2022
F) Target wastewater discharge conditions, provided by Texas Commission on Environmental Quality (TCEQ), dated 03.19.2024
G) Kiewit, "Water Treatment System" Wiki page, last updated 03.25.2024
H) Kiewit, "Water Balance" Lessons Learned search, dated 04.01.2024
J) Kiewit, "Water Balance Standard Design Parameters", Rev.2 pulled on 04.01.2024
K) James McDonald, "pH & Total Alkalinity", originally published: CSTN - January 2004

DESIGN BASIS:

1) The following items are standard Kiewit design bases:
   - Constituents not provided in water analyses, or provided with values below detectable limits, are expected to have no impact on water treatment design.
   - Temperature calculations are outside the scope of the calculation, with exception to steam cycle blowdown quenching and scaling calculations.
   - Quenched steam cycle blowdown flows are estimated. Formal calculation developed by design team will supersede water balance flows.
   - Misc. steam cycle losses are intended to account for water loss from leak sources (i.e. vent steam, valves, etc.), which are typical for all steam-generating units during normal operation.
   - Steam cycle sampling losses are intended to account for water loss through the sampling process.
   - Stormwater flows are not included in this evaluation.
2) This calculation does not consider wastewater discharge temperatures or any associated discharge temperature limits.
3) Water treatment equipment shall be provided to produce demineralized water that meets EPRI guidelines. (Ref. A)
4) Per EPRI guidelines (Ref. A), condensate/feedwater chemistry regime shall be AVT(O) and with AVT boiler treatment, which would be met by dosing aqueous ammonia. Additional treatment, like trisodium phosphate, is not expected for this application.
5) Case data for steam cycle and circulating water conditions are based on information provided in the Kiewit Option F heat balances. (Ref B)
6) Kiewit HB Case F-3 is utilized for the water quality evaluation - 100% load, 59°F and 60% RH, evap cooler online, and duct firing offline. (Ref. B)
7) Turbine evaporative cooler circulating water / blowdown shall not exceed the requirements provided by GE (Ref. C)
8) Circulating water / cooling tower blowdown quality shall not exceed the typical guidelines from SPX. (Ref. D)
9) Source water (canal water) quality values are based on the most recent and maximum values from the Lower Neches Valley Authority (LNVA). (Ref. E)
   - Magnesium hardness for most recent data was calculated by taking the difference of total hardness and calcium hardness.
   - Ratio of calcium hardness to total hardness was for the most recent data was used to estimate calcium and magnesium hardness for the maximum data.
   - Total dissolved solids for maximum data were calculated based on 0.65*Conductivity relationship from most recent data.
   - Sodium was adjusted for most recent and maximum data sets to balance cations and anions.
10) Process wastewater collected for discharge shall not exceed the values provided by Client. (Ref. F)
11) The following items act as a summary of the Design Parameters:

Parameter	Units	Value	Reference	Note(s)
Bulk Solids Density	kg/L	2.5	Engg. Jgmt.	Used for RWT recovery rates
Bulk Liquid Density	kg/L	1.0	Engg. Jgmt.	Used for RWT recovery rates
Clarifier Underflow - Solids Concentration	wt%	0.5%	Engg. Jgmt.	Used for RWT recovery rates
Recovery Rate - Clarifier	%	98.0%	---	User calculated value
Clarifier Effluent - Suspended Solids	mg/L	10.0	G	Typical for various clarifier types
Clarifier Effluent - Iron	µg/L	300.0	Engg. Jgmt.	Past vendor guarantee + 50% margin
Clarifier Effluent - Manganese	µg/L	100.0	Engg. Jgmt.	Past vendor guarantee
Thickener Underflow - Solids Concentration		3.0%	Engg. Jgmt.	Used for RWT recovery rate calculations
Recovery Rate - Thickener	%	83.0%	---	User calculated value
Filter Cake - Solids Concentration		20.0%	Engg. Jgmt.	Used for RWT recovery rate calculations
Filter Press Operating Days per Week	days/wk	5.0	Engg. Jgmt.	Weekday operation only
Filter Press Operating Hours per Day	hr/day	8.0	Engg. Jgmt.	First shift operation only
Recovery Rate - Filter Press	%	96.0%	---	User calculated value
Recovery Rate - UF System	%	90.0%	J	Kiewit Standard
UF System Effluent - Suspended Solids	mg/L	1.0	G	Typical for low TSS treatment
UF System Effluent - Organic Carbon	mg/L	3.0	Engg. Jgmt.	Per WAVE, recommended limit for RO

11) *Continued…* The following items act as a summary of the Design Parameters:

UF System Effluent - Iron	µg/L	50.0	Checklist	Per checklist, recommended limit for RO
UF System Effluent - Manganese	µg/L	50.0	Checklist	Per checklist, recommended limit for RO
Recovery Rate - Filtration System	%	90.0%	J	Kiewit Standard
Recovery Rate - FPRO System	%	80.0%	Engg. Jgmt.	Increased for low TDS source water
RO Concentrate - Suspended Solids	mg/L	0.0	Engg. Jgmt.	TSS removed by filter or membranes
Recovery Rate - SPRO System	%	90.0%	J	Kiewit Standard
Recovery Rate - EDI System	%	95.0%	J	Kiewit Standard
Demin Water - Sodium, as Na	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Sulfates, as SO4	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Chlorides, as Cl	mg/L	0.002	A	EPRI Guideline for steam cycle makeup
Demin Water - Silica, as SiO2	mg/L	0.010	A	EPRI Guideline for steam cycle makeup
Demin Water - Hardness, as CaCO3	mg/L	ND	A	EPRI Guideline for steam cycle makeup
Demin Water - Total Organic Carbon	mg/L	0.100	A	EPRI Guideline for steam cycle makeup
Demin Water - Specific Conductivity	µS/cm	0.010	A	EPRI Guideline for steam cycle makeup
OWS Effluent - Suspended Solids	mg/L	50.0	G	Typical for Kiewit OWS units
OWS Effluent - Oil & Grease	mg/L	10.0	Engg. Jgmt.	Typical specified requirement
Misc. Service Water Demand	gpm	25.0	J	Kiewit Standard
Potable/Sanitary Water Demand	gpm	2.0	J	Kiewit Standard
Steam Cycle Sampling Losses	gpm	6.0	Engg. Jgmt.	Matches multiple past water balances
Misc. Steam Cycle Losses	gpm	5.0	J	Kiewit Standard
Steam Cycle Blowdown Rate	%	2.0%	J	Kiewit Standard
Blowdown Tank Operating Pressure	psia	17.0	J	Kiewit Standard
Steam Cycle Blowdown - Ammonia	mg/L	2.0	Engg. Jgmt.	Most of ammonia volatilizes with LP steam
Quench Water Temperature	°F	70.0	J	Kiewit Standard
Quenched Blowdown Temperature	°F	140.0	J	Kiewit Standard
Circulating Water - Alkalinity	mg/L	150.0	K	Calculated based pH 7.9 target in tower

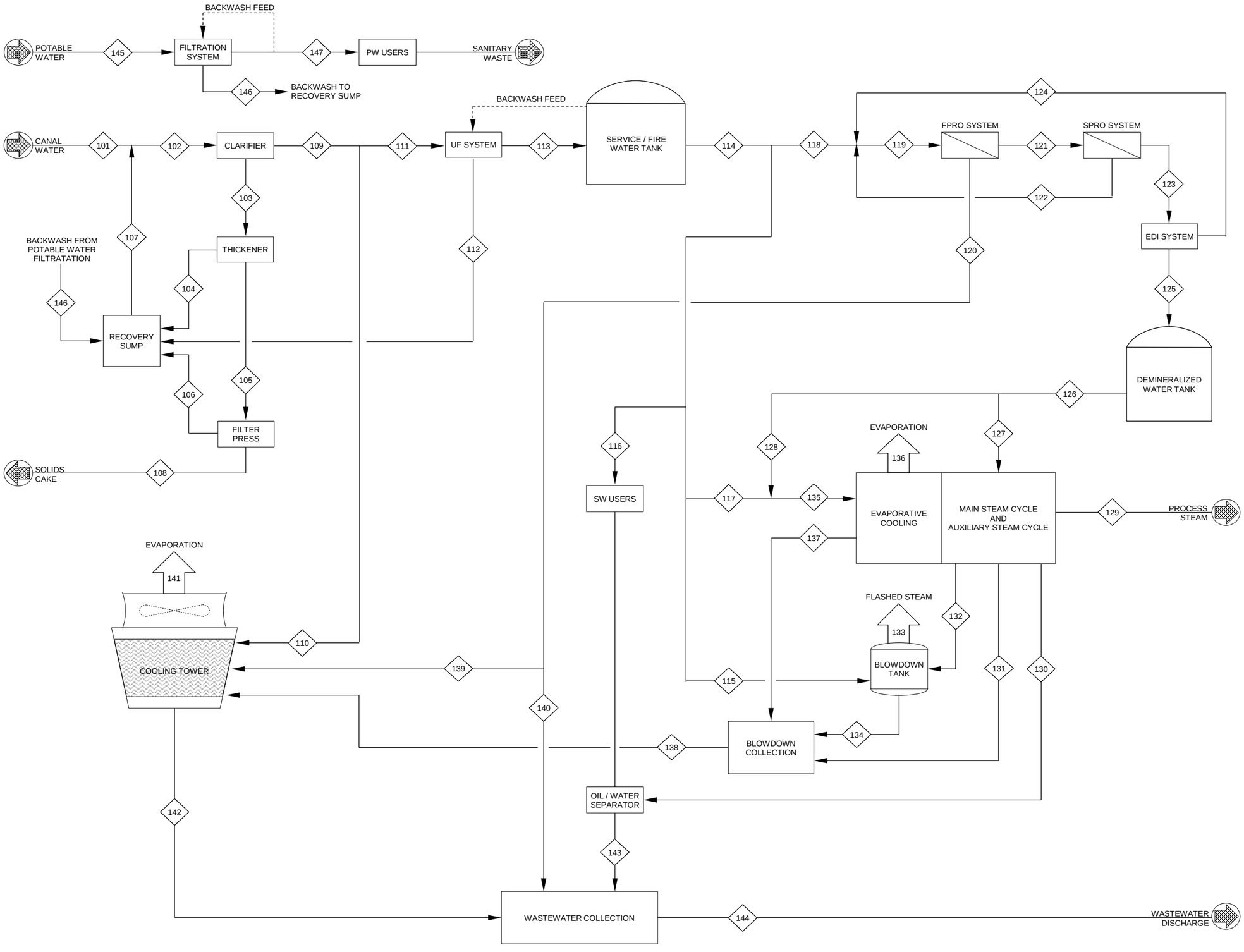
RESULTS:

1) See attached sheets for detailed information.
2) Raw, service, and demineralized water treatment equipment shown will meet the plant water user requirements.
3) Except for total alkalinity, the wastewater discharge requirements can be met without treatment during normal operation. The worst case wastewater quality is not expected to occur due to equalization in the wastewater collection before discharge. Alkalinity reduction could likely be achieved by dosing acid to the wastewater prior to discharge. Hydrochloric or other non-sulfur based acid is preferred due to discharge requirement on sulfates. Further evaluation will be required after receiving "firm" wastewater discharge requirements.
4) The main limiting constituent for the turbine evaporative cooler is manganese. For the average source water, the scaling indices show a corrosive environment at the design cycles of concentrations - trade off for meeting manganese requirement. For the maximum source water, the LSI is slightly exceeded with the other two scaling indices being in the recommended range - deemed acceptable for this evaluation.
5) Cooling tower guideline exceedance for silica and manganese will be addressed with scale/corrosion inhibitor dosing to the tower basin.
6) A summary of major system conditions are outlined below, including cycles of concentration for evaporative cooling equipment, water blend rates, and flowrates:

Case / Option Description	**OPTION F**		**OPTION F**	
Source Water Quality	**AVERAGE**		**MAXIMUM**	
Evap Cooler Cycles of Conc.	**4.0**		**4.0**	
Evap Cooler Demin Water Blend	**0.0%**		**0.0%**	
Cooling Tower Cycles of Conc.	**4.0**		**2.5**	
Flow Designation	**MINIMUM**	**MAXIMUM**	**MINIMUM**	**MAXIMUM**
CANAL WATER DEMAND	2,599	3,317	2,705	3,916
CLARIFIED WATER DEMAND	2,804	3,458	3,006	4,057
SERVICE WATER DEMAND	1,269	2,749	1,269	2,749
DEMINERALIZED WATER DEMAND	912	2,063	912	2,063
WASTEWATER DISCHARGE	213	629	356	1,227

REVISION HISTORY:

Rev.	Description	Prepared By	Checked By	Approved By	Issue Date
A	ISSUED FOR INFORMATION - Original transmittal to Client				



NOTES

1. ACTUAL PIPE ROUTING AND PROCESS FLOW LOCATIONS SUBJECT TO CHANGE
2. LARGE ARROWS DESIGNATE STREAMS ENTERING / EXITING THE PROJECT BOUNDARY LIMITS.
3. DASHED LINES REPRESENT "NORMALLY NO FLOW" (NNF) CONDITION.

- PRELIMINARY -
NOT FOR CONSTRUCTION / PERMITTING

REV	DESIGN BY	CHECKED BY	DATE
A	ISSUED FOR INFORMATION		
	L. DAVIS	C. STATLER	04/02/24

FENGATE - MOTIVA
THUNDERSTRUCK COGENERATION PROJECT

Kiewit

WATER MASS BALANCE
BLOCK FLOW DIAGRAM

ORIGINATOR	L. DAVIS	DRAWING NUMBER
LEAD ENG	E. VANZONNEVELD	20054000-WB-001 SHEET 1 OF 3
ENG MGR	J. MULDER	
PROJ MGR	J. MULDER	

ESTIMATED STREAM FLOWRATES - MAXIMUM SOURCE WATER QUALITY

PLANT DESIGN		Case F-1	Case F-1B	Case F-2	Case F-3	Case F-3B	Case F-4	Case F-5	Case F-5B	Case F-6	OPTION F - 320 MW 2x1 CC / COGENERATION GE 7F.04	
AMBIENT CONDITIONS		95°F / 50%RH	95°F / 50%RH	95°F / 50%RH	59°F / 60%RH	59°F / 60%RH	59°F / 60%RH	15°F / 13%RH	15°F / 13%RH	15°F / 13%RH		
EVAP COOLER STATUS		Evap On	Evap Off	Evap On	Evap On	Evap Off	Evap On	Evap Off	Evap Off	Evap Off		
DUCT BURNER STATUS		Unfired	Unfired	Fired to 1603F	Unfired	Unfired	Fired to 1596F	Unfired	Unfired	Fired to 1596F		
TYPE OF SOURCE FUEL		Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas		
PLANT CAPACITY		320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW	320 MW		
QUANTITY OF CTs OPERATING		2	2	1	2	2	1	2	2	1		
STREAM	**PARAMETER**	**Case F-1**	**Case F-1B**	**Case F-2**	**Case F-3**	**Case F-3B**	**Case F-4**	**Case F-5**	**Case F-5B**	**Case F-6**	**MINIMUM (NOTE 2)**	**MAXIMUM (NOTE 2)**
101	CANAL WATER DEMAND	3,372.9	3,096.2	3,915.9	2,880.4	2,706.9	3,371.0	2,718.6	2,705.2	2,906.7	2,705.2	3,915.9
102	CLARIFIER FEED	3,753.2	3,466.3	4,139.3	3,249.3	3,068.9	3,636.0	3,082.1	3,066.9	3,175.8	3,066.9	4,139.3
103	CLARIFIER BLOWDOWN	75.1	69.3	82.8	65.0	61.4	72.7	61.6	61.3	63.5	61.3	82.8
104	THICKENER DECANTATE	62.3	57.5	68.7	53.9	50.9	60.4	51.2	50.9	52.7	50.9	68.7
105	THICKENER BLOWDOWN	12.8	11.8	14.1	11.0	10.4	12.4	10.5	10.4	10.8	10.4	14.1
106	FILTER PRESS FILTRATE	12.3	11.3	13.5	10.6	10.0	11.9	10.1	10.0	10.4	10.0	13.5
107	RECOVERY SUMP DISCHARGE	380.2	370.1	223.4	368.9	361.9	265.1	363.5	361.7	269.0	223.4	380.2
108	SOLIDS CAKE TO DISPOSAL	0.5	0.5	0.6	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.6
109	CLARIFIED WATER DEMAND	3,678.1	3,397.0	4,056.5	3,184.3	3,007.5	3,563.3	3,020.5	3,005.6	3,112.3	3,005.6	4,056.5
110	CLARIFIED WATER TO COOLING TOWER	623.4	386.3	2,646.5	143.0	0.0	1,637.2	0.0	0.0	1,054.9	143.0	2,646.5
111	CLARIFIED WATER TO ULTRAFILTRATION SYSTEM	3,054.7	3,010.7	1,410.0	3,041.4	3,007.5	1,926.1	3,020.5	3,005.6	2,057.3	1,410.0	3,054.7
112	ULTRAFILTER BACKWASH	305.5	301.1	141.0	304.1	300.7	192.6	302.0	300.6	205.7	141.0	305.5
113	ULTRAFILTER EFFLUENT	2,749.3	2,709.7	1,269.0	2,737.2	2,706.7	1,733.5	2,718.4	2,705.0	1,851.6	1,269.0	2,749.3
114	SERVICE WATER DEMAND	2,749.3	2,709.7	1,269.0	2,737.2	2,706.7	1,733.5	2,718.4	2,705.0	1,851.6	1,269.0	2,749.3
115	SERVICE WATER MAKE-UP TO SC BDN QUENCH	30.9	27.7	35.5	31.8	26.8	38.7	30.5	26.3	39.8	26.3	39.8
116	SERVICE WATER MAKE-UP TO SW USERS	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
117	SERVICE WATER MAKE-UP TO EVAPORATIVE COOLING	29.6	0.0	29.6	14.7	0.0	14.7	0.0	0.0	0.0	14.7	29.6
118	SERVICE WATER MAKE-UP TO DWT SYSTEM	2,663.8	2,656.9	1,178.9	2,665.8	2,654.9	1,655.1	2,662.9	2,653.8	1,786.8	1,178.9	2,665.8
119	FIRST PASS RO FEED	3,013.3	3,005.6	1,333.6	3,015.6	3,003.3	1,872.3	3,012.4	3,002.0	2,021.3	1,333.6	3,015.6
120	FIRST PASS RO CONCENTRATE	602.7	601.1	266.7	603.1	600.7	374.5	602.5	600.4	404.3	266.7	603.1
121	FIRST PASS RO EFFLUENT	2,410.7	2,404.5	1,066.9	2,412.5	2,402.7	1,497.8	2,409.9	2,401.6	1,617.0	1,066.9	2,412.5
122	SECOND PASS RO CONCENTRATE	241.1	240.4	106.7	241.2	240.3	149.8	241.0	240.2	161.7	106.7	241.2
123	SECOND PASS RO EFFLUENT	2,169.6	2,164.0	960.2	2,171.2	2,162.4	1,348.0	2,168.9	2,161.4	1,455.3	960.2	2,171.2
124	EDI CONCENTRATE / DRAINS	108.5	108.2	48.0	108.6	108.1	67.4	108.4	108.1	72.8	48.0	108.6
125	EDI EFFLUENT / DEMIN WATER PRODUCED	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
126	DEMINERALIZED WATER DEMAND	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
127	DEMIN WATER MAKE-UP TO STEAM CYCLE	2,061.1	2,055.8	912.2	2,062.6	2,054.3	1,280.6	2,060.5	2,053.4	1,382.6	912.2	2,062.6
128	DEMIN WATER MAKE-UP TO EVAPORATIVE COOLING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	PROCESS STEAM TO COGENERATION	1,998.8	1,998.8	837.7	1,998.8	1,998.8	1,204.2	1,998.8	1,998.8	1,305.5	837.7	1,998.8
130	MISCELLANEOUS STEAM CYCLE LOSSES	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
131	STEAM CYCLE SAMPLING BLOWDOWN	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
132	STEAM CYCLE BLOWDOWN	51.3	46.0	63.5	52.8	44.4	65.5	50.6	43.5	66.1	43.5	66.1
133	FLASHED STEAM FROM HRSG BLOWDOWN TANK	24.2	21.7	32.4	25.0	20.9	31.5	23.9	20.5	31.2	20.5	32.4
134	QUENCHED STEAM CYCLE BLOWDOWN	57.9	52.0	66.6	59.6	50.3	72.7	57.2	49.3	74.7	49.3	74.7
135	MAKE-UP TO EVAPORATIVE COOLING	29.6	0.0	29.6	14.7	0.0	14.7	0.0	0.0	0.0	14.7	29.6
136	EVAPORATIVE COOLING EVAPORATION LOSSES	22.2	0.0	22.2	11.0	0.0	11.0	0.0	0.0	0.0	11.0	22.2
137	EVAPORATIVE COOLING BLOWDOWN	7.4	0.0	7.4	3.7	0.0	3.7	0.0	0.0	0.0	3.7	7.4
138	BLOWDOWN COLLECTION DISCHARGE	71.3	58.0	80.0	69.3	56.3	82.3	63.2	55.3	80.7	55.3	82.3
139	FPRO CONCENTRATE TO COOLING TOWER	602.7	601.1	266.7	603.1	373.5	374.5	451.0	174.2	404.3	174.2	603.1
140	FPRO CONCENTRATE TO WASTEWATER	0.0	0.0	0.0	0.0	227.2	0.0	151.4	426.2	0.0	151.4	426.2
141	COOLING TOWER EVAPORATION LOSSES	778.4	627.2	1,796.0	489.2	257.9	1,256.4	308.5	137.7	923.9	137.7	1,796.0
142	COOLING TOWER BLOWDOWN	518.9	418.2	1,197.3	326.1	171.9	837.6	205.7	91.8	615.9	91.8	1,197.3
143	OIL / WATER SEPARATOR DISCHARGE	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
144	WASTEWATER DISCHARGE	548.9	448.2	1,227.3	356.1	429.1	867.6	387.1	548.0	645.9	356.1	1,227.3
145	UNTREATED WATER DEMAND	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
146	FILTRATION BACKWASH	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
147	POTABLE WATER DEMAND	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

NOTES

1. ALL FLOWS IN GALLONS PER MINUTE (GPM). SOME OPERATING SCENARIOS WILL REQUIRE HIGHER FLOWS FOR SHORTER DURATIONS COMPARED TO STEADY STATE VALUES. DESIGN CONDITIONS FOR PUMPS, SUMPS, PIPING, AND OTHER PLANT EQUIPMENT SHOULD NOT BE BASED SOLEY ON THE FLOWS IN THIS EVALUATION.
2. MINIMUM AND MAXIMUM COLUMNS REPRESENT MINIMUM/MAXIMUM VALUES FROM ALL HEAT BALANCE CASES WHILE ONLY SPECIFIC CASES ARE SHOWN.
3. CTG WASH WATER FLOWS AND OTHER INSTANTANEOUS DEMANDS ARE MET BY UTILIZING THE RESPECTIVE SERVICE OR DEMIN WATER STORAGE TANK VOLUMES.
4. FLOWS ARE PRELIMINARY AND ARE SUBJECT TO THE FINAL DESIGN.

- PRELIMINARY -
NOT FOR CONSTRUCTION / PERMITTING

REV	DESIGN BY	CHECKED BY	DATE
A	ISSUED FOR INFORMATION		
	L. DAVIS	C. STATLER	04/02/24

FENGATE - MOTIVA
THUNDERSTRUCK COGENERATION PROJECT

Kiewit

WATER MASS BALANCE
ESTIMATED STREAM FLOWRATES

ORIGINATOR	L. DAVIS	DRAWING NUMBER
LEAD ENG	E. VANZONNEVELD	20054000-WB-001
ENG MGR	J. MULDER	SHEET 2 OF 3
PROJ MGR	J. MULDER	

ENGINEERING DESIGN REQUIREMENTS (EDR)
GENERAL SERVICE PUMPS

Description - RAW WATER INTAKE (1Z-RWS-PMP-01A/B)	Units	Quantity
1. **SCOPE:**	S=Seller, P=Purchaser, O=Option	
Quantity of RAW WATER INTAKE PUMPS (1Z-RWS-PMP-01A/B)		2
Pump Capacity (per pump)	%	100
Location (Indoor, Outdoor)		Outdoors
Skid Mounted		No
Skid to be Insulated		No
Skid Tag Number		N/A
Skid Pipe Code		1BAA11
2. **DESIGN CONSIDERATIONS:**	S=Seller, P=Purchaser, O=Option	
Performance Summary Case		
Pumped Fluid		Water
Water Specific Gravity @ Normal Operating Temperature		1.0
Base Case Guaranteed Case		
Pumps in Operation		1
Pump Capacity point #1	gpm	3485
Pump TDH point #1	ft	140
Guaranteed Maximum Head Rise-to-Shutoff	%	140
Maximum Recirculation Flow Rate	gpm	S
NPSHA	ft	LATER
* Above numbers indicate pressures seen at the discharges and suctions. Delta between the discharges and suctions must be taken to achieve developed head by pump		
** Case are the Base/Guaranteed cases; however, the flows and corresponding discharge heads shown on the curves shall meet or exceed the flow and discharge head requirements of all operating cases		
Operating Temperature Range	°F	40
	°F	75
Design Temperature	°F	95
Minimum total head developed at shutoff conditions at design speed as a percent of the total head at the design point	% (by ea. Pump)	See Section M1
Maximum total head developed at shutoff conditions at design speed as a percent of the total head at the design point	% (by ea. Pump)	See Section M1
3. **MATERIALS:**	S=Seller, P=Purchaser, O=Option	
Casing Material		A536 65-45-12 Ductile Iron
Shaft Material		1045 Steel
Shaft Sleeve Required		N/A
Shaft Sleeve Material		N/A
Impeller Material		A48 Cast Iron
Casing Wear Ring Material		S
4. **GUARANTEED NOISE REQUIREMENTS:**	S=Seller, P=Purchaser, O=Option	
Near Field Limit (3 ft distance and 5 ft above grade)	dBA	85
5. **Motor Data**		
Voltage/Phase/Frequency		460/3/60
Pump Synchronous Speed	RPM	1800
6. **Freeze Protection for Instrumentation**		
		Yes

ENGINEERING AND DESIGN REQUIREMENTS (EDR)
CIRCULATING WATER PUMPS

Item	Description	(English) Units	Circulating Water Pumps Quantity	Aux Circulating Water Pump Quantity
1.00	**Circulating Water Pumps**			
1.01	Scope			
	Number of Circulating Water Pumps		2	1
	Tag Numbers		1Z-CWS-PMP-01A/B	1Z-CWS-PMP-02
	Number of Electric Motor Drivers		2	1
	Motor Driver Space Heater (Yes / No)		Yes	Yes
	VFD required for Motor? / Rated For?		No	No
	Pump Configuration		Vertical Wet	Vertical Wet
	Pump Discharge w.r.t. Floor Level (Above / Below)		Above	Above
	Number of Stages		Multistage	Multistage
	Pull-Out Design Required (Yes / No)		Yes	Yes
	Pump Capacity (Per Pump)	%	50	100
	Spare Pump(s)		N/A	N/A
	Spare Pull-Out Element(s) (Yes / No)		No	No
	Spare Motor(s) (Yes / No)		No	No
1.02	Design			
	Guaranteed Capacity @ Guaranteed Head (each)	GPM @ ft	51,716	10,000
	Guaranteed Head (TDH) @ Guaranteed Capacity	ft	86	65
	Referenced to Low Water Level (LWL)			
	All losses up to the discharge flange shall be included in Seller's design			
	At Design Flow Rate, TDH is within (x)% of Design TDH	%	+ 6% / - 0%	+ 6% / - 0%
	At Design TDH, Flow is within (x)% of Design Flow	%	+ 10% / - 0%	+ 10% / - 0%
	At Pump Shutoff, TDH is within (x)% of Expected TDH	%	+ 0% / - 5%	+ 0% / - 5%
	Maximum Total Dynamic Head (TDH) @ Minimum Flow:	ft @ GPM	By Seller	By Seller
	High Water Level (HWL) (From Bottom of Baseplate):	ft	LATER	LATER
	Normal Water Level (NWL) (From Bottom of Baseplate):	ft	LATER	LATER
	Low Water Level (LWL) (From Bottom of Baseplate):	ft	LATER	LATER
	Design Fluid Temperature (Min / Max / Design)	°F	40 / 87 / 120	40 / 87 / 120
	Normal Operating Temperature Range	°F	LATER	LATER
	Pumping Fluid	Fluid / S.G.	Circulating Water / 1.0	Circulating Water / 1.0
	Maximum Pump Speed	RPM	1200	1200
	Motor Cooling (Air / Integrated Water / Internal Coolant / External Coolant)		Air	Air
	Minimum Discharge Nozzle Loading Design (F_x / F_y / F_z)	lb	8,000	2,500
	Minimum Discharge Nozzle Loading Design (M_x / M_y / M_z)	ft-lb	30,000	2,500

ENGINEERING AND DESIGN REQUIREMENTS (EDR)
CIRCULATING WATER PUMPS

Item	Description	(English) Units	Circulating Water Pumps Quantity	Aux Circulating Water Pump Quantity
1.03	Operating Conditions			
	Shutoff Head	ft	Seller	Seller
	Percent of Max Total Design Point TDH at Shutoff Condition	%	Less than 180%	Less than 180%
	Near Field Limit (free-field, 3 ft (1 m) horizontal distance and 5 ft (1.5 m) above base plate)	dBA	85	85
	Far Field Limit (free-field, 400 ft (120 m) horizontal distance and 5 ft (1.5 m) above base plate)	dBA	Seller	Seller
	Location (Indoors / Outdoors)		Outdoors	Outdoors
	Maximum Particle Size to Pass	in	1	1
	Impeller Balancing Grade (ISO 1940)	G6.3	per M1	per M1
	Circulating Water Quality		See Appendix A	See Appendix A
	Prime Mover Pump Motor Operation	VAC	6600	6600
	No Rotating Assembly f_c within % of operating speed	%	25	25
	Column Velocity at Design Flow Rate	ft/s	10	10
	Suction Bell Inlet Velocity at Design Flow Rate	ft/s	5	5
	Suction Specific speed shall not vary more than (x)% from FD	%	10	10
1.04	Materials		ASTM # / Trade Name	
	Pump Bowls		Carbon Steel ASTM A36	Carbon Steel ASTM A36
	Pump Column		Carbon Steel ASTM A36	Carbon Steel ASTM A36
	Discharge Head Assembly and Column		Carbon Steel ASTM A36	Carbon Steel ASTM A36
	Line Shaft		Stainless Steel ASTM A582 Type 416 Turned and Ground	Stainless Steel ASTM A582 Type 416 Turned and Ground
	Impellers		Stainless Steel ASTM A582 Type 416 Turned and Ground	Stainless Steel ASTM A582 Type 416 Turned and Ground
	Bearings, Above/Below Low Water Level		Cutless Rubber, Water Lubricated	Cutless Rubber, Water Lubricated
	Bearings, Bowl		Bronze, Water Lubricated	Bronze, Water Lubricated
	Bearings, Suction Bell		Bronzed Fitted Permanently Lubricated	Bronzed Fitted Permanently Lubricated
	Shaft Sleeves		ASTM A276 Type 304 Condition A	ASTM A276 Type 304 Condition A
	Mounting Flange and Soleplate		Carbon Steel ASTM A36 with Epoxy Coating	Carbon Steel ASTM A36 with Epoxy Coating
	Wear Rings		Compatible with impeller, Cast Iron A48-Class 30	Compatible with impeller, Cast Iron A48-Class 30
	Impeller Castings		ASTM A240 Type 316L SS, Auxiliary circulating water pump impeller casing shall be A216 CS	ASTM A240 Type 316L SS, Auxiliary circulating water pump impeller casing shall be A216 CS
1.05	Field Services			
	Erection Support	man-days	LATER	LATER
	Commissioning / Startup	man-days	LATER	LATER
	Operator Training	man-days	LATER	LATER

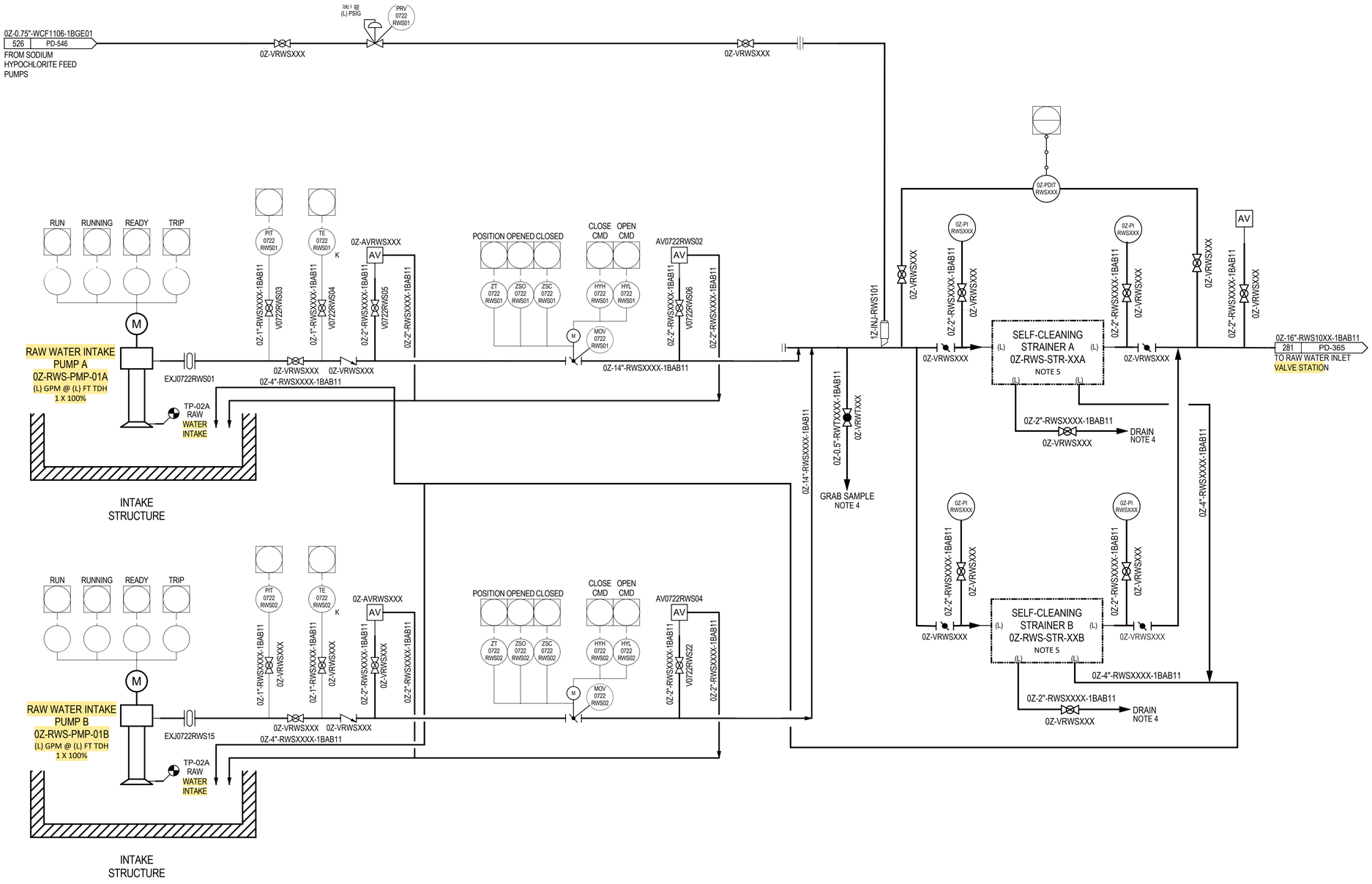
ATTACHEMNT 19 / ATTACHMENT 20 - FIGURE 5

STREAM DESCRIPTION		COOLING TOWER MAKEUP		COOLING TOWER CIRCULATING WATER	
CONSTITUENT	**UNITS**	**AS SUCH**	**AS CaCO3**	**AS SUCH**	**AS CaCO3**
CALCIUM, Ca	ppm	32.1	80.1	80.2	200.3
MAGNESIUM, Mg	ppm	56.2	231.5	140.6	578.8
SODIUM, Na	ppm	170.6	371.4	426.5	928.4
M-ALKALINITY, M-ALK	ppm		157.6		150.0
BICARBONATE, HCO3	ppm	192.1	157.6	182.9	150.0
SULFATES, SO4	ppm	127.0	132.4	551.7	574.9
CHLORIDES, Cl	ppm	278.5	393.1	696.2	982.7
SILICA, SiO2	ppm	63.4	52.8	158.6	132.1
TOTAL HARDNESS	ppm		311.7		779.1
pH		7.0		7.9	
SPECIFIC CONDUCTIVITY	µS/cm	1,337.4		3,343.5	
TOTAL DISSOLVED SOLIDS, TDS	ppm	869.5		2,173.7	
TOTAL SUSPENDED SOLIDS, TSS	ppm	1.8		4.5	
AMMONIA, NH3	ppm	0.1		0.4	
TOTAL ORGANIC CARBON, TOC	ppm	14.9		37.2	
IRON, Fe	ppb	218.9		547.3	
MANGANESE, Mn	ppb	183.9		459.6	
AVAILABLE CHLORINE, FREE	ppm			1.0	

ATTACHEMNT 19 / ATTACHMENT 20 - FIGURE 6

NOTES:

1. SEE KIEWIT DWG: (L)
   SEE VENDOR DWG: (L)
2. INSULATE AND/ OR HEAT TRACE PER MECHANICAL DETAIL.
3. ADD BIRD SCREEN TO THE END OF THE OVERFLOW PIPE.
4. THREADED CAP TO BE INSTALLED DURING SHIPPING FOR THREAD PROTECTION AND REMOVED AFTER INSTALLATION.
5. SEE KIEWIT DWG: (L)
   SEE VENDOR DWG: (L)



- PRELIMINARY -
NOT FOR CONSTRUCTION

REV	DESIGN BY	CHECKED BY	DATE
A	Issued for Review		
	E. VanZonneveld	S. Gawer	4/26/2024

FENGATE - MOTIVA

THUNDERSTRUCK COGENERATION PROJECT

Kiewit

PIPING AND INSTRUMENTATION DIAGRAM
RWS - RAW WATER SYSTEM

ENGINEER/DESIGN ORIGINATOR	E. VanZonneveld
LEAD ENG	S. Gawer
ENG MGR	J. Mulder
PROJ MGR	J. Mulder

DRAWING NUMBER

20054000-PD-360

ATTACHMENT 21- Source Waterbody Data

Source Waterbody Data

1. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports this determination of the water body type where each cooling water intake structure is located.

2. CWIS 01 RAW WATER LNVA CANAL– The proposed facility includes the construction and installation of an intake structure on the Lower Neches Valley Authority (LNVA) canal system located near the Port Arthur Water Treatment Facility at the intersection of State Highway 73 and Highway 215 (Figure 1). This manmade canal was built before earliest available satellite image (1938) and is connected to the larger Port Arthur Canal system, channelized tributaries of the Neches River.

CWIS 01 RAW WATER LNVA CANAL		
Physical Characteristics		Units
Width	120	ft
Length	2,528	ft
Area	5,250	ft^2
Average Depth	10 (estimated)	ft
Immediate Area Volume	52,500 (estimated)	ft^3
Immediate Area Volume	392,826 (estimated)	gal
Flow Rate (observed)*	0.0	ft/s
Flow Rate (reported by LNVA)	75	ft^3/s
Visual Water Quality Data – Observed 7/11/24 - 10:15am		
Observed Color	Light Brown	
Visible Suspended Solids	Moderate amount of particulate matter present	
Odor	Light decay smell, unpleasant	

*Floating chip did not move over any measurable distance

Analytical Water Quality Data – Sampled 7/11/24 - 10:15am		Units
Alkalinity	24	mg CaCO3/L
Ammonia as N	BRL	mg/L
Chlorine, Free	0.16	mg/L
Chlorine, Total	0.16	mg/L
Conductance	129.0	umho/cm @ 25°C
Nitrate/Nitrite as N	0.0677	mg/L
TOC	6.5	mg/L
Bromide	BRL	mg/L
Chloride	8.97	mg/L
Sulfate	10.8	mg/L
TSS	20.4	mg/L
Calcium Hardness	18.71	mg CaCO3/L
Magnesium Hardness	8.23	mg CaCO3/L
Total Hardness	26.94	mg CaCO3/L
Arsenic	BRL	mg/L
Chromium	BRL	mg/L
Copper	BRL	mg/L
Iron	1.75	mg/L
Manganese	0.104	mg/L
Selenium	BRL	mg/L

Silicon	7.93	mg/L
Sodium	6.11	mg/L
Zinc	0.008	mg/L
Oil & Grease	BRL	mg/L
TDS	198.0	mg/L
Mercury	BRL	ng/L
Aroclor 1016	BRL	ug/L
Aroclor 1221	BRL	ug/L
Aroclor 1232	BRL	ug/L
Aroclor 1242	BRL	ug/L
Aroclor 1248	BRL	ug/L
Aroclor 1254	BRL	ug/L
Aroclor 1260	BRL	ug/L
Total PCBs	BRL	ug/L
Mercury	BRL	ng/L

Photograph 1 – CWIS 01 RAW WATER LNVA CANAL, Observation Area

CWIS 02 RAW WATER (ALT) – Clarified water supplied and treated within the existing Motiva facility is an alternative source for service and demineralized water supply. This existing pump structure is located within the Motiva facility on the east bank of the termination of the canal connected to the LNVA levee referred to in CWIS 01 approximately 0.85 miles east.

3. A narrative description of the source waterbody's hydrological and geomorphological features.

CWIS 01 RAW WATER LNVA CANAL – This water body is characterized by a narrow berm to the north with vegetated banks of cemented crushed stone retaining the reservoir to north owned and operated by the City of Prot Arthur Water Treatment. To the south the canal is bordered by another berm bank with a freshwater marsh area on the opposing side. The canal is channelized in its entirety from the LNVA station off the Neches River to the terminus on Motiva Enterprises property with some aquatic vegetation present near the banks. At the time on-site observations were made no discernable water flow could be seen and the LNVA flood gauge present was at 1 inch. The water flow of the canal is presumed to be entirely dependent on the LNVA operation of levees and active rainfall.

CWIS 02 RAW WATER (ALT) –. This existing pump structure is located within the Motiva facility is located on the drainage channel and characterized by the same water colorization and bank features as CWIS 01 RAW WATER LNVA CANAL.

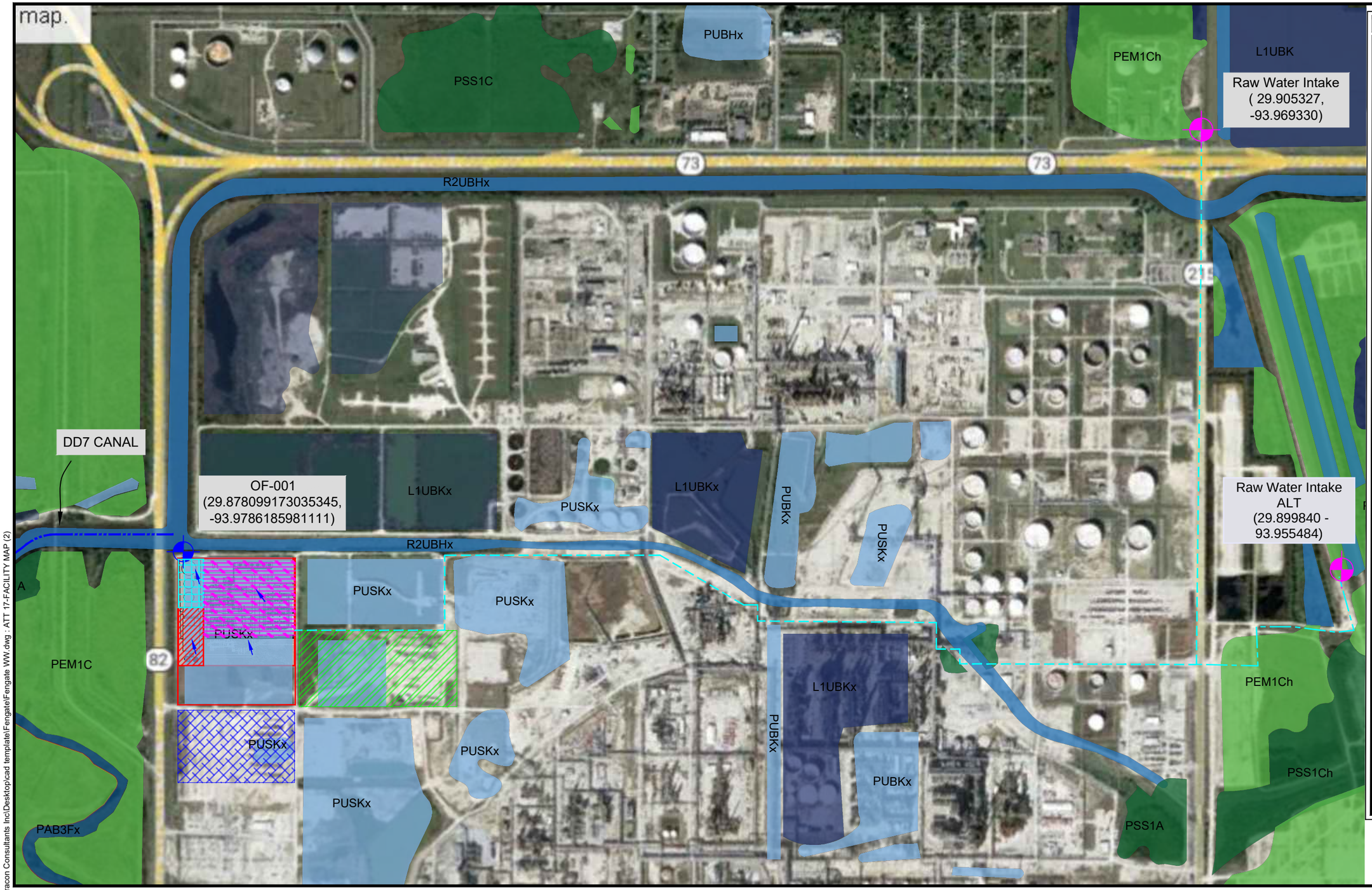
4. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. NOTE: The source waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.

   See Figure 1

5. A description of the methods used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

   Site observations depict a slow-to-no flow channel, however, a desktop review of the LNVA canal network available through Google Earth and Jefferson County DD7 maps on their website indicates a larger availability of source water than what was present at the time of observations. More than 30 miles of drainage channel is operated upstream before reaching the natural stream of Pine Island Bayou or the Neches River.

map.



LEGEND

- WASTEWATER TREATMENT PLANT
- POWER GENERATION AREA
- CHEMICAL STORAGE AREA
- LAYDOWN AREA
- PARKING AREA
- PROPERTY BOUNDARY
- OUTFALL
- FLOW DIRECTION
- RAW WATER INTAKE
- RAW WATER LINE INTAKE
- RECEIVING WATER

WETLAND

- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- LAKE
- RIVERINE

0 450 900

APPROXIMATE SCALE: 1"=900'

C:\Users\psbelloni\OneDrive - Terracon Consultants Inc\Desktop\cad template\Fengate\Fengate WW.dwg : ATT 17-FACILITY MAP (2)

REV.	DATE	BY	DESCRIPTION

Terracon

11555 CLAY ROAD, SUITE. 100 HOUSTON, TX 77043

PH. (713) 690-8989 FAX. (713) 690-8787

ATTACHEMNT 19/ ATTACHMENT 20 - FIGURE 1

PORT ARTHUR COGENERATION, LLC
PORT ARTHUR COGENERATION PROJECT

2555 Savannah Ave, Port Arthur, TX 77640

HOUSTON TEXAS

DESIGNED BY:	BEM
DRAWN BY:	PSB
APPVD. BY:	RDC
SCALE:	AS SHOWN
DATE:	07/03/2024
JOB NO.	92247254
ACAD NO.	Fengate WW.dwg
SHEET NO.:	1 OF 1

ATTACHMENT 22-
Source Water
Biological Data

Source Water Biological Data

A list of the data requested at *40 CFR § 122.21(r)(4)(ii)* through *(vi)* that are not available, and efforts made to identify sources of the data.

Data Request	Availability	Efforts Made
(ii) A list of species (or relevant taxa) for all life stages and their relative abundance in the vicinity of the cooling water intake structure;	Not Available	Contacted Lower Neches Valley Authority (LNVA) and Jefferson County DD7 for any available data on the intake structure channel. Searched TCEQ Water Quality Data and Texas Fish and Wildlife Reports.
(iii) Identification of the species and life stages that would be most susceptible to impingement and entrainment. Species evaluated should include the forage base as well as those most important in terms of significance to commercial and recreational fisheries;	Not Available	Contacted Lower Neches Valley Authority (LNVA) and Jefferson County DD7 for any available data on the intake structure channel. Searched TCEQ Water Quality Data and Texas Fish and Wildlife Reports.
(iv) Identification and evaluation of the primary period of reproduction, larval recruitment, and period of peak abundance for relevant taxa;	Not Available	Contacted Lower Neches Valley Authority (LNVA) and Jefferson County DD7 for any available data on the intake structure channel. Searched TCEQ Water Quality Data and Texas Fish and Wildlife Reports.
(v) Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of	Not Available	Contacted Lower Neches Valley Authority (LNVA) and Jefferson County DD7 for any available data on the

biological organisms in the vicinity of the cooling water intake structure;		intake structure channel. Searched TCEQ Water Quality Data and Texas Fish and Wildlife Reports.
(vi) Identification of all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at your cooling water intake structures;	Attached iPac Report from USFWS Attached LNVA 2021 Basin Summary Report of the Lower Neches and Neches Trinity Coastal Basins	

Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.

- all life stages and their relative abundance,
- identification of all species and life stages that would be most susceptible to impingement and entrainment,
- forage base,
- significance to commercial fisheries,
- significance to recreational fisheries,
- primary period of reproduction,
- larval recruitment, and
- period of peak abundance for relevant taxa.

Not Available

Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the CWIS(s).

Not Available

Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the CWIS(s).

- The LNVA 2021 Basin Summary Report of the Lower Neches and Neches Trinity Coastal Basins indicates the potential presence of freshwater mussels in the canal systems.

- The USFWS IPAC report did not indicate any potential aquatic species in the selected canal area (approximately 5 miles upstream)

Documentation of any public participation or consultation with federal or state agencies undertaken.

LNVA was contacted to retrieve any available information. All provided information is attached.

- Attachment 1 – USFWS IPAC Report
- Attachment 2 – LNVA 2021 Basin Summary Report of the Lower Neches and Neches Trinity Coastal Basins
- Attachment 3 – LNVA Provided Pollutants and Flow

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Texas Coastal & Central Plains Esfo
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
Phone: (281) 286-8282 Fax: (281) 488-5882

In Reply Refer To: 07/25/2024 06:48:28 UTC
Project Code: 2024-0121242
Project Name: Proposed Intake Structure

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Corpus Christi, Fort Worth, and Alamo, Texas, have combined administratively to form the Texas Coastal Ecological Services Field Office. All project related correspondence should be sent to the field office address listed below responsible for the county in which your project occurs:

Project Leader; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058
Angelina, *Austin*, *Brazoria*, *Brazos*, *Chambers, Colorado, Fayette, Fort Bend, Freestone, Galveston, Grimes, Hardin, Harris, Houston, Jasper, Jefferson, Leon, Liberty, Limestone, Madison, Matagorda, Montgomery, Newton, Orange, Polk, Robertson, Sabine, San Augustine, San Jacinto, Trinity, Tyler, Walker, Waller, and Wharton.*

Assistant Field Supervisor, U.S. Fish and Wildlife Service; 4444 Corona Drive, Ste 215; Corpus Christi, Texas 78411
Aransas, Atascosa, Bee, Brooks, Calhoun, De Witt, Dimmit, Duval, Frio, Goliad, Gonzales, Hidalgo, Jackson, Jim Hogg, Jim Wells, Karnes, Kenedy, Kleberg, La Salle, Lavaca, Live Oak, Maverick, McMullen, Nueces, Refugio, San Patricio, Victoria, and Wilson.

U.S. Fish and Wildlife Service; Santa Ana National Wildlife Refuge; Attn: Texas Ecological Services Sub-Office; 3325 Green Jay Road, Alamo, Texas 78516
Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata.

For questions or coordination for projects occurring in counties not listed above, please contact arles@fws.gov.

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your

proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/media/endangered-species-consultation-handbook.

Non-Federal entities may consult under Sections 9 and 10 of the Act. Section 9 and Federal regulations prohibit the take of endangered and threatened species, respectively, without special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is further defined (50 CFR § 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. “Harass” is defined (50 CFR § 17.3) as intentional or negligent actions that create the likelihood of

injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Should the proposed project have the potential to take listed species, the Service recommends that the applicant develop a Habitat Conservation Plan and obtain a section 10(a)(1)(B) permit. The Habitat Conservation Planning Handbook is available at: https://www.fws.gov/library/collections/habitat-conservation-planning-handbook.

Migratory Birds:
In addition to responsibilities to protect threatened and endangered species under the Act, there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts visit: https://www.fws.gov/program/migratory-birds.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable National Environmental Policy Act (NEPA) documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Texas Coastal & Central Plains Esfo
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
(281) 286-8282

PROJECT SUMMARY

Project Code: 2024-0121242
Project Name: Proposed Intake Structure
Project Type: Power Gen - Natural Gas
Project Description: Biological Review
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@29.9162427,-94.01756863337692,14z

Counties: Jefferson County, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

REPTILES

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: North Atlantic DPS There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle *Eretmochelys imbricata* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Kemp's Ridley Sea Turtle *Lepidochelys kempii* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/5523	Endangered
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

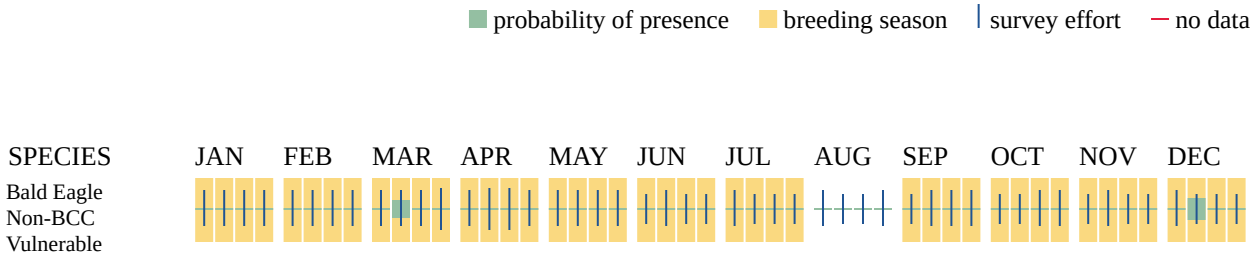
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Black Skimmer *Rynchops niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Dickcissel *Spiza americana* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9453	Breeds May 5 to Aug 31
Forster's Tern *Sterna forsteri* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11953	Breeds Mar 1 to Aug 15

NAME	BREEDING SEASON
Gull-billed Tern *Gelochelidon nilotica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Le Conte's Sparrow *Ammospiza leconteii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9469	Breeds elsewhere
Least Tern *Sternula antillarum antillarum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11919	Breeds Apr 25 to Sep 5
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Painted Bunting *Passerina ciris* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9511	Breeds Apr 25 to Aug 15
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prairie Loggerhead Shrike *Lanius ludovicianus excubitorides* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8833	Breeds Feb 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere

NAME	BREEDING SEASON
Sandwich Tern *Thalasseus sandvicensis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9731	Breeds Apr 25 to Aug 31
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Swallow-tailed Kite *Elanoides forficatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5
Wilson's Plover *Charadrius wilsonia* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9722	Breeds Apr 1 to Aug 20

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

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Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
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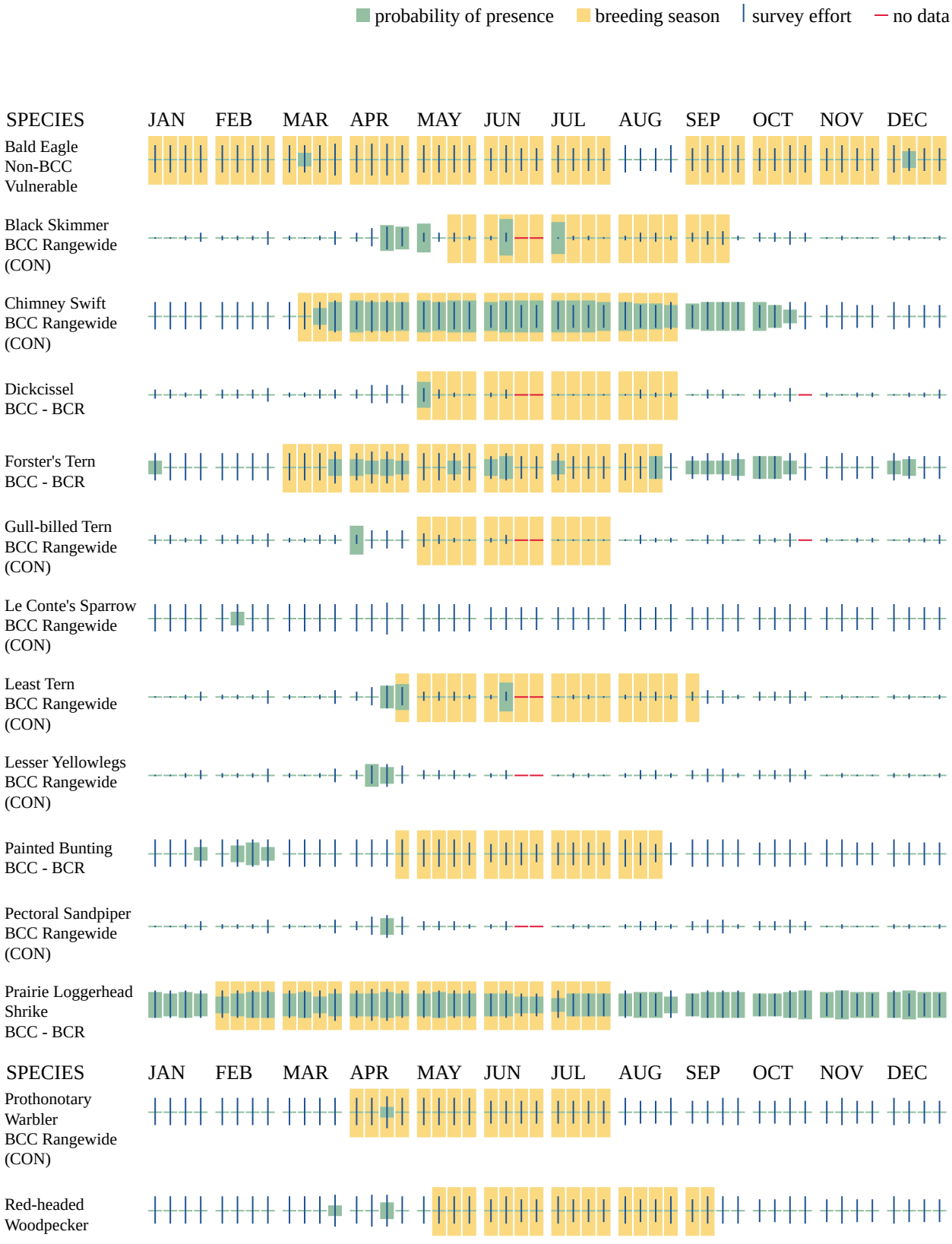
probability of presence
breeding season
survey effort
no data
SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Bald Eagle
Non-BCC
Vulnerable
Black Skimmer
BCC Rangewide
(CON)
Chimney Swift
BCC Rangewide
(CON)
Dickcissel
BCC - BCR
Forster's Tern
BCC - BCR
Gull-billed Tern
BCC Rangewide
(CON)
Le Conte's Sparrow
BCC Rangewide
(CON)
Least Tern
BCC Rangewide
(CON)
Lesser Yellowlegs
BCC Rangewide
(CON)
Painted Bunting
BCC - BCR
Pectoral Sandpiper
BCC Rangewide
(CON)
Prairie Loggerhead
Shrike
BCC - BCR
SPECIES
JAN
FEB
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AUG
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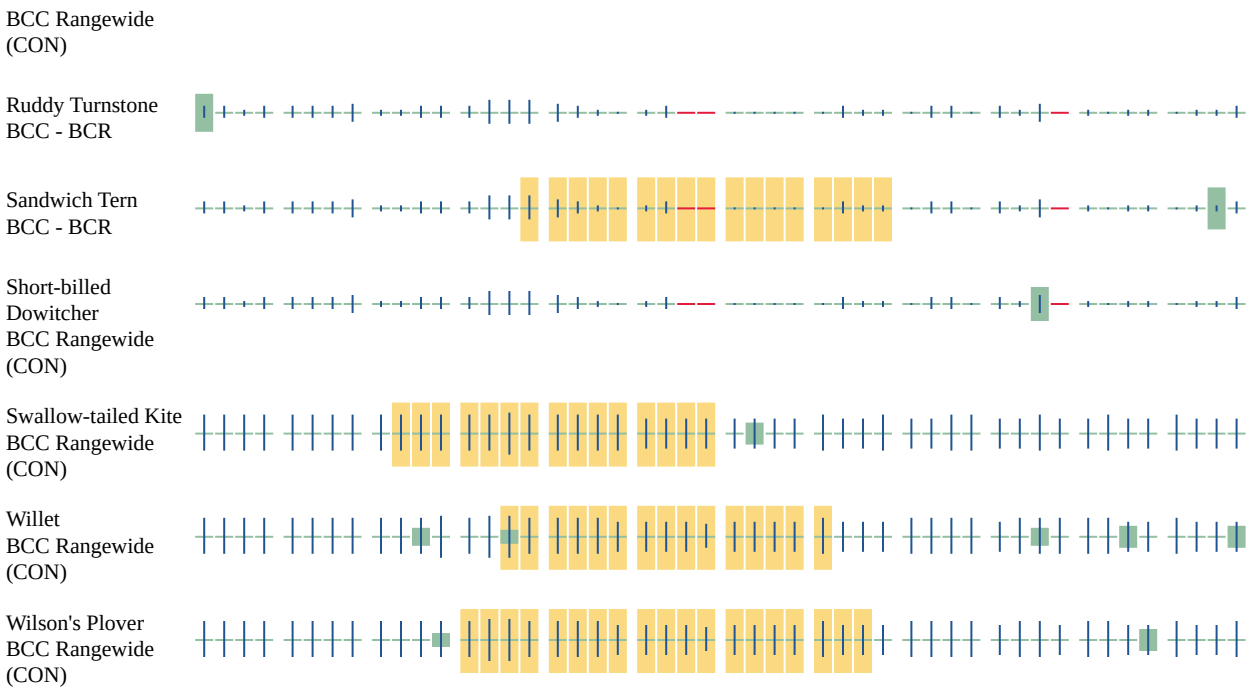
NOV
DEC
Prothonotary
Warbler
BCC Rangewide
(CON)
Red-headed
Woodpecker



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R5UBFx

- R5UBH
- R2UBHx

FRESHWATER FORESTED/SHRUB WETLAND

- PSSA
- PSS1C

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1A

OTHER

- Pf

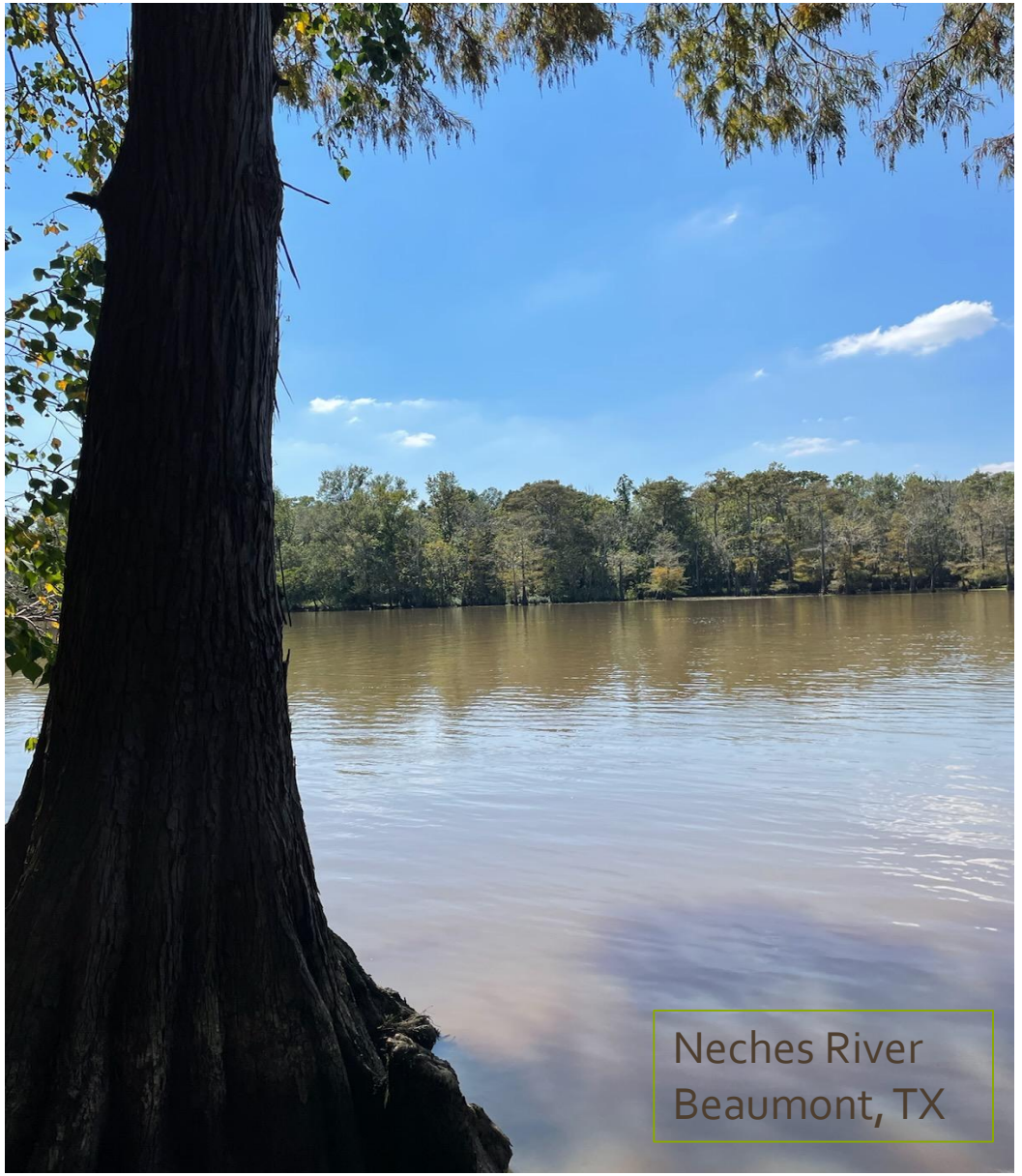
IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Brita Minin
Address: 11555 Clay Rd. Suite 100
City: Houston
State: TX
Zip: 77043
Email beminin@terracon.com
Phone: 7133292561

Lower Neches Basin and Neches-Trinity Coastal Basin Highlights Report

Clean Rivers Program Update 2022

Table of Contents



Neches River
Beaumont, TX

This report is prepared in cooperation with and through funding provided by the Texas Commission on Environmental Quality.

Introduction

Texas Clean Rivers Program

The Texas Legislature passed the Texas Clean Waters Act, in 1991, to ensure rivers and streams across the state are protected and sustainably utilized, without jeopardizing the integrity of the resource. As a result, the Texas Clean Rivers Program (CRP) was born. This program, in coordination with the Texas Commission on Environmental Quality (TCEQ) and regional water authorities across the state, is tasked with water quality monitoring, basin health assessments, and to engage stakeholders on how to improve the quality of surface water within each river basin of Texas. Currently, fifteen (15) regional water authorities, which are made up of twelve (12) river authorities, one (1) water district, one (1) council of governments, and one (1) international water commission, possess contracts with the TCEQ to conduct water quality monitoring, assessments, and stakeholder outreach in the 23 major river and coastal basins of Texas. The Lower Neches Valley Authority (LNVA) monitors and assesses surface water quality in the lower Neches Basin.

2022 Basin Highlights Report

This report is an update on the Clean River Program in the Lower Neches and Neches-Trinity Coastal Basins in 2021. Report sections include highlights of the events and activities that took place in 2021. A section on public involvement with water quality including education and outreach activities that occurred within the year. The last major section is a summarization of the water quality monitoring and special projects taking place within the basins.

Clean Rivers Goals and Objectives

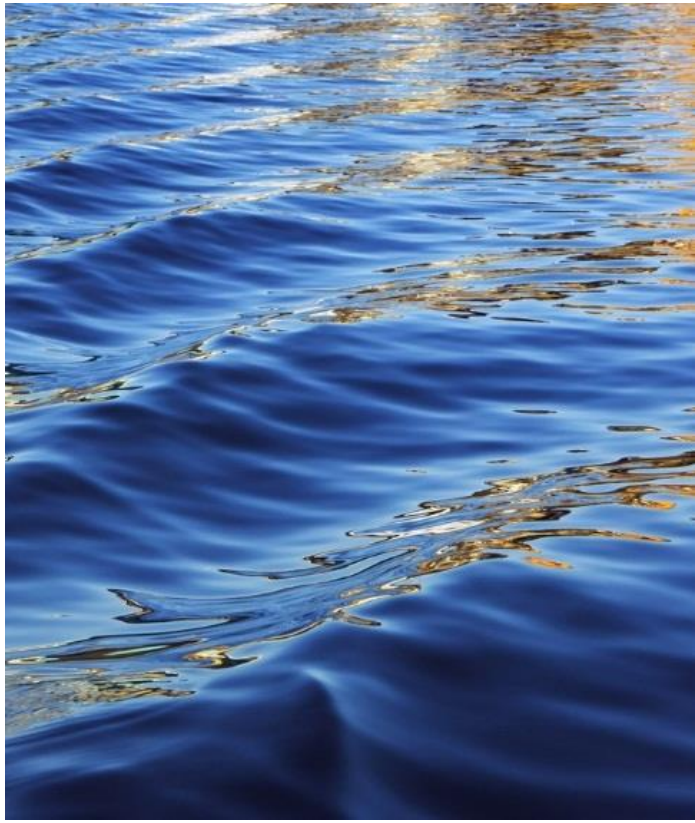
The goal of the Clean Rivers Program is to maintain and improve the quality of surface water within each river basin in Texas through an ongoing partnership involving the Texas Commission on Environmental Quality, river authorities, other state agencies, regional entities, local governments, industry, and citizens. The program's watershed approach will identify and evaluate water quality issues, establish priorities for corrective action, work to implement those actions and adapt to changing priorities. There are six program objectives for the Clean Rivers Program. These objectives are:

- Provide quality-assured data to the TCEQ for use in decision making
- Identify and evaluate water quality issues
- Promote cooperative watershed planning
- Recommend management strategies
- Inform and engage stakeholders
- Maintain efficient use of public funds

THE TEXAS CLEAN RIVERS PROGRAM

LNVA LOWER NECHES VALLEY AUTHORITY

2021 Highlights



Basin Summary Report

In order to accomplish the program goal and objectives, the Clean Rivers Program is divided into six different tasks. These tasks are as follows:

- Task 1 - Project Administration
- Task 2 - Quality Assurance
- Task 3 - Water Quality Monitoring
- Task 4 - Data Management
- Task 5 - Data Analysis and Reporting
- Task 6 - Stakeholder Participation and Public Outreach
- Task 7 - Special Projects

The basin summary report is a requirement of Task 5 Data Analysis and Reporting. The purpose of the basin summary report, is to provide a comprehensive review of water quality data and involves a detailed discussion of data analysis findings. This report serves to develop a greater understanding of basin water quality conditions, identify trends and changes, and aid in making decisions regarding water quality issues in each river and coastal basin in Texas.

In the 2021 report, the water quality in the Lower Neches and Neches-Trinity Coastal Basin segments do not meet all state water quality standards and assessment criteria. All of the segments have listed impairments and/or concerns. Some of these impairments and concerns can be attributed to natural conditions within the basin. The specific causes of those that aren't natural will require further study. Significant progress has been made to address some of these issues. Additional monitoring efforts to target specific impairments, as well as more coordination with agencies like the Texas Department of State Health Services and the Texas Commission on Environmental Quality will be required.

Please visit the LNVA website at https://lnva.dst.tx.us to view the 2021 Basin Summary Report of the Lower Neches and Neches Trinity Coastal Basins in its entirety.

Mussel Studies in the LNVA Canal System

The LNVA canal harbors 24 of the 32 freshwater mussel species present in the Neches Basin, including two state threatened species. One of which, the Louisiana Pigtoe Mussel (LPM) is under review by the United States Fish and Wildlife Service to determine if Federal protection is warranted.

In 2021, after LPM were observed at other locations within the canal system, a survey was conducted by Bio-West Inc. to enhance distribution and abundance data for freshwater mussels within the LNVA canal. In total, 11,200 mussels were collected from 24 sites. Louisiana Pigtoe were located at 14 of the 24 sites and ranked 2nd in overall abundance among the 21 mussel species found during this effort. Bio-West Inc. collected 1984 LPMs and LNVA staff collected an additional 118 which were confirmed by biologists. This brings the total number of LPM observed in the LNVA Canal System to 2,102 individuals. This represents the largest known population of LPM documented to date, and more than doubles the number of contemporary observations of the species throughout its range since 2000.

In summary, the results from this study show high abundances, successful spawning, and recent recruitment of LPM, suggesting that a healthy population currently persists within certain areas of the LNVA Canal System. Although habitat data was not analyzed as part of this survey, observations suggest that areas of the canal system which experience a rather constant year-round flow and have firm substrates exhibited the highest abundance of LPM. Such areas are often found below dam structures in the industrial/municipal portions of the canal system. In contrast, the species was not detected in agricultural supply canals with greater flow variability, seasonal usage, and softer substrates.

1,790 Observations Reported from All Known Populations since 2000
2,102 Discovered by LNVA and Environmental Consultant Bio-West Found During April Canal Surveys

Louisiana Pigtoes are Only Found in Canals Maintaining Constant Flow Due to Sustainable Demand

Completion of Aquatic Life Monitoring on Beech and Cypress Creeks

Cypress 15352	Critical		Index		Critical		Index		2019 - 2021	
	8/19/2019	ALU	6/5/2020	ALU	7/24/2020	ALU	4/12/2021	ALU	Average	ALU
Habitat*	17.5	I	21.5	H	18.5	I	18.5	I	19.0	I
Benthic*	31	H	29	H	30	H	28	I	29.5	H
Fish	42	H	41	I	49	H	43	H	43.8	H

Beech 10529	Critical		Index		Critical		Index		2019 - 2021	
	8/19/2019	ALU	6/5/2020	ALU	7/23/2020	ALU	4/12/2021	ALU	Average	ALU
Habitat*	19.5	H	20.5	H	20.5	H	21	H	20.4	H
Benthic*	28	I	30	H	26	I	30	H	28.5	I/H
Fish	43	H	45	H	43	H	43	H	43.5	H

ALU	Habitat*	Benthic*	Fish
Exceptional	26-31	>36	>52
High	20-25	29-36	42-51
Intermediate	14-19	22-28	36-41
Limited	<13	<22	<36

* State-wide Metrics

Aquatic Life Monitoring (ALM) was conducted from 2019-2021 at Beech and Cypress Creeks by Water Monitoring Solutions, Inc., assisted by LNVA CRP staff. This data will be used to determine when TCEQ will perform a Use Attainability Analysis (UAA) Study. Data from a UAA can result in changes to screening levels that more accurately reflect the natural stream conditions.

ALM events are conducted during the Index period, March through October, with at least one-half to two-thirds of the samples in the critical period. The critical period is when aquatic life are most stressed with higher temperatures and lower flow. Water chemistry, streamflow, nekton (fish), macrobenthics, and habitat are assessed. Results show between intermediate and high aquatic life use on Cypress and Beech Creek. The pictures below show the ALM biological data gathering in progress.

24 Hour DO Monitoring

Along with routine monitoring, LNVA conducted 24 hour dissolved oxygen (DO) monitoring on four different sites where special monitoring had been assigned. These four sites consisted of Pine Island Bayou at SH 105 (Site ID 15367), Boggy Creek at FM 421 (Site ID 16127), Mill Creek at FM 418 (Site ID 16126), and Little Pine Island Bayou at SH 326 (Site ID 15346). Sites chosen for 24 hour DO monitoring are often water bodies on the 303(d) list and that have a concern for low DO that could impact it's aquatic-life use classification.

Station 15346
Little Pine Island Bayou at SH 326

Conducting 24 hour DO monitoring consists of leaving a calibrated sonde out at the site for at least 24 hours. During this time the sonde collects measurements at least once every hour. The resulting data is used to calculate an average dissolved oxygen value. Values from these monitoring events help to determine if a stream body is in compliance with Aquatic Life Use Standards set by the Texas Surface Water Quality Standards and helps to reassess the DO impairment on the water body.

Station 16127
Boggy Creek

2021 Neches River Study

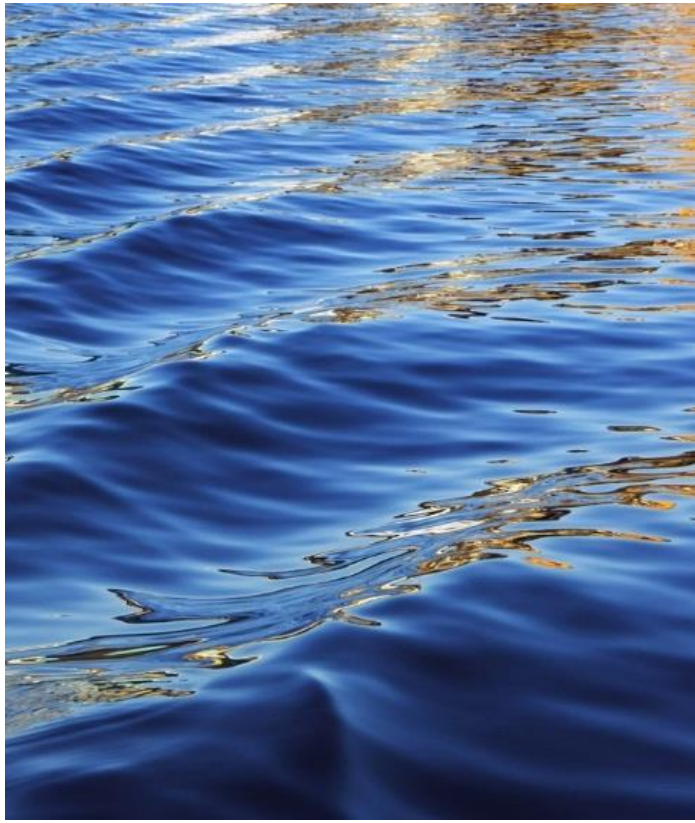
For over 50 years independent academic and scientific institutions have conducted periodic monitoring studies of the lower Neches river.

During October 2021, the Patrick Center for Environmental Research of the Academy of Natural Sciences completed the seventh in a series of biological and water quality surveys. Previous studies were performed in 1953, 1956, 1960, 1973 and 1996, and 2003. The study was designed to assess the general "health" of the river by taking water quality measurements, sampling attached algae, macroinvertebrate, and fish communities. Many levels of the aquatic food web are studied because no single group can reliably indicate the condition of an ecosystem. LNVA CRP staff assisted with the water chemistry sample collections for this event. One new addition to last years study was the inclusion of a station above the LNVA saltwater barrier. The LNVA saltwater barrier was put into operation in October of 2003.

The results from the data collected will be compiled in a report to assess the overall health of the Neches River compared to the results of previous studies.

Seining during the 2021 Neches River study

Public Participation and Outreach



Public Participation and Educational Outreach

Steering Committee

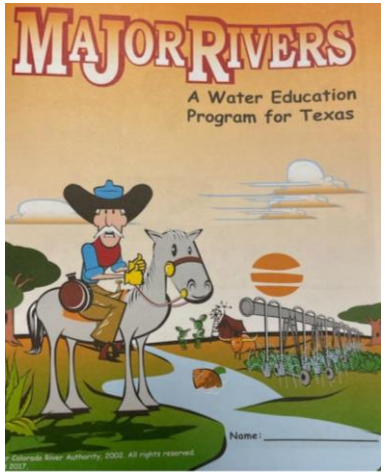
Maintaining and improving the quality of water in each of the 23 river basins throughout Texas through partnerships with TCEQ, local governments, industry, regional governments, and river authorities like LNVA is the primary goal of the Clean Rivers Program. Promoting cooperative watershed planning requires input from informed and engaged stakeholders. Stakeholders in LNVA's program range from concerned citizens, representatives of local industry and municipalities, state and federal agencies, tribal groups and environmental groups, to the general public. These stakeholders make up LNVA's CRP Steering Committee.

LNVA's CRP Steering Committee meets annually to discuss water quality issues within the basin. At these meetings, members are able to voice their local or regional concerns and work together to create realistic water quality objectives and basin priorities. Through these meetings, monitoring priorities are established, and the need or want for special studies are discussed. Having a diverse basin-wide committee helps open the platform for different interests, concerns, and priorities of each watershed to be represented. LNVA's annual meetings are open to the public and are posted on the website at https://lnva.dst.tx.us/.

Major Rivers

Each year, LNVA sponsors Major Rivers and distributes it's content to local elementary schools. Major Rivers is an educational program developed by the Texas Water Development Board to educate students in the 4th and 5th grade of Texas' major water resources. Major Rivers acts as a great tool to teach students about all the waterways of Texas and how important it is to care for this vital resource.

During the COVID pandemic, the Texas Water Development Board made Major Rivers information available on their website for teachers and students to continue water resource education virtually. The materials are available for viewing and printing at www.twdb.texas.gov/conservation/education/kids/MajorRivers/index.asp



Neches River Festival River Day

In addition to school outreach programs, the LNVA engages the younger generation by attending various public events. At these events, the LNVA provides visual aids and handouts educating the public on what the Clean Rivers Program is and why water quality is important. One event the LNVA participates in annually is the Neches River Festival River Day (NRF), which focuses on the area's high school seniors.

The NRF celebrates the Southeast Texas area and its greatest natural resource, the Neches River. The actual festival takes place over a week but the River Day is the day dedicated to science. The event also highlights local organizations and how they are working to improve the environment in and around the Neches River. The one-day focus allows the LNVA to set up its educational booth and have staff ready to answer any questions graduating seniors may have.

This past River Day, LNVA staff allowed the students to participate in testing Neches River water for parameters such as pH and dissolved oxygen. The seniors enjoyed having a hands on experience and learning what these water quality parameters can tell us about the health of our rivers.

Texas Speaker of the House, Dade Phelan, addressing students during the Neches River Day event.

Ivory Bill tour boat on the Neches River

LNVA CRP staff at their demonstration booth.

LNVA General Manager, Scott Hall, addressing students during the Neches River Day event.

Texas Stream Team

Since 2009, the LNVA has been involved in the Texas Stream Team program. Operating out of Texas State University in San Marcos, Stream Team is a statewide volunteer network that began in 1991. Volunteers monitor program approved water bodies on a monthly basis. After being trained, citizens are able to test for parameters such as dissolved oxygen, pH, water temperature, and conductivity. The LNVA provides volunteers within their basin with the water quality test kits, supplies, and refill agents needed for Stream Team monitoring activities. LNVA staff are currently in the process of becoming Stream Team trainers for area citizens to become part of the program in addition to providing supplies.

LNVA held a Stream Team training in June of 2021 at the Saltwater Barrier in partnership with Angelina Neches River Authority. Ten new stream team members were trained and are now certified to monitor water quality. A current list of the sites being monitored by the LNVA Texas Stream Team are listed in the table.

LNVA will continue to hold annual Texas Stream Team trainings. Upcoming training dates are posted to the LNVA website at https://lnva.dst.tx.us

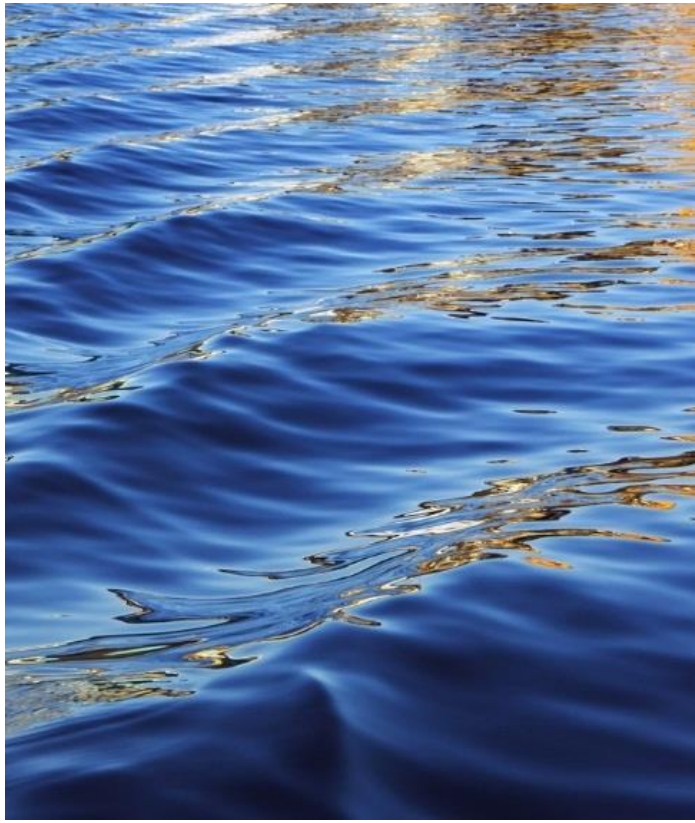
Current LNVA Stream Team Sites

Site ID	Site Description
80979	Village Creek at US Hwy 69
15489	Keith Lake Comal at Hwy 87
10668	Taylor Bayou at SH 73
80550	Neches River at the Saltwater Barrier
80681	Village Creek at Hwy 327
10578	Neches River at Collier's Ferry Boat Dock
80549	Acid Ditch at Atlantic Road

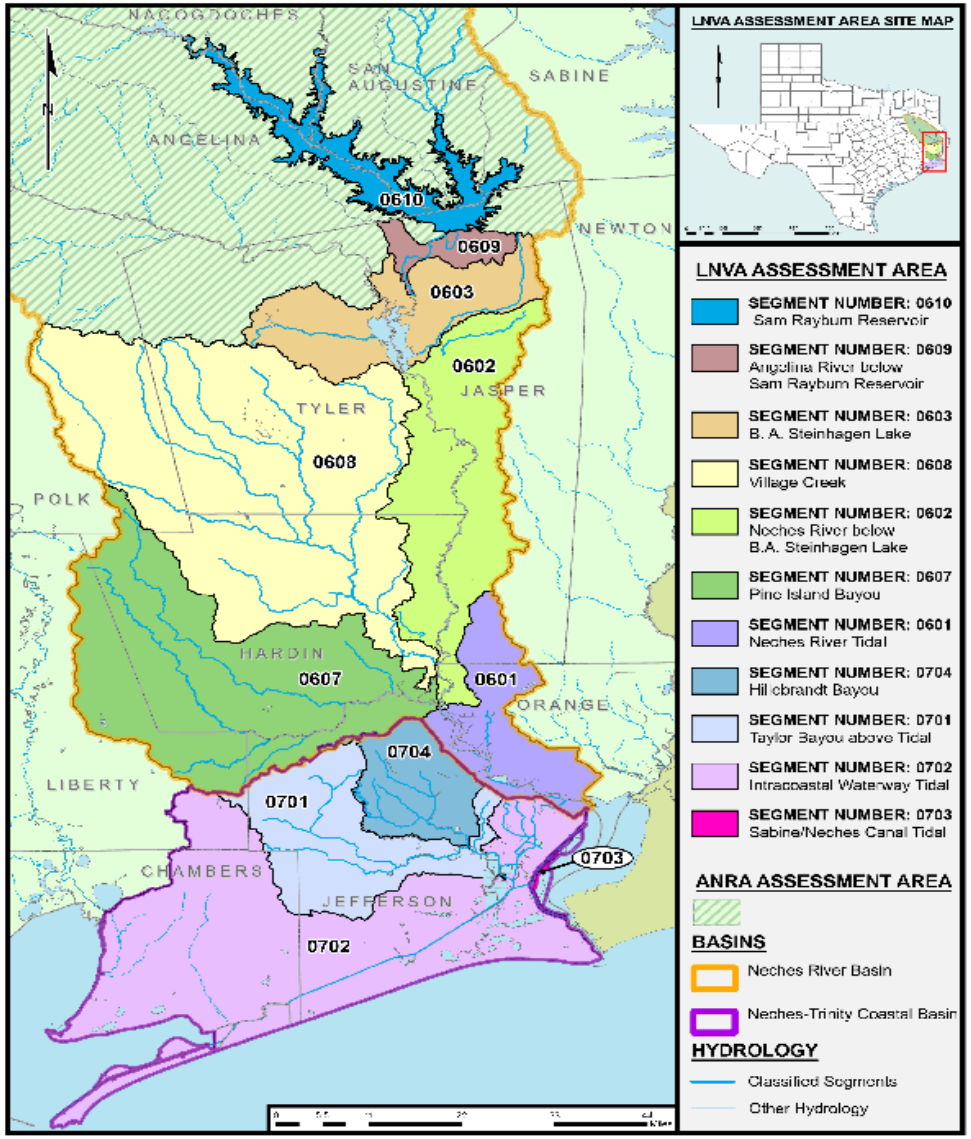
Stream Team field training event

Classroom training at the LNVA Saltwater Barrier

LNVA Water Quality Monitoring



LNVA CRP Monitoring Program



The Texas Integrated Report works to describe the status of Texas' natural waters based on historical data, and how these waters stand in accordance with the *Texas Surface Water Quality Standards (TSWQS).*

The 2020 assessment period of record for the last seven years is from December 1, 2011 through November 30, 2018. If the minimum sample number is not met, the most recent samples collected in the preceding three years (December 1, 2008 through November 30, 2011) can be included to meet the sample requirements. At least 10 samples (20 for bacteria) over the seven-year period of record are required for assessment of use attainment (listing and delisting).

The Texas Integrated Report satisfies the requirements of the federal Clean Water Act Sections 305(b) and 303(d). The TCEQ produces a new report every two years in even-numbered years, as required by law. The 303(d) List must be approved by the EPA before finalization. The 2020 Texas Integrated Report is used as a reference tool for this report to show impairments and concerns existing in each segment of the lower Neches and Neches–Trinity Coastal Basins. Each segment is assigned a water quality use category by the TCEQ, which indicates the status of water quality in the segment. Categories 4 and 5 are further subdivided to communicate the plans TCEQ has for addressing a particular water quality impairment.

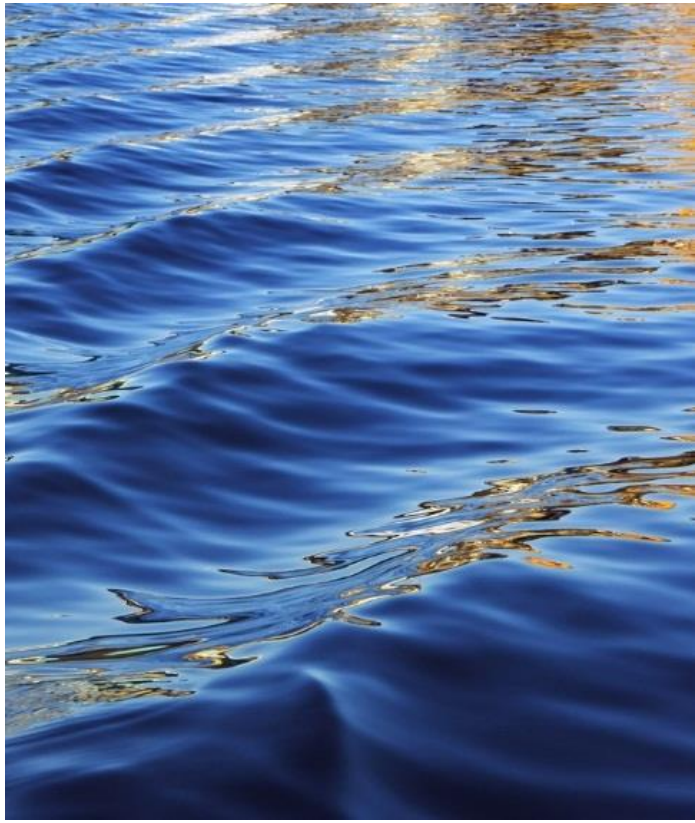
Lower Neches Valley Authority monitors 23 sites within the lower Neches basin and the TCEQ monitors 19 sites in the Neches-Trinity Coastal Basin and the lower Neches Basin. The segment summary section of this report includes a map of sample sites, the segment ID listed in the TSWQS and any impairments listed on the Integrated, possible causes of the impairments, actions taken already, and future actions recommended. The parameters collected by LNVA's water quality monitoring program are listed and defined on the following page.

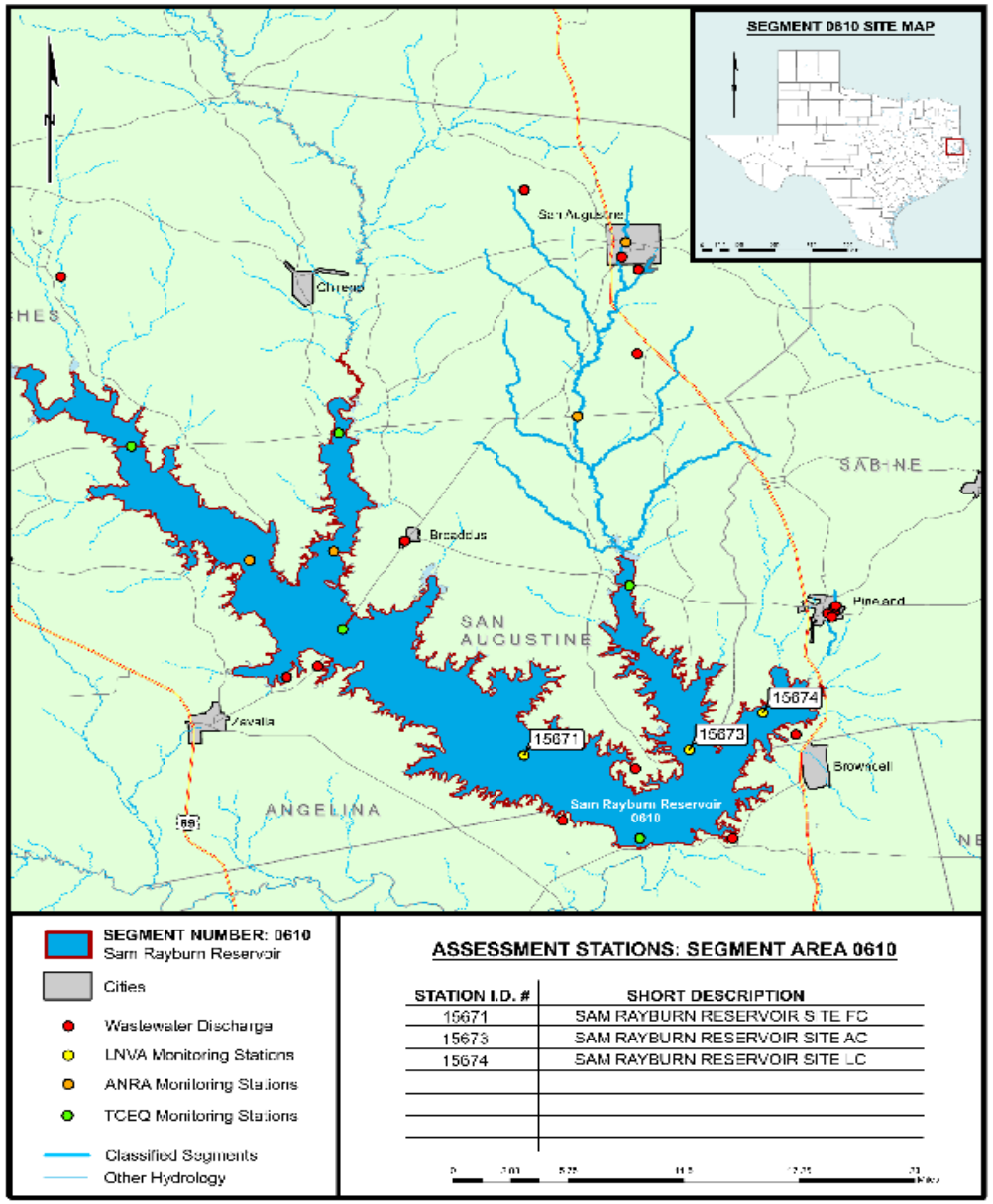
Water Quality Parameters

The following water quality parameters are collected by LNVA routine monitoring on a quarterly basis:

- **Bacteria** –Monitoring of bacteria consists of *E.coli* in freshwater environments and *Enterococcus* in saltwater marine environments. These bacteria are used as indicators of the presence of fecal material in waters.
- **Chloride**- Nearly all-natural waterways contain the element chloride. The chloride ion is found most commonly as a component of salt (sodium chloride) and is a major component of dissolved solids. Chloride naturally enters water when rocks and sediments dissolve through weathering.
- **Conductivity**-Conductivity is the ability of water to conduct electrical current. This current relies heavily on the amount of inorganic dissolved solids such as chloride, sulfate, and sodium in the stream. Elevated levels of conductivity indicate higher amounts of dissolved salts which can impact drinking water and/or aquatic habitat.
- **Dissolved Oxygen**-Dissolved oxygen is the amount of oxygen dissolved in water available to aquatic life. The amount of oxygen available for aquatic organisms tells a lot about the health of a stream and the quality of the water.
- **Hardness**-The hardness of the water describes the amount of dissolved minerals present in water, specifically calcium and magnesium.
- **Nutrients**-Nitrate, nitrite, and ammonia, which are compounds of nitrogen, and total phosphorus are nutrients routinely monitored. These nutrients are essential for plant and animal growth, but can also be harmful in higher amounts. All animals produce nitrogenous waste; however, ammonia is the primary waste product in aquatic animals. Some algae and bacteria use ammonia for growth and reproduction through a process called nitrification, which is the breakdown of ammonia into nitrite and conversion into nitrate.
- **pH**- pH stands for potential hydrogen and specifies the acidity or basicity of the water. It is on a scale of 0 (acidic) to 14 (basic).
- **Stream Flow**-Stream flow refers to the amount of water flowing in a river, which is measured in cubic feet per second (cfs). Flow is an important parameter because it greatly affects the water quality.
- **Temperature**-Temperature is an important parameter to monitor because of its influence on biological activity and growth, as well as its effect on the water chemistry. The temperature of the water determines what organisms can survive and affects the dissolved oxygen, as colder water contains more oxygen than warmer water.
- **Sulfates**-Sulfates are a combination of sulfur and oxygen and are found naturally in most waters as minerals in sediment and rock. Industrial discharges, sewage treatment plant discharges, and runoff from fertilizers used on agricultural land are unnatural sources of sulfates.
- **Total Suspended Solids**-Total suspended solids is the measure of solid particles found suspended in the water column that can be trapped by a filter.
- **Total Dissolved Solids** -Total dissolved solids in water, which mainly consist of carbonates, bicarbonates, chlorides, and sulfates, are sometimes referred to as total salinity.
- **Turbidity**-Turbidity refers to the cloudiness of the water and its transparency due to the presence of suspended solids.

Segment Summaries

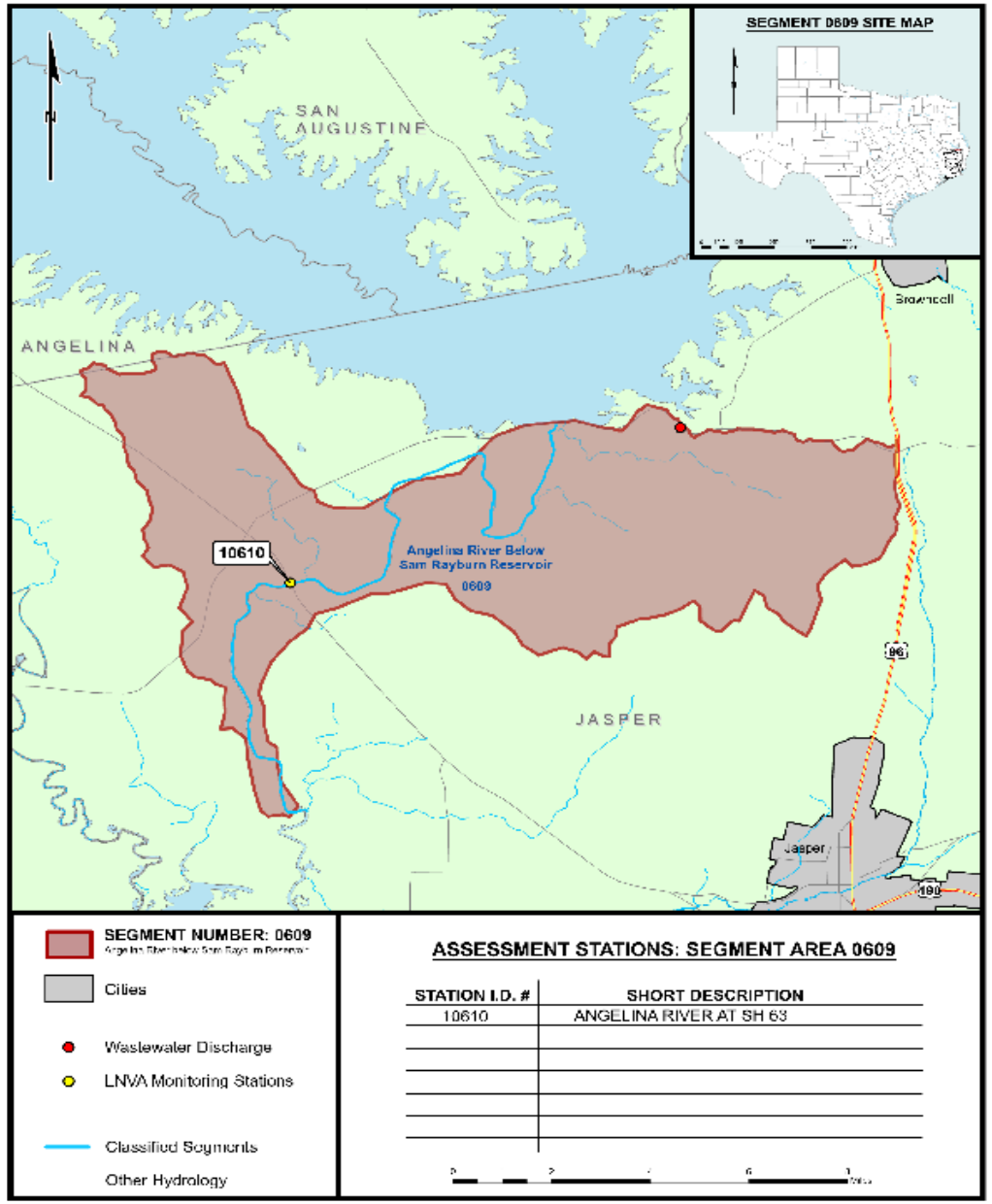




Segment ID: 0610 Sam Rayburn Reservoir From Sam Rayburn Dam to a point 5.6 km (3.5 mi) upstream of Marion's Ferry on the Angelina River Arm and to a point 3.9 km (2.4 mi) downstream of Curry Creek on the Attoyac Bayou Arm, up to the normal pool elevation of 164.4 feet (except on the Angelina River)

Basin Characteristics: Approximately 167 square miles of recreational areas that include hiking trails, camp grounds, fishing, boating ramps, marinas, and swimming areas. The reservoir itself is designed for flood regulation and hydroelectric power generation, and water supply.

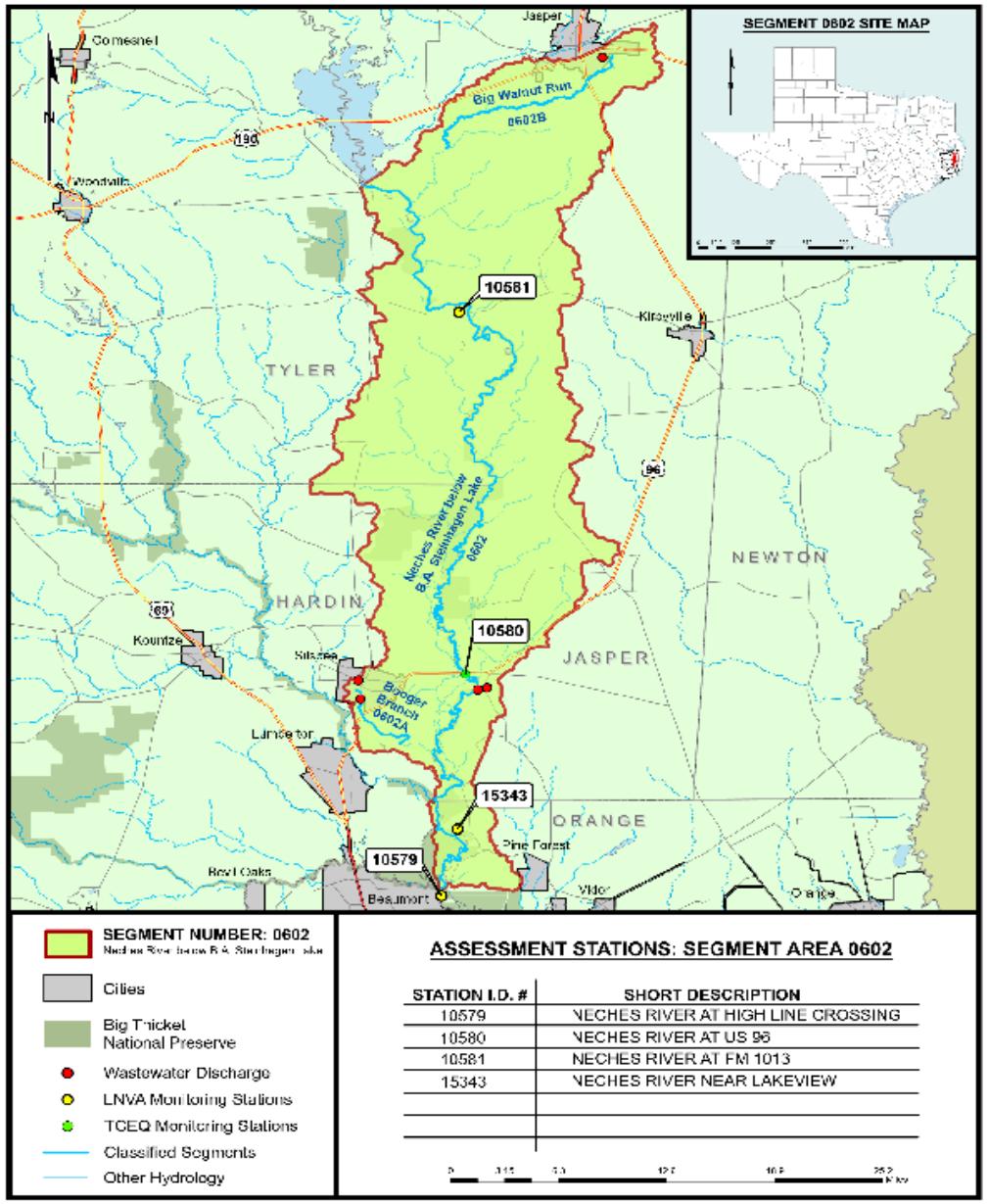
Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0610	Lake Sam Rayburn Reservoir	Not supporting fish consumption due to mercury	Source unknown; Atmospheric deposition for mercury	Advisory issued Department of State Health Services	Updated fish tissue sampling by Department of State Health Services
		Screening level concern for iron and manganese	Sources unknown	Routine collection of metals in sediment by TCEQ	TCEQ continue routine collection
0610A	Ayish Bayou	Not supporting contact recreation for E.coli	Non-point source and unknown sources	Routine Monitoring Angelina Neches River Authority	Continued monitoring by Angelina Neches River Authority
0610P	Bayou Carrizo @ SH	Not supporting contact recreation for E.coli	Non-point source and unknown sources	Routine Monitoring Angelina Neches River Authority	Continued monitoring by Angelina Neches River Authority



Segment ID: 0609 Angelina River Below Sam Rayburn Reservoir From a point immediately upstream of the confluence of Indian Creek in Jasper County to Sam Rayburn Dam in Jasper County

Basin Characteristics: Approximately 107 square miles of heavily forested and sparsely populated land with minimal non-irrigated cropland in the southeast quadrant. Land cover is forested and includes bald cypress, pine and hardwood trees. Wildlife common to this area includes deer, squirrels, quail, dove, and ducks.

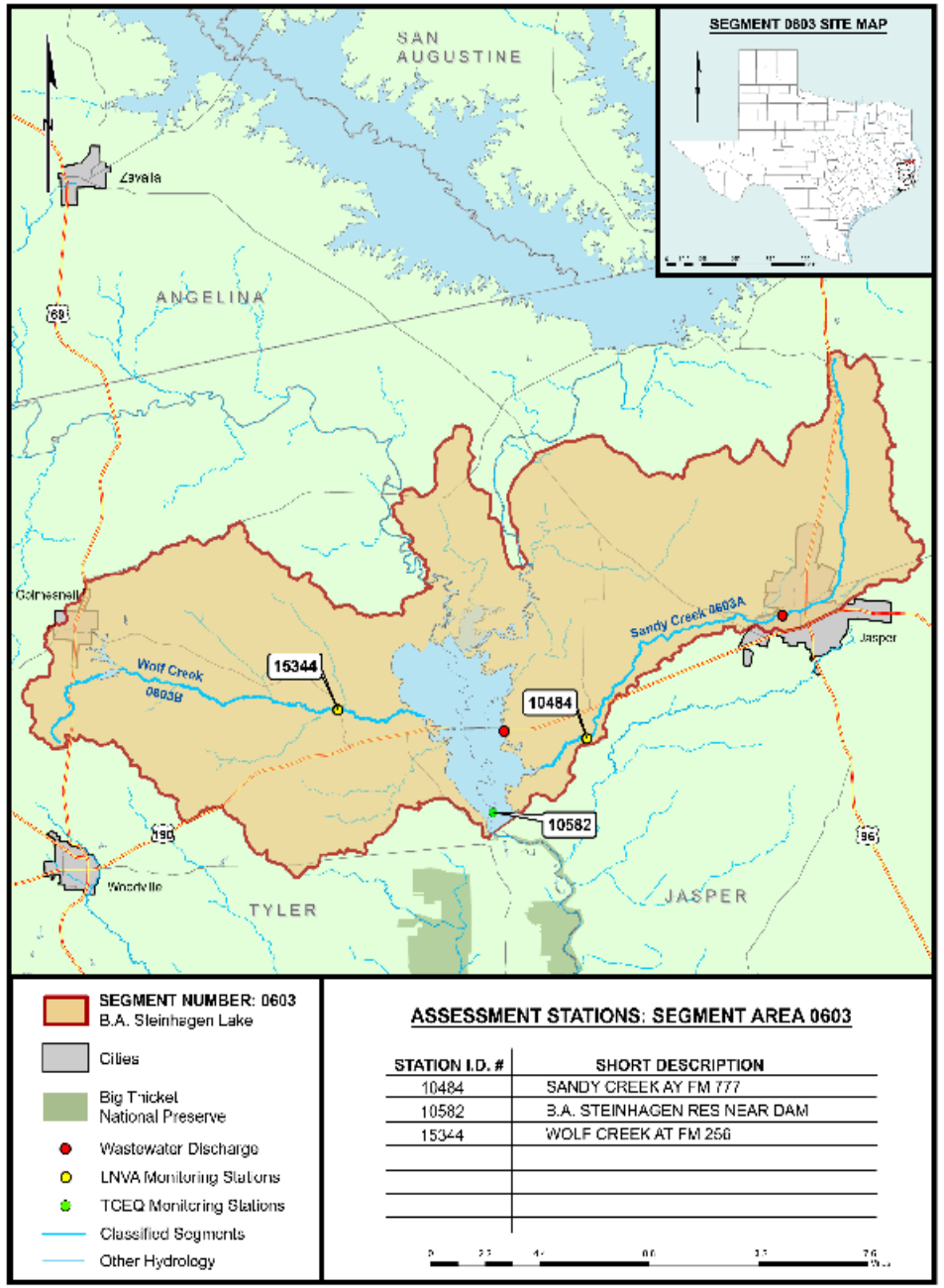
Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0609	Angelina River below Sam Rayburn Reservoir	Not supporting fish consumption for mercury and dioxin	Atmospheric Deposition-Toxics; Source unknown	Advisory issued Department of State Health Services (January 24, 2014)	Updated fish tissue sampling by Department of State Health Services



Segment ID: 0602 Neches River Below B. A. Steinhagen Lake From the Neches River Saltwater Barrier, which is at a point 0.8 km (0.5 mi) downstream of the confluence of Pine Island Bayou, in Orange County to Town Bluff Dam in Jasper/Tyler County

Basin Characteristics: Situated in a broad flood plain, Segment 0602 is 84 miles long and major tributaries include Village Creek and Pine Island Bayou. Stream flow is regulated by Town Bluff Dam and at Lake B.A. Steinhagen and varies depending on releases from Sam Rayburn Reservoir and upstream Neches River flows. Land use is livestock grazing, hunting, timber production, improved pasture, recreation, wildlife, and oil and gas production, and both state and federal land. Land cover is mixed, evergreen, and deciduous forest, pine plantations, and forested wetlands.

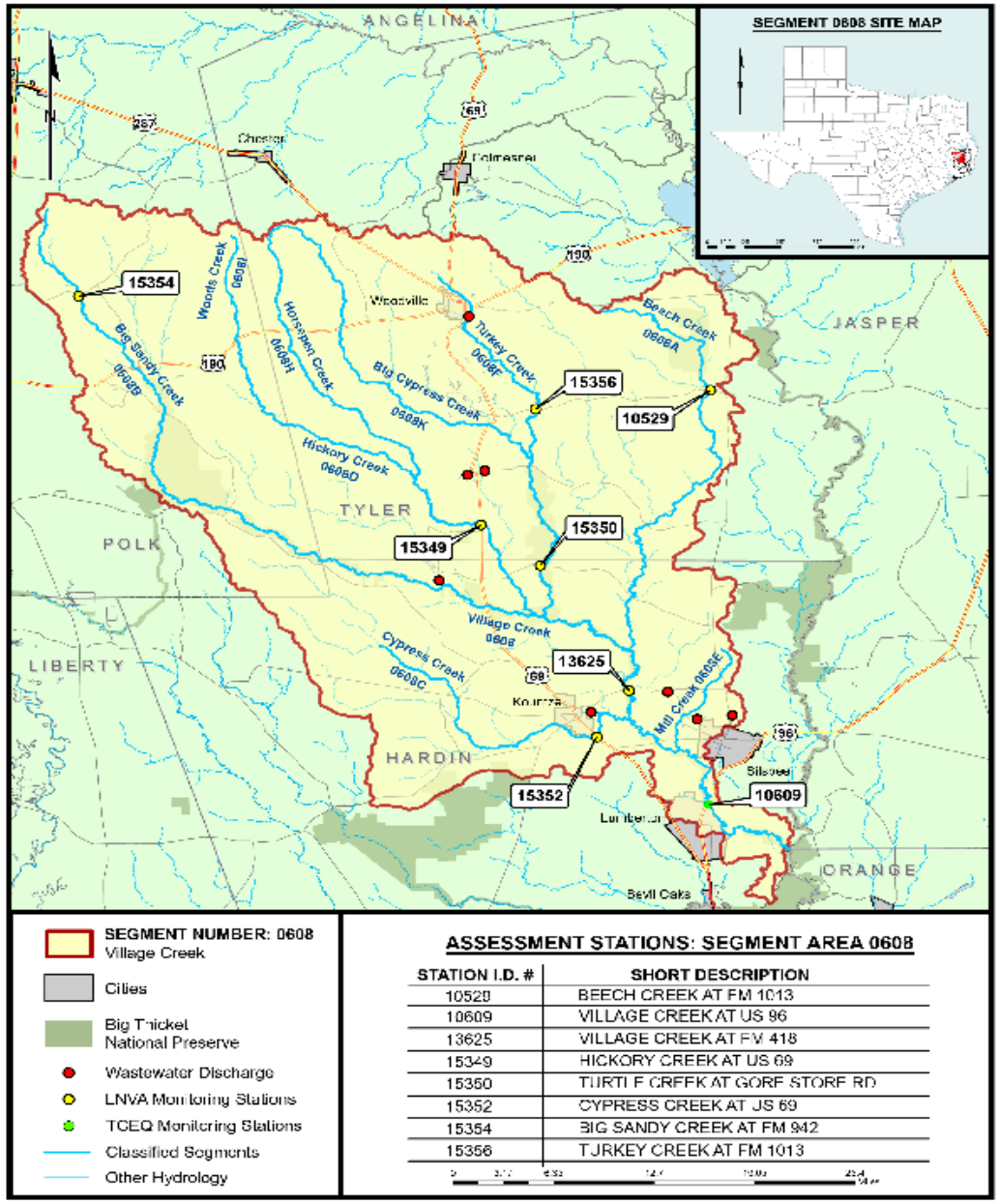
Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0602	Neches River below B.A. Steinhagen	Not supporting fish consumption use due to mercury and dioxins in edible tissue	Atmospheric Deposition-Toxics; Industrial point source discharge; Source unknown	Advisory issued Department of State Health Services (January 24, 2014)	Updated fish tissue sampling by Department of State Health Services
		Concern for mercury in edible tissue	Source unknown	TCEQ sampled fish tissue for toxics	Update fish tissue sampling by Department of State Health Services; TCEQ continue monitoring



Segment ID: 0603 B. A. Steinhagen Lake From Town Bluff Dam to a point immediately upstream of the confluence of Hopson Mill Creek on the Neches River Arm and to a point immediately upstream of the confluence of Indian Creek on the Angelina River Arm, up to the normal pool elevation of 83 feet

Basin Characteristics: The reservoir itself is about 20 square miles and is located in the piney woods. It assists the Sam Rayburn Reservoir in flow regulation, electricity generation, and water supply. Sandy And Wolf Creeks in addition to the Angelina River are the main tributaries to the reservoir. With its acidic and sandy soils, land cover is mostly pine and hardwood forests. Land use is primarily timber production, public land use, pasture and livestock production, recreation, and wildlife habitat.

Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0603	B.A. Steinhagen	Not supporting fish consumption use due to mercury and dioxins in edible tissue	Atmospheric Deposition-Toxics; Industrial Point Source Discharge; Other unknown source	Advisory issued Department of State Health Services (January 24, 2014)	Updated fish tissue sampling by Department of State Health Services
0603A	Sandy Creek	Not supporting contact recreation use due to bacteria	Non-Point Source-Agriculture and Grazing in Riparian Zone or Shoreline Zones	LNVA Routine Monitoring; Total Maximum Daily Load and Implementation Plan under development	More data is recommended; Total Maximum Daily Load and Implementation plan finalized
0603B	Wolf Creek	Not supporting contact recreation use due to bacteria	Non-Point Source-Agriculture and Livestock Grazing or Feeding Operations	LNVA Routine Monitoring; Total Maximum Daily Load and Implementation Plan under development	More data is recommended; Total Maximum Daily Load and Implementation Plan finalized



ASSESSMENT STATIONS: SEGMENT AREA 0608

STATION I.D. #	SHORT DESCRIPTION
10529	BEECH CREEK AT FM 1013
10609	VILLAGE CREEK AT US 96
13625	VILLAGE CREEK AT FM 418
15349	HICKORY CREEK AT US 69
15350	TURTLE CREEK AT GORE STORE RD
15352	CYPRESS CREEK AT US 69
15354	BIG SANDY CREEK AT FM 942
15356	TURKEY CREEK AT FM 1013

Segment ID: 0608 Village Creek From the confluence with the Neches River in Hardin County to Lake Kimble Dam in Hardin County

Segment ID: 0608A Beech Creek From the confluence of Village Creek northeast of Kountze in Hardin County to the upstream perennial portion of the stream southeast of Woodville in Tyler County

Segment ID: 0608B Big Sandy Creek From the confluence of Village and Kimball Creeks in Hardin County upstream to headwaters in Polk County

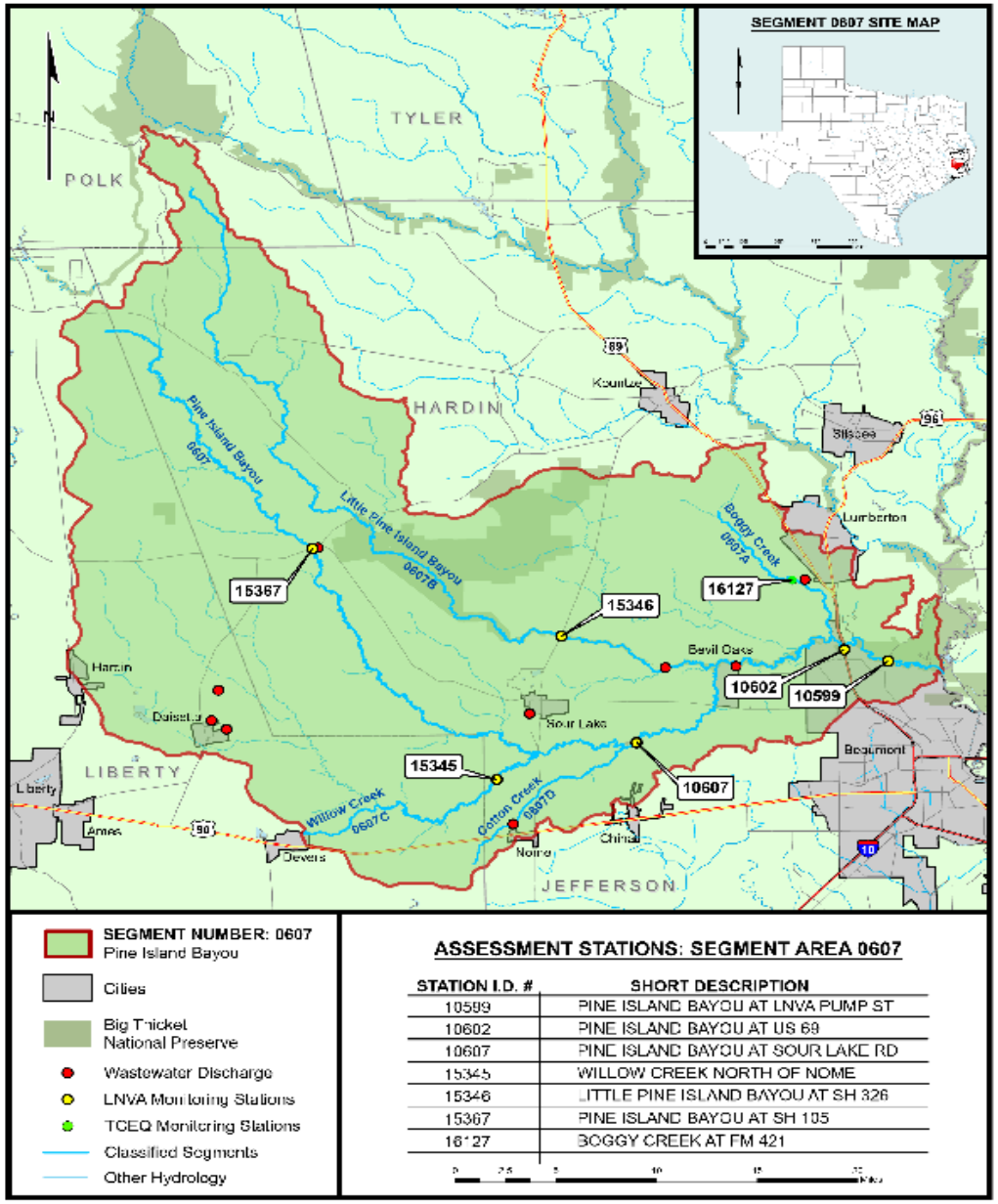
Segment ID: 0608C Cypress Creek From the confluence of Village Creek (0608) east of Kountze in Hardin County to the confluence with Bad Luck Creek northwest of Kountze in Hardin County

Segment ID: 0608E Mill Creek in Hardin County From the confluence of Village Creek (0608) west of Silsbee in Hardin County upstream to headwaters northwest of Silsbee in Hardin County

Segment ID: 0608G Lake Kimball From Kimble Creek Dam northwest of Kountze in Hardin County to normal pool elevation in Tyler County (impounds Kimble and Village Creeks)

Basin Characteristics: Village Creek and a number of smaller tributaries make up the 1,113 square miles of Segment 0608. Land use is primarily recreation and made up of the Big Thicket National Preserve, state parks, and conservation sanctuaries. This segment is a popular destination for campers, hikers, kayakers, and canoers. Land cover includes several species of pine including conservation land for the longleaf pine.

Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0608A	Beech Creek	Not supporting aquatic life use due to elevated copper	Source unknown	TCEQ Region 10 metals sampling	More metals data should be collected before management strategy is determined
		Concern for E.coli	Non-point source; Source unknown	LNVA Routine Monitoring	LNVA will continue routine monitoring
		Screening level concern for impaired habitat	Source unknown	LNVA Routine Monitoring	LNVA will continue routine monitoring
0608B	Big Sandy Creek	Screening level concern for dissolved oxygen	Source unknown; Non-point source	LNVA Routine Monitoring	LNVA will continue routine monitoring
0608C	Cypress Creek	Not supporting aquatic life use due to depressed dissolved oxygen	Natural Conditions-Water Quality Standards Use Attainability Analyses Needed; Source Unknown	LNVA Routine Monitoring; Aquatic Life Monitoring	TCEQ should review standards to see if possible Texas Surface Water Quality Standards revision is necessary; LNVA will add 24 hour dissolved oxygen to a future monitoring schedule
		Concern for impaired habitat	Unknown Source	LNVA Routine Monitoring	LNVA will continue routine monitoring
		Concern for bacteria	Unknown source; Non-Point Source	LNVA Routine Monitoring	LNVA will continue routine monitoring
0608E	Mill Creek	Not supporting aquatic life use due to depressed dissolved oxygen	Natural sources; Industrial point source discharge; Municipal point source discharge	TCEQ Routine Monitoring	More data should be collected before a management plan is developed; LNVA adding 24 hr dissolved oxygen collection in FY 22
0608G	Lake Kimball	Not supporting fish consumption use due to mercury in edible tissue	Atmospheric deposition-toxics; Source unknown	Advisory issued Department of State Health Services (September 21, 2009 and April 23, 1999)	Updated fish tissue sampling by Department of State Health Services



Segment ID: 0607 Pine Island Bayou From the confluence with the Neches River in Hardin/Jefferson County to FM 787 in Hardin County

Segment ID: 0607A Boggy Creek From the confluence of Pine Island Bayou upstream to the confluence with an unnamed tributary 4 km downstream of the crossing of the Southern Pacific Railroad.

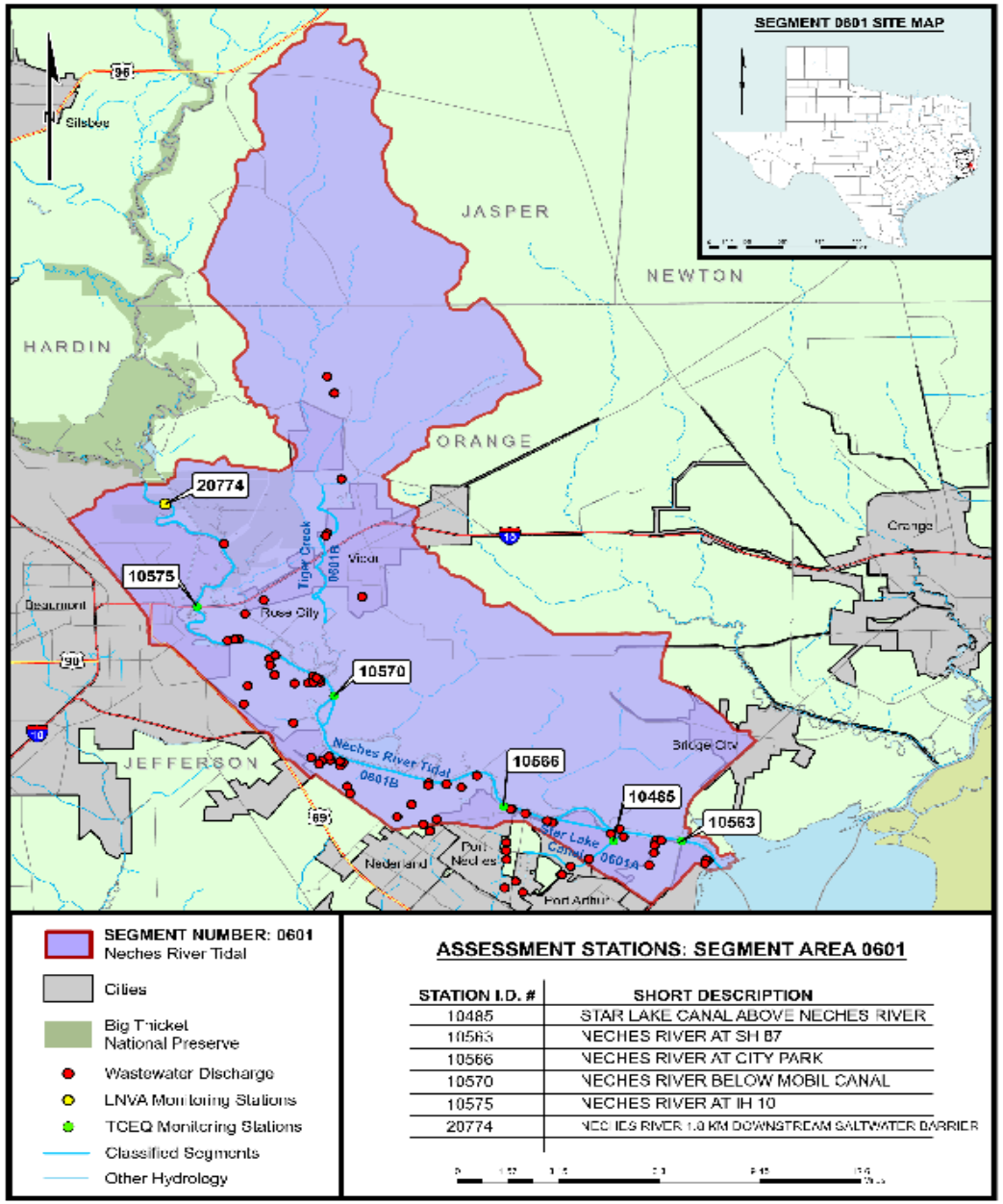
Segment ID: 0607B Little Pine Island Bayou From the confluence of Pine Island Bayou southwest of Lumberton in Hardin County to the upstream perennial portion of the stream west of Kountze in Hardin County

Segment ID: 0607C Willow Creek From the confluence of Pine Island Bayou north of Nome in Jefferson County to the upstream perennial portion of the stream east of Devers in Liberty County

Basin Characteristics: Segment 0607 is 657 square miles and made up of Pine Island Bayou and several smaller tributaries. Land use includes timber, pasture land, agriculture, and oil and gas production. The upper portions of this segment heavily forested while the lower portions provide drainage for the communities of Sour Lake, Pinewood Estates, Bevil Oaks, and northern Beaumont.

LNVA's Clean Rivers Program maintains a Continuous Water Quality Monitoring Network (CWQMN) station, CAMS 749, on Pine Island Bayou. Links to the CWQM stations by basin and the current revision of the Quality Assurance Project plan (QAPP) are available at: http://www.tceq.texas.gov/waterquality/monitoring/swqm_realtime.html

Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0607	Pine Island Bayou	Not supporting aquatic life use due to depressed dissolved oxygen	Natural Conditions-Water Quality Standards Use Attainability Analyses needed; Natural sources	LNVA Routine Monitoring, Continuous Water Quality Monitoring Network Real-time Monitoring Station; Intermediate Aquatic Life Use category proposed by TCEQ in 2014 Texas Surface Water Quality Standards; 24 HR dissolved oxygen collected by LNVA in FY20-21 at station #15367 Pine Island Bayou @ 105	2018 Texas Surface Water Quality Standards includes approved lower dissolved oxygen standard; LNVA will continue monitoring based on lower standard for future assessments; 24 HR dissolved oxygen data will continue to be collected in FY22 by LNVA
0607A	Boggy Creek	Not supporting aquatic life use due to depressed dissolved oxygen	Natural Conditions-Water Quality Standards Use Attainability Analyses Needed; Natural Sources; Streambank Modifications/De-stabilization; Unknown Source	TCEQ Region 10 Routine Monitoring; 24 HR Dissolved Oxygen collected by TCEQ; LNVA collected 24 HR DO in FY 20-21; Intermediate Aquatic Life Use category in 2018 Texas State Water Quality Standards	TCEQ Region 10 will continue monitoring based on lowered standard; 24 HR dissolved oxygen data will continue to be collected in FY 22 by LNVA
		Concern for bacteria	Source Unknown; Non-Point Source	TCEQ Region 10 Routine Monitoring	TCEQ Region 10 continue routine monitoring; TCEQ schedule a Recreational Use Attainability Analysis
		Concern for impaired habitat in Boggy Creek	Non-Point Source-Loss of riparian habitat	TCEQ Biological Assessment; LNVA collected 24 hour dissolved oxygen	TCEQ Region 10 continue routine monitoring with assessment using lowered standard; LNVA will keep monitoring 24 hour dissolved oxygen
0607B	Little Pine Island Bayou	Not supporting aquatic life use due to depressed dissolved oxygen	Natural Conditions-Water Quality Standards Use Attainability Analyses Needed; Natural Sources; Source unknown	LNVA routine monitoring and 24 hour dissolved oxygen collection in FY 20-21 ; Intermediate Aquatic Life Use category in 2018 Texas Surface Water Quality Standards	LNVA will continue routine monitoring based on lowered standard for dissolved oxygen; Use attainability analysis under development
		Concern for bacteria	Non-Point Source; Source Unknown	LNVA Routine Monitoring	LNVA continue routine monitoring; TCEQ schedule a Recreational Use Attainability Analysis
0607C	Willow Creek	Not supporting aquatic life use due to depressed dissolved oxygen	Natural Conditions-Water Quality Standards Use Attainability Analyses Needed; Natural Sources; Source unknown	LNVA routine monitoring ; Intermediate Aquatic Life Use category in 2018 Texas Surface Water Quality Standards	LNVA will continue routine monitoring based on lowered standard for dissolved oxygen

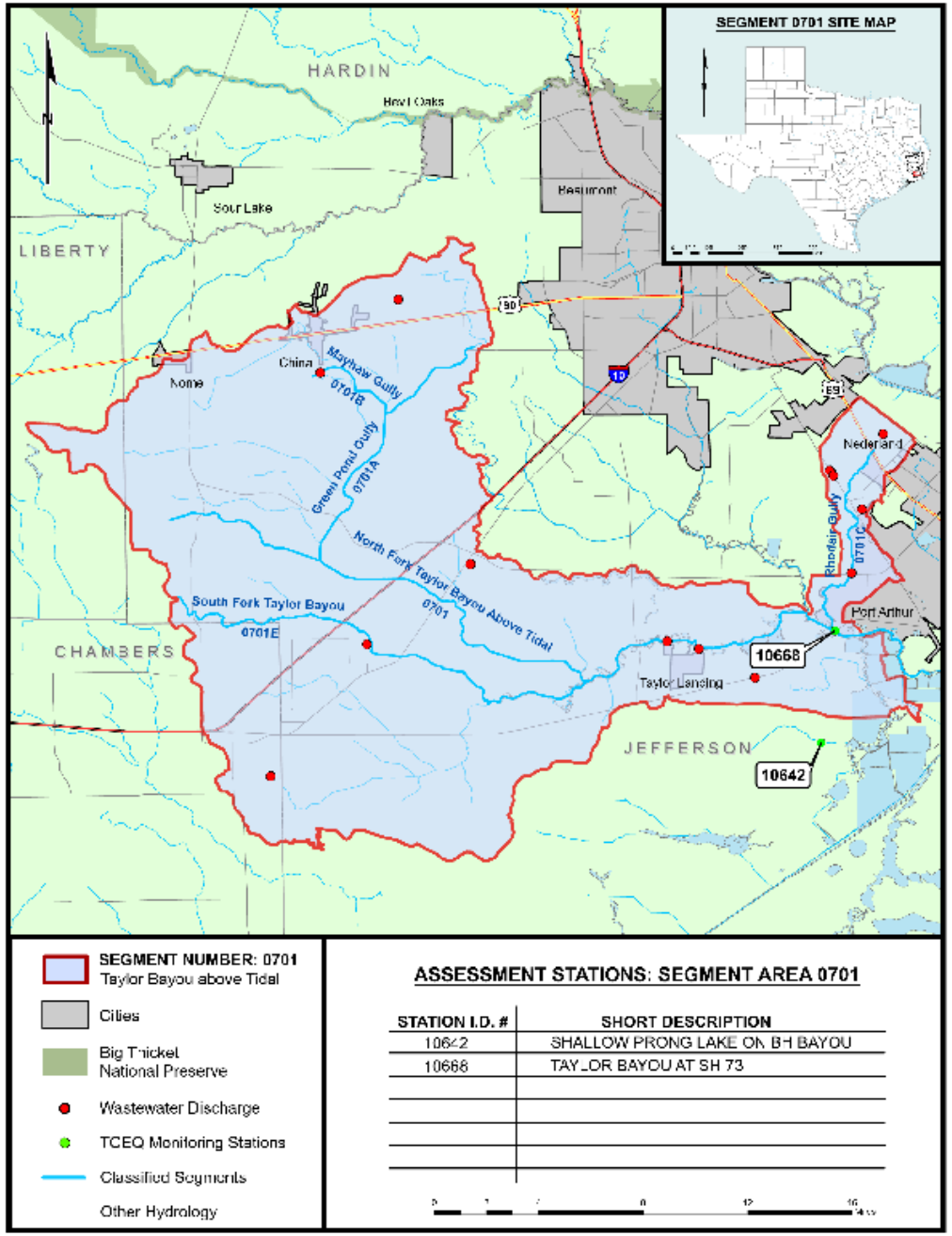


Segment ID: 0601 Neches River Tidal From the confluence with Sabine Lake in Orange County to the Neches River Saltwater Barrier, which is at a point 0.8 km (0.5 mi) downstream of the confluence of Pine Island Bayou, in Orange County

Basin Characteristics: Segment 0601 is a tidal stream segment. Land cover is dominated by water tolerant trees such as water tupelo, bald cypress, willow, and oaks in the upper portion of the segment and reeds and grasses in the flat plains, and marshes and bayous of the lower portion. A dredged navigation channel from the mouth of the Neches River to the Port of Beaumont is maintained by the U.S. Army Corps of Engineers (USACE). Land use in this segment is primarily oil and gas production, marshland, waterfowl and wildlife habitat, crop land, and urban/industrial use.

Roseate Spoonbill

Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0601	Neches River Tidal	Not supporting contact recreation use due to bacteria in Neches River Tidal	Source unknown	LNVA & TCEQ routine monitoring; Total Maximum Daily Load and Implementation Plan drafted	Continue routine bacteria monitoring, Total Maximum Daily Load and Implementation Plan finalized by TCEQ
		Not supporting fish consumption due to polychlorinated biphenyls in edible tissue	Source unknown	Advisory issued Department of State Health Services (Dec 29, 2011)	Updated fish tissue sampling by Department of State Health Services
		Concern for aquatic life use due to malathion (lower segment only)	Source unknown	TCEQ organics in water monitoring	Routine monitoring for organics in water
0601A	Star Lake Canal	Not supporting contact recreation use due to bacteria (Enterococcus)	Source unknown	TCEQ Region 10 Routine Monitoring	Additional sampling by TCEQ Region 10 needed in order to reevaluate primary contact recreation use
		Concern for aquatic life use due to malathion	Source unknown	TCEQ organics in water monitoring	Routine monitoring for organics in water
		Screening level concern for ammonia	Non-point source; Pesticide application	TCEQ Region 10 Routine Monitoring	Additional sampling by TCEQ Region 10 needed



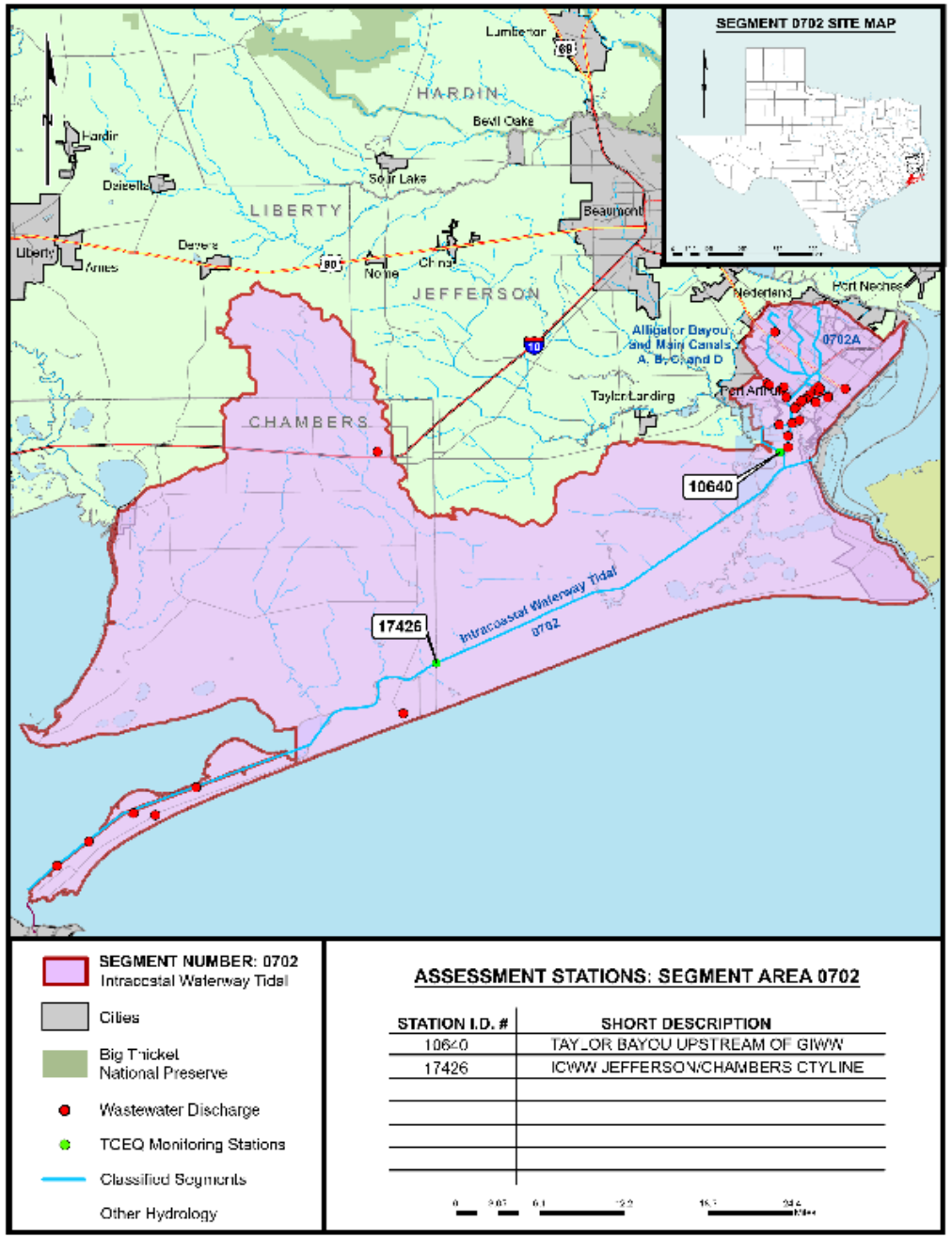
Segment ID: 0701 Taylor Bayou/North Fork Taylor Bayou Above Tidal From the saltwater lock 7.7 km (4.8 mi) downstream of SH 73 in Jefferson County to the Lower Neches Valley Authority Canal crossing of North Fork Taylor Bayou in Jefferson County

Segment ID: 0701D Shallow Prong Lake Widest upper portion of Big Hill Bayou about 2.0 km (1.26 mi) north of Blind Lake

Basin Characteristics: Segment 0701 is generally flat plains, with much of the area covered by tidal marshes with bayous, lakes, and canals, and wetlands. Land use is pasture/hay, and cultivated crops of rice, grain, sorghum, cotton, and soybeans. There are also urban/industrial uses, oil and gas production, and waterfowl and wildlife habitat throughout the segment.

Red Winged Blackbird

Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0701	Taylor Bayou Above Tidal	Not supporting aquatic life use due to depressed dissolved oxygen	Natural Conditions-Water Quality Standards Use Attainability Analyses needed; Natural Sources; Source unknown	TCEQ Region 10 Routine Monitoring	TCEQ continue routine monitoring and collect new 24 hour dissolved oxygen measurements; TCEQ should schedule a Use Attainability Analysis
		Concern for chlorophyll-a	Source unknown	TCEQ Region 10 Routine Monitoring	Continue routine monitoring; develop a nutrient standard
0701D	Shallow Prong Lake	Concern for arsenic in edible tissue	Source unknown	TCEQ Region 10 sampled for fish tissue	Update fish tissue sampling to see if advisory necessary by Department State Health Services
		Concern for dissolved oxygen	Source unknown; Non-point source	TCEQ Region 10 Routine Monitoring	TCEQ continue routine monitoring
		Concern for ammonia in water	Source Unknown	TCEQ Region 10 Routine Monitoring	TCEQ continue routine monitoring
		Nonsupport for dissolved oxygen minimum grab	Source unknown; Non-point source	TCEQ Region 10 Routine Monitoring	TCEQ continue routine monitoring



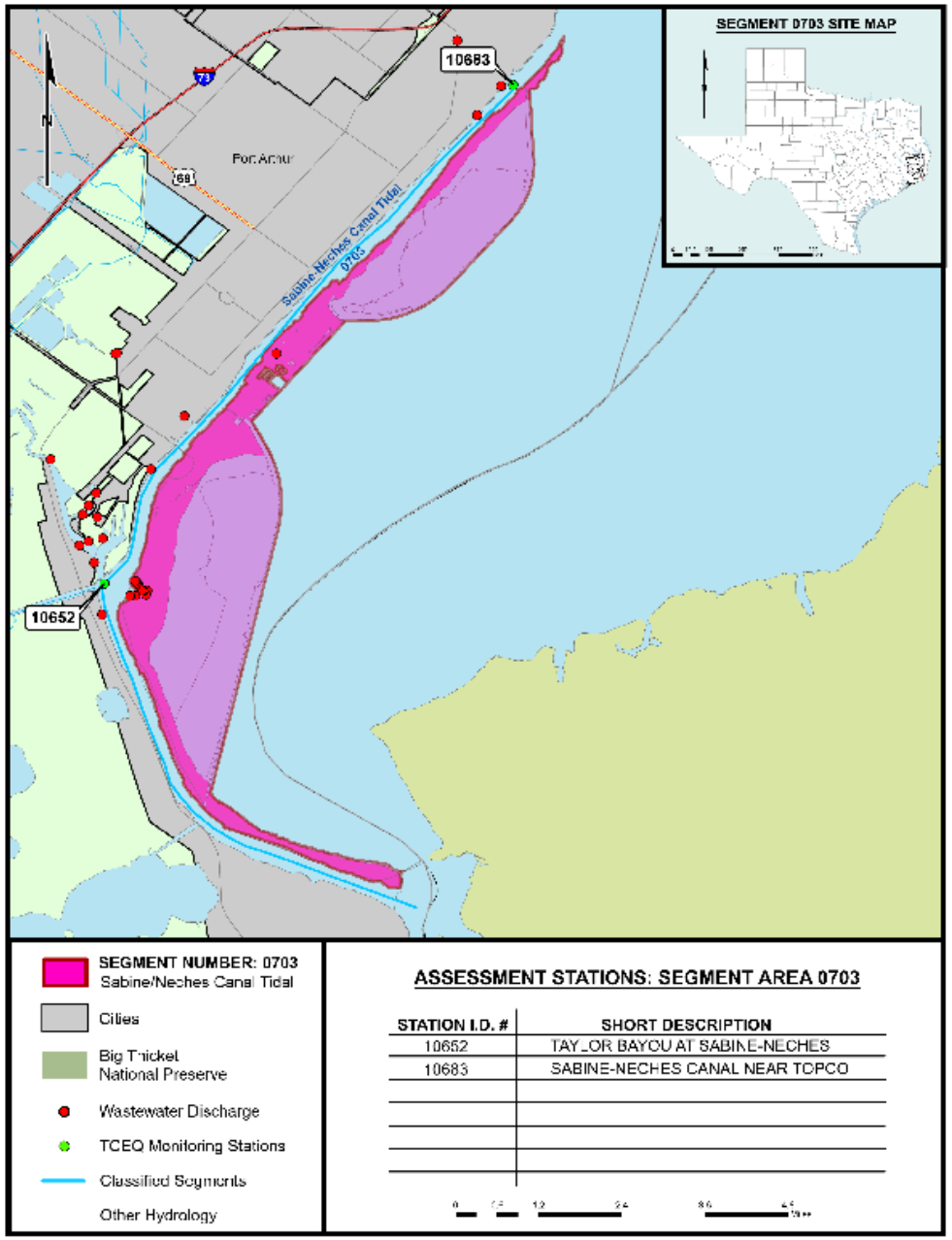
Segment ID: 0702 Intracoastal Waterway Tidal From the confluence with Galveston Bay at Port Bolivar to the confluence with the Sabine-Neches/Port Arthur Canal (including Taylor Bayou Tidal from the confluence with the Intracoastal Waterway up to the saltwater lock 7.7 km (4.8 mi) downstream of SH 73

Segment ID: 0702A Alligator Bayou and Main Canals A, B, C, and D All perennial canals in Jefferson County Drainage District No. 7 that eventually drain into the tidal portion of Taylor Bayou at the pump house gate, including Alligator Bayou

Basin Characteristics: Segment 0702 is 63 miles long. Land use includes extensive agricultural land for cultivated crops and pasture/hay/marshland, wildlife and waterfowl habitat, oil and gas production, and intensive urban/industrial development in the eastern most portion of the watershed. Fishing is commercially important and recreationally popular in this segment as well. Dominant vegetation is various species of marsh grasses. The marshes provide wintering grounds for ducks and geese as well as rearing grounds for a variety of fish and shrimp.

Black Bellied Whistling Ducks

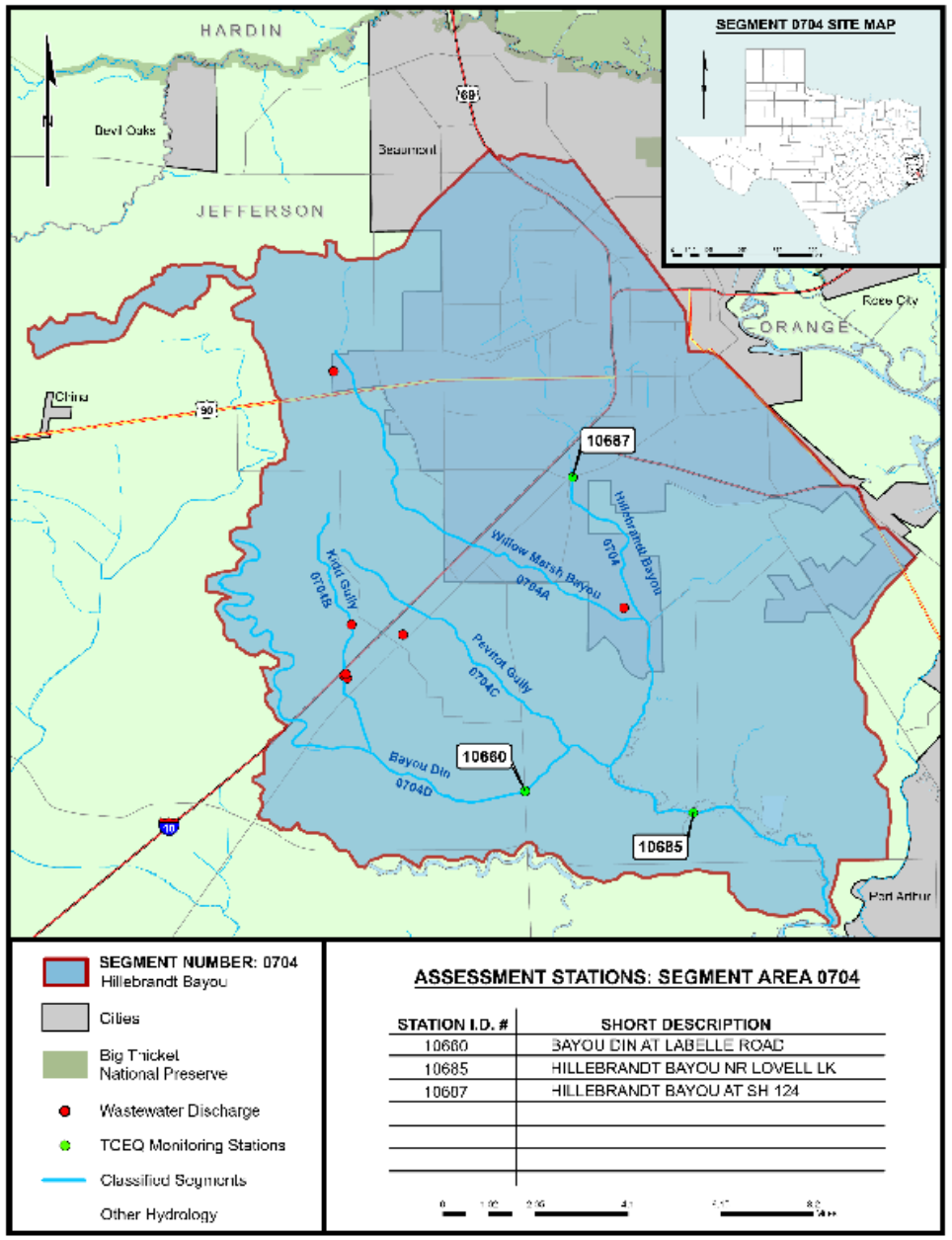
Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0702	Intracoastal Waterway Tidal	Not supporting contact recreation use due to bacteria	Non-point source; Source unknown	TCEQ Region 10 Routine Monitoring	Consider a secondary contact recreation use standard
		Not supporting fish consumption due to polychlorinated biphenyls and dioxin in edible tissue	Industrial point source discharge; Source unknown	Advisory issued Department of State Health Services (January 26, 2013)	Updated fish tissue sampling by Department of State Health Services
		Concern for chlorophyll-a in Taylor Bayou Tidal	Source unknown	TCEQ Region 10 Routine Monitoring	Continue routine monitoring; develop a nutrient standard
0702A	Alligator Bayou	Not supporting aquatic life use due to acute toxicity in water and sediment toxicity	Petroleum/Natural gas activities; Industrial point source discharge; Source unknown	TCEQ toxicity sampling	Complete Total Maximum Daily Load; keep monitoring to determine source
		Concern for lead in sediment	Petroleum/Natural gas activities; Industrial point source discharge; Source unknown	TCEQ metals sampling	Continue monitoring for metals in sediment
		Concern for chlorophyll-a	Source unknown	TCEQ Region 10 Routine Monitoring	Continue routine monitoring; develop a nutrient standard



Segment ID: 0703 Sabine-Neches Canal Tidal From the confluence with Sabine Pass at the southern tip of Pleasure Island in Jefferson County to the Sabine Lake seawall at the northern tip of Pleasure Island in Jefferson County

Basin Characteristics: Segment 0703 is considered a tidal stream and 16 miles in length. The freshwater and saltwater coastal marshes in this segment consist of grasses, sedges, and wedges. There are very few trees found in this segment. Land use includes urban/industrial development, oil and gas production, as well as the marshland, wildlife, and waterfowl habitat.

Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0703	Sabine-Neches Canal Tidal	Not supporting contact recreation use due to bacteria	Source unknown	TCEQ Region 10 Routine Monitoring	Consider secondary or noncontact recreation use standards; Recreational Use Attainability Analysis



Segment ID 0704 Hillebrandt Bayou From the confluence of Taylor Bayou in Jefferson County to a point 100 meters (110 yards) upstream of SH 124 in Jefferson County.

Segment ID 0704D Bayou Din From the confluence with Hillebrandt Bayou upstream to headwaters in Jefferson County.

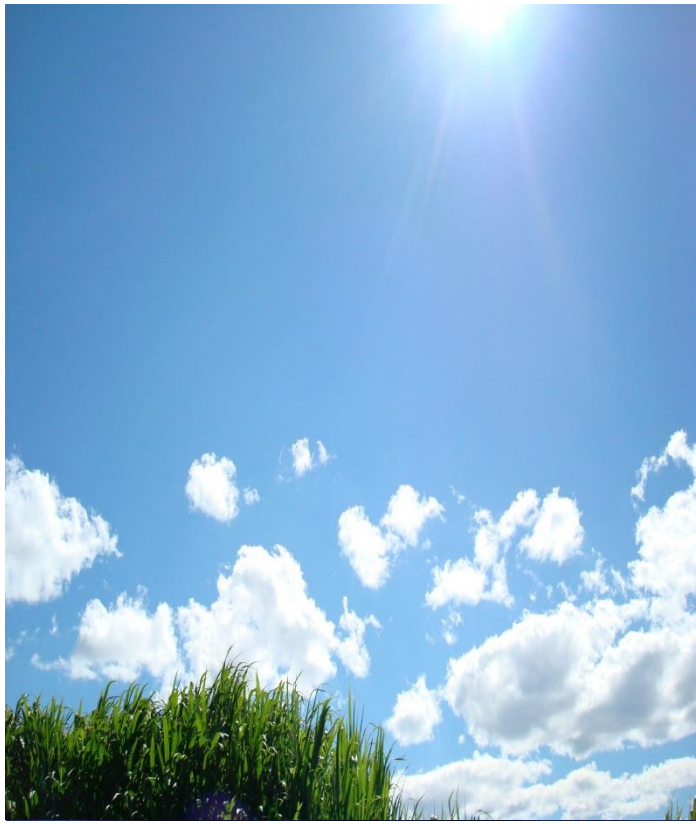
Basin Characteristics: Segment 0704 is a freshwater stream that includes floodplain forested land to the north and prairie land in the south until the convergence with Taylor Bayou when the land becomes flat plains of marsh grasses. Land use is improved pasture, cultivated cropland, urban and industrial development, oil and gas production, storm water drainage through Cattail Marsh wetlands to Hillebrandt Bayou, recreational parks, and gold courses. Cattail Marsh is a popular area for birding, photography, jogging, horseback riding, hiking, and other recreational activities.

Segment #	Segment Name	Impairments and Concerns Listed in 2020 Texas Integrated Report	Reason for Impairment	Actions Taken	Future Action Recommended
0704	Hillebrandt Bayou	Not supporting contact recreation use due to bacteria	Urban runoff/Storm sewers	TCEQ Region 10 Routine Monitoring; Total Maximum Daily Load and Implementation plan drafted	Total Maximum Daily Load and Implementation plan finalized; Recreational Use Attainability Analysis

Agency Websites

Angelina & Neches River Authority: www.anra.org
Environmental Protection Agency: www.epa.gov
Department of State Health Service: www.dshs.texas.gov
Lower Neches Valley Authority: https://lnva.dst.tx.us
Texas Commission on Environmental Quality: www.tceq.texas.gov
Texas Water Development Board: www.twdb.texas.gov

For more information about the Lower Neches Valley Authority Clean Rivers Program, please visit the LNVA website at https://lnva.dst.tx.us or contact (409)892-4011.



Laboratory Analysis Report

Total Number of Pages: 63

Job ID : 23121410

10100 East Freeway, Suite 100, Houston, TX 77029 tel: 713-453-6060, fax: 713-453-6091, http://www.ablabs.com

Client Project Name :
Priority Pollutants - LNVA Canals

Report To :	Client Name:	Lower Neches Valley Authority SWB Lab	P.O.#.:
	Attn:	Brielle Patronella	Sample Collected By: Brielle Patronella
	Client Address:	6790 Bigner Rd	Date Collected: 12/13/23
	City, State, Zip:	Beaumont, Texas, 77708	

A&B Labs has analyzed the following samples...

Client Sample ID	Matrix	A&B Sample ID
Neches Main	Water	23121410.01
Devers	Water	23121410.02
Neches South	Water	23121410.03
Cheek	Water	23121410.04
Gallier	Water	23121410.05
Port Arthur	Water	23121410.06
Atlantic	Water	23121410.07

Released By: Senthilkumar Sevukan
Title: Vice President Operations
Date: 12/20/2023

This Laboratory is NELAP (T104704213-23-31) accredited. Effective: 04/13/2023; Expires: 3/31/2024
Scope: Non-Potable Water, Drinking Water, Air, Solid, Biological Tissue, Hazardous Waste

I am the laboratory manager, or his/her designee, and I am responsible for the release of this data package. This laboratory data package has been reviewed and is complete and technically compliant with the requirements of the methods used, except where noted in the attached exception reports. I affirm, to the best of my knowledge that all problems/anomalies observed by this laboratory (and if applicable, any and all laboratories subcontracted through this laboratory) that might affect the quality of the data, have been identified in the Laboratory Review Checklist, and that no information or data have been knowingly withheld that would affect the quality of the data.

ab-q210-0321

Date Received : 12/13/2023 15:47

Report Number: RPT231220110

LABORATORY TERM AND QUALIFIER DEFINITION REPORT

Job ID : 23121410

Date: 12/20/2023

General Term Definition

Back-Wt	Back Weight	Post-Wt	Post Weight
BRL	Below Reporting Limit	ppm	parts per million
cfu	colony-forming units	Pre-Wt	Previous Weight
Conc.	Concentration	Q	Qualifier
D.F.	Dilution Factor	RegLimit	Regulatory Limit
Front-Wt	Front Weight	RPD	Relative Percent Difference
J	Estimation. Below calibration range but above MDL	RptLimit	Reporting Limit
LCS	Laboratory Check Standard	SDL	Sample Detection Limit
LCSD	Laboratory Check Standard Duplicate	surr	Surrogate
MS	Matrix Spike	T	Time
MSD	Matrix Spike Duplicate	TNTC	Too numerous to count
MW	Molecular Weight	UQL	Unadjusted Upper Quantitation Limit
MQL	Unadjusted Minimum Quantitation Limit		

Qualifier Definition

L4	Associated LCS and/or LCSD recovery is out of laboratory statistical acceptance limits but within method control limits for flagged parameter.
M1	Matrix Spike and/or Matrix Spike Duplicate recovery is above laboratory control limits due to matrix interference. "The sample randomly selected as QC for this batch was not part of your project. Therefore, this sample matrix is not applicable to your project samples."
M8	Matrix Spike and/or Matrix Spike Duplicate recovery is above laboratory control limits.
S2	Surrogate recovery is below control limit. Results may be biased low.
V1	CCV recovery is above acceptance limits. This target analyte was not detected in the sample.
V11	CCV recovery is below acceptance limits.
V12	Closing CCV recovery is outside of acceptance limits.

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches Main
Date Collected: 12/13/23
Time Collected: 08:45
Other Information:

Job Sample ID: 23121410.01
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
EPA 200.7	Total Recoverable Metals								
	Aluminum	0.503	mg/L	1	0.01			12/14/23 13:00	BDC
	Antimony	BRL	mg/L	1	0.02			12/14/23 13:00	BDC
	Arsenic	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Barium	0.0520	mg/L	1	0.01			12/14/23 13:00	BDC
	Beryllium	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Cadmium	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Chromium	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Copper	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Iron	0.953	mg/L	1	0.01			12/14/23 13:00	BDC
	Lead	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Manganese	0.0790	mg/L	1	0.01			12/14/23 13:00	BDC
	Nickel	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Selenium	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Silver	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Thallium	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Titanium	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Vanadium	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
	Zinc	BRL	mg/L	1	0.01			12/14/23 13:00	BDC
EPA 245.1	Total Metals - Mercury								
	Mercury	BRL	mg/L	1	0.0002			12/14/23 13:07	MAS
SM 4500CNC/E	Cyanide, Total								
	Cyanide	BRL	mg/L	1	0.01			12/20/23 11:51	SKC
SW-846 8081B	Organochlorine Pesticides								
	Alpha-chlordane	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Gamma-chlordane	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	4,4-DDD	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	4,4-DDE	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	4,4-DDT	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	a-BHC	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Aldrin	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	b-BHC	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Chlordane	BRL	ug/L	1.00	0.1			12/19/23 12:41	MQ
	d-BHC	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Dieldrin	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Endosulfan I	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Endosulfan II	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Endosulfan sulfate	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches Main
Date Collected: 12/13/23
Time Collected: 08:45
Other Information:

Job Sample ID: 23121410.01
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8081B	Organochlorine Pesticides								
	Endrin	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Endrin aldehyde	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Endrin ketone	BRL	ug/L	1.00	0.01		V12	12/19/23 12:41	MQ
	g-BHC	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Heptachlor	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Heptachlor epoxide	BRL	ug/L	1.00	0.01			12/19/23 12:41	MQ
	Methoxychlor	BRL	ug/L	1.00	0.01		V12	12/19/23 12:41	MQ
	Toxaphene	BRL	ug/L	1.00	0.5			12/19/23 12:41	MQ
	Decachlorobiphenyl(surr)	42.8	%	1.00	34-120			12/19/23 12:41	MQ
	Tetrachloro-m-xylene(surr)	92.8	%	1.00	24-127			12/19/23 12:41	MQ
SW-846 8082A	Polychlorinated Biphenyls								
	Aroclor 1016	BRL	ug/L	1.00	0.05			12/14/23 18:14	MQ
	Aroclor 1221	BRL	ug/L	1.00	0.05			12/14/23 18:14	MQ
	Aroclor 1232	BRL	ug/L	1.00	0.05			12/14/23 18:14	MQ
	Aroclor 1242	BRL	ug/L	1.00	0.05			12/14/23 18:14	MQ
	Aroclor 1248	BRL	ug/L	1.00	0.05			12/14/23 18:14	MQ
	Aroclor 1254	BRL	ug/L	1.00	0.05			12/14/23 18:14	MQ
	Aroclor 1260	BRL	ug/L	1.00	0.05			12/14/23 18:14	MQ
	Total PCBs	BRL	ug/L	1.00	0.05			12/14/23 18:14	MQ
	Decachlorobiphenyl(surr)	39	%	1.00	35-129			12/14/23 18:14	MQ
	Tetrachloro-m-xylene(surr)	61	%	1.00	27-127			12/14/23 18:14	MQ
SW-846 8260C	Volatile Organic Compounds								
	1,1,1,2-Tetrachloroethane	BRL	mg/L	1.00	0.005		L4	12/14/23 11:09	RT
	1,1,1-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,1,2,2-Tetrachloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,1,2-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,1-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,1-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,1-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,2,3-trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,2,3-Trichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,2,4-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,2-Dibromo-3-chloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,2-Dibromoethane	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,2-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches Main
Date Collected: 12/13/23
Time Collected: 08:45
Other Information:

Job Sample ID: 23121410.01
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	1,2-Dichloropropane	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	1,3,5-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,3-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	2,2-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	2-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	4-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	4-Isopropyltoluene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Benzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Bromobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Bromochloromethane	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	Bromodichloromethane	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	Bromoform	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Bromomethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Carbon tetrachloride	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	Chlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Chloroethane	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	Chloroform	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	Chloromethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	cis-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	cis-1,3-Dichloropropene	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	Dibromochloromethane	BRL	mg/L	1.00	0.005		L4	12/14/23 11:09	RT
	Dibromomethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Dichlorodifluoromethane	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	Ethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Isopropylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	m- & p-Xylenes	BRL	mg/L	1.00	0.01			12/14/23 11:09	RT
	MEK	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Methylene chloride	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Naphthalene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	n-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	n-Propylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	o-Xylene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	sec-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Styrene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	t-butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches Main
Date Collected: 12/13/23
Time Collected: 08:45
Other Information:

Job Sample ID: 23121410.01
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	Tetrachloroethylene	BRL	mg/L	1.00	0.006			12/14/23 11:09	RT
	Toluene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	trans-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	trans-1,3-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Trichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Trichlorofluoromethane	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	TTHMs	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Vinyl Chloride	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	Xylenes	BRL	mg/L	1.00	0.005			12/14/23 11:09	RT
	1,2-Dichloroethane-d4(surr)	103	%	1.00	70-130			12/14/23 11:09	RT
	Dibromofluoromethane(surr)	94.1	%	1.00	70-130			12/14/23 11:09	RT
	p-Bromofluorobenzene(surr)	100	%	1.00	70-130			12/14/23 11:09	RT
	Toluene-d8(surr)	99.5	%	1.00	70-130			12/14/23 11:09	RT
SW-846 8270D									
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2,4,5-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2,4,6-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2,4-Dichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2,4-Dimethylphenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2,4-Dinitrophenol	BRL	mg/L	1.00	0.01			12/15/23 19:44	GM
	2,4-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2,6-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2-Chloronaphthalene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2-Chlorophenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2-Methylnaphthalene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2-Methylphenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2-Nitrophenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	3- & 4-Methylphenols	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	3,3-Dichlorobenzidine	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	3-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	4,6-Dinitro-2-methylphenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	4-Bromophenyl phenyl ether	BRL	mg/L	1.00	0.005		V11	12/15/23 19:44	GM
	4-Chloro-3-methylphenol	BRL	mg/L	1.00	0.005		V1	12/15/23 19:44	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches Main
Date Collected: 12/13/23
Time Collected: 08:45
Other Information:

Job Sample ID: 23121410.01
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	4-Chloroaniline	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	4-Chlorophenyl phenyl ether	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	4-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	4-Nitrophenol	BRL	mg/L	1.00	0.02			12/15/23 19:44	GM
	Acenaphthene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Acenaphthylene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Aniline	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Anthracene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Azobenzene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Benzidine	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Benzo(a)anthracene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Benzo(a)pyrene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Benzo(b)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Benzo(g,h,i)perylene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Benzo(k)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Benzoic acid	BRL	mg/L	1.00	0.025			12/15/23 19:44	GM
	Benzyl alcohol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Bis(2-chloroethoxy) methane	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Bis(2-chloroethyl) ether	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Bis(2-chloroisopropyl) ether	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Bis(2-ethylhexyl)phthalate	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Butyl benzyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Carbazole	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Chrysene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Dibenzo(a,h)anthracene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Dibenzofuran	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Diethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Dimethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Di-n-butyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Di-n-octyl Phthalate	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Fluorene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Hexachlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Hexachlorobutadiene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Hexachlorocyclopentadiene	BRL	mg/L	1.00	0.01		V11	12/15/23 19:44	GM
	Hexachloroethane	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Indeno(1,2,3-cd)pyrene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches Main
Date Collected: 12/13/23
Time Collected: 08:45
Other Information:

Job Sample ID: 23121410.01
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	Isophorone	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Naphthalene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Nitrobenzene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	N-Nitrosodimethylamine	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	N-nitroso-di-n-propylamine	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	N-Nitrosodiphenylamine	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Pentachlorophenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Phenanthrene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Phenol	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Pyrene	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	Pyridine	BRL	mg/L	1.00	0.005			12/15/23 19:44	GM
	2,4,6-Tribromophenol(surr)	37.7	%	1.00	19-122			12/15/23 19:44	GM
	2-Fluorobiphenyl(surr)	48.5	%	1.00	30-115			12/15/23 19:44	GM
	2-Fluorophenol(surr)	29.9	%	1.00	15-115			12/15/23 19:44	GM
	Nitrobenzene-d5(surr)	67.6	%	1.00	23-120			12/15/23 19:44	GM
	Phenol-d6(surr)	18.8	%	1.00	10-130			12/15/23 19:44	GM
	p-Terphenyl-d14(surr)	36.8	%	1.00	18-137			12/15/23 19:44	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Devers
Date Collected: 12/13/23
Time Collected: 10:00
Other Information:

Job Sample ID: 23121410.02
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
EPA 200.7	Total Recoverable Metals								
	Aluminum	0.461	mg/L	1	0.01			12/14/23 13:07	BDC
	Antimony	BRL	mg/L	1	0.02			12/14/23 13:07	BDC
	Arsenic	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Barium	0.0710	mg/L	1	0.01			12/14/23 13:07	BDC
	Beryllium	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Cadmium	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Chromium	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Copper	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Iron	0.516	mg/L	1	0.01			12/14/23 13:07	BDC
	Lead	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Manganese	0.0200	mg/L	1	0.01			12/14/23 13:07	BDC
	Nickel	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Selenium	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Silver	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Thallium	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Titanium	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Vanadium	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
	Zinc	BRL	mg/L	1	0.01			12/14/23 13:07	BDC
EPA 245.1	Total Metals - Mercury								
	Mercury	BRL	mg/L	1	0.0002			12/14/23 13:27	MAS
SM 4500CNC/E	Cyanide, Total								
	Cyanide	BRL	mg/L	1	0.01			12/20/23 11:51	SKC
SW-846 8081B	Organochlorine Pesticides								
	Alpha-chlordane	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Gamma-chlordane	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	4,4-DDD	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	4,4-DDE	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	4,4-DDT	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	a-BHC	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Aldrin	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	b-BHC	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Chlordane	BRL	ug/L	1.00	0.1			12/19/23 12:55	MQ
	d-BHC	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Dieldrin	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Endosulfan I	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Endosulfan II	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Endosulfan sulfate	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Devers
Date Collected: 12/13/23
Time Collected: 10:00
Other Information:

Job Sample ID: 23121410.02
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8081B	Organochlorine Pesticides								
	Endrin	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Endrin aldehyde	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Endrin ketone	BRL	ug/L	1.00	0.01		V12	12/19/23 12:55	MQ
	g-BHC	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Heptachlor	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Heptachlor epoxide	BRL	ug/L	1.00	0.01			12/19/23 12:55	MQ
	Methoxychlor	BRL	ug/L	1.00	0.01		V12	12/19/23 12:55	MQ
	Toxaphene	BRL	ug/L	1.00	0.5			12/19/23 12:55	MQ
	Decachlorobiphenyl(surr)	54	%	1.00	34-120			12/19/23 12:55	MQ
	Tetrachloro-m-xylene(surr)	95.5	%	1.00	24-127			12/19/23 12:55	MQ
SW-846 8082A	Polychlorinated Biphenyls								
	Aroclor 1016	BRL	ug/L	1.00	0.05			12/14/23 18:26	MQ
	Aroclor 1221	BRL	ug/L	1.00	0.05			12/14/23 18:26	MQ
	Aroclor 1232	BRL	ug/L	1.00	0.05			12/14/23 18:26	MQ
	Aroclor 1242	BRL	ug/L	1.00	0.05			12/14/23 18:26	MQ
	Aroclor 1248	BRL	ug/L	1.00	0.05			12/14/23 18:26	MQ
	Aroclor 1254	BRL	ug/L	1.00	0.05			12/14/23 18:26	MQ
	Aroclor 1260	BRL	ug/L	1.00	0.05			12/14/23 18:26	MQ
	Total PCBs	BRL	ug/L	1.00	0.05			12/14/23 18:26	MQ
	Decachlorobiphenyl(surr)	59.5	%	1.00	35-129			12/14/23 18:26	MQ
	Tetrachloro-m-xylene(surr)	77	%	1.00	27-127			12/14/23 18:26	MQ
SW-846 8260C	Volatile Organic Compounds								
	1,1,1,2-Tetrachloroethane	BRL	mg/L	1.00	0.005		L4	12/14/23 11:30	RT
	1,1,1-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,1,2,2-Tetrachloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,1,2-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,1-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,1-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,1-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,2,3-trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,2,3-Trichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,2,4-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,2-Dibromo-3-chloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,2-Dibromoethane	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,2-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Devers
Date Collected: 12/13/23
Time Collected: 10:00
Other Information:

Job Sample ID: 23121410.02
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	1,2-Dichloropropane	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	1,3,5-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,3-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	2,2-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	2-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	4-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	4-Isopropyltoluene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Benzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Bromobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Bromochloromethane	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	Bromodichloromethane	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	Bromoform	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Bromomethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Carbon tetrachloride	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	Chlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Chloroethane	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	Chloroform	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	Chloromethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	cis-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	cis-1,3-Dichloropropene	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	Dibromochloromethane	BRL	mg/L	1.00	0.005		L4	12/14/23 11:30	RT
	Dibromomethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Dichlorodifluoromethane	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	Ethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Isopropylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	m- & p-Xylenes	BRL	mg/L	1.00	0.01			12/14/23 11:30	RT
	MEK	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Methylene chloride	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Naphthalene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	n-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	n-Propylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	o-Xylene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	sec-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Styrene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	t-butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Devers
Date Collected: 12/13/23
Time Collected: 10:00
Other Information:

Job Sample ID: 23121410.02
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	Tetrachloroethylene	BRL	mg/L	1.00	0.006			12/14/23 11:30	RT
	Toluene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	trans-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	trans-1,3-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Trichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Trichlorofluoromethane	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	TTHMs	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Vinyl Chloride	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	Xylenes	BRL	mg/L	1.00	0.005			12/14/23 11:30	RT
	1,2-Dichloroethane-d4(surr)	105	%	1.00	70-130			12/14/23 11:30	RT
	Dibromofluoromethane(surr)	98.8	%	1.00	70-130			12/14/23 11:30	RT
	p-Bromofluorobenzene(surr)	111	%	1.00	70-130			12/14/23 11:30	RT
	Toluene-d8(surr)	93.3	%	1.00	70-130			12/14/23 11:30	RT
SW-846 8270D									
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2,4,5-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2,4,6-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2,4-Dichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2,4-Dimethylphenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2,4-Dinitrophenol	BRL	mg/L	1.00	0.01			12/15/23 20:09	GM
	2,4-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2,6-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2-Chloronaphthalene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2-Chlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2-Methylnaphthalene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2-Methylphenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2-Nitrophenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	3- & 4-Methylphenols	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	3,3-Dichlorobenzidine	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	3-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	4,6-Dinitro-2-methylphenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	4-Bromophenyl phenyl ether	BRL	mg/L	1.00	0.005		V11	12/15/23 20:09	GM
	4-Chloro-3-methylphenol	BRL	mg/L	1.00	0.005		V1	12/15/23 20:09	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Devers
Date Collected: 12/13/23
Time Collected: 10:00
Other Information:

Job Sample ID: 23121410.02
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	4-Chloroaniline	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	4-Chlorophenyl phenyl ether	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	4-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	4-Nitrophenol	BRL	mg/L	1.00	0.02			12/15/23 20:09	GM
	Acenaphthene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Acenaphthylene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Aniline	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Anthracene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Azobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Benzidine	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Benzo(a)anthracene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Benzo(a)pyrene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Benzo(b)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Benzo(g,h,i)perylene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Benzo(k)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Benzoic acid	BRL	mg/L	1.00	0.025			12/15/23 20:09	GM
	Benzyl alcohol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Bis(2-chloroethoxy) methane	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Bis(2-chloroethyl) ether	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Bis(2-chloroisopropyl) ether	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Bis(2-ethylhexyl)phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Butyl benzyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Carbazole	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Chrysene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Dibenzo(a,h)anthracene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Dibenzofuran	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Diethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Dimethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Di-n-butyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Di-n-octyl Phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Fluorene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Hexachlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Hexachlorobutadiene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Hexachlorocyclopentadiene	BRL	mg/L	1.00	0.01		V11	12/15/23 20:09	GM
	Hexachloroethane	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Indeno(1,2,3-cd)pyrene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Devers
Date Collected: 12/13/23
Time Collected: 10:00
Other Information:

Job Sample ID: 23121410.02
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	Isophorone	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Naphthalene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Nitrobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	N-Nitrosodimethylamine	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	N-nitroso-di-n-propylamine	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	N-Nitrosodiphenylamine	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Pentachlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Phenanthrene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Phenol	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Pyrene	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	Pyridine	BRL	mg/L	1.00	0.005			12/15/23 20:09	GM
	2,4,6-Tribromophenol(surr)	47.6	%	1.00	19-122			12/15/23 20:09	GM
	2-Fluorobiphenyl(surr)	53.1	%	1.00	30-115			12/15/23 20:09	GM
	2-Fluorophenol(surr)	40.1	%	1.00	15-115			12/15/23 20:09	GM
	Nitrobenzene-d5(surr)	74.8	%	1.00	23-120			12/15/23 20:09	GM
	Phenol-d6(surr)	24	%	1.00	10-130			12/15/23 20:09	GM
	p-Terphenyl-d14(surr)	39	%	1.00	18-137			12/15/23 20:09	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches South
Date Collected: 12/13/23
Time Collected: 11:00
Other Information:

Job Sample ID: 23121410.03
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
EPA 200.7	Total Recoverable Metals								
	Aluminum	1.66	mg/L	1	0.01			12/14/23 13:09	BDC
	Antimony	BRL	mg/L	1	0.02			12/14/23 13:09	BDC
	Arsenic	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Barium	0.0740	mg/L	1	0.01			12/14/23 13:09	BDC
	Beryllium	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Cadmium	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Chromium	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Copper	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Iron	1.78	mg/L	1	0.01			12/14/23 13:09	BDC
	Lead	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Manganese	0.0600	mg/L	1	0.01			12/14/23 13:09	BDC
	Nickel	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Selenium	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Silver	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Thallium	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Titanium	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Vanadium	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
	Zinc	BRL	mg/L	1	0.01			12/14/23 13:09	BDC
EPA 245.1	Total Metals - Mercury								
	Mercury	BRL	mg/L	1	0.0002			12/14/23 13:30	MAS
SM 4500CNC/E	Cyanide, Total								
	Cyanide	BRL	mg/L	1	0.01			12/20/23 11:51	SKC
SW-846 8081B	Organochlorine Pesticides								
	Alpha-chlordane	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Gamma-chlordane	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	4,4-DDD	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	4,4-DDE	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	4,4-DDT	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	a-BHC	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Aldrin	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	b-BHC	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Chlordane	BRL	ug/L	1.00	0.1			12/14/23 20:54	MQ
	d-BHC	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Dieldrin	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Endosulfan I	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Endosulfan II	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Endosulfan sulfate	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches South
Date Collected: 12/13/23
Time Collected: 11:00
Other Information:

Job Sample ID: 23121410.03
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8081B	Organochlorine Pesticides								
	Endrin	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Endrin aldehyde	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Endrin ketone	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	g-BHC	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Heptachlor	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Heptachlor epoxide	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Methoxychlor	BRL	ug/L	1.00	0.01			12/14/23 20:54	MQ
	Toxaphene	BRL	ug/L	1.00	0.5			12/14/23 20:54	MQ
	Decachlorobiphenyl(surr)	64	%	1.00	34-120			12/14/23 20:54	MQ
	Tetrachloro-m-xylene(surr)	75.3	%	1.00	24-127			12/14/23 20:54	MQ
SW-846 8082A	Polychlorinated Biphenyls								
	Aroclor 1016	BRL	ug/L	1.00	0.05			12/14/23 18:38	MQ
	Aroclor 1221	BRL	ug/L	1.00	0.05			12/14/23 18:38	MQ
	Aroclor 1232	BRL	ug/L	1.00	0.05			12/14/23 18:38	MQ
	Aroclor 1242	BRL	ug/L	1.00	0.05			12/14/23 18:38	MQ
	Aroclor 1248	BRL	ug/L	1.00	0.05			12/14/23 18:38	MQ
	Aroclor 1254	BRL	ug/L	1.00	0.05			12/14/23 18:38	MQ
	Aroclor 1260	BRL	ug/L	1.00	0.05			12/14/23 18:38	MQ
	Total PCBs	BRL	ug/L	1.00	0.05			12/14/23 18:38	MQ
	Decachlorobiphenyl(surr)	38.5	%	1.00	35-129			12/14/23 18:38	MQ
	Tetrachloro-m-xylene(surr)	62	%	1.00	27-127			12/14/23 18:38	MQ
SW-846 8260C	Volatile Organic Compounds								
	1,1,1,2-Tetrachloroethane	BRL	mg/L	1.00	0.005		L4	12/14/23 11:52	RT
	1,1,1-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,1,2,2-Tetrachloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,1,2-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,1-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,1-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,1-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,2,3-trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,2,3-Trichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,2,4-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,2-Dibromo-3-chloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,2-Dibromoethane	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,2-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches South
Date Collected: 12/13/23
Time Collected: 11:00
Other Information:

Job Sample ID: 23121410.03
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	1,2-Dichloropropane	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	1,3,5-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,3-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	2,2-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	2-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	4-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	4-Isopropyltoluene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Benzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Bromobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Bromochloromethane	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	Bromodichloromethane	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	Bromoform	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Bromomethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Carbon tetrachloride	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	Chlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Chloroethane	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	Chloroform	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	Chloromethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	cis-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	cis-1,3-Dichloropropene	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	Dibromochloromethane	BRL	mg/L	1.00	0.005		L4	12/14/23 11:52	RT
	Dibromomethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Dichlorodifluoromethane	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	Ethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Isopropylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	m- & p-Xylenes	BRL	mg/L	1.00	0.01			12/14/23 11:52	RT
	MEK	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Methylene chloride	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Naphthalene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	n-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	n-Propylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	o-Xylene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	sec-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Styrene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	t-butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches South
Date Collected: 12/13/23
Time Collected: 11:00
Other Information:

Job Sample ID: 23121410.03
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	Tetrachloroethylene	BRL	mg/L	1.00	0.006			12/14/23 11:52	RT
	Toluene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	trans-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	trans-1,3-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Trichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Trichlorofluoromethane	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	TTHMs	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Vinyl Chloride	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	Xylenes	BRL	mg/L	1.00	0.005			12/14/23 11:52	RT
	1,2-Dichloroethane-d4(surr)	108	%	1.00	70-130			12/14/23 11:52	RT
	Dibromofluoromethane(surr)	101	%	1.00	70-130			12/14/23 11:52	RT
	p-Bromofluorobenzene(surr)	98.9	%	1.00	70-130			12/14/23 11:52	RT
	Toluene-d8(surr)	101	%	1.00	70-130			12/14/23 11:52	RT
SW-846 8270D									
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2,4,5-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2,4,6-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2,4-Dichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2,4-Dimethylphenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2,4-Dinitrophenol	BRL	mg/L	1.00	0.01			12/15/23 20:34	GM
	2,4-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2,6-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2-Chloronaphthalene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2-Chlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2-Methylnaphthalene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2-Methylphenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2-Nitrophenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	3- & 4-Methylphenols	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	3,3-Dichlorobenzidine	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	3-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	4,6-Dinitro-2-methylphenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	4-Bromophenyl phenyl ether	BRL	mg/L	1.00	0.005		V11	12/15/23 20:34	GM
	4-Chloro-3-methylphenol	BRL	mg/L	1.00	0.005		V1	12/15/23 20:34	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches South
Date Collected: 12/13/23
Time Collected: 11:00
Other Information:

Job Sample ID: 23121410.03
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	4-Chloroaniline	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	4-Chlorophenyl phenyl ether	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	4-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	4-Nitrophenol	BRL	mg/L	1.00	0.02			12/15/23 20:34	GM
	Acenaphthene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Acenaphthylene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Aniline	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Anthracene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Azobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Benzidine	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Benzo(a)anthracene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Benzo(a)pyrene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Benzo(b)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Benzo(g,h,i)perylene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Benzo(k)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Benzoic acid	BRL	mg/L	1.00	0.025			12/15/23 20:34	GM
	Benzyl alcohol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Bis(2-chloroethoxy) methane	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Bis(2-chloroethyl) ether	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Bis(2-chloroisopropyl) ether	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Bis(2-ethylhexyl)phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Butyl benzyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Carbazole	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Chrysene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Dibenzo(a,h)anthracene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Dibenzofuran	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Diethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Dimethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Di-n-butyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Di-n-octyl Phthalate	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Fluorene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Hexachlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Hexachlorobutadiene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Hexachlorocyclopentadiene	BRL	mg/L	1.00	0.01		V11	12/15/23 20:34	GM
	Hexachloroethane	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Indeno(1,2,3-cd)pyrene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Neches South
Date Collected: 12/13/23
Time Collected: 11:00
Other Information:

Job Sample ID: 23121410.03
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	Isophorone	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Naphthalene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Nitrobenzene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	N-Nitrosodimethylamine	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	N-nitroso-di-n-propylamine	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	N-Nitrosodiphenylamine	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Pentachlorophenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Phenanthrene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Phenol	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Pyrene	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	Pyridine	BRL	mg/L	1.00	0.005			12/15/23 20:34	GM
	2,4,6-Tribromophenol(surr)	48.1	%	1.00	19-122			12/15/23 20:34	GM
	2-Fluorobiphenyl(surr)	45.3	%	1.00	30-115			12/15/23 20:34	GM
	2-Fluorophenol(surr)	43	%	1.00	15-115			12/15/23 20:34	GM
	Nitrobenzene-d5(surr)	59.2	%	1.00	23-120			12/15/23 20:34	GM
	Phenol-d6(surr)	24.4	%	1.00	10-130			12/15/23 20:34	GM
	p-Terphenyl-d14(surr)	33.6	%	1.00	18-137			12/15/23 20:34	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Cheek
Date Collected: 12/13/23
Time Collected: 11:30
Other Information:

Job Sample ID: 23121410.04
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
EPA 200.7	Total Recoverable Metals								
	Aluminum	1.68	mg/L	1	0.01			12/14/23 13:11	BDC
	Antimony	BRL	mg/L	1	0.02			12/14/23 13:11	BDC
	Arsenic	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Barium	0.0630	mg/L	1	0.01			12/14/23 13:11	BDC
	Beryllium	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Cadmium	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Chromium	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Copper	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Iron	1.88	mg/L	1	0.01			12/14/23 13:11	BDC
	Lead	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Manganese	0.0570	mg/L	1	0.01			12/14/23 13:11	BDC
	Nickel	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Selenium	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Silver	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Thallium	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Titanium	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Vanadium	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
	Zinc	BRL	mg/L	1	0.01			12/14/23 13:11	BDC
EPA 245.1	Total Metals - Mercury								
	Mercury	BRL	mg/L	1	0.0002			12/14/23 13:34	MAS
SM 4500CNC/E	Cyanide, Total								
	Cyanide	BRL	mg/L	1	0.01			12/20/23 11:51	SKC
SW-846 8081B	Organochlorine Pesticides								
	Alpha-chlordane	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Gamma-chlordane	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	4,4-DDD	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	4,4-DDE	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	4,4-DDT	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	a-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Aldrin	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	b-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Chlordane	BRL	ug/L	1.00	0.1			12/19/23 13:22	MQ
	d-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Dieldrin	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Endosulfan I	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Endosulfan II	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Endosulfan sulfate	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Cheek
Date Collected: 12/13/23
Time Collected: 11:30
Other Information:

Job Sample ID: 23121410.04
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8081B	Organochlorine Pesticides								
	Endrin	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Endrin aldehyde	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Endrin ketone	BRL	ug/L	1.00	0.01		V12	12/19/23 13:22	MQ
	g-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Heptachlor	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Heptachlor epoxide	BRL	ug/L	1.00	0.01			12/19/23 13:22	MQ
	Methoxychlor	BRL	ug/L	1.00	0.01		V12	12/19/23 13:22	MQ
	Toxaphene	BRL	ug/L	1.00	0.5			12/19/23 13:22	MQ
	Decachlorobiphenyl(surr)	21.3	%	1.00	34-120		S2	12/19/23 13:22	MQ
	Tetrachloro-m-xylene(surr)	78.3	%	1.00	24-127			12/19/23 13:22	MQ
SW-846 8082A	Polychlorinated Biphenyls								
	Aroclor 1016	BRL	ug/L	1.00	0.05			12/14/23 18:50	MQ
	Aroclor 1221	BRL	ug/L	1.00	0.05			12/14/23 18:50	MQ
	Aroclor 1232	BRL	ug/L	1.00	0.05			12/14/23 18:50	MQ
	Aroclor 1242	BRL	ug/L	1.00	0.05			12/14/23 18:50	MQ
	Aroclor 1248	BRL	ug/L	1.00	0.05			12/14/23 18:50	MQ
	Aroclor 1254	BRL	ug/L	1.00	0.05			12/14/23 18:50	MQ
	Aroclor 1260	BRL	ug/L	1.00	0.05			12/14/23 18:50	MQ
	Total PCBs	BRL	ug/L	1.00	0.05			12/14/23 18:50	MQ
	Decachlorobiphenyl(surr)	26	%	1.00	35-129		S2	12/14/23 18:50	MQ
	Tetrachloro-m-xylene(surr)	69	%	1.00	27-127			12/14/23 18:50	MQ
SW-846 8260C	Volatile Organic Compounds								
	1,1,1,2-Tetrachloroethane	BRL	mg/L	1.00	0.005		L4	12/14/23 12:13	RT
	1,1,1-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,1,2,2-Tetrachloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,1,2-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,1-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,1-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,1-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,2,3-trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,2,3-Trichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,2,4-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,2-Dibromo-3-chloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,2-Dibromoethane	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,2-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Cheek
Date Collected: 12/13/23
Time Collected: 11:30
Other Information:

Job Sample ID: 23121410.04
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	1,2-Dichloropropane	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	1,3,5-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,3-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	2,2-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	2-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	4-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	4-Isopropyltoluene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Benzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Bromobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Bromochloromethane	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	Bromodichloromethane	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	Bromoform	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Bromomethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Carbon tetrachloride	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	Chlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Chloroethane	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	Chloroform	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	Chloromethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	cis-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	cis-1,3-Dichloropropene	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	Dibromochloromethane	BRL	mg/L	1.00	0.005		L4	12/14/23 12:13	RT
	Dibromomethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Dichlorodifluoromethane	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	Ethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Isopropylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	m- & p-Xylenes	BRL	mg/L	1.00	0.01			12/14/23 12:13	RT
	MEK	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Methylene chloride	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Naphthalene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	n-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	n-Propylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	o-Xylene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	sec-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Styrene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	t-butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Cheek
Date Collected: 12/13/23
Time Collected: 11:30
Other Information:

Job Sample ID: 23121410.04
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	Tetrachloroethylene	BRL	mg/L	1.00	0.006			12/14/23 12:13	RT
	Toluene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	trans-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	trans-1,3-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Trichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Trichlorofluoromethane	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	TTHMs	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Vinyl Chloride	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	Xylenes	BRL	mg/L	1.00	0.005			12/14/23 12:13	RT
	1,2-Dichloroethane-d4(surr)	106	%	1.00	70-130			12/14/23 12:13	RT
	Dibromofluoromethane(surr)	97.2	%	1.00	70-130			12/14/23 12:13	RT
	p-Bromofluorobenzene(surr)	101	%	1.00	70-130			12/14/23 12:13	RT
	Toluene-d8(surr)	101	%	1.00	70-130			12/14/23 12:13	RT
SW-846 8270D									
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2,4,5-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2,4,6-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2,4-Dichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2,4-Dimethylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2,4-Dinitrophenol	BRL	mg/L	1.00	0.01			12/15/23 21:00	GM
	2,4-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2,6-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2-Chloronaphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2-Chlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2-Methylnaphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2-Methylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2-Nitrophenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	3- & 4-Methylphenols	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	3,3-Dichlorobenzidine	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	3-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	4,6-Dinitro-2-methylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	4-Bromophenyl phenyl ether	BRL	mg/L	1.00	0.005		V11	12/15/23 21:00	GM
	4-Chloro-3-methylphenol	BRL	mg/L	1.00	0.005		V1	12/15/23 21:00	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Cheek
Date Collected: 12/13/23
Time Collected: 11:30
Other Information:

Job Sample ID: 23121410.04
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	4-Chloroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	4-Chlorophenyl phenyl ether	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	4-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	4-Nitrophenol	BRL	mg/L	1.00	0.02			12/15/23 21:00	GM
	Acenaphthene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Acenaphthylene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Aniline	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Azobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Benzidine	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Benzo(a)anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Benzo(a)pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Benzo(b)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Benzo(g,h,i)perylene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Benzo(k)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Benzoic acid	BRL	mg/L	1.00	0.025			12/15/23 21:00	GM
	Benzyl alcohol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Bis(2-chloroethoxy) methane	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Bis(2-chloroethyl) ether	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Bis(2-chloroisopropyl) ether	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Bis(2-ethylhexyl)phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Butyl benzyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Carbazole	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Chrysene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Dibenzo(a,h)anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Dibenzofuran	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Diethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Dimethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Di-n-butyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Di-n-octyl Phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Fluorene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Hexachlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Hexachlorobutadiene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Hexachlorocyclopentadiene	BRL	mg/L	1.00	0.01		V11	12/15/23 21:00	GM
	Hexachloroethane	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Indeno(1,2,3-cd)pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Cheek
Date Collected: 12/13/23
Time Collected: 11:30
Other Information:

Job Sample ID: 23121410.04
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	Isophorone	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Naphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Nitrobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	N-Nitrosodimethylamine	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	N-nitroso-di-n-propylamine	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	N-Nitrosodiphenylamine	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Pentachlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Phenanthrene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Phenol	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	Pyridine	BRL	mg/L	1.00	0.005			12/15/23 21:00	GM
	2,4,6-Tribromophenol(surr)	46.9	%	1.00	19-122			12/15/23 21:00	GM
	2-Fluorobiphenyl(surr)	45.3	%	1.00	30-115			12/15/23 21:00	GM
	2-Fluorophenol(surr)	45.9	%	1.00	15-115			12/15/23 21:00	GM
	Nitrobenzene-d5(surr)	58.6	%	1.00	23-120			12/15/23 21:00	GM
	Phenol-d6(surr)	26.3	%	1.00	10-130			12/15/23 21:00	GM
	p-Terphenyl-d14(surr)	34.8	%	1.00	18-137			12/15/23 21:00	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Gallier
Date Collected: 12/13/23
Time Collected: 12:10
Other Information:

Job Sample ID: 23121410.05
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
EPA 200.7	Total Recoverable Metals								
	Aluminum	1.25	mg/L	1	0.01			12/14/23 13:14	BDC
	Antimony	BRL	mg/L	1	0.02			12/14/23 13:14	BDC
	Arsenic	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Barium	0.0590	mg/L	1	0.01			12/14/23 13:14	BDC
	Beryllium	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Cadmium	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Chromium	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Copper	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Iron	1.58	mg/L	1	0.01			12/14/23 13:14	BDC
	Lead	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Manganese	0.0730	mg/L	1	0.01			12/14/23 13:14	BDC
	Nickel	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Selenium	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Silver	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Thallium	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Titanium	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Vanadium	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
	Zinc	BRL	mg/L	1	0.01			12/14/23 13:14	BDC
EPA 245.1	Total Metals - Mercury								
	Mercury	BRL	mg/L	1	0.0002			12/14/23 13:37	MAS
SM 4500CNC/E	Cyanide, Total								
	Cyanide	BRL	mg/L	1	0.01			12/20/23 11:51	SKC
SW-846 8081B	Organochlorine Pesticides								
	Alpha-chlordane	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Gamma-chlordane	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	4,4-DDD	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	4,4-DDE	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	4,4-DDT	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	a-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Aldrin	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	b-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Chlordane	BRL	ug/L	1.00	0.1			12/19/23 13:35	MQ
	d-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Dieldrin	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Endosulfan I	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Endosulfan II	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Endosulfan sulfate	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Gallier
Date Collected: 12/13/23
Time Collected: 12:10
Other Information:

Job Sample ID: 23121410.05
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8081B	Organochlorine Pesticides								
	Endrin	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Endrin aldehyde	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Endrin ketone	BRL	ug/L	1.00	0.01		V12	12/19/23 13:35	MQ
	g-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Heptachlor	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Heptachlor epoxide	BRL	ug/L	1.00	0.01			12/19/23 13:35	MQ
	Methoxychlor	BRL	ug/L	1.00	0.01		V12	12/19/23 13:35	MQ
	Toxaphene	BRL	ug/L	1.00	0.5			12/19/23 13:35	MQ
	Decachlorobiphenyl(surr)	31.3	%	1.00	34-120		S2	12/19/23 13:35	MQ
	Tetrachloro-m-xylene(surr)	81.8	%	1.00	24-127			12/19/23 13:35	MQ
SW-846 8082A	Polychlorinated Biphenyls								
	Aroclor 1016	BRL	ug/L	1.00	0.05			12/14/23 19:03	MQ
	Aroclor 1221	BRL	ug/L	1.00	0.05			12/14/23 19:03	MQ
	Aroclor 1232	BRL	ug/L	1.00	0.05			12/14/23 19:03	MQ
	Aroclor 1242	BRL	ug/L	1.00	0.05			12/14/23 19:03	MQ
	Aroclor 1248	BRL	ug/L	1.00	0.05			12/14/23 19:03	MQ
	Aroclor 1254	BRL	ug/L	1.00	0.05			12/14/23 19:03	MQ
	Aroclor 1260	BRL	ug/L	1.00	0.05			12/14/23 19:03	MQ
	Total PCBs	BRL	ug/L	1.00	0.05			12/14/23 19:03	MQ
	Decachlorobiphenyl(surr)	42.5	%	1.00	35-129			12/14/23 19:03	MQ
	Tetrachloro-m-xylene(surr)	67	%	1.00	27-127			12/14/23 19:03	MQ
SW-846 8260C	Volatile Organic Compounds								
	1,1,1,2-Tetrachloroethane	BRL	mg/L	1.00	0.005		L4	12/14/23 12:34	RT
	1,1,1-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,1,2,2-Tetrachloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,1,2-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,1-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,1-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,1-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,2,3-trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,2,3-Trichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,2,4-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,2-Dibromo-3-chloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,2-Dibromoethane	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,2-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Gallier
Date Collected: 12/13/23
Time Collected: 12:10
Other Information:

Job Sample ID: 23121410.05
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	1,2-Dichloropropane	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	1,3,5-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,3-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	2,2-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	2-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	4-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	4-Isopropyltoluene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Benzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Bromobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Bromochloromethane	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	Bromodichloromethane	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	Bromoform	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Bromomethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Carbon tetrachloride	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	Chlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Chloroethane	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	Chloroform	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	Chloromethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	cis-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	cis-1,3-Dichloropropene	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	Dibromochloromethane	BRL	mg/L	1.00	0.005		L4	12/14/23 12:34	RT
	Dibromomethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Dichlorodifluoromethane	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	Ethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Isopropylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	m- & p-Xylenes	BRL	mg/L	1.00	0.01			12/14/23 12:34	RT
	MEK	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Methylene chloride	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Naphthalene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	n-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	n-Propylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	o-Xylene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	sec-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Styrene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	t-butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Gallier
Date Collected: 12/13/23
Time Collected: 12:10
Other Information:

Job Sample ID: 23121410.05
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	Tetrachloroethylene	BRL	mg/L	1.00	0.006			12/14/23 12:34	RT
	Toluene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	trans-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	trans-1,3-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Trichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Trichlorofluoromethane	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	TTHMs	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Vinyl Chloride	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	Xylenes	BRL	mg/L	1.00	0.005			12/14/23 12:34	RT
	1,2-Dichloroethane-d4(surr)	107	%	1.00	70-130			12/14/23 12:34	RT
	Dibromofluoromethane(surr)	98.9	%	1.00	70-130			12/14/23 12:34	RT
	p-Bromofluorobenzene(surr)	106	%	1.00	70-130			12/14/23 12:34	RT
	Toluene-d8(surr)	100	%	1.00	70-130			12/14/23 12:34	RT
SW-846 8270D									
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2,4,5-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2,4,6-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2,4-Dichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2,4-Dimethylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2,4-Dinitrophenol	BRL	mg/L	1.00	0.01			12/15/23 21:25	GM
	2,4-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2,6-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2-Chloronaphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2-Chlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2-Methylnaphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2-Methylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2-Nitrophenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	3- & 4-Methylphenols	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	3,3-Dichlorobenzidine	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	3-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	4,6-Dinitro-2-methylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	4-Bromophenyl phenyl ether	BRL	mg/L	1.00	0.005		V11	12/15/23 21:25	GM
	4-Chloro-3-methylphenol	BRL	mg/L	1.00	0.005		V1	12/15/23 21:25	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Gallier
Date Collected: 12/13/23
Time Collected: 12:10
Other Information:

Job Sample ID: 23121410.05
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	4-Chloroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	4-Chlorophenyl phenyl ether	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	4-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	4-Nitrophenol	BRL	mg/L	1.00	0.02			12/15/23 21:25	GM
	Acenaphthene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Acenaphthylene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Aniline	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Azobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Benzidine	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Benzo(a)anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Benzo(a)pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Benzo(b)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Benzo(g,h,i)perylene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Benzo(k)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Benzoic acid	BRL	mg/L	1.00	0.025			12/15/23 21:25	GM
	Benzyl alcohol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Bis(2-chloroethoxy) methane	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Bis(2-chloroethyl) ether	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Bis(2-chloroisopropyl) ether	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Bis(2-ethylhexyl)phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Butyl benzyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Carbazole	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Chrysene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Dibenzo(a,h)anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Dibenzofuran	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Diethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Dimethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Di-n-butyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Di-n-octyl Phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Fluorene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Hexachlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Hexachlorobutadiene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Hexachlorocyclopentadiene	BRL	mg/L	1.00	0.01		V11	12/15/23 21:25	GM
	Hexachloroethane	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Indeno(1,2,3-cd)pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Gallier
Date Collected: 12/13/23
Time Collected: 12:10
Other Information:

Job Sample ID: 23121410.05
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	Isophorone	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Naphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Nitrobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	N-Nitrosodimethylamine	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	N-nitroso-di-n-propylamine	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	N-Nitrosodiphenylamine	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Pentachlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Phenanthrene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Phenol	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	Pyridine	BRL	mg/L	1.00	0.005			12/15/23 21:25	GM
	2,4,6-Tribromophenol(surr)	44.3	%	1.00	19-122			12/15/23 21:25	GM
	2-Fluorobiphenyl(surr)	45.1	%	1.00	30-115			12/15/23 21:25	GM
	2-Fluorophenol(surr)	40.6	%	1.00	15-115			12/15/23 21:25	GM
	Nitrobenzene-d5(surr)	59.9	%	1.00	23-120			12/15/23 21:25	GM
	Phenol-d6(surr)	23.2	%	1.00	10-130			12/15/23 21:25	GM
	p-Terphenyl-d14(surr)	30.9	%	1.00	18-137			12/15/23 21:25	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Port Arthur
Date Collected: 12/13/23
Time Collected: 12:40
Other Information:

Job Sample ID: 23121410.06
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
EPA 200.7	Total Recoverable Metals								
	Aluminum	1.05	mg/L	1	0.01			12/14/23 13:18	BDC
	Antimony	BRL	mg/L	1	0.02			12/14/23 13:18	BDC
	Arsenic	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Barium	0.0580	mg/L	1	0.01			12/14/23 13:18	BDC
	Beryllium	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Cadmium	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Chromium	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Copper	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Iron	1.49	mg/L	1	0.01			12/14/23 13:18	BDC
	Lead	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Manganese	0.0760	mg/L	1	0.01			12/14/23 13:18	BDC
	Nickel	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Selenium	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Silver	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Thallium	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Titanium	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Vanadium	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
	Zinc	BRL	mg/L	1	0.01			12/14/23 13:18	BDC
EPA 245.1	Total Metals - Mercury								
	Mercury	BRL	mg/L	1	0.0002			12/14/23 13:40	MAS
SM 4500CNC/E	Cyanide, Total								
	Cyanide	BRL	mg/L	1	0.01			12/20/23 11:51	SKC
SW-846 8081B	Organochlorine Pesticides								
	Alpha-chlordane	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Gamma-chlordane	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	4,4-DDD	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	4,4-DDE	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	4,4-DDT	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	a-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Aldrin	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	b-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Chlordane	BRL	ug/L	1.00	0.1			12/19/23 13:48	MQ
	d-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Dieldrin	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Endosulfan I	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Endosulfan II	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Endosulfan sulfate	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ

ab-q212-0321

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Port Arthur
Date Collected: 12/13/23
Time Collected: 12:40
Other Information:

Job Sample ID: 23121410.06
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8081B	Organochlorine Pesticides								
	Endrin	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Endrin aldehyde	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Endrin ketone	BRL	ug/L	1.00	0.01		V12	12/19/23 13:48	MQ
	g-BHC	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Heptachlor	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Heptachlor epoxide	BRL	ug/L	1.00	0.01			12/19/23 13:48	MQ
	Methoxychlor	BRL	ug/L	1.00	0.01		V12	12/19/23 13:48	MQ
	Toxaphene	BRL	ug/L	1.00	0.5			12/19/23 13:48	MQ
	Decachlorobiphenyl(surr)	44.8	%	1.00	34-120			12/19/23 13:48	MQ
	Tetrachloro-m-xylene(surr)	90.5	%	1.00	24-127			12/19/23 13:48	MQ
SW-846 8082A	Polychlorinated Biphenyls								
	Aroclor 1016	BRL	ug/L	1.00	0.05			12/14/23 19:15	MQ
	Aroclor 1221	BRL	ug/L	1.00	0.05			12/14/23 19:15	MQ
	Aroclor 1232	BRL	ug/L	1.00	0.05			12/14/23 19:15	MQ
	Aroclor 1242	BRL	ug/L	1.00	0.05			12/14/23 19:15	MQ
	Aroclor 1248	BRL	ug/L	1.00	0.05			12/14/23 19:15	MQ
	Aroclor 1254	BRL	ug/L	1.00	0.05			12/14/23 19:15	MQ
	Aroclor 1260	BRL	ug/L	1.00	0.05			12/14/23 19:15	MQ
	Total PCBs	BRL	ug/L	1.00	0.05			12/14/23 19:15	MQ
	Decachlorobiphenyl(surr)	38.5	%	1.00	35-129			12/14/23 19:15	MQ
	Tetrachloro-m-xylene(surr)	73	%	1.00	27-127			12/14/23 19:15	MQ
SW-846 8260C	Volatile Organic Compounds								
	1,1,1,2-Tetrachloroethane	BRL	mg/L	1.00	0.005		L4	12/14/23 12:55	RT
	1,1,1-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,1,2,2-Tetrachloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,1,2-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,1-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,1-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,1-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,2,3-trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,2,3-Trichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,2,4-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,2-Dibromo-3-chloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,2-Dibromoethane	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,2-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Port Arthur
Date Collected: 12/13/23
Time Collected: 12:40
Other Information:

Job Sample ID: 23121410.06
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	1,2-Dichloropropane	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	1,3,5-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,3-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	2,2-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	2-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	4-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	4-Isopropyltoluene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Benzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Bromobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Bromochloromethane	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	Bromodichloromethane	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	Bromoform	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Bromomethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Carbon tetrachloride	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	Chlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Chloroethane	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	Chloroform	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	Chloromethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	cis-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	cis-1,3-Dichloropropene	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	Dibromochloromethane	BRL	mg/L	1.00	0.005		L4	12/14/23 12:55	RT
	Dibromomethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Dichlorodifluoromethane	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	Ethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Isopropylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	m- & p-Xylenes	BRL	mg/L	1.00	0.01			12/14/23 12:55	RT
	MEK	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Methylene chloride	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Naphthalene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	n-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	n-Propylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	o-Xylene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	sec-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Styrene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	t-butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Port Arthur
Date Collected: 12/13/23
Time Collected: 12:40
Other Information:

Job Sample ID: 23121410.06
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	Tetrachloroethylene	BRL	mg/L	1.00	0.006			12/14/23 12:55	RT
	Toluene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	trans-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	trans-1,3-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Trichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Trichlorofluoromethane	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	TTHMs	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Vinyl Chloride	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	Xylenes	BRL	mg/L	1.00	0.005			12/14/23 12:55	RT
	1,2-Dichloroethane-d4(surr)	104	%	1.00	70-130			12/14/23 12:55	RT
	Dibromofluoromethane(surr)	97.8	%	1.00	70-130			12/14/23 12:55	RT
	p-Bromofluorobenzene(surr)	99.3	%	1.00	70-130			12/14/23 12:55	RT
	Toluene-d8(surr)	99.5	%	1.00	70-130			12/14/23 12:55	RT
SW-846 8270D									
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2,4,5-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2,4,6-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2,4-Dichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2,4-Dimethylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2,4-Dinitrophenol	BRL	mg/L	1.00	0.01			12/15/23 21:50	GM
	2,4-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2,6-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2-Chloronaphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2-Chlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2-Methylnaphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2-Methylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2-Nitrophenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	3- & 4-Methylphenols	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	3,3-Dichlorobenzidine	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	3-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	4,6-Dinitro-2-methylphenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	4-Bromophenyl phenyl ether	BRL	mg/L	1.00	0.005		V11	12/15/23 21:50	GM
	4-Chloro-3-methylphenol	BRL	mg/L	1.00	0.005		V1	12/15/23 21:50	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Port Arthur
Date Collected: 12/13/23
Time Collected: 12:40
Other Information:

Job Sample ID: 23121410.06
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	4-Chloroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	4-Chlorophenyl phenyl ether	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	4-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	4-Nitrophenol	BRL	mg/L	1.00	0.02			12/15/23 21:50	GM
	Acenaphthene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Acenaphthylene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Aniline	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Azobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Benzidine	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Benzo(a)anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Benzo(a)pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Benzo(b)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Benzo(g,h,i)perylene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Benzo(k)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Benzoic acid	BRL	mg/L	1.00	0.025			12/15/23 21:50	GM
	Benzyl alcohol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Bis(2-chloroethoxy) methane	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Bis(2-chloroethyl) ether	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Bis(2-chloroisopropyl) ether	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Bis(2-ethylhexyl)phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Butyl benzyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Carbazole	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Chrysene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Dibenzo(a,h)anthracene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Dibenzofuran	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Diethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Dimethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Di-n-butyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Di-n-octyl Phthalate	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Fluorene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Hexachlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Hexachlorobutadiene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Hexachlorocyclopentadiene	BRL	mg/L	1.00	0.01		V11	12/15/23 21:50	GM
	Hexachloroethane	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Indeno(1,2,3-cd)pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Port Arthur
Date Collected: 12/13/23
Time Collected: 12:40
Other Information:

Job Sample ID: 23121410.06
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	Isophorone	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Naphthalene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Nitrobenzene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	N-Nitrosodimethylamine	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	N-nitroso-di-n-propylamine	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	N-Nitrosodiphenylamine	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Pentachlorophenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Phenanthrene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Phenol	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Pyrene	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	Pyridine	BRL	mg/L	1.00	0.005			12/15/23 21:50	GM
	2,4,6-Tribromophenol(surr)	52.2	%	1.00	19-122			12/15/23 21:50	GM
	2-Fluorobiphenyl(surr)	46.8	%	1.00	30-115			12/15/23 21:50	GM
	2-Fluorophenol(surr)	45.7	%	1.00	15-115			12/15/23 21:50	GM
	Nitrobenzene-d5(surr)	65.7	%	1.00	23-120			12/15/23 21:50	GM
	Phenol-d6(surr)	23.5	%	1.00	10-130			12/15/23 21:50	GM
	p-Terphenyl-d14(surr)	35.3	%	1.00	18-137			12/15/23 21:50	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Atlantic
Date Collected: 12/13/23
Time Collected: 13:10
Other Information:

Job Sample ID: 23121410.07
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
EPA 200.7	Total Recoverable Metals								
	Aluminum	0.814	mg/L	1	0.01			12/14/23 13:21	BDC
	Antimony	BRL	mg/L	1	0.02			12/14/23 13:21	BDC
	Arsenic	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Barium	0.0530	mg/L	1	0.01			12/14/23 13:21	BDC
	Beryllium	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Cadmium	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Chromium	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Copper	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Iron	1.32	mg/L	1	0.01			12/14/23 13:21	BDC
	Lead	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Manganese	0.0760	mg/L	1	0.01			12/14/23 13:21	BDC
	Nickel	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Selenium	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Silver	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Thallium	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Titanium	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Vanadium	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
	Zinc	BRL	mg/L	1	0.01			12/14/23 13:21	BDC
EPA 245.1	Total Metals - Mercury								
	Mercury	BRL	mg/L	1	0.0002			12/14/23 13:44	MAS
SM 4500CNC/E	Cyanide, Total								
	Cyanide	BRL	mg/L	1	0.01			12/20/23 11:51	SKC
SW-846 8081B	Organochlorine Pesticides								
	Alpha-chlordane	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Gamma-chlordane	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	4,4-DDD	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	4,4-DDE	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	4,4-DDT	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	a-BHC	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Aldrin	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	b-BHC	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Chlordane	BRL	ug/L	1.00	0.1			12/19/23 14:16	MQ
	d-BHC	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Dieldrin	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Endosulfan I	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Endosulfan II	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Endosulfan sulfate	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Atlantic
Date Collected: 12/13/23
Time Collected: 13:10
Other Information:

Job Sample ID: 23121410.07
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8081B	Organochlorine Pesticides								
	Endrin	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Endrin aldehyde	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Endrin ketone	BRL	ug/L	1.00	0.01		V12	12/19/23 14:16	MQ
	g-BHC	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Heptachlor	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Heptachlor epoxide	BRL	ug/L	1.00	0.01			12/19/23 14:16	MQ
	Methoxychlor	BRL	ug/L	1.00	0.01		V12	12/19/23 14:16	MQ
	Toxaphene	BRL	ug/L	1.00	0.5			12/19/23 14:16	MQ
	Decachlorobiphenyl(surr)	50.3	%	1.00	34-120			12/19/23 14:16	MQ
	Tetrachloro-m-xylene(surr)	85.8	%	1.00	24-127			12/19/23 14:16	MQ
SW-846 8082A	Polychlorinated Biphenyls								
	Aroclor 1016	BRL	ug/L	1.00	0.05			12/14/23 19:27	MQ
	Aroclor 1221	BRL	ug/L	1.00	0.05			12/14/23 19:27	MQ
	Aroclor 1232	BRL	ug/L	1.00	0.05			12/14/23 19:27	MQ
	Aroclor 1242	BRL	ug/L	1.00	0.05			12/14/23 19:27	MQ
	Aroclor 1248	BRL	ug/L	1.00	0.05			12/14/23 19:27	MQ
	Aroclor 1254	BRL	ug/L	1.00	0.05			12/14/23 19:27	MQ
	Aroclor 1260	BRL	ug/L	1.00	0.05			12/14/23 19:27	MQ
	Total PCBs	BRL	ug/L	1.00	0.05			12/14/23 19:27	MQ
	Decachlorobiphenyl(surr)	42.5	%	1.00	35-129			12/14/23 19:27	MQ
	Tetrachloro-m-xylene(surr)	71.5	%	1.00	27-127			12/14/23 19:27	MQ
SW-846 8260C	Volatile Organic Compounds								
	1,1,1,2-Tetrachloroethane	BRL	mg/L	1.00	0.005		L4	12/14/23 13:17	RT
	1,1,1-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,1,2,2-Tetrachloroethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,1,2-Trichloroethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,1-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,1-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,1-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,2,3-trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,2,3-Trichloropropane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,2,4-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,2-Dibromo-3-chloropropane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,2-Dibromoethane	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,2-Dichloroethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Atlantic
Date Collected: 12/13/23
Time Collected: 13:10
Other Information:

Job Sample ID: 23121410.07
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	1,2-Dichloropropane	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	1,3,5-Trimethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,3-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	2,2-Dichloropropane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	2-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	4-Chlorotoluene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	4-Isopropyltoluene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Benzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Bromobenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Bromochloromethane	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	Bromodichloromethane	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	Bromoform	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Bromomethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Carbon tetrachloride	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	Chlorobenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Chloroethane	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	Chloroform	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	Chloromethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	cis-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	cis-1,3-Dichloropropene	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	Dibromochloromethane	BRL	mg/L	1.00	0.005		L4	12/14/23 13:17	RT
	Dibromomethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Dichlorodifluoromethane	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	Ethylbenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Isopropylbenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	m- & p-Xylenes	BRL	mg/L	1.00	0.01			12/14/23 13:17	RT
	MEK	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Methylene chloride	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Naphthalene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	n-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	n-Propylbenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	o-Xylene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	sec-Butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Styrene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	t-butylbenzene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Atlantic
Date Collected: 12/13/23
Time Collected: 13:10
Other Information:

Job Sample ID: 23121410.07
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8260C	Volatile Organic Compounds								
	Tetrachloroethylene	BRL	mg/L	1.00	0.006			12/14/23 13:17	RT
	Toluene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	trans-1,2-Dichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	trans-1,3-Dichloropropene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Trichloroethylene	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Trichlorofluoromethane	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	TTHMs	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Vinyl Chloride	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	Xylenes	BRL	mg/L	1.00	0.005			12/14/23 13:17	RT
	1,2-Dichloroethane-d4(surr)	107	%	1.00	70-130			12/14/23 13:17	RT
	Dibromofluoromethane(surr)	102	%	1.00	70-130			12/14/23 13:17	RT
	p-Bromofluorobenzene(surr)	99.8	%	1.00	70-130			12/14/23 13:17	RT
	Toluene-d8(surr)	98.9	%	1.00	70-130			12/14/23 13:17	RT
SW-846 8270D									
	1,2,4-Trichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	1,2-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	1,3-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	1,4-Dichlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2,4,5-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2,4,6-Trichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2,4-Dichlorophenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2,4-Dimethylphenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2,4-Dinitrophenol	BRL	mg/L	1.00	0.01			12/15/23 22:15	GM
	2,4-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2,6-Dinitrotoluene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2-Chloronaphthalene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2-Chlorophenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2-Methylnaphthalene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2-Methylphenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2-Nitrophenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	3- & 4-Methylphenols	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	3,3-Dichlorobenzidine	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	3-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	4,6-Dinitro-2-methylphenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	4-Bromophenyl phenyl ether	BRL	mg/L	1.00	0.005		V11	12/15/23 22:15	GM
	4-Chloro-3-methylphenol	BRL	mg/L	1.00	0.005		V1	12/15/23 22:15	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Atlantic
Date Collected: 12/13/23
Time Collected: 13:10
Other Information:

Job Sample ID: 23121410.07
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	4-Chloroaniline	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	4-Chlorophenyl phenyl ether	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	4-Nitroaniline	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	4-Nitrophenol	BRL	mg/L	1.00	0.02			12/15/23 22:15	GM
	Acenaphthene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Acenaphthylene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Aniline	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Anthracene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Azobenzene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Benzidine	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Benzo(a)anthracene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Benzo(a)pyrene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Benzo(b)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Benzo(g,h,i)perylene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Benzo(k)fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Benzoic acid	BRL	mg/L	1.00	0.025			12/15/23 22:15	GM
	Benzyl alcohol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Bis(2-chloroethoxy) methane	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Bis(2-chloroethyl) ether	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Bis(2-chloroisopropyl) ether	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Bis(2-ethylhexyl)phthalate	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Butyl benzyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Carbazole	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Chrysene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Dibenzo(a,h)anthracene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Dibenzofuran	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Diethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Dimethyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Di-n-butyl phthalate	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Di-n-octyl Phthalate	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Fluoranthene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Fluorene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Hexachlorobenzene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Hexachlorobutadiene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Hexachlorocyclopentadiene	BRL	mg/L	1.00	0.01		V11	12/15/23 22:15	GM
	Hexachloroethane	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Indeno(1,2,3-cd)pyrene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM

LABORATORY TEST RESULTS

Job ID : 23121410

Date 12/20/2023

Client Name: Lower Neches Valley Authority SWB Lab

Attn: Brielle Patronella

Project Name: Priority Pollutants - LNVA Canals

Client Sample ID: Atlantic
Date Collected: 12/13/23
Time Collected: 13:10
Other Information:

Job Sample ID: 23121410.07
Sample Matrix Water

Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
SW-846 8270D									
	Isophorone	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Naphthalene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Nitrobenzene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	N-Nitrosodimethylamine	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	N-nitroso-di-n-propylamine	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	N-Nitrosodiphenylamine	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Pentachlorophenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Phenanthrene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Phenol	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Pyrene	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	Pyridine	BRL	mg/L	1.00	0.005			12/15/23 22:15	GM
	2,4,6-Tribromophenol(surr)	51.5	%	1.00	19-122			12/15/23 22:15	GM
	2-Fluorobiphenyl(surr)	44.3	%	1.00	30-115			12/15/23 22:15	GM
	2-Fluorophenol(surr)	43.8	%	1.00	15-115			12/15/23 22:15	GM
	Nitrobenzene-d5(surr)	66.4	%	1.00	23-120			12/15/23 22:15	GM
	Phenol-d6(surr)	25	%	1.00	10-130			12/15/23 22:15	GM
	p-Terphenyl-d14(surr)	36.8	%	1.00	18-137			12/15/23 22:15	GM

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Volatile Organic Compounds **Method :** SW-846 8260C **Reporting Units :** mg/L

QC Batch ID : Qb231214120 **Created Date :** 12/14/23 **Created By :** Rajeev

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

Sample Preparation : PB23121462 **Prep Method :** SW-846 5030C **Prep Date :** 12/14/23 10:00 **Prep By :** Rajeev

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit	Qual
1,1,1,2-Tetrachloroethane	630-20-6	BRL	mg/L	1.00	0.005	
1,1,1-Trichloroethane	71-55-6	BRL	mg/L	1.00	0.005	
1,1,2,2-Tetrachloroethane	79-34-5	BRL	mg/L	1.00	0.005	
1,1,2-Trichloroethane	79-00-5	BRL	mg/L	1.00	0.005	
1,1-Dichloroethane	75-34-3	BRL	mg/L	1.00	0.005	
1,1-Dichloroethylene	75-35-4	BRL	mg/L	1.00	0.005	
1,1-Dichloropropene	563-58-6	BRL	mg/L	1.00	0.005	
1,2,3-trichlorobenzene	87-61-6	BRL	mg/L	1.00	0.005	
1,2,3-Trichloropropane	96-18-4	BRL	mg/L	1.00	0.005	
1,2,4-Trichlorobenzene	120-82-1	BRL	mg/L	1.00	0.005	
1,2,4-Trimethylbenzene	95-63-6	BRL	mg/L	1.00	0.005	
1,2-Dibromo-3-chloropropa	96-12-8	BRL	mg/L	1.00	0.005	
1,2-Dibromoethane	106-93-4	BRL	mg/L	1.00	0.006	
1,2-Dichlorobenzene	95-50-1	BRL	mg/L	1.00	0.005	
1,2-Dichloroethane	107-06-2	BRL	mg/L	1.00	0.005	
1,2-Dichloropropane	78-87-5	BRL	mg/L	1.00	0.006	
1,3,5-Trimethylbenzene	108-67-8	BRL	mg/L	1.00	0.005	
1,3-Dichlorobenzene	541-73-1	BRL	mg/L	1.00	0.005	
1,3-Dichloropropane	142-28-9	BRL	mg/L	1.00	0.005	
1,4-Dichlorobenzene	106-46-7	BRL	mg/L	1.00	0.005	
2,2-Dichloropropane	594-20-7	BRL	mg/L	1.00	0.005	
2-Chlorotoluene	95-49-8	BRL	mg/L	1.00	0.005	
4-Chlorotoluene	106-43-4	BRL	mg/L	1.00	0.005	
4-Isopropyltoluene	99-87-6	BRL	mg/L	1.00	0.005	
Benzene	71-43-2	BRL	mg/L	1.00	0.005	
Bromobenzene	108-86-1	BRL	mg/L	1.00	0.005	
Bromochloromethane	74-97-5	BRL	mg/L	1.00	0.006	
Bromodichloromethane	75-27-4	BRL	mg/L	1.00	0.006	
Bromoform	75-25-2	BRL	mg/L	1.00	0.005	
Bromomethane	74-83-9	BRL	mg/L	1.00	0.005	
Carbon tetrachloride	56-23-5	BRL	mg/L	1.00	0.006	
Chlorobenzene	108-90-7	BRL	mg/L	1.00	0.005	
Chloroethane	75-00-3	BRL	mg/L	1.00	0.006	
Chloroform	67-66-3	BRL	mg/L	1.00	0.006	
Chloromethane	74-87-3	BRL	mg/L	1.00	0.005	
cis-1,2-Dichloroethylene	156-59-2	BRL	mg/L	1.00	0.005	
cis-1,3-Dichloropropene	10061-01-5	BRL	mg/L	1.00	0.006	
Dibromochloromethane	124-48-1	BRL	mg/L	1.00	0.005	
Dibromomethane	74-95-3	BRL	mg/L	1.00	0.005	
Dichlorodifluoromethane	75-71-8	BRL	mg/L	1.00	0.006	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Volatile Organic Compounds **Method :** SW-846 8260C **Reporting Units :** mg/L

QC Batch ID : Qb231214120 **Created Date :** 12/14/23 **Created By :** Rajeev

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit	Qual
Ethylbenzene	100-41-4	BRL	mg/L	1.00	0.005	
Isopropylbenzene	98-82-8	BRL	mg/L	1.00	0.005	
m- & p-Xylenes	179601-23-1	BRL	mg/L	1.00	0.01	
MEK	78-93-3	BRL	mg/L	1.00	0.005	
Methylene chloride	75-09-2	BRL	mg/L	1.00	0.005	
Naphthalene	91-20-3	BRL	mg/L	1.00	0.005	
n-Butylbenzene	104-51-8	BRL	mg/L	1.00	0.005	
n-Propylbenzene	103-65-1	BRL	mg/L	1.00	0.005	
o-Xylene	95-47-6	BRL	mg/L	1.00	0.005	
sec-Butylbenzene	135-98-8	BRL	mg/L	1.00	0.005	
Styrene	100-42-5	BRL	mg/L	1.00	0.005	
t-butylbenzene	98-06-6	BRL	mg/L	1.00	0.005	
Tetrachloroethylene	127-18-4	BRL	mg/L	1.00	0.006	
Toluene	108-88-3	BRL	mg/L	1.00	0.005	
trans-1,2-Dichloroethylene	156-60-5	BRL	mg/L	1.00	0.005	
trans-1,3-Dichloropropene	10061-02-6	BRL	mg/L	1.00	0.005	
Trichloroethylene	79-01-6	BRL	mg/L	1.00	0.005	
Trichlorofluoromethane	75-69-4	BRL	mg/L	1.00	0.005	
TTHMs		BRL	mg/L	1.00	0.005	
Vinyl Chloride	75-01-4	BRL	mg/L	1.00	0.005	
Xylenes	1330-20-7	BRL	mg/L	1.00	0.005	
Dibromofluoromethane(surr	1868-53-7	96.1	%	1.00	70-130	
1,2-Dichloroethane-d4(surr	17060-07-0	107	%	1.00	70-130	
Toluene-d8(surr)	2037-26-5	95.4	%	1.00	70-130	
p-Bromofluorobenzene(surr	460-00-4	109	%	1.00	70-130	

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
1,1,1,2-Tetrachloroethane	0.04	0.0344	86.1	0.04	0.0346	86.5	0.4	20	86.3-118	L4
1,1,1-Trichloroethane	0.04	0.0363	90.7	0.04	0.0359	89.7	1	20	82.2-118	
1,1,2,2-Tetrachloroethane	0.04	0.0417	104	0.04	0.0402	101	3.7	20	82.5-124	
1,1,2-Trichloroethane	0.04	0.0410	102	0.04	0.0392	97.9	4.4	20	86.6-119	
1,1-Dichloroethane	0.04	0.0384	96.1	0.04	0.0382	95.6	0.7	20	80.9-119	
1,1-Dichloroethylene	0.04	0.0391	97.8	0.04	0.0379	94.8	3.2	20	80.7-119	
1,1-Dichloropropene	0.04	0.0398	99.4	0.04	0.0388	97.1	2.4	20	82.4-120	
1,2,3-trichlorobenzene	0.04	0.0442	110	0.04	0.0427	107	3.4	20	70.9-135	
1,2,3-Trichloropropane	0.04	0.0426	106	0.04	0.0433	108	1.8	20	81.2-125	
1,2,4-Trichlorobenzene	0.04	0.0447	112	0.04	0.0440	110	1.5	20	70-136	
1,2,4-Trimethylbenzene	0.04	0.0414	104	0.04	0.0405	101	2.2	20	82.8-119	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Volatile Organic Compounds **Method :** SW-846 8260C **Reporting Units :** mg/L

QC Batch ID : Qb231214120 **Created Date :** 12/14/23 **Created By :** Rajeev

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
1,2-Dibromo-3-chloropropa	0.04	0.0366	91.5	0.04	0.0386	96.5	5.3	20	76-130	
1,2-Dibromoethane	0.04	0.0416	104	0.04	0.0394	98.5	5.3	20	87.9-118	
1,2-Dichlorobenzene	0.04	0.0417	104	0.04	0.0410	102	1.7	20	84.1-118	
1,2-Dichloroethane	0.04	0.0404	101	0.04	0.0389	97.3	3.8	20	83-121	
1,2-Dichloropropane	0.04	0.0404	101	0.04	0.0373	93.2	8.1	20	85.2-117	
1,3,5-Trimethylbenzene	0.04	0.0410	102	0.04	0.0399	99.8	2.7	20	83.5-118	
1,3-Dichlorobenzene	0.04	0.0422	106	0.04	0.0399	99.9	5.6	20	83.6-118	
1,3-Dichloropropane	0.04	0.0405	101	0.04	0.0396	98.9	2.4	20	82.4-122	
1,4-Dichlorobenzene	0.04	0.0415	104	0.04	0.0403	101	2.9	20	83.8-118	
2,2-Dichloropropane	0.04	0.0379	94.7	0.04	0.0385	96.4	1.6	20	78.9-125	
2-Chlorotoluene	0.04	0.0404	101	0.04	0.0393	98.3	2.7	20	82.5-118	
4-Chlorotoluene	0.04	0.0412	103	0.04	0.0396	99	4	20	82.9-119	
4-Isopropyltoluene	0.04	0.0421	105	0.04	0.0406	102	3.6	20	81.7-120	
Benzene	0.04	0.0394	98.4	0.04	0.0378	94.4	4	20	84.7-114	
Bromobenzene	0.04	0.0404	101	0.04	0.0415	104	2.7	20	83.2-117	
Bromochloromethane	0.04	0.0391	97.6	0.04	0.0384	96	1.7	20	80.8-123	
Bromodichloromethane	0.04	0.0366	91.4	0.04	0.0359	89.7	1.8	20	86.1-118	
Bromoform	0.04	0.0329	82.4	0.04	0.0342	85.5	3.8	20	81.9-124	
Bromomethane	0.04	0.0383	95.9	0.04	0.0382	95.5	0.4	20	72.1-134	
Carbon tetrachloride	0.04	0.0334	83.6	0.04	0.0338	84.6	1.1	20	82-118	
Chlorobenzene	0.04	0.0403	101	0.04	0.0388	96.9	3.9	20	87.4-115	
Chloroethane	0.04	0.0399	99.6	0.04	0.0378	94.4	5.3	20	74.5-123	
Chloroform	0.04	0.0390	97.5	0.04	0.0378	94.4	3.1	20	83.8-118	
Chloromethane	0.04	0.0416	104	0.04	0.0410	103	1.4	20	72-120	
cis-1,2-Dichloroethylene	0.04	0.0389	97.3	0.04	0.0378	94.6	3	20	82-120	
cis-1,3-Dichloropropene	0.04	0.0385	96.3	0.04	0.0381	95.2	1.1	20	87-117	
Dibromochloromethane	0.04	0.0341	85.3	0.04	0.0336	84.1	1.5	20	85.3-119	L4
Dibromomethane	0.04	0.0415	104	0.04	0.0386	96.6	7.4	20	84.9-119	
Dichlorodifluoromethane	0.04	0.0375	93.7	0.04	0.0355	88.7	5.5	20	63.3-118	
Ethylbenzene	0.04	0.0406	101	0.04	0.0384	95.9	5.5	20	85.1-115	
Isopropylbenzene	0.04	0.0407	102	0.04	0.0390	97.4	4.3	20	85.4-117	
m- & p-Xylenes	0.08	0.0813	102	0.08	0.0775	96.8	4.8	20	84.7-115	
MEK	0.04	0.0445	111	0.04	0.0426	106	4.3	20	69-135	
Methylene chloride	0.04	0.0379	94.8	0.04	0.0368	92	3	20	72.5-130	
Naphthalene	0.04	0.0453	113	0.04	0.0454	113	0.3	20	75-135	
n-Butylbenzene	0.04	0.0434	108	0.04	0.0426	106	1.8	20	80-126	
n-Propylbenzene	0.04	0.0414	103	0.04	0.0419	105	1.3	20	82.1-120	
o-Xylene	0.04	0.0407	102	0.04	0.0383	95.8	6.1	20	85.4-115	
sec-Butylbenzene	0.04	0.0414	104	0.04	0.0402	100	3	20	82-120	
Styrene	0.04	0.0412	103	0.04	0.0392	98.1	5	20	86.5-116	
t-butylbenzene	0.04	0.0406	101	0.04	0.0398	99.4	1.9	20	84.3-118	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Volatile Organic Compounds **Method : SW-846 8260C** **Reporting Units : mg/L**

QC Batch ID : Qb231214120 **Created Date :** 12/14/23 **Created By :** Rajeev

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Tetrachloroethylene	0.04	0.0373	93.2	0.04	0.0351	87.8	6	20	73.2-129	
Toluene	0.04	0.0399	99.8	0.04	0.0380	94.9	4.9	20	85.1-114	
trans-1,2-Dichloroethylene	0.04	0.0390	97.5	0.04	0.0377	94.3	3.4	20	81.1-119	
trans-1,3-Dichloropropene	0.04	0.0389	97.4	0.04	0.0381	95.3	2.2	20	85.7-118	
Trichloroethylene	0.04	0.0403	101	0.04	0.0383	95.7	5.1	20	84-118	
Trichlorofluoromethane	0.04	0.0403	101	0.04	0.0386	96.4	4.3	20	78.4-120	
Vinyl Chloride	0.04	0.0393	98.2	0.04	0.0379	94.7	3.6	20	73.5-121	
Xylenes	0.12	0.122	102	0.12	0.116	96.5	5.1	20	85.1-115	

QC Type: MS and MSD
QC Sample ID: 23121410.01

Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
1,1,1,2-Tetrachloroethane	BRL	0.04	0.0358	89.5						72-139	
1,1,1-Trichloroethane	BRL	0.04	0.0374	93.5						70.6-135	
1,1,2,2-Tetrachloroethane	BRL	0.04	0.0475	119						55-149	
1,1,2-Trichloroethane	BRL	0.04	0.0451	113						68-139	
1,1-Dichloroethane	BRL	0.04	0.0400	100						78-134	
1,1-Dichloroethylene	BRL	0.04	0.0396	99						65-141	
1,1-Dichloropropene	BRL	0.04	0.0407	102						79-136	
1,2,3-trichlorobenzene	BRL	0.04	0.0441	110						54-144	
1,2,3-Trichloropropane	BRL	0.04	0.0472	118						58-156	
1,2,4-Trichlorobenzene	BRL	0.04	0.0416	104						69-127	
1,2,4-Trimethylbenzene	BRL	0.04	0.0400	99.9						80-131	
1,2-Dibromo-3-chloropropa	BRL	0.04	0.0424	106						61-145	
1,2-Dibromoethane	BRL	0.04	0.0458	115						68-140	
1,2-Dichlorobenzene	BRL	0.04	0.0413	103						70-138	
1,2-Dichloroethane	BRL	0.04	0.0430	108						67-152	
1,2-Dichloropropane	BRL	0.04	0.0401	100						79-135	
1,3,5-Trimethylbenzene	BRL	0.04	0.0404	101						79-133	
1,3-Dichlorobenzene	BRL	0.04	0.0402	101						79-128	
1,3-Dichloropropane	BRL	0.04	0.0442	110						70-147	
1,4-Dichlorobenzene	BRL	0.04	0.0401	100						76-127	
2,2-Dichloropropane	BRL	0.04	0.0384	96						60-129	
2-Chlorotoluene	BRL	0.04	0.0399	99.9						83-130	
4-Chlorotoluene	BRL	0.04	0.0400	100						82-129	
4-Isopropyltoluene	BRL	0.04	0.0404	101						78-129	
Benzene	BRL	0.04	0.0391	97.8						73-129	
Bromobenzene	BRL	0.04	0.0408	102						76-132	
Bromochloromethane	BRL	0.04	0.0428	107						76-135	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Volatile Organic Compounds **Method :** SW-846 8260C **Reporting Units :** mg/L

QC Batch ID : Qb231214120 **Created Date :** 12/14/23 **Created By :** Rajeev

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: MS and MSD
QC Sample ID: 23121410.01

Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Bromodichloromethane	BRL	0.04	0.0379	94.8						80-136	
Bromoform	BRL	0.04	0.0369	92.3						65-139	
Bromomethane	BRL	0.04	0.0363	90.7						65-150	
Carbon tetrachloride	BRL	0.04	0.0342	85.5						70-136	
Chlorobenzene	BRL	0.04	0.0408	102						69-123	
Chloroethane	BRL	0.04	0.0393	98.2						74-145	
Chloroform	BRL	0.04	0.0396	98.9						41.8-164	
Chloromethane	BRL	0.04	0.0429	107						42.2-160	
cis-1,2-Dichloroethylene	BRL	0.04	0.0399	99.7						71-134	
cis-1,3-Dichloropropene	BRL	0.04	0.0389	97.2						74-128	
Dibromochloromethane	BRL	0.04	0.0369	92.3						67-141	
Dibromomethane	BRL	0.04	0.0453	113						63.1-135	
Dichlorodifluoromethane	BRL	0.04	0.0359	89.8						62-146	
Ethylbenzene	BRL	0.04	0.0409	102						80-132	
Isopropylbenzene	BRL	0.04	0.0411	103						78-137	
m- & p-Xylenes	BRL	0.08	0.0809	101						74-127	
MEK	BRL	0.04	0.0549	137						52-148	
Methylene chloride	BRL	0.04	0.0396	99						68-131	
Naphthalene	BRL	0.04	0.0493	123						61-116	M8
n-Butylbenzene	BRL	0.04	0.0414	104						73-140	
n-Propylbenzene	BRL	0.04	0.0394	98.5						75-127	
o-Xylene	BRL	0.04	0.0412	103						74-126	
sec-Butylbenzene	BRL	0.04	0.0403	101						75-129	
Styrene	BRL	0.04	0.0418	105						77-123	
t-butylbenzene	BRL	0.04	0.0402	101						75-126	
Tetrachloroethylene	BRL	0.04	0.0364	91.1						27.6-194	
Toluene	BRL	0.04	0.0407	102						72-121	
trans-1,2-Dichloroethylene	BRL	0.04	0.0398	99.5						73-138	
trans-1,3-Dichloropropene	BRL	0.04	0.0411	103						66-131	
Trichloroethylene	BRL	0.04	0.0395	98.7						70-130	
Trichlorofluoromethane	BRL	0.04	0.0412	103						67-148	
Vinyl Chloride	BRL	0.04	0.0389	97.2						59.4-140	
Xylenes	BRL	0.12	0.122	102						73-127	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Total Metals - Mercury **Method :** EPA 245.1 **Reporting Units :** mg/L

QC Batch ID : Qb23121458 **Created Date :** 12/14/23 **Created By :** MSenarath

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

Digestion : PB23121425 **Prep Method :** EPA 245.1 **Prep Date :** 12/14/23 10:00 **Prep By :** MSenarath

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit		Qual
Mercury	7439-97-6T	BRL	mg/L	1	0.0002		

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Mercury	0.005	0.00489	97.8	0.005	0.00480	96	1.9	20	85-115	

QC Type: MS and MSD
QC Sample ID: 23121410.01

Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Mercury	BRL	0.005	0.00482	96.4						85-115	

QC Type: MS2 and MSD2
QC Sample ID: 23121412.01

Parameter	Sample Result	MS2 Spk Added	MS2 Result	MS2 % Rec	MSD2 Spk Added	MSD2 Result	MSD2 % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Mercury	BRL	0.005	0.00490	98						85-115	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Total Recoverable Metals **Method :** EPA 200.7 **Reporting Units :** mg/L

QC Batch ID : Qb23121468 **Created Date :** 12/14/23 **Created By :** BChristofer

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

Digestion : PB23121407 **Prep Method :** EPA 200.7 **Prep Date :** 12/14/23 07:45 **Prep By :** Mwissman

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit		Qual
Aluminum	7429-90-5T	BRL	mg/L	1	0.01		
Antimony	7440-36-0	BRL	mg/L	1	0.02		
Arsenic	7440-38-2T	BRL	mg/L	1	0.01		
Barium	7440-39-3T	BRL	mg/L	1	0.01		
Beryllium	7440-41-7	BRL	mg/L	1	0.01		
Cadmium	7440-43-9	BRL	mg/L	1	0.01		
Chromium	7440-47-3T	BRL	mg/L	1	0.01		
Copper	7440-50-8	BRL	mg/L	1	0.01		
Iron	7439-89-6T	BRL	mg/L	1	0.01		
Lead	7439-92-1T	BRL	mg/L	1	0.01		
Manganese	7439-96-5	BRL	mg/L	1	0.01		
Nickel	7440-02-0	BRL	mg/L	1	0.01		
Selenium	7782-49-2	BRL	mg/L	1	0.01		
Silver	7440-22-4	BRL	mg/L	1	0.01		
Thallium	7440-28-0	BRL	mg/L	1	0.01		
Titanium	7440-32-6	BRL	mg/L	1	0.01		
Vanadium	7440-62-2	BRL	mg/L	1	0.01		
Zinc	7440-66-6T	BRL	mg/L	1	0.01		

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Aluminum	1	1.00	100	1	1.00	100	0.3	20	85-115	
Antimony	1	1.07	107	1	1.07	107	0.4	20	85-115	
Arsenic	1	1.09	109	1	1.08	108	0.7	20	85-115	
Barium	1	1.02	102	1	1.01	101	0.7	20	85-115	
Beryllium	1	1.04	104	1	1.03	103	0.7	20	85-115	
Cadmium	1	1.01	101	1	1.01	101	0.2	20	85-115	
Chromium	1	1.02	102	1	1.02	102	0.3	20	85-115	
Copper	1	1.04	104	1	1.03	103	0.6	20	85-115	
Iron	1	1.02	102	1	0.998	99.8	2.4	20	85-115	
Lead	1	0.985	98.5	1	0.980	98	0.5	20	85-115	
Manganese	1	0.991	99.1	1	0.987	98.7	0.4	20	85-115	
Nickel	1	1.00	100	1	1.00	100	0.2	20	85-115	
Selenium	1	1.07	107	1	1.07	107	0.1	20	85-115	
Silver	1	1.01	102	1	1.01	101	0.5	20	85-115	
Thallium	1	0.999	99.9	1	1.00	100	0.1	20	85-115	
Titanium	1	1.01	101	1	1.00	100	0.8	20	85-115	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Total Recoverable Metals **Method :** EPA 200.7 **Reporting Units :** mg/L

QC Batch ID : Qb23121468 **Created Date :** 12/14/23 **Created By :** BChristofer

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Vanadium	1	1.02	102	1	1.02	102	0.2	20	85-115	
Zinc	1	1.01	101	1	1.00	100	0.8	20	85-115	

QC Type: MS and MSD
QC Sample ID: 23121257.01

Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Aluminum	5.67	1	6.74	107						75-125	
Antimony	BRL	1	1.10	110						75-125	
Arsenic	0.005	1	1.14	114						75-125	
Barium	0.114	1	1.14	103						75-125	
Beryllium	BRL	1	1.06	106						75-125	
Cadmium	BRL	1	0.992	99.2						75-125	
Chromium	0.005	1	1.03	103						75-125	
Copper	0.006	1	1.08	108						75-125	
Iron	2.01	1	5.11	310						75-125	M1
Lead	BRL	1	0.956	95.6						75-125	
Manganese	0.0800	1	1.06	97.6						75-125	
Nickel	0.0120	1	0.991	97.9						75-125	
Selenium	BRL	1	1.12	112						75-125	
Silver	BRL	1	1.04	104						75-125	
Thallium	0.002	1	0.965	96.3						75-125	
Titanium	0.004	1	1.04	104						75-125	
Vanadium	0.009	1	1.05	105						75-125	
Zinc	0.194	1	1.22	103						75-125	

QC Type: MS2 and MSD2
QC Sample ID: 23121410.06

Parameter	Sample Result	MS2 Spk Added	MS2 Result	MS2 % Rec	MSD2 Spk Added	MSD2 Result	MSD2 % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Aluminum	1.05	1	2.61	156						75-125	M1
Antimony	BRL	1	1.07	107						75-125	
Arsenic	BRL	1	1.09	109						75-125	
Barium	0.0580	1	1.10	104						75-125	
Beryllium	BRL	1	1.07	107						75-125	
Cadmium	BRL	1	1.03	103						75-125	
Chromium	BRL	1	1.05	105						75-125	
Copper	BRL	1	1.06	106						75-125	
Iron	1.49	1	2.56	107						75-125	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Total Recoverable Metals **Method :** EPA 200.7 **Reporting Units :** mg/L

QC Batch ID : Qb23121468 **Created Date :** 12/14/23 **Created By :** BChristofer

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: MS2 and MSD2
QC Sample ID: 23121410.06

Parameter	Sample Result	MS2 Spk Added	MS2 Result	MS2 % Rec	MSD2 Spk Added	MSD2 Result	MSD2 % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Lead	BRL	1	0.995	99.5						75-125	
Manganese	0.0760	1	1.08	101						75-125	
Nickel	BRL	1	1.03	103						75-125	
Selenium	BRL	1	1.11	111						75-125	
Silver	BRL	1	1.03	103						75-125	
Thallium	BRL	1	1.02	102						75-125	
Titanium	BRL	1	1.02	103						75-125	
Vanadium	BRL	1	1.05	105						75-125	
Zinc	BRL	1	1.04	104						75-125	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : **Method :** **SW-846 8270D** **Reporting Units :** **mg/L**

QC Batch ID : Qb231215137 **Created Date :** 12/15/23 **Created By :** GeMu

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

Extraction : PB23121503 **Prep Method :** SW-846 3510C **Prep Date :** 12/15/23 08:00 **Prep By :** MMuteen

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit	Qual
1,2,4-Trichlorobenzene	120-82-1	BRL	mg/L	1.00	0.005	
1,2-Dichlorobenzene	95-50-1	BRL	mg/L	1.00	0.005	
1,3-Dichlorobenzene	541-73-1	BRL	mg/L	1.00	0.005	
1,4-Dichlorobenzene	106-46-7	BRL	mg/L	1.00	0.005	
2,4,5-Trichlorophenol	95-95-4	BRL	mg/L	1.00	0.005	
2,4,6-Trichlorophenol	88-06-2	BRL	mg/L	1.00	0.005	
2,4-Dichlorophenol	120-83-2	BRL	mg/L	1.00	0.005	
2,4-Dimethylphenol	105-67-9	BRL	mg/L	1.00	0.005	
2,4-Dinitrophenol	51-28-5	BRL	mg/L	1.00	0.01	
2,4-Dinitrotoluene	121-14-2	BRL	mg/L	1.00	0.005	
2,6-Dinitrotoluene	606-20-2	BRL	mg/L	1.00	0.005	
2-Chloronaphthalene	91-58-7	BRL	mg/L	1.00	0.005	
2-Chlorophenol	95-57-8	BRL	mg/L	1.00	0.005	
2-Methylnaphthalene	91-57-6	BRL	mg/L	1.00	0.005	
2-Methylphenol	95-48-7	BRL	mg/L	1.00	0.005	
2-Nitroaniline	88-74-4	BRL	mg/L	1.00	0.005	
2-Nitrophenol	88-75-5	BRL	mg/L	1.00	0.005	
3- & 4-Methylphenols	65794-96-9	BRL	mg/L	1.00	0.005	
3,3-Dichlorobenzidine	91-94-1	BRL	mg/L	1.00	0.005	
3-Nitroaniline	99-09-2	BRL	mg/L	1.00	0.005	
4,6-Dinitro-2-methylphenol	534-52-1	BRL	mg/L	1.00	0.005	
4-Bromophenyl phenyl ethe	101-55-3	BRL	mg/L	1.00	0.005	
4-Chloro-3-methylphenol	59-50-7	BRL	mg/L	1.00	0.005	
4-Chloroaniline	106-47-8	BRL	mg/L	1.00	0.005	
4-Chlorophenyl phenyl ethe	7005-72-3	BRL	mg/L	1.00	0.005	
4-Nitroaniline	100-01-6	BRL	mg/L	1.00	0.005	
4-Nitrophenol	100-02-7	BRL	mg/L	1.00	0.02	
Acenaphthene	83-32-9	BRL	mg/L	1.00	0.005	
Acenaphthylene	208-96-8	BRL	mg/L	1.00	0.005	
Aniline	62-53-3	BRL	mg/L	1.00	0.005	
Anthracene	120-12-7	BRL	mg/L	1.00	0.005	
Azobenzene	103-33-3	BRL	mg/L	1.00	0.005	
Benzidine	92-87-5	BRL	mg/L	1.00	0.005	
Benzo(a)anthracene	56-55-3	BRL	mg/L	1.00	0.005	
Benzo(a)pyrene	50-32-8	BRL	mg/L	1.00	0.005	
Benzo(b)fluoranthene	205-99-2	BRL	mg/L	1.00	0.005	
Benzo(g,h,i)perylene	191-24-2	BRL	mg/L	1.00	0.005	
Benzo(k)fluoranthene	207-08-9	BRL	mg/L	1.00	0.005	
Benzoic acid	65-85-0	BRL	mg/L	1.00	0.025	
Benzyl alcohol	100-51-6	BRL	mg/L	1.00	0.005	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : **Method :** **SW-846 8270D** **Reporting Units :** **mg/L**

QC Batch ID : Qb231215137 **Created Date :** 12/15/23 **Created By :** GeMu

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit		Qual
Bis(2-chloroethoxy) methan	111-91-1	BRL	mg/L	1.00	0.005		
Bis(2-chloroethyl) ether	111-44-4	BRL	mg/L	1.00	0.005		
Bis(2-chloroisopropyl) ether	108-60-1	BRL	mg/L	1.00	0.005		
Bis(2-ethylhexyl)phthalate	117-81-7	BRL	mg/L	1.00	0.005		
Butyl benzyl phthalate	85-68-7	BRL	mg/L	1.00	0.005		
Carbazole	86-74-8	BRL	mg/L	1.00	0.005		
Chrysene	218-01-9	BRL	mg/L	1.00	0.005		
Dibenzo(a,h)anthracene	53-70-3	BRL	mg/L	1.00	0.005		
Dibenzofuran	132-64-9	BRL	mg/L	1.00	0.005		
Diethyl phthalate	84-66-2	BRL	mg/L	1.00	0.005		
Dimethyl phthalate	131-11-3	BRL	mg/L	1.00	0.005		
Di-n-butyl phthalate	84-74-2	BRL	mg/L	1.00	0.005		
Di-n-octyl Phthalate	117-84-0	BRL	mg/L	1.00	0.005		
Fluoranthene	206-44-0	BRL	mg/L	1.00	0.005		
Fluorene	86-73-7	BRL	mg/L	1.00	0.005		
Hexachlorobenzene	118-74-1	BRL	mg/L	1.00	0.005		
Hexachlorobutadiene	87-68-3	BRL	mg/L	1.00	0.005		
Hexachlorocyclopentadiene	77-47-4	BRL	mg/L	1.00	0.01		
Hexachloroethane	67-72-1	BRL	mg/L	1.00	0.005		
Indeno(1,2,3-cd)pyrene	193-39-5	BRL	mg/L	1.00	0.005		
Isophorone	78-59-1	BRL	mg/L	1.00	0.005		
Naphthalene	91-20-3	BRL	mg/L	1.00	0.005		
Nitrobenzene	98-95-3	BRL	mg/L	1.00	0.005		
N-Nitrosodimethylamine	62-75-9	BRL	mg/L	1.00	0.005		
N-nitroso-di-n-propylamine	621-64-7	BRL	mg/L	1.00	0.005		
N-Nitrosodiphenylamine	86-30-6	BRL	mg/L	1.00	0.005		
Pentachlorophenol	87-86-5	BRL	mg/L	1.00	0.005		
Phenanthrene	85-01-8	BRL	mg/L	1.00	0.005		
Phenol	108-95-2	BRL	mg/L	1.00	0.005		
Pyrene	129-00-0	BRL	mg/L	1.00	0.005		
Pyridine	110-86-1	BRL	mg/L	1.00	0.005		
2-Fluorophenol(surr)	367-12-4	36.6	%	1.00	15-115		
Phenol-d6(surr)	13127-88-3	21.5	%	1.00	10-130		
Nitrobenzene-d5(surr)	4165-60-0	59.9	%	1.00	23-120		
2-Fluorobiphenyl(surr)	321-60-8	47	%	1.00	30-115		
2,4,6-Tribromophenol(surr)	118-79-6	46.2	%	1.00	19-122		
p-Terphenyl-d14(surr)	1718-51-0	35.6	%	1.00	18-137		

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : **Method :** **SW-846 8270D** **Reporting Units :** **mg/L**

QC Batch ID : Qb231215137 **Created Date :** 12/15/23 **Created By :** GeMu

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
1,2,4-Trichlorobenzene	0.05	0.0300	59.9	0.05	0.0300	60.1	0.2	35	30.6-132	
1,2-Dichlorobenzene	0.05	0.0271	54.3	0.05	0.0283	56.6	4.2	35	29.6-122	
1,3-Dichlorobenzene	0.05	0.0266	53.2	0.05	0.0279	55.8	4.8	35	28.9-121	
1,4-Dichlorobenzene	0.05	0.0273	54.6	0.05	0.0280	56	2.6	35	29.8-121	
2,4,5-Trichlorophenol	0.05	0.0284	56.8	0.05	0.0291	58.3	2.5	35	24.3-141	
2,4,6-Trichlorophenol	0.05	0.0277	55.3	0.05	0.0276	55.2	0.2	35	18.2-141	
2,4-Dichlorophenol	0.05	0.0302	60.4	0.05	0.0304	60.9	0.6	35	27.8-135	
2,4-Dimethylphenol	0.05	0.0350	69.9	0.05	0.0431	86.3	20.8	35	15.1-168	
2,4-Dinitrophenol	0.05	0.0140	27.9	0.05	0.0152	30.5	8.5	35	20.3-119	
2,4-Dinitrotoluene	0.05	0.0402	80.3	0.05	0.0393	78.5	2.2	35	33.1-167	
2,6-Dinitrotoluene	0.05	0.0361	72.2	0.05	0.0368	73.7	1.9	35	46.6-144	
2-Chloronaphthalene	0.05	0.0286	57.1	0.05	0.0294	58.8	2.9	35	36.3-120	
2-Chlorophenol	0.05	0.0286	57.1	0.05	0.0291	58.3	1.8	35	26.1-129	
2-Methylnaphthalene	0.05	0.0355	71	0.05	0.0368	73.7	3.6	35	43.4-126	
2-Methylphenol	0.05	0.0334	66.7	0.05	0.0349	69.9	4.5	35	31.2-123	
2-Nitroaniline	0.05	0.0388	77.5	0.05	0.0395	79	1.9	35	27.2-168	
2-Nitrophenol	0.05	0.0279	55.8	0.05	0.0291	58.1	4.2	35	14.6-153	
3- & 4-Methylphenols	0.1	0.0550	55.1	0.1	0.0566	56.6	2.8	35	35.7-111	
3,3-Dichlorobenzidine	0.05	0.0308	61.7	0.05	0.0310	62	0.5	35	37.4-133	
3-Nitroaniline	0.05	0.0351	70.3	0.05	0.0359	71.8	2.2	35	23.2-161	
4,6-Dinitro-2-methylphenol	0.05	0.0172	34.5	0.05	0.0198	39.7	13.8	35	19-134	
4-Bromophenyl phenyl ethe	0.05	0.0321	64.2	0.05	0.0337	67.3	4.9	35	51.2-122	
4-Chloro-3-methylphenol	0.05	0.0377	75.5	0.05	0.0383	76.7	1.5	35	38.9-137	
4-Chloroaniline	0.05	0.0371	74.2	0.05	0.0388	77.6	4.5	35	31.2-124	
4-Chlorophenyl phenyl ethe	0.05	0.0344	68.8	0.05	0.0337	67.4	2.1	35	47.5-124	
4-Nitroaniline	0.05	0.0392	78.3	0.05	0.0383	76.5	2.2	35	42-140	
4-Nitrophenol	0.05	0.0330	66	0.05	0.0335	67.1	1.5	35	4.2-138	
Acenaphthene	0.05	0.0338	67.5	0.05	0.0343	68.6	1.6	35	38.9-122	
Acenaphthylene	0.05	0.0346	69.3	0.05	0.0349	69.9	0.8	35	42.2-126	
Aniline	0.05	0.0294	58.9	0.05	0.0304	60.9	3.2	35	23.8-104	
Anthracene	0.05	0.0322	64.4	0.05	0.0347	69.3	7.4	35	39.1-121	
Azobenzene	0.05	0.0356	71.1	0.05	0.0365	72.9	2.6	35	43.7-128	
Benzidine	0.05	0.0335	67	0.05	0.0310	61.9	7.8	35	7.4-143	
Benzo(a)anthracene	0.05	0.0351	70.3	0.05	0.0357	71.3	1.6	35	43.4-124	
Benzo(a)pyrene	0.05	0.0465	92.9	0.05	0.0466	93.2	0.3	35	43.6-129	
Benzo(b)fluoranthene	0.05	0.0429	85.9	0.05	0.0413	82.6	3.9	35	37.8-128	
Benzo(g,h,i)perylene	0.05	0.0354	70.8	0.05	0.0377	75.5	6.2	35	41.4-121	
Benzo(k)fluoranthene	0.05	0.0421	84.1	0.05	0.0399	79.8	5.3	35	47.1-126	
Benzoic acid	0.25	0.100	40	0.25	0.101	40.2	1	35	10-133	
Benzyl alcohol	0.05	0.0303	60.7	0.05	0.0321	64.2	5.7	35	34.4-121	
Bis(2-chloroethoxy) methan	0.05	0.0315	63	0.05	0.0333	66.5	5.6	35	39.8-127	
Bis(2-chloroethyl) ether	0.05	0.0316	63.1	0.05	0.0322	64.3	2	35	45.7-127	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : **Method :** **SW-846 8270D** **Reporting Units :** **mg/L**

QC Batch ID : Qb231215137 **Created Date :** 12/15/23 **Created By :** GeMu

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Bis(2-chloroisopropyl) ether	0.05	0.0302	60.3	0.05	0.0321	64.2	6.2	35	38.6-121	
Bis(2-ethylhexyl)phthalate	0.05	0.0374	74.7	0.05	0.0372	74.4	0.5	35	22.4-180	
Butyl benzyl phthalate	0.05	0.0384	76.8	0.05	0.0377	75.3	1.9	35	45.9-149	
Carbazole	0.05	0.0346	69.2	0.05	0.0336	67.2	2.9	35	53.5-117	
Chrysene	0.05	0.0349	69.8	0.05	0.0351	70.3	0.6	35	47.4-120	
Dibenzo(a,h)anthracene	0.05	0.0394	78.9	0.05	0.0429	85.8	8.4	35	43.1-125	
Dibenzofuran	0.05	0.0368	73.5	0.05	0.0361	72.2	1.8	35	44.4-120	
Diethyl phthalate	0.05	0.0364	72.9	0.05	0.0351	70.2	3.7	35	52.5-132	
Dimethyl phthalate	0.05	0.0345	69	0.05	0.0351	70.2	1.7	35	39.7-135	
Di-n-butyl phthalate	0.05	0.0360	71.9	0.05	0.0361	72.2	0.4	35	50.3-146	
Di-n-octyl Phthalate	0.05	0.0378	75.6	0.05	0.0357	71.3	5.7	35	40.5-156	
Fluoranthene	0.05	0.0345	69	0.05	0.0336	67.2	2.7	35	49.3-127	
Fluorene	0.05	0.0372	74.3	0.05	0.0367	73.5	1.2	35	44.9-125	
Hexachlorobenzene	0.05	0.0313	62.7	0.05	0.0332	66.5	5.8	35	49.2-118	
Hexachlorobutadiene	0.05	0.0265	52.9	0.05	0.0278	55.7	4.9	35	27-119	
Hexachlorocyclopentadiene	0.05	0.0127	25.4	0.05	0.0146	29.1	14	35	10-96.7	
Hexachloroethane	0.05	0.0258	51.6	0.05	0.0263	52.7	1.9	35	31-115	
Indeno(1,2,3-cd)pyrene	0.05	0.0373	74.6	0.05	0.0422	84.5	12.4	35	41.8-123	
Isophorone	0.05	0.0286	57.2	0.05	0.0301	60.2	5	35	29.7-131	
Naphthalene	0.05	0.0306	61.3	0.05	0.0313	62.6	2.1	35	35-120	
Nitrobenzene	0.05	0.0377	75.5	0.05	0.0382	76.3	1.2	35	32.2-146	
N-Nitrosodimethylamine	0.05	0.0241	48.1	0.05	0.0229	45.7	4.9	35	23.4-101	
N-nitroso-di-n-propylamine	0.05	0.0360	72	0.05	0.0355	71.1	1.4	35	41.6-133	
N-Nitrosodiphenylamine	0.05	0.0337	67.4	0.05	0.0344	68.9	2	35	46.4-121	
Pentachlorophenol	0.05	0.0210	42	0.05	0.0215	43	2.4	35	19.7-132	
Phenanthrene	0.05	0.0328	65.7	0.05	0.0338	67.7	2.9	35	41-124	
Phenol	0.05	0.0169	33.9	0.05	0.0179	35.7	5.6	35	26.1-73.7	
Pyrene	0.05	0.0344	68.9	0.05	0.0348	69.7	1.1	35	41.5-123	
Pyridine	0.05	0.0220	44	0.05	0.0210	41.9	4.7	35	18.8-84.2	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Polychlorinated Biphenyls **Method :** SW-846 8082A **Reporting Units :** ug/L

QC Batch ID : Qb23121514 **Created Date :** 12/14/23 **Created By :** mqiao

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

Extraction : PB23121443 **Prep Method :** SW-846 3510C **Prep Date :** 12/14/23 11:00 **Prep By :** Msoria

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit		Qual
Aroclor 1016	12674-11-2	BRL	ug/L	1.00	0.05		
Aroclor 1221	11104-28-2	BRL	ug/L	1.00	0.05		
Aroclor 1232	11141-16-5	BRL	ug/L	1.00	0.05		
Aroclor 1242	53469-21-9	BRL	ug/L	1.00	0.05		
Aroclor 1248	12672-29-6	BRL	ug/L	1.00	0.05		
Aroclor 1254	11097-69-1	BRL	ug/L	1.00	0.05		
Aroclor 1260	11096-82-5	BRL	ug/L	1.00	0.05		
Total PCBs		BRL	ug/L	1.00	0.05		
Tetrachloro-m-xylene(surr)	877-09-8	81.5	%	1.00	27-127		
Decachlorobiphenyl(surr)	2051-24-3	105	%	1.00	35-129		

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Aroclor 1016	2	1.71	85.4	2	1.70	85.1	0.4	18	50-124	
Aroclor 1260	2	2.04	102	2	2.02	101	1.2	18	41-130	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Organochlorine Pesticides **Method :** SW-846 8081B **Reporting Units :** ug/L

QC Batch ID : Qb23121992 **Created Date :** 12/14/23 **Created By :** mqiao

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

Extraction : PB23121444 **Prep Method :** SW-846 3510C **Prep Date :** 12/14/23 10:30 **Prep By :** Msoria

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit		Qual
Alpha-chlordane	5103-71-9	BRL	ug/L	1.00	0.01		
Gamma-chlordane	5103-74-2	BRL	ug/L	1.00	0.01		
4,4-DDD	72-54-8	BRL	ug/L	1.00	0.01		
4,4-DDE	72-55-9	BRL	ug/L	1.00	0.01		
4,4-DDT	50-29-3	BRL	ug/L	1.00	0.01		
a-BHC	319-84-6	BRL	ug/L	1.00	0.01		
Aldrin	309-00-2	BRL	ug/L	1.00	0.01		
b-BHC	319-85-7	BRL	ug/L	1.00	0.01		
Chlordane	57-74-9	BRL	ug/L	1.00	0.1		
d-BHC	319-86-8	BRL	ug/L	1.00	0.01		
Dieldrin	60-57-1	BRL	ug/L	1.00	0.01		
Endosulfan I	959-98-8	BRL	ug/L	1.00	0.01		
Endosulfan II	33213-65-9	BRL	ug/L	1.00	0.01		
Endosulfan sulfate	1031-07-8	BRL	ug/L	1.00	0.01		
Endrin	72-20-8	BRL	ug/L	1.00	0.01		
Endrin aldehyde	7421-93-4	BRL	ug/L	1.00	0.01		
Endrin ketone	53494-70-5	BRL	ug/L	1.00	0.01		
g-BHC	58-89-9	BRL	ug/L	1.00	0.01		
Heptachlor	76-44-8	BRL	ug/L	1.00	0.01		
Heptachlor epoxide	1024-57-3	BRL	ug/L	1.00	0.01		
Methoxychlor	72-43-5	BRL	ug/L	1.00	0.01		
Toxaphene	8001-35-2	BRL	ug/L	1.00	0.5		
Tetrachloro-m-xylene(surr)	877-09-8	97.3	%	1.00	24-127		
Decachlorobiphenyl(surr)	2051-24-3	115	%	1.00	34-120		

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
4,4-DDD	0.2	0.222	111	0.2	0.204	102	8.2	24	27-147	
4,4-DDE	0.2	0.196	97.8	0.2	0.189	94.5	3.4	21	30-136	
4,4-DDT	0.2	0.218	109	0.2	0.189	94.5	14.5	30	23-152	
a-BHC	0.2	0.183	91.5	0.2	0.180	90	1.7	25	23-125	
Aldrin	0.2	0.186	93	0.2	0.184	91.8	1.1	23	27-127	
b-BHC	0.2	0.187	93.5	0.2	0.184	92	1.6	24	29-132	
d-BHC	0.2	0.208	104	0.2	0.199	99.5	4.2	20	30-139	
Dieldrin	0.2	0.200	100	0.2	0.196	98.3	2	21	29-135	
Endosulfan I	0.2	0.179	89.5	0.2	0.177	88.5	1.1	24	15-125	
Endosulfan II	0.2	0.172	85.8	0.2	0.168	84.3	2.1	21	20-133	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : **Organochlorine Pesticides** **Method :** **SW-846 8081B** **Reporting Units :** **ug/L**

QC Batch ID : Qb23121992 **Created Date :** 12/14/23 **Created By :** mqiao

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Endosulfan sulfate	0.2	0.214	107	0.2	0.190	95.3	12.1	20	21-151	
Endrin	0.2	0.189	94.5	0.2	0.182	91.3	3.8	24	22-147	
Endrin aldehyde	0.2	0.233	117	0.2	0.207	104	11.8	33	14-136	
Endrin ketone	0.2	0.192	96	0.2	0.190	95	1	20	15-154	
g-BHC	0.2	0.192	96	0.2	0.190	94.8	1	25	23-132	
Heptachlor	0.2	0.201	101	0.2	0.196	97.8	2.5	20	27-134	
Heptachlor epoxide	0.2	0.188	94.3	0.2	0.186	93.3	1.3	24	32-132	
Methoxychlor	0.2	0.212	106	0.2	0.212	106	0.2	24	24-175	
Alpha-chlordane	0.2	0.194	97	0.2	0.192	95.8	1	23	29-135	
Gamma-chlordane	0.2	0.185	92.5	0.2	0.183	91.5	1.1	21	27-136	

QUALITY CONTROL CERTIFICATE

Job ID : 23121410 **Date :** 12/20/2023

Analysis : Cyanide, Total **Method : SM 4500CNC/E** **Reporting Units : mg/L**

QC Batch ID : Qb231220141 **Created Date :** 12/20/23 **Created By :** Srijan

Samples in This QC Batch : 23121410.01,02,03,04,05,06,07

Sample Preparation : PB23122046 **Prep Method :** SM 4500CNC/E **Prep Date :** 12/20/23 10:00 **Prep By :** Srijan

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	RptLimit		Qual
Cyanide	57-12-5	BRL	mg/L	1	0.01		

QC Type: Duplicate

QC Sample ID: 23121495.01

Parameter	QCSample Result	Sample Result	Units	RPD	RPD CtrlLimit		Qual
Cyanide	BRL	BRL	mg/L	0	20		

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Cyanide	0.1	0.099	99	0.1	0.100	100	1	20	85-115	

QC Type: MS and MSD

QC Sample ID: 23121495.01

Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Cyanide	BRL	0.1	0.106	106						80-120	

A & B Labs — Chain of Custody

The Chain of Custody is a Legal Document

Page _____ of _____

Job ID:23121410

Lower Neches Valley Auth ANA

A&B JOB ID #

5. Project #

REPORT TO:

Company: LNVA

Address: 6790 Bigner Road Beaumont, TX 77708

Contact: Brielle Patronella

Phone: 409-617-2286

Fax: ☐

E-mail: ☐ brielle.patronella@lnva.dst.tx.us

2. INVOICE TO:

Company:

Address: Same as Report to

Contact:

Phone:

Fax: ☐

E-mail: ☐

3. PO #

3a. A&B Quote #

4. Turnaround Time (Business Days)

☐ 1 Day* ☐ Other:

☐ 2 Days*

☐ 3 Days* *Surcharge applies

☐ 7 Days - Standard

6. Project Name/Location: Priority Pollutants - LNVA Canals

7. Reporting Requirement:

☐ TRRP Limits only ☐ TRRP Rpt. Package ☐ See Attached ☐ Standard Level II ☐ PST ☐ MDL ☐ EDD

8. Sampler's Name & Company (PLEASE PRINT): Brielle Patronella

Sampler's Signature & Date: Brielle Patronella 12-13-23

13. No. of Containers

14. Containers*: N | 6HT | H | C | C | C

15. Preservatives**

16. PH-Lab Only

17. Analyses/Methods: Metals | Cyanide Total | VOC | PCBs | Pesticides; Chlorine | SVOC

LAB USE ONLY	9. Sample ID and Description	10. Sampling Date	10. Sampling Time 24hr	11. Comp.	11. Grab	12. Matrix: Water	Soil	Sludge	Oil	Drinking Water	Air	Other	Metals	Cyanide Total	VOC	PCBs	Pesticides; Chlorine	SVOC	18. REMARKS
01AH	Neches Main	12-13-23	0845		X	X							X	X	X	X	X	X	
02AH	Devers		1000		X	X							X	X	X	X	X	X	
03AH	Neches South		1100		X	X							X	X	X	X	X	X	
04AH	Cheek		1130		X	X							X	X	X	X	X	X	
05AH	Gallier		1210		X	X							X	X	X	X	X	X	
06AH	Port Arthur		1240		X	X							X	X	X	X	X	X	
07AH	Atlantic		1310		X	X							X	X	X	X	X	X	

	19. RELINQUISHED BY	DATE	TIME	20. RECEIVED BY	DATE	TIME
1	Brielle Patronella	12-13-23	13:55		12/13/23	13:55
2		12/13/23	15:47		12/13/23	15:47
3						

21. KNOWN HAZARDS/COMMENTS

Temperature: 2.8 °C

Thermometer ID IR5

Intact Y or N 0 Initials AN

A&B cannot accept verbal changes
Please FAX written changes to 713-453-6091

Samples will be disposed of after 30 days
A&B reserves the right to return samples

*Containers: VOA - 40 ml vial; 4 oz/8 oz - glass wide mouth; A/G - Amber/Glass 1 Liter; P/O - Plastic/other _____

**Preservatives: C - Cool; OH - NaOH; H - HCl; T - $NA_2S_2O_3$; N - HNO_3; X - Other; S - H_2SO_4

METHOD OF SHIPMENT

BILL OF LADING/TRACKING #

LAB USE ONLY SAMPLING _____ RENTAL _____ P/U _____ Supplies _____ Field Work _____

ab-s001-0516

Sample Condition Checklist

A&B JobID : **23121410**	Date Received : **12/13/2023**	Time Received : **3:47PM**
Client Name : **Lower Neches Valley Authority SWB Lab**		
Temperature : **2.8°C**	Sample pH : **<2 Metals >12 CN**	
Thermometer ID : **IR5**	pH Paper ID : **110194**	
Perservative :	Lot# :	

	Check Points	Yes	No	N/A
1.	**Cooler Seal present and signed.**		X	
2.	**Sample(s) in a cooler.**	X		
3.	**If yes, ice in cooler.**	X		
4.	**Sample(s) received with chain-of-custody.**	X		
5.	**C-O-C signed and dated.**	X		
6.	**Sample(s) received with signed sample custody seal.**		X	
7.	**Sample containers arrived intact. (If No comment)**	X		
8.	**Matrix:** Water ☑ Soil ☐ Liquid ☐ Sludge ☐ Solid ☐ Cassette ☐ Tube ☐ Bulk ☐ Badge ☐ Food ☐ Other ☐			
9.	**Samples were received in appropriate container(s)**	X		
10.	**Sample(s) were received with Proper preservative**	X		
11.	**All samples were tagged or labeled.**	X		
12.	**Sample ID labels match C-O-C ID's.**	X		
13.	**Bottle count on C-O-C matches bottles found.**	X		
14.	**Sample volume is sufficient for analyses requested.**	X		
15.	**Samples were received with in the hold time.**	X		
16.	**VOA vials completely filled.**	X		
17.	**Sample accepted.**	X		
18.	**Has client been contacted about sub-out**			X

Comments : Include actions taken to resolve discrepancies/problem:

CN: NaOH+NaAsO2. ~EV 12/13/2023

Brought by : YDR

Received by : EValdez

Check in by/date : EValdez / 12/13/2023

ab-s005-1123

Subject: Data Request
Sent: 7/1/2024, 1:39:56 PM
From: Jason Watson<jason.watson@lnva.dst.tx.us>
To: Minin, Brita

Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon,

I am following up on your data request for the supply canal providing raw water for the City of Port Arthur Water Treatment Plant. LNVA's supply is contingent on customer demand. Mean annual flow for that canal is 75 cfs. If you have any additional questions please don't hesitate to reach out.

Jason E. Watson
Environmental Stewardship Manager
Lower Neches Valley Authority
(409) 658-1670 cell

7850 Eastex Freeway
Beaumont, TX 77708

Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ000Click to enter text.

Applicant Name: Port Arthur Cogeneration, LLC

Certification: I, Greg Calhoun, 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): Greg Calhoun

Signatory title: Managing Director

Signature: _____ Date: 9/27/2024

(Use blue ink)

Subscribed and Sworn to before me by the said Gregory A. Calhoun

on this 27th day of September, 2024.

My commission expires on the 13th day of September, 2025.

Melissa M. Banda

Notary Public

[SEAL] MELISSA MICHELLE BANDA Notary ID #133329334 My Commission Expires September 13, 2025

Harris

County, Texas

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

TCEQ Use Only

TCEQ Core Data Form

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

1.1 SECTION I: General Information

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

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

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

☐ Other

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

1.2 SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	07/18/2024

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

Port Arthur Cogeneration, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID	10. DUNS Number *(if applicable)*
0805645883	32096144921	(9 digits)	

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☒ Other: LLC

12. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*								
☐ Owner ☐ Operator ☒ Owner & Operator ☐ Other: ☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant								
15. Mailing Address:	609 Main St Suite 3525							
	City	Houston	State	TX	ZIP	77002	ZIP + 4	

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(832) 249-8992		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*
☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information
The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).
22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*
Port Arthur Cogeneration

23. Street Address of the Regulated Entity: *(No PO Boxes)*	2555 Savannah Ave							
	City	Port Arthur	State	TX	ZIP	77642	ZIP + 4	
24. County	Jefferson							

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

25. Description to Physical Location:	Located inside of the Motiva Enterprrises Refinery
26. Nearest City	State Nearest ZIP Code

Port Arthur	TX	77640

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).

27. Latitude (N) In Decimal:	29.877810°	28. Longitude (W) In Decimal:	-93.975859°

Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
4911		221112	

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

Electric Power Generation

34. Mailing Address:	609 Main St Suite 3525						
	City	Houston	State	TX	ZIP	77002	ZIP + 4

35. E-Mail Address:	greg.calhoun@fengate.com

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(832) 294-8992		( ) -

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

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil

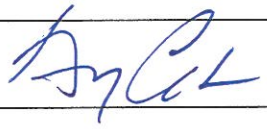
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Brita Minin	41. Title:	Environmental Consultant
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(713) 329-2561		( ) -	brita.minin@terracon.com

SECTION V: Authorized Signature

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

Company:	Port Arthur Cogeneration, LLC	Job Title:	Managing Director
Name *(In Print)*:	Greg Calhoun	Phone:	(832) 294- 8992
Signature:		Date:	9/22/2024

Leah Whallon

From: Minin, Brita <Brita.Minin@terracon.com>
Sent: Wednesday, December 11, 2024 4:47 PM
To: Leah Whallon; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC
Attachments: Technical Report 10055 Updated 12.11.24.pdf; Copy of FedEx.pdf; Administrative Report 10411 Updated 12.11.24.pdf; 19 - Cooling Water System Information.pdf; 2 - Plain Language Summary (20972).pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon Leah,

Attached is the amended Administrative Report and Technical Report reflecting the following changes in response to the deficiencies identified in your previous correspondence:

Administrative Report Page 5 – Motiva Enterprises LLC has been added as a co-applicant to satisfy item No.2 regarding the landowner of the proposed site. Administrative information as well as the signature page has been inserted into the application.

Technical Report Page 10 – Upon review by Motiva Enterprises LLC a correction has been made to the domestic sewage plant servicing the property.
The correct Plant is CITY OF PORT ARTHUR MAIN PLANT TCEQ Permit No. WQ0010364001.

Technical Report Page 79 – A correction has been made regarding the name of the source water operator. “Lower Neches Valley River Authority” has been corrected to “Lower Neches Valley Authority”. This correction has been made in the single occurrence in the Technical Report as well as two occurrences in Attachment 2 and Attachment 19.

Original hard copies including the notarized signature page have been scanned and shipped via FedEx. A copy of the scans and shipping label are attached to this email.

Please let me know if you have any questions or comments, I appreciate the flexibility given to the response deadline, if there is anything else I can provide please do not hesitate to ask.

Sincerely,

Brita Minin, GIT
Staff Geologist
Regulatory Compliance I Environmental Services

Terracon
11555 Clay Road Suite 100 I Houston, Texas 77043
D (713) 329-2561 I M (832) 729-7979 I F (713) 690-8989
beminin@terracon.com I Terracon.com

Please consider the environment before printing this email

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Thursday, November 7, 2024 10:32 AM
To: Minin, Brita <Brita.Minin@terracon.com>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Hi Brita,

Our legal office has confirmed that the requested executed lease agreement between the applicant and the landowner is needed to move the application forward. The MOU agreement would not meet the requirement to obtain a permit. The alternative is to include the landowner as a co-applicant. Please let me know if you have any questions.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

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From: Leah Whallon
Sent: Tuesday, November 5, 2024 9:06 AM
To: Minin, Brita <Brita.Minin@terracon.com>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Good Morning,

I have forwarded this to our legal team. I will follow up as soon as I have more information. The 30 day extension letter will be sent in a separate email shortly. Please let me know if you have any questions.

Thanks,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at
www.tceq.texas.gov/customersurvey

From: Minin, Brita <Brita.Minin@terracon.com>
Sent: Monday, November 4, 2024 12:16 PM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

I wanted to follow up and formally request the 30-day extension as well as provide the attached information regarding Port Arthur Cogeneration LLC being a subsidiary of Fengate.

Could you please confirm that an amendment to the MOU naming Port Aurthur Cogeneration as the owner/operating party would be sufficient? We would like to be efficient and avoid a goose chase as they say.

Thanks,

Brita Minin, GIT
Staff Geologist
Regulatory Compliance I Environmental Services

11555 Clay Road Suite 100 I Houston, Texas 77043
D (713) 329-2561 I M (832) 729-7979 I F (713) 690-8989
beminin@terracon.com I Terracon.com

From: Minin, Brita
Sent: Monday, November 4, 2024 10:11 AM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Thank You Leah,

I will speak with the applicant team and get back to you as soon as possible.

Sincerely,

Brita Minin, GIT
Staff Geologist
Regulatory Compliance I Environmental Services

11555 Clay Road Suite 100 I Houston, Texas 77043
D (713) 329-2561 I M (832) 729-7979 I F (713) 690-8989
beminin@terracon.com I Terracon.com

Please consider the environment before printing this email

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Friday, November 1, 2024 10:33 AM
To: Minin, Brita <Brita.Minin@terracon.com>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Thank you, Brita.

I was able to verify the payment for this application. I will follow up regarding the lease/MOU but generally any agreement has to be between the applicant and the owner of the land. If they were to accept another agreement in lieu of an executed lease, it would still need to include the applicant's name, or that entity would need to be added to the permit as a co-applicant.

The initial due date for the response letter was today, 11/1/2024. I can send the 30 day extension letter on Monday to allow more time to resolve this issue. Please let me know if you have any questions.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

From: Minin, Brita <Brita.Minin@terracon.com>
Sent: Thursday, October 31, 2024 3:59 PM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Good Afternoon Leah,

1. I apologize , the check No. is 235314. I have also attached a copy of the payment submittal form that was sent.
2. The agreement is between Fengate, the owner/operator of Port Arthur Cogeneration, and Motiva. Please let me know what the legal office says, what exactly we need to provide, as of now there is not an executed lease agreement.

Thanks!

Brita Minin, GIT
Staff Geologist
Regulatory Compliance I Environmental Services

11555 Clay Road Suite 100 I Houston, Texas 77043
D (713) 329-2561 I M (832) 729-7979 I F (713) 690-8989
beminin@terracon.com I Terracon.com

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Thursday, October 31, 2024 3:15 PM
To: Minin, Brita <Brita.Minin@terracon.com>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Hi Brita,

I've reviewed the response and there are a few items that still need attention. Items not addressed below have received a sufficient response.

1. The payment information was not provided in the application. My letter requested the check or voucher number to be provided so that it can be verified as received. Without this information we are unable to associate the payment to this application.

2. Regarding the requested executed lease agreement, I have reached out to our legal office for clarification on the MOU documents provided because it is not generally an accepted document for obtaining the

permit. Additionally, the agreement is not between the applicant 'Port Arthur Congregation, LLC' and the landowner 'Motiva Enterprises LLC', which would be needed.

I can send another letter to extend an additional 30 days to provide all required items. Please let me know if you have any questions.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

---

From: Minin, Brita <Brita.Minin@terracon.com>
Sent: Monday, October 21, 2024 2:09 PM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Happy Monday Leah,

Please see the below responses to your letter:

1. The check and payment form were sent at the same time as the application on October 7th, it may not have been processed yet.
2. Please see attached Memo of Understanding and Amendment between Motiva and Fengate in lieu of the signed lease agreement which has not been executed as of yet.
3. Please see the attached updated landowner list and address labels.
4. The provided portion of the NORI has been reviewed and determined to be correct.
5. Please see the attached Spanish translated NORI.

Please let me know if you have any questions or would like to discuss any of the responses.

Sincerely,

Brita Minin, GIT
Staff Geologist
Regulatory Compliance I Environmental Services

Terracon
11555 Clay Road Suite 100 I Houston, Texas 77043
D (713) 329-2561 I M (832) 729-7979 I F (713) 690-8989
beminin@terracon.com I Terracon.com

Please consider the environment before printing this email

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Friday, October 18, 2024 11:18 AM
To: zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com; Minin, Brita <Brita.Minin@terracon.com>
Subject: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Good Morning,

Please see the attached Notice of Deficiency letter dated October 18, 2024 requesting additional information needed to declare the application administratively complete. Please send the complete response by November 1, 2024.

Please let me know if you have any questions.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the industrial wastewater permit application.

APPLICANT NAME: Port Arthur Cogeneration, LLC

PERMIT NUMBER (If new, leave blank): WQ00 5469000

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

	Y	N		Y	N
Administrative Report 1.0	☒	☐	Worksheet 8.0	☐	☒
Administrative Report 1.1	☒	☐	Worksheet 9.0	☐	☒
SPIF	☒	☐	Worksheet 10.0	☐	☒
Core Data Form	☒	☐	Worksheet 11.0	☒	☐
Public Involvement Plan Form	☒	☐	Worksheet 11.1	☐	☒
Plain Language Summary	☒	☐	Worksheet 11.2	☒	☐
Technical Report 1.0	☒	☐	Worksheet 11.3	☐	☒
Worksheet 1.0	☒	☐	Original USGS Map	☒	☐
Worksheet 2.0	☐	☒	Affected Landowners Map	☒	☐
Worksheet 3.0	☐	☒	Landowner Disk or Labels	☒	☐
Worksheet 3.1	☐	☒	Flow Diagram	☒	☐
Worksheet 3.2	☐	☒	Site Drawing	☒	☐
Worksheet 3.3	☐	☒	Original Photographs	☒	☐
Worksheet 4.0	☒	☐	Design Calculations	☒	☐
Worksheet 4.1	☒	☐	Solids Management Plan	☐	☒
Worksheet 5.0	☐	☒	Water Balance	☒	☐
Worksheet 6.0	☐	☒			
Worksheet 7.0	☒	☐			

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

This report is required for all applications for TPDES permits and TLAPs, except applications for oil and gas extraction operations subject to 40 CFR Part 435. Contact the Applications Review and Processing Team at 512-239-4671 with any questions about completing this report.

Applications for oil and gas extraction operations subject to 40 CFR Part 435 must use the Oil and Gas Exploration and Production Administrative Report (TCEQ Form-20893 and 20893-inst[1]).

Item 1. Application Information and Fees (Instructions, Page 26)

a. Complete each field with the requested information, if applicable.

Applicant Name: Port Arthur Cogeneration, LLC

Permit No.: WQ0005469000

EPA ID No.: TX0Click to enter text.

Expiration Date: Click to enter text.

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

☒ Industrial Wastewater (wastewater and stormwater)

☐ Industrial Stormwater (stormwater only)

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

☐ Active ☒ Inactive

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

☒ TPDES Permit ☐ TLAP ☐ TPDES with TLAP component

e. Check the box next to the appropriate application type.

☒ New

☐ Renewal with changes ☐ Renewal without changes

☐ Major amendment with renewal ☐ Major amendment without renewal

☐ Minor amendment without renewal

☐ Minor modification without renewal

f. If applying for an amendment or modification, describe the request: N/A

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

[1] https://www.tceq.texas.gov/publications/search_forms.html

g. Application Fee

EPA Classification	New	Major Amend. (with or without renewal)	Renewal (with or without changes)	Minor Amend. / Minor Mod. (without renewal)
Minor facility not subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	☐ $350	☐ $350	☐ $315	☐ $150
Minor facility subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	☒ $1,250	☐ $1,250	☐ $1,215	☐ $150
Major facility	N/A [2]	☐ $2,050	☐ $2,015	☐ $450

h. Payment Information

Mailed

Check or money order No.: Click to enter text.

Check or money order amt.: Click to enter text.

Named printed on check or money order: Click to enter text.

Epay

Voucher number: Click to enter text.

Copy of voucher attachment: Click to enter text.

Item 2. Applicant Information (Instructions, Pages 26)

a. Customer Number, if applicant is an existing customer: CNClick to enter text.

Note: Locate the customer number using the TCEQ's Central Registry Customer Search[3].

b. Legal name of the entity (applicant) applying for this permit: Port Arthur Cogeneration, LLC

Note: The owner of the facility must apply for the permit. The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: Mr. Full Name (Last/First Name): Greg Calhoun

Title: Managing Director Credential: Click to enter text.

d. Will the applicant have overall financial responsibility for the facility?

☒ Yes ☐ No

[2] All facilities are designated as minors until formally classified as a major by EPA.

[3] https://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 3. Co-applicant Information (Instructions, Page 27)

☐ Check this box if there is no co-applicant.; otherwise, complete the below questions.

a. Legal name of the entity (co-applicant) applying for this permit: Motiva Enterprises LLC

Note: The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

b. Customer Number (if applicant is an existing customer): CN600124051

Note: Locate the customer number using the TCEQ's Central Registry Customer Search.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: Click to enter text. Full Name (Last/First Name): Jody Moffett

Title: Vice President, General Manager – Port Arthur Refinery Click to enter text.

d. Will the co-applicant have overall financial responsibility for the facility?

☐ Yes ☒ No

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 4. Core Data Form (Instructions, Pages 27)

a. Complete one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: 1-Core Data Form (10400)

Item 5. Application Contact Information (Instructions, Page 27)

Provide names of two individuals who can be contact for additional information about this application. Indicate if the individual can be contact about administrative or technical information, or both.

a. ☒ Administrative Contact . ☐ Technical Contact

Prefix: Mr. Full Name (Last/First Name): Zeeshan Mahmood

Title: Vice President Infrastructure Investments Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 832 207 0211 Email: zeeshan.mahmood@fengate.com

b. ☒ Administrative Contact ☒ Technical Contact

Prefix: Mr. Full Name (Last/First Name): Alex Brosseau

Title: Vice President Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 604-353-0740 Email: alex.brosseau@fengate.com

Attachment: N/A

Item 6. Permit Contact Information (Instructions, Page 28)

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

a. Prefix: Mr. Full Name (Last/First Name): John Gilbreath

Title: Managing Partner Credential: Click to enter text.

Organization Name: AOS Energy Partners

Mailing Address: 9852 S 97th Ave Circle City/State/Zip: Papillion, NE 68046-4933

Phone No: 402-926-9760 Email: jgilbreath@aosenergypartners.com

b. Prefix: Ms. Full Name (Last/First Name): Brita Minin

Title: Environmental Consultant Credential: GIT

Organization Name: Terracon Consultants, Inc

Mailing Address: 11555 Clay Rd. Suite 100 City/State/Zip: Houston, TX 77002

Phone No: 713-329-2561 Email: brita.minin@terracon.com

Attachment: N/A

Item 7. Billing Contact Information (Instructions, Page 28)

The permittee is responsible for paying the annual fee. The annual fee will be assessed for 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 (form TCEQ-20029).

Provide the complete mailing address where the annual fee invoice should be mailed and the name and phone number of the permittee's representative responsible for payment of the invoice.

Prefix: Mr. Full Name (Last/First Name): Jeffery Feng

Title: Associate Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 832-998-1556 Email: jeffrey.feng@fengate.com

Item 8. DMR/MER Contact Information (Instructions, Page 28)

Provide the name and mailing address of the person delegated to receive and submit DMRs or MERs. **Note:** DMR data must be submitted through the NetDMR system. An electronic reporting account can be established once the facility has obtained the permit number.

Prefix: Mr. Full Name (Last/First Name): Alex Brosseau

Title: Vice President Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 604-353-0740 Email: alex.brosseau@fengate.com

Item 9. Notice Information (Instructions, Pages 28)

a. Individual Publishing the Notices

Prefix: Ms. Full Name (Last/First Name): Brita Minin

Title: Environmental Consultant Credential: GIT

Organization Name: Terracon Consultants, Inc.

Mailing Address: 11555 Clay Rd. Suite 100 City/State/Zip: Houston, TX 77043

Phone No: 713-329-2561 Email: brita.minin@terracon.com

b. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package (only for NORI, NAPD will be sent via regular mail)

☒ E-mail: brita.minin@terracon.com

☐ Fax: Click to enter text.

☐ Regular Mail (USPS)

Mailing Address: Click to enter text.

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

c. Contact in the Notice

Prefix: Ms. Full Name (Last/First Name): Brita Minin

Title: Environmental Consultant Credential: GIT

Organization Name: Terracon Consultants, Inc.

Phone No: 713-329-2561 Email: brita.minin@terracon.com

d. Public Viewing Location Information

Note: If the facility or outfall is located in more than one county, provide a public viewing place for each county.

Public building name: Port Arthur Public Library Location within the building: Public Notice Viewing Area

Physical Address of Building: 4615 9th Ave, Port Arthur, TX 77642

City: Port Arthur County: Jefferson County

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.

Call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine if an alternative language notice(s) is 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 Item 8 (Regulated Entity and Permitted Site Information.)

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 ☒ N/A

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: 2 – Plain Language Summary (20972)

g. Complete one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment and include as an attachment. Attachment: 3 – Public Involvement Plan (PIP) (20960)

Item 10. Regulated Entity and Permitted Site Information (Instructions Page 29)

a. TCEQ issued Regulated Entity Number (RN), if available: RNClick to enter text.

Note: If your business site is part of a larger business site, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search the TCEQ's Central Registry to determine the RN or to see if the larger site may already be registered as a Regulated Entity. If the site is found, provide the assigned RN.

b. Name of project or site (the name known by the community where located): Port Arthur Cogeneration, LLC

c. Is the location address of the facility in the existing permit the same?

☐ Yes ☐ No ☒ N/A (new permit)

Note: If the facility is located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County, additional information concerning protection of the Edwards Aquifer may be required.

d. Owner of treatment facility:

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: Port Arthur Cogeneration, LLC

Mailing Address: 609 Main St, Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 832-294-8992 Email: greg.calhoun@fengate.com

e. Ownership of facility: ☐ Public ☒ Private ☐ Both ☐ Federal

f. Owner of land where treatment facility is or will be: Motiva Enterprises, LLC

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: Motiva Enterprises, LLC

Mailing Address: 500 Dallas Street City/State/Zip: Houston, Texas 77002

Phone No: Click to enter text. Email: Click to enter text.

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years (In some cases, a lease may not suffice - see instructions). Attachment: 4 – Long Term Lease Agreement - Draft

g. Owner of effluent TLAP disposal site (if applicable): N/A

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: N/A

Mailing Address: N/A City/State/Zip: N/A

Phone No: N/A Email: N/A

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

h. Owner of sewage sludge disposal site (if applicable):

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: N/A

Mailing Address: N/A City/State/Zip: N/A

Phone No: N/A Email: N/A

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

Item 11. TDPES Discharge/TLAP Disposal Information (Instructions, Page 31)

a. Is the facility located on or does the treated effluent cross Native American Land?

☐ Yes ☒ No

b. Attach an original full size USGS Topographic Map (or an 8.5"×11" reproduced portion for renewal or amendment applications) with all required information. Check the box next to each item below to confirm it has been included on the map.

☒ One-mile radius

☒ Applicant's property boundaries

☒ Labeled point(s) of discharge

☒ Effluent disposal site boundaries

☒ Sewage sludge disposal site

☒ Three-miles downstream information

☒ Treatment facility boundaries

☒ Highlighted discharge route(s)

☒ All wastewater ponds

☒ New and future construction

Attachment: 5 – USGS Topographic Map

c. Is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☒ No or New Permit

If no, or a new application, provide an accurate location description: N/A

d. Are the point(s) of discharge in the existing permit correct?

☐ Yes ☒ No or New Permit

If no, or a new application, provide an accurate location description: Treated process water from the proposed outfall (Outfall 001) will discharge at 29.878183˚, -93.978300˚ directly into Alligator Bayou (Segment 0702A) just downstream of Jefferson County Drainage District No. 7 Main Canal D.

e. Are the discharge route(s) in the existing permit correct?

☐ Yes ☒ No or New Permit

If no, or a new permit, provide an accurate description of the discharge route: Treated process water from the proposed outfall (Outfall 001) will discharge at 29.878183˚, -93.978300˚ directly into Alligator Bayou (Segment 0702A) just downstream of Jefferson County Drainage District No. 7 Main Canal D. Approximately 1.25 miles downstream from the discharge point Alligator Bayou confluences with the Intercoastal Waterway (Segment 0702).

f. City nearest the outfall(s): City of Port Arthur

g. County in which the outfalls(s) is/are located: Jefferson County

h. 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, attach copies of letters that show proof of contact and provide the approval letter upon receipt. Attachment: 6 - Request for Authorization – Jefferson County Drainage District No. 7

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

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

☐ Yes No or New Permit ☒ N/A

If no, or a new application, provide an accurate location description: N/A

j. City nearest the disposal site: N/A

k. County in which the disposal site is located: N/A

l. For TLAPs, describe how effluent is/will be routed from the treatment facility to the disposal site: N/A

m. For TLAPs, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: N/A

Item 12. Miscellaneous Information (Instructions, Page 33)

a. 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: N/A

b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account no.: N/A

Total amount due: N/A

c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Enforcement order no.: N/A

Amount due: N/A

Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ00054469000

Applicant Name: Port Arthur Cogeneration, LLC

Certification: I, Greg Calhoun, 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): Greg Calhoun

Signatory title: Managing Director

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

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

Item 14. Signature Page (Instructions, Page 33)

Permit No: WQ00054469000

Applicant Name: Motiva Enterprises LLC

Certification: I, Jody Moffett, 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): Jody Moffett

Signatory title: Vice President, General Manager – Port Arthur Refinery

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

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

INDUSTRIAL WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

Item 1. Affected Landowner Information (Instructions, Page 35)

a. Attach a landowner map or drawing, with scale, as applicable. Check the box next to each item to confirm it has been provided.

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

Attachment: 7 – Affected Landowner Map

b. Check the box next to the format of the landowners list:

☐ Readable/Writeable CD ☒ Four sets of labels

Attachment: 8 – Landowners List – Labels 9 – Cross Referenced Landowner List

d. Provide the source of the landowners' names and mailing addresses: Jefferson County Appraisal District

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

☐ Yes ☒ No

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

Item 2. Original Photographs (Instructions, Page 37)

Provide original ground level photographs. Check the box next to each of the following items to indicate it is included.

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

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

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

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

Attachment: 10 – Photograph Log

INDUSTRIAL 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: 11 – Supplemental Permit Information Form (SPIF) (20971)

WATER QUALITY PERMIT

PAYMENT SUBMITTAL FORM

Use this form to submit the Application Fee, if mailing the payment. (Instructions, Page 36-37)

- 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 **Permit No:** WQ000Click to enter text.

1. Check or Money Order Number: Click to enter text.
2. Check or Money Order Amount: $1,250
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: Port Arthur Cogeneration, LLC

   Physical Address of Project or Site: 2555 Savannah Ave, Port Arthur, TX 77640

   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.
   Attachment: N/A

Staple Check or Money Order in This Space

ATTACHMENT 1

INDIVIDUAL INFORMATION

Item 1. Individual information (Instructions, Page 38)

Complete this attachment if the facility applicant or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

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

Full legal name (first, middle, and last): Click to enter text.

Driver's License or State Identification Number: Click to enter text.

Date of Birth: Click to enter text.

Mailing Address: Click to enter text.

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

Phone No.: Click to enter text.

Fax No.: Click to enter text.

E-mail Address: Click to enter text.

CN: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST OF COMMON DEFICIENCIES

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

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

☒ Correct and Current Industrial Wastewater Permit Application Forms
(TCEQ Form Nos. 10055 and 10411. Version dated 5/10/2019 or later.)

☒ Water Quality Permit Payment Submittal Form (Page 14)
(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)

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

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

☐ N/A ☒ Landowners Map
(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.

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

☐ N/A ☒ Landowners Labels or CD-RW attached
(See instructions for landowner requirements.)

☒ Original signature per 30 TAC § 305.44 – Blue Ink Preferred
(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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. Applicants may modify the template as necessary to accurately describe their 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 the applicant 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.

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
Enter 'INDUSTRIAL' or 'DOMESTIC' here 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.

Port Arthur Cogeneration, LCC (2. Enter Customer Number here (i.e., CN6########)) proposes to operate Port Arthur Cogeneration (5. Enter Regulated Entity Number here (i.e., RN1########)), an electric power plant servicing the Motiva Enterprises Refinery. The facility will be located at 2555 Savannah Ave, in Port Arthur, Jefferson County, Texas 77640. This application is for a new natural gas power plant that will discharge approximately 2,380,000 gallons of treated process water per day from cooling water, boiler blowdown, and general washing and plant activities as well as variable amounts of stormwater through Outfall 001.

Discharges from the facility are expected to contain suspended solids, oil and grease, ammonia, phosphate, zinc, iron, and free chlorine. Cooling water, boiler blowdown, and general plant service water are subject to subject to federal effluent limitation guidelines at 40 CFR Part 423. Intake water supplied by the Lower Neches Vally Authority will be treated by clarification, reverse osmosis, deionization, demineralization before being used for cooling water and boiler supply and blowdown. Wastewater is then transferred to the oil/water

separator before going to wastewater collection and discharged through Outfall 001. Domestic water and sewage is treated off-site at the City of Port Arthur Main Wastewater Treatment Center .

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

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí **/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.

Port Arthur Cogeneration, LCC (2. Introduzca el número de cliente aquí (es decir, CN6########).) propone operar Port Arthur Cogeneration 5. Introduzca el número de entidad regulada aquí (es decir, RN1########), una planta de energía eléctrica que abastece la refinería Motiva Enterprises. La instalación estará ubicada en 2555 Savannah Ave, en la ciudad de Port Arthur, Condado de Jefferson, Texas 77640. Esta solicitud es para una nueva planta de energía de gas natural que descargara aproximadamente 2,380,000 galones de agua de proceso tratadas por día provenientes del agua de torres de enfriamiento, purga de caldera, lavado y actividades generales de la planta, así como cantidades variables de aguas pluviales a través de Outfall 001. *<<Para las solicitudes de TLAP incluya la siguiente oración, de lo contrario, elimine:>>* Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan solidos suspendidos, aceites y grasas, amoníaco, fosfato, cinc, hierro y cloro. Aguas proveniente de Torres de enfriamiento, purga de caldera y aguas de las actividades generales de la planta, son sujetas a las pautas federales de limitación de efluentes en 40 CFR Parte 423. La toma de agua será suministrada por Neches Vally Authority. estará tratado por processo de clarificación, ósmosis inversa, desionización y desmineralización antes de ser utilizada para el agua de enfriamiento y el suministro y purga de calderas. Las aguas residuales se transfieren al separador de aceite/agua antes de ir a la recolección de aguas residuales y ser descargadas a través del Outfall 001. El agua doméstica y las aguas residuales son tratadas fuera del sitio en el Centro de Tratamiento de Aguas Residuales de la Ciudad de Port Arthur.

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 WQ-ARPTeam@tceq.texas.gov or by phone at (512) 239-4671.

Example

Individual Industrial Wastewater 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 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.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

The following information **is required** for all applications for a TLAP or an individual TPDES discharge permit.

For **additional information** or clarification on the requested information, please refer to the Instructions for Completing the Industrial Wastewater Permit Application[1] available on the TCEQ website. Please contact the Industrial Permits Team at 512-239-4671 with any questions about this form.

If more than one outfall is included in the application, provide applicable information for each individual outfall. **If an item does not apply to the facility, enter N/A** to indicate that the item has been considered. Include separate reports or additional sheets as **clearly cross-referenced attachments** and provide the attachment number in the space provided for the item the attachment addresses.

NOTE: This application is for an industrial wastewater permit only. Additional authorizations from the TCEQ Waste Permits Division or the TCEQ Air Permits Division may be needed.

Item 1. Facility/Site Information (Instructions, Page 39)

a. Describe the general nature of the business and type(s) of industrial and commercial activities. Include all applicable SIC codes (up to 4).

The proposed facility will function as a gas power plant that generates electricity using natural gas as its primary fuel source. The plant will involve the combustion of natural gas to produce steam, which then drives turbines connected to generators to generate electricity for sale to the adjacent Motiva refinery. SIC Code 4911: Electric Services, Establishments engaged in the generation, transmission, and/or distribution of electric energy for sale.

b. Describe all wastewater-generating processes at the facility.

Cooling Tower: water for cooling purposes. This water, after absorbing heat from the power generation process, becomes heated and is recycled in a closed-loop cooling system but still generates wastewater through evaporation and blowdown processes. Boiler and Evaporation Cooler Blowdown: blowdown to remove concentrated dissolved solids and impurities from boiler and cooler water to prevent scale formation and maintain boiler efficiency. Blowdown water is discharged as wastewater. Filtration High Purity Treatment Waste: high-purity water for various purposes, such as boiler feedwater, steam generation, and equipment cooling. To achieve the required level of purity, water treatment processes such as reverse osmosis (RO), deionization (DI), and demineralization are employed. General Plant Operations and Washdowns: Various other plant operations, such as equipment cleaning, and maintenance activities. Stormwater Runoff: Rainwater or stormwater runoff from the gas power plant site.

[1] https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES_industrial_wastewater_steps.html

c. Provide a list of raw materials, major intermediates, and final products handled at the facility.

Materials List

Raw Materials	Intermediate Products	Final Products
Natural Gas	Heat	Electricity
Refinery Fuel Gas		Steam
Raw Water	Potable Water	Process Wastewater
	Service Water	
	Demineralized Water	

Attachment: N/A

d. Attach a facility map (drawn to scale) with the following information:

- Production areas, maintenance areas, materials-handling areas, waste-disposal areas, and water intake structures.
- The location of each unit of the WWTP including the location of wastewater collection sumps, impoundments, outfalls, and sampling points, if significantly different from outfall locations.

Attachment: 12 – Facility Map

e. Is this a new permit application for an existing facility?

☐ Yes ☒ No

If **yes**, provide background discussion: N/A

f. Is/will the treatment facility/disposal site be located above the 100-year frequency flood level.

☒ Yes ☐ No

List source(s) used to determine 100-year frequency flood plain: FEMA National Flood Hazard Layer

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are used/proposed to prevent flooding (including tail water and rainfall run-on controls) of the treatment facility and disposal area: N/A

Attachment: N/A

g. For **new** or **major amendment** permit applications, will any construction operations result in a discharge of fill material into a water in the state?

☒ Yes ☐ No ☐ N/A (renewal only)

h. If **yes** to Item 1.g, has the applicant applied for a USACE CWA Chapter 404 Dredge and Fill permit?

☐ Yes ☒ No

If **yes**, provide the permit number: N/A

If **no**, provide an approximate date of application submittal to the USACE: 6/30/2024

Item 2. Treatment System (Instructions, Page 40)

a. List any physical, chemical, or biological treatment process(es) used/proposed to treat wastewater at this facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

The Facility proposes that raw water will be initially treated at the Clarifier where water enters and is treated with chemicals including sulfuric acid, and sodium hypochlorite. Heavier particles settle to the bottom as sludge, while clearer water exits. Sludge from the clarifier is fed into the thickener where solids settle further using a polymer, and the clarified overflow is recycled. Water from the previous processes (clarifier, thickener) is collected to minimize water usage and manage process water. Sludge from the thickener is pumped into the filter press where solids are captured in filters and liquid (filtrate) is expelled. The filter cake will be disposed of as solid waste. From there the water goes to the cooling tower where it is further treated with sodium bisulfite, anti-foam, dispersant/corrosion inhibitor, sulfuric acid, scale inhibitor, and sodium hypochlorite, or through the Ultrafiltration (UF) system where the water is treated with sulfuric acid, sodium hypochlorite, and citric acid and then pressurized and forced through a semi-permeable membrane, allowing water molecules to pass while rejecting salts and contaminants. The UF water is stored inside of the Service Water Tank before either the blowdown tank or through the two-stage Reverse Osmosis (RO) System. Sodium bisulfite, sulfuric acid, and scale inhibitor are also used at this stage. Following RO water is then sent to the Demineralization process where water passes through ion exchange resins which exchange cations and anions for hydrogen and hydroxide ions, producing purified water. Purified process water is heated to generate steam, where ammonia and phosphate are used, and then cooled through the cooling tower. Wastewater from the boilers and other plant services are sent to the Oil/Water Separator where oil floats to the surface and is skimmed off, while water exits from the bottom to Wastewater Collection before being discharged through Outfall 001. Chemicals like corrosion inhibitors, scale inhibitors, biocides, and pH adjusters are added to the water to optimize conditions for equipment and prevent damage.

b. Attach a flow schematic **with a water balance** showing all sources of water and wastewater flow into the facility, wastewater flow into and from each treatment unit, and wastewater flow to each outfall/point of disposal.

Attachment: 13 – Water Balance

Item 3. Impoundments (Instructions, Page 40)

Does the facility use or plan to use any wastewater impoundments (e.g., lagoons or ponds?)

☐ Yes ☒ No

If **no**, proceed to Item 4. If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a - 3.e** for **new or proposed** impoundments. **NOTE:** See instructions, Pages 40-42, for additional information on the attachments required by Items 3.a – 3.e.

a. Complete the table with the following information for each existing, new, or proposed impoundment. Attach additional copies of the Impoundment Information table, if needed.

   Use Designation: Indicate the use designation for each impoundment as Treatment (**T**), Disposal (**D**), Containment (**C**), or Evaporation (**E**).

   Associated Outfall Number: Provide an outfall number if a discharge occurs or will occur.

   Liner Type: Indicate the liner type as Compacted clay liner (**C**), In-situ clay liner (**I**), Synthetic/plastic/rubber liner (**S**), or Alternate liner (**A**). **NOTE:** See instructions for further detail on liner specifications. If an alternate liner (A) is selected, include an attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

   Leak Detection System: If any leak detection systems are in place/planned, enter **Y** for yes. Otherwise, enter **N** for no.

   Groundwater Monitoring Wells and Data: If groundwater monitoring wells are in place/planned, enter **Y** for yes. Otherwise, enter **N** for no. Attach any existing groundwater monitoring data.

   Dimensions: Provide the dimensions, freeboard, surface area, storage capacity of the impoundments, and the maximum depth (not including freeboard). For impoundments with irregular shapes, submit surface area instead of length and width.

   Compliance with 40 CFR Part 257, Subpart D: If the impoundment is required to be in compliance with 40 CFR Part 257, Subpart D, enter **Y** for yes. Otherwise, enter **N** for no.

   Date of Construction: Enter the date construction of the impoundment commenced (mm/dd/yy).

Impoundment Information

Parameter	**Pond #**	**Pond #**	**Pond #**	**Pond #**
Use Designation: (T) (D) (C) or (E)				
Associated Outfall Number				
Liner Type (C) (I) (S) or (A)				
Alt. Liner Attachment Reference				
Leak Detection System, Y/N				
Groundwater Monitoring Wells, Y/N				
Groundwater Monitoring Data Attachment				
Pond Bottom Located Above The Seasonal High-Water Table, Y/N				
Length (ft)				
Width (ft)				
Max Depth From Water Surface (ft), Not Including Freeboard				

Parameter	Pond #	Pond #	Pond #	Pond #
Freeboard (ft)				
Surface Area (acres)				
Storage Capacity (gallons)				
40 CFR Part 257, Subpart D, Y/N				
Date of Construction				

Attachment: Click to enter text.

The following information (**Items 3.b – 3.e**) is required only for **new or proposed** impoundments.

b. For new or proposed impoundments, attach any available information on the following items. If attached, check **yes** in the appropriate box. Otherwise, check **no** or **not yet designed**.

1. Liner data

☐ Yes ☐ No ☐ Not yet designed

2. Leak detection system or groundwater monitoring data

☐ Yes ☐ No ☐ Not yet designed

3. Groundwater impacts

☐ Yes ☐ No ☐ Not yet designed

NOTE: Item b.3 is required if the bottom of the pond is not above the seasonal high-water table in the shallowest water-bearing zone.

Attachment: Click to enter text.

For TLAP applications: Items 3.c – 3.e are **not required**, continue to Item 4.

c. Attach a USGS map or a color copy of original quality and scale which accurately locates and identifies all known water supply wells and monitor wells within ½-mile of the impoundments.

Attachment: Click to enter text.

d. Attach copies of State Water Well Reports (e.g., driller's logs, completion data, etc.), and data on depths to groundwater for all known water supply wells including a description of how the depths to groundwater were obtained.

Attachment: Click to enter text.

e. Attach information pertaining to the groundwater, soils, geology, pond liner, etc. used to assess the potential for migration of wastes from the impoundments or the potential for contamination of groundwater or surface water.

Attachment: Click to enter text.

Item 4. Outfall/Disposal Method Information (Instructions, Page 42)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge, and for each point of disposal for TLAP operations.

If there are more outfalls/points of disposal at the facility than the spaces provided, copies of pages 6 and/0r numbered accordingly (i.e., page 6a, 6b, etc.) may be used to provide information on the additional outfalls.

For TLAP applications: Indicate the disposal method and each individual irrigation area **I**, evaporation pond **E**, or subsurface drainage system **S** by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area in the space provided for **Outfall** number (e.g. **E1** for evaporation pond 1, **I2** for irrigation area No. 2, etc.).

Outfall Longitude and Latitude

Outfall No.	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
001	29.878183˚	-93.978300˚

Outfall Location Description

Outfall No.	Location Description
001	Northwest corner of the Facility along the south bank of the Main Outfall Canal

Description of Sampling Point(s) (if different from Outfall location)

Outfall No.	Description of sampling point
001	Wastewater treatment discharge bypass valve

Outfall Flow Information – Permitted and Proposed

Outfall No.	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)	Anticipated Discharge Date (mm/dd/yy)
001	-	-	1.59	2.38	06-01-25

Outfall Discharge – Method and Measurement

Outfall No.	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
001	Y	Y	Magnetic Flow Meter

Outfall Discharge – Flow Characteristics

Outfall No.	Intermittent Discharge? Y/N	Continuous Discharge? Y/N	Seasonal Discharge? Y/N	Discharge Duration (hrs/day)	Discharge Duration (days/mo)	Discharge Duration (mo/yr)
001	N	Y	Y	24	31	12

Outfall Wastestream Contributions

Outfall No. 001

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Cooling Tower	1.724	72.4
Reverse Osmosis Wastewater	0.614	25.8
General Service Water	0.036	1.5
Boilers	0.007	0.3

Outfall No. Click to enter text.

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow

Outfall No. Click to enter text.

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow

Attachment: N/A

Item 5. Blowdown and Once-Through Cooling Water Discharges (Instructions, Page 43)

a. Indicate if the facility currently or proposes to:

☒ Yes ☐ No Use cooling towers that discharge blowdown or other wastestreams

☒ Yes ☐ No Use boilers that discharge blowdown or other wastestreams

☐ Yes ☒ No Discharge once-through cooling water

NOTE: If the facility uses or plans to use cooling towers or once-through cooling water, Item 12 **is required**.

b. If **yes** to any of the above, attach an SDS with the following information for each chemical additive.

- Manufacturers Product Identification Number
- Product use (e.g., biocide, fungicide, corrosion inhibitor, etc.)
- Chemical composition including CASRN for each ingredient
- Classify product as non-persistent, persistent, or bioaccumulative
- Product or active ingredient half-life
- Frequency of product use (e.g., 2 hours/day once every two weeks)
- Product toxicity data specific to fish and aquatic invertebrate organisms
- Concentration of whole product or active ingredient, as appropriate, in wastestream.

In addition to each SDS, attach a summary of the above information for each specific wastestream and the associated chemical additives. Specify which outfalls are affected.

Attachment: 14 – SDS Sheets and Summary

c. Cooling Towers and Boilers

If the facility currently or proposes to use cooling towers or boilers that discharge blowdown or other wastestreams to the outfall(s), complete the following table.

Cooling Towers and Boilers

Type of Unit	Number of Units	Daily Avg Blowdown (gallons/day)	Daily Max Blowdown (gallons/day)
Cooling Towers	1	862,128	1,724,112
Boilers	2	6,137	6,798

Item 6. Stormwater Management (Instructions, Page 44)

Will any existing/proposed outfalls discharge stormwater associated with industrial activities, as defined at *40 CFR § 122.26(b)(14)*, commingled with any other wastestream?

☒ Yes ☐ No

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in a manner which may result in exposure of the activities or materials to stormwater: Outdoor industrial activities involve the delivery, storage, and handling of fuels such as natural gas, diesel, and oil. Chemicals used for water treatment, cleaning, and maintenance are stored and handled in tanks outdoors. Operations and maintenance of cooling towers and regular maintenance of equipment and facilities. Collection, storage, and disposal of solid wastes from the water treatment process.

Item 7. Domestic Sewage, Sewage Sludge, and Septage Management and Disposal (Instructions, Page 44)

Domestic Sewage - Waste and wastewater from humans or household operations that is discharged to a wastewater collection system or otherwise enters a treatment works.

a. Check the box next to the appropriate method of domestic sewage and domestic sewage sludge treatment or disposal. Complete Worksheet 5.0 or Item 7.b if directed to do so.

☒ Domestic sewage is routed (i.e., connected to or transported to) to a WWTP permitted to receive domestic sewage for treatment, disposal, or both. Complete Item 7.b.

☐ Domestic sewage disposed of by an on-site septic tank and drainfield system. Complete Item 7.b.

☐ Domestic and industrial treatment sludge ARE commingled prior to use or disposal.

☐ Industrial wastewater and domestic sewage are treated separately, and the respective sludge IS NOT commingled prior to sludge use or disposal. Complete Worksheet 5.0.

☐ Facility is a POTW. Complete Worksheet 5.0.

☐ Domestic sewage is not generated on-site.

☐ Other (e.g., portable toilets), specify and Complete Item 7.b: Click to enter text.

b. Provide the name and TCEQ, NPDES, or TPDES Permit No. of the waste-disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TCEQ Registration No. of the hauler.

Domestic Sewage Plant/Hauler Name

Plant/Hauler Name	Permit/Registration No.
CITY OF PORT ARTHUR MAIN PLANT	WQ0010364001

Item 8. Improvements or Compliance/Enforcement Requirements (Instructions, Page 45)

a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?

☐ Yes ☒ No

b. Has the permittee completed or planned for any improvements or construction projects?

☐ Yes ☒ No

c. If **yes** to either 8.a **or** 8.b, provide a brief summary of the requirements and a status update: N/A

Item 9. Toxicity Testing (Instructions, Page 45)

Have any biological tests for acute or chronic toxicity been made on any of the discharges or on a receiving water in relation to the discharge within the last three years?

☐ Yes ☒ No

If **yes**, identify the tests and describe their purposes: N/A

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** N/A

Item 10. Off-Site/Third Party Wastes (Instructions, Page 45)

a. Does or will the facility receive wastes from off-site sources for treatment at the facility, disposal on-site via land application, or discharge via a permitted outfall?

☐ Yes ☒ No

If **yes**, provide responses to Items 10.b through 10.d below.

If **no**, proceed to Item 11.

b. Attach the following information to the application:

- List of wastes received (including volumes, characterization, and capability with on-site wastes).
- Identify the sources of wastes received (including the legal name and addresses of the generators).
- Description of the relationship of waste source(s) with the facility's activities.

Attachment: Click to enter text.

c. Is or will wastewater from another TCEQ, NPDES, or TPDES permitted facility commingled with this facility's wastewater after final treatment and prior to discharge via the final outfall/point of disposal?

☐ Yes ☐ No

If **yes**, provide the name, address, and TCEQ, NPDES, or TPDES permit number of the contributing facility and a copy of any agreements or contracts relating to this activity.

Attachment: Click to enter text.

d. Is this facility a POTW that accepts/will accept process wastewater from any SIU and has/is required to have an approved pretreatment program under the NPDES/TPDES program?

☐ Yes ☐ No

If **yes**, **Worksheet 6.0** of this application **is required**.

Item 11. Radioactive Materials (Instructions, Page 46)

a. Are/will radioactive materials be mined, used, stored, or processed at this facility?

☐ Yes ☒ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L.

Radioactive Materials Mined, Used, Stored, or Processed

Radioactive Material Name	Concentration (pCi/L)

b. Does the applicant or anyone at the facility have any knowledge or reason to believe that radioactive materials may be present in the discharge, including naturally occurring radioactive materials in the source waters or on the facility property?

☐ Yes ☐ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L. Do not include information provided in response to Item 11.a.

Radioactive Materials Present in the Discharge

Radioactive Material Name	Concentration (pCi/L)

Item 12. Cooling Water (Instructions, Page 46)

a. Does the facility use or propose to use water for cooling purposes?

☒ Yes ☐ No

If **no**, stop here. If **yes**, complete Items 12.b thru 12.f.

b. Cooling water is/will be obtained from a groundwater source (e.g., on-site well).

☐ Yes ☒ No

If **yes**, stop here. If **no**, continue.

c. Cooling Water Supplier

1. Provide the name of the owner(s) and operator(s) for the CWIS that supplies or will supply water for cooling purposes to the facility.

Cooling Water Intake Structure(s) Owner(s) and Operator(s)

CWIS ID	01	02 (ALT)		
Owner	Port Arthur Cogeneration	Motiva Enterprises		
Operator	Port Arthur Cogeneration	Motiva Enterprises		

2. Cooling water is/will be obtained from a Public Water Supplier (PWS)

☐ Yes ☒ No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS No. N/A

3. Cooling water is/will be obtained from a reclaimed water source?

☐ Yes ☒ No

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here: N/A

4. Cooling water is/will be obtained from an Independent Supplier

☐ Yes ☒ No

If **no**, proceed to Item 12.d. If **yes**, provide the actual intake flow of the Independent Supplier's CWIS that is/will be used to provide water for cooling purposes and proceed: N/A

d. 316(b) General Criteria

1. The CWIS(s) used to provide water for cooling purposes to the facility has or will have a cumulative design intake flow of 2 MGD or greater.

☒ Yes ☐ No

2. At least 25% of the total water withdrawn by the CWIS is/will be used at the facility exclusively for cooling purposes on an annual average basis.

☒ Yes ☐ No

3. The CWIS(s) withdraw(s)/propose(s) to withdraw water for cooling purposes from surface waters that meet the definition of Waters of the United States in *40 CFR § 122.2*.

   ☒ Yes ☐ No

   If **no**, provide an explanation of how the waterbody does not meet the definition of Waters of the United States in *40 CFR § 122.2*: N/A

If **yes** to all three questions in Item 12.d, the facility **meets** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA. Proceed to **Item 12.f**.

If **no** to any of the questions in Item 12.d, the facility **does not meet** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA; however, a determination is required based upon BPJ. Proceed to **Item 12.e**.

e. The facility does not meet the minimum requirements to be subject to the fill requirements of Section 316(b) **and uses**/proposes **to use cooling towers**.

   ☒ Yes ☐ No

   If **yes**, stop here. If **no**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ.

f. Oil and Gas Exploration and Production

   1. The facility is subject to requirements at 40 CFR Part 435, Subparts A or D.

      ☐ Yes ☒ No

      If **yes**, continue. If **no**, skip to Item 12.g.

   2. The facility is an existing facility as defined at 40 CFR § 125.92(k) or a new unit at an existing facility as defined at 40 CFR § 125.92(u).

      ☐ Yes ☒ No

      If **yes**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ. If **no**, skip to Item 12.g.3.

g. Compliance Phase and Track Selection

   1. Phase I – New facility subject to 40 CFR Part 125, Subpart I

      ☒ Yes ☐ No

      If **yes**, check the box next to the compliance track selection, attach the requested information, and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

      ☒ Track I – AIF greater than 2 MGD, but less than 10 MGD

      - Attach information required by *40 CFR §§ 125.86(b)(2)-(4)*.

      ☐ Track I – AIF greater than 10 MGD

      - Attach information required by *40 CFR § 125.86(b)*.

      ☐ Track II

      - Attach information required by *40 CFR § 125.86(c)*.

      Attachment: 15 - Track I Application Requirements – CFR 125.86(b)(1)-(4)

2. Phase II – Existing facility subject to 40 CFR Part 125, Subpart J

   ☐ Yes ☒ No

   If **yes**, complete Worksheets 11.0 through 11.3, as applicable.

3. Phase III – New facility subject to 40 CFR Part 125, Subpart N

   ☐ Yes ☒ No

   If **yes**, check the box next to the compliance track selection and provide the requested information.

   ☐ Track I – Fixed facility

   - Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

   ☐ Track I – Not a fixed facility

   - Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Item 2 (except CWIS latitude/longitude under Item 2.a).

   ☐ Track II – Fixed facility

   - Attach information required by 40 CFR § 125.136(c) and complete Worksheet 11.0, Items 2 and 3.

   Attachment: Click to enter text.

Item 13. Permit Change Requests (Instructions, Page 48)

This item is only applicable to existing permitted facilities.

a. Is the facility requesting a **major amendment** of an existing permit?

   ☐ Yes ☒ No

   If **yes**, list each request individually and provide the following information: 1) detailed information regarding the scope of each request and 2) a justification for each request. Attach any supplemental information or additional data to support each request.

Click to enter text.

b. Is the facility requesting any **minor amendments** to the permit?

   ☐ Yes ☐ No

If **yes**, list and describe each change individually.

Click to enter text.

c. Is the facility requesting any **minor modifications** to the permit?

☐ Yes ☐ No

If **yes**, list and describe each change individually.

Click to enter text.

Item 14. Laboratory Accreditation (Instructions, Page 49)

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: Greg Calhoun

Title: Managing Director

Signature: _____

Date: _____

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 1.0: EPA CATEGORICAL EFFLUENT GUIDELINES

This worksheet **is required** for all applications for TPDES permits for discharges of wastewaters subject to EPA categorical effluent limitation guidelines (ELGs).

Item 1. Categorical Industries (Instructions, Page 53)

Is this facility subject to any 40 CFR categorical ELGs outlined on page 53 of the instructions?

☒ Yes ☐ No

If **no**, this worksheet is not required. If **yes**, provide the appropriate information below.

40 CFR Effluent Guideline

Industry	40 CFR Part
STEAM ELECTRIC POWER GENERATION POINT SOURCE	423

Item 2. Production/Process Data (Instructions, Page 54)

NOTE: For all TPDES permit applications requesting individual permit coverage for discharges of oil and gas exploration and production wastewater (discharges into or adjacent to water in the state, falling under the Oil and Gas Extraction Effluent Guidelines – 40 CFR Part 435), see Worksheet 12.0, Item 2 instead.

a. Production Data

Provide appropriate data for effluent guidelines with production-based effluent limitations.

Production Data

Subcategory	Actual Quantity/Day	Design Quantity/Day	Units
N/A			

b. Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing Data (40 CFR Part 414)

Provide each applicable subpart and the percent of total production. Provide data for metal-bearing and cyanide-bearing wastestreams, as required by *40 CFR Part 414, Appendices A and B*.

Percentage of Total Production

Subcategory	Percent of Total Production	Appendix A and B - Metals	Appendix A - Cyanide
N/A			

c. Refineries (40 CFR Part 419)

Provide the applicable subcategory and a brief justification.

N/A

Item 3. Process/Non-Process Wastewater Flows (Instructions, Page 54)

Provide a breakdown of wastewater flow(s) generated by the facility, including both process and non-process wastewater flow(s). Specify which wastewater flows are to be authorized for discharge under this permit and the disposal practices for wastewater flows, excluding domestic, which are not to be authorized for discharge under this permit.

Cooling Tower: water for cooling purposes. This water, after absorbing heat from the power generation process, becomes heated and is recycled in a closed-loop cooling system but still generates wastewater through evaporation and blowdown processes. Boiler and Evaporation Cooler Blowdown: blowdown to remove concentrated dissolved solids and impurities from boiler and cooler water to prevent scale formation and maintain boiler efficiency. Blowdown water is discharged as wastewater. Filtration Backwash: filtration systems to remove suspended solids, particulates, and other impurities from water used in cooling systems or other processes. During backwashing, water is reversed through the filter media to dislodge and flush out accumulated solids. High Purity Treatment Waste: high-purity water for various purposes, such as boiler feedwater, steam generation, and equipment cooling. To achieve the

required level of purity, water treatment processes such as reverse osmosis (RO), deionization (DI), and demineralization are employed. General Plant Operations and Washdowns: Various other plant operations, such as equipment cleaning, and maintenance activities. Stormwater Runoff: Rainwater or stormwater runoff from the gas power plant site. All above wastewater process are to be directed and then treated onsite through a wastewater treatment process, discharges from the wastewater treatment plant are to be authorized by this permit.

Item 4. New Source Determination (Instructions, Page 54)

Provide a list of all wastewater-generating processes subject to EPA categorical ELGs, identify the appropriate guideline Part and Subpart, and provide the date the process/construction commenced.

Wastewater Generating Processes Subject to Effluent Guidelines

Process	EPA Guideline Part	EPA Guideline Subpart	Date Process/ Construction Commenced
Low Volume Waste Sources	423	423.12(b)(3)	TBD
Metal Cleaning	423	423.12(b)(5)	TBD
Once Through Cooling Water	423	423.12(b)(6)	TBD
Cooling Tower Blowdown	423	423.12(b)(7)	TBD
Flue Gas Desulfurization (FGD)	423	423.12(b)(11)	TBD

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 **is required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

Item 1. General Testing Requirements (Instructions, Page 55)

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): TBD

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm. **Attachment:** Click to enter text.

Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** 16 - Correspondence with the TCEQ – Pollutant Analysis

TABLE 1 and TABLE 2 (Instructions, Page 58)

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

Table 1 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (mg/L)**	**Sample 2 (mg/L)**	**Sample 3 (mg/L)**	**Sample 4 (mg/L)**
BOD (5-day)				
CBOD (5-day)				
Chemical oxygen demand				
Total organic carbon				
Dissolved oxygen				
Ammonia nitrogen				
Total suspended solids				
Nitrate nitrogen				
Total organic nitrogen				
Total phosphorus				
Oil and grease				
Total residual chlorine				

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total dissolved solids				
Sulfate				
Chloride				
Fluoride				
Total alkalinity (mg/L as CaCO3)				
Temperature (˚F)				
pH (standard units)				

Table 2 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

TABLE 3 (Instructions, Page 58)

Completion of Table 3 **is required** for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 **is required** for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (µg/L)***	**Sample 2 (µg/L)***	**Sample 3 (µg/L)***	**Sample 4 (µg/L)***	**MAL (µg/L)***
Acrylonitrile					50
Anthracene					10
Benzene					10
Benzidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
Bis(2-chloroethyl)ether					10
Bis(2-ethylhexyl)phthalate					10
Bromodichloromethane [Dichlorobromomethane]					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane [Dibromochloromethane]					10
Chloroform					10
Chrysene					5
m-Cresol [3-Methylphenol]					10
o-Cresol [2-Methylphenol]					10
p-Cresol [4-Methylphenol]					10
1,2-Dibromoethane					10
m-Dichlorobenzene [1,3-Dichlorobenzene]					10
o-Dichlorobenzene [1,2-Dichlorobenzene]					10
p-Dichlorobenzene [1,4-Dichlorobenzene]					10
3,3'-Dichlorobenzidine					5
1,2-Dichloroethane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1-Dichloroethene [1,1-Dichloroethylene]					10
Dichloromethane [Methylene chloride]					20
1,2-Dichloropropane					10
1,3-Dichloropropene [1,3-Dichloropropylene]					10
2,4-Dimethylphenol					10
Di-n-Butyl phthalate					10
Ethylbenzene					10
Fluoride					500
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Methyl ethyl ketone					50
Nitrobenzene					10
N-Nitrosodiethylamine					20
N-Nitroso-di-n-butylamine					20
Nonylphenol					333
Pentachlorobenzene					20
Pentachlorophenol					5
Phenanthrene					10
Polychlorinated biphenyls (PCBs) (**)					0.2
Pyridine					20
1,2,4,5-Tetrachlorobenzene					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethene [Tetrachloroethylene]					10
Toluene					10
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10
Trichloroethene [Trichloroethylene]					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
2,4,5-Trichlorophenol					50
TTHM (Total trihalomethanes)					10
Vinyl chloride					10

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Pages 58-59)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. **Tributyltin**

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

☐ Manufacturers and formulators of tributyltin or related compounds.

☐ Painting of ships, boats and marine structures.

☐ Ship and boat building and repairing.

☐ Ship and boat cleaning, salvage, wrecking and scaling.

☐ Operation and maintenance of marine cargo handling facilities and marinas.

☐ Facilities engaged in wood preserving.

☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. **Enterococci (discharge to saltwater)**

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. E. coli (discharge to freshwater)

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1**	**Sample 2**	**Sample 3**	**Sample 4**	**MAL**
Tributyltin (µg/L)					0.010
Enterococci (cfu or MPN/100 mL)					N/A
E. coli (cfu or MPN/100 mL)					N/A

TABLE 5 (Instructions, Page 59)

Completion of Table 5 **is required** for all **external outfalls** which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

☒ N/A

Table 5 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (µg/L)***	**Sample 2 (µg/L)***	**Sample 3 (µg/L)***	**Sample 4 (µg/L)***	**MAL (µg/L)***
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan I (*alpha*)					0.01
Endosulfan II (*beta*)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (*alpha*)					0.05
Hexachlorocyclohexane (*beta*)					0.05
Hexachlorocyclohexane (*gamma*) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 59)

Completion of Table 6 **is required** for all **external outfalls**.

Table 6 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutants	**Believed Present**	**Believed Absent**	**Sample 1 (mg/L)**	**Sample 2 (mg/L)**	**Sample 3 (mg/L)**	**Sample 4 (mg/L)**	**MAL (µg/L)***
Bromide	☐	☐					400
Color (PCU)	☐	☐					—
Nitrate-Nitrite (as N)	☐	☐					—
Sulfide (as S)	☐	☐					—
Sulfite (as SO3)	☐	☐					—
Surfactants	☐	☐					—
Boron, total	☐	☐					20
Cobalt, total	☐	☐					0.3
Iron, total	☐	☐					7
Magnesium, total	☐	☐					20
Manganese, total	☐	☐					0.5
Molybdenum, total	☐	☐					1
Tin, total	☐	☐					5
Titanium, total	☐	☐					30

TABLE 7 (Instructions, Page 60)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

Industrial Category	40 CFR Part	Volatiles Table 8	Acids Table 9	Bases/ Neutrals Table 10	Pesticides Table 11
☐ Adhesives and Sealants		☐ Yes	☐ Yes	☐ Yes	No
☐ Aluminum Forming	467	☐ Yes	☐ Yes	☐ Yes	No
☐ Auto and Other Laundries		☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Battery Manufacturing	461	☐ Yes	No	☐ Yes	No
☐ Coal Mining	434	No	No	No	No
☐ Coil Coating	465	☐ Yes	☐ Yes	☐ Yes	No
☐ Copper Forming	468	☐ Yes	☐ Yes	☐ Yes	No
☐ Electric and Electronic Components	469	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Electroplating	413	☐ Yes	☐ Yes	☐ Yes	No
☐ Explosives Manufacturing	457	No	☐ Yes	☐ Yes	No
☐ Foundries		☐ Yes	☐ Yes	☐ Yes	No
☐ Gum and Wood Chemicals - Subparts A,B,C,E	454	☐ Yes	☐ Yes	No	No
☐ Gum and Wood Chemicals - Subparts D,F	454	☐ Yes	☐ Yes	☐ Yes	No
☐ Inorganic Chemicals Manufacturing	415	☐ Yes	☐ Yes	☐ Yes	No
☐ Iron and Steel Manufacturing	420	☐ Yes	☐ Yes	☐ Yes	No
☐ Leather Tanning and Finishing	425	☐ Yes	☐ Yes	☐ Yes	No
☐ Mechanical Products Manufacturing		☐ Yes	☐ Yes	☐ Yes	No
☐ Nonferrous Metals Manufacturing	421,471	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	☐ Yes	☐ Yes	☐ Yes	No
☐ Ore Mining - Subpart B	440	No	☐ Yes	No	No
☐ Organic Chemicals Manufacturing	414	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Paint and Ink Formulation	446,447	☐ Yes	☐ Yes	☐ Yes	No
☐ Pesticides	455	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Petroleum Refining	419	☐ Yes	No	No	No
☐ Pharmaceutical Preparations	439	☐ Yes	☐ Yes	☐ Yes	No
☐ Photographic Equipment and Supplies	459	☐ Yes	☐ Yes	☐ Yes	No
☐ Plastic and Synthetic Materials Manufacturing	414	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Plastic Processing	463	☐ Yes	No	No	No
☐ Porcelain Enameling	466	No	No	No	No
☐ Printing and Publishing		☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Pulp and Paperboard Mills - Subpart C	430	☐ *	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subparts F, K	430	☐ *	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	☐ Yes	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts I, J, L	430	☐ Yes	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subpart E	430	☐ Yes	☐ Yes	☐ Yes	☐ *
☐ Rubber Processing	428	☐ Yes	☐ Yes	☐ Yes	No
☐ Soap and Detergent Manufacturing	417	☐ Yes	☐ Yes	☐ Yes	No
☒ Steam Electric Power Plants	423	☒ Yes	☒ Yes	No	No
☐ Textile Mills (Not Subpart C)	410	☐ Yes	☐ Yes	☐ Yes	No
☐ Timber Products Processing	429	☐ Yes	☐ Yes	☐ Yes	☐ Yes

* Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Page 60)

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

Table 8 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (µg/L)***	**Sample 2 (µg/L)***	**Sample 3 (µg/L)***	**Sample 4 (µg/L)***	**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 [1,1-Dichloroethene]					10
1,2-Dichloropropane					10
1,3-Dichloropropylene [1,3-Dichloropropene]					10
Ethylbenzene					10
Methyl bromide [Bromomethane]					50
Methyl chloride [Chloromethane]					50
Methylene chloride [Dichloromethane]					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethylene [Tetrachloroethene]					10
Toluene					10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10
Trichloroethylene [Trichloroethene]					10
Vinyl chloride					10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	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
Pentachlorophenol					5
Phenol					10
2,4,6-Trichlorophenol					10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acenaphthene					10
Acenaphthylene					10
Anthracene					10
Benzidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]					10
Benzo(ghi)perylene					20
Benzo(k)fluoranthene					5
Bis(2-chloroethoxy)methane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroethyl)ether					10
Bis(2-chloroisopropyl)ether					10
Bis(2-ethylhexyl)phthalate					10
4-Bromophenyl phenyl ether					10
Butylbenzyl phthalate					10
2-Chloronaphthalene					10
4-Chlorophenyl phenyl ether					10
Chrysene					5
Dibenzo(a,h)anthracene					5
1,2-Dichlorobenzene [o-Dichlorobenzene]					10
1,3-Dichlorobenzene [m-Dichlorobenzene]					10
1,4-Dichlorobenzene [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 Azobenzene)					20
Fluoranthene					10
Fluorene					10
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Indeno(1,2,3-cd)pyrene					5
Isophorone					10
Naphthalene					10
Nitrobenzene					10
N-Nitrosodimethylamine					50

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
N-Nitrosodi-n-propylamine					20
N-Nitrosodiphenylamine					20
Phenanthrene					10
Pyrene					10
1,2,4-Trichlorobenzene					10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Aldrin					0.01
alpha-BHC [alpha-Hexachlorocyclohexane]					0.05
beta-BHC [beta-Hexachlorocyclohexane]					0.05
gamma-BHC [gamma-Hexachlorocyclohexane]					0.05
delta-BHC [delta-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

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
PCB 1260					0.2
PCB 1016					0.2
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: Click to enter text.

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 59-60)

Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- ☐ 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- ☐ 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- ☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- ☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CASRN 299-84-3
- ☐ 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- ☐ hexachlorophene (HCP) CASRN 70-30-4
- ☐ None of the above

Description: Click to enter text.

Does the applicant or anyone at the facility 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 the effluent proposed for discharge?

☐ Yes ☐ No

Description: Click to enter text.

If **yes** to either Items a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	1.0					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.03					50
2,3,4,7,8-PeCDF	0.3					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					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 **is required** for all **external outfalls** as directed below. (Instructions, Pages 60-61)

Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

☐ Yes ☐ No

Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☐ No

If **yes** to either Items a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND APPLICATION OF EFFLUENT

This worksheet **is required** for all applications for a permit to disposal of wastewater by land application (i.e., TLAP)).

Item 1. Type of Disposal System (Instructions, Page 69)

Check the box next to the type of land disposal requested by this application:

- ☐ Irrigation
- ☐ Evaporation
- ☐ Evapotranspiration beds
- ☐ Drip irrigation system
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☐ Surface application
- ☐ Other, specify: Click to enter text.

Item 2. Land Application Area (Instructions, Page 69)

Land Application Area Information

Effluent Application (gallons/day)	Irrigation Acreage (acres)	Describe land use & indicate type(s) of crop(s)	Public Access? (Y/N)

Item 3. Annual Cropping Plan (Instructions, Page 69)

Attach the required cropping plan that includes each of the following:

- Cool and warm season plant species
- Breakdown of acreage and percent of total acreage for each crop
- Crop growing season
- Harvesting method/number of harvests
- Minimum/maximum harvest height
- Crop yield goals
- Soils map
- Nitrogen requirements per crop
- Additional fertilizer requirements
- Supplemental watering requirements
- Crop salt tolerances
- Justification for not removing existing vegetation to be irrigated

Attachment:

Item 4. Well and Map Information (Instructions, Page 70)

a. Check each box to confirm the required information is shown and labeled on the attached USGS map:

☐ The exact boundaries of the land application area

☐ On-site buildings

☐ Waste-disposal or treatment facilities

☐ Effluent storage and tailwater control facilities

☐ Buffer zones

☐ All surface waters in the state onsite and within 500 feet of the property boundaries

☐ All water wells within ½-mile of the disposal site, wastewater ponds, or property boundaries

☐ All springs and seeps onsite and within 500 feet of the property boundaries

Attachment: Click to enter text.

b. List and cross reference all water wells located on or within 500 feet of the disposal site, wastewater ponds, or property boundaries in the following table. Attach additional pages as necessary to include all of the wells.

Well and Map Information Table

Well ID	Well Use	Producing? Y/N/U	Open, cased, capped, or plugged?	Proposed Best Management Practice

Attachment: Click to enter text.

c. Groundwater monitoring wells or lysimeters are/will be installed around the land application site or wastewater ponds.

☐ Yes ☐ No

If **yes**, provide the existing/proposed location of the monitoring wells or lysimeters on the site map attached for Item 4.a. Additionally, attach information on the depth of the wells or lysimeters, sampling schedule, and monitoring parameters for TCEQ review, possible modification, and approval.

Attachment: Click to enter text.

d. Attach a short groundwater technical report using *30 TAC § 309.20(a)(4)* as guidance.
Attachment:

Item 5. Soil Map and Soil Information (Instructions, Page 71)

Check each box to confirm that the following information is attached:

a. ☐ USDA NRCS Soil Survey Map depicting the area to be used for land application with the locations identified by fields and crops.

b. ☐ Breakdown of acreage and percent of total acreage for each soil type.

c. ☐ Copies of laboratory soil analyses. **Attachment:** Click to enter text.

Item 6. Effluent Monitoring Data (Instructions, Page 72)

a. Completion of Table 14 **is required** for all **renewal** and **major amendment** applications. Complete the table with monitoring data for the previous two years for all parameters regulated in the current permit. An additional table has been provided with blank headers for parameters regulated in the current permit which are not listed in Table 14.

Table 14 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Date (mo/yr)	Daily Avg Flow (gpd)	BOD5 (mg/L)	TSS (mg/L)	Nitrogen (mg/L)	Conductivity (mmhos/cm)	Total acres irrigated	Hydraulic Application rate (acre-feet/month)

Date (mo/yr)	Daily Avg Flow (gpd)	BOD5 (mg/L)	TSS (mg/L)	Nitrogen (mg/L)	Conductivity (mmhos/cm)	Total acres irrigated	Hydraulic Application rate (acre-feet/month)

b. Use this table to provide effluent analysis for parameters regulated in the current permit which are not listed in Table 14.

Additional Parameter Effluent Analysis

Date (mo/yr)							

c. Attach an explanation of all persistent excursions to permitted parameters and corrective actions taken. **Attachment:** Click to enter text.

Item 7. Pollutant Analysis (Instructions, Page 72)

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): Click to enter text.

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Complete Tables 15 and 16.

Table 15 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (mg/L)**	**Sample 2 (mg/L)**	**Sample 3 (mg/L)**	**Sample 4 (mg/L)**
BOD (5-day)				
CBOD (5-day)				
Chemical oxygen demand				
Total organic carbon				
Dissolved oxygen				
Ammonia nitrogen				
Total suspended solids				
Nitrate nitrogen				
Total organic nitrogen				
Total phosphorus				
Oil and grease				
Total residual chlorine				
Total dissolved solids				
Sulfate				
Chloride				
Fluoride				
Total alkalinity (mg/L as CaCO3)				
Temperature (˚F)				
pH (standard units)				

Table 16 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (µg/L)**	**Sample 2 (µg/L)**	**Sample 3 (µg/L)**	**Sample 4 (µg/L)**	**MAL (µg/L)**
Aluminum, total					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.1: SURFACE LAND APPLICATION AND APPLICATION

This worksheet **is required** for all applications for a permit to disposal of wastewater by surface land application or evaporation.

Item 1. Edwards Aquifer (Instructions, Page 73)

a. Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

☐ Yes ☐ No

If **no**, proceed to Item 2. If **yes**, complete Items 1.b **and** 1.c.

b. Check the box next to the subchapter applicable to the facility.

☐ 30 TAC Chapter 213, Subchapter A

☐ 30 TAC Chapter 213, Subchapter B

c. If *30 TAC Chapter 213, Subchapter A* applies, attach **either**: 1) a Geologic Assessment (if conducted in accordance with *30 TAC § 213.5*) **or** 2) a report that contains the following:

- A description of the surface geological units within the proposed land application site and wastewater pond area.
- The location and extent of any sensitive recharge features in the land application site and wastewater pond area
- A list of any proposed BMPs to protect the recharge features.

Attachment: Click to enter text.

Item 2. Surface Spray/Irrigation (Instructions, Page 73)

a. Provide the following information on the irrigation operations:

Area under irrigation (acres): Click to enter text.

Design application rate (acre-ft/acre/yr): Click to enter text.

Design application frequency (hours/day): Click to enter text.

Design application frequency (days/week): Click to enter text.

Design total nitrogen loading rate (lbs nitrogen/acre/year): 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.

Irrigation efficiency (percent): Click to enter text.

Effluent conductivity (mmhos/cm): Click to enter text.

Soil conductivity (mmhos/cm): Click to enter text.

Curve number: Click to enter text.

Describe the application method and equipment: Click to enter text.

b. Attach a detailed engineering report which includes a water balance, storage volume calculations, and a nitrogen balance. **Attachment:** Click to enter text.

Item 3. Evaporation Ponds (Instructions, Page 74)

a. Daily average effluent flow into ponds: Click to enter text. gallons per day

b. Attach a separate engineering report of evaporation calculations for average long-term and worst-case critical conditions. **Attachment:** Click to enter text.

Item 4. Evapotranspiration Beds (Instructions, Page 74)

a. Provide the following information on the evapotranspiration beds:

Number of beds: Click to enter text.

Area of bed(s) (acres): Click to enter text.

Depth of bed(s) (feet): Click to enter text.

Void ratio of soil in the beds: Click to enter text.

Storage volume within the beds (include units): Click to enter text.

Description of any lining to protect groundwater: Click to enter text.

b. Attach a certification by a licensed Texas professional engineer that the liner meets TCEQ requirements. **Attachment:** Click to enter text.

c. Attach a separate engineering report with water balance, storage volume calculations, and description of the liner. **Attachment:** Click to enter text.

Item 5. Overland Flow (Instructions, Page 74)

a. Provide the following information on the overland flow:

Area used for application (acres): Click to enter text.

Slopes for application area (percent): Click to enter text.

Design application rate (gpm/foot of slope width): Click to enter text.

Slope length (feet): Click to enter text.

Design BOD5 loading rate (lbs BOD5/acre/day): Click to enter text.

Design application frequency (hours/day): Click to enter text.

Design application frequency (days/week): Click to enter text.

b. Attach a separate engineering report with the method of application and design requirements according to *30 TAC § 217.212*. **Attachment:** Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.2: SUBSURFACE IRRIGATION (NON-DRIP)

This worksheet **is required** for all applications for a permit to disposal of wastewater by subsurface land application.

☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 75)

a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?

☐ Yes ☐ No

b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?

☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Subsurface Application (Instructions, Page 75)

a. Check the box next to the type of subsurface land disposal system requested:

☐ Conventional drainfield, beds, or trenches

☐ Low pressure dosing

☐ Other: Click to enter text.

b. Provide the following information on the irrigation operations:

Application area (acres): Click to enter text.

Area of drainfield (square feet): Click to enter text.

Application rate (gal/square ft/day): Click to enter text.

Depth to groundwater (feet): Click to enter text.

Area of trench (square feet): Click to enter text.

Dosing duration per area (hours): Click to enter text.

Number of beds: Click to enter text.

Dosing amount per area (inches/day): Click to enter text.

Soil infiltration rate (inches/hour): Click to enter text.

Storage volume (gallons): Click to enter text.

Area of bed(s) (square feet): Click to enter text.

Soil classification: Click to enter text.

c. Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation. **Attachment:** Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.3: SUBSURFACE AREA DRIP DISPERSAL SYSTEMS

This worksheet **is required** for all applications for a permit to dispose of wastewater using a subsurface area drip dispersal system (SADDS).

☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 76)

a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?

☐ Yes ☐ No

b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?

☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Administrative Information (Instructions, Page 76)

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: Click to enter text.

b. The owner of the land where the WWTF is/will be located is the same as the owner of the WWTF.

☐ 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 WWTF is/will be located: Click to enter text.

c. Provide the legal name of the owner of the SADDS: Click to enter text.

d. The owner of the SADDS is the same as the owner of the WWTF or the site where the WWTF is/will be located.

☐ Yes ☐ No

If **no**, identify the legal name 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. Provide the legal name of the owner of the land where the SADDS is located: Click to enter text.

f. The owner of the land where the SADDS is/will be located is the same as owner of the WWTF, the site where the WWTF is located, or the owner of the SADDS.

☐ Yes ☐ No

If **no**, provide the legal 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.

Item 3. SADDS (Instructions, Page 77)

a. Check the box next to the type SADDS requested by this application:

☐ Subsurface drip/trickle irrigation

☐ Surface drip irrigation

☐ Other: Click to enter text.

b. Attach a description of the SADDS proposed/used by the facility (see instructions for guidance). **Attachment:** Click to enter text.

c. Provide the following information on the SADDS:

Application area (acres): Click to enter text.

Soil infiltration rate (inches/hour): Click to enter text.

Average slope of the application area: Click to enter text.

Maximum slope of the application area: Click to enter text.

Storage volume (gallons): Click to enter text.

Major soil series: Click to enter text.

Depth to groundwater (feet): Click to enter text.

Effluent conductivity (mmhos/cm): Click to enter text.

d. The facility is/will be located west of the boundary shown in *30 TAC § 222.83* **and** using a vegetative cover of non-native grasses over seeded with cool-season grasses.

☐ Yes ☐ No

If **yes**, the facility may propose a hydraulic application rate up to, but not to exceed, 0.1 gal/ft^2/day.

e. The facility is/will be located east of the boundary shown in *30 TAC § 222.83* **or** is the facility proposing 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.

f. The facility has or plans to submit an alternative method to calculate the hydraulic application rate for approval by the ED.

☐ Yes ☐ No

If **yes**, provide the following information on the hydraulic application rates:

- Hydraulic application rate (gal/square foot/day): Click to enter text.
- Nitrogen application rate (gal/square foot/day): Click to enter text.

g. Provide the following dosing information:

Number of doses per day: Click to enter text.

Dosing duration per area (hours): Click to enter text.

Rest period between doses (hours): Click to enter text.

Dosing amount per area (inches/day): Click to enter text.

Number of zones: Click to enter text.

h. The system is/will be a surface drip irrigation system using existing native vegetation as a crop?

☐ Yes ☐ No

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

- A vegetation survey by a certified arborist describing the percent canopy cover and relative percentage of major overstory and understory plant species.

  Attachment: Click to enter text.

- Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation.

  Attachment: Click to enter text.

Item 4. Required Plans (Instructions, Page 78)

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

Attachment: Click to enter text.

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

Attachment: Click to enter text.

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

Attachment: Click to enter text.

d. Provide soil sampling and testing with all information required in *30 TAC § 222.157*.

Attachment: Click to enter text.

Item 5. Flood and Run-On Protection (Instructions, Page 79)

a. Is the existing/proposed SADDS located within the 100-year frequency flood level?

☐ Yes ☐ No

Source: Click to enter text.

If **yes**, describe how the site will be protected from inundation: Click to enter text.

b. Is the existing/proposed SADDS within a designated floodway?

☐ Yes ☐ No

If **yes**, attach either the FEMA flood map or alternate information used to make this determination. **Attachment:** Click to enter text.

Item 6. Surface Waters in The State (Instructions, Page 79)

a. Attach a buffer map which shows the appropriate buffers on surface waters in the state, water wells, and springs/seeps. **Attachment:** Click to enter text.

b. The facility has or plans to request a buffer variance from water wells or waters in the state?

☐ Yes ☐ No

If **yes**, attach the additional information required in *30 TAC § 222.81(c)*. **Attachment:** Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.0: RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

Item 1. Domestic Drinking Water Supply (Instructions, Page 80)

a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

☐ Yes ☒ No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

1. The legal name of the owner of the drinking water supply intake: Click to enter text.
2. The distance and direction from the outfall to the drinking water supply intake: Click to enter text.

b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

☐ Check this box to confirm the above requested information is provided.

Item 2. Discharge Into Tidally Influenced Waters (Instructions, Page 80)

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3.

a. Width of the receiving water at the outfall: Click to enter text. feet

b. Are there oyster reefs in the vicinity of the discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: Click to enter text.

c. Are there sea grasses within the vicinity of the point of discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: Click to enter text.

Item 3. Classified Segment (Instructions, Page 80)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

☐ Yes ☒ No

If **yes**, stop here and do not complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

Item 4. Description of Immediate Receiving Waters (Instructions, Page 80)

a. Name of the immediate receiving waters: Jefferson County Drainage District 7 Main Canal "D"

b. Check the appropriate description of the immediate receiving waters:

☐ Lake or Pond

- Surface area (acres): Click to enter text.
- Average depth of the entire water body (feet): Click to enter text.
- Average depth of water body within a 500-foot radius of the discharge point (feet): Click to enter text.

☒ Man-Made Channel or Ditch

☐ Stream or Creek

☐ Freshwater Swamp or Marsh

☐ Tidal Stream, Bayou, or Marsh

☐ Open Bay

☐ Other, specify:

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c – 4.g below:

c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

☐ Intermittent (dry for at least one week during most years)

☐ Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)

☒ Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

☐ USGS flow records

☒ personal observation

☒ historical observation by adjacent landowner(s)

☒ other, specify: historical satellite imagery

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Alligator Bayou and Main Outfall Canal (0702A), Intercoastal Waterway Tidal (0702)

e. 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**, describe how: The immediate receiving water, DD7 Main "D", has been reinforced on the banks with crushed stone. After joining Alligator Bayou, the channel is naturally vegetated on the banks and significantly wider, yes still channelized. The channel then joins Taylor Bayou after the levee and becomes a Tidal Stream with naturally occurring meandering and cuts.

f. General observations of the water body during normal dry weather conditions: Jefferson County DD7 Main Canal "D" is a manmade channel with existing industrial activity from the surrounding refinery and industrial activity including other wastewater outfalls, flow control weirs. and drainage pumps.

Date and time of observation: 7/11/24 approximately 9am

g. The water body was influenced by stormwater runoff during observations.

☐ Yes ☒ No

If **yes**, describe how: Click to enter text.

Item 5. General Characteristics of Water Body (Instructions, Page 81)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

☐ oil field activities
☒ urban runoff
☐ agricultural runoff
☐ septic tanks
☒ upstream discharges
☐ other, specify: Click to enter text.

b. Uses of water body observed or evidence of such uses (check all that apply):

☐ livestock watering
☒ industrial water supply
☐ non-contact recreation
☐ irrigation withdrawal
☐ domestic water supply
☐ navigation
☐ contact recreation
☐ picnic/park activities
☐ fishing
☐ other, specify: Click to enter text.

c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

☐ **Wilderness:** outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional

☐ **Natural Area:** trees or native vegetation common; 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

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.1: WATERBODY PHYSICAL CHARACTERISTICS

The following information **is required** for new applications, EPA-designated Major facilities, and major amendment applications requesting to add an outfall if the receiving waters are perennial or intermittent with perennial pools (including impoundments) for a TDPES permit.

Complete the transects downstream of the existing or proposed discharges.

Item 1. Data Collection (Instructions, Page 82)

a. Date of study: 7/11/24 Time of study: 9:00am – 10:00am

Waterbody name: Jefferson County DD7 Main Canal "D"

General location: Approximately 100 feet upstream of the confluence of Main Canal "D" and Alligator Bayou along the southeast bank.

b. Type of stream upstream of an existing discharge or downstream of a proposed discharge (check only one):

☒ perennial ☐ intermittent with perennial pools ☐ impoundment

c. No. of defined stream bends:

Well: Click to enter text. Moderately: Click to enter text. Poorly: Click to enter text.

d. No. of riffles: Click to enter text.

e. Evidence of flow fluctuations (check one):

☐ Minor ☒ Moderate ☐ Severe

f. Provide the observed stream uses and where there is evidence of channel obstructions/modifications: The channel is currently being utilized for industrial and stormwater discharges, many modifications and infrastructure features are present. Due to the nature of the location and characteristics of the water body (restricted access and non-wadable) a formal stream survey and assessment was not conducted. The information provided is what was observed from the proposed outfall location and desktop review.

g. Complete the following table with information regarding the transect measurements.

Stream Transect Data

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**								
Proposed Outfall	Riffle	109									
90 feet downstream at Alligator Bayou juncture	Riffle	90									
100 feet downstream at	Run	240									

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**								
Alligator Bayou											
400 feet downstream at Alligator Bayou and HW 82	Glide	200									
1,200 feet downstream to 2nd pipeline crossing	Glide	215									

* riffle, run, glide, or pool
** channel bed to water surface

Item 2. Summarize Measurements (Instructions, Page 83)

Provide the following information regarding the transect measurements:

Streambed slope of entire reach (from USGS map in ft. /ft.): 0 ft/ 1,200 ft

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): 5 sq. miles

Length of stream evaluated (ft): 1,200 ft

Number of lateral transects made: 0

Average stream width (ft): 191

Average stream depth (ft): Not attainable due to lack of wadable stream

Average stream velocity (ft/sec): 8 ft/sec

Instantaneous stream flow (ft^3/sec): Unavailable

Indicate flow measurement method (VERY IMPORTANT – type of meter, floating chip timed over a fixed distance, etc.): floating chip timed over fixed distance

Flow fluctuations (i.e., minor, moderate, or severe): moderate

Size of pools (i.e., large, small, moderate, or none): none

Maximum pool depth (ft): none

Total number of stream bends: 1

Number well defined: 0

Number moderately defined: 0

Number poorly defined: 1

Total number of riffles: 2

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 5.0: SEWAGE SLUDGE MANAGEMENT AND DISPOSAL

The following information **is required** for all TPDES permit applications that meet the conditions as outlined in Technical Report 1.0, Item 7.

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

☐ Yes ☐ No

b. Does or will the facility discharge in the Lake Houston watershed?

☐ Yes ☐ No

If **yes** to either Item 1.a **or** 1.b, attach a solids management plan. **Attachment:** Click to enter text.

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

☐ Permitted landfill

☐ Marketing and distribution by the permittee, attach Form TCEQ-00551

☐ Registered land application site, attach Form TCEQ-00565

☐ Processed by the permittee, attach Form TCEQ-00744

☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744

☐ Transported to another WWTP

☐ Beneficial land application, attach Form TCEQ-10451

☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment: Click to enter text.

b. Provide the following information for each disposal site:

Disposal site name: Click to enter text.

TCEQ Permit/Registration Number: Click to enter text.

County where disposal site is located: Click to enter text.

c. Method of sewage sludge transportation:

☐ truck ☐ train ☐ pipe ☐ other: Click to enter text.

TCEQ Hauler Registration Number: Click to enter text.

d. Sludge is transported as a:

☐ liquid ☐ semi-liquid ☐ semi-solid ☐ solid

e. Purpose of land application: ☐ reclamation ☐ soil conditioning ☐ N/A

f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment: Click to enter text.

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

☐ Marketing and distribution by the permittee, attach Form TCEQ-00551

☐ Processed by the permittee, attach Form TCEQ-00744

☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744

☐ Beneficial land application, attach Form TCEQ-10451

☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment: Click to enter text.

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit**. New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 6.0: INDUSTRIAL WASTE CONTRIBUTION

The following information **is required** for all applications for publicly-owned treatment works (POTWs).

For an explanation of the terms used in this worksheet, refer to the General Definitions on pages 4-12 and the Definitions Relating to Pretreatment on pages 13-14 of the Instructions.

Item 1. All POTWs (Instructions, Page 86)

a. Complete the following table with the number of each type of industrial users (IUs) that discharge to the POTW and the daily average flows from each.

Industrial User Information

Type of Industrial User	Number of Industrial Users	Daily Average Flow (gallons per day)
CIU		
SIU – Non-categorical		
Other IU		

b. In the past three years, has the POTW experienced treatment plant interference?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, nature of interference, and probable cause(s) and possible source(s) of each interference event. Include the names of the IU(s) that may have caused the interference: Click to enter text.

c. In the past three years, has the POTW experienced pass-through?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, pollutants passing through the treatment plant, and probable cause(s) and possible source(s) of each pass-through event. Include the names of the IU(s) that may have caused the pass-through: Click to enter text.

d. Does the POTW have, or is it required to develop, an approved pretreatment program?

☐ Yes ☐ No

If **yes**, answer all questions in Item 2 and skip Item 3.

If **no**, skip Item 2 and answer all questions in Item 3 for each SIU and CIU.

Item 2. POTWs With Approved Pretreatment Programs or Those Required To Develop A Pretreatment Program (Instructions, Page 86)

a. Have there been any substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ) for approval according to *40 CFR § 403.18*?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all substantial modifications that have not been submitted to the TCEQ and the purpose of the modifications.

Attachment: Click to enter text.

b. Have there been any non-substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ)?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all non-substantial modifications that have not been submitted to the TCEQ and the purpose of the modification.

Attachment: Click to enter text.

c. List all parameters measured above the MAL in the POTW's effluent monitoring during the last three years:

Effluent Parameters Measured Above the MAL

Pollutant	Concentration	MAL	Units	Date

Attachment: Click to enter text.

d. Has any SIU, CIU, or other IU caused or contributed to any other problems (excluding interference or pass-through) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including date(s), duration, description of problems, and probable pollutants. Include the name(s) of the SIU(s)/CIU(s)/other IU(s) that may have caused or contributed to any of the problems: Click to enter text.

Item 3. Significant Industrial User and Categorical Industrial User Information (Instructions, Pages 88-87)

POTWs that **do not** have an approved pretreatment program **are required** to provide the following information for each SIU and CIU:

a. Mr. or Ms.: Click to enter text. First/Last Name: Click to enter text.

Organization Name: Click to enter text. SIC Code: Click to enter text.

Phone number: Click to enter text. Email address: Click to enter text.

Physical Address: Click to enter text. City/State/ZIP Code: Click to enter text.

Attachment: Click to enter text.

b. Describe the industrial processes or other activities that affect or contribute to the SIU(s) or CIU(s) discharge (e.g., process and non-process wastewater): Click to enter text.

c. Provide a description of the principal products(s) or service(s) performed: Click to enter text.

d. Flow rate information

Flow Rate Information

Effluent Type	Discharge Day (gallons per day)	Discharge Frequency (Continuous, batch, or intermittent)
Process Wastewater		
Non-process Wastewater		

e. Pretreatment Standards

1. Is the SIU or CIU subject to technology-based local limits as defined in the application instructions?

   ☐ Yes ☐ No

2. Is the SIU subject to categorical pretreatment standards?

   ☐ Yes ☐ No

   If **yes**, provide the category and subcategory or subcategories in the SIUs Subject To Categorical Pretreatment Standards table.

SIUs Subject to Categorical Pretreatment Standards

Category in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR

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

   ☐ Yes ☐ No

   If **yes**, provide a description of each episode, including dates, duration, description of problems, and probable pollutants, and include the name(s) of the SIU(s)/CIU(s) that may have caused or contributed to the problem(s): Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 7.0: STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges consisting of **either**: 1) solely of stormwater discharges associated with industrial activities, as defined in *40 CFR § 122.26(b)(14)(i-xi)*, **or** 2) stormwater discharges associated with industrial activities and any of the listed allowable non-stormwater discharges, as defined in the MSGP (TXR05000), Part II, Section A, Item 6.

Discharges of stormwater as defined in *40 CFR § 122.26 (b)(13)* are not required to obtain authorization under a TPDES permit (see exceptions at *40 CFR §§ 122.26(a)(1)* and *(9)*). Authorization for discharge may be required from a local municipal separate storm sewer system.

Item 1. Applicability (Instructions, Page 89)

Do discharges from any of the existing/proposed outfalls consist either 1) solely of stormwater discharges associated with industrial activities **or** 2) stormwater discharges associated with industrial activities and any of the allowable non-stormwater discharges?

☒ Yes ☐ No

If **no**, stop here. If **yes**, proceed as directed.

Item 2. Stormwater Coverage (Instructions, Page 89)

List each existing/proposed stormwater outfall at the facility and indicate which type of authorization covers or is proposed to cover discharges.

Authorization Coverage

Outfall	Authorization under MSGP	Authorized Under Individual Permit
001	☐	☒
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

If **all** existing/proposed outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) are **authorized under the MSGP**, **stop** here.

If **seeking authorization** for any outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) **under an individual permit**, **proceed**.

NOTE: The following information is required for each existing/proposed stormwater outfall for which the facility is seeking individual permit authorization under this application

Item 3. Site Map (Instructions, Page 90)

Attach a site map or maps (drawn to scale) of the entire facility with the following information.

- the location of each stormwater outfall to be covered by the permit
- an outline of the drainage area that is within the facility's boundary and that contributes stormwater to each outfall to be covered by the permit
- connections or discharge points to municipal separate storm sewer systems
- locations of all structures (e.g. buildings, garages, storage tanks)
- structural control devices that are designed to reduce pollution in discharges of stormwater associated with industrial activities
- process wastewater treatment units (including ponds)
- bag house and other air treatment units exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)
- landfills; scrapyards; surface water bodies (including wetlands)
- vehicle and equipment maintenance areas
- physical features of the site that may influence discharges of stormwater associated with industrial activities or contribute a dry weather flow
- locations where spills or leaks of reportable quality (as defined in *30 TAC § 327.4*) have occurred during the three years before this application was submitted to obtain coverage under an individual permit
- processing areas, storage areas, material loading/unloading areas, and other locations where significant materials are exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)

☒ Check the box to confirm all above information was provided on the facility site map(s).

Attachment: 17 – Facility Map - Stormwater

Item 4. Facility/Site Information (Instructions, Page 90)

a. Provide the area of impervious surface and the total area drained by each stormwater outfall requested for authorization by this permit application.

Impervious Surfaces

Outfall	Area of Impervious Surface (include units)	Total Area Drained (include units)
001	Approximately 25 acers	Approximately 33 acres

b. Provide the following local area rainfall information and the source of the information.

Wettest month: June

Average rainfall for wettest month (total inches): 6.61 in.

25-year, 24-hour rainfall (inches): 12.6 in.

Source: National Weather Service /NOAA

c. Attach an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation. **Attachment:** 18 - Inventory of Exposed Materials and Narrative of Exposed Activities

d. Attach narrative descriptions of the industrial processes and activities involving the materials in the above-listed inventory that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff (see instructions for guidance). **Attachment:** 18 - Inventory of Exposed Materials and Narrative of Exposed Activities

e. Describe any BMPs and controls the facility uses/proposes to prevent or effectively reduce pollution in stormwater discharges from the facility: Good Housekeeping Measures will be employed to prevent stormwater pollution.

Item 5. Pollutant Analysis (Instructions, Page 91)

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): N/A

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Complete Table 17 as directed on page 92 of the Instructions.

Table 17 for Outfall No.: Click to enter text.

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
pH (standard units)	(max)	—	(min)	—		—
Total suspended solids						—
Chemical oxygen demand						—
Total organic carbon						—
Oil and grease						—
Arsenic, total						0.0005
Barium, total						0.003
Cadmium, total						0.001
Chromium, total						0.003
Chromium, trivalent						—
Chromium, hexavalent						0.003

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
Copper, total						0.002
Lead, total						0.0005
Mercury, total						0.000005
Nickel, total						0.002
Selenium, total						0.005
Silver, total						0.0005
Zinc, total						0.005

* Taken during first 30 minutes of storm event

** Flow-weighted composite sample

d. Complete Table 18 as directed on pages 92-94 of the Instructions.

Table 18 for Outfall No.: Click to enter text.

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled

* Taken during first 30 minutes of storm event

** Flow-weighted composite sample

Attachment: Click to enter text.

Item 6. Storm Event Data (Instructions, Page 93)

Provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted:

Date of storm event: N/A

Duration of storm event (minutes): Click to enter text.

Total rainfall during storm event (inches): Click to enter text.

Number of hours the between beginning of the storm measured and the end of the previous measurable storm event (hours): Click to enter text.

Maximum flow rate during rain event (gallons/minute): Click to enter text.

Total stormwater flow from rain event (gallons): Click to enter text.

Provide a description of the method of flow measurement or estimate:

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 8.0: AQUACULTURE

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges of aquaculture wastewater.

Item 1. Facility/Site Information (Instructions, Page 94)

a. Complete the following table with information regarding production ponds, raceways, and fabricated tanks at the facility.

Production Pond Descriptions

Number of Ponds	Dimensions (include units)	Area of Each Pond (include units)	Number of Ponds x Area of Ponds (include Units)

Total surface area of all ponds: Click to enter text.

Raceway Descriptions

Number of Raceways	Dimensions (include units)

Fabricated Tank Descriptions

Number of Tanks	Dimensions (include units)

b. Does the facility have a TPWD-approved emergency plan?

☐ Yes ☐ No

If **yes**, attach a copy of the approved plan.

Attachment: Click to enter text.

c. Does the facility have an aquatic plant transplant authorization?

☐ Yes ☐ No

If **yes**, attach a copy of the authorization letter.

Attachment: Click to enter text.

d. Provide the number of aquaculture facilities located within 25-miles of this facility: Click to enter text.

Item 2. Species Identification (Instructions, Page 95)

Complete the following table regarding each species raised, source, origin, and disease status of the stock. Identify and attach copies of any current relevant authorizations or permits that authorize the species.

Stock Species Information

Species	Source of Stock	Origin of Stock	Disease Status	Authorizations

Attachment: Click to enter text.

Item 3. Stock Management Plan (Instructions, Page 95)

Attach a detailed stock management plan: Click to enter text.

Item 4. Water Treatment and Discharge Description (Instructions, Page 96)

Attach a detailed description of the discharge practices and water treatment process(es): Click to enter text.

Item 5. Solid Waste Management (Instructions, Page 96)

Attach a description of the solid waste-disposal practices: Click to enter text.

Item 6. Site Assessment Report (Instructions, Page 96)

All new and expanding commercial shrimp facilities located/to be located within the coastal zone must attach a detailed site assessment report which identifies sensitive aquatic habitats within the coastal zone: Click to enter text.

WORKSHEET 9.0

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_____

Item 1. General Information (Instructions Page 99)

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.

Item 2. Proposed Down Hole Design

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

Down Hole Design Table

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

Item 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.

Item 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. Attach a list of contaminants and the levels (ppm) in contaminated aquifer as Attachment E.
9. Attach the Horizontal and Vertical extent of contamination and injection plume as Attachment F.
10. Attach Formation (Injection Zone) Water Chemistry (Background levels) TDS, etc., 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.

Item 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.
4. Previous Remediation. Attach results of any previous remediation as Attachment M.

NOTE: Authorization Form should be completed in detail and authorization given by the TCEQ before construction, operation, and/or conversion can begin. Attach additional pages as necessary.

Item 6. CLASS V INJECTION WELL DESIGNATIONS

5A07 Heat Pump/AC return (IW used for groundwater to heat 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 Stormwater 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 groundwater withdrawal)

5W09 Untreated Sewage

5W10 Large Capacity Cesspools (Cesspools that are designed for 5,000 gpd or greater)

5W11 Large Capacity Septic systems (Septic systems designed for 5,000 gpd or greater)

5W12 WTTP disposal

5W20 Industrial Process Waste-disposal Wells

5W31 Septic System (Well Disposal method)

5W32 Septic System Drainfield Disposal

5X13 Mine Backfill (IW used to control subsidence, dispose of mining byproducts, 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)

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 10.0: QUARRIES IN THE JOHN GRAVES SCENIC RIVERWAY

This worksheet **is required** for all applications for individual permits for a municipal solid waste facility or mining facility located within a Water Quality Protection Area in the John Graves Scenic Riverway. **Note: Review 30 TAC §§ 311.71-311.82 thoroughly prior to completing any portion of this worksheet.**

Item 1. Exclusions (Instructions, Page 100)

a. Is this a municipal solid waste facility?

☐ Yes ☐ No

b. Has this quarry been in operation since January 1, 1994 without cessation of operation for more than 30 consecutive days and under the same ownership?

☐ Yes ☐ No

c. Is this a coal mine?

☐ Yes ☐ No

d. Is this facility mining clay and/or shale for use in manufacturing structural clay products?

☐ Yes ☐ No

If **yes** to **any** above question, **stop here**. The facility is required to maintain documentation, as outlined in *30 TAC § 311.72(c)*, at the facility to demonstrate the exclusion(s).

Item 2. Location of the Quarry (Instructions, Page 101)

Check the box next to the distance between the quarry and the nearest navigable water body:

☐ < 200 feet ☐ 200 feet – 1,500 feet ☐ 1,500 feet – 1 mile ☐ > 1 mile

NOTE: The construction or operation of any new quarry or expansion of any existing quarry **is prohibited** within 200 feet of any water body located within a Water Quality Protection Area in the John Graves Scenic Riverway.

Item 3. Additional Requirements (Instructions, Page 101)

Use the table in the Instructions to determine if additional application requirements apply to the facility based on distance between the quarry and the nearest waterway. Attach as appropriate or enter N/A.

a. Attach a Restoration Plan: Click to enter text.

b. Amount of Financial Assurance for Restoration: $ Click to enter text.

Mechanism: Click to enter text.

c. Attach a Technical Demonstration: Click to enter text.

d. Attach a Reclamation Plan: Click to enter text.

e. Amount of Financial Assurance for Reclamation: $ Click to enter text.

Mechanism: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 11.0: COOLING WATER SYSTEM INFORMATION

This worksheet **is required** for all TPDES permit applications **that meet the conditions outlined in Technical Report 1.0, Item 12.**

Item 1. Cooling Water System Data (Instructions, Page 104)

a. Complete the following table with information regarding the cooling water system.

Cooling Water System Data

Parameter	Volume (include units)
Total DIF	11.7096 MGD
Total AIF	4.4278 MGD
Intake Flow Use(s) (%)	
Contact cooling	85
Non-contact cooling	0
Process Wastewater	12
Other	3

b. Attach the following information:

1. A narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).

2. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.

3. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).

4. Design and engineering calculations prepared by a qualified professional and data to support the information provided in above item a.

5. Previous year (a minimum of 12 months) of AIF data.

6. A narrative description of existing or proposed impingement and entrainment technologies or operation measures and a summary of their performance, including, but not limited to, reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

Attachment: 19 – Cooling Water System Data

Item 2. Cooling Water Intake Structure(s) Data (Instructions, Page 105)

a. Complete the following table with information regarding each cooling water intake structure (this includes primary and make-up CWIS(s)).

Cooling Water Intake Structure(s) Data

CWIS ID	CWIS 01 RAW WATER	CWIS 02 RAW WATER (ALT)		
DIF (include units)	10.0368 MGD	1.6728 MGD		
AIF (include units)	4.4278 MGD	TBD		
Intake Flow Use(s) (%)				
Contact cooling	85	85		
Non-contact cooling	0	0		
Process Wastewater	12	12		
Other	3	3		
Latitude (decimal degrees)	29.905313˚	29.899937˚		
Longitude (decimal degrees)	-93.969306˚	-93.955673˚		

b. Attach the following information regarding the CWIS(s):

1. A narrative description of the configuration of each CWIS, annual and daily operation, including any seasonal changes, and where it is located in the water body and in the water column.

2. Engineering calculations for each CWIS.

Attachment: 20 – Cooling Water Intake Structure Data (CWIS)

Item 3. Source Water Physical Data (Instructions, Page 105)

a. Complete the following table with information regarding the CWIS(s) source waterbody (this includes primary and make-up CWIS(s)).

Source Waterbody Data

CWIS ID	CWIS 01 RAW WATER	CWIS 02 RAW WATER (ALT)		
Source Waterbody	Port Arthur Canal LNVRA	Motiva Enterprises Reclaimed Water		
Mean Annual Flow	75 cfs	Not Available		
Source	LNVA			

b. Attach the following information regarding the source waterbody.

1. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports this determination of the water body type where each cooling water intake structure is located.

2. A narrative description of the source waterbody's hydrological and geomorphological features.

3. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. **NOTE:** The source waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.

4. A description of the methods used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

Attachment: 21 - Source Waterbody Data

Item 4. Operational Status (Instructions, Page 106)

a. Is this application for a power production or steam generation facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.b. If **yes**, provide the following information as an attachment:

1. Describe the operating status of each individual unit, including age, capacity utilization rate (or equivalent) for the previous five years (a minimum of 60 months), and any seasonal changes in operation.

2. Describe any extended or unusual outages or other factors which significantly affect current data for flow, impingement, entrainment.

3. Identify any operating unit with a capacity utilization rate of less than 8 percent averaged over a contiguous period of two years (a minimum of 24 months).

4. Describe any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes of fuel type.

Attachment: N/A

b. Process Units

1. Is this application for a facility which has process units that use cooling water (other than for power production or steam generation)?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, continue.

2. Does the facility use or intend to use reductions in flow or changes in operations to meet the requirements of *40 CFR § 125.94(c)*?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, attach descriptions of the following information:

- Individual production processes and product lines
- The operating status, including age of each line and seasonal operation
- Any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors
- Any major upgrades completed within the last 15 years and plans or schedules for decommissioning or replacement of process units or production processes and product lines.

Attachment: Click to enter text.

c. Is this an application for a nuclear power production facility?

☐ Yes ☒ No

If **no**, proceed to Item 4.d. If **yes**, attach a description of completed, approved, or scheduled upgrades and the Nuclear Regulatory Commission relicensing status for each unit at the facility.

Attachment: Click to enter text.

d. Is this an application for a manufacturing facility?

☐ Yes ☒ No

If **no**, proceed to Worksheet 11.1. If **yes**, attach descriptions of current and future production schedules and any plans or schedules for any new units planned within the next five years (a minimum of 60 mos)

Attachment: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 11.1: IMPINGEMENT MORTALITY

This worksheet **is required** for all TPDES permit applications **that meet the conditions outlined in Technical Report 1.0, Item 12.** Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID:

Item 1. Impingement Compliance Technology Selection (Instructions, Page 107)

Check the box next to the method of compliance for the Impingement Mortality Standard selected by the facility.

☐ Closed-cycle recirculating system(CCRS) [*40 CFR § 125.94(c)(1)*]
☐ 0.5 ft/s Through-Screen Design Velocity [*40 CFR § 125.94(c)(2)*] – Proceed to Worksheet 11.2
☐ 0.5 ft/s Through Screen Actual Velocity [*40 CFR § 125.94(c)(3)*]
☐ Existing offshore velocity cap [*40 CFR § 125.94(c)(4)*] – Proceed to Worksheet 11.2
☐ Modified traveling screens [*40 CFR § 125.94(c)(5)*]
☐ System of technologies [*40 CFR § 125.94(c)(6)*]
☐ Impingement mortality performance standard [*40 CFR § 125.94(c)(7)*]
☐ De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]
☐ Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

If 0.5 ft/s Through-Screen Design Velocity [*40 CFR § 125.94(c)(2)*] or existing offshore velocity cap [*40 CFR § 125.94(c)(4)*] was selected, proceed to Worksheet 11.2. Otherwise, continue to Item 2.

Item 2. Impingement Compliance Technology Information (Instructions, Page 107)

Complete the following sections based on the selection made for item 1 above.

a. CCRS [*40 CFR § 125.94(c)(1)*]

☐ Check this box to confirm the CWS meets the definition of CCRS located at *40 CFR § 125.91(c)* and provide a response to the following questions.

1. Does the facility use or propose to use a CWIS to replenish water losses to the CWS?

   ☐ Yes ☐ No

   If **no**, proceed to item a.2. If **yes**, provide the following information as an attachment and continue.

   - CWIS ID
   - 12 months of intake flow data for any CWIS used for make-up intake flows to replenish cooling water losses, excluding intakes for losses due to blowdown, drift, or evaporation.

- A narrative description of any physical or operational measures taken to minimize make-up withdraws.

Attachment: Click to enter text.

NOTE: Do not complete a separate Worksheet 11.1 for a make-up CWIS.

2. Does the facility use or propose to use cooling towers?

☒ Yes ☐ No

If **no**, proceed to Worksheet 11.2. If **yes**, provide the following information and proceed to Worksheet 11.2.

- Average number of cycles of concentration (COCs) prior to blowdown:

Average COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Attach COC monitoring data for each cooling tower from the previous year (a minimum of 12 months): Click to enter text.
- Maximum number of COCs each cooling tower can accomplish based on design of the system.

Calculated COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Describe conditions that may limit the number of COCs prior to blowdown, if any, including but not limited to permit conditions: Click to enter text.

b. 0.5 ft/s Through Screen Actual Velocity [*40 CFR § 125.94(c)(3)*]

Provide daily intake flow measurement monitoring data from the previous year (a minimum of 12 months) as an attachment and proceed to Worksheet 11.2.

Attachment: Click to enter text.

c. Modified traveling screens [*40 CFR § 125.94(c)(5)*]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the modified traveling screens and associated equipment.
2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: Click to enter text.

d. System of technologies [*40 CFR § 125.94(c)(6)*] or impingement mortality performance standard [*40 CFR § 125.94(c)(7)]*

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the system of technologies used or proposed for use by the facility to

achieve compliance with the impingement mortality standard.

2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods.

3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: Click to enter text.

e. De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]

Provide the following information and proceed to Worksheet 11.2.

1. Attach monitoring data from the previous year (a minimum of 12 months) of intake flow measured at a frequency of 1/day on days of operation.

   Attachment: Click to enter text.

2. If the rate of impingement caused by the CWIS is extremely low (at an organism or age-one equivalent count), attach supplemental information to Worksheet 11.0, item 1.b.6. to support this determination.

   Attachment: Click to enter text.

f. Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

Attach monthly utilization data from the previous 2 years (a minimum of 24 months) for each operating unit and proceed to Worksheet 11.2.

Attachment: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 11.2: SOURCE WATER BIOLOGICAL DATA

This worksheet **is required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** source waterbody of a CWIS for which a facility has selected an Impingement Mortality Technology Option described at *40 CFR §§ 125.94(c)(1)-(7)*.

Name of source waterbody: Lower Neches Valley Authority Drainage Channel

Item 1. Species Management (Instructions, Page 109)

a. The facility has obtained an incidental take permit for its cooling water intake structure(s) from the USFWS or the NMFS.

☐ Yes ☒ No

If yes, attach any information submitted in order to obtain that permit, which may be used to supplement the permit application information requirements of paragraph *40 CFR § 125.95(f)*.

Attachment: N/A

b. Is the facility requesting a waiver from application requirements at *40 CFR § 122.21(r)(4)* in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent?

☐ Yes ☒ No

If **yes**, attach a copy of the most recent managed fisheries report to TPWD, or equivalent.

Attachment: N/A

c. There are no federally listed threatened or endangered species or critical habitat designations within the source water body.

☒ True ☐ False

Item 2. Source Water Biological Data (Instructions, Page 109)

New Facilities (Phase I, Track I and II)

- Provide responses to all items in this section and stop.

Existing Facilities (Phase II)

- If the answer to **1.b.** above was **no**, provide responses to all items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **true**, do not complete any items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **false**, attach a response for any item in this section that is not contained within the most recent TPWD, or equivalent and proceed to Worksheet 11.3.

Attachment: 22 – Source Water Biological Data

a. A list of the data requested at *40 CFR § 122.21(r)(4)(ii)* through *(vi)* that are not available, and efforts made to identify sources of the data.

b. Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.
   - all life stages and their relative abundance,
   - identification of all species and life stages that would be most susceptible to impingement and entrainment,
   - forage base,
   - significance to commercial fisheries,
   - significance to recreational fisheries,
   - primary period of reproduction,
   - larval recruitment, and
   - period of peak abundance for relevant taxa.

c. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the CWIS(s).

d. Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the CWIS(s).

e. Documentation of any public participation or consultation with federal or state agencies undertaken.

The following is required for existing facilities only. Include the following information with the above listed attachment.

f. Identify any protective measures and stabilization activities that have been implemented and provide a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.

g. A list of fragile species, as defined at *40 CFR § 125.92(m)*, at the facility. The applicant need only identify those species not already identified as fragile at *40 CFR § 125.92(m)*.

NOTE: New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 11.3: ENTRAINMENT

This worksheet **is required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: Click to enter text.

Item 1. Applicability (Instructions, Page 111)

Is the AIF of the CWIS identified above greater than, or equal to, 125 MGD?

☐ Yes ☒ No

- If **no** or the facility has selected **CCRS** [*40 CFR § 125.94(c)(1)*] for the impingement mortality compliance method, complete Item 2 and stop here.
- If **yes** and the facility is **seeking a waiver** from application requirements in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent, complete item 2 and stop.
- If **yes** and the facility is **not seeking a waiver** from application requirements in accordance *with 40 CFR § 125.95*, complete item 2 and provide any required and completed studies listed in item 3. For any required studies in item 3 that are not complete, provide a detailed explanation for the delay and an anticipated schedule for completion and submittal.

Item 2. Existing Entrainment Performance Studies (Instructions, Page 111)

Attach any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies.

Attachment: Click to enter text.

Item 3. Facility Entrainment Performance Studies (Instructions, Page 111)

a. Attach an entrainment characterization study, as described at *40 CFR § 122.21(r)(9)*: Click to enter text.

b. Attach a comprehensive feasibility study, as described as *40 CFR § 122.21(r)(10)*: Click to enter text.

c. Attach a benefits valuation study, as described as *40 CFR § 122.21(r)(11)*: Click to enter text.

d. Attach a non-water quality environmental and other impacts study, as described as *40 CFR § 122.21(r)(12)*: Click to enter text.

e. Attach a peer review analysis, as described as *40 CFR § 122.21(r)(13)*: Click to enter text.

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 12.0: OIL AND GAS EXPLORATION, DEVELOPMENT, AND PRODUCTION WASTEWATER DISCHARGES

This worksheet **is required** for all TPDES permit applications that are subject to Effluent Limitation Guidelines in 40 CFR Part 435.

Item 1. Operational Information (Instructions, Page 112)

a. Is the wastewater from an oil and gas exploration, development, or production facility located west of the 98th meridian?

☐ Yes ☐ No

If yes, continue to the next question. If no, skip to Item 2 relating to Production/Process Data.

b. Provide justification for how the wastewater is/will be used for agriculture or wildlife propagation.

Click to enter text.

Item 2. Production/Process Data (Instructions, Page 112)

a. Provide the applicable 40 CFR Part 435 Subpart(s).

Click to enter text.

b. Describe if the permit being sought is for discharges from exploration, development, production, or for a combination of more than one of those activities.

Click to enter text.

c. Provide information on all waste-streams generated and specify which waste-streams you are requesting to be authorized for discharge.

Wastestreams Generated

Wastestream	Requesting authorization to discharge? (Yes/No)	Volume (MGD)	% of Total Flow

d. Describe how the facility will manage wastestreams for which discharge authorization is not being sought.

Click to enter text.

Attachment: Click to enter text.

e. Provide information on miscellaneous discharges.

Click to enter text.

Attachment: Click to enter text.

f. List of chemicals that are in use, or will be used, downhole. Provide the category, concentration used/to be used, and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: Click to enter text.

g. **List of chemicals that are in use, or will be used, to treat the wastewater to be discharged under this authorization. Provide the concentration used/to be used and purpose of using the chemical. Attach a safety data sheet for each chemical listed.**

Water Treatment Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: Click to enter text.

Item 3. Pollutant Analysis (Instructions, Page 113)

Tables 1, 2, 6, and 7 located in Worksheet 2.0 are required. In addition, Table 19 below is required and must be completed for each outfall and submitted with this application. The remaining tables in Worksheet 2.0, are required as applicable.

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): Click to enter text.

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm. **Attachment:** Click to enter text.

d. Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** Click to enter text.

Table 19 for Outfall No.: Click to enter text. **Samples are (check one):** ☐ **Composite** ☐ **Grab**

Pollutant	**Sample 1 (mg/L)***	**Sample 2 (mg/L)***	**Sample 3 (mg/L)***	**Sample 4 (mg/L)***
Calcium				
Potassium				
Sodium				

*Indicate units if different from mg/L.

Cooling Water System Information

1. Narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).

The natural gas cogeneration power plant utilizes a combined heat and power process to generate electricity and capture waste heat to power additional power generation. The cooling water system is crucial in such plants to manage the heat generated during electricity generation and ensure efficient operation of the plant.

Cooling Water Intake Structure:

Purpose: The intake structure draws water from the Lower Neches Valley Authority channel at Raw Water Intake and Raw Water Intake ALT (Figure 1) to provide cooling water for the plant.

Components: The intake structure will be designed to meet quality standards and will include screens and velocity caps to prevent debris and aquatic life from entering the system as discussed in Attachment 15 – Track II Requirements. Engineering Design Requirements for the raw water intake pumps are included in Figure 3.

Cooling Water Circulation:

Water is pumped from the intake structure to the plant's water treatment system before being transferred to heat exchangers or condensers, where it absorbs heat from the turbine exhaust or waste heat from the engine. Heat exchangers transfer heat from the hot process water (from the power generation process) to the cooling water. Condensers condense steam from the turbine back into water using the cooling water as a heat sink. Excess heat is removed via a cooling tower. The tower allows heat exchange between the cooling water and the atmosphere through evaporation and convection. This system reduces the temperature of the cooling water before it is recirculated back to the heat exchangers or condensers. A preliminary overview of the water system is included in Figure 2.

Treatment and Discharge:

Cooling water is treated through chemical treatment and filtration systems to control fouling, corrosion, and biological growth. After absorbing heat from the plant processes, the cooling water is recirculated back into the cooling system. Wastewater from blowdown, maintenance, or general service water will be discharged into the Jefferson County DD7 Canal "D" at Outfall 001.

Annual Operation:

Water temperature in the intake source can vary seasonally, affecting the efficiency of heat exchange. During hotter months, cooling systems may need to work harder to maintain optimal operating temperatures. Regular maintenance of pumps, heat exchangers, condensers, and cooling towers is essential to ensure efficient operation and prolong equipment lifespan. Periodic cleaning of intake screens and monitoring of water quality help prevent fouling and maintain system efficiency. Maintenance activities may result in blowdown and other water discharges creating an increase in make-up water. The cooling water intake structure is directly linked to the plant's cooling water system, providing a continuous supply of make-up water for heat exchange purposes.

2. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.

Figure 1 includes the above information. The position of the intake pipe within the water column has yet to be determined in accordance with Lower Neches Valley Authority intake structure design requirements.

3. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).

Circulating water will be reused and make-up water will be minimized to the extent allowed by process quality.

4. Design and engineering calculations prepared by a qualified professional and data to support the information provided in the technical report.

Cooling Water System Data

Parameter	Volume (include units)	Reference
Total DIF	11.7096 MGD	*Engineering Design Requirements (EDR) for Raw Water Intake Pumps*, Prepared by Kiewit
Total AIF	4.4278 MGD	*Water Mass Balance*, Prepared by Kiewit
Intake Flow Use(s) (%)		*Water Mass Balance*, Prepared by Kiewit
Contact cooling	85	
Non-contact cooling	0	
Process Wastewater	12	
Other	3	

- Figure 1 – *Site Overview*, Prepared by Terracon Consultants, Inc.
- Figure 2 – *Water Mass Balance*, Prepared by Kiewit
- Figure 3 – *Engineering Design Requirements (EDR) for Raw Water Intake Pumps*, Prepared by Kiewit
- Figure 4 – *Engineering Design Requirements (EDR) for Circulating Water Pumps*, Prepared by Kiewit
- Figure 5 - *Circulating Water Quality*, Prepared by Kiewit
- Figure 6 – *Piping and Instrumentation Diagram RWS – Raw Water System*, Prepared by Kiewit

Signature Page (Instructions, Page 33)

Permit No: WQ0005469000

Applicant Name: Motiva Enterprises LLC

Certification: I, Jody Moffett, 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): Jody Moffett

Signatory title: Vice President and General Manager – Port Arthur Refinery

Signature: Jody M. Moffett (Use blue ink) Date: 12/10/24

Subscribed and Sworn to before me by the said Jody Moffett

on this 10th day of December, 2024.

My commission expires on the 07 day of November, 2024.

Amie N. Sonnier
Notary Public

Jefferson
County, Texas

[SEAL]

AMIE N. SONNIER
Notary Public, State of Texas
Comm. Expires 11-07-2025
Notary ID 131343116

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

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 3. Co-applicant Information (Instructions, Page 27)

☐ Check this box if there is no co-applicant.; otherwise, complete the below questions.

a. Legal name of the entity (co-applicant) applying for this permit: Motiva Enterprises LLC

Note: The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

b. Customer Number (if applicant is an existing customer): CN600124051

Note: Locate the customer number using the TCEQ's Central Registry Customer Search.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: Click to enter text. Full Name (Last/First Name): Jody Moffett

Title: Vice President, General Manager - Port Arthur Refinery Click to enter text.

d. Will the co-applicant have overall financial responsibility for the facility?

☐ Yes ☒ No

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 4. Core Data Form (Instructions, Pages 27)

a. Complete one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: 1-Core Data Form (10400)

Item 5. Application Contact Information (Instructions, Page 27)

Provide names of two individuals who can be contact for additional information about this application. Indicate if the individual can be contact about administrative or technical information, or both.

a. ☒ Administrative Contact ☐ Technical Contact

Prefix: Mr. Full Name (Last/First Name): Zeeshan Mahmood

Title: Vice President Infrastructure Investments Credential: Click to enter text.

Organization Name: Fengate Asset Management

Mailing Address: 609 Main St Suite 3525 City/State/Zip: Houston, TX 77002

Phone No: 832 207 0211 Email: zeeshan.mahmood@fengate.com

b. ☒ Administrative Contact ☒ Technical Contact

Prefix: Mr. Full Name (Last/First Name): Alex Brosseau

Title: Vice President Credential: Click to enter text.

Organization Name: Fengate Asset Management

Domestic Sewage Plant/Hauler Name

Plant/Hauler Name	Permit/Registration No.
CITY OF PORT ARTHUR MAIN PLANT	WQ0010364001

Item 8. Improvements or Compliance/Enforcement Requirements (Instructions, Page 45)

a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?

☐ Yes ☒ No

b. Has the permittee completed or planned for any improvements or construction projects?

☐ Yes ☒ No

c. If **yes** to either 8.a **or** 8.b, provide a brief summary of the requirements and a status update: N/A

Item 9. Toxicity Testing (Instructions, Page 45)

Have any biological tests for acute or chronic toxicity been made on any of the discharges or on a receiving water in relation to the discharge within the last three years?

☐ Yes ☒ No

If **yes**, identify the tests and describe their purposes: N/A

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** N/A

Item 10. Off-Site/Third Party Wastes (Instructions, Page 45)

a. Does or will the facility receive wastes from off-site sources for treatment at the facility, disposal on-site via land application, or discharge via a permitted outfall?

☐ Yes ☒ No

If **yes**, provide responses to Items 10.b through 10.d below.

If **no**, proceed to Item 11.

b. Attach the following information to the application:

- List of wastes received (including volumes, characterization, and capability with on-site wastes).
- Identify the sources of wastes received (including the legal name and addresses of the generators).
- Description of the relationship of waste source(s) with the facility's activities.

Attachment: Click to enter text.

ORIGIN ID:NQIA 17139396413
COOLEY, LISA
TERRACON CONSULTANTS INC.
11555 CLAY ROAD, STE100

HOUSTON, TX 77043
UNITED STATES US

SHIP DATE: 11DEC24
ACTWGT: 0.20 LB
CAD: 250518691/WSXI3600

BILL SENDER

TO **LEAH WHALLON**
APPLICATIONS REVIEW & PROCESSING TE
12100 PARK THIRTY FIVE CIR
SUITE MC148
AUSTIN TX 78753
(713) 329-2561

REF: 92247254_0
INV:
PO:
DEPT:

59CJ4/EB78/C6C4

FedEx Express

THU - 12 DEC 5:00P
STANDARD OVERNIGHT

TRK# 0201 **2831 3039 5716**

ASR

A8 MMRA

78753
TX-US **AUS**

Motiva Enterprises LLC
500 Dallas Street
Houston, Texas 77002

Date: 12/13/23

Attention: Greg Calhoun

Fengate Capital Management Ltd.
609 Main Street, Suite 3525
Houston, Texas 77002

Subject: Memorandum of Understanding (MOU)

Dear Greg,

This Memorandum of Understanding ("**MOU**") is effective as of 12/1/23 ("**Effective Date**") between Motiva Enterprises LLC ("**Motiva**") and Fengate Capital Management Ltd. ("**Fengate**"). Motiva and Fengate may be referred to herein individually as a "**Party**" and collectively as the "**Parties.**" This MOU supersedes and replaces the Memorandum of Understanding between the Parties dated December 1, 2021.

1. Background.

Motiva desires for Fengate to design, build, own and operate a Cogeneration Facility ("**Facility**"), which shall deliver at least 320MW of electrical power and at least 1000Mlbs/hr of 1500 psig export steam to Motiva's Port Arthur Manufacturing Complex ("**PAMC**") through a behind-the-meter connection to Motiva's 230kV network and through utility ties for steam and refinery fuel gas (collectively the "**Potential Project**").

The facility is to be constructed on a stabilized plot of approximately 15 acres along the southernmost boundary of PAMC property adjacent to Hwy 82. This location has access to the current route of Motiva's 230kV private transmission lines and is approximately 1 mile from Motiva's existing power stations.

If built, the proposed Facility will be connected to Motiva's existing power stations via utility tie lines for delivery of steam and refinery fuel gas. The lines will be located on elevated piperack (10 ft. above-grade) except at road and railroad crossing which shall be in accordance with Motiva's minimum height and width requirements. The scope and cost of utility ties between the proposed Facility and Motiva's existing power stations shall be considered separately as part of interconnects.

Remaining utility & technical requirements of the proposed Facility will be the responsibility of Fengate as mentioned in Fengate's Proposal dated 12/5/23 (the "Proposal").

2. Purpose.

In consideration of the economic package and value proposition of the Proposal, this MOU signifies the intent of the Parties to negotiate the Power & Steam Sales Agreement and Land Lease, that will

be between the Parties' or their affiliates in connection with the Potential Project ("***Definitive Agreement(s)***") and to further develop the proposed Facility by completing the work specified in Appendix 1 of this MOU for the 2x2x1 with Auxiliary Fired Boiler(s) only ("***MOU Work***"). During the term of this MOU, unless otherwise agreed by the Parties in writing, Fengate shall only perform the MOU Work as set forth in Appendix 1.

Fengate shall perform the MOU Work in accordance with applicable law and the provisions herein and shall be responsible for providing all necessary resources for the proper and timely completion of the MOU Work and shall assume individually all responsibilities for the technical and commercial risks attendant to the MOU Work.

3. No Obligation.

This MOU is legally binding upon execution as to the Parties' limited engagement pursuant to this MOU. However, neither Party, nor any of their respective affiliates, will have any binding obligation with respect to the Potential Project, including any obligation to enter into the Definitive Agreement(s), or any other agreement, by the execution of this MOU. The Parties will not be obligated to the Potential Project until the approval, execution, and delivery of the mutually-acceptable Definitive Agreement(s), which are subject to each Party's sole and absolute discretion and the management approval of each Party.

4. MOU Term.

This MOU shall become effective on the Effective Date and shall terminate upon the earliest of:

(a) the date on which (a) Motiva's economic analysis for the Potential Project is finalized and (b) negotiation of the Definitive Agreement(s) is complete and, subject to receiving necessary approvals, the Definitive Documents are in final form, ready to be signed by the parties;
(b) INTENTIONALLY OMMITED
(c) If after good faith negotiations to update the Reimbursement Cap pursuant to Section 6 there remains a difference of at least [$50,000] between the Revised Cap Amount proposed by Motiva and the Revised Cap Amount proposed by Fengate, then the date the Parties are unable to reach such good faith agreement;
(d) the date on which Motiva terminates this MOU:

(1) for convenience, upon seven (7) days prior written notice to Fengate, without any liability or obligation to Fengate, whether arising in contract, tort, strict liability or otherwise in respect of the Potential Project unless otherwise specifically provided in the MOU;

(2) for breach of contract or for changes in economics, upon seven (7) days prior written notice to Fengate, without any liability or obligation to Fengate, whether arising in contract, tort, strict liability or otherwise in respect of the Potential Project unless otherwise specifically provided in the MOU;

(e) the date on which Fengate terminates this MOU, upon thirty (30) days prior notice to Motiva, notifying Motiva that despite all commercially reasonable efforts, the parties are unable to reach an agreement on the Definitive Agreements, with such determination to be in Fengate's sole discretion; or

(f) December 31, 2024.

The Parties agree to exercise commercially reasonable efforts to (a) negotiate the Definitive Agreement(s) and (b) complete the deliverables within the time frames specified in Appendix 1.

If this MOU is terminated in accordance with Sections 4, then (1) Fengate shall (i) immediately discontinue the MOU Work on the date and to the extent specified in such notice (as applicable); (ii) cooperate with Motiva for the efficient transition of the MOU Work (including, upon Fengate's receipt of all MOU Costs due to Fengate under this MOU, transferring, conveying and assigning to Motiva all of Fengate's right, title and interest in the MOU Work free and clear of any lien or claim and without any restriction on its use so long as all undisputed payments due and owing to Fengate from Motiva pursuant to this MOU have been made by Motiva to Fengate; (iii) take any action that may be necessary or that Motiva may direct, for the protection and preservation of any MOU Work; and (iv) within one business day cause all subcontractors to immediately cease work; and (2) Motiva shall reimburse Fengate for all payments due and owing to Fengate from Motiva pursuant to this MOU through the date of termination (and with respect to MOU Work performed by subcontractors, through the first (1st) business day thereafter). Except as otherwise expressly set forth in clause (ii) above, Fengate's transfer, conveyance and assignment of the MOU Work to Motiva shall be without recourse to Fengate and without representation or warranty by Fengate of any kind, statutory, express or implied, including without limitation any warranty as to accuracy, correctness, mechantability or fitness for purpose, all of which representation and warranties are hereby expressly disclaimed by Fengate.

5. MOU Cost Recovery.

(a) MOU Costs (as defined below) incurred by Fengate and billed to Motiva during each month of the MOU Term will be reimbursed to Fengate by Motiva for that particular month of the MOU Term in accordance with Section 6 below.
(b) (intentionally deleted)
(c) Subject to Section 7 below, in the event of a termination pursuant to Section 4, Motiva's sole liability to Fengate will be payment of any MOU Costs due and owing under Section 6 hereof for MOU Costs not previously reimbursed to Fengate by Motiva.

6. Reimbursement Terms.

As provided in Section 5(a), Motiva will reimburse Fengate for the following costs incurred in performing the MOU Work:

(a) The actual travel costs and expenses incurred in accordance with Fengate internal travel and living expense policies, provided that such costs and expenses are reviewed and approved by Motiva and that Motiva has provided prior written approval for such travel; and
(b) Any reasonable, documented third-party costs incurred by Fengate relating to the Potential Project as contemplated by Appendix 1 (subclauses (a) and (b) collectively, the "***MOU Costs***").

The Parties agree that the maximum reimbursement payable by Motiva for the MOU Costs is one million three hundred thousand and no/100 dollars (**$**1,300,000.00**)** (the "**Reimbursement Cap**"). Any

costs (including MOU Costs) incurred by Fengate in connection with the MOU Work in excess of the Reimbursement Cap shall be to the account of Fengate, except to the extent Motiva approves and agrees in writing to pay such excess costs. If the scope of the Potential Project changes at Motiva's direction during this MOU, the Parties agree to negotiate in good faith an update to the Reimbursement Cap (the "Revised Cap Amount).

Prior to each monthly payment by Motiva to Fengate in accordance with Section 6(a) or 6(b), Fengate will submit a work report detailing expended man hours and an invoice for the actual and reasonable MOU Costs incurred pursuant to this Section 6. Motiva will pay all invoiced amounts within forty-five (45) days of the date such invoice and supporting documentation is received by Motiva; provided that if Motiva disputes any amount set forth in any such invoice, Motiva shall notify Fengate in writing of the dispute setting forth the particulars thereof within forty-five (45) days after receipt of such invoice and Motiva shall pay the undisputed portion within thirty (30) days of Fengate issuing a new invoice for the undisputed amount. Upon receipt of any such dispute notice the Parties shall endeavor in good faith to resolve such dispute within ten (10) business days thereafter and any amount due to Fengate upon resolution of the dispute shall be promptly paid to Fengate pursuant to the invoicing and payment procedures in this Section. Motiva with pay all invoices via electronic funds transfer. Motiva shall have the right to audit the MOU Costs for the MOU Work, at its sole cost and expense at any reasonable time and during normal business hours.

Except as set forth in this Section 6 with respect to the MOU Costs, the Parties agree to be responsible for and bear their own expenses and fees incurred as part of the transactions contemplated under this MOU. Each Party will maintain ownership and control over all of its intellectual property, whether existing prior to this MOU or developed during the term of this MOU; provided that in the event of a termination pursuant to Sections 4, Motiva has the right (subject to any confidentiality obligations specifically set forth herein) to use, modify and copy the MOU Work in connection with development of the Facility or Potential Project (or any modifications or expansions thereto).

7. Exclusivity, Right to Rebid and Break Fee.

(a) During the term of this MOU, the parties agreed to work exclusively with each other, in good faith, on an open book basis to create the lowest cost, highest return project possible for the Proposed Project.
(b) If Motiva cancels the Proposed Project for any reason and within twelve (12) months thereafter proceeds with the Potential Project (or a project substantially similar to the Potential Project) Motiva shall notify Fengate and Fengate shall have a reasonable opportunity to rebid on the Potential Project (or such substantively similar project).
(c) If this MOU is terminated by Motiva pursuant to Section 4(d)(1) then in addition to any MOU Costs owed to Fengate under this MOU, Motiva shall pay Fengate a break fee in the amount of $500,000 (the "Break Fee").
(d) If this MOU is terminated pursuant to Section 4(a), Fengate is thereafter ready, willing, and able to execute the Definitive Document(s) the parties will work together in good faith to enter into agreements that protect the interests of both parties.
(e) The Parties acknowledge and agree that the Break Fee payable pursuant to this Section 7 does not constitute a penalty, and the Parties, having negotiated in good faith for such specific amount and having agreed that such amount is reasonable and appropriate in light of the

anticipated harm caused by Motiva not proceeding with the Potential Project with Fengate and the difficulties of determining Fengate's damages and inconvenience or non-feasibility of obtaining any adequate remedy, and Motiva is hereby estopped from contesting the validity or enforceability of its obligation to pay such Break Fee.

8. INTENTIONALLY DELETED

9. No Amendment or Waiver/Condition Precedent.

Neither the terms and conditions of this MOU nor any negotiations or proposals relating to this MOU or the Potential Project will amend any existing agreements between the Parties unless expressly so stated in a written document executed by the Parties. The rights and remedies of each Party under existing agreements (other than prior MOU), at law, or in equity, will not in any way be waived or modified by this MOU or related negotiations unless expressly so stated in a written document executed by the Parties.

10. Governing Law.

This MOU will be governed by the laws of the State of Texas, without regard to its conflicts of laws principles.

11. Dispute Resolution.

Should any dispute or claim related to or in connection with this MOU arise, senior management of both Parties will meet in an effort to resolve the dispute. If these measures are not successful within fourteen (14) days after a Party notifies the other Party in writing of the dispute at the address set forth herein and requests such meeting, any proceedings related to such dispute shall be finally and exclusively resolved by litigation in a court of competent jurisdiction in Harris County, Texas. **EACH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL ACTION, PROCEEDING, CAUSE OF ACTION, OR COUNTERCLAIM ARISING OUT OF OR RELATING TO THIS MOU, INCLUDING ANY EXHIBITS, APPENDICES AND SCHEDULES ATTACHED TO THIS MOU, OR THE TRANSACTIONS CONTEMPLATED HEREBY.**

12. Confidential Information.

All information provided by either Party to the other Party in connection with this MOU will be governed by the Confidentiality and Nondisclosure Agreement between Fengate and Motiva dated March 31, 2021.

13. Limitation of Liability.

WITHOUT LIMITING FENGATE'S OBLIGATIONS TO PERFORM AND COMPLETE THE MOU WORK AS SET FORTH IN THIS MOU, THE PARTIES ACKNOWLEDGE THAT THERE ARE MANY FACTORS ENTERING INTO A DECISION

OF WHETHER TO EXECUTE THE DEFINITIVE AGREEMENT(S) AND AGREE NEITHER PARTY WILL HAVE ANY LIABILITY FOR REFUSING OR FAILING TO EXECUTE THE DEFINITIVE AGREEMENT(S), IN ITS SOLE DISCRETION, OTHER THAN PAYMENT OF MOU COSTS TO THE EXTENT SET FORTH IN SECTIONS 5 AND 6 OF THIS MOU AND PAYMENT OF THE BREAK-UP FEE AS SET FORTH IN SECTION 7 IF AND TO THE EXTENT APPLICABLE.

NEITHER PARTY WILL BE LIABLE UNDER THIS MOU OR ANY CLAIM RELATED TO THE SUBJECT MATTER OF THIS MOU, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR ANY OTHER CLAIM FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, EXEMPLARY, PUNITIVE, OR SPECIAL DAMAGES, LOSS OF PROFITS (WHETHER DIRECT OR INDIRECT) LOSS OF USE, OR LOSS OF REVENUE INCURRED BY THE OTHER PARTY OR ITS AFFILIATES ARISING FROM OR RELATED TO THIS MOU. FENGATE SHALL HAVE NO LIABILITY TO MOTIVA WITH RESPECT TO THIS MOU AND THE SUBJECT MATTER HEREIN IN EXCESS OF THE AGGREGATE AMOUNT OF MOU COSTS ACTUALLY RECEIVED BY FENGATE, EXCEPT FOR INSURED CLAIMS AND CLAIMS ATTRIBUTABLE TO FRAUD, GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF FENGATE. MOTIVA SHALL HAVE NO LIABILITY TO FENGATE WITH RESPECT TO THIS MOU AND THE SUBJECT MATTER HEREIN IN EXCESS OF THE AGGREGATE AMOUNT OF MOU COSTS DUE TO FENGATE AND, IF APPLICABLE, THE BREAK FEE DUE TO FENGATE, EXCEPT FOR INSURED CLAIMS AND CLAIMS ATTRIBUTABLE TO FRAUD, GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF MOTIVA.

14. Insurance.

During the term of this MOU, Fengate shall, at its sole cost and expense, obtain and maintain, or provide for self-insurance, in force at all times, (i) Workers' Compensation and Employer's Liability Insurance in accordance with applicable laws; (ii) Commercial General Liability Insurance with products liability/completed operations and contractual liability insurance to cover liabilities assumed under this MOU, with minimum limits of $1,000,000 per occurrence; and (iii) Automobile Liability Insurance as required by law. All insurance policies of Fengate required herein shall include waivers of subrogation providing that each insurer shall waive its right of recovery, under subrogation or otherwise, against Motiva. Except for Workers' Compensation and Professional Liability coverage, all required policies shall contain endorsements naming the Motiva as additional insured.

15. No Partnership.

This MOU is not intended to create, and the Parties each expressly disavow the existence of, a partnership, joint venture, agency, or other relationship between them, including any relationship: (i) creating a duty of care, a duty of loyalty, or other fiduciary duties or similar liability, duties, or obligations (whether express or implied) or (ii) that would subject the Parties or their respective affiliates to joint and several or vicarious liability.

16. Amendment.

This MOU can be modified only by written instrument expressly designated as an amendment of this MOU and signed on behalf of each Party by its authorized representatives.

17. Counterparts.

This MOU may be executed in any number of counterparts, and by the Parties on separate counterparts, each of which when executed and delivered will be deemed an original and will be effective for purposes of binding the Parties, but all of which will together constitute one and the same instrument. Delivery of an executed counterpart of a signature page to this MOU by fax or PDF will be deemed to be an original signature for purposes of this MOU and will be binding upon the signatory as an original signature.

18. Assignment.

Neither Party may assign its rights or obligations under this MOU without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed).

19. Notices.

All notices or other communications under the MOU must be in English and in writing, and: (i) delivered by hand; (ii) sent by prepaid courier; (iii) sent by registered post; or (iv) sent by email with confirmation receipt requested. Notices and communications are effective when delivered at the address set forth below.

A. If delivered to Motiva:

Motiva Enterprises LLC
500 Dallas Street
Houston, TX 77002
Attention: Joe Tracy

With copies of legal notices to:

Legal Department, Motiva Enterprises

and

Motiva-Legal@Motiva.com

B. If delivered to Fengate:

Fengate Capital Management Ltd.
609 Main Street, Suite3525
Houston, Texas 77002
Attention: Greg Calhoun
greg.calhoun@fengate.com

With copies of legal notices to:

Fengate Capital Management Ltd.

2275 Upper Middle Road, East,
Oakville, Ontario L6h Oc3
Attention: Steven Sokalsky
Steven.sokalsky@fengate.com

20. Survival.

Section 2, Section 3, the last paragraph of Section 4, Section 5, Section 6, Section 7 and Sections 9 through 15 and this Section 20 will survive the termination or expiration of this MOU.

If this MOU is acceptable to Fengate, please sign where indicated below and return a copy via email to Joe Tracy. (joseph.tracy@motiva.com)

Motiva Enterprises LLC

By: Joseph Tracy
9DAB8E7B7F7C4E0...

Printed Name: Joseph Tracy

Title: Supply Chain

Date: 12/13/2023

FENGATE CAPITAL MANAGEMENT LTD.

By: _____

Printed Name: Greg Calhoun

Title: Managing Director, Infrastructure Investments

Date: December 13, 2023

Appendix 1

Category	Recommended Service Provider	Scope	Kickoff Date	Completion Date	Today Through FEL-3
Owners Engineer	Kiewit	(1) Prepare EPC RFP / Refine Design and Construction Timeline	11/15/23	3/15/24	$324,000
		(2) Review and Analyze EPC RFP Responses / Select EPC Contractor	6/15/24	7/15/24	$210,765
Legal	Locke Lord	(1) Assist with Negotiation of All Commercial Agreements (EPC Contract, Turbine Supply/LTSA, Steam and Power Purchase and Sale Agreement, Lease Agreement, Asset Management/O&M Services/ Contruction Management Agreement, Electric Interconnect, Gas Supply/Transport/Interconnect, Project Financing, All Other Key Project Agreements)	11/15/23	7/15/24	$395,000
		(2) Assist with Interconnection Process / Permitting	11/15/23	7/15/24	$80,000
Development/ Construction/ Commercial Management	AOS Energy Partners	(1) Manage EPC RFP Process (2) Manage Gas Supply Discussions (3) Manage Water Supply Discussions (4) Assist with Interconnect/Permitting Process from Commercial Perspective (5) Manage Asset Management/O&M/Construction Management RFP and Discussions (6) Assist with Commercial Negotiations around All Key Project Agreements (7) Assist with Financial Modeling (8) Oversee Owners' Engineer, Market Consultant and Other Third Party Service Providers	11/15/23	7/15/24	$160,000
Development/ Construction/ Commercial Assistance	TBD - Plan to run RFP and Select by Year End 2023	(1) Assist with EPC RFP Process (2) Work with Owners' Engineer / EPC RFP Developer (3) Assist with EPC Contract Negotiations	11/15/23	7/15/24	$97,500

		(4) Assist with Development Where Necessary			
Other	Various To Be Determined	(1) Tax Review	11/15/23	7/15/24	$10,000
		(2) Interconnect Support	11/15/23	7/15/24	$10,000
Total					**$1,287,265**

End of MOU*

AMENDMENT NO. 1

TO

Motiva-Fengate MOU Dated 12/1/23

THIS AMENDMENT NO. 1 (this "**Amendment**") is made and entered into as of **1/26/24** (the "**Amendment Effective Date**"), by and between Motiva Enterprises LLC, a Delaware limited liability company, whose address is 500 Dallas Street, Houston, Texas 77002 ("**Company**"), and Fengate Capital Management Ltd., an Ontario Corporation, whose address is **609 Main Street, Suite 3525, Houston Texas 77002** ("**Fengate**", and collectively with Company, the "**Parties**", and each, a "**Party**").

WHEREAS, Company and Fengate previously entered into that certain **Memorandum of Understanding** dated effective as of **12/1/23** (as amended from time to time, the "**MOU**"); and

WHEREAS, Company and Fengate now desire to amend the Agreement as set forth in this Amendment.

NOW, THEREFORE, in order to satisfy the purposes of the Parties set forth herein, and for such other good and valuable consideration, the receipt and sufficiency of which are hereby recognized, the Parties agree as follows:

1. Capitalized terms used but not defined in this Amendment have the meanings given to such terms in the MOU.

2. The MOU is amended as follows:

   a. Section 6 – Reimbursement Terms – The Reimbursement Cap is revised from $1,300,000 to $1,370,000.

   b. Appendix 1 is deleted and replace in its entirety with the following:

Category	Recommended Service Provider	Scope	Kickoff Date	Completion Date	Today Through FEL-3
Owners Engineer	Kiewit	(1) Prepare EPC RFP / Refine Design and Construction Timeline	11/15/2023	3/15/2024	$324,000
		(2) Review and Analyze EPC RFP Responses / Select EPC Contractor	6/15/2024	7/15/2024	$210,765
Legal	Locke Lord	(1) Assist with Negotiation of All Commercial Agreements (EPC Contract, Turbine Supply/LTSA, Steam and Power Purchase and Sale Agreement, Lease Agreement, Asset Management/O&M Services/ Contruction Management Agreement, Electric Interconnect, Gas Supply/Transport/Interconnect, Project Financing, All Other Key Project Agreements)	11/15/2023	7/15/2024	$395,000

		(2) Assist with Interconnection Process / Permitting	11/15/2023	7/15/2024	$80,000
Development/ Construction/ Commercial Management	AOS Energy Partners	(1) Manage EPC RFP Process (2) Manage Gas Supply Discussions (3) Manage Water Supply Discussions (4) Assist with Interconnect/Permitting Process from Commercial Perspective (5) Manage Asset Management/O&M/Construction Management RFP and Discussions (6) Assist with Commercial Negotiations around All Key Project Agreements (7) Assist with Financial Modeling (8) Oversee Owners' Engineer, Market Consultant and Other Third Party Service Providers	11/15/2023	7/15/2024	$160,000
Development/ Construction/ Commercial Assistance	TBD - Plan to run RFP and Select by Year End 2023	(1) Assist with EPC RFP Process (2) Work with Owners' Engineer / EPC RFP Developer (3) Assist with EPC Contract Negotiations (4) Assist with Development Where Necessary	11/15/2023	7/15/2024	$97,500
MISO Study	ICF	Market Advisory Service for investment in a nat gas cogen in MISO South	1/25/2024	3/31/2024	$66,000
Other	Various To Be Determined	(1) Tax Review	11/15/2023	7/15/2024	$10,000
		(2) Interconnect Support	11/15/2023	7/15/2024	$10,000
Total					**$1,353,265**

3. The Parties hereby confirm all of the terms and conditions of the MOU, as amended herein, as of the Amendment Effective Date.

4. Sections 10 and 11 of the MOU are incorporated into and made a part of this Amendment by reference, *mutatis mutandis*.

[*Signature Page Follows*]

THIS AMENDMENT NO. 1 is executed by the duly authorized representatives of the Parties effective as of the Amendment Effective Date.

MOTIVA ENTERPRISES LLC

DocuSigned by:

By: Joseph Tracy
9DAB8E7B7F7C4E0...

Name: Joseph Tracy

Title: Authorized Signatory – Supply Chain

Date: 2/21/2024

Fengate Capital Management Ltd.

By: _____

Name: Greg Calhoun

Title: Managing Director

Date: 2/22/2024

No.	Map Cooralated Owner ID	Prop ID	Property Use Code	Property Use	Owner1	Owner1 Address
1	1	264115	D4	UNDEVELOPED OVER 5 AC(NOT AG)	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
2	5	413226	F6	RESERVOIRS	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516
3	1	413233	F6	RESERVOIRS	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
4	5	74113	F5	OPERATING UNITS ACREAGE	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516
5	1	264119	C2	COMMERCIAL, VACANT	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
6	1	264114	D4	UNDEVELOPED OVER 5 AC(NOT AG)	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
7	9	74018	F5	OPERATING UNITS ACREAGE	MOTIVA CHEMICALS LLC	ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727
8	1	264100	F5	OPERATING UNITS ACREAGE	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
9	5	407883	F6	RESERVOIRS	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516
10	5	413227	F6	RESERVOIRS	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516
11	5	413228	F6	RESERVOIRS	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516
12	9	74100	F5	OPERATING UNITS ACREAGE	MOTIVA CHEMICALS LLC	ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727
13	5	74112	D4	UNDEVELOPED OVER 5 AC(NOT AG)	AFTON CHEMICAL ADDITIVES CORP	1000 N SOUTH ST PASADENA TX 77503-2516
14	6	264181	F5	OPERATING UNITS ACREAGE	PREMCOR REFINING GROUP INC THE	ACCOUNTS PAYABLE PO BOX 690110 SAN ANTONIO TX 78269-0110
15	1	264123	D4	UNDEVELOPED OVER 5 AC(NOT AG)	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
16	1	264121	C2	COMMERCIAL, VACANT	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
17	1	264117	C2	COMMERCIAL, VACANT	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
18	1	264116	D4	UNDEVELOPED OVER 5 AC(NOT AG)	MOTIVA ENTERPRISES LLC	PROPERTY TAX DEPARTMENT PO BOX 2727 HOUSTON TX 77252-2727
19	2	92587	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
20	2	92573	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
21	2	92520	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
22	2	92509	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
23	2	92428	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
24	2	92419	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
25	2	92312	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
26	2	92302	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
27	2	92169	CC	VACANT CITY PROPERTY	CITY OF PORT ARTHUR	PO BOX 1089 PORT ARTHUR TX 77641-1089
28	9	74019	D4	UNDEVELOPED OVER 5 AC(NOT AG)	MOTIVA CHEMICALS LLC	ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727
29	3	74336	D4	UNDEVELOPED OVER 5 AC(NOT AG)	TEXACO DOWNSTREAM PROP INC	PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285
30	3	74334	D1	5+ ACRES PASTURE/RANCH	TEXACO DOWNSTREAM PROP INC	PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285
31	3	74401	D1	5+ ACRES PASTURE/RANCH	TEXACO DOWNSTREAM PROP INC	PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285
32	7	74119	CD	VACANT DRAINAGE DIST PROPERTY	JEFFERSON CO DRAINAGE DIST 7	PO BOX 3244 PORT ARTHUR TX 77643-3244
33	4	650238	F5	OPERATING UNITS ACREAGE	COLONIAL PIPELINE COMPANY	1000 LAKE STREET ALPHARETTA GA 30009

PREMCOR REFINING GROUP INC THE
ACCOUNTS PAYABLE
PO BOX 690110 SAN ANTONIO TX 78269-0110

MOTIVA ENTERPRISES LLC
PROPERTY TAX DEPARTMENT
PO BOX 2727
HOUSTON TX 77252-2727

AFTON CHEMICAL ADDITIVES CORP
1000 N SOUTH ST
PASADENA TX 77503-2516

CITY OF PORT ARTHUR
PO BOX 1089
PORT ARTHUR TX 77641-1089

TEXACO DOWNSTREAM PROP INC
PROPERTY TAX DEPT
PO BOX 285
HOUSTON TX 77001-0285

JEFFERSON CO DRAINAGE DIST 7
PO BOX 3244
PORT ARTHUR TX 77643-3244

COLONIAL PIPELINE COMPANY
1000 LAKE STREET
ALPHARETTA GA 30009

MOTIVA CHEMICALS LLC - 74019
ATTN: PROPERTY TAX DEPT PO BOX 2727 HOUSTON TX 77252-2727

TEXACO DOWNSTREAM PROP INC - 74334
PROPERTY TAX DEPT PO BOX 285 HOUSTON TX 77001-0285

Comisión de Calidad Ambiental del Estado de Texas

AVISO DE RECIBO DE LA SOLICITUD Y
EL INTENTO DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA

PERMISO PROPUESTO NO. WQ00_____

SOLICITUD. Port Arthur Cogeneration, LLC, 609 Main Street, Suite 3525, Houston, Texas 77002 ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para el propuesto Permiso No. WQ0005469000 (EPA I.D. No. TX TX0146773) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la descarga de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 1,590,000 galones por día. La planta está ubicada 2555 Savannah Avenue, near the city of Port Arthur en el Condado de Jefferson, Texas. La ruta de descarga es del sitio de la planta a Alligator Bayou luego al Intracoastal Waterway Tidal. La TCEQ recibió esta solicitud el 9 de Octubre, 2024. La solicitud para el permiso estará disponible para leerla y copiarla en la Biblioteca Publica de Port Arthur, 4615, 9th Avenue, Port Arthur, en el condado de Jefferson, Texas 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/tpdes-applications.

Include the following non-italicized sentence if the facility is located in the Coastal Management Program. The Coastal Management Program boundary is the area along the Texas Coast of the Gulf of México as depicted on the map in 31 TAC §503.1 and includes part or all of the following counties: Cameron, Willacy, Kenedy, Kleberg, Nueces, San Patricio, Aransas, Refugio, Calhoun, Victoria, Jackson, Matagorda, Brazoria, Galveston, Harris, Chambers, Jefferson y Orange. El Director Ejecutivo de la TCEQ ha revisado esta medida para ver si está de acuerdo con los objetivos y las regulaciones del Programa de Administración Costero de Texas (CMP) de acuerdo con las regulaciones del Consejo Coordinador de la Costa (CCC) y ha determinado que la acción es conforme con las metas y regulaciones pertinentes del CMP.

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 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.

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. Ademas, puede pedir que la TCEQ ponga su nombre en una or mas 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 especifico. 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 Port Arthur Cogeneration, LLC a la dirección indicada arriba o llamando a Ms. Brita Minin, Terracon Consultants, Inc. al 713-329-2561.

Fecha de emisión _____ *[Date notice issued]*

Leah Whallon

From: Minin, Brita <Brita.Minin@terracon.com>
Sent: Friday, December 20, 2024 11:33 AM
To: Leah Whallon; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC
Attachments: Core Data Form - Motiva Enterprises.pdf

Good Morning,

Please see the attached Core Data Form from Motiva Enterprises.

Thanks, and have a very Merry Christmas!

Brita Minin, GIT
Staff Geologist
Regulatory Compliance I Environmental Services

11555 Clay Road Suite 100 I Houston, Texas 77043
D (713) 329-2561 I M (832) 729-7979 I F (713) 690-8989
beminin@terracon.com I Terracon.com

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Wednesday, December 18, 2024 4:01 PM
To: Minin, Brita <Brita.Minin@terracon.com>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Hi Brita,

Yes, that would be great!

Thanks,

TCEQ Use Only

TCEQ Core Data Form

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

1.1 SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 600124051		**RN**

1.2 SECTION II: Customer Information

4. General Customer Information	**5. Effective Date for Customer Information Updates** (mm/dd/yyyy)	12/18/2024

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

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

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☐ **Yes** ☐ **No**

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

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant
☒ Other: Landowner

15. Mailing Address:								
	City		**State**		**ZIP**		**ZIP + 4**	

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

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*

( ) -		( ) -

1.3 SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

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

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

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

Port Arthur Cogeneration

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	2555 Savannah Ave							
	City	Port Arthur	**State**	TX	**ZIP**	77642	**ZIP + 4**	
24. County	Jefferson							

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

25. Description to Physical Location:	Located inside of the Motiva Enterprrises Refinery				
26. Nearest City			**State**		**Nearest ZIP Code**
Port Arthur			TX		77640

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).

27. Latitude (N) In Decimal:	29.877810°		**28. Longitude (W) In Decimal:**	-93.975859°	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
4911		221112	

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

Electric Power Generation

34. Mailing Address:	**609 Main St Suite 3525**							
	City	**Houston**	**State**	**TX**	**ZIP**	**77002**	**ZIP + 4**	
35. E-Mail Address:	**greg.calhoun@fengate.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(832) 294-8992		( ) -

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

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0005469000			

SECTION IV: Preparer Information

40. Name:	Brita Minin	**41. Title:**	Environmental Consultant

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(713) 329-2561		( ) -	brita.minin@terracon.com

SECTION V: Authorized Signature

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

Company:	Motiva Enterprises LLC	**Job Title:**	Vice President, HSSE
Name *(In Print):*	Brenda J. Allen	**Phone:**	(409) 205- **5030**
Signature:	Brenda J Allen	**Date:**	12/19/24

Leah Whallon

From: Taylor, Tobey <Tobey.Taylor@Motiva.com>
Sent: Friday, December 20, 2024 12:24 PM
To: Leah Whallon; Minin, Brita; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: [EXTERNAL]RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Sorry for the confusion. Here is the requested information:

6. Motiva Enterprises LLC
7. TX SOS: 703846823
8. Tax ID: 17602624904
15. 2555 Savannah Ave.
Port Arthur TX 77640
17. tobey.taylor@motiva.com
18. W: 713-427-3569
C: 281-793-3853

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Friday, December 20, 2024 12:07 PM
To: Taylor, Tobey <Tobey.Taylor@Motiva.com>; Minin, Brita <Brita.Minin@terracon.com>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: [EXTERNAL]RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Good Afternoon,

Can you provide the information from the requested items by email if not by completing the core data form? This won't affect any other permits, we just need it for verification and for the mailing address for this permit. This form is the mechanism we have to request this information.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

From: Taylor, Tobey <Tobey.Taylor@Motiva.com>
Sent: Friday, December 20, 2024 11:57 AM
To: Minin, Brita <Brita.Minin@terracon.com>; Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: Re: [EXTERNAL]RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

> **Caution:** This email may contain suspicious content. Please take care when clicking links or opening attachments. When in doubt, contact the TCEQ Help Desk.

Brita is correct. None of that information is changing for our CN. The Core Data Form instructions indicated to only fill out the sections with new or updated info.

Tobey Taylor
Motiva HSE

From: Minin, Brita <Brita.Minin@terracon.com>
Sent: Friday, December 20, 2024 11:49:33 AM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; zeeshan.mahmood@fengate.com <zeeshan.mahmood@fengate.com>
Cc: alex.brosseau@fengate.com <alex.brosseau@fengate.com>; Taylor, Tobey <Tobey.Taylor@Motiva.com>
Subject: [EXTERNAL]RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

I am looping in Tobey Taylor from the Motiva team. The sections were intentionally omitted to prevent altering any existing information regarding the Motiva regulated entities or the established customer information for Motiva Enterprises, which is not connected to the permitting of this project. I believe this was of concern to the Motiva representatives.

Tobey feel free to correct me or to respond with your input.

Brita Minin, GIT
Staff Geologist
Regulatory Compliance I Environmental Services

Terracon
11555 Clay Road Suite 100 I Houston, Texas 77043
D (713) 329-2561 I M (832) 729-7979 I F (713) 690-8989
beminin@terracon.com I Terracon.com

Please consider the environment before printing this email

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Friday, December 20, 2024 11:42 AM
To: Minin, Brita <Brita.Minin@terracon.com>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Thank you, Brita.

It looks like Section II is not completed, which is the information we need especially items 6-8, 15, 17, 18. Can you please complete these items in Section II?

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

From: Minin, Brita <Brita.Minin@terracon.com>
Sent: Friday, December 20, 2024 11:33 AM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; zeeshan.mahmood@fengate.com
Cc: alex.brosseau@fengate.com
Subject: RE: Application for Proposed Permit No. WQ0005469000; Port Arthur Cogeneration, LLC

Good Morning,

Please see the attached Core Data Form from Motiva Enterprises.

Thanks, and have a very Merry Christmas!

Brita Minin, GIT
Staff Geologist
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