Region 14

COPY

GCGV Asset Holding LLC
TPDES Permit Application 2017

RN109754390
WQ0005228000
10975373l

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WATER QUALITY DIVISION
Applications Team

5228000

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TCEQ
FIELD OPS/REGION 14

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TCEQ INDUSTRIAL WASTEWATER PERMIT APPLICATION

INDUSTRIAL ADMINISTRATIVE REPORT

Complete and submit this checklist with the application.

APPLICANT: GCGV Asset Holding LLC

PERMIT NUMBER: New permit - to be assigned

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

	Y	N		Y	N
Administrative Report 1.0	◉	○	Worksheet 7.0	◉	○
Administrative Report 1.1	◉	○	Worksheet 8.0	○	◉
SPIF	◉	○	Worksheet 9.0	○	◉
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Worksheet 1.0	◉	○	Worksheet 11.0	◉	○
Worksheet 2.0	◉	○	Original USGS Map	◉	○
Worksheet 3.0	○	◉	Affected Landowners Map	◉	○
Worksheet 3.1	○	◉	Landowner Disk or Labels	◉	○
Worksheet 3.2	○	◉	Flow Diagram	◉	○
Worksheet 3.3	○	◉	Site Drawing	◉	○
Worksheet 4.0	◉	○	Original Photographs	◉	○
Worksheet 4.1	○	◉	Solids Management Program	○	◉
Worksheet 5.0	○	◉	Water Balance	◉	○
Worksheet 6.0	○	◉			

For Commission Use Only:
Segment Number: _____ County: _____ Expiration Date: _____
Proposed/Current Permit Number: 5228000 Region: _____

INDUSTRIAL ADMINISTRATIVE REPORT 1.0

The following information **is required** for **all** applications—renewals, new, and amendments.

1. TYPE OF APPLICATION AND FEES(Instructions, Page 21)

Permit No.: **New permit - to be assigned**

EPA ID No.: **New permit - to be assigned**

- (●) New TPDES permit
- ( ) Major Amendment with Renewal
- ( ) Renewal of existing permit
- ( ) Minor Amendment to permit
- ( ) New TLAP
- ( ) Major Amendment without Renewal
- ( ) Stormwater only discharge
- ( ) Minor modification to permit

If applying for an **amendment** or modification of a permit, please describe the request in detail.

N/A - This is a new permit application.

Please indicate by a check mark the amount submitted for the application fee:

EPA Classification	New	Major Amendment (With or Without Renewal)	Renewal Only	Minor Amendment/ Minor Modification
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 *	☐ $2,050	☐ $2,015	☐ $450

* All facilities are designated as minors until formally classified as a major by EPA.

Payment Information: **See Attachment A-4 Copy of Application Fee Payment.**

Mailed Check or Money Order Number: **6196**

Check or Money Order Amount: **$1,250.00**

Named Printed on Check or Money Order: **Tischler/Kocurek**

EPAY Voucher Number: _____

Copy of Voucher Enclosed? ☐ Yes

Attachment No.: _____

2. APPLICANT INFORMATION (Instructions, Pages 21-24)

a. Facility Owner

(Owner of the facility must apply for the permit.)

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

GCGV Asset Holding LLC

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

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

CN: **to be assigned**

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

First/Last Name: **William H. Cheek**

Title: **President** Credential:

What is the applicant's mailing address as recognized by the US Postal Service (USPS)? You may verify the address on the USPS website at https://tools.usps.com/go/ZipLookupAction!input.action.

Organization Name: **GCGV Asset Holding LLC**

Mailing Address: **22777 Springwoods Village Parkway**

City: **Spring** State: **TX** ZIP Code: **77389**

Phone No.: **832-625-4775** Extension:

Fax No.: **832-625-2544** E-mail Address: **bill.cheek@exxonmobil.com**

Indicate the type of customer:

- ☐ Individual*
- ☐ Limited Partnership
- ☐ Trust
- ☐ Federal Government
- ☐ County Government
- ☐ Other Government
- ☐ Sole Proprietorship-D.B.A.
- ☐ Corporation
- ☐ Estate
- ☐ State Government
- ☐ City Government
- ☑ Other **LLC**

* if the customer type selected is **Individual**, complete **Attachment 1**.

Independent entity

- ☑ Yes
- ☐ No (If governmental entity, subsidiary, or part of a larger corporation)

Number of Employees

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☑ 501 or higher

Customer Business Tax and Filing Numbers

(Not applicable to individuals, governments, general partnerships or sole proprietors. **Required** *for corporations and limited partnerships.)*

State Franchise Tax ID Number: **32061311067**

TX SOS Charter (filing) Number: **802522337**

b. Co-applicant Information

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

N/A

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

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

CN: _____

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

First/Last Name: _____

Title: _____ Credential: _____

Provide a brief description of the need for a co-permittee:

What is the applicant's mailing address as recognized by the US Postal Service (USPS)? You may verify the address on the USPS website at https://tools.usps.com/go/ZipLookupAction!input.action.

Organization Name: _____

Mailing Address: _____

City: _____ State: _____ ZIP Code: _____

Phone No.: _____ Extension: _____

Fax No.: _____ E-mail Address: _____

Indicate the type of customer:

- ☐ Individual*
- ☐ Limited Partnership
- ☐ Trust
- ☐ Federal Government
- ☐ County Government
- ☐ Other Government
- ☐ Sole Proprietorship-D.B.A.
- ☐ Corporation
- ☐ Estate
- ☐ State Government
- ☐ City Government
- ☐ Other: _____

* If the customer type selected is **Individual**, complete **Attachment 1**.

Independent entity

☐ Yes

☐ No (If governmental entity, subsidiary, or part of a larger corporation)

Number of Employees

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 or higher

Customer Business Tax and Filing Numbers

(Not applicable to individuals, governments, general partnerships or sole proprietors. **Required** for corporations and limited partnerships.)

State Franchise Tax ID Number: _____

TX SOS Charter (filing) Number: _____

3. APPLICATION CONTACT INFORMATION (Instructions, Page 24)

If the TCEQ needs additional information regarding this application, who should be contacted?

a. First/Last Name: **John E. Groneck**

Title: **Permitting / Environmental Advisor** Credential: _____

Organization Name: **GCGV Asset Holding LLC**

Mailing Address: **22777 Springwoods Village Parkway**

City: **Spring** State: **TX** ZIP Code: **77389**

Phone No.: **832-624-9618** Extension: _____

Fax No.: **832-625-2544** E-mail Address: **john.e.groneck@exxonmobil.com**

Check one or both: ☑ Administrative Contact ☑ Technical Contact

b. First/Last Name: **Shawn E. Simmons, Ph.D.**

Title: **SSHE Manager** Credential: _____

Organization Name: **GCGV Asset Holding LLC**

Mailing Address: **22777 Springwoods Village Parkway**

City: **Spring** State: **TX** ZIP Code: **77389**

Phone No.: **832-624-0583** Extension: _____

Fax No.: **832-625-2544** E-mail Address: **shawn.e.simmons@exxonmobil.com**

Check one or both: ☑ Administrative Contact ☑ Technical Contact

Attachment: **N/A**

4. PERMIT CONTACT INFORMATION (Instructions, Page 24)

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

a. First/Last Name: William H. Cheek
Title: President Credential:
Organization Name: GCGV Asset Holding LLC
Mailing Address: 22777 Springwoods Village Parkway
City: Spring State: TX ZIP Code: 77389
Phone No.: 832-625-4775 Extension:
Fax No.: 832-625-2544 E-mail Address: bill.cheek@exxonmobil.com

b. First/Last Name: Bruce D. Lilly
Title: Manufacturing Manager Credential:
Organization Name: GCGV Asset Holding LLC
Mailing Address: 22777 Springwoods Village Parkway
City: Spring State: TX ZIP Code: 77389
Phone No.: 832-625-4774 Extension:
Fax No.: 832-625-2544 E-mail Address: bruce.d.lilly@exxonmobil.com

5. BILLING CONTACT INFORMATION(Instructions, Page 24)

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

Is the billing address the same as the ☐ permittee or ☐ co-applicant?

If neither, fill out this section.

First/Last Name: Bruce D. Lilly
Title: Manufacturing Manager Credential:
Organization Name: GCGV Asset Holding LLC
Mailing Address: 22777 Springwoods Village Parkway
City: Spring State: TX ZIP Code: 77389
Phone No.: 832-625-4774 Extension:
Fax No.: 832-625-2544 E-mail Address: bruce.d.lilly@exxonmobil.com

6. DMR/MER CONTACT INFORMATION (Instructions, Page 25)

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

First/Last Name: Bruce D. Lilly

Title: Manufacturing Manager Credential:

Organization Name: GCGV Asset Holding LLC

Mailing Address: 22777 Springwoods Village Parkway

City: Spring State: TX ZIP Code: 77389

Phone No.: 832-625-4774 Extension:

Fax No.: 832-625-2544 E-mail Address: bruce.d.lilly@exxonmobil.com

You can submit DMR data on the TCEQ website at https://www.tceq.texas.gov/field/netdmr/netdmr.html. Establish an electronic reporting account with the permit number.

7. NOTICE INFORMATION (Instructions, Pages 25-26)

a. Individual Publishing the Notices

First/Last Name: Walt F. Buchholtz

Title: Public & Government Affairs Manager Credential:

Organization Name: GCGV Asset Holding LLC

Mailing Address: 22777 Springwoods Village Parkway

City: Spring State: TX ZIP Code: 77389

Phone No.: 832-625-3757 Extension:

Fax No.: 832-625-2544 E-mail Address: walt.f.buchholtz@exxonmobil.com

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

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

- ☑ E-mail Address: walt.f.buchholtz@exxonmobil.com
- ☐ Fax No.:
- ☐ Overnight/Priority mail: (self-addressed, prepaid envelope required)
- ☐ Regular Mail:

  Mailing Address:

  City: State: ZIP Code:

  Phone No.: Extension:

c. Contact in the Notice

First/Last Name: **Walt F. Buchholtz**

Title: **Public & Government Affairs Manager** Credential: _____

Organization Name: **GCGV Asset Holding LLC**

Phone No.: **832-625-3757** Extension: _____

Fax No.: **832-625-2544** E-mail Address: **walt.f.buchholtz@exxonmobil.com**

d. Public Place Information

If the facility or outfall is located in more than one county, a public viewing place for each county must be provided. **2nd library location for Nueces County:**
La Retama Central Library, 805 Comanche Street, Corpus Christi, TX 78401, Nueces County, 361-826-7055.

Public building name: **Bell Whittington Public Library**

Location within the building: **N/A**

Physical Address of Building: **2400 Memorial Parkway**

City: **Portland** County: **San Patricio**

Contact Name: **N/A**

Phone No.: **361-777-0921** Extension: **N/A**

e. Bilingual Notice Requirements:

This information **is required** for **new, major amendment, and renewal applications**. It is not required for minor amendment or minor modification applications.

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

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

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

   ☐ Yes ☑ No

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

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? _____

8. REGULATED ENTITY AND PERMITTED SITE INFORMATION (Instructions Pages 26-29)

If the site of your business 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 at http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=regent.RNSearch to determine the RN or to see if the larger site may already be registered as a regulated site:

If the site is found, provide the assigned Regulated Entity Number and provide the information for the site to be authorized through this application below. The site information for this authorization may vary from the larger site information.

TCEQ issued Regulated Entity Number (RN): **RN** to be assigned

a. State/TPDES Permit No.: to be assigned Expiration Date: N/A

EPA Identification No. (TPDES Permits only): TX to be assigned

b. Name of project or site (the name known by the community where located):
GCGV Asset Holding LLC

c. Is the facility located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County? If yes, additional information concerning protection of the Edwards Aquifer may be required.

☐ Yes ☑ No

d. Is the location of the facility used in the existing permit correct?

☐ Yes ☐ No

N/A - New permit application

Does the site have a physical address?

☐ Yes ☑ No

If **yes**, complete Section A.

If **no** (the location description is not accurate or this is a new permit application), complete Section B.

Section A: Enter the physical address for the site or project.

Verify the address on the USPS website at https://tools.usps.com/go/ZipLookupAction!input.action. If the address is not recognized as a delivery address, provide the address as identified for overnight mail delivery, 911 emergencies, or other online map tool to confirm an address.

Street Number: _____ Street Name: No address

City: _____ ZIP Code: _____

Section B: Enter the location information for the site or project.

Provide a written location description of the site or project (example: located 2 miles west from intersection of Highway 290 and IH35, accessible from Highway 290 South):

Located on the south side of State Highway 181 and the west side of Farm-to-Market Road 2986, approximately one mile west of the City of Gregory, San Patricio County, Texas 78359

e. City where site is located or, if not in a city, the nearest city: Gregory, TX

f. ZIP Code where site is located: **78359**

g. County or counties where site is located: **San Patricio**

h. Site Latitude: **27°55'51"N** Longitude: **97°19'22"W**

i. In your own words, briefly describe the primary business of the Regulated Entity (do not repeat the SIC and NAICS code):

Organic chemicals and polymer manufacturing

j. Owner of treatment facility: **GCGV Asset Holding LLC**

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

k. Owner of land where treatment facility is or will be: **GCGV has a legally binding option to purchase the property for the proposed project. TCEQ attorneys have indicated that this would suffice for the TPDES application.**

First/Last Name:

Mailing Address:

City: State: ZIP Code:

Phone No.: E-mail Address:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years. In some cases, a lease may not suffice - see instructions.

Attachment No.:

N/A l. Owner of effluent disposal site:

First/Last Name:

Mailing Address:

City: State: ZIP Code:

Phone No.: E-mail Address:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years.

Attachment No.:

N/A m. Owner of sewage sludge disposal site:

First/Last Name:

Mailing Address:

City: State: ZIP Code:

Phone No.: E-mail Address:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years.

Attachment No.:

(This information is required only if authorization is sought in the permit for sludge disposal on property owned or controlled by the applicant.)

9. DISCHARGE/ DISPOSAL INFORMATION (Instructions, Pages 29-31)

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

☐ Yes ☑ No

b. Provide an **original** full size USGS Topographic Map with all required information. Indicate by a check mark that the following information is provided. **See Attachment A-1, USGS Map.**

☑ Applicant's property boundary
☑ Treatment facility boundaries
☑ Labeled point(s) of discharge and highlighted discharge route(s)
N/A ☐ Sewage sludge disposal site
N/A ☐ Effluent disposal site boundaries
☑ New and future construction
☑ One-mile radius and three-miles downstream information
☑ All ponds

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

☐ Yes ☐ No

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

N/A - This is a new permit application, which does not include a request for sewage sludge disposal.

N/A d. Are the point(s) of discharge and the discharge route(s) in the existing permit correct?

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description:

Outfall 001 - Via a submerged pipe into La Quinta Channel, thence to the Corpus Christi Bay in Segment No. 2481 of the the Bays and Estuaries
Outfalls 002 and 003 - To drainage ditches, thence to Copano Bay in Segment No. 2472 of the Bays and Estuaries
Outfalls 004 and 005 - To drainage ditches, thence to Green Lake Ditch, thence to Green Lake, thence to the Corpus Christi Bay in Segment No. 2481 of the the Bays and Estuaries

e. City nearest the outfall(s): **Outfall 001 (Portland, TX), Outfalls 002-005 (Gregory, TX)**

f. County in which the outfalls(s) is/are located: **Outfall 001 (Nueces County) Outfalls 002-005 (San Patricio County)**

g. Outfall Latitude: **Multiple outfalls, see Technical Report, pg. 6** Longitude: ———

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

Project requirements were discussed with the San Patricio County Drainage District (SPCDD) and its drainage consultant, Hanson Professional Services, in November 2016. Information required to be submitted for authorizations was identified. Since early 2016, GCGV has had discussions with the Port of Corpus Christi Authority (PCCA) regarding project requirements including the wastewater discharge line route through PCCA-held land and into Corpus Christi Bay.

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

☐ Authorization granted ☑ Authorization pending

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

Attachment No.: **See above note.**

i. 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.
For Outfall 001, counties along the coastal shoreline within 100 miles of the discharge point: north of the discharge point (San Patricio, Aransas, Refugio, Calhoun, Jackson, Matagorda) and south of the discharge point (Nueces, Kleberg, Kenedy, Willacy).

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

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description:

N/A

k. City nearest the disposal site: **N/A**

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

m. Disposal Site Latitude: **N/A** Longitude: **N/A**

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

N/A

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

N/A

10. MISCELLANEOUS INFORMATION (Instructions, Page 32)

a. List each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application:

None

b. Do you owe any fees to the TCEQ?

☐ Yes ☑ No

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

Account number: _____ Amount past due: _____

c. Do you owe any penalties to the TCEQ?

☐ Yes ☑ No

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

Enforcement order number: _____ Amount past due: _____

11. SIGNATURE PAGE (Instructions, Page 32)

Permit Number: New permit - to be assigned

Applicant: GCGV Asset Holding LLC

Certification:

I,

Typed or printed name William H. Cheek Title President

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.

Signature: Wil Cheek Date: 4/12/17

(Use blue ink)

Subscribed and Sworn to before me by the said William H. Cheek

on this 12th day of April, 20 17.

My commission expires on the 10th day of December, 20 17.

Notary Public Christina L. Juckes

Harris County, Texas

SEAL CHRISTINA L. JUCKES MY COMMISSION EXPIRES December 10, 2017

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

INDUSTRIAL ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

1. AFFECTED LANDOWNER INFORMATION (Instructions, Pages 33-35)

a. Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable. **See Attachment A-2-1, Adjacent Landowner Map.**

- ☑ The applicant's property boundaries
- ☑ The facility site boundaries within the applicant's property boundaries
- N/A ☐ 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
- N/A ☐ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
- N/A ☐ The property boundaries of all landowners surrounding the applicant's property boundaries where the effluent disposal site is located
- N/A ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
- N/A ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located

b. Indicate by a check mark in which format the landowners list is submitted: **See Attachment A-2-2, Adjacent Landowner List.**

☑ Readable/Writeable CD ☐ Four sets of labels
See Attachment A-2-3 (landowner list in mailing label format on CD).

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

d. Provide the source of the landowners' names and mailing addresses: **San Patricio County Appraisal District Nueces County Appraisal District**

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

☐ Yes ☑ No **See Attachment A-2-4, PSFL Map.**

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

N/A

2. ORIGINAL PHOTOGRAPHS (Instructions, Page 35)

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

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

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

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

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

See Attachment A-3, Photos of Outfall and Treatment System Locations.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

FOR AGENCIES REVIEWING 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 36)

The SPIF must be completed as a separate document. The TCEQ will mail a copy of the SPIF to each agency as required by the TCEQ agreement with EPA. If any of the items are not completely addressed or further information is needed, you will be contacted to provide the information before the permit is issued. Each item must be completely addressed.

Do not refer to a response of any item in the permit application form. Each attachment must be provided with this form separately from the administrative report of the application. The application will not be declared administratively complete without this form being completed in its entirety including all attachments.

The following applies to all applications:

1. Permittee: **GCGV Asset Holding LLC**
2. Permit No. WQ00**New permit - to be assigned** EPA ID No. TX **New permit - to be assigned**
3. Address of the project (location description that includes street/highway, city/vicinity, and county): **Located on the south side of State Highway 181 and the west side of Farm-to-Market Road 2986, approximately one mile west of the City of Gregory, San Patricio County, Texas 78359**
4. Provide the name, address, phone and fax number of an individual that can be contacted to answer specific questions about the property.

   Name: **Chrissie P. Vandevere**

   Company: **Project Engineer**

   Phone number: **832-625-5185** Fax number: **832-625-2544**

   Mailing address: **22777 Springwoods Village Parkway**

   City: **Spring** State: **TX** Zip code: **77389**

   E-mail: **chrissie.p.vandevere@exxonmobil.com**

5. List the county in which the facility is located: **San Patricio**

6. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

   N/A

7. 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.

   Outfall 001 - Via a submerged pipe into La Quinta Channel, thence to the Corpus Christi Bay in Segment No. 2481 of the the Bays and Estuaries Outfalls 002 and 003 - To drainage ditches, thence to Copano Bay in Segment No. 2472 of the Bays and Estuaries Outfalls 004 and 005 - To drainage ditches, thence to Green Lake Ditch, thence to Green Lake, thence to the Corpus Christi Bay in Segment No. 2481 of the the Bays and Estuaries

8. 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). **See Attachment SPIF-1, USGS Map.**
   The USGS map also serves as the general location map.

9. Provide original photographs of any structures 50 years or older on the property.
   See Attachment SPIF-2, Historic Resources Survey.

10. 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 **No known impacts at this time to the best of our knowledge.**

    ☑ Disturbance of vegetation or wetlands

    Also see Item 11 below, proposed construction impact.

11. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features): **The proposed project is a chemical manufacturing complex encompassing 1,370 acres. Proposed construction will include process equipment and infrastructure, utility service lines and equipment, storage facilities, structural foundations, road improvements, paving, fencing, railroad and truck loading/unloading facilities, wastewater and waste management systems, and ancillary buildings/facilities for operations and personnel.**

12. Describe existing disturbances, vegetation and land use:
    The land is currently agricultural cropland. Several residential dwellings and two oil/gas wells exist onsite.

THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

13. List construction dates of all buildings and structures on the property:

    See Attachment SPIF-2, Historic Resources Survey.

14. Provide a brief history of the property, and name of the architect/builder, if known

    See Attachment SPIF-2, Historic Resources Survey.

TECHNICAL REPORT 1.0
INDUSTRIAL

This application form is for an industrial wastewater discharge authorization only. Your facility may need additional authorizations from the TCEQ Waste Permitting Division or the TCEQ Air Permitting Division.

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

1. FACILITY/SITE INFORMATION (Instructions, Pages 38-39)

a. Describe the type of activity and general nature of your business.

The proposed facility will be a chemical manufacturing complex, producing ethylene, monoethylene glycol, and polyethylene.

b. SIC Code(s): **2821** , **2869** , _____ , _____

NAICS Code(s): **325211** , **325110** , **325199** , _____

c. Describe the wastewater-generating processes.

See Attachment T-1, Facility Description, Wastewater and Storm Water Systems.

d. Provide a list of raw materials, major intermediates, and products handled at your facility.

Materials List

Raw Materials	Intermediate Products	Final Products
Natural gas [74-82-8]	Ethylene [74-85-1]	Ethylene [74-85-1]
Ethane [74-84-0]		Monoethylene glycol [107-21-1]
		Polyethylene [9002-88-4]
		Pyrolysis gasoline
Note: Also see Attachment T-1, Facility Description, Table 2 - Raw Materials, Intermediates, and Products.		

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

- Production areas, maintenance areas, materials-handling areas, and waste-disposal areas
- The location of each unit of the wastewater treatment plant including the location of wastewater collection sumps, impoundments, and outfalls (also include locations of sampling points if significantly different from outfall locations)

Attachment: **See Attachment T-1, Facility Description, Overall Plot Plan**

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

☐ Yes ☑ No

If **yes**, provide background discussion below.

N/A

g. Is the treatment facility/disposal site located above the 100-year frequency flood level?

☑ Yes ☐ No

List source(s) used to determine 100-year frequency flood plain:

FEMA Map No. 48409C0440E (Effective date: November 4, 2016)
FEMA Map No. 48409C0450E (Effective date: November 4, 2016)

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are in use or planned to be used to prevent flooding of the treatment facility/disposal area.

N/A

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

☑ Yes ☐ No

If **no**, proceed to Item 2.

i. If **yes** to the above question, has the applicant applied for a U.S. Army Corps of Engineers 404 Dredge and Fill permit?

☐ Yes ☑ No

If **yes**, provide the permit number: **It is proposed to pipe the Outfall 001 effluent from the project site for discharge into the La Quinta Channel. The discharge pipe/diffuser would be attached to a proposed dock for the project, to be constructed at the Port of Corpus Christi at the San Patricio Turning Basin. Dredging associated with the construction will be authorized under USACE permit SWG-2001-02261 held by the Port of Corpus Christi Authority. No areas within the project property itself have been identified as subject to USACE jurisdiction.**

If **no**, provide the approximate date you anticipate submitting your application to the Corps:

N/A

2. TREATMENT SYSTEM (Instructions, Page 39)

a. List any physical, chemical, or biological treatment process that you use for the treatment of wastewater at your facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

See Attachment T-1, Facility Description, Wastewater and Storm Water Systems, Outfall 001.

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

Attachment: **See Attachment T-1, Facility Description, Figure 1-Wastewater Flow Diagram and Table 1-Wastewater Sources and Flows by Outfall.**

3. IMPOUNDMENTS (Instructions, Pages 39-42)

Do you use or plan to use any wastewater lagoons, ponds, or impoundments?

☑ Yes ☐ No

If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a-3.h** for **new or proposed** impoundments. If **no**, proceed to Item 4.

Please note: Surface impoundments may also require additional authorizations from the TCEQ Waste Permit Division.

a. Provide the following information in the table provided:

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

Associated Outfall Number: If a discharge occurs from the impoundments, designate the outfall associated with the impoundment.

Liner Type: If the impoundments are lined to comply with specifications outlined for 1) a compacted clay liner (C), 2) an in-situ clay liner (I), or 3) a synthetic/plastic/rubber liner (S), indicate the liner type with the appropriate letter designation **(see instructions for further detail on liner specifications)**. If not, provide a reference to the attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

Dimensions: Provide the dimensions, freeboard, surface area, and storage capacity of the impoundments. For impoundments with irregular shapes, submit surface area (instead of length and width), the average depth, and the maximum depth below natural ground level.

*Physical dimensions that are provided in the table below are preliminary. Final dimensions and other table information can be provided when final design is complete.

Impoundment Information

Parameter	Wastewater Effffluent Pond	Outfall 002 Storm Water Pond	Outfall 004 Storm Water Pond	Outfall 005 Storm Water Pond
	Pond # 1	Pond # 2	Pond # 3	Pond # 4
Use Designation: (T) (D) (C) or (E)	C/T	C	C	C
Associated Outfall Number	001	002	004	005
Liner Type (C) (I) or (S)	Liner construction plans will be submitted when design of the impoundments are finalized. Liner design will be consistent with technical specifications in TPDES permits.			
Alt. Liner Attachment Reference				
Length (ft) *	425	irregular	irregular	irregular
Width (ft) *	250	irregular	irregular	irregular
Depth from Water Surface (ft) *	4	6	3	3
Avg Depth from Nat. Ground Level (ft)	*	*	*	*
Max Depth from Nat. Ground Level (ft)	*	*	*	*
Freeboard (ft)	*	*	*	*
Surface Area (acres) *	2.4	24.9	29.6	24.6
Storage Capacity (gallons) *	3,200,000	48,700,000	28,900,000	24,000,000
Compliance with 40 CFR Chapter 257, Subpart D is required.	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Impoundment Information

Parameter	Pond #	Pond #	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)				
Associated Outfall Number				
Liner Type (C) (I) or (S)				
Alt. Liner Attachment Reference				
Length (ft)				
Width (ft)				
Depth from Water Surface (ft)				
Avg Depth from Nat. Ground Level (ft)				
Max Depth from Nat. Ground Level (ft)				
Freeboard (ft)				
Surface Area (acres)				
Storage Capacity (gallons)				
Compliance with 40 CFR Chapter 257, Subpart D is required.	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

The following information (b - h) is required only for **new or proposed** impoundments.

b. Indicate by a check mark if any of the following data was provided with the application:

☐ Compacted clay liner data

☐ Synthetic/plastic/rubber liner data

☐ In-situ clay liner data

Attachment: **Liner construction plans will be submitted when design of the impoundments are finalized. Liner design will be consistent with technical specifications in TPDES permits.**

c. Are there any leak detection systems or groundwater monitoring wells in place or planned?

☐ Yes ☐ No

If **yes**, attach information on the leak detection system for each pond and groundwater monitoring well data.

Attachment: **Liner construction plans will be submitted when design of the impoundments are finalized. Liner design will be consistent with technical specifications in TPDES permits.**

d. Is the bottom of the pond above the seasonal high water table in the shallowest waste-bearing zone?

☐ Yes ☐ No **See Attachment T-4, Soil Borings. The bottom elevation for each impoundment will be determined when construction designs are finalized.**

If **no**, attach additional information describing the depth of the seasonal high water table in the shallowest waste-bearing zone in relation to the depth of the bottom of the new or proposed impoundment and how this may or may not impact groundwater.

Attachment: **Construction plans will be submitted when design of the impoundments are finalized.**

e. Attach a USGS quadrangle map or a color copy of original quality and scale which accurately locates and identifies water supply wells and monitor wells within ½ mile radius of the impoundments

Attachment: **See Attachment T-3, Water Well Report.**

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

Attachment: **See Attachment T-3, Water Well Report.**

N/A g. For TLAP permit applications: Are new or proposed impoundment(s) and the land application disposal area are located in the same general area?

☐ Yes ☐ No

If **yes**, provide information for this item in Worksheet 3.0 (Item 5).

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

Attachment: **See Attachment T-4, Soil Borings**

4. OUTFALL/DISPOSAL METHOD INFORMATION (Instructions, Pages 42-43)

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

For TLAP permit 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" designation (e.g. "E1" for evaporation pond 1, "I2" for irrigation area No. 2, etc.).

Outfall Latitude and Longitude

Outfall Number	Latitude-degrees	Latitude-minutes	Latitude-seconds	Longitude-degrees	Longitude-minutes	Longitude-seconds
001	27	52	41.97 N	97	17	11.54 W
002	27	56	34.91 N	97	19	50.93 W
003	27	56	18.10 N	97	19	17.92 W
004	27	55	45.73 N	97	18	17.31 W
005	27	55	01.48 N	97	18	46.68 W
Note: Outfall latitudes and longitudes are approximate, pending final construction. Locations for internal outfalls 101, 201, and 301 will be determined in final construction design.						

Outfall Location Description

Outfall Number	Location Description
001	At the diffuser into La Quinta Channel
002	At the drainage ditch west of the Outfall 002 Storm Water Pond
003	At the drainage ditch north of the railyard
004	At the discharge point from Outfall 004 Storm Water Pond at the northeast corner of the property
005	At the discharge point from Outfall 005 Storm Water Pond at the southeast corner of the property
101	At the discharge of the wastewater treatment plant
201	At the discharge from the PE Unit 1 polymer retention basin
301	At the discharge from the PE Unit 2 polymer retention basin

Description of Sampling Points (if different from Outfall location)

Outfall Number	Description of Sampling Point
001	Prior to the discharge into La Quinta Channel
002	Same as outfall location
003	Same as outfall location
004	Same as outfall location
005	Same as outfall location
101	Same as outfall location
201	Same as outfall location
301	Same as outfall location

(1) Scenario 1 - no spent caustic
(2) Scenario 2 - with spent caustic

Outfall Flow Information – Permitted and Proposed

Outfall Number	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)
001	N/A - proposed outfall	N/A - proposed outfall	9.03 (1) / 9.00 (2)	12.76 (1) / 13.24 (2)
002	N/A - proposed outfall	N/A - proposed outfall	intermittent, flow variable	intermittent, flow variable
003	N/A - proposed outfall	N/A - proposed outfall	intermittent, flow variable	intermittent, flow variable
004	N/A - proposed outfall	N/A - proposed outfall	intermittent, flow variable	intermittent, flow variable
005	N/A - proposed outfall	N/A - proposed outfall	intermittent, flow variable	intermittent, flow variable
101	N/A - proposed outfall	N/A - proposed outfall	1.71 (1) / 1.98 (2)	2.95 (1) / 3.43 (2)
201	N/A - proposed outfall	N/A - proposed outfall	0.22	0.32
301	N/A - proposed outfall	N/A - proposed outfall	0.29	0.45

Outfall Discharge – Method and Measurement

Outfall Number	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
001	N	Y	To be determined in final design
002	N	Y	estimate
003	N	Y	estimate
004	N	Y	estimate
005	N	Y	estimate
101	N	Y	To be determined in final design
201	Y	N	To be determined in final design
301	Y	N	To be determined in final design

Outfall Discharge – Flow Characteristics

Outfall Number	Intermittent Discharge? Y/N	Seasonal Discharge? Y/N	Continuous Discharge? Y/N	Discharge Duration (hours/ day)	Discharge Duration (days/ month)	Discharge Duration (months/ year)
001	N	N	Y	24	31	12
002	Y	N	N	variable	variable	variable
003	Y	N	N	variable	variable	variable
004	Y	N	N	variable	variable	variable
005	Y	N	N	variable	variable	variable
101	N	N	Y	24	31	12
201	N	N	Y	24	31	12
301	N	N	Y	24	31	12

Wastestream Contributions

Modeling will be done for a diffuser for Outfall 001 to estimate the effluent dilution for the receiving water mixing zone as well as for characterization of the thermal plume, and the modeling report will be sent to the TCEQ following submittal of the TPDES application.

Outfall No. 001- Scenario 1 (no spent caustic) *Volumes (MGD) are estimated maximum monthly averages.

Contributing Wastestreams	Volume (MGD) *	% of Total Flow
Internal Outfall 101	1.71	18.9%
Internal Outfall 201	0.22	2.4%
Internal Outfall 301	0.29	3.2%
Cooling tower blowdown (main and ASU)	5.36	59.4%
Water treatment wastewaters	0.83	9.2%
Railcar wash water	0.29	3.2%
Other miscellaneous wastewaters	0.15	1.7%
Storm water	0.18	2.0%
Total	9.03	100%

Outfall No. 101 - Scenario 1 (no spent caustic)

Contributing Wastestreams	Volume (MGD) *	% of Total Flow
Process wastewater	1.29	75.4%
Storm water**	0.21	12.3%
Utility wastewater	0.21	12.3%
Total	1.71	100%
**Primarily first flush storm water from process areas.		

Outfall No. N/A

Contributing Wastestreams	Volume (MGD)	% of Total Flow

Additional Outfall wastestream contributions included as **Attachment:** See additional pages 8A - 8D.

Wastestream Contributions

Modeling will be done for a diffuser for Outfall 001 to estimate the effluent dilution for the receiving water mixing zone as well as for characterization of the thermal plume, and the modeling report will be sent to the TCEQ following submittal of the TPDES application.

Outfall No. 001- Scenario 1 (with spent caustic) *Volumes (MGD) are estimated maximum monthly averages.

Contributing Wastestreams	Volume (MGD) *	% of Total Flow
Internal Outfall 101	1.98	22.0%
Internal Outfall 201	0.22	2.4%
Internal Outfall 301	0.29	3.2%
Cooling tower blowdown (main and ASU)	5.06	56.2%
Water treatment wastewaters	0.83	9.2%
Railcar wash water	0.29	3.2%
Other miscellaneous wastewaters	0.15	1.7%
Storm water	0.18	2.0%
Total	9.00	100%

Outfall No. 101 - Scenario 1 (with spent caustic)

Contributing Wastestreams	Volume (MGD) *	% of Total Flow
Process wastewater	1.42	71.7%
Storm water**	0.21	10.6%
Utility wastewater	0.35	17.7%
Total	1.98	100%
**Primarily first flush storm water from process areas.		

Outfall No. N/A

Contributing Wastestreams	Volume (MGD)	% of Total Flow

Additional Outfall wastestream contributions included as **Attachment:** See additional pages 8B - 8D.

Wastestream Contributions

Outfall No. 201 *Volumes (MGD) are estimated maximum monthly averages.

Contributing Wastestreams	Volume (MGD)*	% of Total Flow
Process wastewater and	0.22	100%
storm water*		
*Primarily first flush storm water from process areas.		

Outfall No. 301

Contributing Wastestreams	Volume (MGD)*	% of Total Flow
Process wastewater and	0.29	100%
storm water*		
*Primarily first flush storm water from process areas.		

Outfall No. N/A

Contributing Wastestreams	Volume (MGD)*	% of Total Flow

Additional Outfall wastestream contributions included as **Attachment:** See additional pages 8C - 8D.

Wastestream Contributions

Outfall No. 002

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water	intermittent, flow variable	100%
*Primarily first flush storm water from process areas.		

Outfall No. 003

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water	intermittent, flow variable	100%

Outfall No. 004

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water	intermittent, flow variable	100%

Additional Outfall wastestream contributions included as **Attachment:** See additional page 8D.

Wastestream Contributions

Outfall No. 005

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water	intermittent, flow variable	100%
*Primarily first flush storm water from process areas.		

Outfall No. N/A

Contributing Wastestreams	Volume (MGD)	% of Total Flow

Outfall No. N/A

Contributing Wastestreams	Volume (MGD)	% of Total Flow

Additional Outfall wastestream contributions included as **Attachment:** N/A

5. BLOWDOWN AND ONCE-THROUGH COOLING WATER DISCHARGES (Instructions, Pages 43-44)

a. Does your facility use any cooling towers or boilers that discharge blowdown or other wastestreams to the outfall(s)?

☑ Yes ☐ No

b. Does your facility discharge once-through cooling water to the outfall(s)?

☐ Yes ☑ No

c. If **yes** to either Item a **or** b, attach the appropriate MSDS 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 in wastestream (if above item is for whole product)
- Concentration of active ingredient in wastestream (if above item is for active ingredient)

Please provide a summary attachment of this information in addition to the submittal of the MSDS for each specific wastestream and the associated chemical additives and specify which outfalls are affected.

Attachment: **Treatment chemicals have not yet been determined. MSDSs will be submitted to the TCEQ when treatment chemicals have been selected.**

d. Cooling Towers and Boilers

Cooling Towers and Boilers

Type of Unit	Number of Units	Dly Avg Blowdown (gallons/day)	Dly Max Blowdown (gallons/day)
Cooling Towers	2 (GCGV, ASU)	5,570,000	5,840,000
Boilers	3	N/A - routed to cooling tower system	

6. STORMWATER MANAGEMENT (Instructions, Page 44)

Are there any existing or proposed outfalls which discharge stormwater runoff commingled with other wastestreams?

☑ Yes ☐ No

If **no**, proceed to Item 7.

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff in areas where runoff is generated.

See Attachment T-1, Facility Description, Wastewater and Storm Water Systems.

7. DOMESTIC SEWAGE, SEWAGE SLUDGE, AND SEPTAGE MANAGEMENT AND DISPOSAL (Instructions, Page 45)

a. Please check the appropriate method(s) of domestic sewage and domestic sewage sludge treatment/disposal and complete Worksheet 5.0 or Item 7.b if directed to do so.

- ☒ Facility is connected to a wastewater treatment plant permitted to receive domestic sewage, or the domestic sewage is transported off-site to a permitted facility for treatment, disposal, or both. COMPLETE ITEM 7.b BELOW.
- ☐ Domestic sewage is disposed of by an on-site septic tank and drainfield system. COMPLETE ITEM 7.b BELOW.
- ☐ Both 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 OF THIS APPLICATION.
- ☐ Facility is a POTW. COMPLETE WORKSHEET 5.0 OF THIS APPLICATION.
- ☐ Domestic sewage is not generated on-site.
- ☐ Other (e.g., portable toilets): Please provide a detailed description:

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 Portland Wastewater Treatment Facility, or	WQ0010478001
City of Gregory Roloff Wastewater Treatment Facility	WQ0010092001

8. IMPROVEMENTS OR COMPLIANCE/ENFORCEMENT REQUIREMENTS (Instructions, Page 45)

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

☐ Yes ☑ No **This is a proposed facility.**

If **yes**, provide a brief summary of the requirements and a status update.

9. TOXICITY TESTING (Instructions, Page 46)

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

☐ Yes ☑ No **This is a proposed facility, so there are no existing discharges.**

If **yes**, identify the tests and describe their purposes below. Please attach a copy of all tests performed that have not been previously sent to the TCEQ or the EPA.

Attachment: _____

10. OFF-SITE/THIRD PARTY WASTES (Instructions, Page 46)

Do you receive wastes from off-site sources for any or all of the following: treatment in your facility, disposal on-site via land application, or discharge via a permitted outfall?

☑ Yes ☐ No

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

If **yes**, provide responses to Items a, b, and c below.

a. Attach the following information to the application:

- List of wastes received
- Characterization of wastes received
- Volumes of each waste received
- Information on compatibility with on-site wastes
- Identified sources of wastes received
- Name and addresses of generators
- Description of the relationship of waste source(s) with your facility's activities

Attachment: **See Attachment T-1, Facility Description, Off-site and Third Party Wastewaters.**

b. Is wastewater from a TCEQ, NPDES, or TPDES permitted facility commingled with your wastewater after your final treatment and prior to discharge via your 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: _____

c. Is your facility a Publicly Owned Treatment Works (POTW) that accepts process wastewater from any Significant Industrial User (SIU) and has or is required to have an approved pretreatment program under the NPDES/TPDES program?

☐ Yes ☑ No

If **yes**, complete **Worksheet 6.0** of this application.

11. RADIOACTIVE MATERIALS (Instructions, Page 47)

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

☑ Yes ☐ No

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

Radioactive Materials Mined, Used, Stored, or Processed

Radioactive Material	Concentration (pCi/L)
Ethane can have naturally occuring radioactive materials (NORM), but wastewater discharges are not expected to be in contact with NORM. PE Unit 1 and PE Unit 2 will have nuclear instrumentation, but these will be sealed sources and not in contact with wastewater.	

b. Do you 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 your effluent for all radioactive materials that may be present. Provide results in picocuries per liter (pCi/L). Do not include information provided in response to Item 11.a.

Radioactive Materials Present in the Discharge

Radioactive Material	Concentration (pCi/L)

Note: Items 12, 13, and 14 are required only for **existing permitted** facilities.

12. MAJOR AMENDMENT REQUESTS (Instructions, Page 47)

Are you requesting a major amendment of an existing permit?

☐ Yes ☑ No

If **yes**, list each specific request and provide discussion on the scope of any requested permit changes. If necessary, provide supplemental information or additional data that will support the request.

13. MINOR MODIFICATION REQUESTS (Instructions, Page 48)

Are you requesting any minor modifications to the permit? Note: see the instructions for an exclusive list of changes considered as minor modifications.

☐ Yes ☑ No

If **yes**, list and discuss the requested changes.

14. MINOR AMENDMENT REQUESTS (Instructions, Page 48)

Are you requesting any minor amendments to the permit?

☐ Yes ☑ No

If **yes**, list and discuss the requested changes.

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 guidelines.

1. CATEGORICAL INDUSTRIES (Instructions, Pages 51-52)

Is your facility subject to any of the 40 CFR effluent guidelines outlined on page 52 of the instructions?

☑ Yes ☐ No

If **yes**, provide the appropriate information in the table below.

If **no**, this worksheet is not required.

40 CFR Effluent Guidelines

Industry	40 CFR Part
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414
Inorganic Chemicals	40 CFR 415

2. PRODUCTION/PROCESS DATA (Instructions, Page 52)

a. Production Data

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

Production Data **For Air Separation Unit, ASU**

Subcategory	Actual Quantity/Day	Design Quantity/Day	Units
Oxygen	N/A	3748	1000 lb/d
Nitrogen	N/A	1709	1000 lb/d
40 CFR 415, Subpart AW,			
Oxygen and Nitrogen			

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

Provide each appropriate subpart and the percent of total production. Also provide the appropriate data for metal-bearing wastestreams as required in *40 CFR Part 414*, Appendices A and B.

Percentages of Total Production

Subcategory	Percent of Total Production	Appendix A and B - Metal	Appendix A and B – Process
D - Thermoplastic Resins	100%, Outfalls 201 / 301	N/A	N/A
F - Commodity Organic Chemicals	100%, Outfall 101	N/A	N/A

c. Refineries (40 CFR Part 419):

Provide the applicable subcategory and a brief justification.

N/A

3. PROCESS/NON-PROCESS WASTEWATER FLOWS (Instructions, Page 52)

Provide a breakdown of process wastewater flow(s) and non-process wastewater flow(s) as directed.

See Attachment T-1, Facility Description, Table 1.

4. NEW SOURCE DETERMINATION (Instructions, Page 52)

Provide a list of wastewater-generating processes subject to effluent guidelines and the appropriate information.

Wastewater-generating Processes Subject to Effluent Guidelines

Process	EPA Guideline: Part	EPA Guideline: Subpart	Date Process/ Construction Commenced
Ethylene (Olefins)	40 CFR 414	F	2020
Monoethylene glycol (MEG)	40 CFR 414	F	2020
Polyethylene - PE Unit 1	40 CFR 414	D	2020
Polyethylene - PE Unit 2	40 CFR 414	D	2021
Oxygen/nitrogen (ASU)	40 CFR 415	AW	2020

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 is **required** for 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 runoff.

1. LABORATORY ACCREDITATION (Instructions, Page 53)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:

   1. periodically inspected by the TCEQ; or
   2. located in another state and is accredited or inspected by that state; or
   3. performing work for another company with a unit located in the same site; or
   4. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. 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 Instructions, Page 32, for a list of designated representatives who may sign the certification.

I, **N/A - This is a proposed facility with no existing discharges to sample.**, certify that all laboratory tests submitted with this application meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 53-55)

Please read the general testing requirements in the instructions for important information about sampling, test methods, MALs, and averaging sample results.

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 55-67)

Table 1 and Table 2

Completion of Tables 1 and 2 is required for all external outfalls for new, renewal, and amendment applications. (Instructions, Page 55).

Table 1 for Outfall No. 001; This is a proposed outfall. Values are based on best professional estimates

Pollutant				Maximum (mg/L)	Average (mg/L)
BOD (5-day)				<50	<30
CBOD (5-day)				<50	<30
Chemical oxygen demand				<300	<200
Total organic carbon				<75	<50
Dissolved oxygen				N/A	N/A
Ammonia nitrogen				<20	<10
Total suspended solids				<50	<30
Nitrate nitrogen				<20	<10
Total organic nitrogen				N/A	N/A
Total phosphorus				<5	<2
Oil and grease				<15	<10
Total residual chlorine				<0.1	<0.1
Total dissolved solids				<7000	<6000
Sulfate				N/A	N/A
Chloride				N/A	N/A
Fluoride				<0.5	<0.5
Total alkalinity (mg/L as $CaCO_3$)				N/A	N/A
Temperature (°F)				<110	<110
pH (standard units)				9	6

Table 2 for Outfall No. 001; This is a proposed outfall. Values are based on best professional estimates

Pollutant				Maximum (µg/L)	Average (µg/L)	MAL (µg/L)
Aluminum, total				<1000	<1000	2.5
Antimony, total				<5	<5	5
Arsenic, total				<5	<5	0.5
Barium, total				<200	<200	3
Beryllium, total				<0.5	<0.5	0.5
Cadmium, total				<1	<1	1
Chromium, total				<50	<30	3
Chromium, hexavalent				<3	<3	3
Chromium, trivalent				<50	<30	N/A
Copper, total				<50	<30	2
Cyanide, available				<10	<10	2/10
Lead, total				<10	<10	0.5
Mercury, total				<0.5	<0.5	0.005/0.0005
Nickel, total				<10	<10	2
Selenium, total				<5	<5	5
Silver, total				<0.5	<0.5	0.5
Thallium, total				<0.5	<0.5	0.5
Zinc, total				<100	<100	5.0

TABLE 3

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 with non-process wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed (Instructions, Pages 55-56).

This is a proposed outfall. Values are based on best professional estimates

Table 3 for Outfall No. 001 ; S

Pollutant				Maximum (µg/L)	Avg. (µg/L)*	MAL (µg/L)*
Acrylonitrile				<50	<50	50
Anthracene				<10	<10	10
Benzene				<10	<10	10
Benzidine				<50	<50	50
Benzo(a)anthracene				<5	<5	5
Benzo(a)pyrene				<5	<5	5
Bis(2-chloroethyl)ether				<10	<10	10
Bis(2-ethylhexyl)phthalate				<10	<10	10
Bromodichloromethane [Dichlorobromomethane]				<50	<30	10
Bromoform				<50	<30	10
Carbon tetrachloride				<2	<2	2
Chlorobenzene				<10	<10	10
Chlorodibromomethane [Dibromochloromethane]				<10	<10	10
Chloroform				<50	<30	10
Chrysene				<5	<5	5
m-Cresol [3-Methylphenol]				<10	<10	10
o-Cresol [2-Methylphenol]				<10	<10	10
p-Cresol [4-Methylphenol]				<10	<10	10
1,2-Dibromoethane				<10	<10	10
m-Dichlorobenzene [1,3-Dichlorobenzene]				<10	<10	10
o-Dichlorobenzene [1,2-Dichlorobenzene]				<10	<10	10
p-Dichlorobenzene [1,4-Dichlorobenzene]				<10	<10	10
3,3'-Dichlorobenzidine				<5	<5	5
1,2-Dichloroethane				<10	<10	10
1,1-Dichloroethene [1,1-Dichloroethylene]				<10	<10	10
Dichloromethane [Methylene chloride]				<20	<20	20
1,2-Dichloropropane				<10	<10	10
1,3-Dichloropropene [1,3-Dichloropropylene]				<10	<10	10

	This is a proposed outfall. Values are based on best professional estimates					
Pollutant				Maximum (µg/L)	Avg. (µg/L)*	MAL (µg/L)*
2,4-Dimethylphenol				<10	<10	10
Di-n-Butyl phthalate				<10	<10	10
Ethylbenzene				<10	<10	10
Fluoride				<500	<500	500
Hexachlorobenzene				<5	<5	5
Hexachlorobutadiene				<10	<10	10
Hexachlorocyclopentadiene				<10	<10	10
Hexachloroethane				<20	<20	20
Methyl ethyl ketone				<50	<50	50
Nitrobenzene				<10	<10	10
N-Nitrosodiethylamine				<20	<20	20
N-Nitroso-di-n-butylamine				<20	<20	20
Nonylphenol				<333	<333	333
Pentachlorobenzene				<20	<20	20
Pentachlorophenol				<5	<5	5
Phenanthrene				<10	<10	10
Polychlorinated biphenyls (PCBs) (**)				<0.2	<0.2	0.2
Pyridine				<20	<20	20
1,2,4,5-Tetrachlorobenzene				<20	<20	20
1,1,2,2-Tetrachloroethane				<10	<10	10
Tetrachloroethene [Tetrachloroethylene]				<10	<10	10
Toluene				<10	<10	10
1,1,1-Trichloroethane				<10	<10	10
1,1,2-Trichloroethane				<10	<10	10
Trichloroethene [Trichloroethylene]				<10	<10	10
2,4,5-Trichlorophenol				<50	<50	50
TTHM (Total trihalomethanes)				<50	<30	10
Vinyl chloride				<10	<10	10

(*) Indicate units if different from µg/L.
(**) Total of PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016

TABLE 4

Partial completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls. (Instructions, Pages 56-57)

a. Tributyltin

Is your facility an industrial/commercial facility which directly disposes of wastewater from the types of operations listed below or a domestic facility which receives wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☑ No

If **yes**, indicate with a check mark all of the following criteria which apply and provide the appropriate testing results in the table below.

☐ 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

Does or will your facility 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 or will be discharged?

☐ Yes ☑ No **Sanitary wastewater will be sent off-site for treatment.**

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

c. E. coli

Does or will your facility 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 or will be discharged?

☐ Yes ☑ No

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

Table 4 for Outfall No. N/A ; Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	Average	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

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

Completion of Table 5 **is not required** for internal outfalls. (Instructions, Page 57)

Does your facility manufacture or formulate pesticides or herbicides?

☐ Yes ☑ No

If **yes**, provide the appropriate testing results in Table 5.

Table 5 for Outfall No. N/A **; Samples are (check one):** ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (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
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

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Toxaphene						0.3
2,4,5-TP [Silvex]						0.3

* Indicate units if different from µg/L.

TABLE 6

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls. (Instructions, Page 57)

Table 6 for Outfall No. 001 ; **This is a proposed outfall. Values are based on best professional estimates**

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide		x	<0.4	<0.4	N/A	400
Color (PCU)	x		<100	<100	N/A	—
Nitrate-Nitrite (as N)	x		<10	<20	N/A	—
Sulfide (as S)	x		<0.01	<0.01	N/A	—
Sulfite (as SO3)	x		<2	<2	N/A	—
Surfactants	x		<0.1	<0.1	N/A	—
Boron, total	x		<0.5	<0.1	N/A	20
Cobalt, total	x		<0.003	<0.005	N/A	0.3
Iron, total	x		<3	<5	N/A	7
Magnesium, total	x		<10	<20	N/A	20
Manganese, total	x		<0.3	<0.5	N/A	0.5
Molybdenum, total	x		<0.5	<0.5	N/A	1
Tin, total		x	<0.005	<0.005	N/A	5
Titanium, total	x		<0.1	<0.1	N/A	30

* Indicate units if different from µg/L.

TABLE 7

Indicate with a check mark any of the industrial categories applicable to your facility; otherwise, check the "N/A" box below. If GC/MS testing is required, indicate with a check mark in the box provided that the testing results for the appropriate parameters are provided with the application. (Instructions, Page 57)

☐ 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
☐ 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 A	430	☐ *	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subparts B, C, D, R	430	☐ *	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts F, G, H, I, K, L, M, N, O, P	430	☐ Yes	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts E, Q, S, T	430	☐ Yes	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subparts J, U	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

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 **is not required** for internal outfalls.

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.

(Instructions, Pages 57-58)

Table 8 for Outfall No. 001 : Volatile Compounds

This is a proposed outfall. Values are based on best professional estimates

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acrolein	<50	<50	N/A	50
Acrylonitrile	<50	<50	N/A	50
Benzene	<10	<10	N/A	10
Bromoform	<30	<50	N/A	10
Carbon tetrachloride	<2	<2	N/A	2
Chlorobenzene	<10	<10	N/A	10
Chlorodibromomethane	<30	<50	N/A	10
Chloroethane	<50	<50	N/A	50
2-Chloroethylvinyl ether	<10	<10	N/A	10
Chloroform	<30	<50	N/A	10
Dichlorobromomethane [Bromodichloromethane]	<30	<50	N/A	10
1,1-Dichloroethane	<10	<10	N/A	10
1,2-Dichloroethane	<10	<10	N/A	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<10	<10	N/A	10
1,2-Dichloropropane	<10	<10	N/A	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<10	<10	N/A	10
Ethylbenzene	<10	<10	N/A	10
Methyl bromide [Bromomethane]	<50	<50	N/A	50
Methyl chloride [Chloromethane]	<50	<50	N/A	50
Methylene chloride [Dichloromethane]	<20	<20	N/A	20
1,1,2,2-Tetrachloroethane	<10	<10	N/A	10
Tetrachloroethylene [Tetrachloroethene]	<10	<10	N/A	10
Toluene	<10	<10	N/A	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<10	<10	N/A	10
1,1,1-Trichloroethane	<10	<10	N/A	10
1,1,2-Trichloroethane	<10	<10	N/A	10
Trichloroethylene [Trichloroethene]	<10	<10	N/A	10
Vinyl chloride	<10	<10	N/A	10

Table 9 for Outfall No. 001 : Acid Compounds

This is a proposed outfall. Values are based on best professional estimates

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
2-Chlorophenol	<10	<10	N/A	10
2,4-Dichlorophenol	<10	<10	N/A	10
2,4-Dimethylphenol	<10	<10	N/A	10
4,6-Dinitro-o-cresol	<50	<50	N/A	50
2,4-Dinitrophenol	<50	<50	N/A	50
2-Nitrophenol	<20	<20	N/A	20
4-Nitrophenol	<50	<50	N/A	50
p-Chloro-m-cresol	<10	<10	N/A	10
Pentachlorophenol	<5	<5	N/A	5
Phenol	<10	<10	N/A	10
2,4,6-Trichlorophenol	<10	<10	N/A	10

Table 10 for Outfall No. 001 : Base/Neutral Compounds

This is a proposed outfall. Values are based on best professional estimates

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acenaphthene	<10	<10	N/A	10
Acenaphthylene	<10	<10	N/A	10
Anthracene	<10	<10	N/A	10
Benzidine	<50	<50	N/A	50
Benzo(a)anthracene	<5	<5	N/A	5
Benzo(a)pyrene	<5	<5	N/A	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<10	<10	N/A	10
Benzo(ghi)perylene	<20	<20	N/A	20
Benzo(k)fluoranthene	<5	<5	N/A	5
Bis(2-chloroethoxy)methane	<10	<10	N/A	10
Bis(2-chloroethyl)ether	<10	<10	N/A	10
Bis(2-chloroisopropyl)ether	<10	<10	N/A	10
Bis(2-ethylhexyl)phthalate	<10	<10	N/A	10
4-Bromophenyl phenyl ether	<10	<10	N/A	10
Butylbenzyl phthalate	<10	<10	N/A	10
2-Chloronaphthalene	<10	<10	N/A	10
4-Chlorophenyl phenyl ether	<10	<10	N/A	10
Chrysene	<5	<5	N/A	5
Dibenzo(a,h)anthracene	<5	<5	N/A	5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<10	<10	N/A	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<10	<10	N/A	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<10	<10	N/A	10

This is a proposed outfall. Values are based on best professional estimates				
Pollutant	**Average (µg/L)***	**Maximum (µg/L)***	**No. of Samples**	**MAL (µg/L)**
3,3'-Dichlorobenzidine	<5	<5	N/A	5
Diethyl phthalate	<10	<10	N/A	10
Dimethyl phthalate	<10	<10	N/A	10
Di-n-butyl phthalate	<10	<10	N/A	10
2,4-Dinitrotoluene	<10	<10	N/A	10
2,6-Dinitrotoluene	<10	<10	N/A	10
Di-n-octyl phthalate	<10	<10	N/A	10
1,2-Diphenylhydrazine (as Azobenzene)	<20	<20	N/A	20
Fluoranthene	<10	<10	N/A	10
Fluorene	<10	<10	N/A	10
Hexachlorobenzene	<5	<5	N/A	5
Hexachlorobutadiene	<10	<10	N/A	10
Hexachlorocyclopentadiene	<10	<10	N/A	10
Hexachloroethane	<20	<20	N/A	20
Indeno(1,2,3-cd)pyrene	<5	<5	N/A	5
Isophorone	<10	<10	N/A	10
Naphthalene	<10	<10	N/A	10
Nitrobenzene	<10	<10	N/A	10
N-Nitrosodimethylamine	<50	<50	N/A	50
N-Nitrosodi-n-propylamine	<20	<20	N/A	20
N-Nitrosodiphenylamine	<20	<20	N/A	20
Phenanthrene	<10	<10	N/A	10
Pyrene	<10	<10	N/A	10
1,2,4-Trichlorobenzene	<10	<10	N/A	10

Table 11 for Outfall No. 001 : Pesticides

This is a proposed outfall. Values are based on best professional estimates				
Pollutant	**Average (µg/L)***	**Maximum (µg/L)***	**No. of Samples**	**MAL (µg/L)**
Aldrin	<0.01	<0.01	N/A	0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	<0.05	<0.05	N/A	0.05
beta-BHC [beta-Hexachlorocyclohexane]	<0.05	<0.05	N/A	0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	<0.05	<0.05	N/A	0.05
delta-BHC [delta-Hexachlorocyclohexane]	<0.05	<0.05	N/A	0.05
Chlordane	<0.2	<0.2	N/A	0.2
4,4'-DDT	<0.02	<0.02	N/A	0.02
4,4'-DDE	<0.1	<0.1	N/A	0.1
4,4'-DDD	<0.1	<0.1	N/A	0.1
Dieldrin	<0.02	<0.02	N/A	0.02
Endosulfan I (alpha)	<0.01	<0.01	N/A	0.01

This is a proposed outfall. Values are based on best professional estimates				
Pollutant	**Average (µg/L)***	**Maximum (µg/L)***	**No. of Samples**	**MAL (µg/L)**
Endosulfan II (beta)	**<0.02**	**<0.02**	**N/A**	0.02
Endosulfan sulfate	**<0.1**	**<0.1**	**N/A**	0.1
Endrin	**<0.02**	**<0.02**	**N/A**	0.02
Endrin aldehyde	**<0.1**	**<0.1**	**N/A**	0.1
Heptachlor	**<0.01**	**<0.01**	**N/A**	0.01
Heptachlor epoxide	**<0.01**	**<0.01**	**N/A**	0.01
PCB 1242	**<0.2**	**<0.2**	**N/A**	0.2
PCB 1254	**<0.2**	**<0.2**	**N/A**	0.2
PCB 1221	**<0.2**	**<0.2**	**N/A**	0.2
PCB 1232	**<0.2**	**<0.2**	**N/A**	0.2
PCB 1248	**<0.2**	**<0.2**	**N/A**	0.2
PCB 1260	**<0.2**	**<0.2**	**N/A**	0.2
PCB 1016	**<0.2**	**<0.2**	**N/A**	0.2
Toxaphene	**<0.3**	**<0.3**	**N/A**	0.3

* Indicate units if different from µg/L

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete Table 12 as directed. Table 12 is not required for internal outfalls. (Instructions, Pages 58-59)

a. Are any of the following compounds manufactured or used in a process at the facility?

☐ Yes ☑ No

If **yes**, indicate with a check mark 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.

- ☐ 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

Description:

b. Do you know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

☐ Yes ☑ No

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

c. If you responded **yes** to either Item a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No. N/A ; Samples are (check one): ☐ **Composites** ☐ **Grabs**

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	0.5					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.05					50
2,3,4,7,8-PeCDF	0.5					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					0.5
PCB 81	0.0003					0.5
PCB 126	0.1					0.5
PCB 169	0.03					0.5
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 as directed. Not required for internal outfalls. (Instructions, Pages 59-60)

a. Are there any pollutants listed in the instructions (page 60) believed present in the discharge?

☑ Yes ☐ No

b. Are there pollutants listed in Item 1.d. on page 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☑ Yes ☐ No

If you responded **yes** to **either** Item a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No. 001

This is a proposed outfall. Values are based on best professional estimates

Pollutant	CASRN	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method
Acetaldehyde	75-07-0	<50	<50	N/A	N/A
Acetone	67-64-1	<5	<5	N/A	N/A
Allyl chloride	107-05-1	<10	<10	N/A	N/A
Benzyl alcohol	100-51-6	<5	<5	N/A	N/A
3,4-Dimethylphenol	95-65-8	<10	<10	N/A	N/A
Ethylene glycol	107-21-1	<15000	<15000	N/A	N/A
Ethylene oxide	75-21-8	<10	<10	N/A	N/A
Formaldehyde	50-00-0	<500	<500	N/A	N/A
Methanol	67-56-1	<5	<5	N/A	N/A
2-Methylnaphthalene	91-57-6	<5	<5	N/A	N/A
Phosphine	7803-51-2	<5	<5	N/A	N/A
Propylene oxide	75-56-9	<25	<25	N/A	N/A
Styrene	100-42-5	<10	<10	N/A	N/A
Xylenes, total	1330-20-7	<10	<10	N/A	N/A

WORKSHEET 4.0
RECEIVING WATERS

This worksheet **is required** for all renewal, amendment, and new TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 79)

Is there 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 **yes**, identify owner of the drinking water supply, the distance and direction to the intake, and locate and identify the intake on the USGS map.

☐ Indicate by a check mark that the requested information is provided.

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 79)

a. Width of the receiving water at the outfall? 1,000-2,500 feet

Outfall 001 is proposed to discharge into the San Patricio Turning Basin of La Quinta Channel and the distances are variable.

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

☒ Yes ☐ No

If **yes**, indicate approximate distance and direction from outfall(s):

The exact locations of oyster reefs in the vicinity of the proposed discharge is not known; however, Corpus Christi Bay in Segment No. 2481 of the Bays and Estuaries is designated by the TCEQ as oyster waters.

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

☒ Yes ☐ No

If **yes**, provide the distance and direction to the grasses:

See Attachment T-2, Seagrass Map.

3. CLASSIFIED SEGMENT (Instructions, Page 79)

Is the discharge directly into (or within 300 feet of) a classified segment?

☒ Yes ☐ No

If **yes, stop here**. It is not necessary to complete Items 4 and 5, and it is not necessary to complete Worksheet 4.1.

If **no**, complete Items 4 and 5.

WORKSHEET 4.0
RECEIVING WATERS

This worksheet **is required** for all renewal, amendment, and new TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 79)

Is there 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 **yes**, identify owner of the drinking water supply, the distance and direction to the intake, and locate and identify the intake on the USGS map.

☐ Indicate by a check mark that the requested information is provided.

N/A

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 79)

a. Width of the receiving water at the outfall? _____ feet

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

☐ Yes ☐ No

If **yes**, indicate approximate distance and direction from outfall(s):

_____

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

☐ Yes ☐ No

If **yes**, provide the distance and direction to the grasses:

_____

3. CLASSIFIED SEGMENT (Instructions, Page 79)

Is the discharge directly into (or within 300 feet of) a classified segment?

☐ Yes ☒ No

If **yes, stop here**. It is not necessary to complete Items 4 and 5, and it is not necessary to complete Worksheet 4.1.

Note: Application instructions state that Worksheet 4.1 is not required for storm water only outfalls.

If **no**, complete Items 4 and 5.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Page 80)

Name of the immediate receiving waters:

a. Check the appropriate description of the receiving waters

☐ Lake or Pond

Surface area (acres): _____

Average depth of the entire water body (feet): _____

Average depth of water body within a 500-foot radius of the discharge point (feet): _____

☒ Man-made Channel or Ditch

☐ Stream or Creek

☐ Freshwater Swamp or Marsh

☐ Tidal Stream, Bayou, or Marsh

☐ Open Bay

☐ Other: _____

If you checked "man-made channel or ditch" or "stream or creek" above, provide responses to items b - e below:

b. 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)

☒ others, specify: **Google Earth imagery**

c. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point:

Green Lake - Outfalls 004 and 005 flow through Green Lake Ditch, thence to Green Lake, but it is not clear where the ditch ends and the lake begins.

d. Do the receiving water characteristics change within three miles downstream of the discharge? (e.g., natural or man-made dams, ponds, reservoirs, etc.)

☒ Yes ☐ No

If yes, discuss how:

The discharge route for Outfalls 004 and 005 widens through Green Lake Ditch and downstream Green Lake widens further and has lateral branching.

e. Provide general observations of the water body during normal dry weather conditions:

Outfalls 002 - North-south drainage ditch heavily vegetated on sides, generally dry with some small ponding.
Outfalls 003, 004, and 005 - No flow was observed in any of the perimeter ditches.

Date and time of observation: **September 19-20, 2016; midday; dry, sunny, some clouds**

Was water body influenced by stormwater runoff during observations?

☐ Yes ☒ No

5. GENERAL CHARACTERISTICS OF WATER BODY (Instructions, Page 80)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by (check as appropriate):

☒ oil field activities
☒ agricultural runoff
☒ upstream discharges
☐ urban runoff
☐ septic tanks
☐ others, specify below: _____

b. Uses of water body observed or evidence of such uses (check as appropriate):

☐ livestock watering
☐ non-contact recreation
☐ domestic water supply
☐ contact recreation
☐ fishing
☐ industrial water supply
☒ irrigation withdrawal **Downstream at Green Lake Ditch and Green Lake**
☐ navigation
☐ picnic park activities
☐ others, specify:

c. Check the description (only one) that best describes the aesthetics of the receiving water and the surrounding area:

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area: water clarity exceptional
☒ Natural Area: trees 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

WORKSHEET 7.0
STORMWATER RUNOFF

This worksheet is required for all TPDES permit applications requesting individual permit coverage for discharges of stormwater runoff.

1. APPLICABILITY (Instructions, Page 88)

Do discharges from any of the proposed or existing outfalls consist of stormwater runoff only or stormwater runoff and any of the listed non-stormwater discharges on page 88 of the Instructions?

☒ Yes ☐ No

If **yes**, proceed as directed.

If **no**, stop here.

2. STORMWATER OUTFALL COVERAGE (Instructions, Page 89)

Indicate by a check mark which type of authorization covers or is proposed to cover discharges from each stormwater outfall.

Authorization coverage

Outfall	Authorized Under MSGP	Authorized Under Individual Permit
002	Yes, as option to individual permit	Yes
003	Yes, as option to individual permit	Yes
004	Yes, as option to individual permit	Yes
005	Yes, as option to individual permit	Yes

If you have indicated that **all** existing or proposed stormwater outfalls are authorized under the MSGP, **stop here.**

If you have indicated that you are seeking authorization for any stormwater outfall under an individual permit, **proceed as directed**.

The following information **is required** for each outfall that discharges stormwater for which you are seeking individual authorization under this permit application.

3. SITE MAP (Instructions, Page 89)

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 stormwater runoff
- process wastewater treatment units (including ponds)
- bag house and other air treatment units exposed to precipitation or runoff
- landfills; scrapyards; surface water bodies (including wetlands)
- vehicle and equipment maintenance areas
- physical features of the site that may influence stormwater runoff 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 precipitation or runoff

Indicate by checkmark that all the above information was provided on the facility site map(s).

Attachment: See Attachments T-1, Facility Description, GCGV Proposed Site Ditches and Overall Plot Plan.

4. FACILITY/SITE INFORMATION (Instructions, Pages 89-90)

a. Provide the area of impervious surface and the total area drained by each outfall that discharges stormwater for which you are seeking individual authorization under this permit application.

Impervious Surfaces

Outfall	Area of Impervious Surface (include units)	Total Area Drained (include units)
002	To be determined in final design	775 acres
003	To be determined in final design	148 acres
004	To be determined in final design	200 acres
005	To be determined in final design	251 acres

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

Wettest month:	**September**
Average rainfall for wettest month (total inches):	**3.98" [1]**
25-year, 24-hour rainfall (inches):	**9.5" [2]**

Source: **[1] Climatography of the United States No. 81, Supplement No. 1, Monthly Precipitation Probabilities and Quintiles, 1971-2000**
[2] Atlas of Depth-Duration Frequency of Precipitation Annual Maxima for Texas, U.S. Geological Survey, June 2004, Figure 47

c. Provide an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation.

See Attachment T-1, Facility Description, Wastewater and Storm Water Systems.

d. Provide 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 Attachment T-1, Facility Description, Wastewater and Storm Water Systems.

e. Describe any best management practices and controls that you are using to prevent or effectively reduce pollution in stormwater discharges from the facility.

See Attachment T-1, Facility Description, Wastewater and Storm Water Systems.

5. POLLUTANT ANALYSIS (Instructions, Pages 90-92)

a. Complete Table 17 as directed on page 90 of the Instructions.

These are proposed outfalls. Values are based on best professional estimates.

Table 17 Pollutant Analysis for Outfall No. 002, 003, 004, 005

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)	9 (max)	—	6 (min)	—	N/A	—
Total suspended solids	<250	-	<100	-	N/A	—
Chemical oxygen demand	<100	-	<50	-	N/A	—
Total organic carbon	<75	-	<20	-	N/A	—
Oil and grease	<15	-	<15	-	N/A	—
Arsenic, total	<0.005	-	<0.002	-	N/A	0.0005
Barium, total	<0.2	-	<0.1	-	N/A	0.003
Cadmium, total	<0.001	-	<0.001	-	N/A	0.001
Chromium, total	<0.05	-	<0.03	-	N/A	0.003
Chromium, trivalent	<0.05	-	<0.03	-	N/A	—
Chromium, hexavalent	<0.003	-	<0.003	-	N/A	0.003
Copper, total	<0.05	-	<0.03	-	N/A	0.002
Lead, total	<0.02	-	<0.01	-	N/A	0.0005
Mercury, total	<0.0005	-	<0.0001	-	N/A	0.000005
Nickel, total	<0.02	-	<0.01	-	N/A	0.002
Selenium, total	<0.005	-	<0.005	-	N/A	0.005
Silver, total	<0.0005	-	<0.0005	-	N/A	0.0005
Zinc, total	<2	-	<1	-	N/A	0.005

* Taken during first 30 minutes of storm event
** Flow-weighted composite sample

b. Complete Table 18 as directed on pages 90-92 of the Instructions.

These are proposed outfalls. Values are based on best professional estimates.

Table 18 Pollutant Analysis for Outfall No. 002, 003, 004, 005

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
See Table 18, continued, pg. 58.					

* Taken during first 30 minutes of storm event
** Flow-weighted composite sample

6. STORM EVENT DATA (Instructions, Page 92)

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 - Proposed outfalls with no existing discharges**

Duration of storm event (minutes): _____

Total rainfall during storm event (inches): _____

Number of hours between beginning of storm measured and end of previous measurable rain event (hours): _____

Maximum flow rate during rain event (gallons/minute): _____

Total stormwater flow from rain event (gallons): _____

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

Table 18, continued - Outfalls 002, 003, 004, 005

These are proposed outfalls. Values are based on best professional estimates.

Pollutant	Maximum (mg/L)	Average (mg/L)
Aluminum, total	<5	<3
Ammonia-nitrogen	<0.2	<0.2
Antimony, total	<0.005	<0.005
Beryllium, total	<0.0005	<0.0005
Biochemical oxygen demand (BOD)	<50	<30
Bromide	<0.4	<0.4
Cobalt, total	<0.005	<0.003
Color, PCU	<200	<100
Cyanide, total	<0.01	<0.01
Iron, total	<5	<3
Magnesium, total	<20	<10
Manganese, total	<0.5	<0.3
Molybdenum, total	<0.02	<0.01
Nitrate-nitrite	<3	<1
Phosphorus, total	<0.5	<0.3
Sulfide	<0.01	<0.01
Sulfite	<2	<2
Surfactants	<0.1	<0.1
Thallium, total	<0.0005	<0.0005
Tin, total	<0.005	<0.005
Titanium, total	<0.1	<0.05
Thallium, total	<0.0005	<0.0005
Volatiles/Semivolatiles, Worksheet 2, Tables 8-10	<0.05	<0.05
Pesticides, PCBs, Worksheet 2, Table 11	<0.0003	<0.0003
Other constituents, Worksheet 2, Table 13	nondetect	nondetect

WORKSHEET 11.0
COOLING WATER INTAKE STRUCTURES

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

Complete this worksheet for each cooling water intake structure that the facility uses and proposes to use.

1. GENERAL COOLING WATER INTAKE INFORMATION (Instructions, Page 103)

a. Is the facility a point source that uses or proposes to use a cooling water intake structure that withdraws water from waters of the United States?

☒ Yes ☐ No

If no to the above question, stop here.

Water for industrial operations (industrial water) will be supplied by the San Patricio Municipal Water District (SPMWD; Public Water System (PWS) Identification TX2050011), a supplier of water for both industrial and potable uses. Industrial water will be supplied via the City of Corpus Christi O.N. Stevens Water Treatment Plant (PWS TX1780003) through a SPMWD pipeline. Potable water will also be supplied by the SPMWD via the City of Portland (PWS TX2050005).

If yes, please identify the owner and operator of the cooling water intake structure and answer questions 1 and 2 below:

Owner: City of Corpus Christi

Operator: City of Corpus Christi

1. Are the owner and operator of the cooling water intake structure(s) an entity other than the facility applying for this TPDES permit?

   ☒ Yes ☐ No

2. Do the owner and operator of the cooling water intake structure(s) provide potable water to residential populations?

   ☒ Yes ☐ No

   If the answer is **yes** to both a.1 and a.2, **stop here**.

   If the answer is **no** to either a.1 or a.2, **continue** to the next question.

b. Does the facility have at least one cooling water intake structure that uses ≥25% of the total water withdrawn for cooling purposes (average monthly basis)?

☐ Yes ☐ No

If **no** to the above question, **stop here**.

If **yes**, **continue** to the next question.

c. Does the facility have a design intake flow of ≥2 MGD?

☐ Yes ☐ No

If **no** to the above question, **stop here**.

If **yes**, provide an intake structure identification number below and **continue** to Section 2 of this worksheet.

Intake Structure No.: _____

Attachment SPIF-1

USGS Map

Attachment SPIF-2

Historic Resources Survey

ATKINS

Historic Resources Survey Report for an Undisclosed Project, San Patricio County, Texas

Principal Investigator: M. Kelley Russell

Author: M. Kelley Russell

October 2016

Historic Resources Survey Report for an Undisclosed Project, San Patricio County, Texas

Project Historian and Report Author:

M. Kelley Russell

Prepared for:

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Atkins Job No. 100045200

Document No. 160032

October 2016

Management Summary

Project Name: Historic Resources Survey for an Undisclosed Project

Atkins Project No.: 100048170

Sponsor: Undisclosed Client

Project Location: San Patricio County, Texas

Type of Investigation: Reconnaissance

Regulatory Trigger: Section 106 of the National Historic Preservation Act, completed should a U.S. Army Corps of Engineers permit under Section 404 of the Clean Water Act be required

Project Historian: M. Kelley Russell

Date of Survey: September 19–20, 2016

Number of Recorded Historic-age Resources: 9

Comments: No recommended NRHP-eligible historic-age resources recorded, Atkins recommends no additional investigations.

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Figures

Introduction

On behalf of an undisclosed client, Atkins North America (Atkins) performed a historic resources reconnaissance-level survey for an undisclosed project within a 1,370-acre project site in San Patricio County, Texas (Figure 1). The project site is located entirely on private property, approximately 3.18 kilometers (1.98 miles) northeast of the town of Gregory, Texas. The historic resources survey was conducted in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended in 2014 (Title 54 of United States Code Section 306108 [54 USC § 306108]), and its implementing regulations under the Procedures of the Advisory Council on Historic Preservation, as amended in 2004 (Title 36 Code of Federal Regulations Part 800 [36 CFR 800]), should a U.S. Army Corps of Engineers (USACE) Section 404 permit be required. Any additional regulatory compliance that may trigger further cultural resource survey(s) for the proposed project will be coordinated by the client and additional regulatory agencies.

The historic resources survey consisted of documentation and assessment of all historic-age nonarcheological resources, including buildings, structures, objects, and districts, within a defined Area of Potential Effects (APE) of the proposed project for National Register of Historic Places (NRHP) eligibility. The survey was completed on September 19–20, 2016. This report presents preliminary NRHP eligibility and effects recommendations for one property containing 10 historic-age resources within the project's APE. Archeological investigation for this project were carried out concurrent with the historic resources survey and the findings are presented in a separate report (Acuña and Rains 2016)

Project Description

The project will occur on an approximately 1,370-acre land parcel approximately 3.18 kilometers (1.98 miles) northeast of the town of Gregory, Texas. The project details have not been determined at the time of this report.

Report Organization

This report describes the survey methods, findings, and recommendations and provides supporting documentation. Figure 1 is a general project location map, and Figure 2 depicts the historic resources APE and location of the documented historic-age resources. The Resource Documentation Forms include photographs and NRHP-eligibility assessments for each recorded historic-age resource.

Methodology

Prefield

Atkins defined the historic APE as a 150-foot (ft) buffer surrounding the man-made drainage ditch located on the western portion of the property (should a USACE permit be required) and the entirety of the property parcel (Figure 2). The term "historic age" as it is used in this report refers to any resource that is, or will be, 50 years of age or older at the time of anticipated project construction plus a 5-year buffer to accommodate for delays in project construction. The anticipated construction date at the time of survey was estimated at 2017, and thus the historic cutoff date was determined to be 1972.

Legend

- Historic Resources APE
- 1/4 Mile Study Area

0 400 800 Meters

0 2,000 4,000 Feet

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Figure 1

Project Location and APE Map

Prepared By: Atkins/18827	Scale: 1" = 4000'
Job No.: 100048170	Date: October 5, 2016

Prior to commencement of the field survey, the project historian conducted a literature review for the proposed project. During the records review, the Texas Historic Sites Atlas, Texas Historical Commission Survey Files, the NRHP, the list of State Antiquities Landmarks (SALs), Registered Texas Historic Landmarks (RTHLs), and Official Texas Historic Markers (OTHMs) were examined. Additionally, the National Park Service's (NPS) GIS Spatial Data and database, the National Historic Trails Map Viewer, the El Camino de los Tejas Comprehensive Management Plan/Environmental Assessment Maps, and the National Historic Landmark program and properties listing were also consulted to identify previously recorded historic properties within the project area and within a larger study area extending ¼ mile beyond the APE. No previously designated historic resources were found to be located in the larger study area.

In addition to the records review, the project historian engaged in a limited amount of additional research to facilitate survey efforts and historic context for the project area, including review of historic and current maps and aerial photographs available in-house, online, and from the Texas Historic Overlay (THO) (Foster et al. 2006). Prior to the field survey, the historian reviewed expected property types within the APE, which appeared to be agricultural and domestic resources related to long-term farming of the property.

Field Survey

The field survey was conducted by a historian who meets the Secretary of the Interior's (SOI) Professional Qualification Standards in History and Architectural History in accordance with the NPS standards for identification and evaluation of historic resources. The survey, conducted on the property of the proposed project, identified and documented historic-age resources within the APE.

During the survey, historians examined the project APE for resources constructed within or before 1972. Consideration was also given to resources outside of the APE if they appeared to be part of an NRHP-listed or potentially significant district or landscape resource. Recorded resources were photographed and their locations mapped (Figure 2). Following completion of the survey, the documentation photographs and historical research results were used to develop preliminary NRHP eligibility and effects assessments for all recorded resources. In accordance with 36 CFR 800, the NRHP eligibility assessments were developed by applying NRHP eligibility criteria with regard to locally relevant historic development patterns.

Leg

1

Service Layer Credits:
Japan, METI, Esri Chi
GIS User Community
Image courtesy of US
2010 NAVTEQ © ANC

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Figure 2

Historic-Age Resource Location Map

Prepared By: Atkins/18827	Scale: 1" = 1400'
Job No.: 100048170	Date: October 7, 2016

Historic Background

San Patricio County

The proposed project is located just west of the town of Gregory in southeast San Patricio County, Texas. The earliest recorded permanent European settlement in the project vicinity began about 1830, when the first of approximately 200 Irish American families began to settle at the new colony of San Patricio de Hibernia near the mouth of the Nueces River. The Mexican government soon began to issue land grants to the San Patricio settlers, and the colony was officially established in 1834. By 1836, San Patricio was composed of 500 people residing on 84 land grants; however, the Texas Revolution began that same year, and many of the colonists subsequently relocated to Victoria or other safe havens during the war (1836–1845) as the region became unstable and vulnerable. The county of San Patricio was established by the Republic of Texas in 1836, though it was much larger than its current size, as it formerly encompassed portions of present-day surrounding counties. The region was officially designated a "depopulated area" by the new government until Texas was annexed by the United States in 1845, and the Mexican American War came to an end the following year (Guthrie 2016).

By the 1850s, cattle ranching had become the mainstay of the local economy, with little focus on crop cultivation. In 1860, the population was at enumerated at 620 residents including 95 slaves, many of whom were utilized as cowherds and drovers. The county at this time was occupied by several large cattle ranches, including those owned by John G. Hatch, Youngs Coleman, the White brothers, and William M. Means. The Civil War soon brought further change to the county. While the area was far removed from battle lines, it was located on the "Cotton Road" to Matamoros, Mexico, which became a major center of cotton smuggling after the Union government imposed a blockade on the South. To avoid threats from smugglers, those fighting against the smugglers, and cattle rustlers, many residents fled the area once again and headed to the safety of Goliad (Guthrie 2016).

During the Civil War and the years immediately following, land was inexpensive and the population was low, which attracted new settlers to San Patricio County. In 1870, the county had a population of 602 including 64 African Americans. Crop cultivation had begun to slowly increase, though ranching continued to dominate the local economy. In 1871, the largest cattle firm in the state was established in San Patricio, Goliad, and Aransas counties when cattlemen Thomas M. and Youngs Coleman and George W. Fulton combined their private land holdings with J.M. and Thomas H. Mathis, and rapidly began to acquire additional land. However, by the end of the decade, financial troubles and drought led the five partners to dissolve the company. In 1880, Fulton and the Colemans formed the Coleman-Fulton Pasture Company and quickly became a giant in Texas ranching and land development, controlling 167,000 acres, primarily situated in San Patricio County. This includes the project area, which is situated within Sections M and N of the Coleman-Fulton Pasture Company (Guthrie 2010a, 2010b).

San Patricio County and its economy began to grow after 1885 when the San Antonio and Aransas Pass Railway (SA&AP) was built through the county to connect to the newly laid Aransas Harbor. Several new towns were subsequently platted along the railroad including Mathis and Sinton, as well as Gregory located just east of the project area. By 1900, after several years of financial instability, Charles P. Taft, half-brother of future U.S. President William H. Taft, assumed control of the Coleman-Fulton Pasture Company, which became known as the Taft Ranch. Taft later appointed Joseph F. Green to manage the ranch, and it was under his control that the Taft Ranch greatly expanded, developed new breeds of cattle, and began to focus on agriculture (Guthrie 2010a, 2010b).

Beginning in 1909, Green developed a system of model farms to demonstrate and introduce new crops to the area and to encourage farming and new settlers in the county. Development of San Patricio County intensified as land agents began to advertise property in the county to prospective farmers. Hundreds of new farmers and laborers moved to the area from Texas and other states. Additionally, many laborers were brought by train from Mexico to clear the land for farming, and a large number remained in San Patricio County to work in the fields, shaping the culture of the county. From 1910 to 1920, the county's population increased from 7,307 to 11,386 and the number of farms increased from 470 to 757. With the increase in population, new towns sprang up along the rail road including Odem, St. Paul, Edroy, Taft, and Sodville. Ranching continued to remain a vital part of the county's economy; however, crop farming began to emerge as the dominant element of the economy as ranchland was converted to cropland. A large amount of farming was devoted to vegetables bound for urban markets, though cotton had quickly become the county's most important crop. With the expansion of cotton came the increase of farm tenancy, and by 1930 only a third of the county's farmers owned the land on which they farmed. This number further increased during the Great Depression as thousands of acres were forced out of production and hundreds of farmers were forced off the land. Farming was revived during the 1940s; however, the number of farms and laborers continued to decrease with mechanization and farm consolidation (Guthrie 2010b, 2010a, 2016).

The decrease of farming in the county was partially offset by the oil and gas industry, which had its beginnings in the county during the 1910s and 1920s. In 1926, a gas pipeline was laid from neighboring Refugio County to the Aransas gas fields. By the 1940s and 1950s, many oil wells and gas fields were located throughout the county, as were pipelines, which continue to be laid at present. At the height of the oil and gas boom in the county during the mid-1950s, over 16 million barrels of crude oil were produced a year. As oil production and faming declined in the county, the economy was revived by industrial plants, chemical plants, marine rig builders, and the shrimping industry (Guthrie 2016).

Development of the Project Area

The town of Gregory was laid out at a junction of the SA&AP where a spur led to Corpus Christi through a joint agreement between the railroad and the Coleman-Fulton Pasture Company. In 1887, the Coleman-Fulton Pasture Company gave 640 acres of land for the town, built cattle pens and a schoolhouse, and eventually relocated their headquarters from Rincon to Gregory in 1898. One of Gregory's first settlers was John Samuel Monroe (J. S. M.) McKamey, a "banker, merchant, and cotton buyer" originally from Tennessee who had an interest in farming. (Armstrong 1926; Guthrie 2010b). In 1890, J.S.M. McKamey purchased a 2-mile-square block of land north of town within the Coleman-Fulton Pasture Company land holdings, where he is credited with farming "the first blackland cotton in the Gulf Coast area" (Guthrie 2010b; *Corpus Christi Times* 1955). He also owned a large portion of the original townsite of Gregory, including a community store and the town's first bank (Guthrie 2010b). In addition, according to his 1916 obituary, J. S. M. McKamey was "instrumental in bringing many farmers and their families from East Texas" to the area (*San Patricio County News* 1916).

Following his father's death, Tunnell Absalom (T. A.) McKamey purchased the land within the project area in 1918 that were Sections M and N of the George H. Paul Subdivision of the Coleman-Fulton Pasture Company land (Black 2014; McKamey and McKamey 2016). T. A. McKamey and later his son Kenneth G. McKamey, Sr., farmed the land well into the late 1960s until their deaths (Caterpillar 1997). As was predominant in San Patricio County during the early to mid-twentieth century, the large majority of the McKamey crop was cotton; however, vegetables were cultivated in the northwestern corner of the

parcel. Most of the vegetables were sold at market in Ingleside, but a portion of them were fed to mules, which pulled plows and other farm equipment prior to the McKamey's use of tractors on the farm. T. A. McKamey likely also used the mules to help dig the ditch (Resource 02) in the northwestern portion of parcel for crop irrigation. The channel was later widened and extended to the south during the 1970s by the drainage district (McKamey and McKamey 2016).

According to the current land owner Kenneth McKamey, Jr. (grandson of T. A. McKamey), a small community of mostly Mexican American and Mexican immigrant laborers lived in permanent and temporary tenant houses on the northern portion of the property near US 181. The community included as many as 30 permanent residents and many more temporary residents who traveled from Laredo and Mexico during the summer. It was informally known as "Terra Bella" or "Terryville," which was an anglicized translation of "pretty land" from Spanish (McKamey and McKamey 2016). The majority of buildings and structures in this portion of the property were built between the 1930s and 1960s, and in addition to tenant houses, Terra Bella included a grocery store, several barns, sheds, offices, and a large two-story house (McKamey 2016; National Environmental Title Research [NETR] Online 2016). Extant historic-age resources recorded on this portion of the property were limited to circa 1950 tenant houses and an outhouse (Resources 03–07), and two circa 1950 and 1940 farm office and storage buildings (Resources 08 and 09). Additional tenant housing and a house for the foreman and his family (Resource 01) were constructed in the 1930s at the northwest corner of the parcel.

Following trends in the county, the use of tractors and other farm machines led to a reduced farm labor force (Caterpillar 1997; McKamey and McKamey 2016). Though the McKamey farm appeared to require a large amount of temporary workers until the mid-twentieth century, the majority of the tenant houses appear to have been demolished between the late 1960s and early 1970s (NETR 2016). During the county's oil and gas boom of the 1950s, the Midway Oil Field was established just west of the McKamey farm. Several well pads were placed on the southwestern portion of the farm between the mid-1950s and 1960s, but were subsequently removed as the McKamey farm cotton and now sorghum crop flourished (McKamey and McKamey 2016; NETR 2016.)

After the early death of his father in 1968 and his grandfather in 1969, Kenneth McKamey, Jr., returned to the farm and received an abrupt introduction to farm management. At present, cotton and sorghum are grown on the parcel, and the cotton is processed at a nearby McKamey family-owned gin in Gregory. The farm is now owned by various members of the McKamey family (including Kenneth and son Jeff), and marks 100 years of continuous ownership by the McKameys (Caterpillar 1997; McKamey and McKamey 2016).

Results and Recommendations

NRHP Criteria

The recorded historic-age resources with the proposed project's APE were evaluated according to the NRHP criteria for evaluation under 36 CFR, Part 60.4 (36 CFR 60.4), which states that to be listed in or eligible for listing in the NRHP a property (building, structure, object, site, and district) must have significance in: American history, architecture, archeology, engineering, and/or culture and must meet at least one of the following NRHP Criteria:

A) associated with events that have made a significant contribution to the broad patterns of our history; or

B) associated with the lives of persons significant in our past; or

C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) have yielded, or may be likely to yield, information important in prehistory or history (NPS 1995).

In addition, a property must, retain sufficient historic integrity to convey that significance. The seven aspects of integrity are location, design, setting, materials, workmanship, feeling, and association (NPS 1995).

NRHP Eligibility and Effects Assessments

Nine historic-age resources were recorded within the proposed project's historic resources APE (see Figure 2 and the Resource Documentation Forms). The parcel and the recorded historic-age resources, which remain on the property maintain associations with descendants of J. S. M. McKamey, who is credited with farming "the first blackland cotton in the Gulf Coast area" on land north of the project area. J. S. M. McKamey died two years before his son T. A. McKamey purchased the land within the project area in 1918, and was not associated with the property. Because no individuals associated with the property made known specific significant contributions to history, none of the historic-age resources qualify for inclusion under NRHP Criterion B individually or collectively as a district. In addition, although the parcel's historic use reflects a broad pattern in the history of the region as the former ranchland was converted for large-scale cotton cultivation in the early twentieth century, the recorded resources on the property postdate the primary period of agricultural development in the county and lack sufficient historic integrity to be listed in the NRHP under Criterion A individually or as district.

Additionally, none of the resources individually embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or are of high artistic value, and none retain sufficient historic integrity to meet the criteria for NRHP listing under Criterion C. The resources as a whole do not rise to the level of being eligible under Criterion C under those same conditions. Lastly, none of the resources hold the potential to yield information important to history and thus are not eligible for listing in the NRHP under Criterion D.

Resource Documentation Forms

Northwest oblique of Resource 01, facing southeast

Resource No.:	01
Description:	The resource is a circa 1935, one-story, multifamily dwelling with a hipped roof situated on pier and beam foundation. A full-length porch with a flat roof is located on the north façade of the dwelling. The resource is clad in horizontal wood siding and has replacement vinyl windows. The former single- family farm foreman's residence has been partitioned into 3 or 4 separate apartments. The primary façade includes two entrances into the dwelling, and a rear entrance is located near the southwest corner.
Construction Date:	Ca. 1940
Style:	No Style
Form:	Rectangular
Historic Property Type:	Domestic: Multiple Dwelling
Integrity Issues:	The resource lacks integrity of materials, design, workmanship, and feeling due to replacement windows and doors. Additionally, several windows have been replaced by doors as the house has been divided into additional single rooms.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, architectural merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.

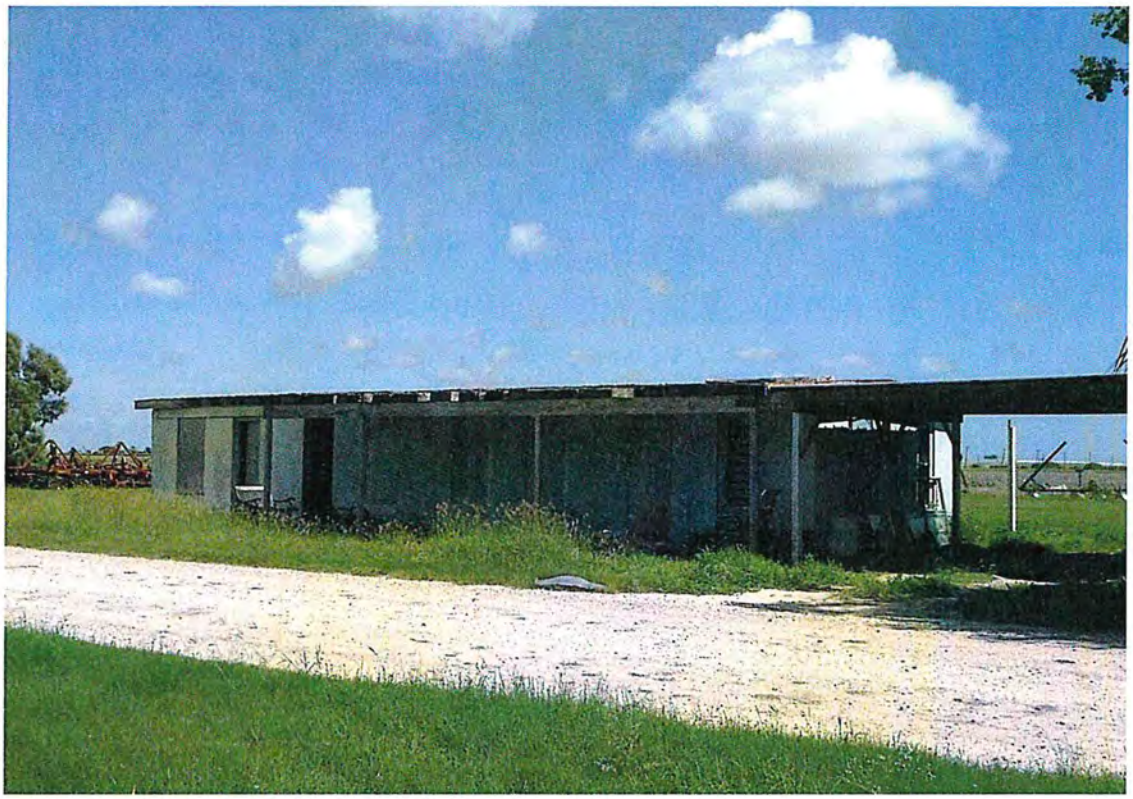
View of west elevation of Resource 01, facing east

View of canal (Resource 02), facing north

Resource No.:	02
Description:	The resource is an irrigation and drainage canal originally dug in the 1930s and later widened in the 1970s.
Construction Date:	Ca. 1930
Style:	No Style
Historic Property Type:	Agriculture: Irrigation facility
Integrity Issues:	The resource lacks integrity of design and workmanship due to alterations including widening in the 1970s.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, design merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.

View of Resource 03, facing east

Resource No.:	03
Description:	The resource is a circa 1950, one-story, vacant farm tenant dwelling composed of four units. The building is of concrete masonry unit construction and has remnants of full-length porch along the primary (west) façade. Plywood boards cover all windows and doors.
Construction Date:	Ca. 1950
Style:	No Style
Form:	Rectangular
Historic Property Type:	Domestic: Multiple Dwelling
Integrity Issues:	The resource lacks integrity of materials, design, and feeling due to deterioration of the porch and boarding of windows and doors. Integrity of setting has been negatively affected by loss of a majority of the historic-age tenant dwellings and farm-related structures in the former tenant farm community of "Terra Bella" on the McKamey farm. Infill of nonhistoric-age agricultural structures has also compromised integrity of setting.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, architectural merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.



Oblique view of Resource 03, facing northeast

View of Resource 04, facing east

Resource No.:	04
Description:	The resource is a circa 1950, one-story, vacant farm tenant dwelling composed of two units. The building is of concrete masonry unit construction and has full-length porch and attached carport along the primary (west) façade. Alterations include a replacement metal, side-gabled, low-pitched roof and replacement aluminum sash 2/2 windows.
Construction Date:	Ca. 1950
Style:	No Style
Form:	Rectangular
Historic Property Type:	Domestic: Multiple Dwelling
Integrity Issues:	The resource lacks integrity of materials, design, workmanship, and feeling due to replacement of the roof and windows. Integrity of setting has been negatively affected by loss of a majority of the historic-age tenant dwellings and farm-related structures in the former tenant farm community of "Terra Bella" on the McKamey farm. Infill of nonhistoric-age agricultural structures has also compromised integrity of setting.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, architectural merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.

Oblique view of Resource 04, facing northeast

View of Resource 05, facing east

Resource No.:	05
Description:	The resource is a circa 1950, one-story farm tenant dwelling composed of four units. The building is of concrete masonry unit construction and has full-length porch and attached carport along the primary (west) façade. Alterations include a replacement metal, side-gabled, low-pitched roof and replacement windows.
Construction Date:	Ca. 1950
Style:	No Style
Form:	Rectangular
Historic Property Type:	Domestic: Multiple Dwelling
Integrity Issues:	The resource lacks integrity of materials, design, workmanship, and feeling due to replacement of the roof and windows. Integrity of setting has been negatively affected by loss of a majority of the historic-age tenant dwellings and farm-related structures in the former tenant farm community of "Terra Bella" on the McKamey farm. Infill of nonhistoric-age agricultural structures has also compromised integrity of setting.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, architectural merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.

Oblique view of Resource 05, facing northeast

View of Resource 06, facing east

Resource No.:	06
Description:	The resource is a circa 1950, one-story outhouse of concrete masonry unit construction and metal roof.
Construction Date:	Ca. 1950
Style:	No Style
Form:	Rectangular
Historic Property Type:	Domestic: Multiple Dwelling
Integrity Issues:	Integrity of materials, has been compromised due to replacement of the roof. Integrity of setting has been negatively affected by loss of a majority of the historic-age tenant dwellings and farm-related structures in the former tenant farm community of "Terra Bella" on the McKamey farm. Infill of nonhistoric-age agricultural structures has also compromised integrity of setting.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, architectural merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.

View of Resource 07, facing east

Resource No.:	07
Description:	The resource is a circa 1950, one-story farm tenant dwelling composed of four units. The building is of concrete masonry unit construction and has a full-length porch and attached carport along the primary (west) façade. Alterations include a replacement metal, side-gabled, low-pitched roof and replacement windows.
Construction Date:	Ca. 1950
Style:	No Style
Form:	Rectangular
Historic Property Type:	Domestic: Multiple Dwelling
Integrity Issues:	The resource lacks integrity of materials, design, workmanship, and feeling due to replacement of the roof and windows. Integrity of setting has been negatively affected by loss of a majority of the historic-age tenant dwellings and farm-related structures in the former tenant farm community of "Terra Bella" on the McKamey farm. Infill of nonhistoric-age agricultural structures has also compromised integrity of setting.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, architectural merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.

Oblique view of Resource 07, facing northeast. Note resources 05, 04, and 03 in the background.

View of Resource 08, facing east

Resource No.:	08
Description:	The resource is a circa 1950, one-story farm office building of concrete masonry unit construction with a partial-length porch and attached carport along the primary (west) façade. Alterations include a replacement metal, side-gabled, low-pitched roof and replacement windows.
Construction Date:	Ca. 1950
Style:	No Style
Form:	Rectangular
Historic Property Type:	Agriculture: Outbuilding
Integrity Issues:	Integrity of materials, design, and workmanship, have been compromised due to replacement of the roof and windows. Integrity of setting has been negatively affected by loss of a majority of the historic-age tenant dwellings and farm-related structures in the former tenant farm community of "Terra Bella" on the McKamey farm. Infill of nonhistoric-age agricultural structures has also compromised integrity of setting.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, architectural merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.

View of Resource 09, facing west

Resource No.:	09
Description:	The resource is a circa 1940, one-story, front-gabled farm office building of wood frame construction situated on a concrete pad foundation. The resource features a full-length porch with metal supports and is clad in a combination of sheet metal and plywood paneling.
Construction Date:	Ca. 1950
Style:	No Style
Form:	Rectangular
Historic Property Type:	Agriculture: Outbuilding
Integrity Issues:	Integrity of setting has been negatively affected by loss of a majority of the historic-age tenant dwellings and farm-related structures in the former tenant farm community of "Terra Bella" on the McKamey farm. Infill of nonhistoric-age agricultural structures has also compromised integrity of setting.
NRHP Assessment:	This resource does not maintain sufficient historic integrity, architectural merit, or known specific historic significance to qualify for inclusion in the NRHP under Criteria A, B, C, or D.

View of Resource 09, facing northwest

Results Summary and Conclusions

Nine historic-age resources were recorded within the proposed project's historic resources APE, and none are recommended eligible for listing in the NRHP. As the proposed project does not have the potential to directly or otherwise adversely affect any NRHP-listed or -eligible resources recorded during this survey, no further consideration of project impacts to nonarcheological historic-age resources under Section 106, should a Section 404 USACE permit be required, is recommended prior to project construction.

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U.S. Geological Survey (USGS)

1980 Rose Hill, Texas, 7.5-minute Series Topographic Map.

1995 Tomball, Texas, 7.5-minute Series Topographic Map.

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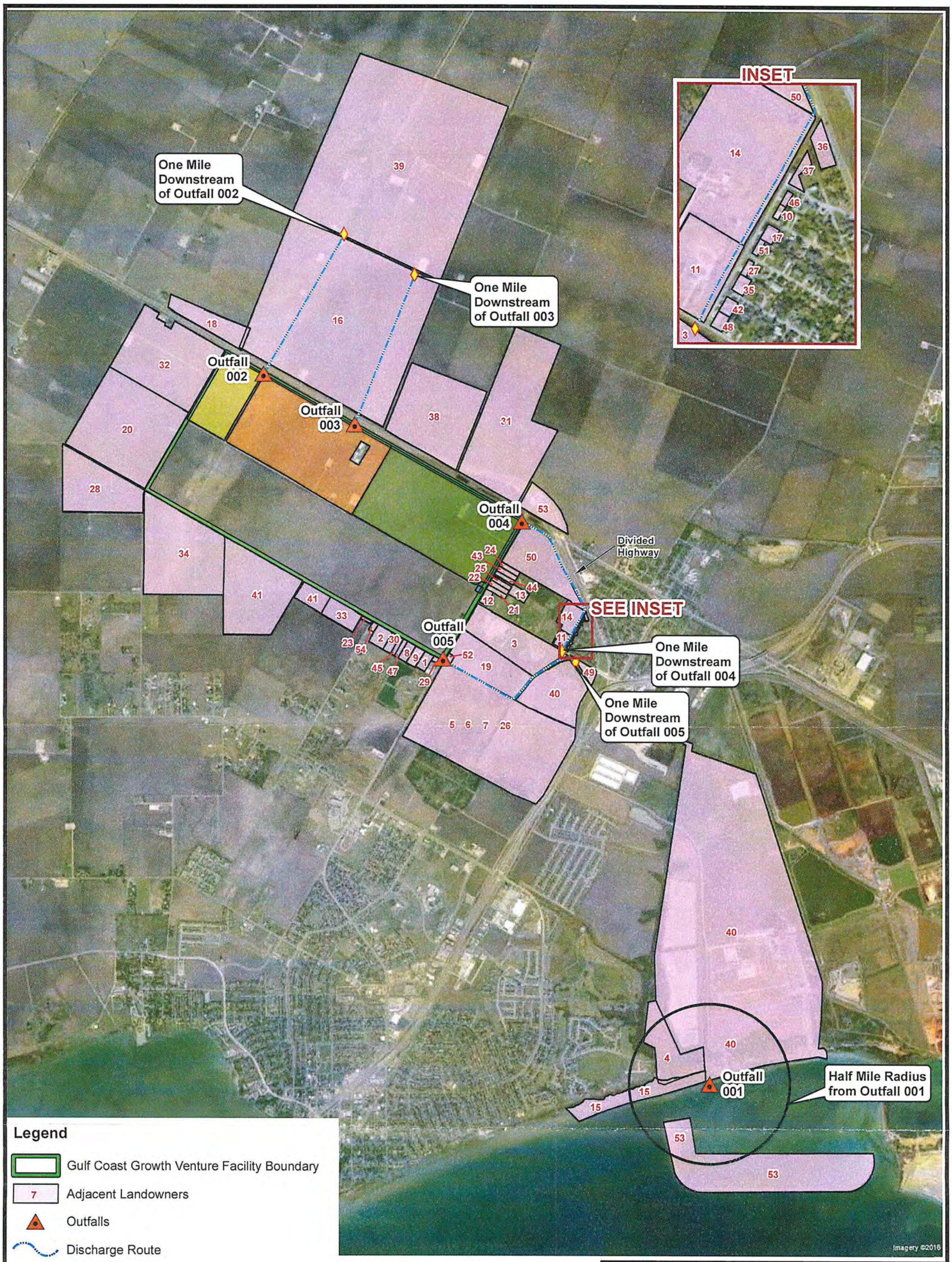
Attachment A-1

USGS Map

Attachment A-2

Adjacent Landowner Map and List

A-2-1 Adjacent Landowner Map
A-2-2 Adjacent Landowner List
A-2-3 Landowner Mailing Labels
(*.docx file on CD, only with originally signed application)
A-2-4 PSFL Map



Legend

- Gulf Coast Growth Venture Facility Boundary
- 7 — Adjacent Landowners
- Outfalls
- Discharge Route
- Stream Markers
- Half Mile Radius from Outfall 001

Current Facility Property Owners that aren't also Adjacent Landowners

- AEP TEXAS CENTRAL COMPANY
- DECOU FAMILY PARTNERSHIP
- DECOU SUSAN & DIANE
- MCKAMEY KARA MURRAY

Parcel Sources:
San Patricio County Appraisal District and Nueces County Appraisal District, Databases last updated November 2016

0 1,500 3,000
FEET
1 " = 3,000 '
1:36,000

J:\Prj\Gulf Coast Growth Venture\TPDES 2016\Adjacent Landowner.mxd
Printed By: Laurie on 11/18/2016, 13:44 PM

GULF COAST GROWTH VENTURE

Attachment A-2-1
ADJACENT LANDOWNER MAP

DRAWN BY: S WILSON	SCALE:	PROJ. NO.	TPDES 2016
CHECKED BY: D KOCUREK	AS NOTED	FILE NO.	Adjacent Landowner.mxd
APPROVED BY: D KOCUREK	DATE PRINTED:		
DATE: November, 2016	*11/18/2016*		

Attachment A-2-2

Adjacent Landowner List

MAP ID	OWNER NAME	ADDRESS	CITY, STATE ZIP
1	AVALOS RICHARD & JUANITA B	6247 COUNTY ROAD 1612	PORTLAND TX 78374-3319
2	BAKER LARRY JR	PO BOX 492	PORTLAND TX 78374-0492
3	BERRY CONTRACTING INC	PO BOX 271095	CORPUS CHRISTI TX 78427-1095
4	BERRYMAN PROPERTIES LTD	28731 WEST IH 10	BOERNE TX 78006-9112
5	CABLE CHRISTOPHER HARRIS	PO BOX 1487	UVALDE TX 78802-1487
6	CABLE JOSEPH D	310 GRANT PL	CORPUS CHRISTI TX 78411
7	CABLE KATHERINE S	222 LEMING AVE	CORPUS CHRISTI TX 78404
8	CANALES ORALIA & VELMA CANTU	1351 BAYVIEW DRIVE	PORTLAND TX 78374-3028
9	CANTU VELMA	1351 BAYVIEW DR	PORTLAND TX 78374-3028
10	CHAPA ERNEST LIFE ESTATE	PO BOX 64	GREGORY TX 78359-0064
11	CITY OF GREGORY	PO BOX 297	GREGORY TX 78359-0297
12	CORTEZ JERRY & VERNA C	PO BOX 1377	PORTLAND TX 78387
13	DAVIS JOE & SANDRA	PO BOX 283	PORTLAND TX 78374-0283
14	DAWSON VANCE IV	PO BOX 995	GREGORY TX 78359
15	DCD INVESTMENTS INC	5155 FLYNN PKWY STE 500	CORPUS CHRISTI TX 78411
16	DECOU MARTHA MCKAMEY	231 BAYRIDGE DR	CORPUS CHRISTI TX 78411-1211
17	DELGADO FRANCISCO L III & EDNA L	PO BOX 570	PORTLAND TX 78374-0570
18	DUPRIE FARMS	328 ROSE MEADOW DR	LA VERNIA TX 78121-4764
19	ELDT INVESTMENTS LTD	PO BOX 7692	CORPUS CHRISTI TX 78467
20	FLOERKE ROY JAMES & ORA MARIE FAMILY LIMITED PARTNERSHIP	P O BOX 38	TAFT TX 78390-0038
21	GAMEZ EULALIO JR	PO BOX 1109	GREGORY TX 78359
22	GAMEZ RICKY G	9281 CR 2249	SINTON TX 78387
23	GARCIA JOHN ROLAND	1033 NORTH CLIFF	PORTLAND TX 78374
24	GARCIA OSCAR & VICTORIA	PO BOX 327	PORTLAND TX 78374-0327
25	GARCIA ROBERT & IRMA	PO BOX 406	PORTLAND TX 78374-0406
26	GJW PARTNERSHIP	458 CARMEL PKWY	CORPUS CHRISTI TX 78411
27	GONZALES AUGUSTIN L & GUADALUPE	PO BOX 194	GREGORY TX 78359-0194
28	HANNA WANITA LOU	224 NE 3RD CT	BOCA RATON FL 33432-3423
29	HERNANDEZ GILBERT & ELVIA	PO BOX 731	GREGORY TX 78359-0731
30	HERRINGTON JOSEPH & SYLVIA	PO BOX 537	PORTLAND TX 78374-0537
31	HESTER JENNIE ETAL	PO BOX 829	GREGORY TX 78359-0829
32	HIGHWAY 181 LLC	7363 US HWY 181	TAFT TX 78390
33	KEYSTONE CASAS INC	PO BOX 1864	INGLESIDE TX 78362-1864
34	LACKEY PARTNERSHIP	4748 CR 3667	TAFT TX 78390-8050
35	LEAL CONSUELO M	PO BOX 752	GREGORY TX 78359-0752
36	LINDLEY PRESTON K & LESTER MARION LINDLEY	1038 KELLY AVE	SPRINGDALE AR 72762-9547
37	LOPEZ MELISSA	PO BOX 734	GREGORY TX 78359-0734
38	MCKAMEY CORINNE & JEFF & KARA	PO BOX 68	GREGORY TX 78359-0068
39	MCKAMEY K G JR	PO BOX 68	GREGORY TX 78359-0068
40	PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY	PO BOX 1541	CORPUS CHRISTI TX 78403-1541
41	RACHAL RANDOLPH B & JJH TRUST	328 PEBBLE BEACH DR	PORTLAND TX 78374-4004
42	RAMIREZ LINDA ROSA	PO BOX 223	GREGORY TX 78359
43	REYES ANTONIO JR & SANDRA	PO BOX 788	PORTLAND TX 78374-0788
44	REYES ANTONIO SR & OFELIA	PO BOX 788	PORTLAND TX 78374-0788
45	RICHARD TRACEY S & BLANE	6323 CR 1612	PORTLAND TX 78374
46	RIOS DELIA	PO BOX 712	GREGORY TX 78359-0712
47	RODRIGUEZ GREGORIO & DOLORES	PO BOX 2	GREGORY TX 78359-0002
48	SAENZ ARMANDO & SAN JUANA	PO BOX 1235	GREGORY TX 78359
49	SOLIS ABEL V	2202 TIMBERLINE DR	PORTLAND TX 78374-2920
50	SOLIS ENTERPRISES INC	PO BOX 400	GREGORY TX 78359
51	SOLIZ MONICA MARIE	1710 KEYS	CORPUS CHRISTI TX 78405
52	SOUTHWESTERN BELL TELE CO	ONE SBC CENTER 36-M-01	ST LOUIS MO 63101-3004
53	STATE OF TEXAS	1700 CONGRESS AVE	AUSTIN TX 78701-1436
54	VILLAFRANCO PABLO & CHRISTINA M	PO BOX 231	PORTLAND TX 78374

ATTACHMENT A-2-4
PSFL Map

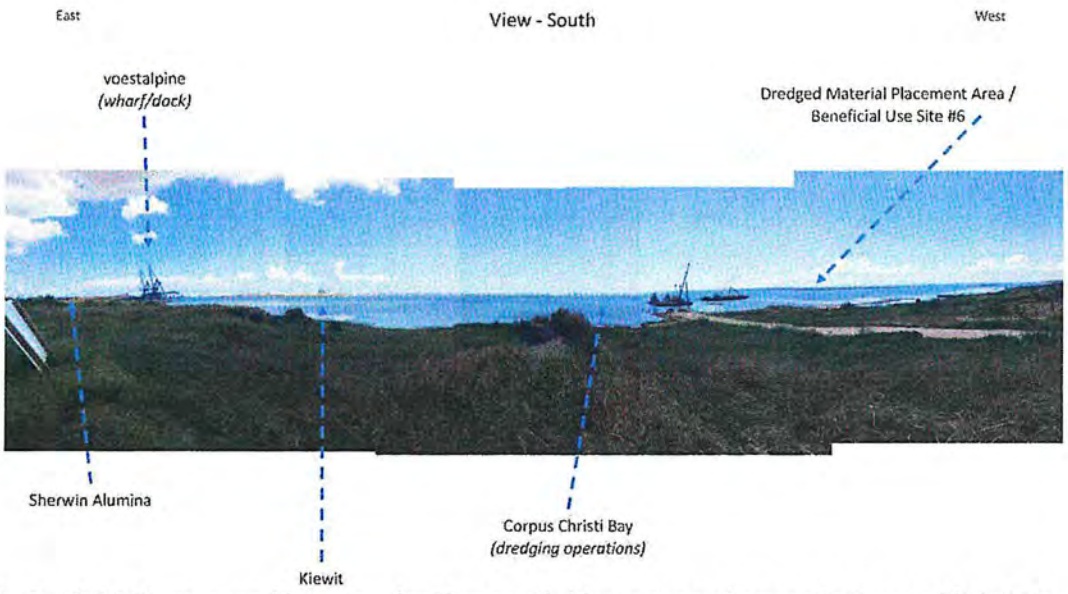
Source: Texas General Land Office, GISWEB Viewer

J:\Prj\Gulf Coast Growth Venture\TPDES 2016\PSF Check.mxd
Printed By: Laurie on 11/18/2016, 10:49 AM

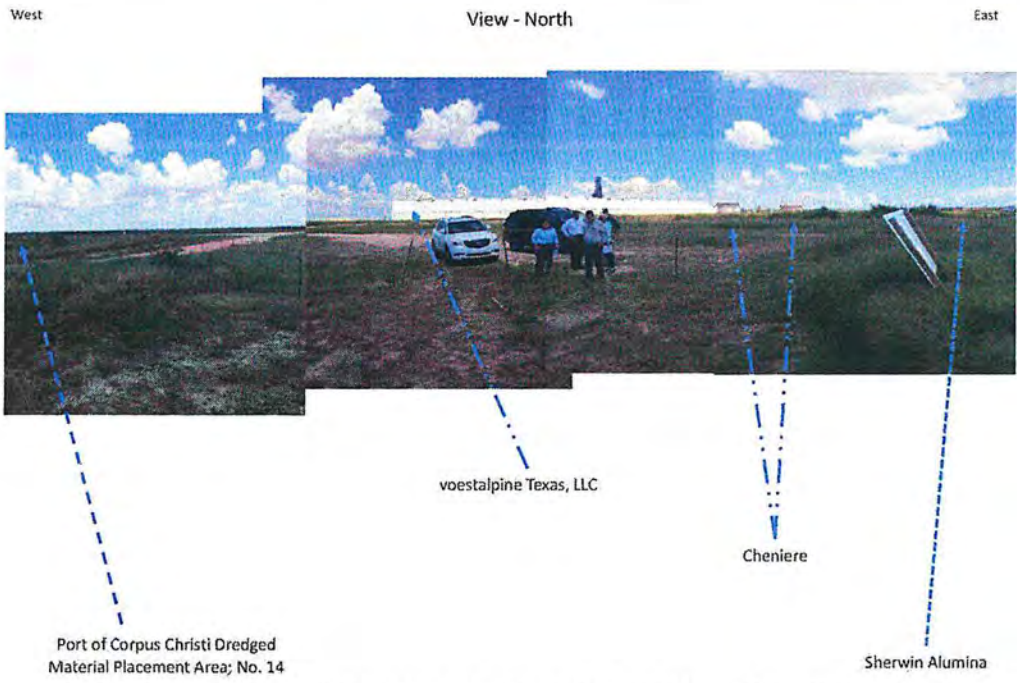
Attachment A-3

Photos of Outfall and Treatment System Locations

Photos of Outfall and Treatment System Locations
GCGV Asset Holding LLC
TPDES Permit Application 2017



1. Outfall 001 proposed location, looking south (downstream) towards Corpus Christi Bay.



2. Outfall 001 proposed location, looking north away from Corpus Christi Bay.

Photos of Outfall and Treatment System Locations
GCGV Asset Holding LLC
TPDES Permit Application 2017

3. Outfall 002 proposed location, looking south (upstream).
Railroad track in middle of photo. Drainage channel center.

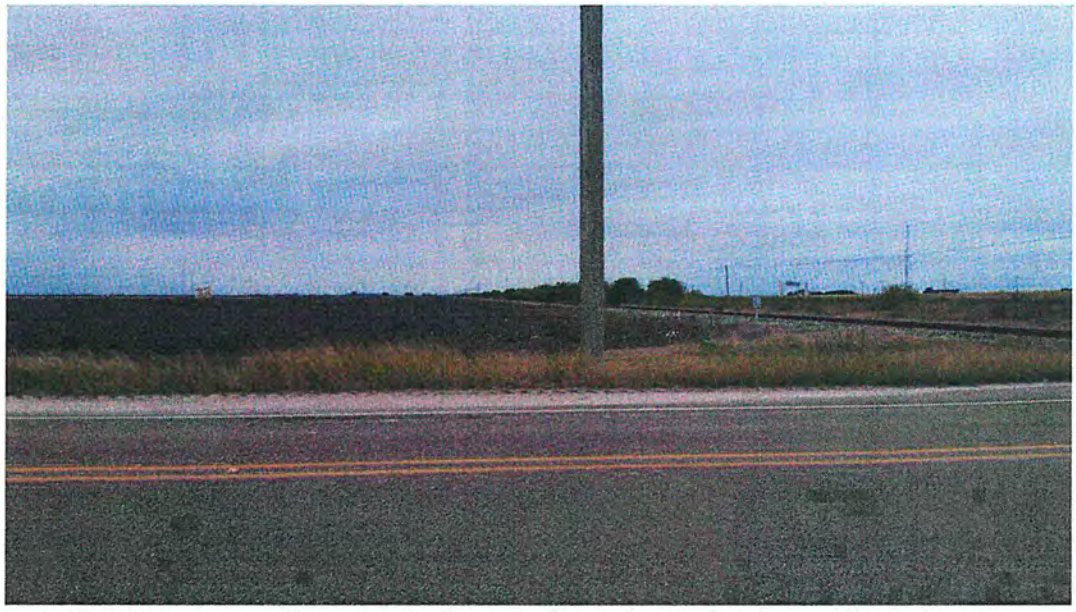
4. Downstream of Outfall 002 proposed location, looking northeast.
Highway 181 in foreground. Drainage channel in center.

Photos of Outfall and Treatment System Locations
GCGV Asset Holding LLC
TPDES Permit Application 2017

5. Outfall 003 proposed location, looking south (upstream).
Railroad track in middle of photo. Drainage channel center, in front of track.

6. Downstream of Outfall 003 proposed location, looking northeast.
Highway 181 in foreground. Drainage swale in center.

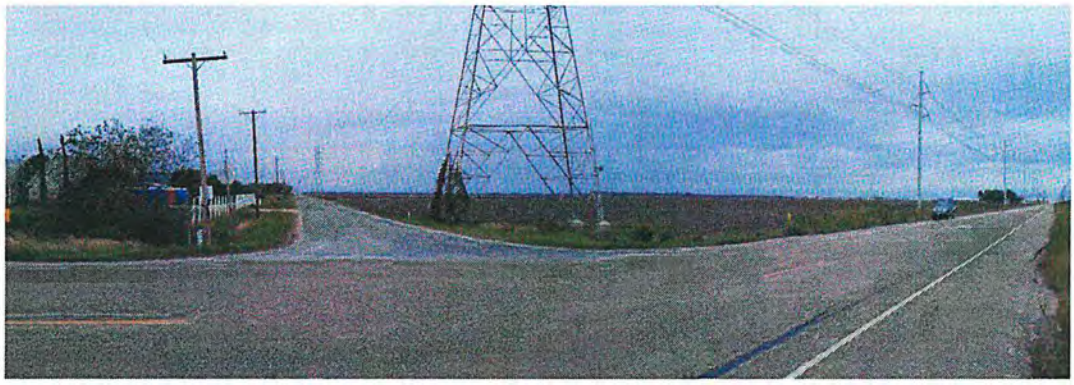
Photos of Outfall and Treatment System Locations
GCGV Asset Holding LLC
TPDES Permit Application 2017



7. Outfall 004 proposed location, looking north-northwest (upstream) from FM 2986 (foreground).

8. Downstream of Outfall 004 proposed location, looking east from FM 2986.

Photos of Outfall and Treatment System Locations
GCGV Asset Holding LLC
TPDES Permit Application 2017



9. Outfall 005 proposed location (center), looking west (upstream) from FM 2986.

10. Downstream of Outfall 005 proposed location, looking east from intersection of CR 78 and FM 2986.

Photos of Outfall and Treatment System Locations
GCGV Asset Holding LLC
TPDES Permit Application 2017

11. Proposed location for wastewater treatment plant, looking northeast.

Photos of Outfall and Treatment System Locations
GCGV Asset Holding LLC
TPDES Permit Application 2017

Aerial Map of Photo Locations

Attachment A-4

Copy of Application Fee Payment

WATER QUALITY PERMIT

PAYMENT SUBMITTAL FORM

Use this form to submit the Application Fee, if the mailing the payment.

- Complete items 1 through 5 below.
- Staple the check or money order in the space provided at the bottom of this document.
- Do not mail this form with the application form.
- Do not mail this form to the same address as the application.
- Do not submit a copy of the application with this form as it could cause duplicate permit entries.

Mail this form and the check or money order to:

BY REGULAR U.S. MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, Texas 78711-3088

BY OVERNIGHT/EXPRESS MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, Texas 78753

Fee Code: WQP **Waste Permit No:** to be assigned (new permit application)

1. Check or Money Order Number: 6196
2. Check or Money Order Amount: $1,250.00
3. Date of Check or Money Order: 4-19-17
4. Name on Check or Money Order: Tischler/Kocurek
5. APPLICATION INFORMATION

   Name of Project or Site: GCGV Asset Holding LLC

   Physical Address of Project or Site: Located on the south side of State Highway 181 and the west side of Farm-to-Market Road 2986, approximately one mile west of the City of Gregory, San Patricio County, Texas 78359

   If the check is for more than one application, attach a list which includes the name of each Project or Site (RE) and Physical Address, exactly as provided on the application.

Staple Check or Money Order in This Space

Attachment T-1

Facility Description

GCGV Asset Holding LLC
Facility Description
2017 TPDES Application

GCGV ASSET HOLDING LLC
FACILITY DESCRIPTION
2017 TPDES APPLICATION

This document is a description of the proposed GCGV Asset Holding LLC wastewater facility near Gregory, San Patricio County, Texas (Facility) in support of its 2017 TPDES wastewater discharge application. This description covers the wastewaters that will be discharged, wastewater and storm water management, and applicability of national effluent guidelines.

FACILITY OVERVIEW

This TPDES application is being submitted to obtain a TPDES permit to authorize wastewater and storm water discharges from a grassroots olefin and derivatives manufacturing complex (Project) to be constructed by affiliates of Exxon Mobil Corporation (ExxonMobil) and affiliates of Saudi Basic Industries Corporation (SABIC). The TPDES permit will be held by GCGV Asset Holding LLC (GCGV), a company jointly owned by ExxonMobil Chemical Gulf Coast Investments LLC and SABIC US Projects LLC.

The Project will include a process unit to convert market pipeline ethane to olefins (the olefins unit) and multiple process units, which will receive the ethylene, produced in the olefins unit, as feed. The derivatives units will consist of two polyethylene (PE) units and a monoethylene glycol (MEG) unit. The polyethylene units are referred to as the PE Unit 1 and PE Unit 2.

Facilities for on-site supporting utilities such as steam, rail, cooling water, and wastewater treatment will be owned by GCGV. Finished polyethylene from the process units will be loaded at a rail transfer station (the rail yard), potentially owned and operated by a third party. The GCGV process units and utilities will be enclosed by an inner fenceline. Liquid loading and unloading will occur at truck, rail, and transfer stations operated by GCGV within the inner fenceline. The process units will receive oxygen, compressed air, and nitrogen from an Air Separation Unit (the ASU) owned and operated by a third party and potentially located within the second outer fenceline. A single controlled access outer fenceline will enclose the GCGV process units and utilities as well as the third-party-owned ASU and rail yard. Laboratory testing facilities that will be operated by a third party. These process units, support units, and land loading facilities are collectively recognized in this application.

An overall plot plan showing the preliminary layout of the Project is provided in Attachment T-1 Overall Plot Plan.

WASTEWATER AND STORM WATER SYSTEMS

Figure 1 is an overall wastewater flow diagram for the facility showing proposed wastewater sources, treatment, and outfalls. Table 1 lists the wastewater sources for each outfall and identifies those that will generate process wastewater subject to national effluent guidelines. Raw materials, major intermediates, and products that will be handled at the facility are provided in Table 2.

Outfall 001 is the proposed process wastewater outfall and will include the discharge from three internal outfalls (IO) for process wastewater (101, 201, and 301). Outfalls 002, 003, 004, and 005 will be for storm water discharges. An alternative permitting option being considered for these storm water outfalls is the TCEQ's multi-sector general permit (MSGP, TXR0500000). If the MSGP option is selected for any or all of the storm water outfalls, then GCGV will request that TCEQ remove those particular outfalls from the TPDES individual permit application.

Water Supply

Water for industrial operations (industrial water) will be supplied by the San Patricio Municipal Water District (SPMWD; Public Water System (PWS) Identification TX2050011), a supplier of water for both industrial and potable uses. Industrial water will be supplied via the City of Corpus Christi O.N. Stevens Water Treatment Plant (PWS TX1780003) through a SPMWD pipeline. Potable water will also be supplied by the SPMWD via the City of Portland (PWS TX2050005).

Outfall 001

Outfall 001 will discharge process wastewater, which will be routed via a closed, concrete culvert or HDPE pipe to the San Patricio Turning Basin in the La Quinta Channel in Corpus Christi Bay, Segment No. 2481 of the Bays and Estuaries.

Outfall 001 will include the discharges from three proposed internal outfalls (IO) (101, 201, and 301) as well as other wastewaters (see Figure 1). IO 101 will be the internal discharge from the biological wastewater treatment plant (WWTP) for olefins and monoethylene glycol (MEG; the glycol unit) process wastewaters as well as for other miscellaneous wastewaters that are potentially contaminated. IOs 201 and 301 will be the internal discharges from PE Unit 1 and PE Unit 2, respectively. Discharges from IOs 101, 201, and 301 will be routed to the proposed Effluent Pond. Other wastewaters that will not require WWTP treatment will be routed directly to the Effluent Pond. Sanitary wastewater will be transferred off-site for treatment at the City of Portland Wastewater Treatment Facility or the City of Gregory Roloff Wastewater Treatment Facility.

The internal outfalls proposed as IO 101, 201, and 301 are described in more detail in the following sections. GCGV notes, however, that as the engineering design for the Project progresses, it is possible that some or all three of the internal outfalls will be combined and

renumbered. For example, IOs 201 and 301 may be combined and replaced by a single internal outfall, or IOs 101, 201, and 301 may be combined into a single internal outfall. In that case, GCGV will request that the TCEQ incorporate these changes into the TPDES permit.

Wastewater Treatment Plant (WWTP) – Internal Outfall 101

The WWTP processes will consist of equalization, dissolved gas flotation (DGF), biological treatment, and oil and solids handling. Oil recovered from the equalization tanks and DGF will be sent to a slop oil tank. Sludge from the DGF and biological treatment will be dewatered and transported for off-site disposal.

Process wastewaters routed to the WWTP include wastewaters from the olefins and MEG process units, storm water (primarily first-flush runoff from process areas), and other wastewaters that could be potentially contaminated. Wastewaters from the process units will include olefins Benzene Waste Operations NESHAP stripper effluent, olefins dilution steam blowdown, ammonia vapor control wastewater, MEG wastewater and, possibly, olefins spent caustic.

Spent caustic from olefins production may be sent to the WWTP if it is not shipped off-site to a third-party vendor. The spent caustic will be oxidized and neutralized before being sent to the WWTP. Storm water routed to the WWTP and cooling water blowdown will be used to maintain a desired wastewater influent quality to the WWTP. Table 1 shows the two scenarios for the WWTP plant, with and without spent caustic.

First-flush storm water considered potentially contaminated will be routed to the WWTP. First-flush storm water will be collected primarily from the process unit areas, but may include other areas where storm water could be potentially contaminated. Storm water and other wastewaters that are potentially contaminated and routed to treatment along with process wastewaters are considered equivalent to process wastewater for the purpose of discharge allocations under national effluent guidelines (see Table 1). There may be small amounts of storm water from other non-process areas that will also be routed to the WWTP.

Miscellaneous wastewaters that will be routed to the WWTP include contaminated cooling water and/or condensate, furnace decoking condensate, slop oil tank draws, flare drum wastewater, wastewater from upsets or spills, oily or contaminated wastewaters or contaminated first-flush storm water from the ASU, and firefighting wastewaters. Water draws from a proposed off-site pyrolysis gasoline (Pygas) storage tank will be transported to the WWTP for treatment. Pygas is a byproduct of ethylene production and a Pygas storage tank will be located at the proposed dock facilities associated with the Project, at the Port of Corpus Christi. (Note: TPDES permitting for the proposed dock area storm water is not part of this TPDES application.) Other wastewaters that may be routed to the WWTP, if potentially contaminated, would include wash pad water, unit washdown, and equipment washdown; if not contaminated, they will be routed directly to the Effluent Pond.

PE Unit 1 Unit – Internal Outfall 201

Process wastewater from the PE Unit 1 unit will include wastewater containing pellets, condensate dump, and potentially contaminated first-flush storm water. These wastewaters will be routed to a polymer retention basin where solids/pellets will be removed. Discharge from the PE Unit 1 polymer retention basin will be IO 201.

PE Unit 2 Unit – Internal Outfall 301

Process wastewater from the PE Unit 2 unit will include wastewater containing pellets, condensate dump, and potentially contaminated first-flush storm water. These wastewaters will be routed to a polymer retention basin where solids/pellets will be removed. Discharge from the PE Unit 2 polymer retention basin will be IO 301.

Effluent Pond

Wastewater from IOs 101, 201, and 301 will be routed to the Effluent Pond. Other wastewaters that will be routed directly to the Effluent Pond include cooling tower blowdown, demineralizer wastewater, rail car wash water, fire water system test and flushing waters, and other miscellaneous wastewaters. The discharge from the Effluent Pond will be the monitoring point for Outfall 001.

Cooling tower blowdown will be generated by the main cooling tower system for the production units as well as from the ASU cooling tower. SPMWD water will be used directly in the cooling towers. Treatment chemicals will be used in the cooling towers to maintain acceptable water quality to control corrosion and fouling.

To provide water for the boiler system, industrial water will be demineralized to remove dissolved solids. Water treatment wastewaters from the demineralizer system will depend on the type of system, but may include such wastewaters as reverse osmosis (RO) reject, membrane cleaning wastewaters, and maintenance wastewaters. Treatment chemicals will be used in the boiler system to maintain acceptable water quality. Boiler blowdown will be routed to the main cooling tower system to serve as part of the system makeup water.

A rail yard will be located at the facility. Rail yard operations will include receipt of raw materials as well as loading product PE. Empty rail hopper cars returning from off-site will be washed to remove residual plastic pellets and dried before returning to the product loading facility. Rail car wash water and first-flush storm water from the rail car wash will be sent to the rail car wash sump where solids will be filtered out. The filtered water will then be routed to the Effluent Pond.

Other miscellaneous wastewaters that will be routed directly to the Effluent Pond may include first-flush storm water collected from utilities and non-process areas as well as uncontaminated wash pad water, unit wash down, and equipment washout/cleaning wastewaters.

The discharge from the Effluent Pond (Outfall 001) will be pumped to the San Patricio Turning Basin in the La Quinta Channel and discharged via a diffuser. Modeling will be conducted for the diffuser to estimate the effluent dilution for the receiving water mixing zone as well as for characterization of the thermal plume, and the modeling report will be sent to the TCEQ following submittal of the TPDES application.

Outfall Parameter Monitoring

National effluent guidelines applicable to certain wastewaters that will be generated are identified in Table 1. Applicable guidelines at 40 CFR 414 require limits to be set for biochemical oxygen demand (BOD), total suspended solids (TSS), pH, and speciated organic chemicals for process wastewaters from olefins, the glycol unit, and the two PE units. Applicable guidelines at 40 CFR 415 require limits to be set for oil and grease (O&G) and pH for process wastewaters from the ASU.

For BOD, TSS, O&G, and pH, GCGV requests that monitoring in the TPDES permit for compliance with permit limits be set at the final Outfall 001. For the speciated organic chemicals, GCGV requests that the TCEQ evaluate whether monitoring can be set at Outfall 001 instead of at the internal outfalls. If the TCEQ determines that monitoring for all parameters can be established at Outfall 001 instead of at the internal outfalls, then GCGV will request that the TCEQ remove the internal outfalls from the application.

Sanitary Wastewater

In the current Facility design, sanitary wastewater management will be transferred via the sanitary sewer to the City of Portland Wastewater Treatment Facility, which operates under TPDES Permit No. WQ0010478001 or to the City of Gregory Roloff Wastewater Treatment Facility (TPDES Permit No. WQ00100092001).

Off-site and Third-Party Wastewaters

The ASU unit will be owned/operated by a third party which will not be selected until 2018. Wastewaters from an ASU consists mainly of cooling tower blowdown and some oily wastewaters, and these types of wastewaters are compatible with the Facility's proposed wastewater system. An estimate of the ASU wastewater volume for the Facility is provided in Table 1.

There is an existing AEP Texas Central Company electric substation located on the eastern boundary of the property. The AEP land tract will not be part of the land acquisition for the Project. Storm water from the substation will commingle with storm water discharged through proposed Outfall 005.

There are two existing XTO Energy Inc. oil/gas wells on the property (McKamey Well #1, McKamey Well #6). Contaminated storm water within the secondary containment area and any storage tank wastes are transported off-site.

The Project will include laboratory testing facilities that will be operated by a third party. Wastewater from the laboratory will be discharged to the City of Portland Wastewater Treatment Facility or the City of Gregory Roloff Wastewater Treatment Facility.

Outfalls 002, 003, 004, and 005 – Storm Water

Storm water that will be acceptable for discharge without treatment will be discharged through Outfalls 002, 003, 004, and 005 (see Attachment T-1 GCGV Proposed Site Ditches). An alternative permitting option being considered for these storm water outfalls is the TCEQ's multi-sector general permit (MSGP, TXR0500000) for storm water. If the MSGP option is selected for any or all of the storm water outfalls, then GCGV will request that the TCEQ remove those particular outfalls from the TPDES individual permit application.

Outfall 002 will be located on the west side of the property and will discharge at the north property line along Texas Highway 181 into a drainage ditch maintained by the San Patricio County Drainage District (SPCDD). The drainage area for Outfall 002 will include process and support areas in the center and west side of the property. Storm water collected after the first flush in process areas (post-first flush) and storm water from other areas will be discharged through Outfall 002. The SPCDD drainage ditch runs in a northeast line through the property. Storm water east of the drainage ditch will be primarily from process and support areas and will be collected in the Outfall 002 Storm Water Pond. Outfall 002 will consist of the discharge from the pond commingled with any storm water draining from the west side of the ditch.

Outfall 003 will be located east of Outfall 002 at the north property line along Texas Highway 181. It will discharge into a drainage swale which is not maintained by the SPCDD. Outfall 003 will consist of post-first-flush storm water from the rail yard.

Outfall 004 will be located at the northeast corner of the property. Outfall 004 will include post-first-flush storm water from the rail yard and other storm water from mostly non-process areas to the south and east. Storm water from these areas will be collected in the Outfall 004 Storm Water Pond. Outfall 004 will be the discharge from the pond.

Outfall 005 will be located at the southeast corner of the property. Outfall 005 will include storm water from non-process areas, including maintenance and administration. Storm water from these areas will be collected in the Outfall 005 Storm Water Pond. Outfall 005 will be the discharge from the pond.

Materials that may be exposed to storm water include process materials/equipment, finished and intermediate product, plastic pellets/fines, oils and greases, wastes/wastewaters, and maintenance materials. Best management practices (BMPs) to minimize the exposure of pollutants to storm water will be developed for the site based on standard industry and company-specific practices. These practices will address good housekeeping, preventative maintenance, secondary containment, and spill prevention and response.

Table 1. Wastewater Sources and Flows by Outfall

Outfall		Wastewater Sources	Monthly Average MGD Scenario 1 No Spent Caustic to WWTP	Monthly Average MGD Scenario 2 Spent Caustic to WWTP	Applicable Effluent Guideline (ELG)
001	101	Wastewater Treatment Plant	1.71	1.98	See below.
		Process wastewater [8]	1.29	1.42	40 CFR 414, Subpart F [2]
		Olefins Unit (Ethylene)			
		Olefins NESHAP stripper effluent			
		Olefins dilution steam blowdown			
		Spent caustic			
		Ammonia water box/sump			
		Monoethylene Glycol Unit			
		Storm water [4]	0.21	0.21	
		Utility Wastewater	0.21	0.35	N/A
		Cooling tower blowdown and maintenance wastewaters [7]			
	201	PE Unit 1 (Polyethylene)			40 CFR 414, Subpart D [1]
		Process wastewater Storm water [4]	0.22	0.22	
	301	PE Unit 2 (Polyethylene)			40 CFR 414, Subpart D [1]
		Process wastewater Storm water [4]	0.29	0.29	
	Other wastewaters to Effluent Pond	Cooling tower blowdown	5.00	4.70	N/A
		Water treatment wastewaters	0.83	0.83	N/A
		Air Separation Unit cooling tower blowdown	0.36	0.36	40 CFR 415, Subpart AW [3]
		Miscellaneous wastewaters [8]	0.15	0.15	N/A
		Railcar wash water	0.29	0.29	N/A
	Other Storm Water to Effluent Pond		0.18	0.18	N/A
		Storm water [5]			
		Storm water falling directly on Effluent Pond			
	Total		9.03	9.00	
002	Storm water [6]		Intermittent and flow variable		
003	Storm water [6]		Intermittent and flow variable		
004	Storm water [6]		Intermittent and flow variable		
005	Storm water [6]		Intermittent and flow variable		

Notes

[1] 40 CFR 414, Subpart D - Organic Chemicals, Plastics, and Synthetic Fibers, Thermoplastic Resins

[2] 40 CFR 414, Subpart F - Organic Chemicals, Plastics, and Synthetic Fibers, Commodity Organic Chemicals

[3] 40 CFR 415, Subpart AW - Inorganic Chemicals, Oxygen and Nitrogen Production

[4] Primarily first flush of storm water collected from process and other areas and which is considered potentially contaminated; EGL allocation equivalent to process wastewaters. May include small amounts of storm water, other than first flush, from other areas.

[5] Primarily first flush of storm water from outside main process areas. May include small amounts of storm water other than first flush.

[6] Storm water collected from other areas, and storm collected after the first flush from process and nonprocess areas.

[7] If spent caustic is treated, TDS levels will be maintained by the addition of cooling tower blowdown, as needed.

[8] Includes miscellaneous small intermittent flows such as ASU contaminated first flush storm water, wash pad water, unit washdown, tank water draws from dock area, firefighting wastewater, contaminated cooling water and/or condensate, equipment washdown, furnace decoking condensate, wastewaters from upsets and spills, fire water system test and flushing waters, and other miscellaneous wastewaters from operating units. Potentially contaminated wastewaters will be sent to the WWTP; others not needing treatment in the WWTP will be sent to the Effluent Pond.

Table 2. Raw Materials, Intermediates, and Products

Material	CAS	Material Type*	Consumer**	Producer**	Notes
1,3-Butadiene	106-99-0	P	N/A	O	
1-Butene	106-98-9	P	N/A	O	
Activated carbon	7440-44-0		G	N/A	
Amine		R	O	N/A	
Ammonia	7664-41-7	R	O	N/A	
Anti-fouling agents		R	O	N/A	
Base			PE2	N/A	
Benzene	71-43-2	P	N/A	O	
Bleed Stream		P	N/A	G	
Boric Acid	20786-60-1		G	N/A	
Carbon Dioxide	124-38-9	R, P	G	O, G, I, PE1, PE2	
Catalyst 1 (proprietary)		R	PE2	N/A	
Catalyst 2 (proprietary)		R	PE2	N/A	
Catalyst 3 (proprietary)		R	PE2	N/A	
Caustic	1310-73-2	R	O, G, I	N/A	
cis-1,3-Pentadiene	1574-41-0	P	N/A	O	
cis-2-Butene	590-18-1	P	N/A	O	
Clarifier Slop		P	N/A	I	
Compressor Wash Oil		R	O	N/A	C10-C14 aromatics
Condensing Agent 1 (proprietary)		R	PE1	N/A	
Condensing Agent 2 (proprietary)		R	PE1	N/A	
Continuity Aid 1 Agent (proprietary)		R	PE2	N/A	
Continuity Aid 2 Agent (proprietary)		R	PE2	N/A	
Corrosion inhibitor		R	O	N/A	
Cyclopentadiene	542-92-7	P	N/A	O	
Cyclopentene	142-29-0	P	N/A	O	
Defoamer		R	I, O	N/A	
Diethylene glycol (DEG)	111-46-6	P	N/A	G	
DIAION SK1B	63182-08-01		G	N/A	40-60% diethenylbenzene polymer with sodium ethenylbenzenesulfonate Balance is water
Dicyclopentadiene	77-73-6	P	N/A	O	
Diesel (emergency generator, etc.)		R	O, G, I, PE1, PE2	N/A	
Dimethylsulfide (DMS)	75-18-3	R	O	N/A	
Emulsion breaking agents		R	O	N/A	
Ethane	74-84-0	R	O	N/A	
Ethyl chloride	75-00-3		G	N/A	
Ethylene	74-85-1	I, P	G, PE1, PE2	O	
Ethylene oxide	75-21-8		G	G	
Flocculant 1		R	I	N/A	
Flocculant 2		R	I	N/A	
Gasoline (for mobile equipment, etc.)		R	O, G, I, PE1, PE2	N/A	
Glycol slops		I	G	G	
Heavy fuel oil		P	N/A	O	100% C8+ material
Heavy glycols		P	N/A	G	
Hexene		R	PE1, PE2	N/A	
Hydrogen	1333-74-0	I	PE1, PE2	O	
ICA (Isopentane)	78-78-4	R	PE2	N/A	
Lithium bromide	7550-35-8	R	G	N/A	
LLDPE		P	N/A	PE1, PE2	
Lube oil		R	all	N/A	
MEG	107-21-1	P	N/A	G	
Methane	74-82-8	R	O, G, I, PE1, PE2	N/A	
Methanol	67-56-1	R	O	N/A	
Mineral oil	8042-47-5	R	PE2	N/A	
Modifier C (Proprietry)			PE2	N/A	
Modifier RO (proprietary)		R	PE2	N/A	
NaCO3	497-19-8	P	N/A	G	
n-Butane	106-97-8	P	N/A	O	
Nitrogen	7727-37-9	I	all	APE2U	
O2 Scavenger		R	O	N/A	

Table 2. Raw Materials, Intermediates, and Products

Material	CAS	Material Type*	Consumer**	Producer**	Notes
OMEGA Catalyst		R	G	N/A	50% Tertiair Butyl Phosphonium Methyl Iodine, 2% K2CO3 and balance MEG
Oxygen	7782-44-7	R	G	N/A	
pH control agents		R	O	N/A	
Phosphate		R	O, G	N/A	
Phosphoric acid	7664-38-2	R	I	N/A	
Pluronic L101	9003-11-6	R	G	PE2uppliPE1r	Chemical name: Polyoxypropylene-Polyoxyethylene Block Copolymer
Polymeric dispersant		R	O	N/A	
Potassium carbonate	584-08-7	R	G	PE2uppliPE1r	
Potassium hydroxide	1310-58-3				
Propane	74-98-6	P	N/A	O	
Propylene	115-07-1	P	N/A	O	
Red Oil		P	N/A	O	
Refrigerant			PE2	N/A	
Silver catalyst	See Notes	R	G	PE2uppliPE1r	Aluminum oxide, Synonyms: Al2O3 (CAS# 1344-28-1)-- < 90 %wt Silver, metallic Synonyms: Ag (CAS# 7440-22-4)---10 - 30 %wt
Slop		P	N/A	O	C5+ material
Sodium hypochlorite (bleach)	7681-52-9	R	O	N/A	
Sodium metabisulphite	7681-57-4	R	O	N/A	
Solid Additive 1	92704-41-1	R	PE2	N/A	
Solid Additive 2	006683-19-8	R	PE2	N/A	
Solid Additive 3	2082-79-3	R	PE2	N/A	
Solid Additive 4	557-05-1	R	PE2	N/A	
Solid Additive 5	1314-13-2	R	PE2	N/A	
Solid Additive 6	1592-23-0	R	PE2	N/A	
Solid Additive 7	6683-19-8	R	PE2	N/A	
Solid Additive 8	003896-11-5	R	PE2	N/A	
Solid Additive 9	65447-77-0	R	PE2	N/A	
Styrene	100-42-5	P	N/A	O	
Sulfidic caustic		P	N/A	O	
Sulfonated divinylbenzene/ styrene copolymer	39389-20-3		G	PE2uppliPE1r	
Sulfuric acid	7664-93-9	R	O, I	N/A	
Triethylene glycol (TEG)	112-27-6	P	N/A	G	
Tetra ethylene glycols	112-60-7	P	N/A	G	
Toluene	108-88-3	P	PE2	O	
trans-2-Butene	624-64-6	P	N/A	O	
Transformer oil		R	all	N/A	
Transition agent (proprietary)		R	PE2	N/A	
Urea 37%	57-13-6	R	I	N/A	
Vanadium pentoxide	1314-62-1	R	G	N/A	
Waste water plant sludge		P	N/A	I	
Water	7732-18-5	R	O, G, I, PE1, PE2	N/A	
Masterbatch 2%Carbowax PEG 3350		R	PE1	N/A	
Masterbatch 50/50 SuperFloss (50% Sprflss MX)		R	PE1	N/A	
OMS		R	PE1	N/A	
Propionaldehyde	123-38-6	R	PE1	N/A	
Trig B		R	PE1	N/A	
Trig D		R	PE1	N/A	
Trigonox 36/21-C17		R	PE1	N/A	
Slip		R	PE1	N/A	
Irganox 1076 FD		R	PE1	N/A	
Ethylene	74-85-1	R	PE1	N/A	
Butene	106-98-9	R	PE1	N/A	
DEAC/TEAL Blend		R	PE1	N/A	
DEAEO - (Diethylaluminum Ethoxide)		R	PE1	N/A	
Diethylaluminum Chloride (DEAC)	96-10-6	R	PE1	N/A	

Table 2. Raw Materials, Intermediates, and Products

Material	CAS	Material Type*	Consumer**	Producer**	Notes
Hexene	592-41-6	R	PE1	N/A	
Hydrogen	1333-74-0	R	PE1	N/A	
M-1 Catalyst		R	PE1	N/A	
Magnesium Chloride/Titanium Trichloride Blend		R	PE1	N/A	
Sylopol (R) 955, 955 EC Silica Gel		R	PE1	N/A	
SYLOPOL 2408		R	PE1	N/A	
TEA (Triethylaluminum) Pyrophoric	97-93-8	R	PE1	N/A	
Tetrahydrofuran	109-99-9	R	PE1	N/A	
Tetraisopropyl Titanate (TIPT) in ISOP	546-68-9	R	PE1	N/A	
TNHA (Pyrophoric)		R	PE1	N/A	
Trimethylaluminum 50% (TMA)	75-24-1	R	PE1	N/A	
MCN Catalyst		R	PE1	N/A	
Carbowax Sentry Polyethylene GLY 8000		R	PE1	N/A	
TNPP		R	PE1	N/A	
Polymer Processing Aid		R	PE1	N/A	
Irgafos C EMZ G		R	PE1	N/A	
Irganox B-11 Zinc		R	PE1	N/A	
Irganox B931 ZNG		R	PE1	N/A	
Irgafos 168FF		R	PE1	N/A	
Optibloc 8		R	PE1	N/A	
Isobutane		R	PE1	N/A	
Mineral Oil - CA		R	PE1	N/A	
Kemamide Bead		R	PE1	N/A	
Kynar 761		R	PE1	N/A	
MB Slip/Antiblock (40/10) DE		R	PE1	N/A	
Microtalc - Abt2500		R	PE1	N/A	
Pluriol E 8000		R	PE1	N/A	
Purolite C100 H		R	PE1	N/A	
Roto MB5		R	PE1	N/A	
Zinc oxide	1314-13-2	R	PE1	N/A	
Zn. St. VG ADM FREE		R	PE1	N/A	

Notes
*R - Raw Material; I - Intermediate; P - Product
**O - Olefins; G - Glycol; PE1 - PE Unit 1; PE2 - PE Unit 2; I - Infrastructure

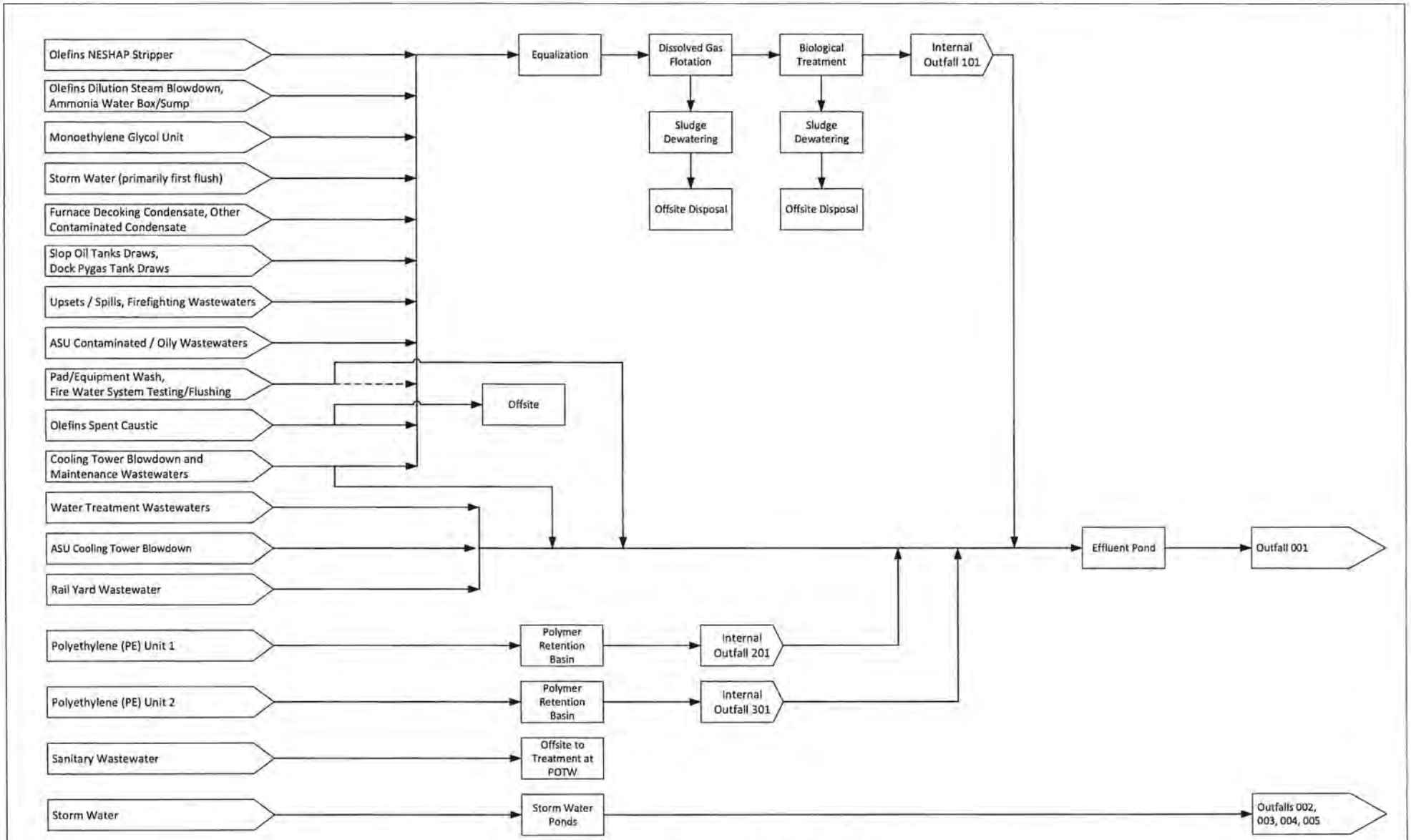


Figure 1. Wastewater Flow Diagram

81

GH7

Outfall 003

GH8

Detention Pond
Outfall 004
30 Acres

GH1

RAIL STORAGE IN TRANSIT AREA (SIT)
(600 CARS)

CAR MAINTENANCE / TRANSLOAD (3)
RAIL YARD (435 CARS)

EMPTY DIRTY CAR STORAGE (100 CARS)

HOPPER CAR WASH

10 CAR TAIL BACK

Detention Pond
Outfall 002
25 Acres

HOPPER / GRT LOADOUT
POLYMER SUMP

5th Street (Major)

6th Street (Major)

HYDROCARBON LOADOUT RACK

CO-MONOMER UNLOADING

Avenue D (Major)

Avenue E (Secondary)

Avenue G (Secondary)

SABIC Fin

SABIC Process

Main 34.5 kV Voltage 345 - Switch Yard

4th Street (Major)

OR LP Flare

Ground Flare (450'x400')

GH6

GH2

3rd Street (Secondary)

OLEFINS RECOVERY

UM1

PM6

PM4

PM2

PM7

PM5

PM3

PM1

EO Unit Flare

Avenue B (Secondary)

2nd Street (Major)

78A

Admin Co

Outfall 001

GH3

WASTE WATER TREATMENT PLANT

WW RET 423'x250'

Gate A

1st Street (Major)

Detention Pond
Outfall 005
25 Acres

AIR SEP UNIT (3RD PARTY) (250'x300')

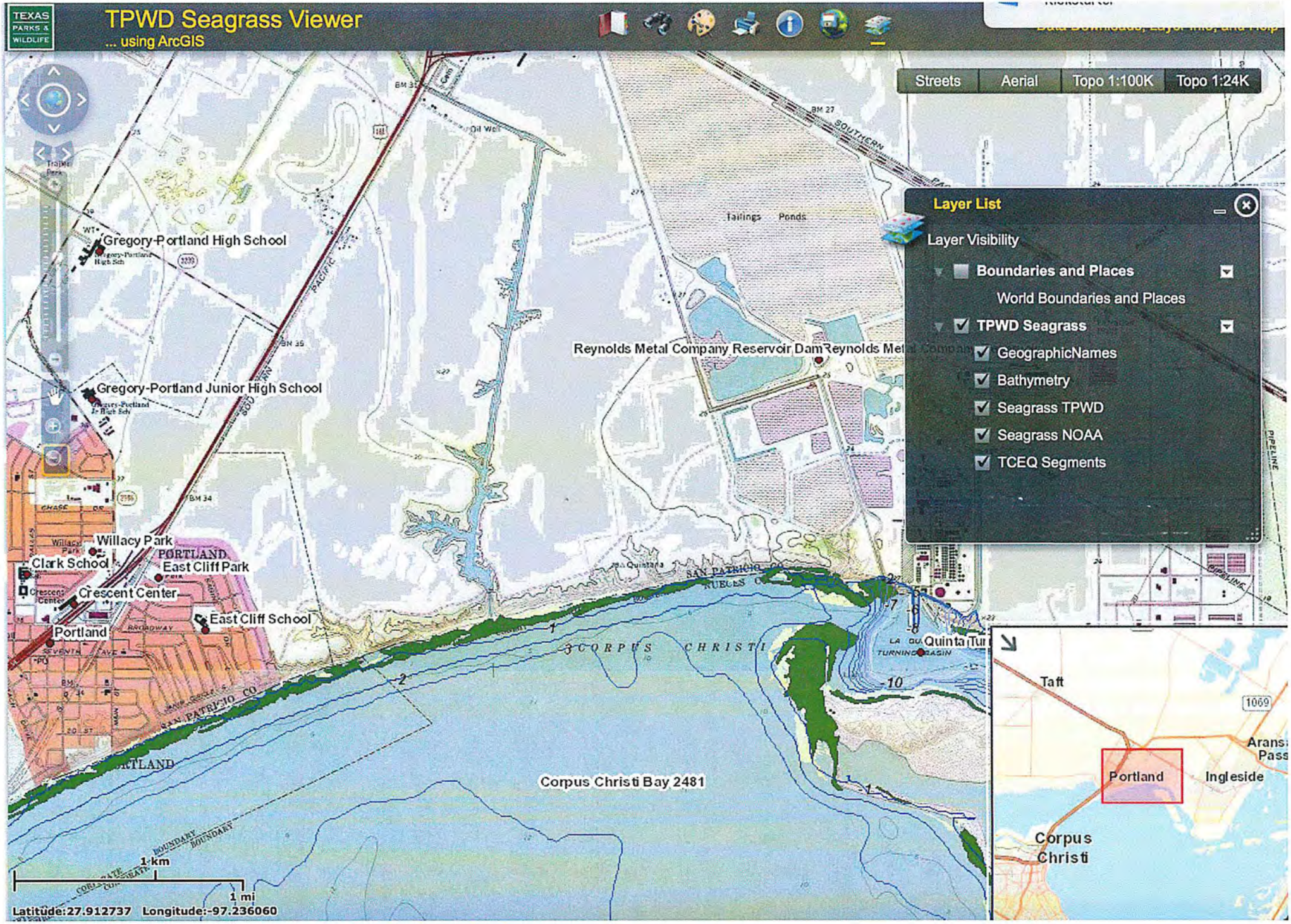
GH5

GH4

Overall Plot Plan

Attachment T-2

Seagrass Map


TPWD Seagrass Viewer
... using ArcGIS
Streets
Aerial
Topo 1:100K
Topo 1:24K
Layer List
Layer Visibility
Boundaries and Places
World Boundaries and Places
TPWD Seagrass
GeographicNames
Bathymetry
Seagrass TPWD
Seagrass NOAA
TCEQ Segments
Gregory-Portland High School
Gregory-Portland Junior High School
Reynolds Metal Company Reservoir Dam
Tailings Ponds
Willacy Park
Clark School
East Cliff Park
Crescent Center
East Cliff School
Portland
Corpus Christi Bay 2481
Taft
Portland
Ingleside
Corpus Christi
1 km
1 mi
Latitude:27.912737 Longitude:-97.236060

Attachment T-3

Water Well Report

Prepared for:

AECOM-Houston
5444 Westheimer Rd
Suite 200
Houston, TX 77056

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Water Well Report

Undisclosed

Gregory, TX

San Patricio County

ES-121408

Thursday, September 08, 2016

Table of Contents

Banks Environmental Data, Inc. - 1601 Rio Grande, Ste. 331 - Austin, TX 78701 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Geographic Summary

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Location
San Patricio County, TX
Target location is 2.128 square miles and has a 6.25 mile perimeter

Coordinates	
Longitude & Latitude in Degrees Minutes Seconds	NA
Longitude & Latitude in Decimal Degrees	NA
X and Y in UTM	NA

Elevation
NA

Zip Codes Searched	
Search Distance	**Zip Codes (historical zip codes included)**
Target Property	78374, 78359
0.5 miles	78374, 78359, 78390, 78359

Topos Searched	
Search Distance	**Topo Name**
Target Property	Gregory (1977)
0.5 miles	Gregory (1977)

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Summary Map - 0.5 Mile Buffer

BANKS ENVIRONMENTAL DATA
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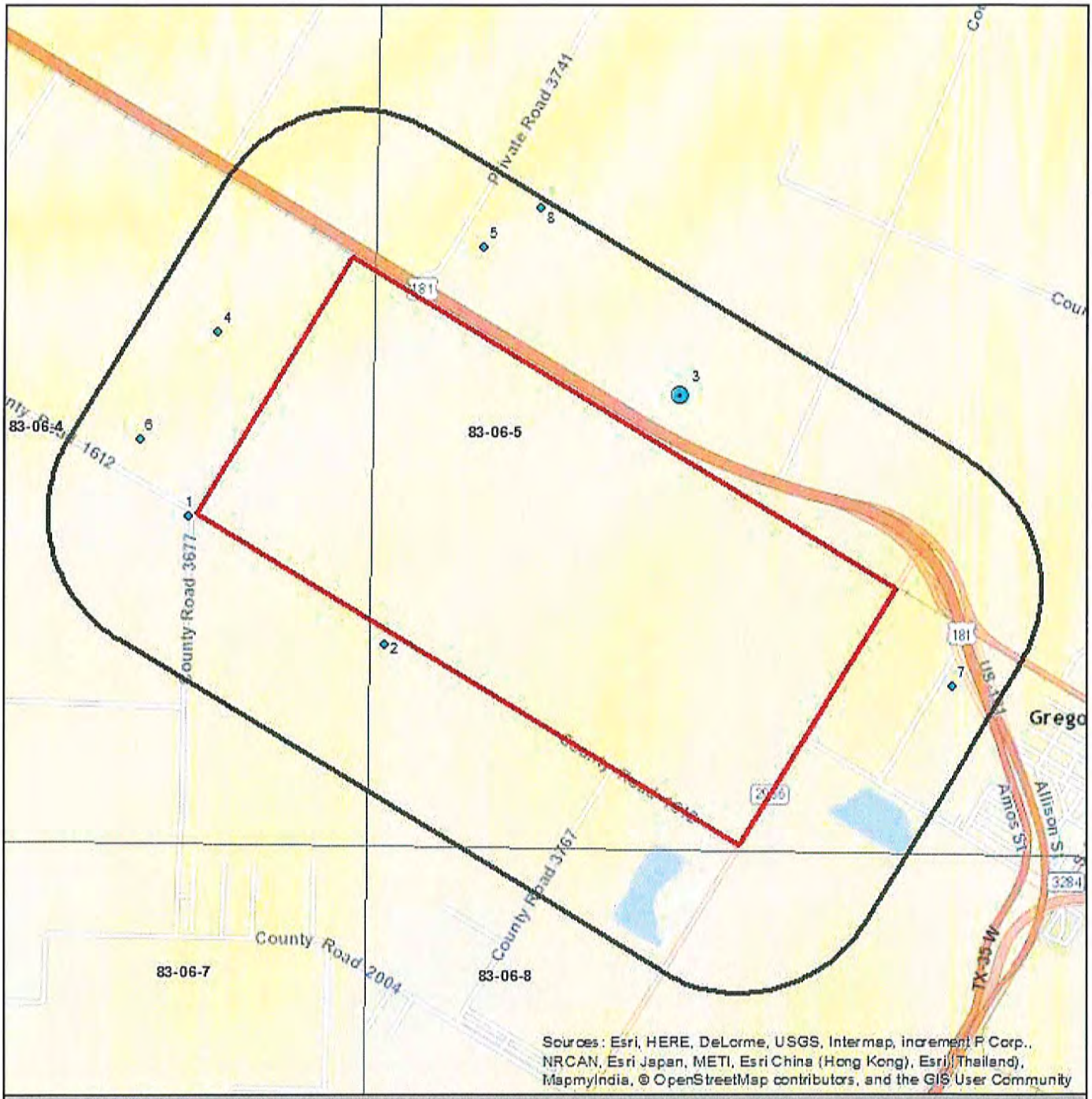


Undisclosed

- Well
- Well Cluster
- Target Property
- Search Buffer
- Texas Quad Index

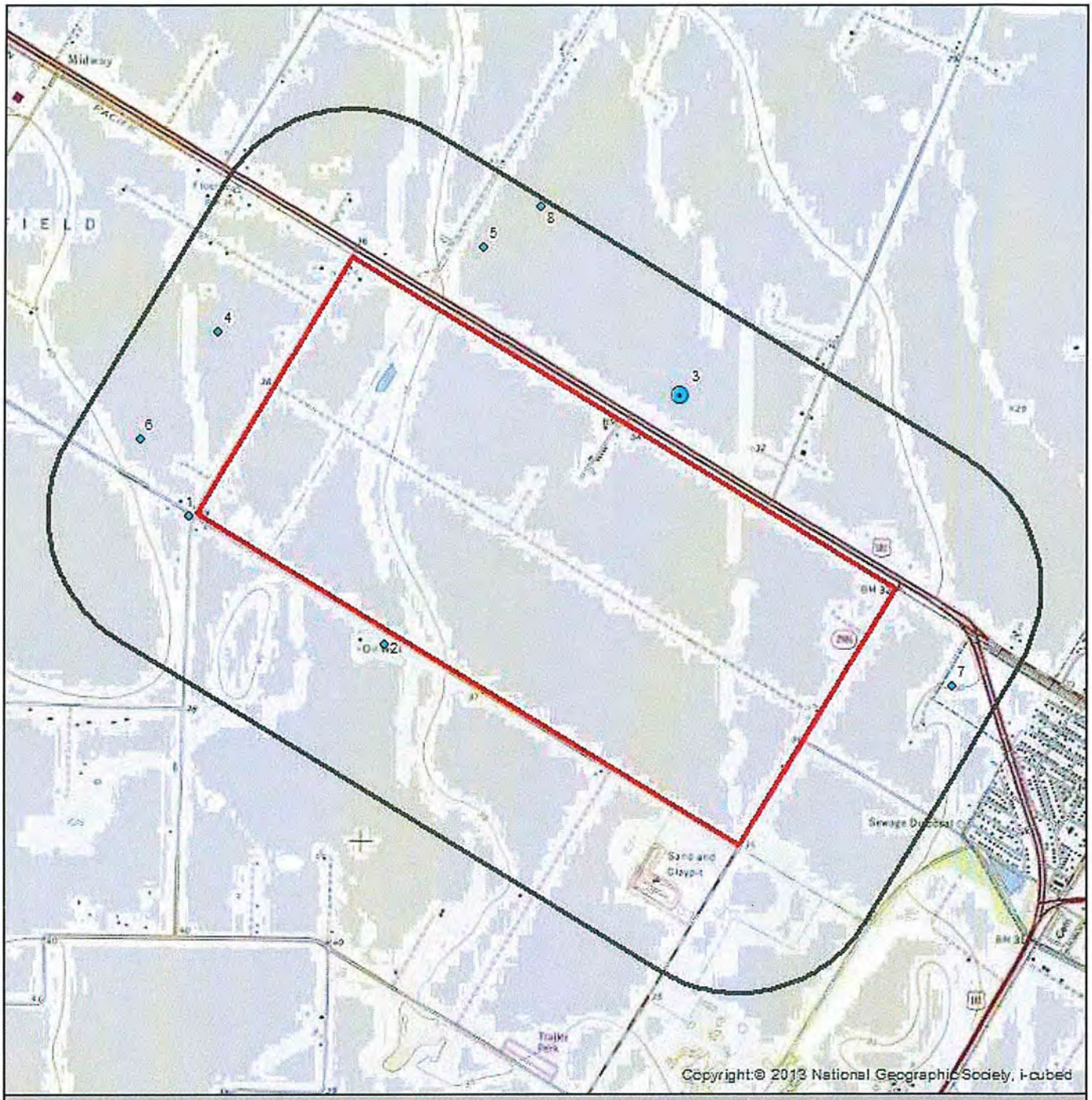
1 : 31,000
1 inch = 0.489 miles
1 inch = 2583 feet
1 centimeter = 0.310 kilometers
1 centimeter = 310 meters

N

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

Topographic Overlay Map - 0.5 Mile Buffer

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Undisclosed

Well
Well Cluster
Target Property
Search Buffer

Target Property Quad Name(s)
Gregory (1977)

1 : 31,000
1 inch = 0.489 miles
1 inch = 2583 feet

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

N

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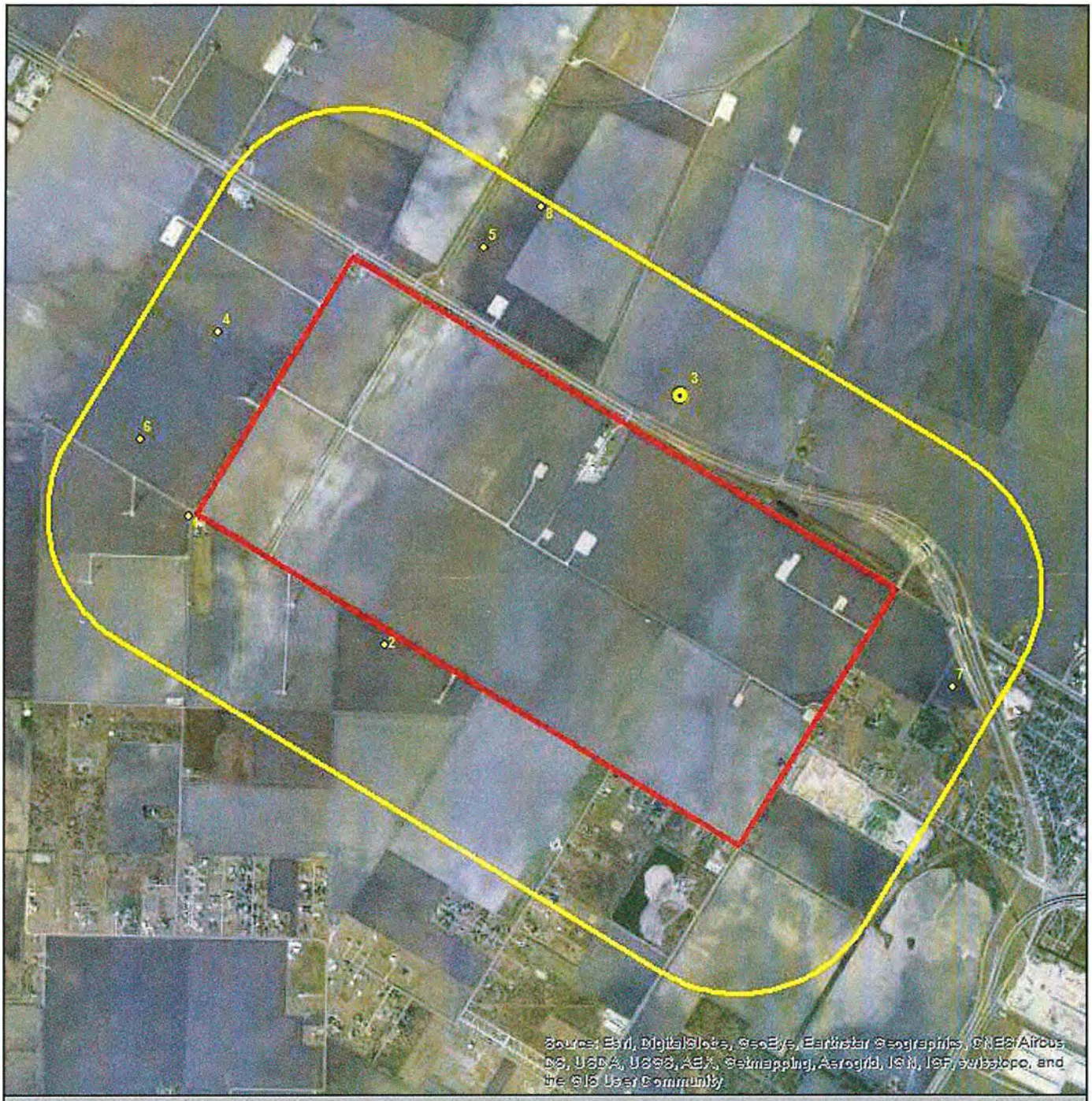
Current Imagery Overlay Map - 0.5 Mile Buffer

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Undisclosed

Well
Well Cluster
Target Property
Search Buffer

1 : 31,000
1 inch = 0.489 miles
1 inch = 2583 feet
1 centimeter = 0.310 kilometers
1 centimeter = 310 meters

N

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0 00" North
Second Standard Parallel: 45 0 00" North
Central Meridian: 96 0 00" West
Latitude of Origin: 39 0 00" North

Water Well Details

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs
1	83-06-401	TX TWDB GW	H. W. Smith	Unused	182	01/01/1921	-97.343334	27.9325	39 ft	View
2	83-06-5a	TX TCEQ HIST	Flourney Drilling Co	Industrial	210	05/28/1964	-97.33251	27.926466	35 ft	View
3	83-06-5E	TX TCEQ HIST	Harkins & Co	Industrial	249	07/14/1973	-97.31646	27.938675	32 ft	View
3	83-06-5E	TX TCEQ HIST	Harkins & Co.	Industrial	238	12/13/1973	-97.316809	27.938656	32 ft	View
3	83-06-5E	TX TCEQ HIST	Harkins &Co.	Industrial	222	10/06/1974	-97.316932	27.938902	32 ft	View
3	83-06-5E	TX TCEQ HIST	Harkins & Co	Industrial	225	04/19/1973	-97.316588	27.93894	32 ft	View
4	83-06-4	TX TCEQ HIST	Corpus Christi Drilling Co	Industrial	220	07/24/1997	-97.341865	27.941443	38 ft	View
5	83-06-5G	TX TCEQ HIST	Harkins & Co	Industrial	220	04/18/1973	-97.327446	27.945727	34 ft	View
6	83-06-4G	TX TCEQ HIST	Allen & Shumate	Industrial	181	08/31/1964	-97.346034	27.936229	39 ft	View
7	83-06-5D	TX TCEQ HIST	Southland Drilling	Other	217	11/14/1970	-97.301439	27.924798	30 ft	View
8	83-06-5H	TX TCEQ HIST	Richard Gonzales	Domestic	235	11/16/1983	-97.324356	27.947698	33 ft	View

Well Summary

Water Well Dataset	# of Wells
TX TCEQ HIST	10
TX TWDB GW	1
Total Count	**11**

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USGS Exp. (CM)
Aug. 1964

Guiterrez

U. S. DEPARTMENT OF THE INTERIOR — GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

Well Number

HYDROGEOLOGIC CARD

Record by: Geo. H. Shafer — Source of data: Rpt. — Date: 6-3-65 — Map: Corpus Christi

State: Texas — County (or town): San Patricio

Latitude: 27 56 56.6 N — Longitude: 097 20 35 — Sequential number: 1

Lat-long accuracy: 2 — T. N S, A W, Sec , , k, k, k

Local well number: W W 8 3 9 6 4 0 1 — Other number: WPD # 280

Local use: — Owner or name: H.W. Smith

Owner or name: W.W. SMITH — Address:

Ownership: (C) County, (F) Fed Gov't, (M) City, (N) Corp or Coop, (P) Private, (S) State Agency, (W) Water Dist — P

Use of water: (A) Air cond, (C) Comm, (D) Dewatering, (F) Fish, (H) Dom, (I) Irr, (N) Ind, (P) P S, (S) Stock, (T) Instit, (U) Unused — U

Use of well: (A) Anode, (D) Drain, (G) Galvanic, (O) Obs, (O) Oil-gas, (R) Recharge, (S) Spring, (T) Test, (U) Unused, (W) Withdrawn, (X) Waste, (Z) Destroyed — U

DATA AVAILABLE: Well data — Freq. W/L meas.: — Field aquifer char.

Hyd. lab. data:

Qual. water data: type:

Freq. sampling: — Pumpage inventory: yes / no — period:

Aperture cards: yes

Log data:

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD — Depth well: 182 ft — 182 Meas. (rep) — accuracy 6

Depth cased (first perf.) ft — Casing type: — Diam. 4 in — 32

Finish: (C) porous concrete, (F) gravel w. (perf.) (screen), (G) gravel w. gallery, (H) horiz. gallery, (O) open hole, (P) perf., screen, sd. pt., (S) shored, (T) open hole, (Z) other

Method Drilled: (A) air rot, (B) bored, cable, dug, (C) cable, (D) dug, (H) hyd rot., (J) jetted, (P) air percussion, (R) reverse rotary, (T) crenching, (V) driven, (W) drive wash, (Z) other

Date Drilled: 1921 — Pump intake setting: ft

Driller: name — address

Lift (type): (A) air, (B) bucket, cent, (C) cent, jet, (J) multiple, (L) multiple (cent.), (M) multiple (turb.), (N) none, (P) piston, rot, (B) submerg, turb, (S) turb, (T) other, (Z) other — Deep / Shallow

Power (type): diesel, elec, gas, gasoline, hand, gas, wind; not LPG; H.P. — Trans. or meter no.

Descrip. MP — ft above / below lsd, Alt. MP

Alt. LSD: — Accuracy (source):

Water Level: 14.5 ft above / below MP; ft above / below lsd — 15 — Accuracy: Meas

Date meas: 11-1-28 — Yield: gpm — Method determined

Drawdown: ft — Accuracy: — Pumping period hrs

QUALITY OF WATER DATA: Iron ppm — Sulfate ppm — Chloride ppm — Hard. ppm

Sp. Conduct K x 10^6 — Temp. °F — Date sampled 11-1-28 — W 98

Taste, color, etc.

Core holes [illegible] pipes [illegible]

[illegible] well [illegible]

[illegible]

9/16

EPO 844-725

5A

File original copy with Texas Water Commission P. O. Box 2311, Capitol Station Austin 11, Texas

State of Texas

DRILLERS LOG AND WELL DATA REPORT

For use by TWC only
Well No. 57-57-5
Located on map
By (H) Date 6-4
Map no. 325

1) Well Owner: Flournoy Drilling Co. Box 491 Alice Texas
(Name) (Street or RFD) (City) (State)

2) Land Owner: J. H. Shell Gregory Texas
(Name) (Street or RFD) (City) (State)

3) Intended use: Industrial ☑ Municipal ☐ Irrigation ☐ Other

4) Location of well: County San Patricio Labor League Abstract No. 238

NW¼ NE¼ SW¼ SE¼ (Circle one) of Section 90 Block No. Survey #4 Geo. H. Paul subd. of Coleman & Fulton Pasture Co.'s Land San Patricio C.S.L.

2½ miles in W direction from Gregory (Nearest town)

467' FWL & 467' FNEL Lse. 3107' E of sc. 1100' FN-FSW/c sec. 90 sc. 5100' FSL & 6100' FEL Sur.

Sketch map of well location with distances from two section or survey lines, and to landmarks, roads, and creeks.

DRILLERS LOG OF WELL

Method of drilling: Rotary Diameter of hole 4½ in. Date drilled May 28, 1964

All measurements made from ft. above ground level.

From (ft)	To (ft)	Description and color of formation material	From (ft)	To (ft)	Description and color of formation material
0	41	Clay			
41	57	Sand			
57	122	Clay			
122	160	Shale			
180	210	Sand			

(Use continuation sheets if necessary)

COMPLETION DATA

COMPLETION
Straight wall ☑
Under reamed ☐
Gravel packed ☐
Open hole ☐
Other

CASING
Type: Old ☐ New ☑
Cemented from None ft.
to ft.

Diameter (inches)	Setting from (ft)	Setting to (ft)
4½	0	180

SCREEN
Type
Perforated ☐ Slotted ☑

Diameter (inches)	Setting from (ft)	Setting to (ft)
4½	180	210

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

J. E. Flournoy Buck Baye & Co. Reg. No. 489
(Signed) (Company name)

Please attach electric log, chemical analysis, and other pertinent information if available.

If well was tested by your company or if you installed the permanent pump please complete the following:

WATER LEVEL AND PUMP DATA

Static water level 30 ft. below Surface

Pumping level

feet	hours	gpm
		50

Pump type
Designed pumping rate 50 gpm ☑ gph ☐
Type power unit Air Jet
Horsepower
Depth to bowls, cylinder, jet, etc., ft. below pump base.

Name of contractor testing well or installing permanent pump if other than your company:

C-34 (62-4)

L. Hamilton

Send original copy by certified mail to the Texas Water Development Board P. O. Box 13087 Austin, Texas 78711

State of Texas

WATER WELL REPORT

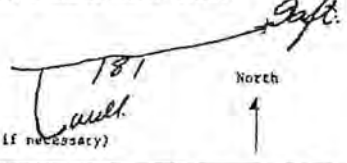
For TWDB use only
Well No.
Located on map
Received

1) OWNER:
Person having well drilled Harkins & Co (Name) Address Alice (Street or RFD) Texas (City) (State)

Landowner (Name) Address (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County San Patricio 6 miles in East. (N.E., S.W., etc.) direction from Taft. (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*



(Use reverse side if necessary)

or Give legal location with distances and directions from adjacent sections or survey lines.

Labor League
Block Survey
Abstract No.
(NW¼ NE¼ SW¼ SE¼) of Section

3) TYPE OF WORK (Check): New Well, Deepening, Reconditioning, Plugging

4) PROPOSED USE (Check): Domestic, Industrial, Municipal, Irrigation, Test Well, Other

5) TYPE OF WELL (Check): Rotary, Driven, Dug, Cable, Jetted, Bored

6) WELL LOG:
Diameter of hole 6½ in. Depth drilled 260 ft. Depth of completed well 249 ft. Date drilled 7-14-73
All measurements made from ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	3	black surface
3	35	yellow clay
35	55	sand
55	100	yellow clay.
100	125	sand.
125	180	yellow clay
180	200	sand.
200	235	yellow clay.
235	249	sand.

(Use reverse side if necessary)

9) Casing:
Type: Old New Steel Plastic Other
Cemented from ft. to ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4 in	249		

10) SCREEN:
Type
Perforated Slotted

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size
4 in	235	249	

7) COMPLETION (Check):
Straight wall, Gravel packed, Other
Under reamed, Open Hole

8) WATER LEVEL:
Static level ft. below land surface Date
Artesian pressure lbs. per square inch Date
Depth to pump bowls, cylinder, jet, etc., ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom? air
Yield: 65 gpm with ft. drawdown after hrs.
Bailer test gpm with ft. drawdown after hrs.
Artesian flow gpm
Temperature of water

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? depth of strata

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME NEWTON BORTH (Type or Print) Water Well Drillers Registration No. 482

ADDRESS Box 954 (Street or RFD) YORKTOWN (City) TEX (State)

(Signed) Truston Borth (Water Well Driller) Borth Garage & welding (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDB-W1-8

Send original copy by certified mail to the Texas Water Development Board P. O. Box 13087 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No.
Located on map
Received:

1) OWNER:
Person having well drilled _____ (Name) Address _____ (Street or RFD) _____ (City) _____ (State)

Landowner _____ (Name) Address _____ (Street or RFD) _____ (City) _____ (State)

2) LOCATION OF WELL:
County _____ _____ miles in _____ direction from _____ (N.E., S.W., etc.) (Town)

Locate by sketch map showing landmarks, roads, creeks, highway number, etc.*

North

(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor _____ League _____

Block _____ Survey _____

Abstract No. _____

(SW¼ NE¼ SW¼ SE¼) of Section _____

3) TYPE OF WORK (Check):
New Well | Deepening | Reconditioning | Plugging

4) PROPOSED USE (Check):
Domestic | Industrial | Municipal | Irrigation | Test Well | Other

5) TYPE OF WELL (Check):
Rotary | Driven | Dug | Cable | Jetted | Bored

6) WELL LOG:
Diameter of hole _____ in. Depth drilled _____ ft. Depth of completed well _____ ft. Date drilled _____

All measurements made from _____ ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material

(Use reverse side if necessary)

9) Casing:
Type: Old New Steel Plastic Other

Cemented from _____ ft. to _____ ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage

10) SCREEN:
Type _____

Perforated Slotted

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size

7) COMPLETION (Check):
Straight wall | Gravel packed | Other
Under reamed | Open Hole

8) WATER LEVEL:
Static level _____ ft. below land surface Date _____

Artesian pressure _____ lbs. per square inch Date _____

Depth to pump bowls, cylinder, jet, etc., _____ ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom?

Yield: _____ gpm with _____ ft. drawdown after _____ hrs.

Bailer test _____ gpm with _____ ft. drawdown after _____ hrs.

Artesian flow _____ gpm

Temperature of water _____

12) WATER QUALITY:
Was a chemical analysis made? Yes No

Did any strata contain undesirable water? Yes No

Type of water? _____ depth of strata _____

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME _____ (Type or Print) Water Well Drillers Registration No. _____

ADDRESS _____ (Street or RFD) _____ (City) _____ (State)

(Signed) _____ (Water Well Driller) _____ (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDB-WWR

Send original copy by certified mail to the Texas Water Development Board P. O. Box 13087 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 83-02-55
Located on map 1 of 1
Received: 2-

1) OWNER:
Person having well drilled Watkins & Co (Name) Address Alice (Street or RFD) Texas (City) (State)

Landowner (Name) Address (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County San Patricio 6 miles in South (N.E., S.W., etc.) direction from Taft. (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor League

Block Survey

Abstract No.

(NW¼ NE¼ SW¼ SE¼) of Section

3) TYPE OF WORK (Check):
New Well | Deepening | Reconditioning | Plugging

4) PROPOSED USE (Check):
Domestic | Industrial | Municipal | Irrigation | Test Well | Other

5) TYPE OF WELL (Check):
Rotary | Driven | Dug | Cable | Jetted | Bored

6) WELL LOG:
Diameter of hole 6 5/8 in. Depth drilled 240 ft. Depth of completed well 232 ft. Date drilled 10-5-74

All measurements made from ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	5	black surface
5	25	yellow clay
25	45	sand
45	140	yellow clay
140	180	Blue clay
180	232	sand

(Use reverse side if necessary)

9) Casing:
Type: Old New Steel Plastic Other

Cemented from ft. to ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
4in	0	232	

10) SCREEN:
Type

Perforated Slotted

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size

7) COMPLETION (Check):
Straight wall | Gravel packed | Other
Under reamed | Open Hole

8) WATER LEVEL:
Static level 20 ft. below land surface Date

Artesian pressure lbs. per square inch Date

Depth to pump bowls, cylinder, jet, etc., ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom? air

Yield: 65 gpm with ft. drawdown after hrs.

Bailer test gpm with ft. drawdown after hrs.

Artesian flow gpm

Temperature of water

12) WATER QUALITY:
Was a chemical analysis made? Yes No

Did any strata contain undesirable water? Yes No

Type of water? depth of strata

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME NEWTON BORTH (Type or Print) Water Well Drillers Registration No. 483

ADDRESS Box 954 (Street or RFD) YOAKTOWN (City) TEX (State)

(Signed) Newton Borth (Water Well Driller) Borth Surveying & Welding (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

WDBE-WD-6

Send original copy by certified mail to the Texas Water Development Board P. O. Box 12386 Austin, Texas 78711

State of Texas

WATER WELL REPORT

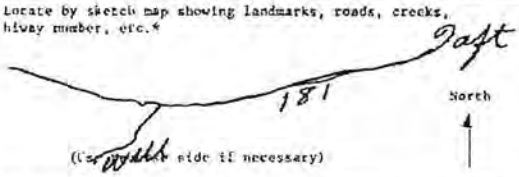
For TWDB use only
Well No.
Located on map
Received:

1) OWNER:
Person having well drilled Borton & Co (Name) Address Alice Texas (Street or RFD) (City) (State)

Landowner (Name) Address (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County San Patricio . 8 miles in East (N.E., S.W., etc.) direction from Daft (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*



(Continued on reverse side if necessary)

or Give legal location with distances and directions from adjacent sections or survey lines.

Labor League
Block Survey
Abstract No.
(NW1 NE1 SW1 SE1) of Section

3) TYPE OF WORK (Check):
New Well | Deepening | Reconditioning | Plugging

4) PROPOSED USE (Check):
Domestic | Industrial | Municipal | Irrigation | Test Well | Other

5) TYPE OF WELL (Check):
Rotary | Driven | Dug | Cable | Jetted | Bored

6) WELL LOG:
Diameter of hole 6 1/2 in. Depth drilled 230 ft. Depth of completed well 225 ft. Date drilled 4-19-73

All measurements made from (ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	4	black surface
4	45	yellow clay
45	55	sand
55	120	yellow clay
120	125	sand
125	190	yellow clay
190	225	sand

(Use reverse side if necessary)

9) Casing:
Type: Old New Steel Plastic Other
Cemented from ft. to ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
4 in		255	

10) SCREEN:
Type
Perforated Slotted

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size
4 in	190	255	

7) COMPLETION (Check):
Straight wall | Gravel packed | Other
Under reamed | Open Hole

8) WATER LEVEL:
Static level ft. below land surface Date
Artesian pressure lbs. per square inch Date
Depth to pump bowls, cylinder, jet, etc., ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom? air
Yield: 65 gpm with ft. drawdown after hrs.
Bailer test gpm with ft. drawdown after hrs.
Artesian flow gpm
Temperature of water

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? depth of strata

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Newton Borth (Type or Print) Water Well Drillers Registration No. 482

ADDRESS Box 954 (Street or RFD) Yoakum (City) Tex (State)

(Signed) Newton Borth (Water Well Driller) Borth Salvage & Welding (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDBE-(W-33

Send original copy by certified return receipt requested to: TNRCC, MC 177, P.O. Box 13087, Austin, TX 78711

ATTENTION OWNER: *Confidentiality Privilege Notice on on reverse side of Well Owner's copy (pink)*

State of Texas
WELL REPORT

Texas Water Well Drillers Advisory Council
MC 177
P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

1) OWNER Corpus Christi Drilling Co. (Name) ADDRESS P.O. Box 8400, (Street or RFD) Corpus Christi, (City) Tx. (State) 78468 (Zip)

2) ADDRESS OF WELL: County San Patricio Midway Rd. (Street, RFD or other) Taft, (City) Texas (State) 783 (Zip) GRID # 53-D-11

3) TYPE OF WORK (Check): [X] New Well [ ] Deepening [ ] Reconditioning [ ] Plugging

4) PROPOSED USE (Check): [ ] Monitor [ ] Environmental Soil Boring [ ] Domestic [X] Industrial [ ] Irrigation [ ] Injection [ ] Public Supply [ ] De-watering [ ] Testwell
If Public Supply well, were plans submitted to the TNRCC? [ ] Yes [ ] No

5) X

6) WELL LOG:
Date Drilling:
Started 7-24 1997
Completed 7-24 1997

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
	Surface	220

7) DRILLING METHOD (Check): [ ] Driven [ ] Air Rotary [X] Mud Rotary [ ] Bored [ ] Air Hammer [ ] Cable Tool [ ] Jetted [ ] Other

From (ft.)	To (ft.)	Description and color of formation material
0	60	Clay
60	74	Sand Streaks
74	80	Clay
80	88	Sand Streaks
88	100	Rock
100	110	Sand
110	120	Clay
120	140	Sand Streaks
140	150	Clay
150	154	Rock
154	164	Sand Streaks
164	180	Rock
180	184	Sand Streaks
184	185	Rock
185	220	Sand Streaks
220	230	Clay

(Use reverse side of Well Owner's copy, if necessary)

8) Borehole Completion (Check): [ ] Open Hole [X] Straight Wall [ ] Underreamed [ ] Gravel Packed [ ] Other
If Gravel Packed give interval ... from ____ ft. to ____ ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
	N	PVC.	0	190	
	N	Slotted Pipe	190	220	

9) CEMENTING DATA (Rule 338.44(1))
Cemented from 0 ft. to 15 ft. No. of sacks used 3
____ ft. to ____ ft. No. of sacks used ____
Method used Annular
Cemented by ____
Distance to septic system field lines or other concentrated contamination ____ ft
Method of verification of above distance No Septic

10) SURFACE COMPLETION
[ ] Specified Surface Slab Installed (Rule 338.44(2)(A))
[ ] Specified Steel Sleeve Installed (Rule 338.44(3)(A))
[ ] Pitless Adapter Used (Rule 338.44(3)(b))
[X] Approved Alternative Procedure Used (Rule 338.71)

11) WATER LEVEL:
Static level 30 ft. below land surface Date 7-24-97
Artesian flow ____ gpm Date ____

12) PACKERS:

Type	Depth
Gravel 15'	

13) TYPE PUMP:
[ ] Turbine [ ] Jet [ ] Submersible [ ] Cylinder
[ ] Other ____
Depth to pump bowls, cylinder, jet, etc.. ____ ft.

14) WELL TESTS:
Type test: [ ] Pump [ ] Bailer [X] Jetted [ ] Estimated
Yield: 75 gpm with 110 ft. drawdown after 1 hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
[ ] Yes [X] No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Good Depth of strata 30'
Was a chemical analysis made? [ ] Yes [X] No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Carter Water Well Drlg. (Type or print) WELL DRILLER'S LICENSE NO. 4932

ADDRESS P.O. Box 856 (Street or RFD) Woodsboro, (City) Tx. (State) 78393 (Zip)

(Signed) Jae Carter (Licensed Well Driller) (Signed) ____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

TNRCC-0199 (Rev. 05-21-96) White - TNRCC Yellow - DRILLER Pink - WELL OWNER

Send original copy by certified mail to the Texas Water Development Board P. O. Box 12386 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No.
Located on map
Received:

1) OWNER:
Person having well drilled Barkins & Co (Same) Address alice (Street or RFD) Texas (City) (State)

Landowner (Same) Address (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County San Patricio 5 miles in East (N.E., S.W., etc.) direction from Taft (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor League
Block Survey
Abstract No.
(NW¼ NE¼ SW¼ SE¼) or Section

3) TYPE OF WORK (Check):
New Well | Deepening | Reconditioning | Plugging

4) PROPOSED USE (Check):
Domestic | Industrial | Municipal | Irrigation | Test Well | Other

5) TYPE OF WELL (Check):
Rotary | Driven | Dug | Cable | Jetted | Bored

6) WELL LOG:
Diameter of hole 6 1/2 in. Depth drilled 220 ft. Depth of completed well 220 ft. Date drilled 4-8-73
All measurements made from (ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	4	black surface
4	45	yellow clays
45	55	sand
55	105	yellow clay
105	140	sand
145	180	yellow clay
180	220	sand

(Use reverse side if necessary)

9) Casing:
Type: Old New Steel Plastic Other
Cemented from ft. to ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
4 in		220	

10) SCREEN:
Type
Perforated Slotted

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size
4 in	180	220	

7) COMPLETION (Check):
Straight wall | Gravel packed | Other
Under reamed | Open Hole

8) WATER LEVEL:
Static level ft. below land surface Date
Artesian pressure lbs. per square inch Date
Depth to pump bowls, cylinder, jet, etc. ft.
below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom?
Yield: 65 gpm with ft. drawdown after hrs.
Bailer test gpm with ft. drawdown after hrs.
Artesian flow gpm
Temperature of water

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? depth of strata

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

Name NEWTON BORTH (Type or Print) Water Well Drillers Registration No. 482

Address Box 954 (Street or RFD) YORKTOWN (City) TEX (State)

(Signed) Newton Borth (Water Well Driller) Borth Garage & Welding (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDB-(WW-5)

File original copy with Texas Water Commission P. O. Box 2311, Capitol Station Austin 11, Texas

State of Texas

DRILLERS LOG AND WELL DATA REPORT

For use by TWC only
Well No.
Located on map
By Date
Map no:

1) Well Owner: Allen & Shumate Box 98 Alice Texas
2) Land Owner: Max Floerke Gregory Texas
3) Intended use: Industrial ☑ ; Municipal ☐ ; Irrigation ☐ ; Other
4) Location of well: County San Patricio Labor League Abstract No.
NW¼ NE¼ SW¼ SE¼ of Section Block No. Survey Geo. H. Paul & BB Coleman - Fulton Pasture Co. Lands Sec. "L"

2 miles in NW direction from Gregory

330' FNWL & 330' FNEL (SE side of US Hwy #181 Un; 252' NW & 2 Max Floerke & 450' SE of Bob Adams #1 Fred Floerke, sd 220' FNEL & 2250' FSEL Sec. L.

Sketch map of well location with distances from two section or survey lines, and to landmarks, roads, and creeks.

DRILLERS LOG OF WELL

Method of drilling: Rotary Diameter of hole 4½ in. Date drilled Aug 31, 1964

All measurements made from 0 ft. above ground level.

From (ft)	To (ft)	Description and color of formation material	From (ft)	To (ft)	Description and color of formation material
0	64	Clay			
64	78	Sand			
78	118	Clay			
118	181	Sand			

(Use continuation sheets if necessary)

COMPLETION DATA

COMPLETION

Straight wall ☑
Under reamed ☐
Gravel packed ☐
Open hole ☐
Other

CASING

Type: Old ☑ New ☐
Cemented from None ft.
to ft.

Diameter (inches)	Setting from (ft)	Setting to (ft)
4½	0	118

SCREEN

Type
Perforated ☐ Slotted ☑

Diameter (inches)	Setting from (ft)	Setting to (ft)
4½	118	181

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

Signed L. E. Page Firm Name Buck Page & Co. Reg. No. 489

Please attach electric log, chemical analysis, and other pertinent information if available.

If well was tested by your company or if you installed the permanent pump please complete the following:

WATER LEVEL AND PUMP DATA

Static water level 20 ft. below Surface

Pumping level

feet	hours	gpm
		80

Pump type
Designed pumping rate 80 gpm ☑ gph ☐
Type power unit Air Jet
Horsepower
Depth to bowls, cylinder, jet, etc., ft. below pump base.

Name of contractor testing well or installing permanent pump if other than your company:

C-34 (62-4)

L. Hamilton R. 1 #2

Send original copy by certified mail to the Texas Water Development Board
P. O. Box 12386
Austin, Texas 78711

State of Texas

WATER WELL REPORT

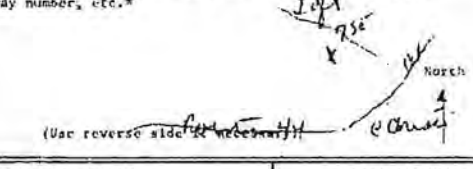
For TWDB use only
Well No. 83-50
Located on map 5-5
Received: 4-71

1) OWNER:
Person having well drilled Southland Drilling (Name) Address Box 1496 (Street or RFD) Alice (City) Texas (State)

Landowner Frank Brunner - Shelby #1 (Name) Address (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County San Patricio 7 miles in SE (N.E., S.W., etc.) direction from Taft (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*



(Use reverse side if necessary)

or Give legal location with distances and directions from adjacent sections or survey lines.

Labor _____ League _____
Block _____ Survey _____
Abstract No. _____
(NW¼ NE¼ SW¼ SE¼) of Section _____

3) TYPE OF WORK (Check):
(New Well) Deepening
Reconditioning Plugging

4) PROPOSED USE (Check):
Domestic Industrial Municipal
Irrigation Test Well (Other)

5) TYPE OF WELL (Check):
(Rotary) Driven Dug
Cable Jetted Bored

6) WELL LOG:
Diameter of hole 6 3/4 in. Depth drilled 217 ft. Depth of completed well 217 ft. Date drilled 11-14-70

All measurements made from _____ ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	4	top sand
4	75	shale
75	145	sand + shale
145	190	shale
190	217	sand

(Use reverse side if necessary)

9) Casing:
Type (Old) New Steel Plastic Other
Cemented from _____ ft. to _____ ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4½	0	217	

10) SCREEN:
Type _____
Perforated (Slotted)

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size

7) COMPLETION (Check):
(Straight wall) Gravel packed Other
Under reamed Open Hole

8) WATER LEVEL:
Static level _____ ft. below land surface Date _____
Artesian pressure _____ lbs. per square inch Date _____
Depth to pump bowls, cylinder, jet, etc., _____ ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom?
Yield: _____ gpm with _____ ft. drawdown after _____ hrs.
Bailer test _____ gpm with _____ ft. drawdown after _____ hrs.
Artesian flow _____ gpm
Temperature of water _____

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? _____ depth of strata _____

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME G. E. Page (Type or Print) Water Well Drillers Registration No. 180

ADDRESS Box 749 (Street or RFD) Alice (City) Texas (State)

(Signed) [signature] (Water Well Driller) Brunner Drlg. Co. (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDBE-GW-53

Send original copy by certified mail to the Texas Department of Water Resources P. O. Box 13087 Austin, Texas 78711

State of Texas
WATER WELL REPORT

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

Texas Water Well Drillers Board P. O. Box 13087 Austin, Texas 78711

1) OWNER Richard Gonzalez (Name) Address P.O. Box 367 (Street or RFD) Gregory (City) Tex. (State) 78359 (Zip)

2) LOCATION OF WELL County San Patricio 2½ miles in N.W. (N E, S W, etc.) direction from Gregory (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. _____ Block No. _____ Township _____
Abstract No. _____ Survey Name _____
Distance and direction from two intersecting section or survey lines _____

Mapsco 79-60-SFF ☑ See attached map. Well No. 3 - San Patricio Co.

3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☒ Domestic ☐ Industrial ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Other _____

5) DRILLING METHOD (Check): ☒ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other _____

6) WELL LOG:

Date drilled	Dia. (in.)	DIAMETER OF HOLE From (ft.)	To (ft.)
Nov. 16-83	6¾	Surface 0	235

From (ft.)	To (ft.)	Description and color of formation material
0	3	Top soil
3	40	White Clay
40	85	Fine red sand
85	190	White Clay
190	234	Course Red Sand
234	235	Blue Clay

7) BOREHOLE COMPLETION: ☐ Open Hole ☒ Straight Wall ☐ Underreamed ☐ Gravel Packed ☐ Other _____
If Gravel Packed give interval . . from _____ ft. to _____ ft.

8) CASING, BLANK PIPE, AND WELL SCREEN DATA

Dia (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfr., if commercial	Setting (ft.) From	To	Gage Casing Slot No.
4	New	Plastic 1¼	Surface	235	40
4	"	Slotted Plastic	224	234	.016
		Mfg - King & Queen Industries			

CEMENTING DATA
Cemented from 0 ft. to 12 ft.
Method used _____
Cemented by _____ (Company or Individual)

9) WATER LEVEL:
Static level 6 ft. below land surface Date Nov. 16-83
Artesian flow _____ gpm. Date _____

10) PACKERS: Type Shaletrap Depth 188'

RECEIVED
DEC -2 1983
DEPT. OF WATER RESOURCES

11) TYPE PUMP: ☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Other _____
Depth to pump bowls, cylinder, jet, etc., _____ ft.

12) WELL TESTS: ☐ Type Test: ☐ Pump ☐ Bailer ☒ Jetted ☐ Estimated
Yield: 65 gpm with _____ ft. drawdown after _____ hrs.

13) WATER QUALITY:
Did you encounter any strata which contained undesirable water? ☐ Yes ☒ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Good Depth of strata 44'
Was a chemical analysis made? ☐ Yes ☒ No

(Use reverse side if necessary)

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

COMPANY NAME B.T. SIKES (Type or Print) Water Well Driller's License No. 215

ADDRESS Rt. 2, Box 52 (Street or RFD) MATHIS (City) TEXAS (State) 78368 (Zip)

(Signed) B.T. Sikes (Licensed Water Well Driller) (Signed) B.T. Sikes Water Well Drlg. Co. (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

For TDWR use only. Well No. B3-06-5H Located on map YCGC.F.S.

TDWR 0392 (Rev. 5-27-82)

DEPARTMENT OF WATER RESOURCES COPY

Dataset Descriptions and Sources

BANKS ENVIRONMENTAL DATA A DIVISION OF THE BANKS GROUP

Dataset	Source	Dataset Description	Update Schedule	Data Requested	Data Obtained	Data Updated	Source Updated
TX HGSD - Texas HGSD	Harris Galveston Subsidence District/Fort Bend Subsidence District	This dataset contains all groundwater well records compiled by Harris Galveston Subsidence District/Fort Bend Subsidence District.	Quarterly	06/14/2016	07/07/2016	07/10/2016	07/07/2016
TX TCEQ HIST - Texas TCEQ Historical	Texas Commission on Environmental Quality	This dataset contains all historical water well records searched from the TCEQ Public Water Well Viewer. Banks Environmental Data plots each well record based on location information found on the log.	As requested	N/A	N/A	N/A	N/A
TX TCEQ PWS - Texas TCEQ PWS	Texas Commission on Environmental Quality	This dataset contains a collection of records from Texas Water Districts, Public Drinking Water Systems and Water and Sewer Utilities who submit information to the TCEQ.	Quarterly	06/14/2016	06/23/2016	07/10/2016	06/23/2016
TX TWDB GW - Texas TWDB Groundwater Database	Texas Water Development Board	This dataset contains water well records contained within Texas Water Development Board Groundwater Database.	Quarterly	07/05/2016	07/05/2016	07/10/2016	07/01/2016
TX TWDB SDR - Texas TWDB Submitted Drillers Reports	Texas Water Development Board	This dataset contains water well records from the Texas Water Development Board Submitted Drillers Reports Database.	Quarterly	07/06/2016	07/06/2016	07/10/2016	07/05/2016
WW USGS - USGS Water Wells	U.S. Geological Survey	This dataset contains groundwater well records from the U.S. Geological Survey.	Semi-annually	03/28/2016	03/28/2016	04/10/2016	03/28/2016

Banks Environmental Data, Inc. - 1601 Rio Grande, Ste. 331 - Austin, TX 78701 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Disclaimer

The Banks Environmental Data Water Well Report was prepared from existing state water well databases and/or additional file data/records research conducted at the state agency and the U.S. Geological Survey. Banks Environmental Data has performed a thorough and diligent search of all groundwater well information provided and recorded. All mapped locations are based on information obtained from the source. Although Banks performs quality assurance and quality control on all research projects, we recognize that any inaccuracies of the records and mapped well locations could possibly be traced to the appropriate regulatory authority or the actual driller. It may be possible that some water well schedules and logs have never been submitted to the regulatory authority by the water driller and, thus, may explain the possible unaccountability of privately drilled wells. It is uncertain if the above listing provides 100% of the existing wells within the area of review. Therefore, Banks Environmental Data cannot fully guarantee the accuracy of the data or well location(s) of those maps and records maintained by the regulatory authorities.

Banks Environmental Data, Inc. - 1601 Rio Grande, Ste. 331 - Austin, TX 78701 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Attachment T-4

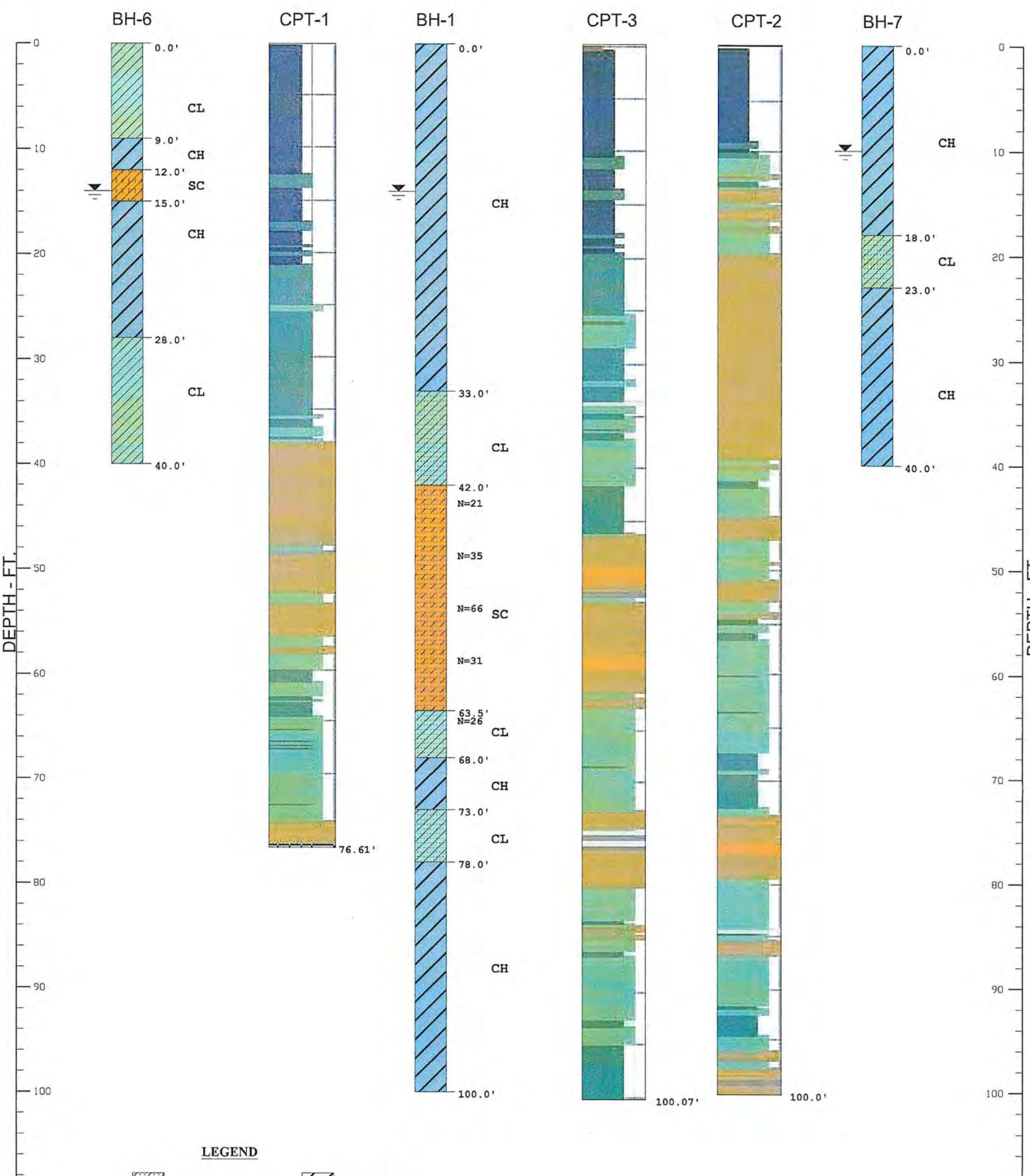
Soil Borings

SITE VICINITY MAP
(NOT TO SCALE)

Note
Soil borings near proposed storm water ponds are listed below, and boring logs are attached.
Outfall 002 Storm Water Pond - Boring BH-6
Outfall 004 Storm Water Pond - Boring BH-7
Outfall 005 Storm Water Pond - Boring BH-9

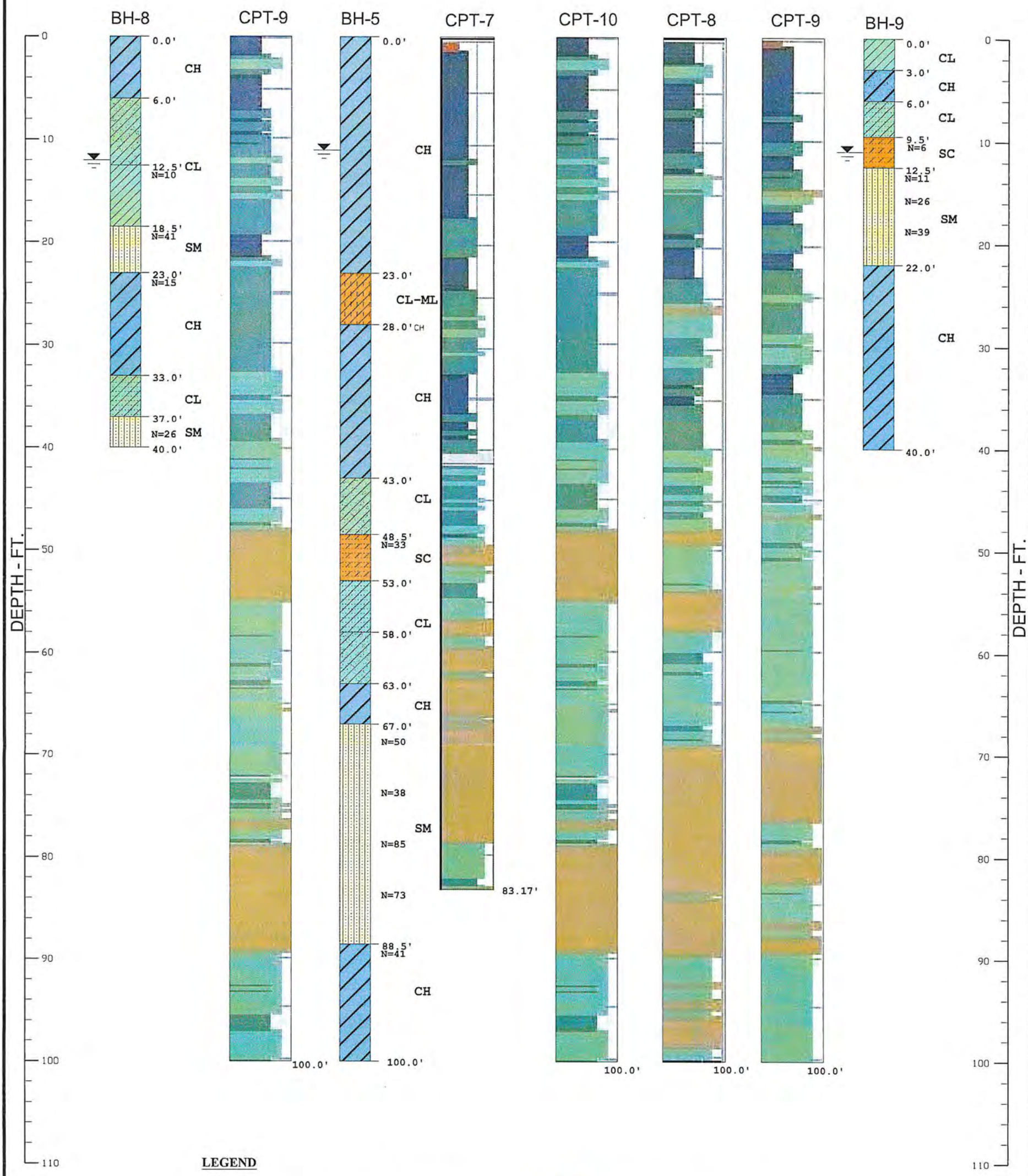
Pre-FEED Geotechnical Investigation Yosemite Project Near Gregory, TX	**Tolunay-Wong Engineers, Inc.**	Plan of Borings
EMPC Offshore & Infrastructure CSC		Project No.: 16.14.082 / Figure 1

BORING LOG PROFILE



Pre-FEED Geotechnical Investigation Yosemite Project Near Gregory, TX	**Tolunay-Wong Engineers, Inc.** Houston, Texas	Subsurface Boring Profile Cross Section A-A	
EMPC Offshore & Infrastructure CSC		Project No.: 16.14.082	Figure 4

BORING LOG PROFILE



LEGEND

- Sandy Lean Clay (CL)
- Lean Clay w/ Sand (CL)
- Lean Clay (CL)
- Silty Sand (SM)
- Fat Clay (CH)
- Fat Clay w/ Sand (CH)
- Clayey Sand (SC)
- Sandy Silty Clay (CL-ML)
- Semi-Cohesive Soil (SC / CL-ML)
- Cohesive Soil (Low to Medium Plasticity - CL)
- Cohesive Soil (High Plasticity - CH)
- Cohesionless Soil (SM)

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Pre-FEED Geotechnical Investigation Yosemite Project Near Gregory, TX	**Tolunay-Wong Engineers, Inc.** Houston, Texas	Subsurface Boring Profile Cross Section C-C
EMPC Offshore & Infrastructure CSC		Project No.: 16.14.082 / Figure 6

LOG OF BORING BH-6

PROJECT: Pre-FEED Geotecnical Investigation; Yosemite Project
Near Gregory, TX

CLIENT: EMPC Offshore & Infrastructure CSC

COORDINATES: N 27°56'28.1"
W 97°19'45.5"

SURFACE ELEVATION:

DRILLING METHOD:
Dry Augered: 0 to 20'
Wash Bored: 20' to 40'

ELEVATION (FT) / DEPTH (FT)	SAMPLE TYPE	SYMBOL	MATERIAL DESCRIPTION	(P) POCKET PEN (tsf) (T) TORVANE (tsf)	STD. PENETRATION TEST BLOWCOUNT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	PASSING #200 SIEVE (%)	OTHER TESTS PERFORMED
0			Firm light gray LEAN CLAY (CL) -w/ silty sand pockets & seams @ 0'-2'	(P)1.25		16								
			-w/ caliche pockets & deposits @ 3'-8'	(P)0.75		20	108							
5			-w/ silty sand seams @ 6'-8'	(P)1.25		21	105	34	18	0.90	15	6		
			Stiff tan FAT CLAY (CH) -w/ caliche deposits @ 9'-11'	(P)2.50		32								
10			Stiff tan SILTY CLAY (CL-ML) -w/ silty sand pockets & seams, lean clay seams 12'-14'	(P)1.50										
15			Very stiff tan FAT CLAY (CH) -w/ silty sand pockets @ 15'-17'	(P)4.25										
			-gray & tan @ 18'-20'	(P)4.00		29	94							
20			-very stiff to hard @ 23'-35' -w/ tan & light gray @ 23'-25'	(P)4.50+										
25			Very stiff to hard gray LEAN CLAY (CL) w/ silty sand pockets, caliche deposits	(P)4.50+		18								
30			-tan & brown, @ 33'-35'	(P)4.50+		20	105							
35														

COMPLETION DEPTH: 40 ft
DATE BORING STARTED: 9/15/16
DATE BORING COMPLETED: 9/15/16
LOGGER: Mike Anderson
PROJECT NO.: 16.14.082

NOTES: 1) Open borehole backfilled with cement bentonite grout upon completion of sampling.

LOG OF BORING BH-6

PROJECT: Pre-FEED Geotecnical Investigation; Yosemite Project
Near Gregory, TX

CLIENT: EMPC Offshore & Infrastructure CSC

COORDINATES: N 27°56'28.1"
W 97°19'45.5"

SURFACE ELEVATION:

DRILLING METHOD:
Dry Augered: 0 to 20'
Wash Bored: 20' to 40'

ELEVATION (FT) / DEPTH (FT)	SAMPLE TYPE	SYMBOL	MATERIAL DESCRIPTION	(P) POCKET PEN (tsf) (T) TORVANE (tsf)	STD. PENETRATION TEST BLOWCOUNT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	PASSING #200 SIEVE (%)	OTHER TESTS PERFORMED
35			Very stiff to hard tan & brown LEAN CLAY (CL)											
			-w/ fat clay pockets @ 38'-40'	(P)4.50+										
40			Bottom @ 40'											
45														
50														
55														
60														
65														
70														

COMPLETION DEPTH: 40 ft
DATE BORING STARTED: 9/15/16
DATE BORING COMPLETED: 9/15/16
LOGGER: Mike Anderson
PROJECT NO.: 16.14.082

NOTES: 1) Open borehole backfilled with cement bentonite grout upon completion of sampling.

LOG OF BORING BH-7

PROJECT: Pre-FEED Geotecnical Investigation; Yosemite Project
Near Gregory, TX

CLIENT: EMPC Offshore & Infrastructure CSC

COORDINATES: 27°55'45.0"
97°18'25.0"

SURFACE ELEVATION:

DRILLING METHOD:
Dry Augered: 0 to 14
Wash Bored: 14 to 40

ELEVATION (FT) / DEPTH (FT)	SAMPLE TYPE	SYMBOL	MATERIAL DESCRIPTION	(P) POCKET PEN (tsf) (T) TORVANE (tsf)	STD. PENETRATION TEST BLOWCOUNT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	PASSING #200 SIEVE (%)	OTHER TESTS PERFORMED
0			Stiff dark gray FAT CLAY (CH) -w/ silty clay layer to 2'	(P)1.50		28								
			-gray @ 3'-8' -w/ silt pockets @ 3'-5'	(P)1.75		28	92	60	40	1.11	15	3		
5				(P)2.80		27								
			-very stiff 9'-17'	(P)3.00		23	102			2.21	9	9		
10			▽tan & gray @ 11'-14' ▼w/ silty clay pockets, caliche deposits @ 9'-11'											
				(P)3.00		22								
15			-tan @ 15'-17'	(P)3.50										
			Stiff tan SANDY LEAN CLAY (CL) -w/ sand seams @ 18'-20'	(P)2.50		18	106							
20														
			Very stiff to hard gray FAT CLAY (CH)	(P)4.50+										
25														
			-tan @ 28'-40'	(P)4.50+										
30														
			-slickensided, very stiff @ 33'-35'	(P)3.50		32	90							
35														

COMPLETION DEPTH: 40 ft
DATE BORING STARTED: 9/16/16
DATE BORING COMPLETED: 9/16/16
LOGGER: Mike Anderson
PROJECT NO.: 16.14.082

NOTES: 1) Open borehole backfilled with cement bentonite grout upon completion of sampling.

LOG OF BORING BH-7

PROJECT: Pre-FEED Geotecnical Investigation; Yosemite Project
Near Gregory, TX

CLIENT: EMPC Offshore & Infrastructure CSC

COORDINATES: 27°55'45.0"
97°18'25.0"

SURFACE ELEVATION:

DRILLING METHOD:
Dry Augered: 0 to 14
Wash Bored: 14 to 40

ELEVATION (FT) / DEPTH (FT)	SAMPLE TYPE	SYMBOL	MATERIAL DESCRIPTION	(P) POCKET PEN (tsf) (T) TORVANE (tsf)	STD. PENETRATION TEST BLOWCOUNT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	PASSING #200 SIEVE (%)	OTHER TESTS PERFORMED
35			Very stiff tan FAT CLAY (CH)	(P)3.50										
40			Bottom @ 40'											
45														
50														
55														
60														
65														
70														

COMPLETION DEPTH: 40 ft
DATE BORING STARTED: 9/16/16
DATE BORING COMPLETED: 9/16/16
LOGGER: Mike Anderson
PROJECT NO.: 16.14.082

NOTES: 1) Open borehole backfilled with cement bentonite grout upon completion of sampling.

LOG OF BORING BH-9

PROJECT: Pre-FEED Geotecnical Investigation; Yosemite Project
Near Gregory, TX

CLIENT: EMPC Offshore & Infrastructure CSC

COORDINATES: N 27°55'6.0"
W 97°18'50.5"

SURFACE ELEVATION:

DRILLING METHOD:
Dry Augered: 0 to 14"
Wash Bored: 14' to 40'

ELEVATION (FT) / DEPTH (FT)	SAMPLE TYPE	SYMBOL	MATERIAL DESCRIPTION	(P) POCKET PEN (tsf) (T) TORVANE (tsf)	STD. PENETRATION TEST BLOWCOUNT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	PASSING #200 SIEVE (%)	OTHER TESTS PERFORMED
0			Very stiff to hard dark gray LEAN CLAY (CL) -w/ fat clay pockets to 2'	(P)4.50+		19								
5			Hard tan FAT CLAY w/ SAND (CH) w/ caliche deposits & calcareous nodules	(P)4.50+		14	112	51	32	6.95	4	3		
			Firm tan SANDY LEAN CLAY (CL) -w/ sandy lean clay layer, caliche deposits @ 6'-8'	(P)1.25		21	106							
10			Loose tan CLAYEY SAND (SC) -w/ sandy lean clay pockets, sand pockets & seams		2 3 3								44	
15			Medium dense gray SILTY SAND (SM) w/ caliche deposits		3 5 6									
			-light gray @ 15.5'-17'		10 14 12									
20			-tan, dense @ 18.5'-20'		12 17 22									
25			Very stiff to hard gray FAT CLAY (CH) -w/ caliche deposits 23'-25'	(P)4.50+		25	97							
30			-tan @ 28'-40' -w/ silt & silty clay pockets @ 28'-30'	(P)4.50+										
35			-very stiff @ 33'-40'	(P)4.25		31								

COMPLETION DEPTH: 40 ft
DATE BORING STARTED: 9/16/16
DATE BORING COMPLETED: 9/16/16
LOGGER: Mike Anderson
PROJECT NO.: 16.14.082

NOTES: 1) Open borehole backfilled with cement bentonite grout upon completion of sampling.

LOG OF BORING BH-9

PROJECT: Pre-FEED Geotecnical Investigation; Yosemite Project
Near Gregory, TX

CLIENT: EMPC Offshore & Infrastructure CSC

COORDINATES: N 27°55'6.0"
W 97°18'50.5"

SURFACE ELEVATION:

DRILLING METHOD:
Dry Augered: 0 to 14"
Wash Bored: 14' to 40'

ELEVATION (FT) / DEPTH (FT)	SAMPLE TYPE	SYMBOL	MATERIAL DESCRIPTION	(P) POCKET PEN (tsf) (T) TORVANE (tsf)	STD. PENETRATION TEST BLOWCOUNT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	PASSING #200 SIEVE (%)	OTHER TESTS PERFORMED
35			Very stiff tan FAT CLAY (CH)											
				(P)3.75										
40			Bottom @ 40'											
45														
50														
55														
60														
65														
70														

COMPLETION DEPTH: 40 ft
DATE BORING STARTED: 9/16/16
DATE BORING COMPLETED: 9/16/16
LOGGER: Mike Anderson
PROJECT NO.: 16.14.082

NOTES: 1) Open borehole backfilled with cement bentonite grout upon completion of sampling.

LOG OF BORING BH-9

PROJECT: Pre-FEED Geotecnical Investigation; Yosemite Project
Near Gregory, TX

CLIENT: EMPC Offshore & Infrastructure CSC

COORDINATES: N 27°55'6.0"
W 97°18'50.5"

SURFACE ELEVATION:

DRILLING METHOD:
Dry Augered: 0 to 14"
Wash Bored: 14' to 40'

ELEVATION (FT) / DEPTH (FT)	SAMPLE TYPE	SYMBOL	MATERIAL DESCRIPTION	(P) POCKET PEN (tsf) (T) TORVANE (tsf)	STD. PENETRATION TEST BLOWCOUNT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	PASSING #200 SIEVE (%)	OTHER TESTS PERFORMED
35			Very stiff tan FAT CLAY (CH)	(P)3.75										
40			Bottom @ 40'											
45														
50														
55														
60														
65														
70														

COMPLETION DEPTH: 40 ft
DATE BORING STARTED: 9/16/16
DATE BORING COMPLETED: 9/16/16
LOGGER: Mike Anderson
PROJECT NO.: 16.14.082

NOTES: 1) Open borehole backfilled with cement bentonite grout upon completion of sampling.