March 18, 2021

Texas Commission on Environmental Quality
Water Quality Division
Applications Review and Processing Team (MC148)
P.O. Box 13087
Austin, Texas 78711-3087

Re: FM 2920 Land Company, Ltd Wastewater Treatment Plant

Sirs,

Enclosed please find the submittal items for "***FM 2920 Land Company, Ltd***" located in Harris County, Texas. FM 2920 Land Company, Ltd is submitting documents for permission to install a wastewater treatment plant to serve the proposed Mobile Home development.

If you find anything deficient please contact me.

Sincerely,

Phi D. Nguyen, P.E.
Ward, Getz & Associates, PLLC
Firm #9756

3/18/2021

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT: FM 2920 Land Company, Ltd.

PERMIT NUMBER:

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

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

For TCEQ Use Only

Segment Number _____ County _____
Expiration Date _____ Region _____
Permit Number _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

APPLICATION FOR A DOMESTIC WASTEWATER PERMIT ADMINISTRATIVE REPORT 1.0

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

Section 1. Application Fees (Instructions Page 29)

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

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

Minor Amendment (for any flow) $150.00 ☐

Payment Information:

Mailed Check/Money Order Number: 83496

Check/Money Order Amount: $850.00

Name Printed on Check: Jacob White Construction

EPAY Voucher Number:

Copy of Payment Voucher enclosed? Yes ☐

Section 2. Type of Application (Instructions Page 29)

☒ New TPDES ☐ New TLAP

☐ Major Amendment *with* Renewal ☐ Minor Amendment *with* Renewal

☐ Major Amendment *without* Renewal ☐ Minor Amendment *without* Renewal

☐ Renewal without changes ☐ Minor Modification of permit

For amendments or modifications, describe the proposed changes:

For existing permits:

Permit Number: WQ00

EPA I.D. (TPDES only): TX

Expiration Date:

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

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

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

FM 2920 Land Company, Ltd.

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

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

CN:

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

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

First and Last Name: Jeff Mickler

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

Title: Authorized representative

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

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

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

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

CN:

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

Prefix (Mr., Ms., Miss):

First and Last Name:

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

Title:

C. Core Data Form

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

Attachment: A: Core Data Form

Section 4. Application Contact Information (Instructions Page 30)

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

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

First and Last Name: Phi Nguyen

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

Title: Senior Project Manager

Organization Name: Ward, Getz & Associates

Mailing Address: 2500 Tanglewilde Street Suite 120

City, State, Zip Code: Houston, TX 77063

Phone No.: 713-489-9568 Ext.: Fax No.:

E-mail Address: Pnguyen@wga-llp.com

Check one or both: ☒ Administrative Contact ☒ Technical Contact

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

First and Last Name: Jeff Mickler

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

Title: Authorized Representative

Organization Name: FM 2920 Land Company, Ltd.

Mailing Address: 2000 West Parkwood Avenue

City, State, Zip Code: Friendswood, TX 77546

Phone No.: 281-286-6666 Ext.: Fax No.:

E-mail Address: Jeff.Mickler@Jacobwhitecc.com

Check one or both: ☒ Administrative Contact ☐ Technical Contact

Section 5. Permit Contact Information (Instructions Page 30)

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

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

First and Last Name: Phi Nguyen

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

Title: Senior Project Manager

Organization Name: Ward, Getz & Associates

Mailing Address: 2500 Tanglewilde Street Suite 120

City, State, Zip Code: Houston, TX 77063

Phone No.: 713-489-9568 Ext.: Fax No.:

E-mail Address: Pnguyen@wga-llp.com

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

First and Last Name: Jeff Mickler

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

Title: Authorized representative

Organization Name: FM 2920 Land Company, Ltd.

Mailing Address: 2000 West Parkwood Avenue

City, State, Zip Code: Friendswood, TX 77546

Phone No.: 281-286-6666 Ext.: Fax No.:

E-mail Address: Jeff.Mickler@Jacobwhitecc.com

Section 6. Billing Information (Instructions Page 30)

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

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

First and Last Name: Jeff Mickler

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

Title: Authorized representative

Organization Name: FM 2920 Land Company, Ltd.

Mailing Address: 2000 West Parkwood Avenue

City, State, Zip Code: Friendswood, TX 77546

Phone No.: 281-286-6666 Ext.: Fax No.:

E-mail Address: Jeff.Mickler@Jacobwhitecc.com

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

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

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

First and Last Name: Jeff Mickler

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

Title: Authorized Representative

Organization Name: FM 2920 Land Company, Ltd.

Mailing Address: 2000 West Parkwood Avenue

City, State, Zip Code: Friendswood, TX 77546

Phone No.: 281-286-6666 Ext.: Fax No.:

E-mail Address: Jeff.Mickler@Jacobwhitecc.com

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

Section 8. Public Notice Information (Instructions Page 31)

A. Individual Publishing the Notices

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

First and Last Name: Phi Nguyen

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

Title: Senior Project Manager

Organization Name: Ward, Getz & Associates

Mailing Address: 2500 Tanglewilde Street Suite 120

City, State, Zip Code: Houston, TX 77063

Phone No.: 713-489-9568 Ext.: Fax No.:

E-mail Address: Pnguyen@wga-llp.com

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

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

☒ E-mail Address

☐ Fax

☒ Regular Mail

C. Contact person to be listed in the Notices

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

First and Last Name: Phi Nguyen

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

Title: Senior Project Manager

Organization Name: Ward, Getz & Associates

Phone No.: 713-489-9568 Ext.:

E-mail: Pnguyen@wga-llp.com

D. Public Viewing Information

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

Public building name: Northwest Branch Library

Location within the building: Front Desk

Physical Address of Building: 11355 Regency Green Dr

City: Cypress County: Harris

Contact Name: Gavin Sheaffer

Phone No.: 832-927-5460 Ext.:

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** Section 9 below.

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

   ☒ Yes ☐ No

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

   ☐ Yes ☒ No

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

   ☐ Yes ☒ No

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

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

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

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

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

FM 2920 Land Company.

C. Owner of treatment facility: FM 2920 Land Company, Ltd.

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

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

Prefix (Mr., Ms., Miss):

First and Last Name: FM 2920 Land Company, Ltd.

Mailing Address: 2000 West Parkwood Avenue

City, State, Zip Code: Friendswood, TX 77546

Phone No.: 281-286-6666 E-mail Address: Jeff.Mickler@Jacobwhitecc.com

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

Attachment: N/A

E. Owner of effluent disposal site:

Prefix (Mr., Ms., Miss):

First and Last Name:

Mailing Address:

City, State, Zip Code:

Phone No.: E-mail Address:

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

Attachment: N/A

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

Prefix (Mr., Ms., Miss):

First and Last Name:

Mailing Address:

City, State, Zip Code:

Phone No.: E-mail Address:

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

Attachment: N/A

Section 10. TPDES Discharge Information (Instructions Page 34)

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

☐ Yes ☐ No

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

Located on FM 2920 approximately 550 feet east from intersection of FM 2920 and Three Pines Drive in Harris County.

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

☐ Yes ☐ No

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

From the treatment plant, the water will be discharged into a man-made ditch located along the western property boundary thence flowing for 700 feet thence to Spring Creek.

City nearest the outfall(s): Hockley, TX

County in which the outfalls(s) is/are located: Harris

Outfall Latitude: 30°04'47.06"N Longitude: 95°44'35.01"W

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

☒ Yes ☐ No

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

☐ Authorization granted ☒ Authorization pending

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

Attachment: N/A

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

N/A

Section 11. TLAP Disposal Information (Instructions Page 36)

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

☐ Yes ☐ No

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

N/A

B. City nearest the disposal site:

C. County in which the disposal site is located:

D. Disposal Site Latitude: Longitude:

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

N/A

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

N/A

Section 12. Miscellaneous Information (Instructions Page 37)

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

☐ Yes ☒ No

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

☐ Yes ☐ No ☒ Not Applicable

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

N/A

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

☐ Yes ☒ No

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

N/A

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

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

Account number: Amount past due:

E. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

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

Enforcement order number: Amount past due:

Section 13. Attachments (Instructions Page 38)

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

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

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

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

☐ Attachment 1 for Individuals as co-applicants

☐ Other Attachments. Please specify:

Attachment: B: USGS Topographic Map

Section 14. Signature Page (Instructions Page 39)

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

Permit Number:

Applicant: FM 2920 Land Company, Ltd.

Certification:

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

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

Signatory name (typed or printed): Jeff Mickler

Signatory title: Authorized representative

Signature: _____ Date: 03/01/2021

(Use blue ink)

Subscribed and Sworn to before me by the said Jeff Michler

on this 1st day of March, 20 21.

My commission expires on the 10th day of January, 20 23.

_____

Notary Public

DIANA FRIAS
My Notary ID # 131850353
Expires January 10, 2023

Brazoria

County, Texas

DOMESTIC ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

Section 1. Affected Landowner Information (Instructions Page 41)

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

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

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

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

☐ Readable/Writeable CD ☒ Four sets of labels

D. Provide the source of the landowners' names and mailing addresses: Brazoria County Appraisal District

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

☐ Yes ☒ No

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

N/A

Section 2. Original Photographs (Instructions Page 44)

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

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

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

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

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

Section 3. Buffer Zone Map (Instructions Page 44)

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

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

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

☒ Ownership

☐ Restrictive easement

☐ Nuisance odor control

☐ Variance

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

☒ Yes ☐ No

Attachment:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

FOR AGENCIES REVIEWING DOMESTIC TPDES WASTEWATER PERMIT APPLICATIONS

TCEQ USE ONLY:

Application type: ____Renewal ____Major Amendment ____Minor Amendment ____New

County: _____ Segment Number: _____

Admin Complete Date: _____

Agency Receiving SPIF:

_____ Texas Historical Commission _____ U.S. Fish and Wildlife

_____ Texas Parks and Wildlife Department _____ U.S. Army Corps of Engineers

This form applies to TPDES permit applications only. (Instructions, Page 53)

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: FM 2920 Land Company, Ltd.

   Permit No: _ EPA ID No. TX

   Address of the project (or a location description that includes street/highway, city/vicinity, and county):

   Located on FM 2920 approximately 550 feet east from intersection of FM 2920 and Three Pines Drive in Harris County.

Provide the name, address, phone and fax number of an individual that can be contacted to answer specific questions about the property.

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

First and Last Name: Jeff Mickler

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

Title: Authorized representative

Mailing Address: 2000 West Parkwood Avenue

City, State, Zip Code: Friendswood, TX 77546

Phone No.: 281-286-6666 Ext.: Fax No.:

E-mail Address: Jeff.Mickler@Jacobwhitecc.com

2. List the county in which the facility is located: Harris
3. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

N/A

4. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the classified segment number.

From the treatment plant, the water will be discharged into a man-made ditch located along the western property boundary thence flowing for 700 feet thence to Spring Creek.

5. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report).

Provide original photographs of any structures 50 years or older on the property.

Does your project involve any of the following? Check all that apply.

- ☐ Proposed access roads, utility lines, construction easements
- ☐ Visual effects that could damage or detract from a historic property's integrity
- ☐ Vibration effects during construction or as a result of project design
- ☒ Additional phases of development that are planned for the future
- ☐ Sealing caves, fractures, sinkholes, other karst features

☐ Disturbance of vegetation or wetlands

6. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features):

Approximately 90 acres to be to be developed into a Manufactured Home Community.

7. Describe existing disturbances, vegetation, and land use:

Clearing and grubbing for future development.

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

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

Estimated construction start date: (03/15/2022). Estimated waste disposal start date: (10/01/2022).

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

Property has not been developed.

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:**

1. Check or Money Order Number: 83496
2. Check or Money Order Amount: $850.00
3. Date of Check or Money Order: 03/01/2021
4. Name on Check or Money Order: Jacob White Construction
5. APPLICATION INFORMATION

   Name of Project or Site: FM 2920 Land Company,

   Physical Address of Project or Site: Located on FM 2920 approximately 550 feet east from intersection of FM 2920 and Three Pines Drive in Harris County. 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.

JACOB | WHITE
CONSTRUCTION
2000 W. PARKWOOD, SUITE 100
FRIENDSWOOD, TX 77546

PROSPERITY BANK 88-2265/1131 83496

Pay: **********Eight hundred fifty dollars and no cents

DATE	CHECK NO.	AMOUNT
March 1, 2021	83496	$********850.00

PAY TO THE ORDER OF Texas Commission on Environmental Quality

00020

⑈083496⑈ ⑆113122655⑆ 04 2618 01⑈

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION

DOMESTIC TECHNICAL REPORT 1.0

The Following Is Required For All Applications

Renewal, New, And Amendment

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

A. Existing/Interim I Phase

Design Flow (MGD): 0.060 MGD

2-Hr Peak Flow (MGD): 0.240 MGD

Estimated construction start date: 03/15/2022

Estimated waste disposal start date: 10/01/2022

B. Interim II Phase

Design Flow (MGD): 0.120

2-Hr Peak Flow (MGD): 0.480

Estimated construction start date: 03/15/2026

Estimated waste disposal start date: 10/01/2026

C. Final Phase

Design Flow (MGD): 0.120 MGD

2-Hr Peak Flow (MGD): 0.480

Estimated construction start date: 03/15/2026

Estimated waste disposal start date: 10/01/2026

D. Current operating phase: Design Development

Provide the startup date of the facility: Proposed 10/01/2022

Section 2. Treatment Process (Instructions Page 51)

A. Treatment process description

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

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

Treatment plant process utilizes an onsite lift station to pump the influent to the wastewater treatment plant. The influent enters the wastewater treatment plant through a bar screen, then into the aeration basin, where the influent and return are mixed together. Flow pushes the process into the clarifier where effluent overflows the weir to chlorination and discharge. One digester tank is used for wasting and solids concentration.

Port or pipe diameter at the discharge point, in inches: 8

B. Treatment Units

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

Table 1.0(1) - Treatment Units

Treatment Unit Type	Number of Units	Dimensions (L x W x D)
Aeration Basin - Existing/Interim Phase I	1	50' x 12' x 10.5'
Digester - Existing/Interim Phase I	1	30' x 12' x 10.5'
Clarifier/Interim Phase I	1	30' diameter, 10.5' depth
Chlorine Contact Chamber - Existing/Interim Phase I	1	7' x 10' x 8'
Aeration Basin - Interim Phase II/Final	1/2	50' x 12' x 10.5'
Digester -Interim Phase II/Final	1/2	30' x 12' x 10.5'
Clarifier/ Interim Phase	1	30' diameter, 10.5' depth

Treatment Unit Type	Number of Units	Dimensions (L x W x D)
II/Final		
Chlorine Contact Chamber - Interim Phase II/Final	1/2	7' x 10' x 8'

C. Process flow diagrams

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

Attachment: F: Process Flow Diagram

Section 3. Site Drawing (Instructions Page 52)

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

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

Attachment: G: Site Drawing

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

FM 2920 Land Company: Manufactured Home Development with 440 units.

Section 4. Unbuilt Phases (Instructions Page 52)

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

Yes ☐ No ☒

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

Yes ☐ No ☐

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

N/A

Section 5. Closure Plans (Instructions Page 53)

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

Yes ☐ No ☒

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

Yes ☐ No ☐

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

N/A

Section 6. Permit Specific Requirements (Instructions Page 53)

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

A. Summary transmittal

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

Yes ☐ No ☒

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

Provide information, including dates, on any actions taken to meet a requirement or provision pertaining to the submission of a summary

transmittal letter. Provide a copy of an approval letter from the TCEQ, if applicable.

N/A

B. Buffer zones

Have the buffer zone requirements been met?

Yes ☒ No ☐

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

Buffer Zone requirements met through ownership.

C. Other actions required by the current permit

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

Yes ☐ No ☒

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

N/A

D. Grit and grease treatment

1. Acceptance of grit and grease waste

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

treatment?

Yes ☐ No ☒

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

2. Grit and grease processing

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

N/A

3. Grit disposal

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

Yes ☐ No ☐

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

Describe the method of grit disposal.

4. Grease and decanted liquid disposal

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

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

N/A

E. Stormwater management

1. Applicability

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

Yes ☐ No ☒

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

Yes ☐ No ☒

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

2. MSGP coverage

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

Yes ☐ No ☐

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

TXR05 or TXRNE

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

Yes ☐ No ☐

3. Conditional exclusion

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

Yes ☐ No ☐

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

N/A

4. Existing coverage in individual permit

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

Yes ☐ No ☐

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

N/A

5. Zero stormwater discharge

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

Yes ☐ No ☐

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

N/A

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

6. Request for coverage in individual permit

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

Yes ☐ No ☐

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

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

F. Discharges to the Lake Houston Watershed

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

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

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

1. Acceptance of sludge from other WWTPs

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

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

In addition, provide the date that the plant started accepting sludge or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the BOD_5

concentration of the sludge, and the design BOD_5 concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

N/A

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

2. Acceptance of septic waste

Is the facility accepting or will it accept septic waste?

Yes ☐ No ☒

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

Yes ☐ No ☐

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

Yes ☐ No ☐

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

N/A

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

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

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

Yes ☐ No ☒

If yes, provide the date that the plant started accepting the waste, an

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

N/A

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

Is the facility in operation?

Yes ☐ No ☒

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

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

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

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

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

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
E.coli (CFU/100ml) freshwater					
Entercocci (CFU/100ml) saltwater					
Total Dissolved Solids, mg/l					
Electrical Conductivity, µmohs/cm, †					
Oil & Grease, mg/l					
Alkalinity ($CaCO_3$)*, mg/l					

*TPDES permits only

†TLAP permits only

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

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

Section 8. Facility Operator (Instructions Page 60)

Facility Operator Name: TBD

Facility Operator's License Classification and Level: TBD

Facility Operator's License Number: TBD

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

A. Sludge disposal method

Identify the current or anticipated sludge disposal method or methods from the following list. Check all that apply.

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

B. Sludge disposal site

Disposal site name: Mount Houston Road Municipal Utility District

TCEQ permit or registration number: WQ0011154001

County where disposal site is located: Harris

C. Sludge transportation method

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

Name of the hauler: Magna Flow Environmental

Hauler registration number: 21484

Sludge is transported as a:

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

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

A. Beneficial use authorization

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

Yes ☐ No ☒

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

Yes ☐ No ☐

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

Yes ☐ No ☐

B. Sludge processing authorization

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

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

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

Yes ☐ No ☐

Section 11. Sewage Sludge Lagoons (Instructions Page 61)

Does this facility include sewage sludge lagoons?

Yes ☐ No ☒

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

A. Location information

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

- Original General Highway (County) Map:

  Attachment:
- USDA Natural Resources Conservation Service Soil Map:

  Attachment:
- Federal Emergency Management Map:

  Attachment:
- Site map:

  Attachment:

Discuss in a description if any of the following exist within the lagoon area.

Check all that apply.

☐ Overlap a designated 100-year frequency flood plain

☐ Soils with flooding classification

☐ Overlap an unstable area

☐ Wetlands

☐ Located less than 60 meters from a fault

☐ None of the above

Attachment:

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

N/A

B. Temporary storage information

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

Nitrate Nitrogen, mg/kg:

Total Kjeldahl Nitrogen, mg/kg:

Total Nitrogen (=nitrate nitrogen + TKN), mg/kg:

Phosphorus, mg/kg:

Potassium, mg/kg:

pH, standard units:

Ammonia Nitrogen mg/kg:

Arsenic:

Cadmium:

Chromium:

Copper:

Lead:

Mercury:

Molybdenum:

Nickel:

Selenium:

Zinc:

Total PCBs:

Provide the following information:

Volume and frequency of sludge to the lagoon(s):

Total dry tons stored in the lagoons(s) per 365-day period:

Total dry tons stored in the lagoons(s) over the life of the unit:

C. Liner information

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

Yes ☐ No ☐

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

N/A

D. Site development plan

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

N/A

Attach the following documents to the application.

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

  Attachment:
- Copy of the closure plan

  Attachment:
- Copy of deed recordation for the site

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

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

  Attachment:
- Procedures to prevent the occurrence of nuisance conditions

  Attachment:

E. Groundwater monitoring

Is groundwater monitoring currently conducted at this site, or are any wells

available for groundwater monitoring, or are groundwater monitoring data otherwise available for the sludge lagoon(s)?

Yes ☐ No ☐

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

Attachment:

Section 12. Authorizations/Compliance/Enforcement (Instructions Page 63)

A. Additional authorizations

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

Yes ☐ No ☒

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

N/A

B. Permittee enforcement status

Is the permittee currently under enforcement for this facility?

Yes ☐ No ☒

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

Yes ☐ No ☒

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

N/A

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

A. RCRA hazardous wastes

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

Yes ☐ No ☒

B. Remediation activity wastewater

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

Yes ☐ No ☒

C. Details about wastes received

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

Attachment:

Section 14. Laboratory Accreditation (Instructions Page 64)

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

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

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

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

CERTIFICATION:

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

Printed Name: Jeff Mickler

Title: Authorized Representative

Signature: _____

Date: 03/01/2021

DOMESTIC TECHNICAL REPORT 1.1

The following is required for new and amendment applications

Section 1. Justification for Permit (Instructions Page 66)

A. Justification of permit need

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

New manufactured home development with 440 connections. Currently, no water or wastewater services available in proposed area. Proposed construction start date of 03/15/2022.

B. Regionalization of facilities

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

1. Municipally incorporated areas

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

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

Yes ☐ No ☒ Not Applicable ☐

If yes, within the city limits of:

If yes, attach correspondence from the city.

Attachment:

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

Attachment:

2. Utility CCN areas

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

Yes ☐ No ☒

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

Attachment:

3. Nearby WWTPs or collection systems

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

Yes ☒ No ☐

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

Attachment:

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

Attachment:

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

Yes ☐ No ☒

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

Attachment:

Section 2. Organic Loading (Instructions Page 67)

Is this facility in operation?

Yes ☐ No ☒

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

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

A. Current organic loading

Facility Design Flow (flow being requested in application):

Average Influent Organic Strength or BOD_5 Concentration in mg/l:

Average Influent Loading (lbs/day = total average flow X average BOD_5 conc. X 8.34):

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

N/A

B. Proposed organic loading

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

Table 1.1(1) – Design Organic Loading

Source	Total Average Flow (MGD)	Influent BOD_5 Concentration (mg/l)
Municipality	–	–
Subdivision	–	–
Trailer park – transient	–	–
Mobile home park	0.120	300
School with cafeteria and showers	–	–
School with cafeteria, no showers	–	–

Source	Total Average Flow (MGD)	Influent BOD_5 Concentration (mg/l)
Recreational park, overnight use	–	–
Recreational park, day use	–	–
Office building or factory	–	–
Motel	–	–
Restaurant	–	–
Hospital	–	–
Nursing home	–	–
Other	–	–
TOTAL FLOW from all sources	0.120	
AVERAGE BOD_5 from all sources		300

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

A. Existing/Interim I Phase Design Effluent Quality

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

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3

Total Phosphorus, mg/l: 3

Dissolved Oxygen, mg/l: 4

Other:

B. Interim II Phase Design Effluent Quality

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

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3

Total Phosphorus, mg/l: 3

Dissolved Oxygen, mg/l: 4

Other:

C. Final Phase Design Effluent Quality

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

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3

Total Phosphorus, mg/l: 3

Dissolved Oxygen, mg/l: 4

Other:

D. Disinfection Method

Identify the proposed method of disinfection.

☒ Chlorine: 1 mg/l after 20 minutes detention time at peak flow

Dechlorination process:

☐ Ultraviolet Light: seconds contact time at peak flow

☐ Other:

Section 4. Design Calculations (Instructions Page 68)

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

Attachment: I: Design Calculations

Section 5. Facility Site (Instructions Page 68)

A. 100-year floodplain

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

Yes ☒ No ☐

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

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

FEMA Flood Map Service Center

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

Yes ☐ No ☒

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

Yes ☐ No ☐

If yes, provide the permit number:

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

B. Wind rose

Attach a wind rose. **Attachment**: J: Wind rose

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

A. Beneficial use authorization

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

Yes ☐ No ☒

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

Attachment:

B. Sludge processing authorization

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

☐ Sludge Composting

☐ Marketing and Distribution of sludge

☐ Sludge Surface Disposal or Sludge Monofill

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

Attachment:

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

Attach a solids management plan to the application.

Attachment: K: Sewage Sludge Solids Management Plan

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

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

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

DOMESTIC TECHNICAL REPORT WORKSHEET 2.0

RECEIVING WATERS

The following is required for all TPDES permit applications

Section 1. Domestic Drinking Water Supply (Instructions Page 73)

Is there a surface water intake for domestic drinking water supply located within 5 miles downstream from the point or proposed point of discharge?

Yes ☐ No ☒

If yes, provide the following:
Owner of the drinking water supply:

Distance and direction to the intake:

Attach a USGS map that identifies the location of the intake.

Attachment:

Section 2. Discharge into Tidally Affected Waters (Instructions Page 73)

Does the facility discharge into tidally affected waters?

Yes ☐ No ☒

If yes, complete the remainder of this section. If no, proceed to Section 3.

A. Receiving water outfall

Width of the receiving water at the outfall, in feet:

B. Oyster waters

Are there oyster waters in the vicinity of the discharge?

Yes ☐ No ☐

If yes, provide the distance and direction from outfall(s).

N/A

C. Sea grasses

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

Yes ☐ No ☐

If yes, provide the distance and direction from the outfall(s).

N/A

Section 3. Classified Segments (Instructions Page 73)

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

Yes ☐ No ☒

If yes, this Worksheet is complete.

If no, complete Sections 4 and 5 of this Worksheet.

Section 4. Description of Immediate Receiving Waters (Instructions Page 75)

Name of the immediate receiving waters: Unnamed man-made ditch

A. Receiving water type

Identify the appropriate description of the receiving waters.

☐ Stream

☐ Freshwater Swamp or Marsh

☐ Lake or Pond

Surface area, in acres:

Average depth of the entire water body, in feet:

Average depth of water body within a 500-foot radius of discharge point, in feet:

☒ Man-made Channel or Ditch

☐ Open Bay

☐ Tidal Stream, Bayou, or Marsh

☐ Other, specify:

B. Flow characteristics

If a stream, man-made channel or ditch was checked above, provide the following. For existing discharges, check one of the following that best characterizes the area *upstream* of the discharge. For new discharges, characterize the area *downstream* of the discharge (check one).

☒ Intermittent - dry for at least one week during most years

☐ Intermittent with Perennial Pools - enduring pools with sufficient habitat to maintain significant aquatic life uses

☐ Perennial - normally flowing

Check the method used to characterize the area upstream (or downstream for new dischargers).

☐ USGS flow records

☐ Historical observation by adjacent landowners

☒ Personal observation

☐ Other, specify:

C. Downstream perennial confluences

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

Spring Creek intercepts the flow at approximately 700 feet from the point of discharge.

D. Downstream characteristics

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

Yes ☐ No ☒

If yes, discuss how.

N/A

E. Normal dry weather characteristics

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

Normally flowing; flow fluctuates per rainfall event.

Date and time of observation: 03/03/2021—11:30am

Was the water body influenced by stormwater runoff during observations?

Yes ☒ No ☐

Section 5. General Characteristics of the Waterbody (Instructions Page 74)

A. Upstream influences

Is the immediate receiving water upstream of the discharge or proposed discharge site influenced by any of the following? Check all that apply.

- ☐ Oil field activities
- ☐ Upstream discharges
- ☐ Septic tanks
- ☒ Urban runoff
- ☐ Agricultural runoff
- ☐ Other(s), specify

B. Waterbody uses

Observed or evidences of the following uses. Check all that apply.

- ☐ Livestock watering
- ☐ Irrigation withdrawal
- ☐ Fishing
- ☐ Contact recreation
- ☐ Non-contact recreation
- ☐ Navigation

☐ Domestic water supply ☐ Industrial water supply

☐ Park activities ☒ Other(s), specify Drainage

C. Waterbody aesthetics

Check one of the following that best describes the aesthetics of the receiving water and the surrounding area.

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional

☒ Natural Area: trees and/or native vegetation; some development evident (from fields, pastures, dwellings); water clarity discolored

☐ Common Setting: not offensive; developed but uncluttered; water may be colored or turbid

☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

Appendix A

Core Data Form

TCEQ Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

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

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

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

SECTION II: Customer Information

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

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

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

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

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

FM 2920 Land Company, LTD

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
	32077554068	86-1944086	

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

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

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

13. Independently Owned and Operated? ☐ Yes ☐ No

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

☐ Owner ☐ Operator ☑ Owner & Operator

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

15. Mailing Address:	2000 W. Parkwood Ave						
	City	Friendswood	State	TX	ZIP	77546	ZIP + 4

16. Country Mailing Information (if outside USA)	17. E-Mail Address (if applicable)

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
( ) -		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

FM 2920 Land Company

23. Street Address of the Regulated Entity: (No PO Boxes)							
	City		State		ZIP		ZIP + 4	
24. County							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:					
26. Nearest City			State	Nearest ZIP Code	
Hockley			TX	77447	

27. Latitude (N) In Decimal:			28. Longitude (W) In Decimal:		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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

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

Manufactured Housing Community

34. Mailing Address:	2000 W. Parkwood Ave.						
	City	Friendswood	State	TX	ZIP	77546	ZIP + 4
35. E-Mail Address:							

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

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

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

SECTION IV: Preparer Information

40. Name:		41. Title:	
Jeff Mickler		Manager	
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(281) 286-6060		( ) -	jeff.mickler@jacobwhitecc.com

SECTION V: Authorized Signature

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

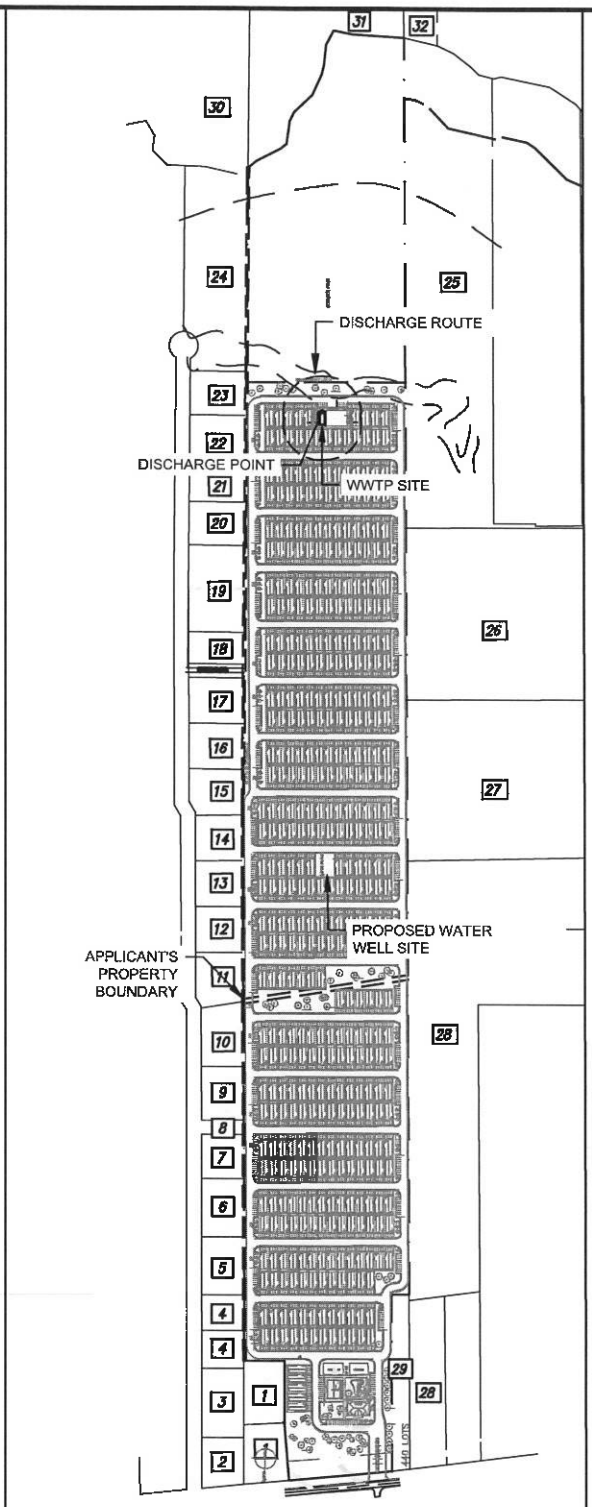
Company:	FM 2920 Land Company, Ltd.	Job Title:	Manager
Name(*In Print*):	Jeff Mickler	Phone:	(281) 286-6060
Signature:		Date:	02/08/2021

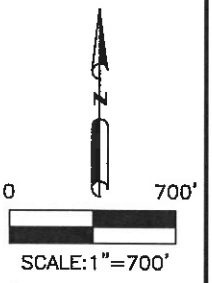
Appendix B

Original USGS Map

Appendix C

Landowners Map and Cross-Referenced List





FM 2920 LAND COMPANY	MARCH 2021	WGA CONSULTING ENGINEERS
LANDOWNER MAP	JOB No. 40018-003	TEXAS REGISTERED ENGINEERING FIRM F-0756
	DRAWN BY: EC	2500 Tanglewilde, Suite 120 Houston, Texas 77063 713.789.1900

Drawing: Z:\40018 (Jacob White Construction)\003 Spring Creek MHP\CAD\Spring Creek- Exhibit- Buffer Zone.dwg Last Plotted: Tue Mar 09, 2021 - 2:11pm By: echatman

1. IGLESIA TALLER DEL ALRARERO
   20604 FM 2920 RD
   HOCKLEY, TX 77447
2. KING JERRY D & CRYSTAL L
   22004 THREE PINES DR
   HOCKLEY TX 77447
3. JONES GENE C
   22610 THREE PINES DR
   HOCKLEY TX 77447
4. WESLEY KEVIN & RHONDA
   22106 THREE PINES DR
   HOCKLEY TX 77447
5. MARTION MICHAEL & ANGELA
   22210 THREE PINES DR
   HOCKLEY TX 77447
6. MARTINO MICHEAL
   22210 THREE PINES DR
   HOCKLEY TX 77447
7. SHAY KAMMIE L
   22214 THREE PINES DR
   HOCKLEY TX 77447
8. UNKNOWN
9. PENA VILMA
   22306 THREE PINES DR
   HOCKLEY TX 77447
10. REDDEN MICHEAL E JR
    22314 THREE PINES DR
    HOCKLEY TX 77447
11. BURKE KEVIN & BERTHA
    22410 THREE PINES DR
    HOCKLEY TX 77447
12. STEPHEN LARRY D & TONI JO
    22422 THREE PINES DR
    HOCKLEY TX 77447
13. RIEDLINGER TODD
    22430 PINES DR
    HOCKLEY TX 77447
14. MECHE JUDY
    22510 PINES DR
    HOCKLEY TX 77447
15. ADKINS THOMAS S & NORMA
    22522 THREE PINES DR
    HOCKLEY TX 77447
16. LACKEY JULIA L

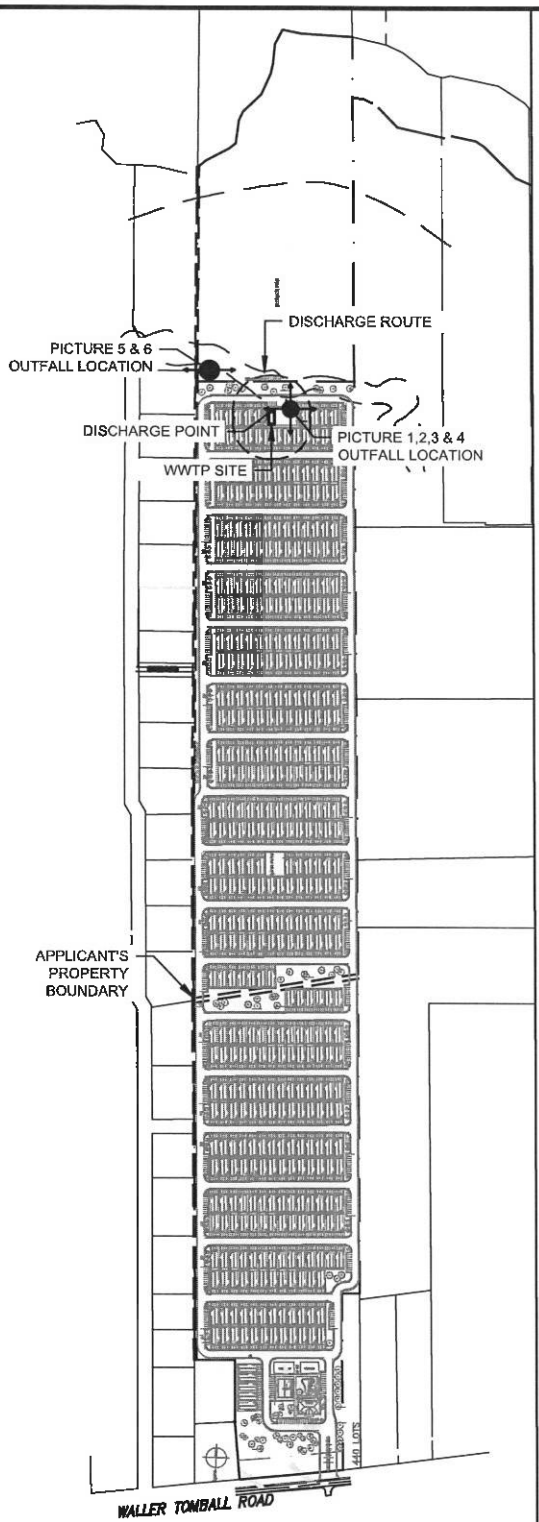
22530 THREE PINES DR
HOCKLEY TX 77447

17. GREEN LEWIS & DOLORES A
    22614 THREE PINES DR
    HOCKLEY TX 77447
18. PHILLIPS MICHEALS & JENNIFER
    22622 THREE PINES DR
    HOCKLEY TX 77447
19. JONES LIANA MARLENE
    22718 THREE PINES DR
    HOCKLEY TX 77447
20. ARIAS ADRIAN & CHERYL R
    22726 THREE PINES DR
    HOCKLEY TX 77447
21. CARTER JOHN R 7 MARY C
    22806 THREE PINES DR
    HOCKLEY TX 77447
22. BLACKWELL DONALD
    22818 THREE PINES DR
    HOCKLEY TX 77447
23. CURRENT OWNER
    22830 THREE PINES DR
    HOCKLEY TX 77447
24. HILL SCOTT R & KAREN J
    22914 THREE PINES DR
    HOCKLEY TX 77447
25. MESSINA INTERESTS LLC
    22333 MUESCHKE RD
    TOMBALL TX 77377
26. FRIENDRICHS RICK G & CAROL E
    22349 MUESCHKE RD
    TOMBALL TX 77377
27. FROEHICH MARK S & JEAN M
    0 MUESCHKE RD
    TOMBALL TX 77377
28. FEHRLE WAYNE A
    20609 FM 2920 RD
    TOMBALL TX 77377
29. FEHRLE WAYNE & SHERRIE
    20410 FM 2920
    HOCKLEY TX 77447
30. HARPER & MANNING INVESTMENT PROP LLC
    5529 LOUETTA RD #STE D
    SPRING TX 77379

31. SEER SAND LLC
    13106 HAZELWOOD HOLLOW DR
    TOMBALL TX 77377
32. VAN DUZER CHARLES B & CANDACE B
    26150 GRNAD PINES RD
    MAGNOLIA TX 77355

Appendix D

Original Photographs



N

0 700

SCALE:1"=700'

FM 2920 LAND COMPANY

ORIGINAL PHOTOGRAPHS PLOT PLAN

MARCH 2021

JOB No. 40018-003

DRAWN BY: EC

WGA
CONSULTING ENGINEERS
TEXAS REGISTERED ENGINEERING FIRM F-9758
2500 Tanglewilde, Suite 120
Houston, Texas 77063
713.789.1900

Drawing: Z:\40018 (Jacob White Construction)\003 Spring Creek MHP\CAD\Spring Creek- Exhibit- Buffer Zone.dwg Last Plotted: Tue Mar 09, 2021 - 2:10pm By: schatman


WWTP LOCATION
PICTURE 1
(NORTH)


WWTP LOCATION
PICTURE 2
(EAST)

WWTP LOCATION
PICTURE 3
(SOUTH)

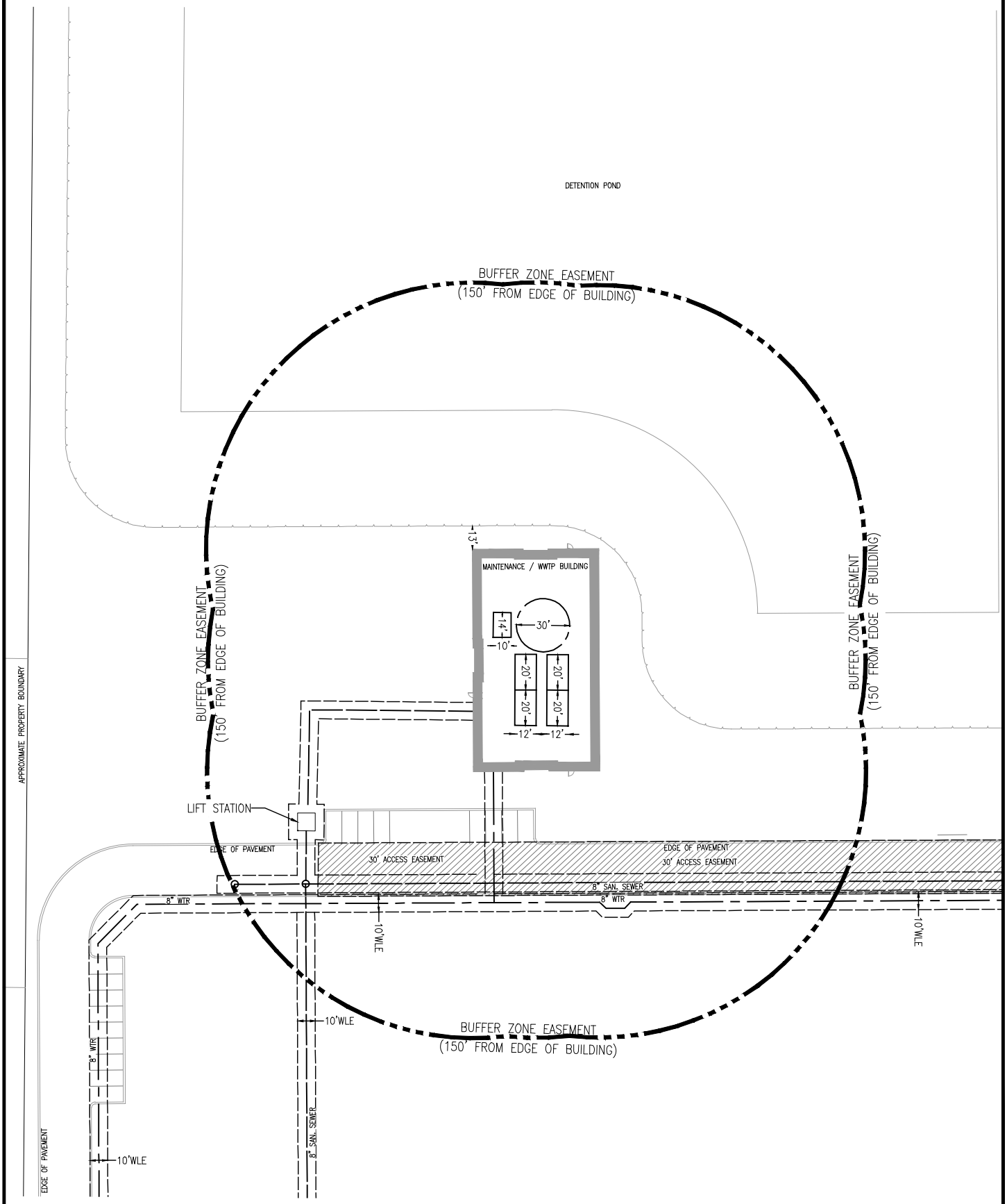

WWTP LOCATION
PICTURE 4
(WEST)


DISCHARGE
LOCATION PICTURE 5
(EAST)


DISCHARGE LOCATION
PICTURE 6
(WEST)

Appendix E

Buffer Zone Map



ENCLAVE AT ROSEHILL

WASTE WATER TREATMENT BUFFER ZONE EXHIBIT

0 75'

SCALE:1"=75'

FEBRUARY 2021

WGA
CONSULTING ENGINEERS
TEXAS REGISTERED ENGINEERING FIRM F-9756
2500 Tanglewilde, Suite 120
Houston, Texas 77063
713.789.1900

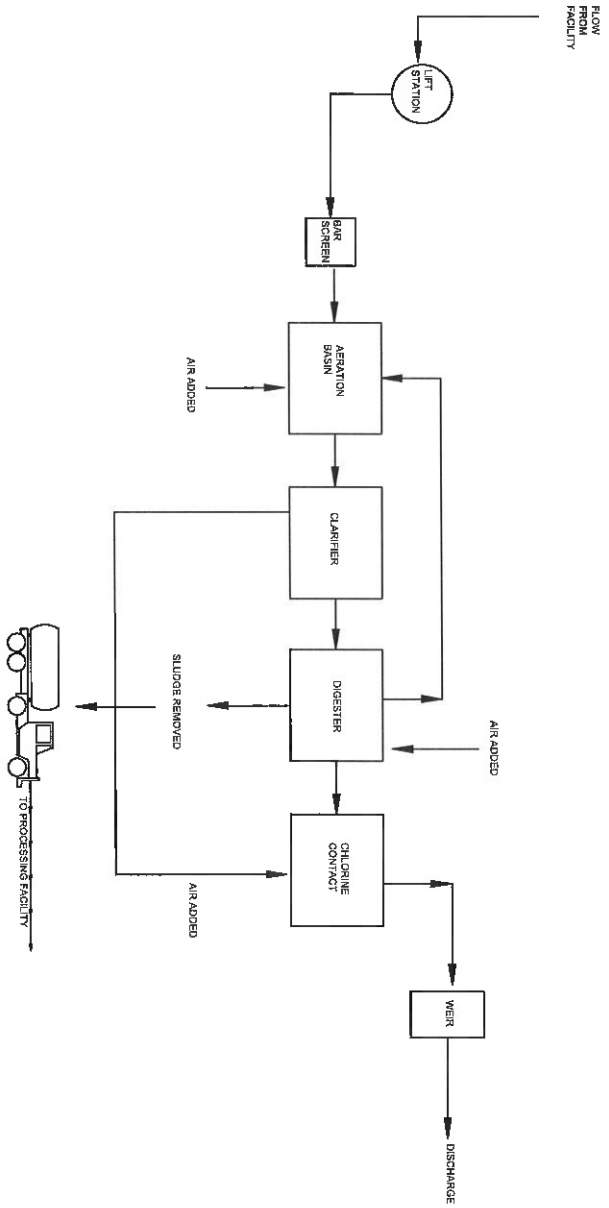
00072

Drawing: Z:\40018 (Jacob White Construction)\003 Spring Creek MHP\CAD\Easements\FM 2920 Land Company – Exhibit 2021.12.02 – Easements.dwg Last Plotted: Wed Feb 02, 2022 – 3:48pm By: echatman

Appendix F

Flow Diagram

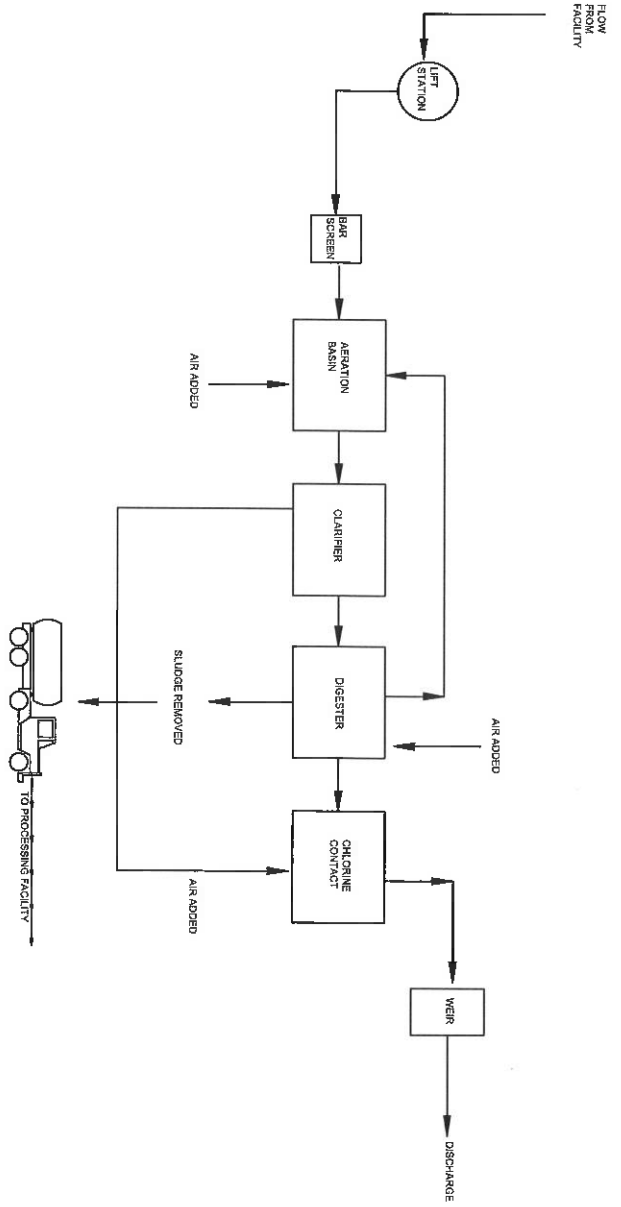
WASTE WATER TREATMENT PLANT
FLOW DIAGRAM



FM 2920 LAND COMPANY	MARCH 2021	WGA CONSULTING ENGINEERS TEXAS REGISTERED ENGINEERING FIRM F-9756 2500 Tanglewilde, Suite 120 Houston, Texas 77063 713.789.1900
INTERIM PHASE II / FINAL FLOW DIAGRAM (0.12 MGD)	JOB No. 40018-001	
	DRAWN BY: EC	

Drawing: Z:\40018 (Jacob White Construction)\001 Cloverfield High Density Housing\CAD\Landing Process Flowchart.dwg Last Plotted: Fri Mar 05, 2021 – 7:48am By: echatman

WASTE WATER TREATMENT PLANT
FLOW DIAGRAM



FM 2920 LAND COMPANY

EXISTING / INTERIM PHASE I
FLOW DIAGRAM (0.06 MGD)

MARCH 2021

JOB No. 40018-001

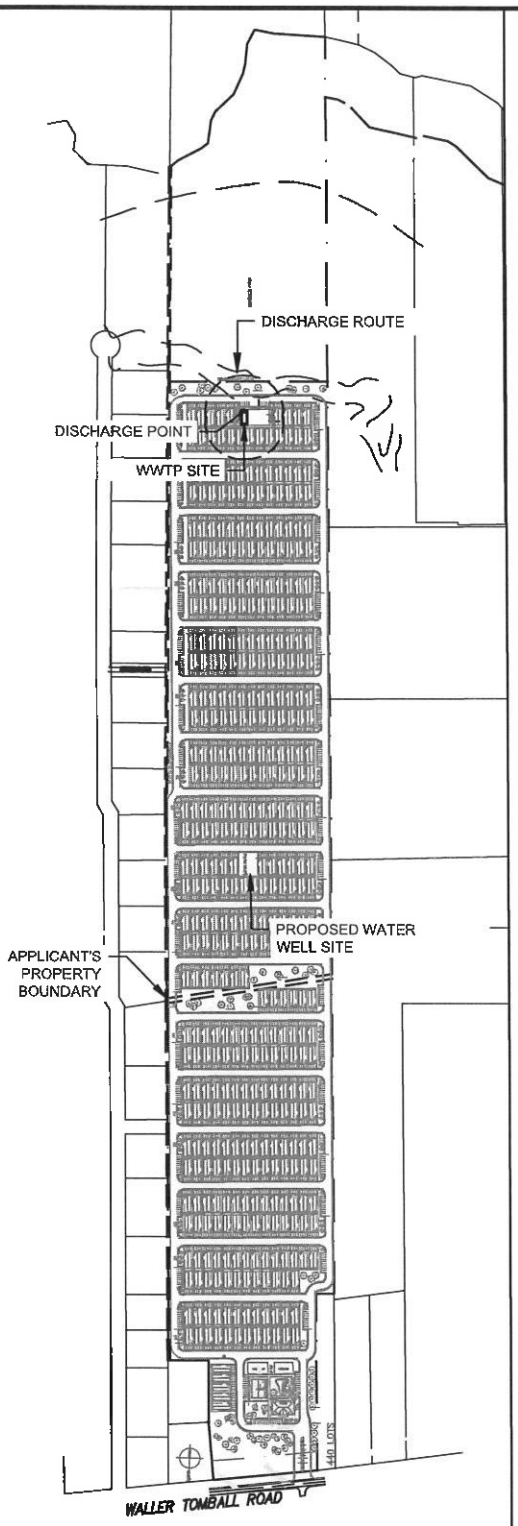
DRAWN BY: EC

WGA
CONSULTING ENGINEERS
TEXAS REGISTERED ENGINEERING FIRM F-9756
2500 Tanglewilde, Suite 120
Houston, Texas 77063
713.789.1900

Drawing: Z:\40018 (Jacob White Construction)\001 Cloverfield High Density Housing\CAD\Landing Process Flowchart.dwg Last Plotted: Fri Mar 05, 2021 – 7:48am By: echatman

Appendix G

Site Drawing



N

0 700'

SCALE: 1"=700'

FM 2920 LAND COMPANY

SITE MAP

MARCH 2021

JOB No. 40018-003

DRAWN BY: EC

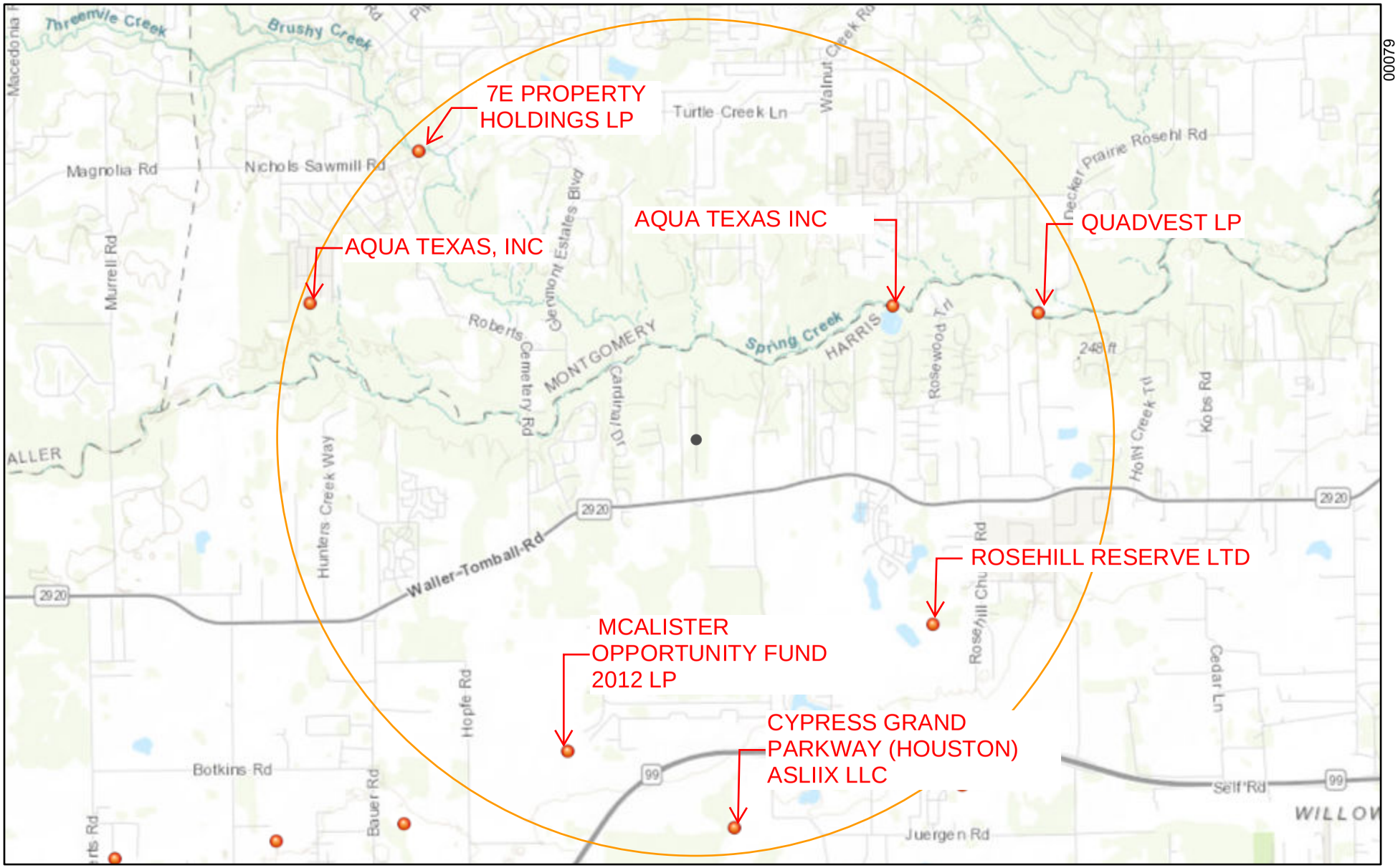
WGA
CONSULTING ENGINEERS
TEXAS REGISTERED ENGINEERING FIRM F-9756
2500 Tanglewilde, Suite 120
Houston, Texas 77063
713.789.1900

Drawing: Z:\40018 (Jacob White Construction)\003 Spring Creek MHP\CAD\Spring Creek– Exhibit– Buffer Zone.dwg Last Plotted: Tue Mar 09, 2021 – 2:10pm By: echatman

Appendix H

Nearby WTTPs and Letters

Wastewater Outfalls in Texas (TCEQ) Custom Print



00079

3/5/2021, 11:18:13 AM

Wastewater Outfalls

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

City of Houston, HPB, County of Montgomery, TX, Texas Parks & Wildlife,

Web AppBuilder for ArcGIS

City of Houston, HPB, County of Montgomery, TX, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA | TCEQ |

WGA
CONSULTING ENGINEERS

March 8, 2021

To: Harris County MUD 441 WWTP
Cypress Grand Parkway Houston ASLI IX, LLC
923 North Pennsylvania Ave
Winter Park, FL 32789

Greetings,

Springcreek Mobile Home Park located at FM 2920, Hockley Texas 77447, with is approximately 118 ft. south of Harris county line, in Harris County has applied with the State of Texas for permission to install a sewage treatment plant to serve the proposed Springcreek Mobile Home Park development estimated to need about 120,00 gallons per day of sewer capacity.

In order to be in compliance with the Texas Administrative Code, Springcreek Mobile Home Park must contact all sewage treatment plants within a 3-mile radius to investigate interest/ability to receive the waste generated from this domestic site.

Your facility with a TPDES permit no. of WQ0015795001 located approximately 3000 ft SSW of intersection of Mueschke Road and State HWY 99 in Harris County, Texas was found to be within 3-miles of the proposed development.

Please respond to Ward, Getz, and Associates, PLLC at the address below to inform us of

A. Your ability capacity wise to take the effluent

B. Your willingness to take the effluent.

Thank you for your participation in these efforts.

Sincerely,

Evan Chatman
echatman@wga-llp.com
P: (254) 249 - 3131
Ward, Getz & Associates, PLLC

WGA
CONSULTING ENGINEERS

March 8, 2021

To: Rosehill Reserve LTD
19229 Waller Tomball Rd
Tomball, TX 77377

Greetings,

Springcreek Mobile Home Park located at FM 2920, Hockley Texas 77447, with is approximately 118 ft. south of Harris county line, in Harris County has applied with the State of Texas for permission to install a sewage treatment plant to serve the proposed Springcreek Mobile Home Park development estimated to need about 120,00 gallons per day of sewer capacity.

In order to be in compliance with the Texas Administrative Code, Springcreek Mobile Home Park must contact all sewage treatment plants within a 3-mile radius to investigate interest/ability to receive the waste generated from this domestic site.

Your facility with a CCN permit no. of 604691238 approximately immediately south of the intersection at FM 2920 & Lonlolly Rd in Harris County, Texas was found to be within 3-miles of the proposed development.

Please respond to Ward, Getz, and Associates, PLLC at the address below to inform us of

A. Your ability capacity wise to take the effluent.

B. Your willingness to take the effluent.

Thank you for your participation in these efforts.

Sincerely,

Evan Chatman
echatman@wga-llp.com
P: (254) 249 - 3131
Ward, Getz & Associates, PLLC

WGA
CONSULTING ENGINEERS

March 8, 2021

To: Quadvest, LP
(Decker Rosehill WWTP)
26926 FM 2978 RD
Magnolia, TX 77354

Greetings,

Springcreek Mobile Home Park located at FM 2920, Hockley Texas 77447, with is approximately 118 ft. south of Harris county line, in Harris County has applied with the State of Texas for permission to install a sewage treatment plant to serve the proposed Springcreek Mobile Home Park development estimated to need about 120,00 gallons per day of sewer capacity.

In order to be in compliance with the Texas Administrative Code, Springcreek Mobile Home Park must contact all sewage treatment plants within a 3-mile radius to investigate interest/ability to receive the waste generated from this domestic site.

Your facility with a TPDES permit no. of WQ0015825001 located approximately 0.9 miles North of intersection FM 2920 & Cypress Rosehill Rd in Harris County, Texas was found to be within 3-miles of the proposed development.

Please respond to Ward, Getz, and Associates, PLLC at the address below to inform us of

A. Your ability capacity wise to take the effluent

B. Your willingness to take the effluent.

Thank you for your participation in these efforts.

Sincerely,

Evan Chatman
echatman@wga-llp.com
P: (254) 249 - 3131
Ward, Getz & Associates, PLLC

WGA
CONSULTING ENGINEERS

March 8, 2021

To: Harris County MUD 547 WWTP
McAlister Opportunity Fund 2012 LP
2211 Norfolk St. STE 803
Houston, TX 77098

Greetings,

Springcreek Mobile Home Park located at FM 2920, Hockley Texas 77447, with is approximately 118 ft. south of Harris county line, in Harris County has applied with the State of Texas for permission to install a sewage treatment plant to serve the proposed Springcreek Mobile Home Park development estimated to need about 120,00 gallons per day of sewer capacity.

In order to be in compliance with the Texas Administrative Code, Springcreek Mobile Home Park must contact all sewage treatment plants within a 3-mile radius to investigate interest/ability to receive the waste generated from this domestic site.

Your facility with a TPDES permit no. of WQ0015644001 located 1.4 miles East and 1 mile South of the interception of Bauer Road and FM 2920 9 miles East of Tomball in Harris County, Texas was found to be within 3-miles of the proposed development.

Please respond to Ward, Getz, and Associates, PLLC at the address below to inform us of

A. Your ability capacity wise to take the effluent.

B. Your willingness to take the effluent.

Thank you for your participation in these efforts.

Sincerely,

Evan Chatman
echatman@wga-llp.com
P: (254) 249 - 3131
Ward, Getz & Associates, PLLC

WGA
CONSULTING ENGINEERS

March 8, 2021

To: Aqua Texas, INC
(Timberloch Estates WWTP)
11100 Britmore Park Dr.
Austin, TX 78041

Greetings,

Springcreek Mobile Home Park located at FM 2920, Hockley Texas 77447, with is approximately 118 ft. south of Harris county line, in Harris County has applied with the State of Texas for permission to install a sewage treatment plant to serve the proposed Springcreek Mobile Home Park development estimated to need about 120,00 gallons per day of sewer capacity.

In order to be in compliance with the Texas Administrative Code, Springcreek Mobile Home Park must contact all sewage treatment plants within a 3-mile radius to investigate interest/ability to receive the waste generated from this domestic site.

Your facility with a TPDES permit no. of WQ0014007001 located approximately 7,150 ft Northwest of PT where Rose hill road crosses spring creek and approx. 12,500 ft North northeast of Intersection of FM 2920 Road and Muechke Rd in Montgomery County, Texas was found to be within 3-miles of the proposed development.

Please respond to Ward, Getz, and Associates, PLLC at the address below to inform us of

A. Your ability capacity wise to take the effluent

B. Your willingness to take the effluent.

Thank you for your participation in these efforts.

Sincerely,

Evan Chatman
echatman@wga-llp.com
P: (254) 249 - 3131
Ward, Getz & Associates, PLLC

Appendix I

Design Calculations

ACTIVATED SLUDGE DESIGN

WASTEWATER CHARACTERISTICS

Description	Value
Influent BOD_5	300.0
Influent TSS	300.0
Influent NH_3	40.0
Daily Flow (Q_{AVE})	60,000
Daily Flow (Q_{AVE})	41.7
Daily Flow (Q_{AVE})	0.093
2-hr Peak Flow (Q_{PK})	240,000
2-hr Peak Flow (Q_{PK})	166.7
2-hr Peak Flow (Q_{PK})	0.372
NH_3	20.1
BOD_5	150.5
TSS	150.5

AERATION BASIN

Description	Value
TCEQ Max Loading	35.0
Width	12.0
Length	50.0
Depth	10.5
Total Volume	5,796
Organic Loading	26.0
Design Within TCEQ Limits?	**YES**

CLARIFIER

Description	Value
TCEQ Max Surface Loading (Q_{ave})	600
TCEQ Max Surface Loading (Q_{PK})	1,200
TCEQ Min Detention Time (Q_{AVE})	3.0
TCEQ Min Detention Time (Q_{PK})	1.8
TCEQ Max Weir Loading $Q_{(PK)}$	20,000
Diameter	30.0
Depth	10.5
Weir Length	92.7
Weir Diameter	29.0
Clarifier Surface Area	706.9
Clarifier Volume	7,422.3
Clarifier Volume	55,518.6
Stilling Well Diameter	4.0
Stilling Well Area	12.6
Stilling Well Velocity	0.076
Clarifier Wall to Weir Area	46.340

ACTIVATED SLUDGE DESIGN

WASTEWATER CHARACTERISTICS

Description	Value
TCEQ Max Upflow Velocity	0.1000
Upflow Velocity at Q_{PK}	0.008
Design Within TCEQ Limits?	**YES**
Design Surface Loading (Q_{AVE})	84.9
Design Within TCEQ Limits?	**YES**
Design Surface Loading (Q_{PK})	339.5
Design Within TCEQ Limits?	**YES**
Detention Time (Q_{AVE})	22.2
Design Within TCEQ Limits?	**YES**
Detention Time (Q_{PK})	5.6
Design Within TCEQ Limits?	**YES**
Weir Flow	2,589.6
Design Within TCEQ Limits?	**YES**

CHLORINE CONTACT CHAMBER

Description	Value
TCEQ Min Detention Time (Q_{PK})	20.0
TCEQ Min Volume	445.6
TCEQ Min Volume	3,333.3
Width	10.0
Length	7.0
Depth	8.00
Chamber Volume	560.0
Chamber Volume	4,188.8
Design Within TCEQ Limits?	**YES**
Detention Time	25.1
Design Within TCEQ Limits?	**YES**

AEROBIC DIGESTER

Description	Value
TCEQ Min Design Volume	20.0
TCEQ Min Design Volume	3,009.6
TCEQ Min Sludge Retention Time	15.0
Width	12.0
Length	30.0
Depth	10.5
Digester Volume	3,780
Digester Loading	25.1
Diameter	0.0
Depth	0.0
Circular Volume	0.0
Digester Volume	3,780
Design Within TCEQ Limits?	**YES**

ACTIVATED SLUDGE DESIGN

WASTEWATER CHARACTERISTICS

Description	Value
Digester Sludge Retention Time @ 1.2%	25.1
Design Within TCEQ Limits?	**YES**

AIR REQUIREMENTS

AIR LIFTS

Description	Value
RAS - Min Requirements @ 200 GPD/ft^2	98.2
SCFM @ R = 0.7 from charts (min 20)	20.0
Pipe Size	4.0
Velocity	2.5
RAS - Max Requirements @ 400 GPD/ft^2	196.4
SCFM @ R = 0.7 from charts (min 20)	26.0
RAS - Pipe Size	6.0
Velocity	2.2
WAS Percent Used	50.0
WAS - Min Requirements @ 200 GPD/ft^2	49.1
SCFM @ R = 0.7 from charts (min 20)	20.0
Pipe Size	3.0
Velocity	2.2
WAS - Max Requirements @ 400 GPD/ft^2	98.2
SCFM @ R = 0.7 from charts (min 20)	20.0
Pipe Size	4.0
Velocity	2.5
SCUM - Min Requirements @ 200 GPD/ft^2	31.4
SCFM @ R = 0.7 from charts	7.5
Pipe Size	3.0
Velocity	1.4
SCUM - Max Requirements @ 400 GPD/ft^2	62.8
SCFM @ R = 0.7 from charts	15.0
Pipe Size	3.0
Velocity	2.9
Total Air Lifts SCFM @ 200 GPD/ft^2	47.5
Total Air Lifts SCFM @ 400 GPD/ft^2	61.0
Process Air Required @ 3200 scfm/day/lb-BOD	334.4
Digester Air @ 30 scfm/1000 ft^3	113.4
Initial Mixing	20.0
Post Aeration @ 20 scfm/1000	11.2
Total Air Required	540.0

HYDRAULIC CALCULATIONS

CHLORINE CONTACT

Description	Value
V_{NOTCH} Q_{AVG}	0.27

ACTIVATED SLUDGE DESIGN

WASTEWATER CHARACTERISTICS

Description	Value
V_{NOTCH} Q_{PK}	0.47
Depth of V_{NOTCH}	12.0
Static Elevation of V_{NOTCH}	8.00
W.S. Elevation @ Q_{AVG}	8.27
W.S. Elevation @ Q_{PK}	8.47

CLARIFIER

Description	Value
Total (Use 2 x 90° V_{NOTCH} per foot of weir)	185.4
Elevation at Q_{AVG}	0.0332
Flow per notch	0.0005
Elevation at Q_{PK}	0.0578
Flow per notch	0.0020

LAUNDER

Description	Value
Split Peaks	83.3
Width	8.0
Depth	3.10
Aeration Zone	
RAS + Q_{PK} + SCUM	425.8
Pipe Size	10.0
Pipe Velocity	1.7
Less than 2 fps?	**YES**

ENGINEERING DESIGN SUMMARY FOR FM 2920 LAND COMPANY WWTP

(60,000 GPD)

PURPOSE The purpose of this report is to present the basis of design and summary of unit sizing and hydraulic calculations for the proposed Wastewater Treatment Plant.

INFLUENT QUALITY CHARACTERISTICS The influent wastewater quality characteristics used for design are estimates based on State Design Criteria and are as follows:

PARAMETER	CONCENTRATION
BOD_5	300 mg/l
TSS	300 mg/l
NH3	40 mg/l

INFLUENT FLOW CHARACTERISTICS

The plant process and hydraulic design are based on the following flows:

Average Daily Flow (Qav)	60,000 GPD	41.7 GPM
Peak 2-Hr. Flow (Qpk)	240,000 GPD	166.7 GPM

EFFLUENT QUALITY CHARACTERISTICS The design is of the activated sludge type based on Single Stage Nitrification to produce the following effluent quality characteristics:

PARAMETER	CONCENTRATION
BOD5	10 mg/l
TSS	15 mg/l
NH3	3 mg/l
DO	4 mg/l

The chlorine residual shall be 1-4 mg/l.

Organic Loading - 60,000 GPD

Influent Conditions

		GPD	GPM	CFS
1	Average Daily Flow (Qav)	60,000	41.7	0.093
2	2 hr. Peak Flow (Qpk)	240,000	166.7	0.372

3	Weir Length	92.7 ft
4	Maximum Weir loading at Qpk	20,000 GPD/ft
5	Weir Loading at Qpk	2,589.6 GPD/ft
6	Clarifier Wall to Weir Area	23.4 sf
7	Maximum Upflow Velocity	0.1 ft/sec
8	Upflow Velocity at Qpk	0.016 ft/sec

Disinfection Chamber

1	Disinfection Volume Required	445.6 cf
2	Volume Available (c.f.)	560.0 cf
3	Volume Available (gal.)	4,188.8 gal
4	Minimum TCEQ Detention Time	20 min
5	Actual Detention Time @ Qpk	25.1 min

Digester

1	Total Volume Required	3,009.6	cf
2	Digester Loadings	25.1	cf/lb
3	Retention Time for Solids Concentration of 1.2 Percent	25.1	days
4	Digester Provided	3,780.0	cf

Air Requirements

		200 GPD/sqft			400 GPD/sqft		
Air Lifts		GPM	SCFM	DIA	GPM	SCFM	DIA
1	Return Activated Sludge (RAS)	98.3	20	4 in	196.4	26	6 in
2	Waste Activated Sludge (WAS)	49.1	20	3 in	98.2	20	4 in
3	Scum	31.4	7.5	3 in	62.8	15	3 in
	Total Air Lifts		47.5 scfm			61.0 scfm	

Air Requirements

1	Process: 3200 scfm/day per lb. BOD5	334.4	scfm
2	Digester: 30 scfm per 1,000 cf	113.4	scfm

3	Total Air Lifts	61.0	scfm
4	17.1Initial Mixing	20	scfm
5	Post Aeration: 20 scfm per 1,000 cf	11.2	scfm
6	**Total Air Required**	**540.0**	**scfm**

7 Air Provided — **Provide three positive displacement blowers at 225 scfm each per unit. (three total)**

Note: The process calculation is based on a clean water oxygen transfer efficiency of 0.85% per foot of submergence. The submergence is 10 foot and the correction factor is 1.56.

Other Air Lifts	GPM	SCFM	DIA
1 One (1) Digester Decant Airlifts (3 feet within 2 hours)	60	20	3 in

Note: Decanting does not occur as air is used in the digesters, so the air numbers are not included in the total air required.

Hydraulic Calculations

I. FLOW

Qavg =	41.7 GPM	60,000 GPD	0.093 CFS
Qpk =	166.7 GPM	240,000 GPD	0.372 CFS

II. DISINFECTION CHAMBER — 90° "V" Notch

H_{avg} = 0.27 ft
H_{pk} = 0.47 ft

Depth of "V" notch weir =	12 inches
Static Elevation in Disinfection Chamber =	8.00 ft
W.S. Elevation @ Qavg =	8.27 ft
W.S. Elevation @ Qpk =	8.47 ft

III. CLARIFIER

Weir Diameter = 29.0 ft

Weir Length = 92.7 ft

Use two (2) 90° "V" notches per foot

1 Elevation @ Qavg
Flow per Notch = 0.0005 CFS

H_{avg} = 0.0332 ft

2 Elevation @ Qpk
Flow per Notch = 0.002 CFS

H_{pk} = 0.0578 ft

3 Minimum Depth of Wide Launder @ Qpk
Launder splits flow = Qpk ÷ 2 = 83.8 CFS
Launder Width = 8 inches
Depth = $0.65(GPM \div width)^{2/3}$ = 3.1 inches

IV. AERATION ZONE

Combined Flow Mix Liquor Transfer to Centerwell at Qpk

Return Activated Sludge RAS = 196.4 GPM

SCUM = 62.8 GPM

Qpk + RAS + SCUM = 425.9 GPM

Select pipe size to provide less than 2.0 ft/sec velocity 10”

ACTIVATED SLUDGE DESIGN

WASTEWATER CHARACTERISTICS

Description	Value
Influent BOD_5	300.0
Influent TSS	300.0
Influent NH_3	40.0
Daily Flow (Q_{AVE})	120,000
Daily Flow (Q_{AVE})	83.3
Daily Flow (Q_{AVE})	0.186
2-hr Peak Flow (Q_{PK})	480,000
2-hr Peak Flow (Q_{PK})	333.3
2-hr Peak Flow (Q_{PK})	0.744
NH_3	40.1
BOD_5	301.0
TSS	301.0

AERATION BASIN

Description	Value
TCEQ Max Loading	35.0
Width	12.0
Length	100.0
Depth	10.5
Total Volume	12,096
Organic Loading	24.9
Design Within TCEQ Limits?	**YES**

CLARIFIER

Description	Value
TCEQ Max Surface Loading (Q_{ave})	600
TCEQ Max Surface Loading (Q_{PK})	1,200
TCEQ Min Detention Time (Q_{AVE})	3.0
TCEQ Min Detention Time (Q_{PK})	1.8
TCEQ Max Weir Loading $Q_{(PK)}$	20,000
Diameter	30.0
Depth	10.5
Weir Length	92.7
Weir Diameter	29.5
Clarifier Surface Area	706.9
Clarifier Volume	7,422.3
Clarifier Volume	55,518.6
Stilling Well Diameter	4.0
Stilling Well Area	12.6
Stilling Well Velocity	0.105
Clarifier Wall to Weir Area	23.366

ACTIVATED SLUDGE DESIGN

WASTEWATER CHARACTERISTICS

Description	Value
TCEQ Max Upflow Velocity	0.1000
Upflow Velocity at Q_{PK}	0.032
Design Within TCEQ Limits?	**YES**
Design Surface Loading (Q_{AVE})	169.8
Design Within TCEQ Limits?	**YES**
Design Surface Loading (Q_{PK})	679.0
Design Within TCEQ Limits?	**YES**
Detention Time (Q_{AVE})	11.1
Design Within TCEQ Limits?	**YES**
Detention Time (Q_{PK})	2.8
Design Within TCEQ Limits?	**YES**
Weir Flow	5,179.1
Design Within TCEQ Limits?	**YES**

CHLORINE CONTACT CHAMBER

Description	Value
TCEQ Min Detention Time (Q_{PK})	20.0
TCEQ Min Volume	891.3
TCEQ Min Volume	6,666.7
Width	10.0
Length	14.0
Depth	8.00
Chamber Volume	1,120.0
Chamber Volume	8,377.6
Design Within TCEQ Limits?	**YES**
Detention Time	25.1
Design Within TCEQ Limits?	**YES**

AEROBIC DIGESTER

Description	Value
TCEQ Min Design Volume	20.0
TCEQ Min Design Volume	6,019.2
TCEQ Min Sludge Retention Time	15.0
Width	12.0
Length	60.0
Depth	10.5
Digester Volume	7,560
Digester Loading	25.1
Diameter	0.0
Depth	0.0
Circular Volume	0.0
Digester Volume	7,560
Design Within TCEQ Limits?	**YES**

ACTIVATED SLUDGE DESIGN

WASTEWATER CHARACTERISTICS

Description	Value
Digester Sludge Retention Time @ 1.2%	25.1
Design Within TCEQ Limits?	**YES**

AIR REQUIREMENTS

AIR LIFTS

Description	Value
RAS - Min Requirements @ 200 GPD/ft^2	98.2
SCFM @ R = 0.7 from charts (min 20)	20.0
Pipe Size	4.0
Velocity	2.5
RAS - Max Requirements @ 400 GPD/ft^2	196.4
SCFM @ R = 0.7 from charts (min 20)	26.0
RAS - Pipe Size	6.0
Velocity	2.2
WAS Percent Used	50.0
WAS - Min Requirements @ 200 GPD/ft^2	49.1
SCFM @ R = 0.7 from charts (min 20)	20.0
Pipe Size	3.0
Velocity	2.2
WAS - Max Requirements @ 400 GPD/ft^2	98.2
SCFM @ R = 0.7 from charts (min 20)	20.0
Pipe Size	4.0
Velocity	2.5
SCUM - Min Requirements @ 200 GPD/ft^2	31.4
SCFM @ R = 0.7 from charts	20.0
Pipe Size	3.0
Velocity	1.4
SCUM - Max Requirements @ 400 GPD/ft^2	62.8
SCFM @ R = 0.7 from charts	20.0
Pipe Size	3.0
Velocity	2.9
Total Air Lifts SCFM @ 200 GPD/ft^2	60.0
Total Air Lifts SCFM @ 400 GPD/ft^2	66.0
Process Air Required @ 3200 scfm/day/lb-BOD	668.8
Digester Air @ 30 scfm/1000 ft^3	226.8
Initial Mixing	20.0
Post Aeration @ 20 scfm/1000	22.4
Total Air Required	1,004.0

HYDRAULIC CALCULATIONS

CHLORINE CONTACT

Description	Value
V_{NOTCH} Q_{AVG}	0.35

ACTIVATED SLUDGE DESIGN

WASTEWATER CHARACTERISTICS

Description	Value
V_{NOTCH} Q_{PK}	0.62
Depth of V_{NOTCH}	12.0
Static Elevation of V_{NOTCH}	8.00
W.S. Elevation @ Q_{AVG}	8.35
W.S. Elevation @ Q_{PK}	8.62

CLARIFIER

Description	Value
Total (Use 2 x 90° V_{NOTCH} per foot of weir)	185.4
Elevation at Q_{AVG}	0.0438
Flow per notch	0.0010
Elevation at Q_{PK}	0.0763
Flow per notch	0.0040

LAUNDER

Description	Value
Split Peaks	166.7
Width	8.0
Depth	4.92
Aeration Zone	
RAS + Q_{PK} + SCUM	592.5
Pipe Size	10.0
Pipe Velocity	2.4
Less than 2 fps?	YES

ENGINEERING DESIGN SUMMARY FOR FM 2920 LAND COMPANY WWTP

(120,000 GPD)

PURPOSE The purpose of this report is to present the basis of design and summary of unit sizing and hydraulic calculations for the proposed Wastewater Treatment Plant.

INFLUENT QUALITY CHARACTERISTICS The influent wastewater quality characteristics used for design are estimates based on State Design Criteria and are as follows:

PARAMETER	CONCENTRATION
BOD_5	300 mg/l
TSS	300 mg/l
NH3	40 mg/l

INFLUENT FLOW CHARACTERISTICS

The plant process and hydraulic design are based on the following flows:

Average Daily Flow (Qav)	120,000 GPD	83.3 GPM
Peak 2-Hr. Flow (Qpk)	480,000 GPD	333.3 GPM

EFFLUENT QUALITY CHARACTERISTICS The design is of the activated sludge type based on Single Stage Nitrification to produce the following effluent quality characteristics:

PARAMETER	CONCENTRATION
BOD5	10 mg/l
TSS	15 mg/l
NH3	3 mg/l
DO	4 mg/l

The chlorine residual shall be 1-4 mg/l.

Organic Loading - 120,000 GPD

Influent Conditions

		GPD	GPM	CFS
1	Average Daily Flow (Qav)	120,000	83.3	0.186
2	2 hr. Peak Flow (Qpk)	480,000	333.3	0.744

3	Weir Length	92.7 ft
4	Maximum Weir loading at Qpk	20,000 GPD/ft
5	Weir Loading at Qpk	5,179.1 GPD/ft
6	Clarifier Wall to Weir Area	23.4 sf
7	Maximum Upflow Velocity	0.1 ft/sec
8	Upflow Velocity at Qpk	0.032 ft/sec

Disinfection Chamber

1	Disinfection Volume Required	891.3 cf
2	Volume Available (c.f.)	1120.0 cf
3	Volume Available (gal.)	8377.6 gal
4	Minimum TCEQ Detention Time	20 min
5	Actual Detention Time @ Qpk	25.1 min

Digester

1	Total Volume Required	6,019.2	cf
2	Digester Loadings	25.1	cf/lb
3	Retention Time for Solids Concentration of 1.2 Percent	25.1	days
4	Digester Provided	7,560.0	cf

Air Requirements

		200 GPD/sqft			400 GPD/sqft		
Air Lifts		GPM	SCFM	DIA	GPM	SCFM	DIA
1	Return Activated Sludge (RAS)	98.3	20	4 in	196.4	26	6 in
2	Waste Activated Sludge (WAS)	49.1	20	3 in	98.2	20	4 in
3	Scum	31.4	20	3 in	62.8	20	3 in
	Total Air Lifts		60.0 scfm			66.0 scfm	

Air Requirements

1	Process: 3200 scfm/day per lb. BOD5	668.8	scfm
2	Digester: 30 scfm per 1,000 cf	226.8	scfm

3	Total Air Lifts	66.0	scfm
4	17.1Initial Mixing	20	scfm
5	Post Aeration: 20 scfm per 1,000 cf	22.4	scfm
6	**Total Air Required**	**1004.0**	**scfm**

7 Air Provided **Provide six positive displacement blowers at 225 scfm each per unit. (te total)**

Note: The process calculation is based on a clean water oxygen transfer efficiency of 0.85% per foot of submergence. The submergence is 10 foot and the correction factor is 1.56.

Other Air Lifts	GPM	SCFM	DIA
1 One (1) Digester Decant Airlifts (3 feet within 2 hours)	60	20	3 in

Note: Decanting does not occur as air is used in the digesters, so the air numbers are not included in the total air required.

Hydraulic Calculations

I. FLOW

Qavg =	83.3 GPM	120,000 GPD	0.186 CFS
Qpk =	333.3 GPM	480,000 GPD	0.744 CFS

II. DISINFECTION CHAMBER 90° "V" Notch

H_{avg} = 0.35 ft
H_{pk} = 0.62 ft

Depth of "V" notch weir =	12 inches
Static Elevation in Disinfection Chamber =	8.00 ft
W.S. Elevation @ Qavg =	8.35 ft
W.S. Elevation @ Qpk =	8.62 ft

III. CLARIFIER

Weir Diameter = 29.0 ft

Weir Length = 92.7 ft

Use two (2) 90° "V" notches per foot

1 Elevation @ Qavg
Flow per Notch = 0.0010 CFS

H_{avg} = 0.0438 ft

2 Elevation @ Qpk
Flow per Notch = 0.004 CFS

H_{pk} = 0.0763 ft

3 Minimum Depth of Wide Launder @ Qpk

Launder splits flow = Qpk ÷ 2 =	166.7 CFS
Launder Width =	8 inches
Depth = $0.65(GPM \div width)^{2/3}$ =	4.92 inches

IV. AERATION ZONE

Combined Flow Mix Liquor Transfer to Centerwell at Qpk

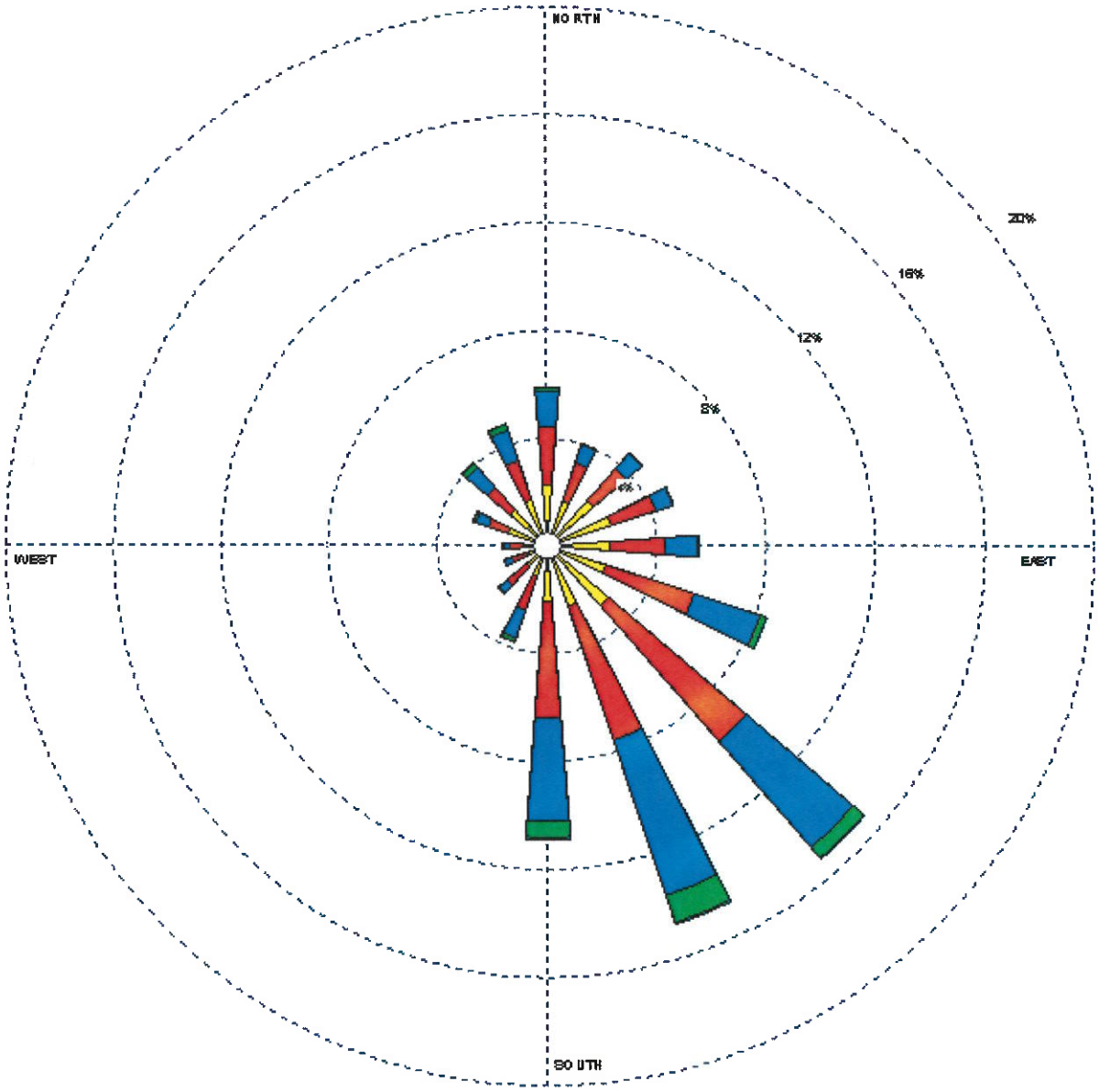
Return Activated Sludge RAS =	196.4 GPM
SCUM =	62.8 GPM
Qpk + RAS + SCUM =	592.5 GPM
Select pipe size to provide less than 2.0 ft/sec velocity	10"

Appendix J

Wind Rose

WIND ROSE PLOT

Station #12960 - HOUSTON/INTERCONTINENTAL ARPT, TX



Wind Speed (m/s)	MODELER	DATE	COMPANY NAME
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	Sara West	8/29/2002	USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 4.63 m/s	CALM WINDS 4.65%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Apr 1 - Apr 30 Midnight - 11 PM	

Appendix K

Solids Management Plan

SLUDGE MANAGEMENT PLANS (60K)

I.PARAMETERS

% CAPACITIES	100	75	50	25
A. AVG. FLOW (MGD)	**0.06**	**0.045**	**0.0225**	**0.005625**

B. VOL OF PROPOSED AERATION BASIN 43,354 GAL = **5,796 CU FT**

C. BOD 300 mg/l

D. Digester Volume 3,780 Cu. Ft = 28,274 Gal

II. DAILY SLUDGE PRODUCTIONS

A. # BOD REMOVED	**150**			
300 X 8.34 X 0.06		**113**	**75**	**38**
	53			
B. # DRY SLUDGE PRODUCED		**35**	**24**	**12**
C. # WET SLUDGE PRODUCE	**2627**			
(ASSUME 2.0 % SOLIDS)		**1970**	**1314**	**657**
	315			
D. VOL WET SLUDGE PRODUCE (GAL/ DAY)		**236**	**158**	**79**
	100%			
Removal Schedule		**75%**	**50%**	**25%**
	11			
Days between sludge removal		**14**	**22**	**43**

Sludge will be removed from digester when digester is full of thickened solids. Sludge will be removed by a resistered transporter and hauled to a permitted disposal site.

MCRT for the digester storage of 28,274 gal equals 90 days at 100% capacity.

SLUDGE MANAGEMENT PLANS (120K)

I.PARAMETERS

% CAPACITIES	100	75	50	25
A. AVG. FLOW (MGD)	0.12	0.09	0.045	0.01125

B. VOL OF PROPOSED AERATION BASIN 90,478 GAL = **12,096 CU FT**

C. BOD 300 mg/l

D. Digester Volume 7,560 Cu. Ft = 56,549 Gal

II. DAILY SLUDGE PRODUCTIONS

A. # BOD REMOVED	300			
300 X 8.34 X 0.12		225	150	75
B. # DRY SLUDGE PRODUCED	105	71	47	24
C. # WET SLUDGE PRODUCE (ASSUME 2.0 % SOLIDS)	5254	3941	2627	1314
D. VOL WET SLUDGE PRODUCE (GAL/ DAY)	630	473	315	158
Removal Schedule	100%	75%	50%	25%
Days between sludge removal	11	14	22	43

Sludge will be removed from digester when digester is full of thickened solids. Sludge will be removed by a resistered transporter and hauled to a permitted disposal site.

MCRT for the digester storage of 56,549 gal equals 90 days at 100% capacity.