Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: 6/4/24
Facility Name: Fort Bend Regional Landfill LP
Permit or Registration No.: 96322

Nature of Correspondence:
☐ Initial/New
☒ Response/Revision to TCEQ Tracking No.: 29597016 (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☐ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☒ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☒ Other: R**esponse to Technical NOD**	

GSI Job No. 6731

4 June 2024

Ms. Fabienne Rambaud, P.G., Project Manager
Industrial and Hazardous Waste Permits Section
TCEQ Waste Permits Division, MC-130
12100 Park 35 Circle
Austin, Texas 78753

RE: Permit Application for New Industrial Non-Hazardous Solid Waste Permit for the Fort Bend Regional Landfill, LP (Proposed Permit No. 96322)
RN102803913 / CN602656373
Response to Technical Notice of Deficiency Tracking No. 29597016

Dear Ms. Rambaud:

On behalf of the Fort Bend Regional Landfill, LP (FBRL), GSI Environmental Inc. is pleased to submit this response to the TCEQ Technical Notice of Deficiency (NOD) email issued 21 May 2024.

This submittal includes the following:

- A table summarizing the Technical NOD comments and FBRL's responses;
- Replacement application pages and tables (redlined and unmarked);
- Replacement attachments (redlined – as possible and unmarked).

Should you have any questions or comments regarding this NOD response or permit application, please feel free to contact me at 832-721-6595 or [redacted]

Sincerely,

James "Jim" M. McDade, PE
Vice President & Principal Engineer

cc: Ms. Jennifer Glowacki, GFL Environmental Inc.
Mr. Marcos Elizondo, GFL Environmental Inc.

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

ATTACHMENTS

Attachment 1 – Comment Response Summary Table

Attachment 2 – Replacement Application Pages and Tables

Attachment 3 – Replacement Attachments

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachment 1 – Comment Response Summary Table

Application Deficiencies – Technical NOD # 1

ID[1]	App.	App. Section	Location[2]	Citation	Error Type[3]	TCEQ Deficiency Description/Resolution	Response
T1	n/a	All	All pages		Incorrect	General comment. Remove all instances of the sentence "Issued: 20 February 2024" from footer on text, tables, and attachments.	The Issue date text was removed from footers in application text, tables, and some of the attachments (e.g., Engineering Report, Waste Analysis Plan). Replacement pages are provided. Note that the date was not removed from maps, as this is a component of the QA/QC for maps and figures for document control.
T2	n/a	I	Section I.F.11	305.45(a)(1)	Inconsistent	Correct the facility coordinates in the application and core data form to be consistent with the central registry. The facility coordinates differ between the application, core data form, and Central Registry.	The coordinates on Page 5 of the application text and the Core Data Form (Attachment I.N) have been updated to match the TCEQ Central Registry.
T3	n/a	I	Section I.L	39.5(b)	Incomplete	Revise the adjacent landowner map and list. Attachment I.L.2 Adjacent Landowners Map is missing the identification of one parcel on the northwest boundary between parcels 19 and 20.	According to the Fort Bend Central Appraisal District, the indicated parcel has the same owner as the parcel labeled #20 in the original map. Attachment I.L.2 (Adjacent Landowners Map) has been updated with a label for the indicated property.

ID[1]	App.	App. Section	Location[2]	Citation	Error Type[3]	TCEQ Deficiency Description/Resolution	Response
T4	n/a	III	Table III.A	305.45(a)(8)(C)	Incomplete	Add to the table the maximum volume per year accepted as per the Waste Management Plan. The volume of each waste source indicates it varies.	In accordance with the UIC permit application, the FBRL will manage wastes from on- and off-site sources up to 353,203,200 gallons. The UIC permit notes that 20%-25% of the total will be from on-site sources (i.e., 88,300,800 gallons, assuming a maximum of 25%). The UIC permit also notes that 75%-80% of the total will be from off-site sources (i.e., 282,562,560 gallons, assuming a maximum of 80%). These totals have been added to Table III.A for the on- and off-site wastes, noting that the total on- and off-site wastes managed will not exceed 353,203,200 gallons.
T5	n/a	III	Table III.C	305.45(a)(8)(C)	Incorrect	Correct the table to indicate most up to date method 9040C.The test method for pH indicates an outdated test method 9040B.	Table III.C has been updated to show test method 9040C for pH.
T6	n/a	IV	Attachment IV.B.2	305.45(a)(8)(C)	Incorrect	Correct the dates in the figures named," Legend and Symbols (2 pages) and "Process Flow Diagram (first page)". These figures have the wrong date of 12/08/24 at the bottom of the page.	The issue dates in Attachment IV.B.2 have been corrected in the attached replacement.
T7	n/a	IV	Attachment IV.D.1	305.45(a)(8)(C)	Incomplete	Show contour intervals on the site map at a scale no less than 1in. = 200 ft and show the location of the leachate line to the UIC Waste Management area.	The replacement Attachment IV.D.1 includes contours at an interval of 2-ft and the location of the leachate line. Note that a smaller scale is used due to the size of the facility, whereas a a scale of 1 inch = 200 ft would require breaking up the map into multiple maps.
T8	n/a	VI	Attachment VI.A	305.45(a)(8)(C)	Incomplete	Revise the figure named Leachate Force Main Routing to show the UIC Waste Management area.	The replacement Attachment VI.A includes an annotation showing the area of the UIC Well Pad and Pre-Injection Area.

ID[1]	App.	App. Section	Location[2]	Citation	Error Type[3]	TCEQ Deficiency Description/Resolution	Response
T9	n/a	VII		37.31(a)	Reminder	Submit an originally signed financial assurance mechanism to the executive director 60 days prior to acceptance of waste. The mechanism must be in effect before the initial receipt of waste.	Fort Bend Regional Landfill, LP recognizes that financial assurance needs to be in-place prior to accepting wastes. Note that the application text for Section VII.A.5 was revised to reflect this.

[[1]] Deficiency ID – Key: A#=Administrative deficiency (ex. A12); NT#=Non-Technical deficiency relating to more administrative in nature such as typo, format, etc. (ex. NT7); T#=Technical deficiency relating to Sections I-X and Sections XII-XIII of the Part B application (ex. T10); C#=Comment only (ex. C1); CP#=Technical deficiency relating to Section XI-Compliance Plan of the Part B application (ex. CP14); **Number in parenthesis (*n*) = *n*th instance of same deficiency** (ex. T1(2) is the second instance of deficiency T1 originally identified in previous NOD).

[2] Location of deficiency in submittal/application. Items in square brackets [ ] refer to applicant's supplemental information submitted as attachments to the application form.

[3] Possible Error Types: Ambiguous, Incomplete, Inconsistent, Incorrect, Omitted, Typo, or Format.

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachment 2 – Replacement Application Pages and Tables

Contents

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Application Pages and Tables (Redlined)

Comment Responses

- Response to Comment T1 (remove dates)
- Response to Comment T2 (update facility coordinates)
- Response to Comment T4 (update Table III.A)
- Response to Comment T5 (update Table III.C)
- Response to Comment T9 (financial assurance requirement)

Table of Contents

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Application for Permit to Store or Process
Industrial Nonhazardous Solid Waste

I. General Information

A. Applicant Information

Name of Applicant: **Fort Bend Regional Landfill , LP**
(individual, Corporation or Other Legal Entity Name – must match the Secretary of State's database records)

Previous or former names of the facility, if applicable: **Long Point Landfill**

Address: **14115 Davis Estates Road**

City: **Needville** State: **Texas** Zip Code: **77461**

Telephone Number: **979-793-4430**

Street Address (if available): **14115 Davis Estates Road**

TCEQ Registration No.: **96322** EPA I.D. No.: **TXR000084600**

Permit No. **96322** County: **Fort Bend**

Regulated Entity Name: **Fort Bend Regional Landfill, LP**

Regulated Entity Reference Number: **RN102803913**

Customer Name: **Fort Bend Regional Landfill, LP**

Customer Number: **CN602656373**

If the application is submitted on behalf of a corporation, please identify the Charter Number as recorded with the Office of Secretary of State for Texas.

0800328149
(Charter Number)

B. Facility Contact Information

1. List those persons or firms, to include a complete mailing address and telephone number, authorized to act for the applicant during the processing of the permit application.

Marcos Elizondo
GFL Environmental
2050 W. Sam Houston Parkway S., Suite #1950
Houston, TX 77042
713-292-2417
[redacted]

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Jennifer Glowacki
GFL Environmental
2050 W. Sam Houston Parkway S., Suite #1950
Houston, TX 77042
346-482-8607
[redacted]

2. If the application is submitted by a corporation or by a person residing out of state, the applicant must designate an Agent in Service or Agent of Service and provide a complete mailing address for the agent. The agent must be a Texas resident.

   Not Applicable

3. List the individual who will be responsible for causing notice to be published in the newspaper and his/her mailing address, telephone number and fax number. If e-mail is available, please provide an e-mail address.

   Jennifer Glowacki
   GFL Environmental
   2050 W. Sam Houston Parkway S., Suite #1950
   Houston, TX 77042
   346-482-8607
   [redacted]

C. Application Location Information

For applications for new permits, renewals, major amendments and class 3 modifications, a copy of the application must be made available at a public place in the county where the facility is, or will be located for review and copying by the public (30 TAC Section 39.405(g)). Identify the public place in the county (e.g., public library, county court house, city hall), including the address, where the application will be made available to the public for review and copying.

Albert George Branch Library
9230 Gene Street
Needville, Texas 77461
281-238-2850

D. Type of Permit for Which Application is Submitted:

1. Original _**X**_____ Permit Number ___96322_____
   (Will be Assigned by the Commission)

2. Amendment: Major _____ Minor _____

3. Modification: Class 1 _____ Class 1[1] _____ Class 2 _____ Class 3 _____

4. Renewal Permit: Yes _____ No __**X**__

5. Provide a brief description of the portion of the facility covered by this application, including the changes for which an amendment or modification is requested.

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The portion of the facility that is covered by this application includes the proposed pre-injection unit, which consists of the following components:

- **A concrete secondary containment area with proposed tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, and TK-1370 and associated ancillary equipment.**
- **A separate concrete secondary containment area with proposed tank TK-1390 and associated ancillary equipment.**
- **A gravel truck unloading pad and associated ancillary equipment.**

These Tanks will serve as the UIC waste management area, which will collect and treat liquid wastes prior to disposal via nonhazardous Class I UIC injection well.

Permit Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
N/A	N/A	N/A	N/A

N/A = Not applicable; this is a new permit and not a modification or an amendment.

6. Does the application contain confidential material? Yes _____ No __**X**__

   If yes, cross-reference the confidential material throughout the application to Section VIII: CONFIDENTIAL MATERIAL, and submit as a separate Section VIII document or binder conspicuously marked "CONFIDENTIAL".

E. List of Other Permits:

List any other permits, existing or pending, which pertain to pollution control activities conducted by this plant or at this location.

Indicate (by listing the permit number(s) in the right-hand column below) all existing or pending State and/or Federal permits or construction approvals which pertain to pollution control or industrial solid waste management activities conducted by your plant or at your location. Complete each blank by entering the permit number, or the date of application, or "none".

Government Relevant Program and/or Law	Permit No.	Agency*
1. Texas Solid Waste Disposal Act	MSW 2270	TCEQ
2. Wastewater disposal under the Texas Water Code	None	None
3. Underground injection under the Texas Water Code	WDW 488 WDW 489	TCEQ

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Government Relevant Program and/or Law		Permit No.	Agency*
4.	Texas Clean Air Act	93892 2696	TCEQ
5.	Texas Uranium Surface Mining & Reclamation Act	None	None
6.	Texas Surface Coal Mining & Reclamation Act	None	None
7.	Hazardous Waste Management program under the Resource Conservation and Recovery Act	None	None
8.	UIC program under the Safe Drinking Water Act	WDW 488 WDW 489	TCEQ
9.	TPDES program under the Clean Water Act	TXR05R702	TCEQ
10.	PSD program under the Clean Air Act	None	None
11.	Nonattainment program under the Clean Air Act	None	None
12.	National Emission Standards for Hazardous Pollutants (NESHAP) Pre-construction approval under the Clean Air Act	None	None
13.	Ocean dumping permits under the Marine Protection Research and Sanctuaries Act	None	None
14.	Dredge or fill permits under section 404 of the Clean Water Act	None	None
15.	Other relevant environmental permits	None	None

*Use the following acronyms for each agency as shown below:

TCEQ = Texas Commission on Environmental Quality
TRC = Texas Railroad Commission
DSHS = Texas Department of State Health Services
TDA = Texas Department of Agriculture
EPA = U.S. Environmental Protection Agency
CORPS = U.S. Army Corps of Engineers

F. Facility Information:

1. Name and address of operator or person in charge of facility (if different from the applicant): **Same as Applicant.**

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Name:_____

Address:_____

City: _____ Zip Code _____ Phone _____

2. Name and address of Owner of facility (if different from applicant): **Not applicable**

   Name:_____

   Address:_____

   City: _____ Zip Code _____ Phone _____

3. If facility is not owned by the applicant, a copy of the lease for use of said facility must accompany this application. (Note: The lease must address the duration and the land usage.)

   Not applicable

4. Provide a brief description of the facility (*i.e.*, the nature of the business) and the activities to be permitted. 30 TAC Sections 305.45(a)(4) and (a)(5)

   Applicant owns and operates a commercial municipal solid waste landfill facility where nonhazardous municipal and industrial solid waste is stored, processed, and disposed. Leachate generated in the landfill and non-hazardous liquid wastes from off-site sources will be stored, processed, and disposed in the proposed permitted tanks and subsequently disposed via UIC-permitted deep injection wells.

5. Ownership Status

Private		X
(1)	Corporation	X
(2)	Partnership	
(3)	Proprietorship	
(4)	Non-profit	
Public		
(1)	Federal	
(2)	Military	
(3)	Regional	
(4)	Municipal	

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Other (specify) _____

If "Other", please specify _____

6. Are your waste management operations within the incorporated limits or extraterritorial jurisdiction of a municipality?

   ___**No**_____If so, what municipality? _____

7. Are your industrial solid waste processing or storage operations in an area in which the governing body of the county or municipality has prohibited the processing, storage or disposal of municipal hazardous waste or industrial solid waste. Yes_____ No__**X**__

   If "yes", provide a copy of the ordinance or order.

8. Is the facility located on Indian lands? Yes _____ No __**X**__

9. Is the facility within the Coastal Management Program boundary? Yes _____ No_**X**__

10. Give a description of the facility location with respect to known or easily identifiable landmarks.

    The facility is located approximately 40 miles southwest of the city of Houston in Needville, Fort Bend County, Texas. It is located 4.5 miles north of the intersection of TX-36 and Farm-to-Market (FM) 1994 Road on the corner of Davis Estate Road.

11. Coordinates of the Facility

    ___**29**_____° ____**23**____' ___**46**___" North Latitude

    ___**95**_____° ____**43**____' ___**29**___" West Longitude

12. Legal Description of Facility

    Submit a legal description(s) of the tract or tracts of land upon which the waste management operations referred to in this permit application occur or will occur. Although a legal description is required, a metes and bounds description is not necessary for urban sites with appropriate "lot" description(s). A survey plat or facility plan drawing which shows the specific points referenced in the survey should also be included.

    The permitted Tanks will be located within the UIC waste management area, which is located on the 2,660.268-acre tract comprising the entire property owned by Fort Bend Regional Landfill, as described by the metes and bounds survey provided in Attachment I.F.1. Attachment I.F.2 displays a 1,194.88-acre tract where the UIC waste management area is located that is located within the larger 2,660.268-acre area that is owned by the Fort Bend Regional Landfill.

13. Total acreage of the facility being permitted: **The proposed UIC waste management area is approximately 4.96 acres and will include the truck unloading area, pre-injection storage tanks, UIC well heads, ancillary equipment, and secondary**

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containment.

14. Identify the name of the drainage basin and segment where the facility is located:
Brazos River, Segment 1202J (Big Creek)

G. List of Other Sites:

Provide a list of sites owned, operated, or controlled by the applicant in the State of Texas. 30 TAC Section 305.50(a)(2)

See Attachment I.G.

H. Wastewater and Stormwater Disposition:

If there will be a discharge of either process water or storm water, describe the effluent route to the nearest identifiable watercourse.

Neither process water nor stormwater from the secondary containment areas will be discharged to nearby surface water.

1. Is the disposal of any waste to be accomplished by a waste disposal well at this facility?

   Yes _**X**_ No _____ (WDW Permit No(s).___**WDW488, WDW 489**___)

2. Will any point source discharge of effluent or rainfall runoff occur as a result of the proposed activities?

   Yes _____ No _**X**_

3. If YES, is this discharge regulated by a TPDES or TCEQ permit?

   Yes _____ Permit No._____(TCEQ) Permit No._____(TPDES)

   No _____ Date TCEQ discharge permit application filed _____

   Date TPDES discharge permit application filed_____

4. Is the facility subject to permitting requirements in 30 TAC Section 335.2(n) for commercial industrial solid waste facilities that receive industrial solid waste for discharge to a publicly owned treatment works? Yes _____ No _**X**_

   If yes, please identify the publicly owned treatment works facility(ies) authorized to receive discharges from the facility.

   _____

   _____

I. Waste Management Units:

Please complete Table I. (Waste Management Unit List) for each waste management unit to be permitted.

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See Table I. – Waste Management Unit List

J. Date of Operation:

What estimated date will waste management operations begin; or if operations have begun, what date did waste management operations begin at the site described by this application?

Waste management operations for the proposed UIC waste management area (i.e., proposed tanks) will begin upon TCEQ-approval of this permit application and the UIC permits for deep injection wells WDW-488 and WDW-489. Upon approval of both permits, construction of the tanks and associated secondary containment will begin. Estimated start of operation is 2025.

K. Application Map:

Submit an application map which extends at least one mile beyond the facility boundaries. The map shall be on a scale of not less than one inch equals one mile and shall include the following information: 30 TAC Section 305.45(a)(6)

1. The approximate boundaries of the tract of land on which the waste management activity is or will be conducted;

2. The location of the areas of storage or processing;

3. The general character of the areas adjacent to the waste facility including public roads, towns and the nature of development of adjacent lands such as residential, commercial, agricultural, recreational, undeveloped, etc.;

4. The boundaries of all affected tracts of land within a reasonable distance from the area of storage, processing, or disposal; and

5. Each well, spring, and surface water body or other water in the state within the map area.

See Attachment I.K.

L. Information Required to Provide Public Notice

State Officials List

Provide the name and mailing address for the State Senator and State Representative in the district in which the facility is or will be located. Either local district addresses or capitol addresses are acceptable. **This list should not be included in the Adjacent Landowners List required below.** [30 TAC 39.103(b)]

Joan Huffman
Texas State Senator District 17
129 Circle Way, Suite 101
Lake Jackson, TX 77566
[redacted]

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Gary Gates
Texas State Representative District 28
P.O. Box 2910
Austin, TX 78768
[redacted]

Local Officials List

Provide the name and mailing address of the mayor and health authority of the municipality in whose territorial limits or extraterritorial jurisdiction the facility is or will be located. In addition, please provide the county judge and health authority of the county in which the facility is located. **This list should not be included in the Adjacent Landowners List required below.** [30 TAC 39.103(c)]

Chad Nesvadba
Mayor
9022 Main Street
P.O. Box 527
Needville, TX 77461
[redacted]
979-793-4253

Judge KP George
Fort Bend County Judge
401 Jackson St.
Richmond, TX 77469
[redacted]
281-341-8606

Dr. Letosha Gale-Lowe
Fort Bend County Health and Human Services
4250 Reading Road, Suite A-100
Rosenberg, TX 77471
[redacted]
281-238-3233

Adjacent Landowners List

Submit a map indicating the boundaries of all adjacent parcels of land, and a list (see samples in the instructions) of the names and mailing addresses of all adjacent landowners and other nearby landowners who might consider themselves affected by the activities described by this application. Cross-reference this list to the map through the use of appropriate keying techniques. The map should be a USGS map, a city or county plat, or another map, sketch, or drawing with a scale adequate enough to show the cross-referenced affected landowners. **The list should be updated prior to any required public notice. It is the applicant's responsibility to ensure that the list is up-to-date for any required public notice.** For all applications (with the exception of Class 1 and Class 11 modifications) this mailing list should be submitted on:

1. a Compact Disk (CD) using software compatible with MS Word [30 TAC 39.5(b)]; or

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2. four sets of printed labels.

If the adjacent landowners list is submitted on a compact disk (CD), please label the disk with the applicant's name and permit number. Within the file stored on the disk, type the permit number and applicant's name on the top line before typing the addresses. Names and addresses must be typed in the format indicated below. This format is required by the U.S. Postal Service for machine readability. Each letter in the name and address must be capitalized, contain no punctuation, and the appropriate two-character abbreviation must be used for the state. Each entity listed must be blocked and spaced consecutively as shown below. The list is to be 30 names, addresses, etc. (10 per column) per page (MS WORD Avery Standard 5160 – ADDRESS template).

Example:

Industrial Hazardous Waste Permit No. 50000, Texas Chemical Plant

TERRY M JENKINS
RR 1 BOX 34
WACO TX 76710

MR AND MRS EDWARD PEABODY
1405 MONTAGUE LN
WACO TX 76710-1234

A list submitted on compact disk (CD) should be the only item on that disk. Please do not submit a list on a disk that includes maps or other materials submitted with your application.

If you wish to provide the list on printed labels, please use sheets of labels that have 30 labels to a page (10 labels per column) (for example: Avery® Easy Peel® White Address Labels for Laser Printers 5160). Please provide four complete sets of labels of the adjacent landowners list.

The adjacent landowners list (and pre-printed mailing labels) and map are provided as Attachment I.L.1 and Attachment I.L.2, respectively.

Based on the questions in the Bilingual Notice Instructions for this form, are you required to make alternate (Bilingual) notice for this application?

_**X**_ Yes _____ No
Bilingual Language(s): **Spanish**

M. Landowner List Information Source:

The names and mailing addresses of persons identified as affected parties, item L. above, were obtained from:

Fort Bend County Public Reference Map

(Source, City, County, School or Water District Records or Abstract Co.)

N. TCEQ Core Data Form

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The TCEQ requires that a Core Data Form (Form 10400) be submitted on all incoming applications unless a Regulated Entity and Customer Reference Number has been issued by the TCEQ and no core data information has changed. For more information regarding the Core Data Form, call (512) 239-5175 or go to the TCEQ Web site at

http://www.tceq.texas.gov/permitting/central_registry/guidance.html

Please label any attachments with name of applicant.

The Core Data Form is provided as Attachment I.N.

O. Plain Language Summary

Complete the following form(s) as applicable, and submit with any industrial hazardous waste, or industrial solid waste, permit application that is subject to 30 Texas Administrative Code §39.405(k) [applications for a Class 3 permit modification, permit amendment, permit renewals, and for a new permit]. For more information regarding the Plain Language Summary forms, call (512) 239-5175, follow the links below, or go to the TCEQ Web site at

https://www.tceq.texas.gov/permitting/waste_permits/ihw_permits/ihw_permit_forms.html

Plan Language Summary Form - Instructions

Plain Language Form Summary - English

Plain Language Form Summary - Spanish

See Attachments I.O for English and Spanish Plain Language Forms

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Signature Page

I, **Marcos Elizondo**, **Area Landfill Director**
(Print or Type Name of Person Signing for Applicant) (Title)

I, _____, _____
(Print or Type Name of Owner if different from Applicant)

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.

Signature: _____Date: _____
(Applicant)

Signature: _____Date: _____
(Owner)

To be completed by the applicant when the above statement is signed by an agent for the applicant.

I, _____hereby designate _____ as my agent
(Print or Type Name) (Print or Type Name)

and hereby authorize said agent to sign any application, submit additional information as may be requested by the Commission, and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Solid Waste Disposal Act permit. I further understand I am responsible for the contents of this application, for oral statement given by my agent in support of the application and for compliance with the terms and conditions of any permit which might be issued based upon this application.

_____
Printed or Typed Name of Applicant
or Chief Executive Officer

_____
Signature

(Note: Application Must Bear Signature & Seal of Notary Public)

Subscribe and Sworn to before me by the said

Marcos Elizondo on this _____ day of_____, 20_____

My commission expires on the _____ day of_____, 20_____

_____

(Seal) Notary Public in and for

_____County, Texas

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FORT BEND REGIONAL LANDFILL, L.P.

GENERAL PARTNER'S CERTIFICATE

The undersigned, Melissa Bachhuber, does hereby certify that she is a duly elected, qualified and serving officer of WCA Texas Management General, Inc., a Delaware corporation ("the Corporation"). The undersigned further certifies that:

1. The Corporation is the sole general partner of Fort Bend Regional Landfill, L.P., a Texas limited partnership ("the Partnership").

2. Mr. Marcos Elizondo has been duly appointed and qualified as the Area Landfill Director, with management responsibility for facilities having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars).

3. In accordance with procedures of the Corporation, authority has been assigned or delegated to Mr. Elizondo to negotiate, enter into, sign and execute, in the name and on behalf of the Partnership and the Corporation, as sole general partner of the Partnership, any permit application, permit amendment or modification application, response to regulatory notices, operating plans for permitted facilities, regulatory and any other agreements, documents, instruments, and certificates relating to permitted facilities that he deems or believes to be advisable and in the best interests of the Partnership and the Corporation. Any of the foregoing authorized actions taken by Mr. Elizondo on behalf of the Partnership and/or the Corporation are authorized actions of the Partnership and the Corporation.

IN WITNESS WHEREOF, I have hereunto set my hand, this ___ day of _____, 2023.

By:_____

Name: Melissa Bachhuber

Title: Assistant Secretary, WCA Texas Management General, Inc.

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II. Facility Management

A. Security: Describe site access control, screening traffic control, and safety. 30 TAC Section 305.45(a)(8)(C)

The UIC waste management area will be located within the boundaries of the Fort Bend Regional Landfill, which implements site security measures to prevent inadvertent or unauthorized entry by persons or livestock to the facility. Site security is maintained by means of security fencing and access controls, as described below.

***Security Fencing*: The facility is surrounded by either a 6-foot high chain-link security fence or a barbed wire fence, with natural buffers (e.g., creek, thick brush, etc.). This fence minimizes the possibility for unauthorized entry of persons or livestock onto the active portion of the facility.**

***Access Controls*: Access to the facility is controlled by means of security fencing and locked gates. Gated openings in the security fence control entry onto the active portion of the facility. With the exception of the main gate, gates are locked at all times. The main gate is unlocked only during operating hours. The gate for receiving trucks is unlocked and opens upon the receipt of trucks during operating hours, and other gates are locked unless specifically in use. Security cameras monitor the facility. During non-operating hours, the main office building has a security system that alarms when there is an unauthorized entry. Cameras, locked doors, and locked fence gates provide 24-hour security during non-operating hours.**

***Communication*: On-site communications are conducted by telephones, two-way radios, and air horns. The air horns can be heard by personnel throughout the facility. Off-site communication is made via telephones. Facility personnel watch for and immediately report any unauthorized entry to facility management.**

B. Inspection and Maintenance:

1. Complete Table II. for all of the waste management units to be permitted. Please note that inspection criteria should be provided for each component of each permitted unit (*e.g.*, tank system, tank, secondary containment area, ancillary equipment). 30 TAC Section 305.45(a)(8)(C)

   See Table II.

2. Describe the inspection procedures for the units listed in Table II. 30 TAC Section 305.45(a)(8)(C)

   Inspection procedures provide a mechanism to prevent and detect system malfunctions, equipment deterioration, operator errors, and discharges which may be causing, or may lead to, releases of nonhazardous waste constituents to the environment or create a threat to human health.

   At a minimum, facility personnel, or other designated persons, will inspect units and equipment associated with waste management (i.e., secondary containment area, tanks, and ancillary equipment) at frequencies specified in Table II. Items for inspection and possible problems to evaluate during the

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inspections are also summarized in Table II.

If deficiencies are identified during the inspections (e.g., deterioration or malfunction of equipment or structures), the facility will document these problems on inspection forms, and will remedy as appropriate, to ensure that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action will be taken immediately. The inspection program is implemented by qualified individuals who have the training and authority to: (1) implement the required inspections, (2) perform necessary evaluations and hazard assessments, and (3) recommend appropriate corrective or remedial actions. The Facility Manager is fully responsible for implementation of the Inspection Program.

The facility operates Monday through Saturday, and is not open on Sundays or major holidays. Inspections will occur as indicated in Table II on days that the facility is open and operating. On Sundays and major holidays, no inspections will occur and the main gate will be locked.

C. Personnel: Describe the staffing pattern and qualifications of all key operating personnel. 30 TAC Section 305.50(a)(2)

The facility is committed to providing facility personnel with the required training to ensure safe and efficient operation. Facility personnel will complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with Class 1 industrial solid waste requirements. The program must be directed by a person trained in waste management procedures, and must include instruction that teaches facility personnel waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed. At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

- **Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;**
- **Communications or alarm systems;**
- **Response to fires or explosions;**
- **Response to ground-water contamination incidents; and**
- **Shutdown of operations.**

Facility personnel must successfully complete the training program within six months after the date of their employment or assignment to the facility, or to a new position at the facility, whichever is later. Employees must not work in unsupervised positions until they have completed the training requirements described above. Facility personnel must take part in an annual review of the initial training.

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The owner or operator will maintain the following documents and records at the facility:

- **The job title for each position at the facility related to waste management, and the name of the employee filling each job;**
- **A written job description for each position at the facility related to waste management.**
- **This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;**
- **A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position at the facility related to waste management; and**
- **Records that document that the training or job experience required as described in this section has been given to, and completed by, facility personnel.**

Training records on current personnel must be kept until closure of the facility and training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

D. Equipment: Describe the types of equipment and minimum number of each type to be provided by the site operator in order to conduct the operation in conformance with the design and operational standards. 30 TAC Section 305.45(a)(8)(A)

Engineering Reports documenting the design and operation of the nine tanks proposed in this application are provided in Attachments IV.G.1 and IV.G.2 to this application. Additional engineering information is also provided in Section IV of this application.

E. Record keeping: Describe the record keeping practices. 30 TAC Section 305.45(a)(8)(C)

Facility personnel, or other designated persons, who conduct the inspections will record the inspections in the inspection report forms. Completed inspection reports are submitted to the Facility Manager or their designee who then takes action, as necessary. Each inspection report will include the date and time of the inspection, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

In cases where specialized outside contractors are appointed to perform testing or inspection services (e.g., ultrasonic wall thickness testing of tanks and fire extinguisher inspections), results of testing or inspection services are reported on the contractor's forms. These reports are made part of the operating records when received.

Completed reports and attachments are accumulated in the facility operating

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records, which are retained at the facility for a minimum period of three years from the date of inspection.

F. Roads: Describe roads used for entry, exit and operations within the facility. 30 TAC Section 305.45(a)(8)(C)

A paved entrance road from Davis Estate Road to the scale house is present at the Fort Bend Regional Landfill facility, where the UIC waste management area will be located. All waste-hauling vehicles, operating personnel, and visitors use the paved entrance for entering the facility. An all-weather road will be installed and maintained to allow access to the injection wells and related facilities, including the secondary containment area where the proposed permitted tanks will be located (see Attachment II.F). This access road will be constructed from the scale house to the well pad and to the offloading area, which will be designed to bear fully laden permitted loads and all anticipated equipment required for well drilling and maintenance, with an additional safety factor. The paved entrance and access roads and the crushed stone surfaced internal roads will provide mud control for the waste hauling vehicles prior to exiting the site and returning to public access roads. The site entrance road, landfill haul road, and access roads will be maintained in a clean and safe condition. In addition, an alternate outbound/inbound road may also be constructed to allow more direct access to the UIC-area from Farm-to-Market (FM) 1994. When the alternate entrance is constructed a new gate, fencing, etc. will also be constructed to limit access to the area to authorized personnel only.

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III. Waste Analysis Plan

A. Complete Table III.A. (Waste Management Information) for each waste, source, and volume of waste to be stored or processed in the facility units to be permitted. 30 TAC Section 305.45(a)(8)(C)

See Table III.A.

B. For inclusion into a permit, complete Table III.B. (Wastes Managed in Permitted Units) for each waste to be managed in a permitted unit. Guidelines for the Classification & Coding of Industrial Wastes and Hazardous Wastes, TCEQ publication RG-22, contains guidance for how to properly classify and code industrial waste in accordance with 30 TAC 335, Subchapter R. 30 TAC Section 305.45(a)(8)(C)

See Table III.B.

1. Applicants need not specify the complete 8-digit waste code formulas for their wastes but only the 3-digit form codes and 1-digit classification codes. This allows the applicant to specify major categories of wastes in an overall manner without having to list all the specific waste streams.

2. Are hazardous wastes defined in 30 TAC Section 335.1 managed or proposed to be managed in permitted units in accordance with 30 TAC Section 335.41(d)(8)?

   Yes _____ No __**X**__

   a. If yes, include the Environmental Protection Agency Waste Numbers as defined in 40 Code of Federal Regulations (CFR) Part 261 (e.g., D001, D002, D018, F039, etc.) for each hazardous waste to be managed in permitted units on Table III.B.

   b. If yes, provide documentation of compliance with 40 CFR Section 264.17(b) if management of hazardous wastes includes diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory as defined in 40 CFR Section 268.40) or reactive (D003) waste to remove the characteristic before land disposal. 30 TAC Section 335.41(d)(8).

C. For inclusion into a permit, complete Table III.C. for each waste listed in Table III.B. For each waste listed in the table, please include the sampling location, the sampling method, the sample frequency, the analytical parameters (*e.g.*, pH, density, viscosity), and the analytical method for each parameter. Please note that process knowledge may be used for difficult to sample and/or measure wastes or parameters. 30 TAC Section 305.45(a)(8)(C)

See Table III.C.

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D. Submit a waste analysis plan which specifies procedures which will be used to inspect and if necessary, analyze each industrial solid waste received at the facility. The plan must describe methods which will be used to determine the identity of each waste managed at the facility. In addition, please specify methods for managing flammable and incompatible wastes. 30 TAC Section 305.45(a)(8)(C)

The Waste Analysis Plan is provided in Attachment III.D, which includes Appendices III.D.1, III.D.2, and III.D.3. Figure III.D.1 describes the waste profiling process for new waste streams.

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IV. Engineering Report

The engineering report represents the conceptual basis for the storage or processing units at the industrial nonhazardous waste management facility. It should include calculations and other such engineering information as may be necessary to follow the logical development of the facility design. Plans and specifications are an integral part of the report. They should include construction procedures, materials specifications, dimensions, design capacities relative to the volume of wastes (as appropriate). Since these reports may be incorporated into any issued permit, the report should not include trade names, manufacturers, or vendors of specific materials, equipment, or services unless such information is critical to the technical adequacy of the material. Technical specifications and required performance standards are sufficient to conduct a technical review.

Submit a detailed engineering design report prepared and sealed by a professional engineer, with current license and designating the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act. Include in the report the following information shown below. 30 TAC Section 305.45(a)(8)

(Please note that in accordance with 30 TAC §305.50(a)(7), any engineering plans and specifications (*e.g.*, engineering drawings, engineering calculations) submitted as part of the permit application shall be sealed by a licensed professional engineer who is currently registered in the state of Texas).

A. Waste Management Unit Information: Complete Table IV. for each waste management unit to be permitted at the facility.

See Table IV.

B. Flow Diagram/Description

Submit a process flow diagram and step-by-step word descriptions of the process flow, depicting the handling, collection, storage, processing, and/or disposal of each waste listed in Table III.A.

The flow diagrams and/or descriptions should include the following information:

1. Originating point of each waste and waste classification code;
2. Means of conveyance utilized in every step of the process flow;
3. Name and function of each facility component through which the waste passes; and
4. The ultimate disposition of all wastes (if off-site, specify "off-site") and waste residues.

See Attachment IV.B.1 for a waste flow diagram and Attachment IV.B.2 for a piping and instrumentation diagram (P&ID) and layout of the tank area.

C. United States Geological Survey: Submit a 72-minute quadrangle map which shows the location of the facility and it uses a scale of not less than 1:24,000.

See Attachment IV.C for the topographic map.

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D. Site Map: Submit a "site map" prepared by a registered surveyor. The map must show the approximate boundaries of the facility, denoting the areas where waste management activity is or will be conducted. The map shall also show (1) contours, using a contour interval of 5 feet if the slope is >5% and a contour interval of 2 feet if the slope is <5%, (2) plant facilities and other improvements such as fences, roads, pits, ponds, ditches, dikes, location of boreholes if applicable etc. The scale of this map should not be less than 1 inch = 200 feet.

The approximately 5-acre UIC waste management area, which includes the proposed permitted tanks and ancillary equipment, is located on a larger 2,660 acre property owned by Fort Bend Regional Landfill. The topographic map provided in Attachment IV.C demonstrates that the area where the UIC waste management area is located is relatively flat. In addition, maps prepared by a Professional Engineer registered in the State of Texas provide information on drainage features (see Attachment IV.D.1), including fences, roads, pits, ponds, ditches, dikes, and locations of monitoring wells. Attachment IV.C also shows major surface water features, including ponds to the south and Deer and Big Creek to the north. The UIC waste management area is located to the northeast of the commercial municipal solid waste landfill that is also located on the larger 2,660-acre property, and the UIC waste management area is relatively flat with minimal elevation changes. A wind rose is also provided (Attachment IV.D.2).

E. Aerial Photograph: For land-based storage or treatment units (such as surface impoundments and land treatment units) submit an aerial photograph approximately 9" x 9" with a scale within a range of 1" =1667' to 1" =3334' and showing the area within at least a one-mile radius of the site boundaries. The site boundaries and actual fill areas should be marked.

Not Applicable

Waste Management Units (30 TAC Section 305.45(a)(8)(A)):

F. Container Storage Areas

Not applicable, no container storage areas are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each container storage area (CSA) (*e.g.*, CSA, secondary containment system, ancillary equipment).

2. Provide an engineering description of each CSA. Please note that the engineering description should include a description of the materials of construction, run-on prevention, overflow prevention, and the container management practices for each CSA.

G. Tank Systems

See Appendix IV.G.1 (Tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, and TK-1370) and Appendix IV.G.2 (Tank TK-1390) for the Engineering Reports for the proposed waste storage and processing tanks. An Engineering Report was not prepared for the leachate pre-injection tank (Tank TK-1380), as discussed

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with TCEQ in the pre-application meeting, since this tank will only handle nonhazardous leachate recovered from the on-site landfill.

1. Submit engineering plans and specifications which fully depict each tank system (*e.g.*, tank, secondary containment system, ancillary equipment).

2. Submit piping and instrumentation drawings (P&IDs) of each tank system.

3. Provide an engineering description of each tank system. Please note that the engineering description should include a description of the materials of construction, external corrosion protection, spill prevention controls, and overfill prevention controls for each tank system.

H. Containment Buildings

Not applicable, no container buildings are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each containment building.

2. Provide an engineering description of each containment building. Please note that the engineering description should include a description of the materials of construction and the waste management practices of each unit.

I. Drip Pads

Not applicable, no drip pads are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each drip pad. If there is a liner(s) (soil and/or artificial), leachate collection system, and/or leak detection monitoring system associated with a drip pad, include engineering drawings of these components as well.

2. Provide an engineering description of each drip pad including a description of any liner, leak detection system, leachate collection system, run-off prevention controls, and/or run-on control system that may be in place. Please note that the description should also describe the materials of construction for each component of each drip pad and the operating practices for each drip pad.

J. Waste Piles

Not applicable, no waste piles are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict any liner(s) (soil and/or artificial), leachate collection, and/or leak detection monitoring system associated with each waste pile.

2. Provide an engineering description of any liner, leak detection system, leachate collection system, run-off prevention controls, and/or run-on control system that may be in place for each waste pile. Please note that the description should describe the materials of construction for each component of a waste pile and the operating practices for each waste pile.

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K. Incinerators

Not applicable, no incinerators are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each incinerator and any associated air pollution control equipment.

2. Submit Piping &Instrumentation Drawings (P&ID) for each incinerator and any associated air pollution control equipment (APCE).

3. Provide an engineering description of each incineration system. Each description should include the name and model number of the unit, the type of unit, a description of any APCE associated with the unit, the materials of construction for each component of the system, the types of auxiliary fuels used, the operating ranges of key parameters (e.g., combustion chamber temperature, waste feed rates, air pollution control equipment parameters), and the types of stack gas monitoring equipment used (if any).

L. Miscellaneous Units

Not applicable, no miscellaneous units are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each miscellaneous unit. If there is a liner(s) (soil and/or artificial), leachate collection system, and/or leak detection monitoring system associated with a drip pad, please include engineering drawings of these components. If there is any APCE associated with a unit, please submit engineering drawings of that equipment as well.

2. Submit P&IDs for each miscellaneous unit, if applicable.

3. Provide an engineering description of each miscellaneous unit including a description of any APCE, liners, leak detection system, leachate collection system, run-off prevention controls, and/or run-on control system that may be associated with the unit. Please note that the description should also describe the materials of construction for each component of each miscellaneous unit and the operating practices for each unit.

M. Surface Impoundments

Not applicable, no surface impoundments are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each surface impoundment. The plans should include all significant features of the surface impoundment(s) and should indicate the 100-year flood zone. Cross-sectional drawing(s) detailing significant design features should be shown.

2. Describe liner specifications including type and thickness.

3. For in-place liners describe site preparation planned including scarification and compaction, and any other chemical or physical treatment to be effected.

4. For imported reworked soils, describe liner installation methodology including lift size, moisture content during compaction, compaction method, design density, and

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determination of hydraulic conductivity.

5. For artificial liner materials provide pertinent specifications and a description of how liner/waste compatibility has been determined. Also describe installation method.

6. For all liners describe quality control measures to be followed during liner installation.

7. Provide an engineering description of any leak detection system, leachate collection, run-off prevention controls, and/or run-on control system that may be in place for each surface impoundment.

N. Land Treatment Units

Not applicable, no land treatment units are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each land treatment unit. The plan should include all significant features of the land treatment unit and should indicate the 100-year flood zone.

2. Submit a performance evaluation plan describing how the degradation of waste constituents will be monitored. The plan should include the depth below ground surface of the treatment zone and management methods to be utilized within the treatment zone.

3. Describe necessary site preparation including soil importation, preparation, chemical amendments, etc.

4. Describe waste application method(s), including depth of incorporation and frequency of cultivation, equipment to be used, etc.

5. Submit an application rate table indicating the application rate of waste constituents to be applied to the treatment zone.

6. Provide an engineering description of any leachate collection, run-off prevention controls, and/or run-on control system that may be in place for each land treatment unit.

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V. Geology Report (30 TAC 305.45(a)(8)(C)

(This section is applicable only to those facilities utilizing land-based storage or treatment facilities such as surface impoundments, land treatment units and waste piles.)

No land-based storage or treatment facilities are proposed for this permit application; therefore, the geology report is not required.

A. Submit a Geology Report (prepared by a Texas licensed professional geoscientist) which describes the regional geology and hydrogeology in the vicinity of the solid waste management facility. The report should provide a discussion of stratigraphy, structural setting, topography, faulting, and land surface subsidence and any other active geologic processes in the vicinity of the facility. Include both geologic maps and cross-sections as necessary. The report should also identify regional aquifers and discuss the groundwater bearing and transmitting properties of subsurface units, and contain a water table contour or potentiometric surface map for the facility.

1. Indicate the location of all water-producing wells within one mile of the facility. A United States Geological Survey map may be used to show the wells. Provide uses of the water in these wells (for example: domestic, livestock watering, industrial, agricultural, etc.)

2. Provide an analysis of ground water at the waste management site.

B. Submit a Subsurface Soils Investigative Report which is sufficiently detailed to establish the soil conditions in the vicinity of the waste management facility. The applicant should consult TCEQ technical guidelines to determine the recommended number of borings, location and depth of borings, and frequency of engineering classification tests. Such investigation should be conducted in accordance with recognized subsurface soils investigation practices. The report should at a minimum contain the following information:

1. The logs of borings performed at the waste management area. All borings must be conducted in accordance with established field exploration methods. Investigation procedures should be discussed in the report. A sufficient number of borings should be performed to establish subsurface stratigraphy and to identify and allow assessment of potential pathways for pollution migration. Borings must be sufficiently deep to allow identification of the uppermost aquifer and underlying hydraulically interconnected aquifers. Boring logs should include a detailed description of materials encountered including any discontinuities such as fractures, fissures, slickensides, lenses or seams. The hollow stem auger boring method is recommended in those instances where an accurate determination of initial water levels is important. A key explaining both the symbols used on the boring logs and the classification terminology for soil type, consistency, and structure should be provided.

2. Complete Table V. and provide in the report data which describes the geotechnical properties of the subsurface soil materials. All laboratory and field tests must be performed in accordance with recognized procedures. A brief discussion of test procedures should be included. All major strata encountered during the field investigation phase should be characterized with regard to: Unified Soil Classification, moisture content, percent less than number 200 sieve, Atterberg limits (liquid limit, plastic limit, and plasticity index), and coefficient of

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permeability. Field permeability tests should be used to determine the coefficient of permeability of sand or silt units and should also be used to supplement laboratory tests for more clay-rich soils. In addition, particle size distribution and relative density based upon penetration resistance should be determined for coarse-grained soils. For fine-grained soils the following parameters should also be determined: cohesive shear strength based upon either penetrometer or unconfined compression tests, dry unit weight, and degree of saturation(s). For the major soil strata encountered, the maximum, minimum, and average for each of these variables should be compiled.

3. Coefficient of permeability in units of cm/sec should be determined for any in-place or constructed soil liners to be used to control waste migration. Separate values shall be determined with ground water from the site and waste or leachate from waste as test fluids. A description of testing methods is required.

4. For land treatment units, provide a description of the surficial soils at the site which includes:

   (a) The name and description of the soil series at the site;

   (b) Important physical properties of the series such as depth, permeability, available water capacity, soil pH, and erosion factors;

   (c) Engineering properties and classifications such as USDA texture, Unified Soil Classification, size gradation, and Atterberg limits (liquid limit, plastic limit, and plasticity index); and

   (d) The cation exchange capacity (CEC) of the soil(s) expressed in units of meq/100g.

   Much of this information may be obtained by consulting the county soil survey published by the United States Department of Agriculture, Soil Conservation Service. If available, a copy of an aerial photograph showing soil series units on the land treatment area should be provided.

   If an aerial photograph is not available, include a soil series map as an attachment to this subsurface soils investigation report.

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VI. Ground and Surface Water Protection (30 TAC 305.45(a)(8)(C))

A. Submit a ground and surface water protection plan drawn to scale consisting of a sheet reflecting locations and typical sections of levees, dikes, liners, drainage channels, culverts, curbs, holding ponds, storm sewers, leachate collections systems and all other units relating to protection of the site from contact with ground and surface water. Adequacy of provisions for safe passage of any internal or adjacent external floodwaters should be reflected here. Cross-sections of levees should be shown tied into contours.

The facility already takes measures to protect groundwater and surface water, since a commercial municipal solid waste landfill (MSW 2270) is also operated on the larger 2,660-acre property. As shown on Attachment VI.A, the facility has groundwater monitoring wells in-place as part of the facility's routine groundwater sampling program associated with the landfill, and the landfill has a leachate collection system. Additionally, the facility manages stormwater in accordance with the entire facility's Texas Pollutant Discharge Elimination System (TPDES) Permit No. TXR05R702, which prevents impacted stormwater from leaving the site (see Attachment IV.D.1).

The proposed UIC waste management area for the UIC-permitted deep wells will consist of tanks and ancillary equipment that will all be contained within concrete secondary containment. Concrete secondary containment will provide protection of both groundwater and surface water from any potential releases. All leaks, drips, spills, and stormwater runoff shall be collected for processing for injection.

B. Submit a subsurface monitoring plan including descriptions of the location, operation, construction and installation of each monitoring device, subsurface zone to be monitored, constituents to be analyzed, analytical method to be employed, frequency of sampling and how a release from the waste management unit will be determined. Include logs of borings performed.

1. Groundwater Monitoring (This section may apply only to those facilities utilizing land-based storage or treatment facilities such as surface impoundments, land treatment units and waste piles.)

No land-based storage or treatment facilities are proposed for this permit application; therefore, groundwater monitoring is not applicable.

(a) For inclusion into a permit, complete Table VI.A. for each unit to be monitored, to specify any proposed monitoring well system.

(b) For inclusion into a permit, for each unit to be monitored, complete Table VI.B. to specify the following:

(1) the suite of waste specific parameters (indicator parameters, waste constituents, or reaction products) which will be analyzed at each sampling event for each well or group of wells. These parameters must provide a reliable indication of the presence of hazardous constituents in the ground water;

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(2) the sampling frequencies and calendar intervals (*e.g.*, monthly; quarterly within the second 30 days of each quarter; semiannually within the first 30 days of the 2nd and 4th quarters, etc.);

(3) the analytical method and the achievable detection limit of the sample preparation and analysis methods for the selected parameters. This detection limit will represent the capability of the sampling and analysis to reliably and accurately determine the presence of the selected parameters in the sample; and

(4) the concentration limit which will be the basis for determining whether a release has occurred from the waste management unit/area.

2. Unsaturated Zone Monitoring (This section may apply to facilities which contain land treatment units):

No land-based storage or treatment facilities are proposed for this permit application; therefore, unsaturated zone monitoring is not applicable.

(a) List all hazardous constituents that have been or will be monitored.

(1) Current parameters

(2) Proposed parameters

(b) Number of soil-pore liquid sampling points

(1) Depth of sampling points

(2) Equipment used for soil pore liquid monitoring

(c) Number of soil core sampling points

(1) Depth of soil core sampling points

(2) Indicate on a facility map locations of all sampling points.

C. Climate

1. Describe regional climatic conditions

The UIC waste management area is located on the larger 2,660-acre Fort Bend Regional Landfill property, which is located in Fort Bend County, near Needville, Texas. The area is located 40 miles from the coast and has a humid subtropical climate. For Rosenberg, approximately 11 miles to the north, average temperatures in the summer months are around 85°F and average temperatures in the winter are around 55°F. Average daily highs in the summer are around 92°F and daily lows in the winter are around 45°F. Rosenberg receives an annual average precipitation of 45.7 inches, with most precipitation during the summer. Historically, the area has been

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impacted by hurricanes along the Gulf Coast.

2. Indicate the magnitudes, in inches, of the following storm events.

   (a) 100-yr./24-hr. **15.7 in**

   (b) 50-yr./24-hr. **13.1 in**

   (c) 25-yr./24-hr. **10.8 in**

3. Indicate the average monthly and annual rainfall for the area.

   The annual average rainfall is approximately 45.7 inches. Monthly average rainfall ranges from 3.0 inches in February to 4.3 inches in September.

4. Is the facility located within a 100-year flood zone?

   No

5. Is the facility located within a coastal surge zone?

   No

6. Indicate the average monthly and annual evaporation rate for the area.

   According to the Texas A&M Agrilife Extension, Houston, which is the nearest measured location approximately 30 miles northeast of Needville, has an average evapotranspiration rate of 54.9 inches per year. For monthly evapotranspiration rates, the maximum and minimum are generally observed in June (6.57 inches) and December (2.35 inches), respectively.

D. Explain how rainfall runoff and any other wastewaters within the boundary of the facility are controlled to prevent pollution of ground and surface waters in the area during construction and operation of the units.

The facility manages stormwater in accordance with Stormwater Permit No. TXR05R702. Stormwater will be managed in accordance with the facility's stormwater permit during construction and operation of the unit. Wastewaters are only associated with operation of the on-site landfill, and all leachate from the landfill will be collected and conveyed to the Tank system for eventual disposal via the UIC-permitted deep injection wells.

E. Is it possible for surface waters originating outside the facility to enter said facility? Give explanation of answer.

In the event of a 100-year flood, waters originating from outside the facility will enter the facility, as a result of the proximity to Big Creek, located approximately 2300 feet to the north and northeast (see Attachment IV.C). However, flood maps from the Federal Emergency Management Agency (FEMA) indicate that only undeveloped portions of the facility's property would be impacted from surface waters originating from outside the facility (see Attachment VI.E).

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F. If an accidental discharge did occur, trace the route which the water would follow (for example: into an unnamed creek adjacent to the facility; thence into Red Creek; thence into the Trinity River).

Any accidental surface discharge would enter one of the unnamed intermittent streams exiting the facility; thence into Big Creek; thence into the Brazos River.

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VII. Closure and Post-Closure Plans

The applicant must close the facility in a manner that minimizes need for further maintenance and controls, or eliminates, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall, or waste decomposition products to the ground water, or surface waters, or to the atmosphere.

A. Closure

1. Complete Table VII.A. for each waste management unit to be permitted and list the possible methods of decontamination, and possible methods of disposal of wastes and waste residues, generated during unit closure. (30 TAC Section 335.8)

   See Table VII.A.

2. Submit a closure plan for the facility which includes each permitted waste management unit. The closure plan should describe in detail the procedures (*e.g.*, disposition of wastes, decontamination procedures, procedures for soil sampling and analysis) to be followed and the materials and manpower to be used in accomplishing final closure of the waste management facility. If the facility contains land based units (*e.g.*, land treatment units), please ensure the closure plan includes information on such items as: type, volume and source of cover material; dismantling/demolition of structures and other improvements; ultimate disposition of liquid wastes; final grading/contouring of the facility; topsoil, seed, fertilizer and irrigation necessary to establish cover, where applicable; equipment and manpower (man hours) to accomplish closure. Please include a schedule or timetable for closure of the facility. (30 TAC Section 335.8)

   See Attachment VII.A.

3. Complete Table VII.B. by providing an itemized closure cost estimate (*e.g.*, cost for any decontamination, costs for soil and/or rinsate sampling, cost for analyses) for each permitted waste management unit at the facility. (30 TAC Section 335.8). Closure cost estimates should be prepared on a "worst case" basis (cost of closure by a third party in the event of sudden or total abandonment of the management facility by the operator). The cost estimate must include the cost of closure at the point in the facilities operating life when the extent and manner of its operation would make closure the most expensive. Please consult TCEQ Technical Guideline No. 10, Closure and Post-Closure Cost Estimates, for details and assumptions in calculating closure costs.

   See Table VII.B. Contractor quotes used to develop the closure cost estimate are provided in Attachment VII.B. Note that these quotes were obtained either for the proposed permitted tanks or for analogous tank projects located within the facility, with unit costs assumed to be representative.

4. Complete Table VII.C. by providing a closure cost estimate, in current dollars, for final closure of each permitted unit at the facility. Please refer to 30 TAC Chapter 37, Subchapter P, for the financial assurance requirements for closure and provide a signed statement from an authorized signatory per 30 TAC 305.44 regarding how the owner or operator will comply with this provision.

   See Table VII.C

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5. If the financial mechanism(s) has been obtained, please provide a copy of the mechanism(s) to the TCEQ.

   A copy of the financial mechanism will be provided to the TCEQ executive director after the Tanks have been constructed and at least 60 days prior to acceptance of waste.

6. Submit a contingent closure plan for each permitted unit in the case where a release from the unit to the environment has occurred. (30 TAC Chapter 350)

   See Attachment VII.A

B. Post-closure (This section may apply to land-based units such as surface impoundments and land treatment units). Provide a post-closure care plan that includes:

   No land-based storage or treatment facilities are proposed for this permit application; therefore, post-closure is not applicable.

   1. any maintenance or monitoring of waste containment systems;
   2. any monitoring or reporting of groundwater monitoring systems;
   3. any monitoring or reporting of unsaturated zone monitoring systems;
   4. any security measures; and/or
   5. a discussion of the future use of the land.

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VIII. Confidential Material

Any information requested in the previous Sections I. through VII. of this application which is deemed confidential shall be provided in this section as a separate collective document and clearly labeled CONFIDENTIAL.

Not Applicable.

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Table I. - Waste Management Unit List

Waste Management Unit	TCEQ N.O.R. Unit #	Function(s) of Unit (storage/processing)	Design Capacity[1]
TK-1300	001	storage	42,000 gallons
TK-1310	002	storage	42,000 gallons
TK-1320	003	storage	42,000 gallons
TK-1330	004	storage	42,000 gallons
TK-1340	005	storage	42,000 gallons
TK-1350	006	storage	42,000 gallons
TK-1360	007	storage	42,000 gallons
TK-1370	008	storage	42,000 gallons
TK-1390	009	storage	21,000 gallons

[1]Cubic yards, gallons, pounds, gallons/minute, pounds/hour, BTUs/hour, etc.

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Table II. - Inspection Schedule

Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
Tanks and Tank System TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, TK-1370, and TK-1390	• *Above-Ground Portions of Tank Exterior:* Corrosion, leaks. • *Piping and Valves:* Damage, leaks. • *Data Gathered from Visual Monitoring and/or Leak Detection Equipment:* Standing liquid in the sump or secondary containment area. • *Tank Construction Materials and Area Immediately Surrounding Externally Accessible Portion of Tank System:* Corrosion, signs of release. • *Integrity of Secondary Containment:* Cracks, breaks, or signs of deterioration.	Daily, on all days of facility operation
	• *Overfill Control Equipment:* Malfunction of high-level alarms, if present, for systems equipped with such alarms.	Annually
Containment Areas, Dike Walls, Berms	• Evidence of spills or release • Cracks or gaps in coating • Accumulated precipitation	Daily, on all days of facility operation

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Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
Loading/Unloading Areas	• Evidence of spills or release • Accumulated precipitation • Integrity of containment system	Daily, on all days of facility operation
Emergency Equipment Eyewash, safety showers, fire extinguishers, spill control equipment	• Low or no flow • Blockage • High pressure • Missing pieces • System inoperability	Monthly
Security Fences, gates, warning signs	• Breach, damage, missing sections. • Not operating properly. • Deterioration, damage, missing, illegible writing.	Monthly

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Table III.A. - Waste Management Information

Waste	Source	Volume (tons/year)
Leachate from GFL Facility	On-site	Up to 88,300,800 gal. in combination with the other on-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Leachate from other landfills	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Wash water	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Tank Washouts	Various off-site sources and on-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Contaminated Stormwater from GFL Facility	On-site	Up to 88,300,800 gal. in combination with the other on-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Contaminated Stormwater	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Other Aqueous Waste	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.

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Waste	Source	Volume (tons/year)
Scrubber Water	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Other inorganic Liquids	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Nonhazardous Brine	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.

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Table III.B. - Wastes Managed In Permitted Units

No.	Waste	Physical Form (e.g., solid, liquid, sludge)	TCEQ Waste Form Codes and Classification Codes	
1	Leachate from GFL Facility	Liquid	116	1, 2
2	Leachate from other landfills	Liquid	116	1,2
3	Wash water	Liquid	101-106, 109-110, 113-115, 119, 201, 203-205, 207, 219, 296	1, 2
4	Tank Washouts	Liquid	101-106, 109-110, 113-115, 119, 203-205, 207, 209-210, 219, 296	1, 2
5	Contaminated Stormwater from GFL Facility	Liquid	113-114, 119, 203-205, 207, 219, 296	1, 2
6	Contaminated Stormwater	Liquid	113-114, 119, 203-205, 207, 219, 296	1, 2
7	Other Aqueous Waste	Liquid	119, 219	1, 2
8	Scrubber Water	Liquid	115	1, 2
9	Other inorganic Liquids	Liquid	119, 198	1, 2
10	Nonhazardous Brine	Liquid	113, 199	1, 2

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Table III.C. - Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Daily	pH	9040C or equivalent
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Daily	Specific Gravity	ASTM D4052 or equivalent
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Total Dissolved Solids, TDS	SM2540C or equivalent
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Total Suspended Solids, TSS	SM2540D or equivalent
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Waste Characterization Profile: Reactivity, Corrosivity, and Ignitability	EPA Methods 1110a, 9040c, 1010a, or equivalents
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Applicable TCLP metals, Semivolatile organics, volatile organics	Per 40 CFR 261 Appendix III
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Viscosity	D445-04e2 or equivalent

[1]from first column of Table III.B.

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Table IV. - Waste Management Unit Information

Permit Unit No.	Waste Management Unit	TCEQ N.O.R. No.	Waste Nos.[1] Managed in Unit	Function(s) of Unit (storage/processing)	Rated Capacity of Unit
001	TK-1300	001	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
002	TK-1310	002	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
003	TK-1320	003	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
004	TK-1330	004	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
005	TK-1340	005	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
006	TK-1350	006	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
007	TK-1360	007	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
008	TK-1370	008	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
009	TK-1390	009	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	21,000 gallons

[1]from first column of Table III.B.

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Table V. - Waste Management Area Subsurface Conditions

Not applicable, no land-based storage or treatment facilities are proposed for this permit application.

Boring Number	Depth Below Grade	Stratum	USC Symbol	Liquid Limit	Plasticity Index	Percent Passing #200 Sieve	Permeability	Percent Porosity

Maximum depth:

_____feet below grade

_____feet above MSL

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Table VI.A. - Unit Groundwater Detection Monitoring System

Not applicable, no land-based storage or treatment facilities are proposed for this permit application.

For each unit/area which requires groundwater monitoring, specify the number and type of wells which will comprise the groundwater monitoring system for the unit/area. Prepare additional tables as necessary.

Waste Management Unit/Area Name[1]

Well Number(s)						
Hydrogeologic Unit Monitored						
Type (e.g.,. point of compliance, background, observation, etc.)						
Up or Down Gradient						
Casing Diameter and Material						
Screen Diameter and Material						
Screen Slot Size (in.)						
Top of Casing Elevation (ft, MSL)						
Grade or Surface Elevation (ft, MSL)						
Well Depth (ft,)						
Screen Interval, From(ft) To(ft)						
Facility Coordinates (e.g., lat/long or company coordinates)						

[1]From Tables in Section V.

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Table VI.B. - Groundwater Sample Analysis

Not applicable, no land-based storage or treatment facilities are proposed for this permit application.

For each well or group of wells, specify the suite of parameters for which groundwater samples will be analyzed.

Well No(s).

Parameter	Sampling Frequency	Analytical Method	Detection Limits	Concentration Limits[1]

[1] The concentration limit is the basis for determining whether a release has occurred from the waste management unit/area.

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Table VII.A. - Unit Closure

For each unit to be permitted, list the facility components to be decontaminated, the possible methods of decontamination, and the possible methods of disposal of wastes and waste residues generated during unit closure:

Equipment of HWM Unit	Possible Methods of Decontamination[1]	Possible Methods of Disposal [1]
Tank TK-1300	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1310	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1320	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1330	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1340	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1350	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1360	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1370	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1390	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility

[1]Applicants may list more than one appropriate method.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1300

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1310

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1320

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1330

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1340

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1350

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1360

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1370

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.B. - Unit Closure Cost Estimate for Tank TK-1390

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (20,580 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$13,377
Removal and transport of remaining liquid waste in tank (Five 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$9,000
Disposal of tank bottom sludge (2.1 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,397
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (2400 sq. ft. [60 ft x 40 ft secondary containment area] x $0.99 per sq. ft.[4])	$2,376
Disposal of rinsate from tanks and secondary containment (900 gallons [0.05 ft rinse water x 2,400 sq. ft. secondary containment] + 1,000 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,235
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [1,400 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$5,100
Total	$106,200
Contingency (10% minimum)	$10,600
Total Unit Closure Cost (rounded to the nearest 100)	**$116,800** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

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4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

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Table VII.C. - Permitted Unit Closure Cost Summary

Existing Unit Closure Cost Estimate – Not applicable

Unit	Cost

Total Existing Unit Closure Cost Estimate **n/a** (2023) dollars

Proposed Unit Closure Cost Estimate

Unit	Cost
Tank TK-1300	$140,600
Tank TK-1310	$140,600
Tank TK-1320	$140,600
Tank TK-1330	$140,600
Tank TK-1340	$140,600
Tank TK-1350	$140,600
Tank TK-1360	$140,600
Tank TK-1370	$140,600
Tank TK-1390	$116,800

Total Proposed Unit Closure Cost Estimate ***$1,241,600 (2023) dollars***

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GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Application Pages and Tables (Unmarked)

Comment Responses

- Response to Comment T1 (remove dates)
- Response to Comment T2 (update facility coordinates)
- Response to Comment T4 (update Table III.A)
- Response to Comment T5 (update Table III.C)
- Response to Comment T9 (financial assurance requirement)

Table of Contents

Application for Permit to Store or Process
Industrial Nonhazardous Solid Waste

I. General Information

A. Applicant Information

Name of Applicant: **Fort Bend Regional Landfill , LP**
(individual, Corporation or Other Legal Entity Name – must match the Secretary of State's database records)

Previous or former names of the facility, if applicable: **Long Point Landfill**

Address: **14115 Davis Estates Road**

City: **Needville** State: **Texas** Zip Code: **77461**

Telephone Number: **979-793-4430**

Street Address (if available): **14115 Davis Estates Road**

TCEQ Registration No.: **96322** EPA I.D. No.: **TXR000084600**

Permit No. **96322** County: **Fort Bend**

Regulated Entity Name: **Fort Bend Regional Landfill, LP**

Regulated Entity Reference Number: **RN102803913**

Customer Name: **Fort Bend Regional Landfill, LP**

Customer Number: **CN602656373**

If the application is submitted on behalf of a corporation, please identify the Charter Number as recorded with the Office of Secretary of State for Texas.

0800328149
(Charter Number)

B. Facility Contact Information

1. List those persons or firms, to include a complete mailing address and telephone number, authorized to act for the applicant during the processing of the permit application.

Marcos Elizondo
GFL Environmental
2050 W. Sam Houston Parkway S., Suite #1950
Houston, TX 77042
713-292-2417
[redacted]

Jennifer Glowacki
GFL Environmental
2050 W. Sam Houston Parkway S., Suite #1950
Houston, TX 77042
346-482-8607
[redacted]

2. If the application is submitted by a corporation or by a person residing out of state, the applicant must designate an Agent in Service or Agent of Service and provide a complete mailing address for the agent. The agent must be a Texas resident.

   Not Applicable

3. List the individual who will be responsible for causing notice to be published in the newspaper and his/her mailing address, telephone number and fax number. If e-mail is available, please provide an e-mail address.

   Jennifer Glowacki
   GFL Environmental
   2050 W. Sam Houston Parkway S., Suite #1950
   Houston, TX 77042
   346-482-8607
   [redacted]

C. Application Location Information

For applications for new permits, renewals, major amendments and class 3 modifications, a copy of the application must be made available at a public place in the county where the facility is, or will be located for review and copying by the public (30 TAC Section 39.405(g)). Identify the public place in the county (e.g., public library, county court house, city hall), including the address, where the application will be made available to the public for review and copying.

Albert George Branch Library
9230 Gene Street
Needville, Texas 77461
281-238-2850

D. Type of Permit for Which Application is Submitted:

1. Original _**X**_____ Permit Number ___96322_____
   (Will be Assigned by the Commission)

2. Amendment: Major _____ Minor _____

3. Modification: Class 1 _____ Class 1[1] _____ Class 2 _____ Class 3 _____

4. Renewal Permit: Yes _____ No __**X**__

5. Provide a brief description of the portion of the facility covered by this application, including the changes for which an amendment or modification is requested.

The portion of the facility that is covered by this application includes the proposed pre-injection unit, which consists of the following components:

- **A concrete secondary containment area with proposed tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, and TK-1370 and associated ancillary equipment.**
- **A separate concrete secondary containment area with proposed tank TK-1390 and associated ancillary equipment.**
- **A gravel truck unloading pad and associated ancillary equipment.**

These Tanks will serve as the UIC waste management area, which will collect and treat liquid wastes prior to disposal via nonhazardous Class I UIC injection well.

Permit Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
N/A	N/A	N/A	N/A

N/A = Not applicable; this is a new permit and not a modification or an amendment.

6. Does the application contain confidential material? Yes _____ No __**X**__

   If yes, cross-reference the confidential material throughout the application to Section VIII: CONFIDENTIAL MATERIAL, and submit as a separate Section VIII document or binder conspicuously marked "CONFIDENTIAL".

E. List of Other Permits:

List any other permits, existing or pending, which pertain to pollution control activities conducted by this plant or at this location.

Indicate (by listing the permit number(s) in the right-hand column below) all existing or pending State and/or Federal permits or construction approvals which pertain to pollution control or industrial solid waste management activities conducted by your plant or at your location. Complete each blank by entering the permit number, or the date of application, or "none".

Government Relevant Program and/or Law	Permit No.	Agency*
1. Texas Solid Waste Disposal Act	MSW 2270	TCEQ
2. Wastewater disposal under the Texas Water Code	None	None
3. Underground injection under the Texas Water Code	WDW 488 WDW 489	TCEQ

Government Relevant Program and/or Law		Permit No.	Agency*
4.	Texas Clean Air Act	93892 2696	TCEQ
5.	Texas Uranium Surface Mining & Reclamation Act	None	None
6.	Texas Surface Coal Mining & Reclamation Act	None	None
7.	Hazardous Waste Management program under the Resource Conservation and Recovery Act	None	None
8.	UIC program under the Safe Drinking Water Act	WDW 488 WDW 489	TCEQ
9.	TPDES program under the Clean Water Act	TXR05R702	TCEQ
10.	PSD program under the Clean Air Act	None	None
11.	Nonattainment program under the Clean Air Act	None	None
12.	National Emission Standards for Hazardous Pollutants (NESHAP) Pre-construction approval under the Clean Air Act	None	None
13.	Ocean dumping permits under the Marine Protection Research and Sanctuaries Act	None	None
14.	Dredge or fill permits under section 404 of the Clean Water Act	None	None
15.	Other relevant environmental permits	None	None

*Use the following acronyms for each agency as shown below:

TCEQ = Texas Commission on Environmental Quality
TRC = Texas Railroad Commission
DSHS = Texas Department of State Health Services
TDA = Texas Department of Agriculture
EPA = U.S. Environmental Protection Agency
CORPS = U.S. Army Corps of Engineers

F. Facility Information:

1. Name and address of operator or person in charge of facility (if different from the applicant): **Same as Applicant.**

Name:_____

Address:_____

City: _____ Zip Code _____ Phone _____

2. Name and address of Owner of facility (if different from applicant): **Not applicable**

   Name:_____

   Address:_____

   City: _____ Zip Code _____ Phone _____

3. If facility is not owned by the applicant, a copy of the lease for use of said facility must accompany this application. (Note: The lease must address the duration and the land usage.)

   Not applicable

4. Provide a brief description of the facility (*i.e.*, the nature of the business) and the activities to be permitted. 30 TAC Sections 305.45(a)(4) and (a)(5)

   Applicant owns and operates a commercial municipal solid waste landfill facility where nonhazardous municipal and industrial solid waste is stored, processed, and disposed. Leachate generated in the landfill and non-hazardous liquid wastes from off-site sources will be stored, processed, and disposed in the proposed permitted tanks and subsequently disposed via UIC-permitted deep injection wells.

5. Ownership Status

Private		___**X**___
(1)	Corporation	___**X**___
(2)	Partnership	_____
(3)	Proprietorship	_____
(4)	Non-profit	_____
Public		_____
(1)	Federal	_____
(2)	Military	_____
(3)	Regional	_____
(4)	Municipal	_____

Other (specify) _____

If "Other", please specify _____

6. Are your waste management operations within the incorporated limits or extraterritorial jurisdiction of a municipality?

   ___**No**_____If so, what municipality? _____

7. Are your industrial solid waste processing or storage operations in an area in which the governing body of the county or municipality has prohibited the processing, storage or disposal of municipal hazardous waste or industrial solid waste. Yes_____ No__**X**__

   If "yes", provide a copy of the ordinance or order.

8. Is the facility located on Indian lands? Yes _____ No __**X**__

9. Is the facility within the Coastal Management Program boundary? Yes _____ No_**X**__

10. Give a description of the facility location with respect to known or easily identifiable landmarks.

    The facility is located approximately 40 miles southwest of the city of Houston in Needville, Fort Bend County, Texas. It is located 4.5 miles north of the intersection of TX-36 and Farm-to-Market (FM) 1994 Road on the corner of Davis Estate Road.

11. Coordinates of the Facility

    ___**29**_____° ____**23**____' ___**46**__" North Latitude

    ___**95**_____° ____**43**____' ___**29**__" West Longitude

12. Legal Description of Facility

    Submit a legal description(s) of the tract or tracts of land upon which the waste management operations referred to in this permit application occur or will occur. Although a legal description is required, a metes and bounds description is not necessary for urban sites with appropriate "lot" description(s). A survey plat or facility plan drawing which shows the specific points referenced in the survey should also be included.

    The permitted Tanks will be located within the UIC waste management area, which is located on the 2,660.268-acre tract comprising the entire property owned by Fort Bend Regional Landfill, as described by the metes and bounds survey provided in Attachment I.F.1. Attachment I.F.2 displays a 1,194.88-acre tract where the UIC waste management area is located that is located within the larger 2,660.268-acre area that is owned by the Fort Bend Regional Landfill.

13. Total acreage of the facility being permitted: **The proposed UIC waste management area is approximately 4.96 acres and will include the truck unloading area, pre-injection storage tanks, UIC well heads, ancillary equipment, and secondary**

containment.

14. Identify the name of the drainage basin and segment where the facility is located:
Brazos River, Segment 1202J (Big Creek)

G. List of Other Sites:

Provide a list of sites owned, operated, or controlled by the applicant in the State of Texas. 30 TAC Section 305.50(a)(2)

See Attachment I.G.

H. Wastewater and Stormwater Disposition:

If there will be a discharge of either process water or storm water, describe the effluent route to the nearest identifiable watercourse.

Neither process water nor stormwater from the secondary containment areas will be discharged to nearby surface water.

1. Is the disposal of any waste to be accomplished by a waste disposal well at this facility?

   Yes **X** No _____ (WDW Permit No(s).**WDW488, WDW 489**)

2. Will any point source discharge of effluent or rainfall runoff occur as a result of the proposed activities?

   Yes _____ No **X**

3. If YES, is this discharge regulated by a TPDES or TCEQ permit?

   Yes _____ Permit No._____(TCEQ) Permit No._____(TPDES)

   No _____ Date TCEQ discharge permit application filed _____

   Date TPDES discharge permit application filed_____

4. Is the facility subject to permitting requirements in 30 TAC Section 335.2(n) for commercial industrial solid waste facilities that receive industrial solid waste for discharge to a publicly owned treatment works? Yes _____ No **X**

   If yes, please identify the publicly owned treatment works facility(ies) authorized to receive discharges from the facility.
   _____
   _____

I. Waste Management Units:

Please complete Table I. (Waste Management Unit List) for each waste management unit to be permitted.

See Table I. – Waste Management Unit List

J. Date of Operation:

What estimated date will waste management operations begin; or if operations have begun, what date did waste management operations begin at the site described by this application?

Waste management operations for the proposed UIC waste management area (i.e., proposed tanks) will begin upon TCEQ-approval of this permit application and the UIC permits for deep injection wells WDW-488 and WDW-489. Upon approval of both permits, construction of the tanks and associated secondary containment will begin. Estimated start of operation is 2025.

K. Application Map:

Submit an application map which extends at least one mile beyond the facility boundaries. The map shall be on a scale of not less than one inch equals one mile and shall include the following information: 30 TAC Section 305.45(a)(6)

1. The approximate boundaries of the tract of land on which the waste management activity is or will be conducted;

2. The location of the areas of storage or processing;

3. The general character of the areas adjacent to the waste facility including public roads, towns and the nature of development of adjacent lands such as residential, commercial, agricultural, recreational, undeveloped, etc.;

4. The boundaries of all affected tracts of land within a reasonable distance from the area of storage, processing, or disposal; and

5. Each well, spring, and surface water body or other water in the state within the map area.

See Attachment I.K.

L. Information Required to Provide Public Notice

State Officials List

Provide the name and mailing address for the State Senator and State Representative in the district in which the facility is or will be located. Either local district addresses or capitol addresses are acceptable. **This list should not be included in the Adjacent Landowners List required below.** [30 TAC 39.103(b)]

Joan Huffman
Texas State Senator District 17
129 Circle Way, Suite 101
Lake Jackson, TX 77566
[redacted]

Gary Gates
Texas State Representative District 28
P.O. Box 2910
Austin, TX 78768
[redacted]

Local Officials List

Provide the name and mailing address of the mayor and health authority of the municipality in whose territorial limits or extraterritorial jurisdiction the facility is or will be located. In addition, please provide the county judge and health authority of the county in which the facility is located. **This list should not be included in the Adjacent Landowners List required below.** [30 TAC 39.103(c)]

Chad Nesvadba
Mayor
9022 Main Street
P.O. Box 527
Needville, TX 77461
[redacted]
979-793-4253

Judge KP George
Fort Bend County Judge
401 Jackson St.
Richmond, TX 77469
[redacted]
281-341-8606

Dr. Letosha Gale-Lowe
Fort Bend County Health and Human Services
4250 Reading Road, Suite A-100
Rosenberg, TX 77471
[redacted]
281-238-3233

Adjacent Landowners List

Submit a map indicating the boundaries of all adjacent parcels of land, and a list (see samples in the instructions) of the names and mailing addresses of all adjacent landowners and other nearby landowners who might consider themselves affected by the activities described by this application. Cross-reference this list to the map through the use of appropriate keying techniques. The map should be a USGS map, a city or county plat, or another map, sketch, or drawing with a scale adequate enough to show the cross-referenced affected landowners. **The list should be updated prior to any required public notice. It is the applicant's responsibility to ensure that the list is up-to-date for any required public notice.** For all applications (with the exception of Class 1 and Class 11 modifications) this mailing list should be submitted on:

1. a Compact Disk (CD) using software compatible with MS Word [30 TAC 39.5(b)]; or

2. four sets of printed labels.

If the adjacent landowners list is submitted on a compact disk (CD), please label the disk with the applicant's name and permit number. Within the file stored on the disk, type the permit number and applicant's name on the top line before typing the addresses. Names and addresses must be typed in the format indicated below. This format is required by the U.S. Postal Service for machine readability. Each letter in the name and address must be capitalized, contain no punctuation, and the appropriate two-character abbreviation must be used for the state. Each entity listed must be blocked and spaced consecutively as shown below. The list is to be 30 names, addresses, etc. (10 per column) per page (MS WORD Avery Standard 5160 – ADDRESS template).

Example:

Industrial Hazardous Waste Permit No. 50000, Texas Chemical Plant

TERRY M JENKINS
RR 1 BOX 34
WACO TX 76710

MR AND MRS EDWARD PEABODY
1405 MONTAGUE LN
WACO TX 76710-1234

A list submitted on compact disk (CD) should be the only item on that disk. Please do not submit a list on a disk that includes maps or other materials submitted with your application.

If you wish to provide the list on printed labels, please use sheets of labels that have 30 labels to a page (10 labels per column) (for example: Avery® Easy Peel® White Address Labels for Laser Printers 5160). Please provide four complete sets of labels of the adjacent landowners list.

The adjacent landowners list (and pre-printed mailing labels) and map are provided as Attachment I.L.1 and Attachment I.L.2, respectively.

Based on the questions in the Bilingual Notice Instructions for this form, are you required to make alternate (Bilingual) notice for this application?

_**X**_Yes _____No
Bilingual Language(s):_**Spanish**_____

M. Landowner List Information Source:

The names and mailing addresses of persons identified as affected parties, item L. above, were obtained from:

___**Fort Bend County Public Reference Map**_____

(Source, City, County, School or Water District Records or Abstract Co.)

N. TCEQ Core Data Form

The TCEQ requires that a Core Data Form (Form 10400) be submitted on all incoming applications unless a Regulated Entity and Customer Reference Number has been issued by the TCEQ and no core data information has changed. For more information regarding the Core Data Form, call (512) 239-5175 or go to the TCEQ Web site at

http://www.tceq.texas.gov/permitting/central_registry/guidance.html

Please label any attachments with name of applicant.

The Core Data Form is provided as Attachment I.N.

O. Plain Language Summary

Complete the following form(s) as applicable, and submit with any industrial hazardous waste, or industrial solid waste, permit application that is subject to 30 Texas Administrative Code §39.405(k) [applications for a Class 3 permit modification, permit amendment, permit renewals, and for a new permit]. For more information regarding the Plain Language Summary forms, call (512) 239-5175, follow the links below, or go to the TCEQ Web site at

https://www.tceq.texas.gov/permitting/waste_permits/ihw_permits/ihw_permit_forms.html

Plan Language Summary Form - Instructions

Plain Language Form Summary - English

Plain Language Form Summary - Spanish

See Attachments I.O for English and Spanish Plain Language Forms

Signature Page

I, _____**Marcos Elizondo**_____, __**Area Landfill Director**_
(Print or Type Name of Person Signing for Applicant) (Title)

I, _____, _____
(Print or Type Name of Owner if different from Applicant)

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.

Signature: _____Date: _____
(Applicant)

Signature: _____Date: _____
(Owner)

To be completed by the applicant when the above statement is signed by an agent for the applicant.

I, _____hereby designate _____ as my agent
(Print or Type Name) (Print or Type Name)

and hereby authorize said agent to sign any application, submit additional information as may be requested by the Commission, and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Solid Waste Disposal Act permit. I further understand I am responsible for the contents of this application, for oral statement given by my agent in support of the application and for compliance with the terms and conditions of any permit which might be issued based upon this application.

_____
Printed or Typed Name of Applicant
or Chief Executive Officer

_____
Signature

(Note: Application Must Bear Signature & Seal of Notary Public)

Subscribe and Sworn to before me by the said

Marcos Elizondo on this _____ day of_____, 20_____

My commission expires on the _____ day of_____, 20_____

_____

(Seal) Notary Public in and for

_____County, Texas

FORT BEND REGIONAL LANDFILL, L.P.

GENERAL PARTNER'S CERTIFICATE

The undersigned, Melissa Bachhuber, does hereby certify that she is a duly elected, qualified and serving officer of WCA Texas Management General, Inc., a Delaware corporation ("the Corporation"). The undersigned further certifies that:

1. The Corporation is the sole general partner of Fort Bend Regional Landfill, L.P., a Texas limited partnership ("the Partnership").

2. Mr. Marcos Elizondo has been duly appointed and qualified as the Area Landfill Director, with management responsibility for facilities having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars).

3. In accordance with procedures of the Corporation, authority has been assigned or delegated to Mr. Elizondo to negotiate, enter into, sign and execute, in the name and on behalf of the Partnership and the Corporation, as sole general partner of the Partnership, any permit application, permit amendment or modification application, response to regulatory notices, operating plans for permitted facilities, regulatory and any other agreements, documents, instruments, and certificates relating to permitted facilities that he deems or believes to be advisable and in the best interests of the Partnership and the Corporation. Any of the foregoing authorized actions taken by Mr. Elizondo on behalf of the Partnership and/or the Corporation are authorized actions of the Partnership and the Corporation.

IN WITNESS WHEREOF, I have hereunto set my hand, this ____ day of _____, 2023.

By:_____

Name: Melissa Bachhuber

Title: Assistant Secretary, WCA Texas Management General, Inc.

II. Facility Management

A. Security: Describe site access control, screening traffic control, and safety. 30 TAC Section 305.45(a)(8)(C)

The UIC waste management area will be located within the boundaries of the Fort Bend Regional Landfill, which implements site security measures to prevent inadvertent or unauthorized entry by persons or livestock to the facility. Site security is maintained by means of security fencing and access controls, as described below.

***Security Fencing*: The facility is surrounded by either a 6-foot high chain-link security fence or a barbed wire fence, with natural buffers (e.g., creek, thick brush, etc.). This fence minimizes the possibility for unauthorized entry of persons or livestock onto the active portion of the facility.**

***Access Controls:* Access to the facility is controlled by means of security fencing and locked gates. Gated openings in the security fence control entry onto the active portion of the facility. With the exception of the main gate, gates are locked at all times. The main gate is unlocked only during operating hours. The gate for receiving trucks is unlocked and opens upon the receipt of trucks during operating hours, and other gates are locked unless specifically in use. Security cameras monitor the facility. During non-operating hours, the main office building has a security system that alarms when there is an unauthorized entry. Cameras, locked doors, and locked fence gates provide 24-hour security during non-operating hours.**

***Communication*: On-site communications are conducted by telephones, two-way radios, and air horns. The air horns can be heard by personnel throughout the facility. Off-site communication is made via telephones. Facility personnel watch for and immediately report any unauthorized entry to facility management.**

B. Inspection and Maintenance:

1. Complete Table II. for all of the waste management units to be permitted. Please note that inspection criteria should be provided for each component of each permitted unit (*e.g.*, tank system, tank, secondary containment area, ancillary equipment). 30 TAC Section 305.45(a)(8)(C)

   See Table II.

2. Describe the inspection procedures for the units listed in Table II. 30 TAC Section 305.45(a)(8)(C)

   Inspection procedures provide a mechanism to prevent and detect system malfunctions, equipment deterioration, operator errors, and discharges which may be causing, or may lead to, releases of nonhazardous waste constituents to the environment or create a threat to human health.

   At a minimum, facility personnel, or other designated persons, will inspect units and equipment associated with waste management (i.e., secondary containment area, tanks, and ancillary equipment) at frequencies specified in Table II. Items for inspection and possible problems to evaluate during the

inspections are also summarized in Table II.

If deficiencies are identified during the inspections (e.g., deterioration or malfunction of equipment or structures), the facility will document these problems on inspection forms, and will remedy as appropriate, to ensure that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action will be taken immediately. The inspection program is implemented by qualified individuals who have the training and authority to: (1) implement the required inspections, (2) perform necessary evaluations and hazard assessments, and (3) recommend appropriate corrective or remedial actions. The Facility Manager is fully responsible for implementation of the Inspection Program.

The facility operates Monday through Saturday, and is not open on Sundays or major holidays. Inspections will occur as indicated in Table II on days that the facility is open and operating. On Sundays and major holidays, no inspections will occur and the main gate will be locked.

C. Personnel: Describe the staffing pattern and qualifications of all key operating personnel. 30 TAC Section 305.50(a)(2)

The facility is committed to providing facility personnel with the required training to ensure safe and efficient operation. Facility personnel will complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with Class 1 industrial solid waste requirements. The program must be directed by a person trained in waste management procedures, and must include instruction that teaches facility personnel waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed. At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

- **Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;**
- **Communications or alarm systems;**
- **Response to fires or explosions;**
- **Response to ground-water contamination incidents; and**
- **Shutdown of operations.**

Facility personnel must successfully complete the training program within six months after the date of their employment or assignment to the facility, or to a new position at the facility, whichever is later. Employees must not work in unsupervised positions until they have completed the training requirements described above. Facility personnel must take part in an annual review of the initial training.

The owner or operator will maintain the following documents and records at the facility:

- **The job title for each position at the facility related to waste management, and the name of the employee filling each job;**

- **A written job description for each position at the facility related to waste management.**

- **This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;**

- **A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position at the facility related to waste management; and**

- **Records that document that the training or job experience required as described in this section has been given to, and completed by, facility personnel.**

Training records on current personnel must be kept until closure of the facility and training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

D. Equipment: Describe the types of equipment and minimum number of each type to be provided by the site operator in order to conduct the operation in conformance with the design and operational standards. 30 TAC Section 305.45(a)(8)(A)

Engineering Reports documenting the design and operation of the nine tanks proposed in this application are provided in Attachments IV.G.1 and IV.G.2 to this application. Additional engineering information is also provided in Section IV of this application.

E. Record keeping: Describe the record keeping practices. 30 TAC Section 305.45(a)(8)(C)

Facility personnel, or other designated persons, who conduct the inspections will record the inspections in the inspection report forms. Completed inspection reports are submitted to the Facility Manager or their designee who then takes action, as necessary. Each inspection report will include the date and time of the inspection, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

In cases where specialized outside contractors are appointed to perform testing or inspection services (e.g., ultrasonic wall thickness testing of tanks and fire extinguisher inspections), results of testing or inspection services are reported on the contractor's forms. These reports are made part of the operating records when received.

Completed reports and attachments are accumulated in the facility operating

records, which are retained at the facility for a minimum period of three years from the date of inspection.

F. Roads: Describe roads used for entry, exit and operations within the facility. 30 TAC Section 305.45(a)(8)(C)

A paved entrance road from Davis Estate Road to the scale house is present at the Fort Bend Regional Landfill facility, where the UIC waste management area will be located. All waste-hauling vehicles, operating personnel, and visitors use the paved entrance for entering the facility. An all-weather road will be installed and maintained to allow access to the injection wells and related facilities, including the secondary containment area where the proposed permitted tanks will be located (see Attachment II.F). This access road will be constructed from the scale house to the well pad and to the offloading area, which will be designed to bear fully laden permitted loads and all anticipated equipment required for well drilling and maintenance, with an additional safety factor. The paved entrance and access roads and the crushed stone surfaced internal roads will provide mud control for the waste hauling vehicles prior to exiting the site and returning to public access roads. The site entrance road, landfill haul road, and access roads will be maintained in a clean and safe condition. In addition, an alternate outbound/inbound road may also be constructed to allow more direct access to the UIC-area from Farm-to-Market (FM) 1994. When the alternate entrance is constructed a new gate, fencing, etc. will also be constructed to limit access to the area to authorized personnel only.

III. Waste Analysis Plan

A. Complete Table III.A. (Waste Management Information) for each waste, source, and volume of waste to be stored or processed in the facility units to be permitted. 30 TAC Section 305.45(a)(8)(C)

See Table III.A.

B. For inclusion into a permit, complete Table III.B. (Wastes Managed in Permitted Units) for each waste to be managed in a permitted unit. Guidelines for the Classification & Coding of Industrial Wastes and Hazardous Wastes, TCEQ publication RG-22, contains guidance for how to properly classify and code industrial waste in accordance with 30 TAC 335, Subchapter R. 30 TAC Section 305.45(a)(8)(C)

See Table III.B.

1. Applicants need not specify the complete 8-digit waste code formulas for their wastes but only the 3-digit form codes and 1-digit classification codes. This allows the applicant to specify major categories of wastes in an overall manner without having to list all the specific waste streams.

2. Are hazardous wastes defined in 30 TAC Section 335.1 managed or proposed to be managed in permitted units in accordance with 30 TAC Section 335.41(d)(8)?

   Yes _____ No _**X**__

   a. If yes, include the Environmental Protection Agency Waste Numbers as defined in 40 Code of Federal Regulations (CFR) Part 261 (e.g., D001, D002, D018, F039, etc.) for each hazardous waste to be managed in permitted units on Table III.B.

   b. If yes, provide documentation of compliance with 40 CFR Section 264.17(b) if management of hazardous wastes includes diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory as defined in 40 CFR Section 268.40) or reactive (D003) waste to remove the characteristic before land disposal. 30 TAC Section 335.41(d)(8).

C. For inclusion into a permit, complete Table III.C. for each waste listed in Table III.B. For each waste listed in the table, please include the sampling location, the sampling method, the sample frequency, the analytical parameters (*e.g.*, pH, density, viscosity), and the analytical method for each parameter. Please note that process knowledge may be used for difficult to sample and/or measure wastes or parameters. 30 TAC Section 305.45(a)(8)(C)

See Table III.C.

D. Submit a waste analysis plan which specifies procedures which will be used to inspect and if necessary, analyze each industrial solid waste received at the facility. The plan must describe methods which will be used to determine the identity of each waste managed at the facility. In addition, please specify methods for managing flammable and incompatible wastes. 30 TAC Section 305.45(a)(8)(C)

The Waste Analysis Plan is provided in Attachment III.D, which includes Appendices III.D.1, III.D.2, and III.D.3. Figure III.D.1 describes the waste profiling process for new waste streams.

IV. Engineering Report

The engineering report represents the conceptual basis for the storage or processing units at the industrial nonhazardous waste management facility. It should include calculations and other such engineering information as may be necessary to follow the logical development of the facility design. Plans and specifications are an integral part of the report. They should include construction procedures, materials specifications, dimensions, design capacities relative to the volume of wastes (as appropriate). Since these reports may be incorporated into any issued permit, the report should not include trade names, manufacturers, or vendors of specific materials, equipment, or services unless such information is critical to the technical adequacy of the material. Technical specifications and required performance standards are sufficient to conduct a technical review.

Submit a detailed engineering design report prepared and sealed by a professional engineer, with current license and designating the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act. Include in the report the following information shown below. 30 TAC Section 305.45(a)(8)

(Please note that in accordance with 30 TAC §305.50(a)(7), any engineering plans and specifications (*e.g.*, engineering drawings, engineering calculations) submitted as part of the permit application shall be sealed by a licensed professional engineer who is currently registered in the state of Texas).

A. Waste Management Unit Information: Complete Table IV. for each waste management unit to be permitted at the facility.

See Table IV.

B. Flow Diagram/Description

Submit a process flow diagram and step-by-step word descriptions of the process flow, depicting the handling, collection, storage, processing, and/or disposal of each waste listed in Table III.A.

The flow diagrams and/or descriptions should include the following information:

1. Originating point of each waste and waste classification code;
2. Means of conveyance utilized in every step of the process flow;
3. Name and function of each facility component through which the waste passes; and
4. The ultimate disposition of all wastes (if off-site, specify "off-site") and waste residues.

See Attachment IV.B.1 for a waste flow diagram and Attachment IV.B.2 for a piping and instrumentation diagram (P&ID) and layout of the tank area.

C. United States Geological Survey: Submit a 72-minute quadrangle map which shows the location of the facility and it uses a scale of not less than 1:24,000.

See Attachment IV.C for the topographic map.

D. Site Map: Submit a "site map" prepared by a registered surveyor. The map must show the approximate boundaries of the facility, denoting the areas where waste management activity is or will be conducted. The map shall also show (1) contours, using a contour interval of 5 feet if the slope is >5% and a contour interval of 2 feet if the slope is <5%, (2) plant facilities and other improvements such as fences, roads, pits, ponds, ditches, dikes, location of boreholes if applicable etc. The scale of this map should not be less than 1 inch = 200 feet.

The approximately 5-acre UIC waste management area, which includes the proposed permitted tanks and ancillary equipment, is located on a larger 2,660 acre property owned by Fort Bend Regional Landfill. The topographic map provided in Attachment IV.C demonstrates that the area where the UIC waste management area is located is relatively flat. In addition, maps prepared by a Professional Engineer registered in the State of Texas provide information on drainage features (see Attachment IV.D.1), including fences, roads, pits, ponds, ditches, dikes, and locations of monitoring wells. Attachment IV.C also shows major surface water features, including ponds to the south and Deer and Big Creek to the north. The UIC waste management area is located to the northeast of the commercial municipal solid waste landfill that is also located on the larger 2,660-acre property, and the UIC waste management area is relatively flat with minimal elevation changes. A wind rose is also provided (Attachment IV.D.2).

E. Aerial Photograph: For land-based storage or treatment units (such as surface impoundments and land treatment units) submit an aerial photograph approximately 9" x 9" with a scale within a range of 1" =1667' to 1" =3334' and showing the area within at least a one-mile radius of the site boundaries. The site boundaries and actual fill areas should be marked.

Not Applicable

Waste Management Units (30 TAC Section 305.45(a)(8)(A)):

F. Container Storage Areas

Not applicable, no container storage areas are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each container storage area (CSA) (*e.g.*, CSA, secondary containment system, ancillary equipment).

2. Provide an engineering description of each CSA. Please note that the engineering description should include a description of the materials of construction, run-on prevention, overflow prevention, and the container management practices for each CSA.

G. Tank Systems

See Appendix IV.G.1 (Tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, and TK-1370) and Appendix IV.G.2 (Tank TK-1390) for the Engineering Reports for the proposed waste storage and processing tanks. An Engineering Report was not prepared for the leachate pre-injection tank (Tank TK-1380), as discussed

with TCEQ in the pre-application meeting, since this tank will only handle nonhazardous leachate recovered from the on-site landfill.

1. Submit engineering plans and specifications which fully depict each tank system (*e.g.*, tank, secondary containment system, ancillary equipment).

2. Submit piping and instrumentation drawings (P&IDs) of each tank system.

3. Provide an engineering description of each tank system. Please note that the engineering description should include a description of the materials of construction, external corrosion protection, spill prevention controls, and overfill prevention controls for each tank system.

H. Containment Buildings

Not applicable, no container buildings are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each containment building.

2. Provide an engineering description of each containment building. Please note that the engineering description should include a description of the materials of construction and the waste management practices of each unit.

I. Drip Pads

Not applicable, no drip pads are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each drip pad. If there is a liner(s) (soil and/or artificial), leachate collection system, and/or leak detection monitoring system associated with a drip pad, include engineering drawings of these components as well.

2. Provide an engineering description of each drip pad including a description of any liner, leak detection system, leachate collection system, run-off prevention controls, and/or run-on control system that may be in place. Please note that the description should also describe the materials of construction for each component of each drip pad and the operating practices for each drip pad.

J. Waste Piles

Not applicable, no waste piles are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict any liner(s) (soil and/or artificial), leachate collection, and/or leak detection monitoring system associated with each waste pile.

2. Provide an engineering description of any liner, leak detection system, leachate collection system, run-off prevention controls, and/or run-on control system that may be in place for each waste pile. Please note that the description should describe the materials of construction for each component of a waste pile and the operating practices for each waste pile.

K. Incinerators

Not applicable, no incinerators are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each incinerator and any associated air pollution control equipment.

2. Submit Piping &Instrumentation Drawings (P&ID) for each incinerator and any associated air pollution control equipment (APCE).

3. Provide an engineering description of each incineration system. Each description should include the name and model number of the unit, the type of unit, a description of any APCE associated with the unit, the materials of construction for each component of the system, the types of auxiliary fuels used, the operating ranges of key parameters (e.g., combustion chamber temperature, waste feed rates, air pollution control equipment parameters), and the types of stack gas monitoring equipment used (if any).

L. Miscellaneous Units

Not applicable, no miscellaneous units are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each miscellaneous unit. If there is a liner(s) (soil and/or artificial), leachate collection system, and/or leak detection monitoring system associated with a drip pad, please include engineering drawings of these components. If there is any APCE associated with a unit, please submit engineering drawings of that equipment as well.

2. Submit P&IDs for each miscellaneous unit, if applicable.

3. Provide an engineering description of each miscellaneous unit including a description of any APCE, liners, leak detection system, leachate collection system, run-off prevention controls, and/or run-on control system that may be associated with the unit. Please note that the description should also describe the materials of construction for each component of each miscellaneous unit and the operating practices for each unit.

M. Surface Impoundments

Not applicable, no surface impoundments are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each surface impoundment. The plans should include all significant features of the surface impoundment(s) and should indicate the 100-year flood zone. Cross-sectional drawing(s) detailing significant design features should be shown.

2. Describe liner specifications including type and thickness.

3. For in-place liners describe site preparation planned including scarification and compaction, and any other chemical or physical treatment to be effected.

4. For imported reworked soils, describe liner installation methodology including lift size, moisture content during compaction, compaction method, design density, and

determination of hydraulic conductivity.

5. For artificial liner materials provide pertinent specifications and a description of how liner/waste compatibility has been determined. Also describe installation method.

6. For all liners describe quality control measures to be followed during liner installation.

7. Provide an engineering description of any leak detection system, leachate collection, run-off prevention controls, and/or run-on control system that may be in place for each surface impoundment.

N. Land Treatment Units

Not applicable, no land treatment units are proposed for this permit application.

1. Submit engineering plans and specifications which fully depict each land treatment unit. The plan should include all significant features of the land treatment unit and should indicate the 100-year flood zone.

2. Submit a performance evaluation plan describing how the degradation of waste constituents will be monitored. The plan should include the depth below ground surface of the treatment zone and management methods to be utilized within the treatment zone.

3. Describe necessary site preparation including soil importation, preparation, chemical amendments, etc.

4. Describe waste application method(s), including depth of incorporation and frequency of cultivation, equipment to be used, etc.

5. Submit an application rate table indicating the application rate of waste constituents to be applied to the treatment zone.

6. Provide an engineering description of any leachate collection, run-off prevention controls, and/or run-on control system that may be in place for each land treatment unit.

V. Geology Report (30 TAC 305.45(a)(8)(C)

(This section is applicable only to those facilities utilizing land-based storage or treatment facilities such as surface impoundments, land treatment units and waste piles.)

No land-based storage or treatment facilities are proposed for this permit application; therefore, the geology report is not required.

A. Submit a Geology Report (prepared by a Texas licensed professional geoscientist) which describes the regional geology and hydrogeology in the vicinity of the solid waste management facility. The report should provide a discussion of stratigraphy, structural setting, topography, faulting, and land surface subsidence and any other active geologic processes in the vicinity of the facility. Include both geologic maps and cross-sections as necessary. The report should also identify regional aquifers and discuss the groundwater bearing and transmitting properties of subsurface units, and contain a water table contour or potentiometric surface map for the facility.

1. Indicate the location of all water-producing wells within one mile of the facility. A United States Geological Survey map may be used to show the wells. Provide uses of the water in these wells (for example: domestic, livestock watering, industrial, agricultural, etc.)

2. Provide an analysis of ground water at the waste management site.

B. Submit a Subsurface Soils Investigative Report which is sufficiently detailed to establish the soil conditions in the vicinity of the waste management facility. The applicant should consult TCEQ technical guidelines to determine the recommended number of borings, location and depth of borings, and frequency of engineering classification tests. Such investigation should be conducted in accordance with recognized subsurface soils investigation practices. The report should at a minimum contain the following information:

1. The logs of borings performed at the waste management area. All borings must be conducted in accordance with established field exploration methods. Investigation procedures should be discussed in the report. A sufficient number of borings should be performed to establish subsurface stratigraphy and to identify and allow assessment of potential pathways for pollution migration. Borings must be sufficiently deep to allow identification of the uppermost aquifer and underlying hydraulically interconnected aquifers. Boring logs should include a detailed description of materials encountered including any discontinuities such as fractures, fissures, slickensides, lenses or seams. The hollow stem auger boring method is recommended in those instances where an accurate determination of initial water levels is important. A key explaining both the symbols used on the boring logs and the classification terminology for soil type, consistency, and structure should be provided.

2. Complete Table V. and provide in the report data which describes the geotechnical properties of the subsurface soil materials. All laboratory and field tests must be performed in accordance with recognized procedures. A brief discussion of test procedures should be included. All major strata encountered during the field investigation phase should be characterized with regard to: Unified Soil Classification, moisture content, percent less than number 200 sieve, Atterberg limits (liquid limit, plastic limit, and plasticity index), and coefficient of

permeability. Field permeability tests should be used to determine the coefficient of permeability of sand or silt units and should also be used to supplement laboratory tests for more clay-rich soils. In addition, particle size distribution and relative density based upon penetration resistance should be determined for coarse-grained soils. For fine-grained soils the following parameters should also be determined: cohesive shear strength based upon either penetrometer or unconfined compression tests, dry unit weight, and degree of saturation(s). For the major soil strata encountered, the maximum, minimum, and average for each of these variables should be compiled.

3. Coefficient of permeability in units of cm/sec should be determined for any in-place or constructed soil liners to be used to control waste migration. Separate values shall be determined with ground water from the site and waste or leachate from waste as test fluids. A description of testing methods is required.

4. For land treatment units, provide a description of the surficial soils at the site which includes:

   (a) The name and description of the soil series at the site;

   (b) Important physical properties of the series such as depth, permeability, available water capacity, soil pH, and erosion factors;

   (c) Engineering properties and classifications such as USDA texture, Unified Soil Classification, size gradation, and Atterberg limits (liquid limit, plastic limit, and plasticity index); and

   (d) The cation exchange capacity (CEC) of the soil(s) expressed in units of meq/100g.

   Much of this information may be obtained by consulting the county soil survey published by the United States Department of Agriculture, Soil Conservation Service. If available, a copy of an aerial photograph showing soil series units on the land treatment area should be provided.

   If an aerial photograph is not available, include a soil series map as an attachment to this subsurface soils investigation report.

VI. Ground and Surface Water Protection (30 TAC 305.45(a)(8)(C))

A. Submit a ground and surface water protection plan drawn to scale consisting of a sheet reflecting locations and typical sections of levees, dikes, liners, drainage channels, culverts, curbs, holding ponds, storm sewers, leachate collections systems and all other units relating to protection of the site from contact with ground and surface water. Adequacy of provisions for safe passage of any internal or adjacent external floodwaters should be reflected here. Cross-sections of levees should be shown tied into contours.

The facility already takes measures to protect groundwater and surface water, since a commercial municipal solid waste landfill (MSW 2270) is also operated on the larger 2,660-acre property. As shown on Attachment VI.A, the facility has groundwater monitoring wells in-place as part of the facility's routine groundwater sampling program associated with the landfill, and the landfill has a leachate collection system. Additionally, the facility manages stormwater in accordance with the entire facility's Texas Pollutant Discharge Elimination System (TPDES) Permit No. TXR05R702, which prevents impacted stormwater from leaving the site (see Attachment IV.D.1).

The proposed UIC waste management area for the UIC-permitted deep wells will consist of tanks and ancillary equipment that will all be contained within concrete secondary containment. Concrete secondary containment will provide protection of both groundwater and surface water from any potential releases. All leaks, drips, spills, and stormwater runoff shall be collected for processing for injection.

B. Submit a subsurface monitoring plan including descriptions of the location, operation, construction and installation of each monitoring device, subsurface zone to be monitored, constituents to be analyzed, analytical method to be employed, frequency of sampling and how a release from the waste management unit will be determined. Include logs of borings performed.

1. Groundwater Monitoring (This section may apply only to those facilities utilizing land-based storage or treatment facilities such as surface impoundments, land treatment units and waste piles.)

No land-based storage or treatment facilities are proposed for this permit application; therefore, groundwater monitoring is not applicable.

(a) For inclusion into a permit, complete Table VI.A. for each unit to be monitored, to specify any proposed monitoring well system.

(b) For inclusion into a permit, for each unit to be monitored, complete Table VI.B. to specify the following:

(1) the suite of waste specific parameters (indicator parameters, waste constituents, or reaction products) which will be analyzed at each sampling event for each well or group of wells. These parameters must provide a reliable indication of the presence of hazardous constituents in the ground water;

(2) the sampling frequencies and calendar intervals (*e.g.*, monthly; quarterly within the second 30 days of each quarter; semiannually within the first 30 days of the 2nd and 4th quarters, etc.);

(3) the analytical method and the achievable detection limit of the sample preparation and analysis methods for the selected parameters. This detection limit will represent the capability of the sampling and analysis to reliably and accurately determine the presence of the selected parameters in the sample; and

(4) the concentration limit which will be the basis for determining whether a release has occurred from the waste management unit/area.

2. Unsaturated Zone Monitoring (This section may apply to facilities which contain land treatment units):

No land-based storage or treatment facilities are proposed for this permit application; therefore, unsaturated zone monitoring is not applicable.

(a) List all hazardous constituents that have been or will be monitored.

(1) Current parameters

(2) Proposed parameters

(b) Number of soil-pore liquid sampling points

(1) Depth of sampling points

(2) Equipment used for soil pore liquid monitoring

(c) Number of soil core sampling points

(1) Depth of soil core sampling points

(2) Indicate on a facility map locations of all sampling points.

C. Climate

1. Describe regional climatic conditions

The UIC waste management area is located on the larger 2,660-acre Fort Bend Regional Landfill property, which is located in Fort Bend County, near Needville, Texas. The area is located 40 miles from the coast and has a humid subtropical climate. For Rosenberg, approximately 11 miles to the north, average temperatures in the summer months are around 85°F and average temperatures in the winter are around 55°F. Average daily highs in the summer are around 92°F and daily lows in the winter are around 45°F. Rosenberg receives an annual average precipitation of 45.7 inches, with most precipitation during the summer. Historically, the area has been

impacted by hurricanes along the Gulf Coast.

2. Indicate the magnitudes, in inches, of the following storm events.

   (a) 100-yr./24-hr. **15.7 in**

   (b) 50-yr./24-hr. **13.1 in**

   (c) 25-yr./24-hr. **10.8 in**

3. Indicate the average monthly and annual rainfall for the area.

   The annual average rainfall is approximately 45.7 inches. Monthly average rainfall ranges from 3.0 inches in February to 4.3 inches in September.

4. Is the facility located within a 100-year flood zone?

   No

5. Is the facility located within a coastal surge zone?

   No

6. Indicate the average monthly and annual evaporation rate for the area.

   According to the Texas A&M Agrilife Extension, Houston, which is the nearest measured location approximately 30 miles northeast of Needville, has an average evapotranspiration rate of 54.9 inches per year. For monthly evapotranspiration rates, the maximum and minimum are generally observed in June (6.57 inches) and December (2.35 inches), respectively.

D. Explain how rainfall runoff and any other wastewaters within the boundary of the facility are controlled to prevent pollution of ground and surface waters in the area during construction and operation of the units.

The facility manages stormwater in accordance with Stormwater Permit No. TXR05R702. Stormwater will be managed in accordance with the facility's stormwater permit during construction and operation of the unit. Wastewaters are only associated with operation of the on-site landfill, and all leachate from the landfill will be collected and conveyed to the Tank system for eventual disposal via the UIC-permitted deep injection wells.

E. Is it possible for surface waters originating outside the facility to enter said facility? Give explanation of answer.

In the event of a 100-year flood, waters originating from outside the facility will enter the facility, as a result of the proximity to Big Creek, located approximately 2300 feet to the north and northeast (see Attachment IV.C). However, flood maps from the Federal Emergency Management Agency (FEMA) indicate that only undeveloped portions of the facility's property would be impacted from surface waters originating from outside the facility (see Attachment VI.E).

F. If an accidental discharge did occur, trace the route which the water would follow (for example: into an unnamed creek adjacent to the facility; thence into Red Creek; thence into the Trinity River).

Any accidental surface discharge would enter one of the unnamed intermittent streams exiting the facility; thence into Big Creek; thence into the Brazos River.

VII. Closure and Post-Closure Plans

The applicant must close the facility in a manner that minimizes need for further maintenance and controls, or eliminates, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall, or waste decomposition products to the ground water, or surface waters, or to the atmosphere.

A. Closure

1. Complete Table VII.A. for each waste management unit to be permitted and list the possible methods of decontamination, and possible methods of disposal of wastes and waste residues, generated during unit closure. (30 TAC Section 335.8)

   See Table VII.A.

2. Submit a closure plan for the facility which includes each permitted waste management unit. The closure plan should describe in detail the procedures (*e.g.*, disposition of wastes, decontamination procedures, procedures for soil sampling and analysis) to be followed and the materials and manpower to be used in accomplishing final closure of the waste management facility. If the facility contains land based units (*e.g.*, land treatment units), please ensure the closure plan includes information on such items as: type, volume and source of cover material; dismantling/demolition of structures and other improvements; ultimate disposition of liquid wastes; final grading/contouring of the facility; topsoil, seed, fertilizer and irrigation necessary to establish cover, where applicable; equipment and manpower (man hours) to accomplish closure. Please include a schedule or timetable for closure of the facility. (30 TAC Section 335.8)

   See Attachment VII.A.

3. Complete Table VII.B. by providing an itemized closure cost estimate (*e.g.*, cost for any decontamination, costs for soil and/or rinsate sampling, cost for analyses) for each permitted waste management unit at the facility. (30 TAC Section 335.8). Closure cost estimates should be prepared on a "worst case" basis (cost of closure by a third party in the event of sudden or total abandonment of the management facility by the operator). The cost estimate must include the cost of closure at the point in the facilities operating life when the extent and manner of its operation would make closure the most expensive. Please consult TCEQ Technical Guideline No. 10, Closure and Post-Closure Cost Estimates, for details and assumptions in calculating closure costs.

   See Table VII.B. Contractor quotes used to develop the closure cost estimate are provided in Attachment VII.B. Note that these quotes were obtained either for the proposed permitted tanks or for analogous tank projects located within the facility, with unit costs assumed to be representative.

4. Complete Table VII.C. by providing a closure cost estimate, in current dollars, for final closure of each permitted unit at the facility. Please refer to 30 TAC Chapter 37, Subchapter P, for the financial assurance requirements for closure and provide a signed statement from an authorized signatory per 30 TAC 305.44 regarding how the owner or operator will comply with this provision.

   See Table VII.C

5. If the financial mechanism(s) has been obtained, please provide a copy of the mechanism(s) to the TCEQ.

   A copy of the financial mechanism will be provided to the TCEQ executive director after the Tanks have been constructed and at least 60 days prior to acceptance of waste.

6. Submit a contingent closure plan for each permitted unit in the case where a release from the unit to the environment has occurred. (30 TAC Chapter 350)

   See Attachment VII.A

B. Post-closure (This section may apply to land-based units such as surface impoundments and land treatment units). Provide a post-closure care plan that includes:

   No land-based storage or treatment facilities are proposed for this permit application; therefore, post-closure is not applicable.

   1. any maintenance or monitoring of waste containment systems;
   2. any monitoring or reporting of groundwater monitoring systems;
   3. any monitoring or reporting of unsaturated zone monitoring systems;
   4. any security measures; and/or
   5. a discussion of the future use of the land.

VIII. Confidential Material

Any information requested in the previous Sections I. through VII. of this application which is deemed confidential shall be provided in this section as a separate collective document and clearly labeled CONFIDENTIAL.

Not Applicable.

Table I. - Waste Management Unit List

Waste Management Unit	TCEQ N.O.R. Unit #	Function(s) of Unit (storage/processing)	Design Capacity[1]
TK-1300	001	storage	42,000 gallons
TK-1310	002	storage	42,000 gallons
TK-1320	003	storage	42,000 gallons
TK-1330	004	storage	42,000 gallons
TK-1340	005	storage	42,000 gallons
TK-1350	006	storage	42,000 gallons
TK-1360	007	storage	42,000 gallons
TK-1370	008	storage	42,000 gallons
TK-1390	009	storage	21,000 gallons

[1]Cubic yards, gallons, pounds, gallons/minute, pounds/hour, BTUs/hour, etc.

Table II. - Inspection Schedule

Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
Tanks and Tank System TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, TK-1370, and TK-1390	• *Above-Ground Portions of Tank Exterior:* Corrosion, leaks. • *Piping and Valves:* Damage, leaks. • *Data Gathered from Visual Monitoring and/or Leak Detection Equipment:* Standing liquid in the sump or secondary containment area. • *Tank Construction Materials and Area Immediately Surrounding Externally Accessible Portion of Tank System:* Corrosion, signs of release. • *Integrity of Secondary Containment:* Cracks, breaks, or signs of deterioration.	Daily, on all days of facility operation
	• *Overfill Control Equipment:* Malfunction of high-level alarms, if present, for systems equipped with such alarms.	Annually
Containment Areas, Dike Walls, Berms	• Evidence of spills or release • Cracks or gaps in coating • Accumulated precipitation	Daily, on all days of facility operation

Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
Loading/Unloading Areas	• Evidence of spills or release • Accumulated precipitation • Integrity of containment system	Daily, on all days of facility operation
Emergency Equipment Eyewash, safety showers, fire extinguishers, spill control equipment	• Low or no flow • Blockage • High pressure • Missing pieces • System inoperability	Monthly
Security Fences, gates, warning signs	• Breach, damage, missing sections. • Not operating properly. • Deterioration, damage, missing, illegible writing.	Monthly

Table III.A. - Waste Management Information

Waste	Source	Volume (tons/year)
Leachate from GFL Facility	On-site	Up to 88,300,800 gal. in combination with the other on-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Leachate from other landfills	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Wash water	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Tank Washouts	Various off-site sources and on-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Contaminated Stormwater from GFL Facility	On-site	Up to 88,300,800 gal. in combination with the other on-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Contaminated Stormwater	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Other Aqueous Waste	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.

Waste	Source	Volume (tons/year)
Scrubber Water	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Other inorganic Liquids	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.
Nonhazardous Brine	Various off-site sources	Up to 282,562,560 gal. in combination with the other off-site waste stream. Note that on-site and off-site waste streams will not exceed 353,203,200 gallons.

Table III.B. - Wastes Managed In Permitted Units

No.	Waste	Physical Form (e.g., solid, liquid, sludge)	TCEQ Waste Form Codes and Classification Codes	
1	Leachate from GFL Facility	Liquid	116	1, 2
2	Leachate from other landfills	Liquid	116	1,2
3	Wash water	Liquid	101-106, 109-110, 113-115, 119, 201, 203-205, 207, 219, 296	1, 2
4	Tank Washouts	Liquid	101-106, 109-110, 113-115, 119, 203-205, 207, 209-210, 219, 296	1, 2
5	Contaminated Stormwater from GFL Facility	Liquid	113-114, 119, 203-205, 207, 219, 296	1, 2
6	Contaminated Stormwater	Liquid	113-114, 119, 203-205, 207, 219, 296	1, 2
7	Other Aqueous Waste	Liquid	119, 219	1, 2
8	Scrubber Water	Liquid	115	1, 2
9	Other inorganic Liquids	Liquid	119, 198	1, 2
10	Nonhazardous Brine	Liquid	113, 199	1, 2

Table III.C. - Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Daily	pH	9040C or equivalent
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Daily	Specific Gravity	ASTM D4052 or equivalent
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Total Dissolved Solids, TDS	SM2540C or equivalent
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Total Suspended Solids, TSS	SM2540D or equivalent
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Waste Characterization Profile: Reactivity, Corrosivity, and Ignitability	EPA Methods 1110a, 9040c, 1010a, or equivalents
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Applicable TCLP metals, Semivolatile organics, volatile organics	Per 40 CFR 261 Appendix III
Composite 1, 2, 3, 4, 5, 6, 7, 8, 9 and/or 10	Before Injection Wellhead	Grab	Annually	Viscosity	D445-04e2 or equivalent

[1]from first column of Table III.B.

Table IV. - Waste Management Unit Information

Permit Unit No.	Waste Management Unit	TCEQ N.O.R. No.	Waste Nos.[1] Managed in Unit	Function(s) of Unit (storage/processing)	Rated Capacity of Unit
001	TK-1300	001	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
002	TK-1310	002	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
003	TK-1320	003	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
004	TK-1330	004	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
005	TK-1340	005	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
006	TK-1350	006	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
007	TK-1360	007	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
008	TK-1370	008	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	42,000 gallons
009	TK-1390	009	1 , 2, 3, 4, 5, 6, 7, 8, 9, and/or 10	Storage	21,000 gallons

[1]from first column of Table III.B.

Table V. - Waste Management Area Subsurface Conditions

Not applicable, no land-based storage or treatment facilities are proposed for this permit application.

Boring Number	Depth Below Grade	Stratum	USC Symbol	Liquid Limit	Plasticity Index	Percent Passing #200 Sieve	Permeability	Percent Porosity

Maximum depth:

_____feet below grade

_____feet above MSL

Table VI.A. - Unit Groundwater Detection Monitoring System

Not applicable, no land-based storage or treatment facilities are proposed for this permit application.

For each unit/area which requires groundwater monitoring, specify the number and type of wells which will comprise the groundwater monitoring system for the unit/area. Prepare additional tables as necessary.

Waste Management Unit/Area Name[1]

Well Number(s)						
Hydrogeologic Unit Monitored						
Type (e.g.,. point of compliance, background, observation, etc.)						
Up or Down Gradient						
Casing Diameter and Material						
Screen Diameter and Material						
Screen Slot Size (in.)						
Top of Casing Elevation (ft, MSL)						
Grade or Surface Elevation (ft, MSL)						
Well Depth (ft,)						
Screen Interval, From(ft) To(ft)						
Facility Coordinates (e.g., lat/long or company coordinates)						

[1]From Tables in Section V.

Table VI.B. - Groundwater Sample Analysis

Not applicable, no land-based storage or treatment facilities are proposed for this permit application.

For each well or group of wells, specify the suite of parameters for which groundwater samples will be analyzed.

Well No(s).

Parameter	Sampling Frequency	Analytical Method	Detection Limits	Concentration Limits[1]

[1] The concentration limit is the basis for determining whether a release has occurred from the waste management unit/area.

Table VII.A. - Unit Closure

For each unit to be permitted, list the facility components to be decontaminated, the possible methods of decontamination, and the possible methods of disposal of wastes and waste residues generated during unit closure:

Equipment of HWM Unit	Possible Methods of Decontamination[1]	Possible Methods of Disposal [1]
Tank TK-1300	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1310	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1320	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1330	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1340	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1350	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1360	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1370	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility
Tank TK-1390	Flush/detergent wash, steam cleaning, high pressure wash, or solvent wash	Deep well injection or off-site disposal at authorized facility

[1]Applicants may list more than one appropriate method.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1300

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1310

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1320

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1330

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1340

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1350

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1360

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1370

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (41,160 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$26,754
Removal and transport of remaining liquid waste in tank (Nine 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$16,200
Disposal of tank bottom sludge (2.5 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,680
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (1650 sq. ft. [25% of 60 ft x 110 ft secondary containment area] x $0.99 per sq. ft.[4])	$1,634
Disposal of rinsate from tanks and secondary containment (620 gallons [0.05 ft rinse water x 1,650 sq. ft. secondary containment] + 2,100 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,755
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [2,700 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$6,100
Total	$127,800
Contingency (10% minimum)	$12,800
Total Unit Closure Cost (rounded to the nearest 100)	**$140,600** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.B. - Unit Closure Cost Estimate for Tank TK-1390

Task	Cost
Waste Transportation and Disposal	
Disposal of remaining liquid waste in tank (20,580 gallons [98% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$13,377
Removal and transport of remaining liquid waste in tank (Five 5,000-gal. loads [98% of permitted tank capacity] x $1,800 transport cost per load[1])	$9,000
Disposal of tank bottom sludge (2.1 cubic yards [2% of permitted tank capacity or up to 500 gallons] x $672 cost per cubic yard[2])	$1,397
Removal and transport of tank bottom sludge (4 hours transport x $135 transport cost per hour[2])	$540
Decontamination of Tanks and Secondary Containment	
Contractor mobilization (lump sum[1])	$7,900
Contractor labor and equipment cost for decontamination (5 days equipment and labor at $4,100 per day[1] + 2 days supplied air at $5,600 per day[1])	$31,700
Dismantling tank, demolition of containment, excavation and backfill (bulldozer for 1 week at $3,179[3], excavator for 1 week at $3,721[3], pad foot roller for 1 week at $3,042[3], 2 cut off saws for 1 week at $1,235[3], cutting wheels at $704[3], 600 gallons fuel at $3,510[3])	$15,390
Pressure wash of secondary containment (2400 sq. ft. [60 ft x 40 ft secondary containment area] x $0.99 per sq. ft.[4])	$2,376
Disposal of rinsate from tanks and secondary containment (900 gallons [0.05 ft rinse water x 2,400 sq. ft. secondary containment] + 1,000 gallons [5% of permitted tank capacity] x $0.65 disposal cost per gallon[1])	$1,235
Transport of rinsate from tanks and secondary containment (One 5,000-gal. load [1,400 gallons rinsate] x $1,800 transport cost per load[1])	$1,800
Loading and transport of tank remnants (4 x Heavy Trucking line item at $5,200[3] and dump truck for 1 week at $5,850[3])	$11,050
Labor for rinsate sample collection (assume 8 hrs for 2 scientists[5])	$2,000
PPE and sampling equipment disposal[5]	$280
Sample analytical costs (analysis for pH, RCRA metals, VOCs, SVOCs, and TPH, plus additional fees)	$478
Closure Certification Report	
PE Closure Certification (lump sum)	$2,500
Administration Costs	
Project Administration (5% of cost)	$5,100
Total	$106,200
Contingency (10% minimum)	$10,600
Total Unit Closure Cost (rounded to the nearest 100)	**$116,800** (2023)

Notes:

1. Based on quote from CIMA Services, LP, dated 6 November 2023.
2. Based on quote from IKON Environmental Solutions, LP dated 27 October 2023. Sludge disposal cost assumes $112 per drum, and 6 drums per CY. Sludge transport cost assumes 4 hr for every 5 CY.
3. Based on quote from RL Doskocil, Inc. dated 5 October 2023. Assumes approximately equivalent equipment and material cost as two tanks in quote, for durations listed.

4. Based on cost estimate from RS Means data, 2023 Quarter 3, Wharton, Texas (Line Item 040120520300).
5. Internal engineering consultant costs based on similar projects.
6. Based on quote from Pace Analytical, dated 30 October 2023.

Table VII.C. - Permitted Unit Closure Cost Summary

Existing Unit Closure Cost Estimate – Not applicable

Unit	Cost

Total Existing Unit Closure Cost Estimate **n/a** (2023) dollars

Proposed Unit Closure Cost Estimate

Unit	Cost
Tank TK-1300	$140,600
Tank TK-1310	$140,600
Tank TK-1320	$140,600
Tank TK-1330	$140,600
Tank TK-1340	$140,600
Tank TK-1350	$140,600
Tank TK-1360	$140,600
Tank TK-1370	$140,600
Tank TK-1390	$116,800

Total Proposed Unit Closure Cost Estimate ***$1,241,600 (2023) dollars***

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachment 3 – Replacement Attachments

Contents

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T1:
Attachment I.G – GFL Site Ownership

GSI ENVIRONMENTAL

ATTACHMENT I.G
SITES OWNED, OPERATED, OR CONTROLLED BY GFL, INC. IN TEXAS

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

BU#	Business Unit	Address	City, State
973	Bellfort Landfill	16011 W. Bellfort	Sugar Land, TX 77498
974	Freeport Hauling	3310 FM 523	Freeeport, TX 77541
975	East Houston Hauling	2201 Lee Dr.	Baytown, TX 77520
975	East Houston Hauling	10020 Old Galveston Road	Houston, TX 77034
976	Houston Transfer Station	1548 Mesquite St.	Houston, TX 77093
977	Montgomery Hauling	17851 HWY 105 E.	Conroe, TX 77306
978	Conroe Landfill	17851 HWY 105 E.	Conroe, TX 77306
979	Montgomery Compost	17851 HWY 105 E.	Conroe, TX 77306
980	Northside Treatment Facility	1820 Candle Ridge Park	Houston, TX 77073
981	Port Arthur Hauling	1000 S. Business Dr.	Port Arthur, TX 77640
982	Texas City Hauling	1004 4th Ave. South	Texas City, TX 77590
983	Sugar Land Hauling	16011 W. Bellfort	Sugar Land, TX 77498
984	Corpus Christi Hauling	2199 N. HWY 77	Robstown, TX 78380
985	Port Arthur Transfer Station	1000 S. Business Dr.	Port Arthur, TX 77640
848	Fort Bend Regional Landfill	14115 Davis Estate Rd	Needville, TX 88461
849	Hardy Road Landfill	18710 East Hardy Rd	Houston, TX 77073
854	Ralston Road Landfill	6632 John Ralston Rd	Houston, TX 77049
855	Greenbelt Landfill	550 Old Genoa Red Bluff Road	Houston, TX 77034
856	Houston South Hauling	8515 Highway 6 South	Houston, TX 77083
857	Ruffino Hills Transfer Station	9720 Ruffino Rd	Houston, TX 77031
859	Bay City Hauling	700 Avenue F	Bay City, TX 77414
865	East Mount Houston Hauling	7213 East Mount Houston Rd	Houston, TX 77050
866	East Mount Houston MRF	7213 East Mount Houston Rd	Houston, TX 77050

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T1: Attachment III.D – Waste Analysis Plan

Contents

GSI Job No. 6731

ATTACHMENT III.D
WASTE ANALYSIS PLAN

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

GSI Job No. 6731

ATTACHMENT VII.A
WASTE ANALYSIS PLAN

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

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1.0 INTRODUCTION

1.1 Scope of WAP

This Waste Analysis Plan (WAP) describes how the Fort Bend Regional Landfill (FBRL) facility analyzes wastes to be managed in permitted nonhazardous waste management units, which will include tanks used for storage and processing of liquids prior to disposal via UIC-permitted deep injection wells. The plan addresses waste verification for wastes received from off-site sources, and characterization of wastes (i.e., landfill leachate) generated at FBRL.

This WAP has been prepared using the provisions of 40 CFR 264.13 (adopted by the Texas Commission on Environmental Quality (TCEQ) in 30 TAC 335.152(a)(1)) as a general guideline. As noted in Section 1.2 of this WAP, the FBRL is not authorized to accept, handle, and/or manage hazardous wastes, but as discussed with the TCEQ, FBRL will use provisions in 40 CFR 264 as a general guide. The WAP is employed to obtain information needed to treat, store, or dispose of wastes in accordance with applicable state and federal requirements and permit provisions. The WAP also addresses important safety considerations. Certain wastes when mixed with others may produce hazardous situations through heat generation, fires, explosions, or release of toxic substances. Proper waste analysis, characterization, and handling allow for safe waste management and facility operations.

1.2 Facility Overview

Currently, FBRL is a RCRA Subtitle D solid waste landfill that accepts municipal solid waste, construction and demolition debris, non-hazardous industrial waste, and special wastes. Special wastes are required to be profiled and reviewed by FBRL personnel or its designee prior to disposal in accordance with the facility's TCEQ-approved Special Waste Acceptance Plan. In addition, the facility has TCEQ approval to solidify liquid waste and sludges.

As noted previously, FBRL is permitting two Class I UIC Injection Wells, and FBRL will offer storage and disposal services to generators of nonhazardous wastewater via the deep injection wells, as well as the leachate that is generated by FRBL from operation of the on-site municipal solid waste landfill. It is estimated that at full operation, the majority of the wastes managed in the pre-injection unit tanks and disposed via the UIC Class I injection wells will be off-site generated waste (i.e., commercial), while the remainder will come from on-site wastes (i.e., non-commercial). These waste streams are non-continuous, and the maximum volume that can be injected annually is 353,203,200 gallons.

1.3 Waste Stream Summary

Table III.A provides a list of the nonhazardous wastes managed and disposed on-site via the UIC Class I injection wells, and a summary is provided below:

- Leachate from FBRL facility;
- Leachate from other landfills;
- Wash water;

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- Tank washouts;
- Contaminated stormwater from the FRBL facility;
- Contaminated stormwater;
- Other aqueous waste;
- Scrubber water;
- Other inorganic liquids; and
- Nonhazardous brine.

Note that the volume of individual waste streams will vary annually based on industry trends. The waste streams listed above will be comingled and neutralized in the UIC pre-injection unit (i.e., Tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, TK-1370, and TK-1390), including elementary neutralization prior to injection in the Class I Injection Wells. Table III.B provides additional details on the liquid wastes that will be managed in the pre-injection unit, including the TCEQ waste classification for each industrial waste stream.

FBRL is **not** authorized to manage the following wastes:

- *Hazardous wastes*, including characteristically hazardous wastes (D-code wastes per 40 CFR 261.21, 261.22, 261.23, and 261.24); hazardous wastes from non-specific sources (F-code wastes per 40 CFR 261.31); hazardous wastes from specific sources (K-code wastes per 40 CFR 261.32); and discarded and off-specification commercial chemical products (P- and U-code wastes per 40 CFR 261.33);
- *Polychlorinated biphenyls (PCBs) ≥50 ppm*, as defined by the EPA in regulations issued pursuant to the Toxic Substances Control Act (40 CFR Part 761), unless FBRL is compliant with the federal requirements for PCB storage specified in 40 CFR Part 761;
- *Radioactive wastes,* unless FBRL becomes authorized to store, process and dispose of radioactive wastes in compliance with specific licensing and permitting requirements under Chapter 401 of the Texas Health and Safety Code and any other rules of state or federal authorities;
- *Explosive material,* as defined by the Department of Transportation (DOT) under 49 CFR Part 173;
- *Special Waste* from Health Care Related Facilities subject to 25 TAC Chapter 1 or 30 TAC Chapter 330.

2.0 WASTE STREAM CHEMICAL AND PHYSICAL CHARACTERISTICS

Waste streams accepted at the facility will consist of liquids generated from various non-industrial and industrial facilities, and only include a blend of Class I and Class II nonhazardous wastes. The waste acceptance procedures to ensure that only nonhazardous wastes are received are described in Section 3.0.

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An example analytical of the onsite leachate waste stream (Waste No. 1 on Table III.A and III.B) is included in Appendix III.D.1. Summarized waste profiles of the typical offsite waste streams from waste streams 3 through 10 listed on Tables III.A. and III.B are presented in Appendix III.D.2. The examples presented in Appendices III.D.1 and III.D.2 represent the physical and chemical characteristics of each type of liquid waste stream to be accepted at the facility.

The waste streams to be accepted at the facility will include materials with a pH range greater than or equal to 2.5 and less than 12.5. The accepted waste streams will have a specific gravity range greater than or equal to 0.9 and less than or equal to 1.50 referenced to 68˚F and 1 atmosphere. The waste properties presented in Appendices III.D.1 and III.D.2 include samples of materials which exemplify the waste streams identified in Tables III.A and III.B.

3.0 OFF-SITE GENERATED WASTES

3.1 Waste Evaluation (Profiling) for New Waste Streams

The purpose of a waste evaluation is to characterize non-hazardous waste liquids generated off-site that are designated for comingling and injection into the Class I injection wells. Characterization of the off-site wastes will determine whether a waste received from off-site is acceptable (i.e., allowable under the permit) and to ensure safe and proper handling practices are used during storage and processing. This waste evaluation (profiling) process applies to new waste streams and is summarized in Figure III.D.1.

3.1.1 Pre-Approval Process

It will be the responsibility of the waste generator to characterize each waste stream to be disposed in the proposed Class I injection wells. Each waste stream will need a completed profile (GFL Special Waste Profile in Appendix III.D.3) and required documents for acceptance. All off-site waste will have a hazardous waste determination completed that may include analytical test results, safety data sheets (SDS), generator knowledge, etc. The generator will be required to demonstrate the absence of listed or characteristic hazardous waste as part of the approval process.

A transmittal and waste profile sheet will accompany each off-site waste stream shipment. An example of a typical form is presented at the end of this section. The form (or suitable equivalent) will be required for each incoming load. Additionally, the waste fluid generator or FBRL will perform a compatibility evaluation of the injectate with the disposal formation and confining zone strata. The evaluation must be suited to the physical and chemical characteristics of the injectate and geology, geochemistry, and operational conditions of the Class I injection wells.

It is the responsibility of the waste generator to notify FBRL of any waste stream changes and to furnish the appropriate revised waste characteristics report. Waste streams will be characterized initially, annually thereafter through recertification, and upon any notification of a waste stream change.

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3.1.2 FBRL Review

FBRL reviews the waste profile form and any supporting documents (e.g., laboratory analyses, safety data sheets, etc.) for technical adequacy. The review addresses the following: i) environmental/permit compliance; ii) treatability/handling; and iii) health and safety issues. Errors or omissions discovered during the review process are resolved through contact with the customer by phone, letter, or other means. Waste profiles are re-evaluated whenever the generator has notified FBRL of a change in the waste or FBRL has reason to think that the waste has changed.

3.1.3 Off-Site Waste Fluid Arrivals

After the waste profile and supporting information is accepted by FBRL, the customer may schedule shipments. All unloaded waste fluids will be placed initially in a pre-mix settling tank and/or filtered so suspended solids can be removed before disposal. The pre-mix batch tanks will also be used to treat any incoming waste fluids to meet permit requirements.

3.1.4 Waste Fluids Unloading and Volume Monitoring

A trained operator will be present during offloading of waste fluids. A waste fluid logbook will be maintained documenting incoming waste stream volumes. At a minimum, waste fluid logbook entries will include:

- Operator name,
- Date/time,
- Generator identification,
- Approximate volume, and
- Approved waste fluid source from Table III.A.

Additionally, injection pressure, annulus pressure, flow rate, and total cumulative volumes will be continuously monitored and provided to the TCEQ per applicable permit requirements. Records of the daily on-site generated leachate and daily volume accepted from offsite sources will be kept in the waste fluid logbook and a total monthly volume of off-site waste fluid will be calculated based on records maintained in the offsite logbook and reported in the monthly well reports to the TCEQ. As part of the FBRL waste acceptance and verification procedure, (a.k.a., Fingerprinting) each load that arrives at the FBRL facility will be checked for:

- Visual/ physical examination for color, odor, and presence of foreign material such as oil,
- Conductivity,
- pH,
- Fluid density/ fluid temperature, and
- Additional waste specific parameters, as necessary.

Waste fluids are to be approved in accordance with this Waste Analysis Plan to verify the non-hazardous nature of the waste fluid prior to acceptance. Prior to commingling with other waste fluids for disposal into the proposed well (additional Fingerprinting), the following analysis will be performed:

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- Conductivity,
- pH,
- Total suspended solids,
- Total dissolved solids,
- Specific gravity, and
- Presence of oil and grease.

4.0 WASTE SAMPLING AND ANALYSIS

4.1 Sampling Methods

FBRL or contracted TCEQ NELAC-certified analytical laboratory personnel will collect necessary waste stream samples on a daily or annual frequency, as required. All sampling procedures will be conducted at the direction of the selected, certified analytical laboratory, and in accordance with acceptable USEPA procedures. FBRL will document the sampler's name, sampling point, waste source identification number, and date sampled, and this documentation will be included on the chain-of-custody paperwork. Samples will be collected using the grab or sample composite method. Table III.C summarizes the analytical method for typical parameters to be included in the waste fluid sampling.

4.2 Analytical/Testing Procedures and Parameters

4.2.1 Laboratory Guidelines

Laboratory analyses may be used to aid in waste verification and/or characterization and determine appropriate management methods. The analyses follow guidelines, including quality assurance/quality control (QA/QC) measures, from published method specifications such as:

- Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA Publication SW846, 1987, as revised;
- Standard Methods for the Evaluation of Wastes and Waste Water, 18th edition, 1992, as revised;
- Methods for Chemical Analysis of Water and Wastes, USEPA Publication 600/4-79-020, 1979;
- ASTM Standard Test Methods (e.g., Flash Point by Penske-Martens Closed Tester, American Society for Testing and Materials, Philadelphia);
- HAZCAT Chemical Identification System; or
- Other: Alternate standard methods generally accepted by the industry may also be employed for laboratory analyses.

4.2.2 QA/QC

QA is the process for ensuring that all analytical data is technically sound, statistically valid, and properly documented. QC procedures are the tools employed to measure the degree to which quality assurance objectives are fulfilled.

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General Sampling and Analytical Information

The sampling protocol will be followed by properly trained personnel conducting the sample collection and analysis. Approved sample preservation techniques from 40 CFR 136: Analysis of Pollutants will be followed as appropriate. These will include preservation in plastic or glass sample containers provided by the laboratory and placement in a sample container for shipment to the laboratory. FBRL will require all waste samples be analyzed by a TCEQ approved laboratory.

Standard chain of custody protocols will be followed for sample collection, transport, and analysis. Below are summaries of the minimum sampling and analysis protocols which will be followed for each characterization parameter.

Labeling

1. Sample ID including code or name, waste source ID# (if previously approved), date and time.
2. Name and company of sample collector.
3. Sample collection method (e.g., grab or composite).

Reporting

1. Sample preservation technique, as appropriate.
2. Analytical method for parameter detection/quantification.
3. Analytical method accuracy and quantification limits.
4. Field documentation of sampling.

Sampling Controls

The following are QA/QC parameters which will be followed to ensure the adequacy of the sampling and analytical techniques for onsite sampling and analysis described in this plan.

Equipment Blanks

If possible, samples will be obtained directly from the sample tap and not be transferred to any secondary container or device before being stored in the sample container to be shipped to the laboratory. In this case, no equipment cleaning blanks will be required. If not, equipment blanks will be taken as deemed appropriate by FBRL for the purpose of detecting potential cross contamination due to improper decontamination of sampling equipment. After sampling, the sampling equipment will be decontaminated according to the sampling plan protocol. The sampling device will then be rinsed with deionized water and the rinsate collected in a sample container for transport to the laboratory for analysis of, at a minimum, the same parameters chosen in the sampling plan above.

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Trip Blanks

In the case of suspect analysis from any laboratory, trip blanks will be used and will be sample containers filled with Type II reagent grade water at the laboratory, sealed at the laboratory, which accompany the sample containers used throughout the sampling event. The sample containers shall be handled in the same manner as the samples. The trip blank(s) will be sent to the laboratory for analysis of, at a minimum, the same parameters chosen in the sampling plan above. A minimum of one trip blank per sampling event will be used, if trip blanks are utilized.

Sample Duplicates

On advance written notification by the TCEQ, duplicate samples will be taken to assess the QA/QC of the laboratory conducting the analysis. Such samples will be drawn from the same site from which primary samples are taken. Any duplicate samples will be split from the original sample in a matter to emphasize sample representativeness. The duplicate will be labeled with a sample number which will not conflict with the other samples but will be discernible to the laboratory as a duplicate sample.

Sample Chain-of Custody Protocol

Sample chain-of-custody will be always followed during the sampling and subsequent analysis. Chain-of-custody will be used to document the handling and control necessary to identify and trace a sample from collection to final analytical results.

Analytical Controls

Equipment Calibration

FBRL will require that selected laboratories maintain QA/QC data regarding the frequency and type of instrument calibration performed at the laboratory and in the field. Any calibration of thermometers, gauges, chromatographs. Spectrometers and other meters will be conducted according to appropriate instrument manufacturer specifications and manufacturer recommended frequencies or as dictated by applicable laboratory Q/A plans.

Data Reduction

The process of transcription of the raw data into the reportable units will be conducted by the laboratory in accordance with that laboratory's Q/A plan. Data reduction utilized in the analysis and reporting process will be presented in the reports to the TCEQ for each sampling event and parameter tested by a specific laboratory used at the time. Data are typically recorded on handwritten sheets which include identification data, sample data and all data required for calculations or on computer print-outs accompanied by operator notes and summaries.

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Data Verification

Data verification will be conducted after each sampling event by assigned laboratory personnel review of chain-of-custody forms, equipment calibration records and data completeness. Spot checks of raw data versus reported data will be performed to review math accuracy, significant numbers and reporting units. In addition, certified laboratory standard quality assurance/quality control checklists will be utilized for individual test methods such as blanks, standards, and comparisons of internal lab test duplicate results. Problems with any of these items will be indicated in the report to the agency.

Internal Quality Control

Certified quality control samples will be run periodically with sample batches obtained from appropriate commercial sources, or the TCEQ. Internal quality control will be addressed by disclosure of the laboratory's use of blanks, blind standards, matrix spikes and matrix spike duplicates, preparation of reagents, and laboratory duplicate or replicate analyses.

Corrective actions will be implemented by laboratories if the analytical or sampling method does not achieve plan objectives. Actions may entail re-sampling the waste stream and/or re-analyzing the fluid for a particular parameter, re-calibrating the analytical device, or other appropriate actions. Action levels will be taken in accordance with USEPA SW-846: Hazardous Waste Test Methods or other approved TCEQ methods.

5.0 RECORD KEEPING

FBRL maintains documentation such as waste profiles and manifests in the facility operating record. This documentation may be maintained in an electronic format. FBRL also maintains an electronic database which tracks waste movement in the facility. All records received from off-site generated waste are kept in accordance with the applicable regulations.

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ATTACHMENT III.D: WASTE ANALYSIS PLAN

Fort Bend Regional Landfill, LP
Needville, Texas

FIGURES

Figure III.D.1 Flow Chart of Waste Acceptance and Verification Procedures

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ATTACHMENT III.D: WASTE ANALYSIS PLAN

Fort Bend Regional Landfill, LP
Needville, Texas

APPENDICES

Appendix III.D.1 Analytical Laboratory Report of On-Site Landfill Leachate

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ATTACHMENT III.D: WASTE ANALYSIS PLAN

Fort Bend Regional Landfill, LP
Needville, Texas

APPENDICES

Appendix III.D.2 Summary Waste Profiles of Typical Off-Site Waste Streams

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ATTACHMENT III.D: WASTE ANALYSIS PLAN

Fort Bend Regional Landfill, LP
Needville, Texas

APPENDICES

Appendix III.D.3 GFL Special Waste Profile

GSI Job No. 6731

ATTACHMENT III.D
WASTE ANALYSIS PLAN

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

ATTACHMENT VII.A
WASTE ANALYSIS PLAN

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

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1.0 INTRODUCTION

1.1 Scope of WAP

This Waste Analysis Plan (WAP) describes how the Fort Bend Regional Landfill (FBRL) facility analyzes wastes to be managed in permitted nonhazardous waste management units, which will include tanks used for storage and processing of liquids prior to disposal via UIC-permitted deep injection wells. The plan addresses waste verification for wastes received from off-site sources, and characterization of wastes (i.e., landfill leachate) generated at FBRL.

This WAP has been prepared using the provisions of 40 CFR 264.13 (adopted by the Texas Commission on Environmental Quality (TCEQ) in 30 TAC 335.152(a)(1)) as a general guideline. As noted in Section 1.2 of this WAP, the FBRL is not authorized to accept, handle, and/or manage hazardous wastes, but as discussed with the TCEQ, FBRL will use provisions in 40 CFR 264 as a general guide. The WAP is employed to obtain information needed to treat, store, or dispose of wastes in accordance with applicable state and federal requirements and permit provisions. The WAP also addresses important safety considerations. Certain wastes when mixed with others may produce hazardous situations through heat generation, fires, explosions, or release of toxic substances. Proper waste analysis, characterization, and handling allow for safe waste management and facility operations.

1.2 Facility Overview

Currently, FBRL is a RCRA Subtitle D solid waste landfill that accepts municipal solid waste, construction and demolition debris, non-hazardous industrial waste, and special wastes. Special wastes are required to be profiled and reviewed by FBRL personnel or its designee prior to disposal in accordance with the facility's TCEQ-approved Special Waste Acceptance Plan. In addition, the facility has TCEQ approval to solidify liquid waste and sludges.

As noted previously, FBRL is permitting two Class I UIC Injection Wells, and FBRL will offer storage and disposal services to generators of nonhazardous wastewater via the deep injection wells, as well as the leachate that is generated by FRBL from operation of the on-site municipal solid waste landfill. It is estimated that at full operation, the majority of the wastes managed in the pre-injection unit tanks and disposed via the UIC Class I injection wells will be off-site generated waste (i.e., commercial), while the remainder will come from on-site wastes (i.e., non-commercial). These waste streams are non-continuous, and the maximum volume that can be injected annually is 353,203,200 gallons.

1.3 Waste Stream Summary

Table III.A provides a list of the nonhazardous wastes managed and disposed on-site via the UIC Class I injection wells, and a summary is provided below:

- Leachate from FBRL facility;
- Leachate from other landfills;
- Wash water;

- Tank washouts;
- Contaminated stormwater from the FRBL facility;
- Contaminated stormwater;
- Other aqueous waste;
- Scrubber water;
- Other inorganic liquids; and
- Nonhazardous brine.

Note that the volume of individual waste streams will vary annually based on industry trends. The waste streams listed above will be comingled and neutralized in the UIC pre-injection unit (i.e., Tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, TK-1370, and TK-1390), including elementary neutralization prior to injection in the Class I Injection Wells. Table III.B provides additional details on the liquid wastes that will be managed in the pre-injection unit, including the TCEQ waste classification for each industrial waste stream.

FBRL is **not** authorized to manage the following wastes:

- *Hazardous wastes*, including characteristically hazardous wastes (D-code wastes per 40 CFR 261.21, 261.22, 261.23, and 261.24); hazardous wastes from non-specific sources (F-code wastes per 40 CFR 261.31); hazardous wastes from specific sources (K-code wastes per 40 CFR 261.32); and discarded and off-specification commercial chemical products (P- and U-code wastes per 40 CFR 261.33);
- *Polychlorinated biphenyls (PCBs) ≥50 ppm*, as defined by the EPA in regulations issued pursuant to the Toxic Substances Control Act (40 CFR Part 761), unless FBRL is compliant with the federal requirements for PCB storage specified in 40 CFR Part 761;
- *Radioactive wastes,* unless FBRL becomes authorized to store, process and dispose of radioactive wastes in compliance with specific licensing and permitting requirements under Chapter 401 of the Texas Health and Safety Code and any other rules of state or federal authorities;
- *Explosive material,* as defined by the Department of Transportation (DOT) under 49 CFR Part 173;
- *Special Waste* from Health Care Related Facilities subject to 25 TAC Chapter 1 or 30 TAC Chapter 330.

2.0 WASTE STREAM CHEMICAL AND PHYSICAL CHARACTERISTICS

Waste streams accepted at the facility will consist of liquids generated from various non-industrial and industrial facilities, and only include a blend of Class I and Class II nonhazardous wastes. The waste acceptance procedures to ensure that only nonhazardous wastes are received are described in Section 3.0.

An example analytical of the onsite leachate waste stream (Waste No. 1 on Table III.A and III.B) is included in Appendix III.D.1. Summarized waste profiles of the typical offsite waste streams from waste streams 3 through 10 listed on Tables III.A. and III.B are presented in Appendix III.D.2. The examples presented in Appendices III.D.1 and III.D.2 represent the physical and chemical characteristics of each type of liquid waste stream to be accepted at the facility.

The waste streams to be accepted at the facility will include materials with a pH range greater than or equal to 2.5 and less than 12.5. The accepted waste streams will have a specific gravity range greater than or equal to 0.9 and less than or equal to 1.50 referenced to 68˚F and 1 atmosphere. The waste properties presented in Appendices III.D.1 and III.D.2 include samples of materials which exemplify the waste streams identified in Tables III.A and III.B.

3.0 OFF-SITE GENERATED WASTES

3.1 Waste Evaluation (Profiling) for New Waste Streams

The purpose of a waste evaluation is to characterize non-hazardous waste liquids generated off-site that are designated for comingling and injection into the Class I injection wells. Characterization of the off-site wastes will determine whether a waste received from off-site is acceptable (i.e., allowable under the permit) and to ensure safe and proper handling practices are used during storage and processing. This waste evaluation (profiling) process applies to new waste streams and is summarized in Figure III.D.1.

3.1.1 Pre-Approval Process

It will be the responsibility of the waste generator to characterize each waste stream to be disposed in the proposed Class I injection wells. Each waste stream will need a completed profile (GFL Special Waste Profile in Appendix III.D.3) and required documents for acceptance. All off-site waste will have a hazardous waste determination completed that may include analytical test results, safety data sheets (SDS), generator knowledge, etc. The generator will be required to demonstrate the absence of listed or characteristic hazardous waste as part of the approval process.

A transmittal and waste profile sheet will accompany each off-site waste stream shipment. An example of a typical form is presented at the end of this section. The form (or suitable equivalent) will be required for each incoming load. Additionally, the waste fluid generator or FBRL will perform a compatibility evaluation of the injectate with the disposal formation and confining zone strata. The evaluation must be suited to the physical and chemical characteristics of the injectate and geology, geochemistry, and operational conditions of the Class I injection wells.

It is the responsibility of the waste generator to notify FBRL of any waste stream changes and to furnish the appropriate revised waste characteristics report. Waste streams will be characterized initially, annually thereafter through recertification, and upon any notification of a waste stream change.

3.1.2 FBRL Review

FBRL reviews the waste profile form and any supporting documents (e.g., laboratory analyses, safety data sheets, etc.) for technical adequacy. The review addresses the following: i) environmental/permit compliance; ii) treatability/handling; and iii) health and safety issues. Errors or omissions discovered during the review process are resolved through contact with the customer by phone, letter, or other means. Waste profiles are re-evaluated whenever the generator has notified FBRL of a change in the waste or FBRL has reason to think that the waste has changed.

3.1.3 Off-Site Waste Fluid Arrivals

After the waste profile and supporting information is accepted by FBRL, the customer may schedule shipments. All unloaded waste fluids will be placed initially in a pre-mix settling tank and/or filtered so suspended solids can be removed before disposal. The pre-mix batch tanks will also be used to treat any incoming waste fluids to meet permit requirements.

3.1.4 Waste Fluids Unloading and Volume Monitoring

A trained operator will be present during offloading of waste fluids. A waste fluid logbook will be maintained documenting incoming waste stream volumes. At a minimum, waste fluid logbook entries will include:

- Operator name,
- Date/time,
- Generator identification,
- Approximate volume, and
- Approved waste fluid source from Table III.A.

Additionally, injection pressure, annulus pressure, flow rate, and total cumulative volumes will be continuously monitored and provided to the TCEQ per applicable permit requirements. Records of the daily on-site generated leachate and daily volume accepted from offsite sources will be kept in the waste fluid logbook and a total monthly volume of off-site waste fluid will be calculated based on records maintained in the offsite logbook and reported in the monthly well reports to the TCEQ. As part of the FBRL waste acceptance and verification procedure, (a.k.a., Fingerprinting) each load that arrives at the FBRL facility will be checked for:

- Visual/ physical examination for color, odor, and presence of foreign material such as oil,
- Conductivity,
- pH,
- Fluid density/ fluid temperature, and
- Additional waste specific parameters, as necessary.

Waste fluids are to be approved in accordance with this Waste Analysis Plan to verify the non-hazardous nature of the waste fluid prior to acceptance. Prior to commingling with other waste fluids for disposal into the proposed well (additional Fingerprinting), the following analysis will be performed:

- Conductivity,
- pH,
- Total suspended solids,
- Total dissolved solids,
- Specific gravity, and
- Presence of oil and grease.

4.0 WASTE SAMPLING AND ANALYSIS

4.1 Sampling Methods

FBRL or contracted TCEQ NELAC-certified analytical laboratory personnel will collect necessary waste stream samples on a daily or annual frequency, as required. All sampling procedures will be conducted at the direction of the selected, certified analytical laboratory, and in accordance with acceptable USEPA procedures. FBRL will document the sampler's name, sampling point, waste source identification number, and date sampled, and this documentation will be included on the chain-of-custody paperwork. Samples will be collected using the grab or sample composite method. Table III.C summarizes the analytical method for typical parameters to be included in the waste fluid sampling.

4.2 Analytical/Testing Procedures and Parameters

4.2.1 Laboratory Guidelines

Laboratory analyses may be used to aid in waste verification and/or characterization and determine appropriate management methods. The analyses follow guidelines, including quality assurance/quality control (QA/QC) measures, from published method specifications such as:

- Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA Publication SW846, 1987, as revised;
- Standard Methods for the Evaluation of Wastes and Waste Water, 18th edition, 1992, as revised;
- Methods for Chemical Analysis of Water and Wastes, USEPA Publication 600/4-79-020, 1979;
- ASTM Standard Test Methods (e.g., Flash Point by Penske-Martens Closed Tester, American Society for Testing and Materials, Philadelphia);
- HAZCAT Chemical Identification System; or
- Other: Alternate standard methods generally accepted by the industry may also be employed for laboratory analyses.

4.2.2 QA/QC

QA is the process for ensuring that all analytical data is technically sound, statistically valid, and properly documented. QC procedures are the tools employed to measure the degree to which quality assurance objectives are fulfilled.

General Sampling and Analytical Information

The sampling protocol will be followed by properly trained personnel conducting the sample collection and analysis. Approved sample preservation techniques from 40 CFR 136: Analysis of Pollutants will be followed as appropriate. These will include preservation in plastic or glass sample containers provided by the laboratory and placement in a sample container for shipment to the laboratory. FBRL will require all waste samples be analyzed by a TCEQ approved laboratory.

Standard chain of custody protocols will be followed for sample collection, transport, and analysis. Below are summaries of the minimum sampling and analysis protocols which will be followed for each characterization parameter.

Labeling

1. Sample ID including code or name, waste source ID# (if previously approved), date and time.
2. Name and company of sample collector.
3. Sample collection method (e.g., grab or composite).

Reporting

1. Sample preservation technique, as appropriate.
2. Analytical method for parameter detection/quantification.
3. Analytical method accuracy and quantification limits.
4. Field documentation of sampling.

Sampling Controls

The following are QA/QC parameters which will be followed to ensure the adequacy of the sampling and analytical techniques for onsite sampling and analysis described in this plan.

Equipment Blanks

If possible, samples will be obtained directly from the sample tap and not be transferred to any secondary container or device before being stored in the sample container to be shipped to the laboratory. In this case, no equipment cleaning blanks will be required. If not, equipment blanks will be taken as deemed appropriate by FBRL for the purpose of detecting potential cross contamination due to improper decontamination of sampling equipment. After sampling, the sampling equipment will be decontaminated according to the sampling plan protocol. The sampling device will then be rinsed with deionized water and the rinsate collected in a sample container for transport to the laboratory for analysis of, at a minimum, the same parameters chosen in the sampling plan above.

Trip Blanks

In the case of suspect analysis from any laboratory, trip blanks will be used and will be sample containers filled with Type II reagent grade water at the laboratory, sealed at the laboratory, which accompany the sample containers used throughout the sampling event. The sample containers shall be handled in the same manner as the samples. The trip blank(s) will be sent to the laboratory for analysis of, at a minimum, the same parameters chosen in the sampling plan above. A minimum of one trip blank per sampling event will be used, if trip blanks are utilized.

Sample Duplicates

On advance written notification by the TCEQ, duplicate samples will be taken to assess the QA/QC of the laboratory conducting the analysis. Such samples will be drawn from the same site from which primary samples are taken. Any duplicate samples will be split from the original sample in a matter to emphasize sample representativeness. The duplicate will be labeled with a sample number which will not conflict with the other samples but will be discernible to the laboratory as a duplicate sample.

Sample Chain-of Custody Protocol

Sample chain-of-custody will be always followed during the sampling and subsequent analysis. Chain-of-custody will be used to document the handling and control necessary to identify and trace a sample from collection to final analytical results.

Analytical Controls

Equipment Calibration

FBRL will require that selected laboratories maintain QA/QC data regarding the frequency and type of instrument calibration performed at the laboratory and in the field. Any calibration of thermometers, gauges, chromatographs. Spectrometers and other meters will be conducted according to appropriate instrument manufacturer specifications and manufacturer recommended frequencies or as dictated by applicable laboratory Q/A plans.

Data Reduction

The process of transcription of the raw data into the reportable units will be conducted by the laboratory in accordance with that laboratory's Q/A plan. Data reduction utilized in the analysis and reporting process will be presented in the reports to the TCEQ for each sampling event and parameter tested by a specific laboratory used at the time. Data are typically recorded on handwritten sheets which include identification data, sample data and all data required for calculations or on computer print-outs accompanied by operator notes and summaries.

Data Verification

Data verification will be conducted after each sampling event by assigned laboratory personnel review of chain-of-custody forms, equipment calibration records and data completeness. Spot checks of raw data versus reported data will be performed to review math accuracy, significant numbers and reporting units. In addition, certified laboratory standard quality assurance/quality control checklists will be utilized for individual test methods such as blanks, standards, and comparisons of internal lab test duplicate results. Problems with any of these items will be indicated in the report to the agency.

Internal Quality Control

Certified quality control samples will be run periodically with sample batches obtained from appropriate commercial sources, or the TCEQ. Internal quality control will be addressed by disclosure of the laboratory's use of blanks, blind standards, matrix spikes and matrix spike duplicates, preparation of reagents, and laboratory duplicate or replicate analyses.

Corrective actions will be implemented by laboratories if the analytical or sampling method does not achieve plan objectives. Actions may entail re-sampling the waste stream and/or re-analyzing the fluid for a particular parameter, re-calibrating the analytical device, or other appropriate actions. Action levels will be taken in accordance with USEPA SW-846: Hazardous Waste Test Methods or other approved TCEQ methods.

5.0 RECORD KEEPING

FBRL maintains documentation such as waste profiles and manifests in the facility operating record. This documentation may be maintained in an electronic format. FBRL also maintains an electronic database which tracks waste movement in the facility. All records received from off-site generated waste are kept in accordance with the applicable regulations.

ATTACHMENT III.D: WASTE ANALYSIS PLAN

Fort Bend Regional Landfill, LP

Needville, Texas

FIGURES

ATTACHMENT III.D: WASTE ANALYSIS PLAN

Fort Bend Regional Landfill, LP
Needville, Texas

APPENDICES

Appendix III.D.1 Analytical Laboratory Report of On-Site Landfill Leachate

ATTACHMENT III.D: WASTE ANALYSIS PLAN

Fort Bend Regional Landfill, LP

Needville, Texas

APPENDICES

Appendix III.D.2 Summary Waste Profiles of Typical Off-Site Waste Streams

ATTACHMENT III.D: WASTE ANALYSIS PLAN

Fort Bend Regional Landfill, LP

Needville, Texas

APPENDICES

Appendix III.D.3 GFL Special Waste Profile

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T1: Appendix III.D.2 – Summary Waste Profile of Off-Site Waste Streams

ATTACHMENT III.D.2
SUMMARY WASTE PROFILES OF TYPICAL OFF-SITE WASTE STREAMS
Industrial Non-Hazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

Waste Name	Source	Class	Characteristic Components				Color	Odor	Does Waste Contain Free Liquids?	Solid %	pH	Flash Point
3. Wash Water	Industrial	Class 1	5% Alimet	95% Water			Tan	Mild	Yes	0%	3-11	>200°F
4. Tank Washouts	Industrial	Class 1	90-100% Water	0-20% Crude Base Oil and Water Emulsion	0-5% Unused Crude Oil	2-5% Dirt and Grit	Yellow to Black	Strong	Yes	5%	4-8	>200°F
4. Tank Washouts	Special Waste / Non-Industrial	Class 2 Like	100% Tank Water				Brown	No	Yes	0%	6.3	>200°F
6. Contaminated Stormwater	Industrial	Class 2	50% Natures Edge	50% Water			Clear to Green	Mild	Yes	1%	7-8	>200°F
7. Other Inorganic Liquids	Industrial	Class 2	100% Food Dye				Pale Blue	No	Yes	1%	4-10	>200°F
7. Other Aqueous Waste	Special Waste / Non-Industrial	Class 2 Like	100% Lint Water				Black	No	Yes	10%	7	NA
8. Scrubber Water	Industrial	Class 2	91-95% Water	0-9% CLP-1305	0-9% CCl		Clear / Amber	No	Yes	0%	5-9	>200°F
10. Nonhazardous Brine	Special Waste / Non-Industrial	Class 2 Like	5-20% Salt Water	80-95% Water			Clear	No	Yes	10%	5-10	>200°F
10. Nonhazardous Brine	Industrial	Class 2	100% Brine Water				Clear	No	Yes	0%	7.5	>150°F

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T1: Attachment IV.D.2 – Wind Rose

Contents

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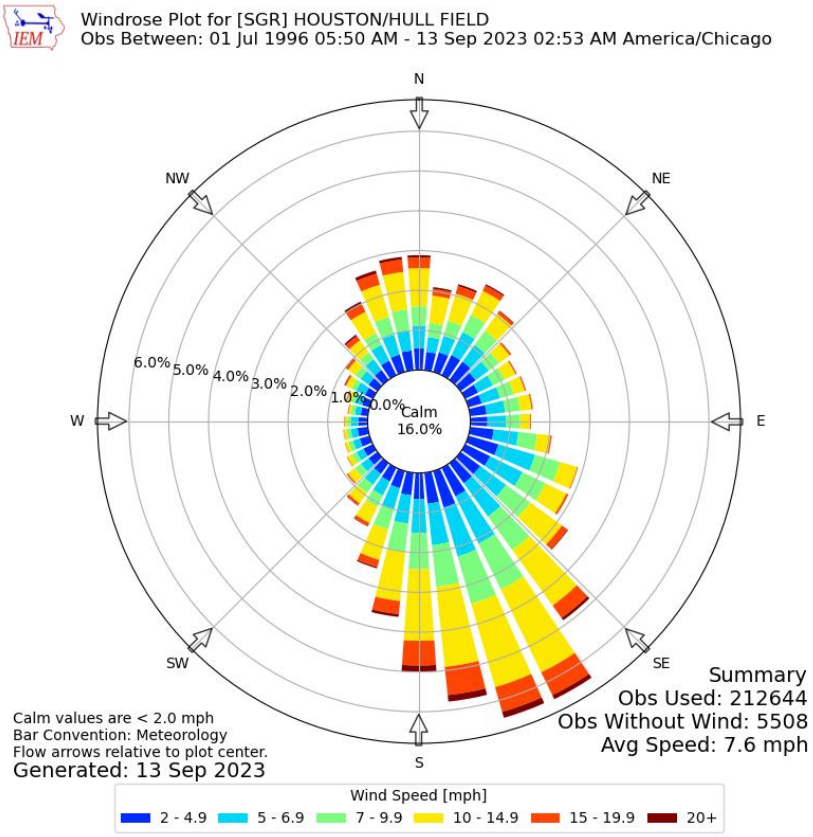
ATTACHMENT IV.D.2
WIND ROSE FOR NEEDVILLE, TEXAS

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

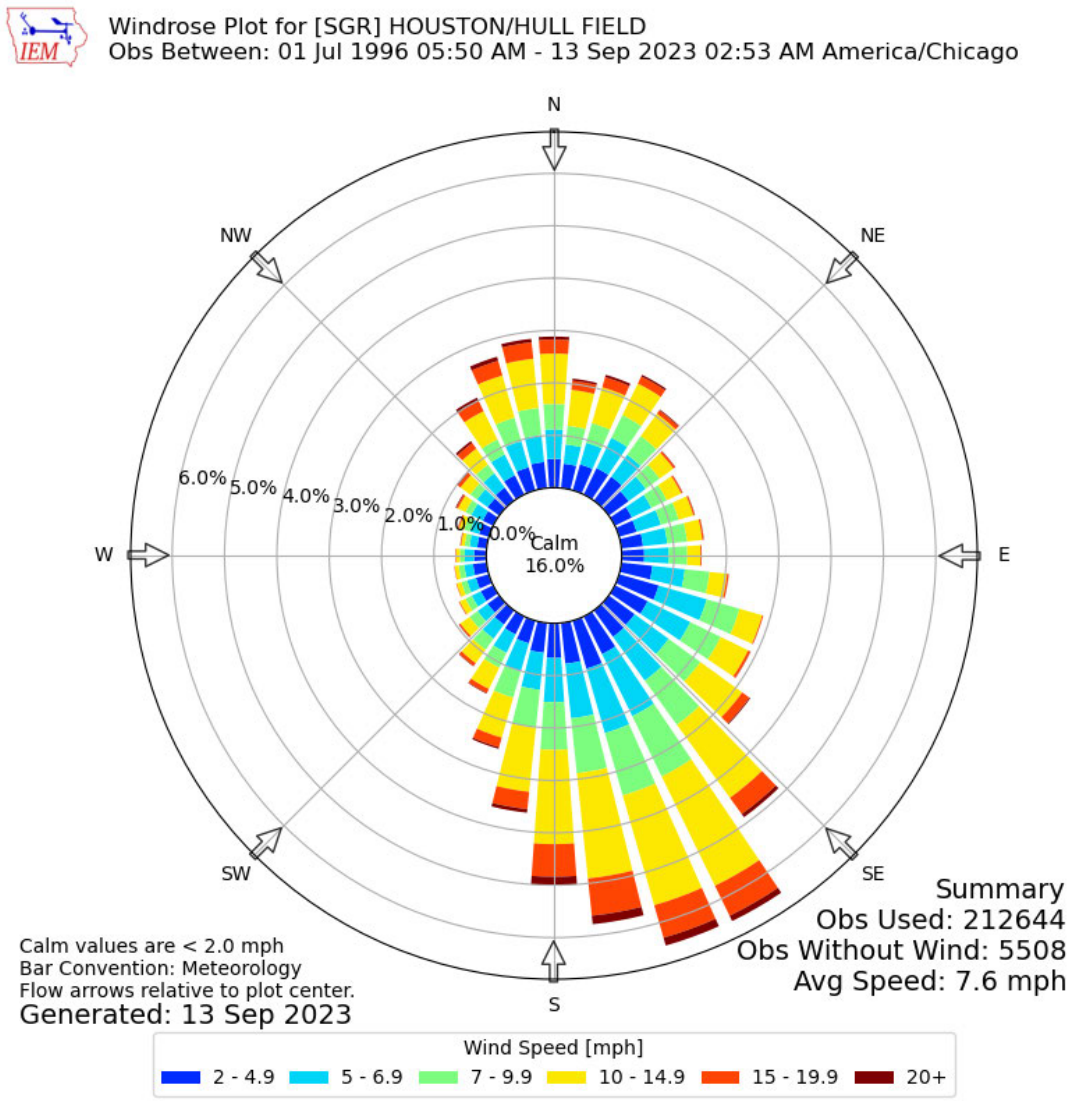


Note: The wind rose was obtained from the Iowa State University Environmental Mesonet website for Needville, Texas. The wind measurements were obtained from 2009 to 2023 at Sugar Land Regional Airport, located approximately 16 miles north of the Fort Bend Regional Landfill, LP facility.

Website:
https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=ARM&network=TX_ASOS

ATTACHMENT IV.D.2
WIND ROSE FOR NEEDVILLE, TEXAS

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas



Note: The wind rose was obtained from the Iowa State University Environmental Mesonet website for Needville, Texas. The wind measurements were obtained from 2009 to 2023 at Sugar Land Regional Airport, located approximately 16 miles north of the Fort Bend Regional Landfill, LP facility.

Website:
https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=ARM&network=TX_ASOS

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T1: Attachment IV.G.1 – Engineering Report TK-1300 to TK-1370 (text only)

Contents

GSI Job No. 6731

ATTACHMENT IV.G.1
ENGINEERING REPORT FOR TANKS TK-1300 THROUGH TK-1370

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

I, James M. McDade, a registered professional engineer in the State of Texas, certify that the Engineering Report issued 20 February 2024 and revised 4 June 2024 for Tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, and TK-1370 (Notice of Registration Unit Nos. 001 through 008) located on the Fort Bend Regional Landfill in Needville, Texas, has been developed in general accordance with good engineering practices and requirements of 30 TAC 305.45(a)(8)(A).

4 June 2024

James M. McDade, P.E.
State of Texas Registration No. 115868
GSI Environmental Inc.
Texas Registration No. F-1198

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1.0 INTRODUCTION

This section summarizes the engineering aspects of the proposed permitted nonhazardous waste tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, and TK-1370 (collectively referred to as Tanks), located on the Fort Bend Regional Landfill (FBRL) facility. The location of the Tanks is shown on the facility plans (see Attachment IV.C). General information on the tanks, including capacity and wastes managed, is summarized on Table IV of this permit application. A figure showing a general diagram of the Tanks is provided in Figure IV.G.1.1 and additional detailed design of the secondary containment area is provided on Figure IV.G.1.2.

1.1 Basis for the Engineering Report

The Tanks will be located in the northern portion of the FBRL facility in Fort Bend County, near Needville, Texas (see Attachment IV.C). This engineering report has been prepared to certify that the design for the tanks meets applicable standards as specified in 30 TAC 305.45(a)(8). After approval of this permit application, the tanks will be installed and tested to certify conformance with this engineering report, applicable regulations, and nonhazardous waste permit provisions. A tank installation certification report will be prepared and submitted to TCEQ prior to placing the new Tanks into service.

1.2 Wastes to be Managed in the Tanks

Wastes 1 through 10 listed on Table III.B of this permit application will be managed in the Tanks (see Table III.B of this permit application). These wastes may be segregated based on chemical properties, including pH. Chemical agents, such as neutralization agents, corrosion inhibitors, and biocides may be added to each tank via an injection skid with diaphragm pumps as necessary to achieve the desired fluid properties. The Tanks will store the wastes before passing through filter bag modules to the Pre-Injection Tank, TK-1390.

2.0 DESIGN AND INSTALLATION OF THE TANKS

2.1 Design of the Tanks

The Tanks will be designed in general accordance with API Specification 12P for Fiberglass Reinforced Plastic Tanks or an equivalent standard. The Tanks will be constructed of fiberglass and oriented vertically, with an approximate height of 30 ft and an approximate diameter of 15 ft, corresponding to a maximum design capacity of 42,000 gallons (see Figure IV.G.1.1). Although not required, the foundation, structural support, seams, and connections of the Tanks have been designed and materials selected in accordance with 40 CFR 264.192 in order to: i) possess sufficient structural strength, ii) be compatible with the non-hazardous materials managed, and iii) prevent corrosion so that the Tanks will be protected from collapse, rupture, or failure. The Tanks will be installed within secondary containment in the northern portion of the FBRL facility (see Attachment IV.C).

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The foundation for the Tanks will be constructed of reinforced concrete capable of maintaining the load of the Tanks when filled. The foundation of the Tanks will be resistant to pressure gradients above and below the system and is capable of preventing failure due to settlement, compression, and/or uplifts. The Tanks will not be in contact with soil or water, will be located aboveground, and will not be subject to frost heave.

2.2 Installation of the Tanks

The Tanks and ancillary equipment will be installed in accordance with standard engineering practices for quality control and testing. The Tanks will be handled in a manner to prevent damage during installation. Ancillary piping will be constructed of polybutylene, high-density polypropylene, or equivalent with welded, flanged connections, and tie-downs designed to accommodate possible expansion and contraction. Following installation of the Tanks, a professional engineer registered in the State of Texas will review information regarding installation of the tanks, ancillary equipment, and piping for evidence of potential weld breaks, punctures, scrapes, cracks, corrosion, or other structural damage, and an Installation Certification Report will be submitted to the TCEQ.

3.0 CONTAINMENT AREA

Potential releases to the environment will be prevented by locating the Tanks and ancillary equipment associated with the tank systems (i.e., piping, pumps, valves, etc.) within a concrete secondary containment area. The concrete secondary containment area may also include a chemically resistant sealant. As shown on Figure IV.G.1.2, the Tanks will be located within the secondary containment area, which will have a containment volume of 108,577 gallons (see Table IV.G.1.1). This volume accounts for displacement of equipment within the secondary containment area, and that includes the volume of the tanks below the height of the dike wall, concrete pads that the tanks will be placed atop, plus an assumed additional 10% of the containment volume for miscellaneous pump bases, footers, piping, etc. The containment volume is sufficient to contain 110% of the volume of the Tank.

The base of the secondary containment will be sloped so that fluid flows to a trench sump. The tanks will be connected in series so that overflow in any one tank will be routed to the next tank or to the drainage sump. Precipitation, wash water, overflow, and/or potential leaks from the tanks will be removed from the sump by FBRL using various methods (pumps, vacuum truck, or equivalent) within 24 hours, or if FBRL demonstrates that it is not possible within 24-hrs, at the earliest practicable time.

4.0 OPERATION OF THE TANKS

4.1 General Operating Requirements

The Tanks will be operated in such a manner as to: i) not place waste or treatment reagents into the tank system that have the potential to rupture, leak, corrode, or otherwise cause failure of the Tanks, their ancillary equipment, or the containment system, ii) provide spill prevention and overfill prevention controls in case of potential leaks, and iii) follow

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applicable provisions in the event of a spill or release in order to protect human health and the environment.

Inspections

The Tanks will have sight glass level indicator and a high-level alarm, which will be subject to regular inspections. Readings from this indicator will be continuously monitored. All Tanks will be monitored routinely by operators at least once per day. The inspection schedule is provided in Table II.

Spill Response

Response activities will be conducted in the event of a release from the Tanks. In the event of a release from any one of the Tanks, FBRL will implement the following applicable procedures:

- *Flow Cessation*: Upon notification of a release, FBRL will immediately discontinue the flow of waste to the tank and into the secondary containment area.
- *Waste Removal*: Within 24 hours of release, FBRL will remove spilled waste from the secondary containment system to be either disposed of on-site or stored in another permitted tank. If removal of waste cannot be completed in 24 hours (i.e., because of force majeure), FBRL will complete waste removal at the earliest possible time to prevent harm to human health or the environment.
- *Notifications*: All notifications regarding a release to the environment will be completed in accordance with the TCEQ's spills and discharges regulations.
- *Return to Service*: If the integrity of any one of the Tanks was not damaged, the tank will be returned to service upon completion of necessary repairs, removal of waste, and adherence to applicable provisions. If the integrity of the tank was damaged, the tank will be repaired accordingly, and re-certified by a registered professional engineer in the State of Texas prior to returning to service in accordance with applicable provisions.

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ATTACHMENT IV.G.1
ENGINEERING REPORT FOR TANKS TK-1300 THROUGH TK-1370

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

TABLE

GSI Job No. 6731

ATTACHMENT IV.G.1
ENGINEERING REPORT FOR TANKS TK-1300 THROUGH TK-1370

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

FIGURES

ATTACHMENT IV.G.1
ENGINEERING REPORT FOR TANKS TK-1300 THROUGH TK-1370

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

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applicable provisions in the event of a spill or release in order to protect human health and the environment.

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The Tanks will have sight glass level indicator and a high-level alarm, which will be subject to regular inspections. Readings from this indicator will be continuously monitored. All Tanks will be monitored routinely by operators at least once per day. The inspection schedule is provided in Table II.

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- *Notifications*: All notifications regarding a release to the environment will be completed in accordance with the TCEQ's spills and discharges regulations.

- *Return to Service*: If the integrity of any one of the Tanks was not damaged, the tank will be returned to service upon completion of necessary repairs, removal of waste, and adherence to applicable provisions. If the integrity of the tank was damaged, the tank will be repaired accordingly, and re-certified by a registered professional engineer in the State of Texas prior to returning to service in accordance with applicable provisions.

ATTACHMENT IV.G.1
ENGINEERING REPORT FOR TANKS TK-1300 THROUGH TK-1370

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

TABLE

ATTACHMENT IV.G.1
ENGINEERING REPORT FOR TANKS TK-1300 THROUGH TK-1370

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

FIGURES

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T1: Attachment IV.G.2 – Engineering Report TK-1390 (text only)

Contents

GSI Job No. 6731

ATTACHMENT IV.G.2
ENGINEERING REPORT FOR TANK TK-1390

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

I, James M. McDade, a registered professional engineer in the State of Texas, certify that the Engineering Report issued 20 February 2024 and revised 4 June 2024 for Tank TK-1390 (Notice of Registration Unit No. 9) located on the Fort Bend Regional Landfill in Needville, Texas, has been developed in general accordance with good engineering practices and requirements of 30 TAC 305.45(a)(8)(A).

4 June 2024

James M. McDade, P.E.
State of Texas Registration No. 115868
GSI Environmental Inc.
Texas Registration No. F-1198

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1.0 INTRODUCTION

This section summarizes the engineering aspects of the proposed permitted nonhazardous waste tank TK-1390 (referred to as the Tank), located on the Fort Bend Regional Landfill (FBRL) facility. The location of the Tank is shown on the facility plans (see Attachment IV.C). General information on the tank, including capacity and wastes managed, is summarized on Table IV of this permit application. A figure showing a general diagram of the Tank is provided in Figure IV.G.2.1 and additional detailed design of the secondary containment area is provided on Figure IV.G.2.2.

1.1 Basis for the Engineering Report

The Tank will be located in the northern portion of the FBRL facility in Fort Bend County, near Needville, Texas (see Attachment IV.C). This engineering report has been prepared to certify that the design for the tank meets applicable standards as specified in 30 TAC 305.45(a)(8). After approval of this permit application, the tank will be installed and tested to certify conformance with this engineering report, applicable regulations, and hazardous waste permit provisions. A tank installation certification report will be prepared and submitted to TCEQ prior to placing the new Tank into service.

1.2 Wastes to be Managed in the Tank

Wastes 1 through 10 listed on Table III.B of this permit application will be managed in the Tanks (see Table III.B of this permit application). These waste streams will be co-mingled, neutralized, and chemically adjusted in the eight sediment and elementary neutralization unit tanks (TK-1300 through TK-1370), before they are pumped through a series of filter bag units into TK-1390. The Tank will provide a working volume for charging the injection booster pump (P-1120) to prevent cavitation of the injection pump (P-1130) during injection into the UIC.

2.0 DESIGN AND INSTALLATION OF THE TANK

2.1 Design of the Tank

The Tank is designed in accordance with API Specification 12P for Fiberglass Reinforced Plastic Tanks or an equivalent standard. The Tank will be constructed of fiberglass and oriented vertically with an approximate height of 25 ft and an approximate diameter of 12 ft, corresponding to a maximum design capacity of 21,000 gallons (see Figure IV.G.2.1). Although not required, the foundation, structural support, seams, and connections of the Tank have been designed and materials selected in accordance with 40 CFR 264.192 in order to: i) possess sufficient structural strength, ii) be compatible with the non-hazardous materials managed, and iii) prevent corrosion so that the Tanks will be protected from collapse, rupture, or failure. The Tanks will be installed within secondary containment in the north portion of the FBRL facility (see Attachment IV.C).

The foundation for the Tank will be constructed of reinforced concrete capable of maintaining the load of the Tanks when filled. The foundation of the Tank will be resistant to pressure gradients above and below the system and is capable of preventing failure

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due to settlement, compression, and/or uplifts. The Tank will not be in contact with soil or water, will be located aboveground, and will not be subject to frost heave.

2.2 Installation of the Tank

The Tank and ancillary equipment will be installed in accordance with standard engineering practices for quality control and testing. The Tanks will be handled in a manner to prevent damage during installation. Ancillary piping will be constructed of polybutylene, high-density polypropylene, or equivalent with welded, flanged connections, and tie-downs designed to accommodate possible expansion and contraction. Following installation of the Tanks, a professional engineer registered in the State of Texas will review information regarding installation of the tanks, ancillary equipment, and piping for evidence of potential weld breaks, punctures, scrapes, cracks, corrosion, or other structural damage, and an Installation Certification Report will be submitted to the TCEQ.

3.0 CONTAINMENT AREA

Potential releases to the environment will be prevented by locating the Tank and ancillary equipment associated with the tank systems (i.e., piping, pumps, valves, etc.) within a concrete secondary containment area. The concrete secondary containment area may also include a chemically resistant sealant. As shown on Figure IV.G.2.2, the Tank will be located within the secondary containment area, which will have a containment volume of 49,613 gallons (see Table IV.G.2.1). This volume accounts for displacement of equipment within the secondary containment area, and that includes the volume of the tank below the height of the dike wall, concrete pad that the tank will be placed atop, plus an assumed additional 10% of the containment volume for miscellaneous pump bases, footers, piping, etc. The containment volume is sufficient to contain 110% of the volume of the Tank.

The base of the secondary containment will be sloped so that fluid flows to a trench sump. The tanks will be connected in series so that overflow in any one tank will be routed to the next tank or to the drainage sump. Precipitation, wash water, overflow, and/or potential leaks from the tanks will be removed from the sump by FBRL using various methods (pumps, vacuum truck, or equivalent) within 24 hours, or if FBRL demonstrates that it is not possible within 24-hrs, at the earliest practicable time.

4.0 OPERATION OF THE TANK

4.1 General Operating Requirements

The Tank will be operated in such a manner as to: i) not place waste or treatment reagents into the tank system that have the potential to rupture, leak, corrode, or otherwise cause failure of the Tank, their ancillary equipment, or the containment system, ii) provide spill prevention and overfill prevention controls in case of potential leaks, and iii) follow applicable provisions in the event of a spill or release in order to protect human health and the environment.

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Inspections

The Tanks will have sight glass level indicator and a high-level alarm, which will be subject to regular inspections. Readings from this indicator will be continuously monitored. All Tanks will be monitored routinely by operators at least once per day. The inspection schedule is provided in Table II.

Spill Response

Response activities will be conducted in the event of a release from the Tanks. In the event of a release from the Tank, FBRL will implement the following applicable procedures:

- *Flow Cessation*: Upon notification of a release, FBRL will immediately discontinue the flow of waste into the secondary containment area.
- *Waste Removal*: Within 24 hours of release, FBRL will remove spilled waste from the secondary containment system to be either disposed of on-site or stored in another permitted tank. If removal of waste cannot be completed in 24 hours (i.e., because of force majeure), FBRL will complete waste removal at the earliest possible time to prevent harm to human health or the environment.
- *Notifications*: All notifications regarding a release to the environment will be completed in accordance with the TCEQ's spills and discharges regulations.
- *Return to Service*: If the integrity of the Tank was not damaged, the Tank will be returned to service upon completion of necessary repairs, removal of waste, and adherence to applicable provisions. If the integrity of the tank was damaged, the tank will be repaired accordingly, and re-certified by a registered professional engineer in the State of Texas prior to returning to service in accordance with applicable provisions.

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GSI Job No. 6731

ATTACHMENT IV.G.2
ENGINEERING REPORT FOR TANK TK-1390

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

TABLE

GSI Job No. 6731

ATTACHMENT IV.G.2
ENGINEERING REPORT FOR TANK TK-1390

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

FIGURES

GSI Job No. 6731

ATTACHMENT IV.G.2
ENGINEERING REPORT FOR TANK TK-1390

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

I, James M. McDade, a registered professional engineer in the State of Texas, certify that the Engineering Report issued 20 February 2024 and revised 4 June 2024 for Tank TK-1390 (Notice of Registration Unit No. 9) located on the Fort Bend Regional Landfill in Needville, Texas, has been developed in general accordance with good engineering practices and requirements of 30 TAC 305.45(a)(8)(A).

4 June 2024

James M. McDade, P.E.
State of Texas Registration No. 115868
GSI Environmental Inc.
Texas Registration No. F-1198

1.0 INTRODUCTION

This section summarizes the engineering aspects of the proposed permitted nonhazardous waste tank TK-1390 (referred to as the Tank), located on the Fort Bend Regional Landfill (FBRL) facility. The location of the Tank is shown on the facility plans (see Attachment IV.C). General information on the tank, including capacity and wastes managed, is summarized on Table IV of this permit application. A figure showing a general diagram of the Tank is provided in Figure IV.G.2.1 and additional detailed design of the secondary containment area is provided on Figure IV.G.2.2.

1.1 Basis for the Engineering Report

The Tank will be located in the northern portion of the FBRL facility in Fort Bend County, near Needville, Texas (see Attachment IV.C). This engineering report has been prepared to certify that the design for the tank meets applicable standards as specified in 30 TAC 305.45(a)(8). After approval of this permit application, the tank will be installed and tested to certify conformance with this engineering report, applicable regulations, and hazardous waste permit provisions. A tank installation certification report will be prepared and submitted to TCEQ prior to placing the new Tank into service.

1.2 Wastes to be Managed in the Tank

Wastes 1 through 10 listed on Table III.B of this permit application will be managed in the Tanks (see Table III.B of this permit application). These waste streams will be co-mingled, neutralized, and chemically adjusted in the eight sediment and elementary neutralization unit tanks (TK-1300 through TK-1370), before they are pumped through a series of filter bag units into TK-1390. The Tank will provide a working volume for charging the injection booster pump (P-1120) to prevent cavitation of the injection pump (P-1130) during injection into the UIC.

2.0 DESIGN AND INSTALLATION OF THE TANK

2.1 Design of the Tank

The Tank is designed in accordance with API Specification 12P for Fiberglass Reinforced Plastic Tanks or an equivalent standard. The Tank will be constructed of fiberglass and oriented vertically with an approximate height of 25 ft and an approximate diameter of 12 ft, corresponding to a maximum design capacity of 21,000 gallons (see Figure IV.G.2.1). Although not required, the foundation, structural support, seams, and connections of the Tank have been designed and materials selected in accordance with 40 CFR 264.192 in order to: i) possess sufficient structural strength, ii) be compatible with the non-hazardous materials managed, and iii) prevent corrosion so that the Tanks will be protected from collapse, rupture, or failure. The Tanks will be installed within secondary containment in the north portion of the FBRL facility (see Attachment IV.C).

The foundation for the Tank will be constructed of reinforced concrete capable of maintaining the load of the Tanks when filled. The foundation of the Tank will be resistant to pressure gradients above and below the system and is capable of preventing failure

due to settlement, compression, and/or uplifts. The Tank will not be in contact with soil or water, will be located aboveground, and will not be subject to frost heave.

2.2 Installation of the Tank

The Tank and ancillary equipment will be installed in accordance with standard engineering practices for quality control and testing. The Tanks will be handled in a manner to prevent damage during installation. Ancillary piping will be constructed of polybutylene, high-density polypropylene, or equivalent with welded, flanged connections, and tie-downs designed to accommodate possible expansion and contraction. Following installation of the Tanks, a professional engineer registered in the State of Texas will review information regarding installation of the tanks, ancillary equipment, and piping for evidence of potential weld breaks, punctures, scrapes, cracks, corrosion, or other structural damage, and an Installation Certification Report will be submitted to the TCEQ.

3.0 CONTAINMENT AREA

Potential releases to the environment will be prevented by locating the Tank and ancillary equipment associated with the tank systems (i.e., piping, pumps, valves, etc.) within a concrete secondary containment area. The concrete secondary containment area may also include a chemically resistant sealant. As shown on Figure IV.G.2.2, the Tank will be located within the secondary containment area, which will have a containment volume of 49,613 gallons (see Table IV.G.2.1). This volume accounts for displacement of equipment within the secondary containment area, and that includes the volume of the tank below the height of the dike wall, concrete pad that the tank will be placed atop, plus an assumed additional 10% of the containment volume for miscellaneous pump bases, footers, piping, etc. The containment volume is sufficient to contain 110% of the volume of the Tank.

The base of the secondary containment will be sloped so that fluid flows to a trench sump. The tanks will be connected in series so that overflow in any one tank will be routed to the next tank or to the drainage sump. Precipitation, wash water, overflow, and/or potential leaks from the tanks will be removed from the sump by FBRL using various methods (pumps, vacuum truck, or equivalent) within 24 hours, or if FBRL demonstrates that it is not possible within 24-hrs, at the earliest practicable time.

4.0 OPERATION OF THE TANK

4.1 General Operating Requirements

The Tank will be operated in such a manner as to: i) not place waste or treatment reagents into the tank system that have the potential to rupture, leak, corrode, or otherwise cause failure of the Tank, their ancillary equipment, or the containment system, ii) provide spill prevention and overfill prevention controls in case of potential leaks, and iii) follow applicable provisions in the event of a spill or release in order to protect human health and the environment.

Inspections

The Tanks will have sight glass level indicator and a high-level alarm, which will be subject to regular inspections. Readings from this indicator will be continuously monitored. All Tanks will be monitored routinely by operators at least once per day. The inspection schedule is provided in Table II.

Spill Response

Response activities will be conducted in the event of a release from the Tanks. In the event of a release from the Tank, FBRL will implement the following applicable procedures:

- *Flow Cessation*: Upon notification of a release, FBRL will immediately discontinue the flow of waste into the secondary containment area.

- *Waste Removal*: Within 24 hours of release, FBRL will remove spilled waste from the secondary containment system to be either disposed of on-site or stored in another permitted tank. If removal of waste cannot be completed in 24 hours (i.e., because of force majeure), FBRL will complete waste removal at the earliest possible time to prevent harm to human health or the environment.

- *Notifications*: All notifications regarding a release to the environment will be completed in accordance with the TCEQ's spills and discharges regulations.

- *Return to Service*: If the integrity of the Tank was not damaged, the Tank will be returned to service upon completion of necessary repairs, removal of waste, and adherence to applicable provisions. If the integrity of the tank was damaged, the tank will be repaired accordingly, and re-certified by a registered professional engineer in the State of Texas prior to returning to service in accordance with applicable provisions.

ATTACHMENT IV.G.2
ENGINEERING REPORT FOR TANK TK-1390

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

TABLE

ATTACHMENT IV.G.2
ENGINEERING REPORT FOR TANK TK-1390

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

FIGURES

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T1: Attachment VII.A – Closure Plan

Contents

- Attachment VII.A: Closure Plan (redlined)
- Attachment VII.A: Closure Plan (unmarked)

GSI Job No. 6731

ATTACHMENT VII.A
CLOSURE PLAN

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

GSI Job No. 6731

ATTACHMENT VII.A
CLOSURE PLAN

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

TABLE OF CONTENTS

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1.0 INTRODUCTION

This plan addresses the closure of the nonhazardous waste management unit (i.e., Tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, TK-1370, and TK-1380) at the Fort Bend Regional Landfill (FBRL) facility. Closure refers to the process of permanently removing from service a waste management unit (i.e., individual tank) or an entire facility (i.e., the pre-injection unit consisting of all four tanks). This plan has been developed to comply with State requirements (30 TAC 335.8 and 30 TAC 350) requirements, as well as applicable technical guidance.

Units subject to this closure plan include the four tanks associated with the UIC deep well pre-injection unit (see Table VII.A). General closure standards applicable to all units are described in Section 2.0 of this closure plan. Procedures specific to each type of unit are described in Section 3.0.

2.0 GENERAL REQUIREMENTS

2.1 Closure Performance Standards

By implementing the closure procedures described below, individual waste management units or the entire facility will be closed in a manner that minimizes the need for care after closure and ensures that the unit(s) will not pose a future threat to human health and the environment.

To achieve this performance standard, closure will involve removal and disposal of wastes and waste residues from each unit, decontamination of the unit and associated equipment, and verification of decontamination. Attainment of closure standards will be documented in reports discussed further below.

2.2 Partial and Final Closures

Circumstances which may prompt closure of an individual waste management unit (i.e., partial closures) may include the following: i) modification to facility operations; or ii) the end of the useful service life of the unit.

Final facility closure will be implemented after all individual nonhazardous waste management units are taken out of service. Although it is anticipated that individual unit closures will occur periodically throughout the operating life of the facility, the closure cost estimate (Section 5.0) has been based on the assumption that the maximum inventory of nonhazardous wastes is present at the time of facility closure.

2.3 Schedule

Operation and subsequent closure of individual permitted units will depend upon actual FBRL waste management needs and requirements; therefore, no date has been set for the closures. An estimated schedule prepared in accordance with the time limits specified in TCEQ guidance and general timelines outlined in 40 CFR 264 is provided below. Note that this unit is not a hazardous waste management unit; therefore, 40 CFR 264 was only used as a general guideline

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for closure timelines. This schedule will be followed for unit closures as well as final facility closure.

Time from Final Waste Receipt	Closure Task Description
10 to 45 days prior to final waste receipt and initiation of closure activities	Provide written notice to TCEQ Region and Central Office of intent to close unit: • Unit Closure: Provide notice at least 10 days prior to closure activities [TCEQ, 2009a]. A schedule for confirmation sampling will either be included with the notice or will be submitted separately. • Final Facility Closure: Provide notice at least 45 days prior to final waste receipt [40 CFR 264.112(d)].
0 days	Discontinue receipt of waste and commence closure.
90 days	Remove and dispose of waste at authorized on-site or off-site facility [40 CFR 264.113(a)].
120 days	Complete decontamination process.
180 days	Complete closure activities [40 CFR 264.113(b)].
240 days	Submit closure certification to the TCEQ. Closure certification reports will be submitted for final facility closure [40 CFR 264.115] as well as for individual unit closures.

Although not anticipated, the closure process may require longer than the 90-day period listed above for waste inventory removal or the 180-day period prescribed for completion of closure activities. If a longer period is required, an extension request will be submitted to the TCEQ.

3.0 CLOSURE PROCEDURES

3.1 Tanks

Tank closures will be conducted in accordance with the Closure and Post-Closure Cost Estimates Technical Guideline No. 10 and using 40 CFR 264.197 as a general guideline. To ensure that closures are completed in accordance with the closure plan, the activities will be supervised by FBRL and reviewed by an independent professional engineer registered in the State of Texas.

Specific steps include the following:

- *Notification:* Notification of the intent to close the unit will be submitted to the TCEQ.
- *Waste Removal and Disposal:* At the time of closure, receipt of nonhazardous waste will be discontinued. The contents of the tank(s) and associated piping will be removed and the system flushed of remaining waste materials. Waste fluids remaining in the tanks and appurtenances will be removed for disposal either by: i) pumping to a permitted on-site injection well, or ii) transport to a permitted off-site disposal facility. Any waste solids collected in the tank(s) will be removed. These solids may be: i) treated on-site, if needed, and disposed in the on-site municipal solid waste landfill, or ii) sent off-site for treatment, if necessary, and authorized disposal.

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- *Decontamination:* On the basis of operating plans at the time of closure, equipment for the tank(s) will be managed in one of the following ways: i) decontamination and retention in service; ii) decontamination, demolition, and salvage; or iii) demolition and disposal. Various components of the tank system may be managed in different ways (e.g., some items may be salvaged and others disposed). The tank(s), piping, and appurtenances will be decontaminated by steam cleaning, pressure washing, or other appropriate methods. Pumps, piping, and other mechanical equipment will be flushed and salvaged or left in place. The decontamination process will typically involve a triple-rinse of the tanks and appurtenances using water or another solvent, if necessary.

  Equipment used during closure operations will be decontaminated by pressure washing, steam cleaning, or other appropriate methods.

  The rinsate generated during the decontamination process may be disposed in a permitted on-site injection well. Wastes or waste residues that cannot be managed on-site will be disposed at an authorized off-site facility. Wastes (e.g., solids) to be land disposed will be treated as necessary.

- *Verification of Decontamination:* At the end of the decontamination process, rinsate samples will be collected. The samples will be analyzed and results evaluated as described in Section 4.0 below. The decontamination process will be repeated as needed until the verification samples meet regulatory requirements. As noted in Section 2.3 (Schedule), the TCEQ Regional Office will be provided initial notice of the closure activities including verification sampling.

- *Inspection:* After completion of the tank cleaning process, the tank area will be visually inspected for evidence of contamination or cracks or gaps that could constitute pathways for release of hazardous waste or waste constituents to the environment. Facility operating records will be reviewed to determine whether releases occurred during the operating life of the unit. Evidence of a potential release will consist of records in the facility operating record or other visual evidence that a spill has occurred and has not been cleaned up in accordance with applicable regulatory or permit requirements. If evidence of a potential release is identified, FBRL will conduct follow-up actions in accordance with 30 TAC 327 or 30 TAC 350, as appropriate.

- *Closure Certification:* A report describing the closure activities will be prepared and submitted to the TCEQ in accordance with the schedule in Section 2.3.

4.0 ATTAINMENT OF CLOSURE STANDARDS

Samples, such as rinsate samples, will be collected to verify whether the tank area has been adequately decontaminated during the closure process. Because of the potentially broad spectrum of wastes managed over the lifetime of a unit at FBRL, indicator parameters have been selected to evaluate the adequacy of decontamination. Therefore, rinsate samples will be analyzed for the following: i) pH (if relevant to the material stored); ii) RCRA metals (if relevant to the material stored); iii) semivolatile organics (if relevant to the material stored); iv) volatile organics (if relevant to the material stored); and v) Total Petroleum Hydrocarbons (TPH) by Method TX1005. TPH by Method TX1005 will be used to provide concentrations of total hydrocarbon boiling point ranges, typically between C6 and C28. These ranges correspond to

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TCEQ-calculated, risk-based criteria which will be used to determine whether the closure standard has been met.

Decontamination will be considered complete when no visible evidence of contamination is observed and when the results from verification sampling and analysis indicate that concentrations of applicable chemicals of concern (COCs) are below Remedy Standard A Protective Concentration Levels (PCLs) as specified in the Texas Risk Reduction Program rules (TRRP; 30 TAC 350). Institutional controls such as deed recordation will be implemented as required under TRRP in the event that concentrations of COCs are evaluated with respect to Standard A commercial/industrial PCLs, rather than residential PCLs.

5.0 CLOSURE COST ESTIMATES

5.1 Basis for Closure Cost Estimates

For the purpose of preparing financial assurance documentation, cost estimates have been prepared for tanks on the FBRL facility (see Tables VII.A through VII.C). Third-party unit rates for labor and equipment, transportation, waste disposal, laboratory analyses, and certification are provided on Table VII.B. Closure costs for all units are summarized on Table VII.C. Calculations and assumptions for the cost estimates are provided below.

5.2 Assumptions

In accordance with TCEQ guidance (e.g., TCEQ, 2011a and 2017), closure costs have been estimated based on a scenario of facility abandonment at full permitted capacity (i.e., a scenario that would make closure the most expensive). This scenario assumes that no operable on-site equipment is available, all wastes are shipped and disposed off-site, and that the closure activities are conducted by a third party. Unit rates for closure activities, including labor and equipment for waste removal, transport, and disposal, have been obtained from contractors for such work (see Table VII.B and Attachment VII.B). Conservative assumptions used for preparing the closure cost estimates are as follows.

5.2.1 Tanks

For closure cost estimates, tanks have been assumed to be storing the maximum permitted volume of waste at the time of closure. Of the waste volume in the tank, 98% is assumed to be liquid and 2% is assumed to be sludge; however, the sludge volume is assumed to be no greater than 500 gallons. The volume of decontamination rinsate is equal to 5% of the tank volume. Liquid tank contents and decontamination rinsate will be transported off-site for disposal in a permitted injection well and sludge will be transported off-site for stabilization and disposal in a permitted landfill. Any other assumptions used for the calculation of closure costs are stated in the notes under Table VII.B.

6.0 REFERENCES

TCEQ, 2009a, TRRP Compatibility with RCRA, RG-366/TRRP-03, Revised March 2009.

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TCEQ, 2011a, Closure of Waste-Management Units Subject to TRRP, RG-366/TRRP-2A, Remediation Division, July 2011.

TCEQ, 2011b, TCEQ Part B Application Form TCEQ-00376, Revised 18 August 2011.

TCEQ, 2017, Draft Technical Guideline No. 10, Topic: Closure and Post-Closure Cost Estimates, Issued 12 October 1984, Revised 7 December 2017.

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GSI Job No. 6731

ATTACHMENT VII.A
CLOSURE PLAN

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

ATTACHMENT VII.A
CLOSURE PLAN

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP, Needville, Texas

TABLE OF CONTENTS

1.0 INTRODUCTION

This plan addresses the closure of the nonhazardous waste management unit (i.e., Tanks TK-1300, TK-1310, TK-1320, TK-1330, TK-1340, TK-1350, TK-1360, TK-1370, and TK-1380) at the Fort Bend Regional Landfill (FBRL) facility. Closure refers to the process of permanently removing from service a waste management unit (i.e., individual tank) or an entire facility (i.e., the pre-injection unit consisting of all four tanks). This plan has been developed to comply with State requirements (30 TAC 335.8 and 30 TAC 350) requirements, as well as applicable technical guidance.

Units subject to this closure plan include the four tanks associated with the UIC deep well pre-injection unit (see Table VII.A). General closure standards applicable to all units are described in Section 2.0 of this closure plan. Procedures specific to each type of unit are described in Section 3.0.

2.0 GENERAL REQUIREMENTS

2.1 Closure Performance Standards

By implementing the closure procedures described below, individual waste management units or the entire facility will be closed in a manner that minimizes the need for care after closure and ensures that the unit(s) will not pose a future threat to human health and the environment.

To achieve this performance standard, closure will involve removal and disposal of wastes and waste residues from each unit, decontamination of the unit and associated equipment, and verification of decontamination. Attainment of closure standards will be documented in reports discussed further below.

2.2 Partial and Final Closures

Circumstances which may prompt closure of an individual waste management unit (i.e., partial closures) may include the following: i) modification to facility operations; or ii) the end of the useful service life of the unit.

Final facility closure will be implemented after all individual nonhazardous waste management units are taken out of service. Although it is anticipated that individual unit closures will occur periodically throughout the operating life of the facility, the closure cost estimate (Section 5.0) has been based on the assumption that the maximum inventory of nonhazardous wastes is present at the time of facility closure.

2.3 Schedule

Operation and subsequent closure of individual permitted units will depend upon actual FBRL waste management needs and requirements; therefore, no date has been set for the closures. An estimated schedule prepared in accordance with the time limits specified in TCEQ guidance and general timelines outlined in 40 CFR 264 is provided below. Note that this unit is not a hazardous waste management unit; therefore, 40 CFR 264 was only used as a general guideline

for closure timelines. This schedule will be followed for unit closures as well as final facility closure.

Time from Final Waste Receipt	Closure Task Description
10 to 45 days prior to final waste receipt and initiation of closure activities	Provide written notice to TCEQ Region and Central Office of intent to close unit: • Unit Closure: Provide notice at least 10 days prior to closure activities [TCEQ, 2009a]. A schedule for confirmation sampling will either be included with the notice or will be submitted separately. • Final Facility Closure: Provide notice at least 45 days prior to final waste receipt [40 CFR 264.112(d)].
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3.0 CLOSURE PROCEDURES

3.1 Tanks

Tank closures will be conducted in accordance with the Closure and Post-Closure Cost Estimates Technical Guideline No. 10 and using 40 CFR 264.197 as a general guideline. To ensure that closures are completed in accordance with the closure plan, the activities will be supervised by FBRL and reviewed by an independent professional engineer registered in the State of Texas.

Specific steps include the following:

- *Notification:* Notification of the intent to close the unit will be submitted to the TCEQ.
- *Waste Removal and Disposal:* At the time of closure, receipt of nonhazardous waste will be discontinued. The contents of the tank(s) and associated piping will be removed and the system flushed of remaining waste materials. Waste fluids remaining in the tanks and appurtenances will be removed for disposal either by: i) pumping to a permitted on-site injection well, or ii) transport to a permitted off-site disposal facility. Any waste solids collected in the tank(s) will be removed. These solids may be: i) treated on-site, if needed, and disposed in the on-site municipal solid waste landfill, or ii) sent off-site for treatment, if necessary, and authorized disposal.

- *Decontamination:* On the basis of operating plans at the time of closure, equipment for the tank(s) will be managed in one of the following ways: i) decontamination and retention in service; ii) decontamination, demolition, and salvage; or iii) demolition and disposal. Various components of the tank system may be managed in different ways (e.g., some items may be salvaged and others disposed). The tank(s), piping, and appurtenances will be decontaminated by steam cleaning, pressure washing, or other appropriate methods. Pumps, piping, and other mechanical equipment will be flushed and salvaged or left in place. The decontamination process will typically involve a triple-rinse of the tanks and appurtenances using water or another solvent, if necessary.

  Equipment used during closure operations will be decontaminated by pressure washing, steam cleaning, or other appropriate methods.

  The rinsate generated during the decontamination process may be disposed in a permitted on-site injection well. Wastes or waste residues that cannot be managed on-site will be disposed at an authorized off-site facility. Wastes (e.g., solids) to be land disposed will be treated as necessary.

- *Verification of Decontamination:* At the end of the decontamination process, rinsate samples will be collected. The samples will be analyzed and results evaluated as described in Section 4.0 below. The decontamination process will be repeated as needed until the verification samples meet regulatory requirements. As noted in Section 2.3 (Schedule), the TCEQ Regional Office will be provided initial notice of the closure activities including verification sampling.

- *Inspection:* After completion of the tank cleaning process, the tank area will be visually inspected for evidence of contamination or cracks or gaps that could constitute pathways for release of hazardous waste or waste constituents to the environment. Facility operating records will be reviewed to determine whether releases occurred during the operating life of the unit. Evidence of a potential release will consist of records in the facility operating record or other visual evidence that a spill has occurred and has not been cleaned up in accordance with applicable regulatory or permit requirements. If evidence of a potential release is identified, FBRL will conduct follow-up actions in accordance with 30 TAC 327 or 30 TAC 350, as appropriate.

- *Closure Certification:* A report describing the closure activities will be prepared and submitted to the TCEQ in accordance with the schedule in Section 2.3.

4.0 ATTAINMENT OF CLOSURE STANDARDS

Samples, such as rinsate samples, will be collected to verify whether the tank area has been adequately decontaminated during the closure process. Because of the potentially broad spectrum of wastes managed over the lifetime of a unit at FBRL, indicator parameters have been selected to evaluate the adequacy of decontamination. Therefore, rinsate samples will be analyzed for the following: i) pH (if relevant to the material stored); ii) RCRA metals (if relevant to the material stored); iii) semivolatile organics (if relevant to the material stored); iv) volatile organics (if relevant to the material stored); and v) Total Petroleum Hydrocarbons (TPH) by Method TX1005. TPH by Method TX1005 will be used to provide concentrations of total hydrocarbon boiling point ranges, typically between C6 and C28. These ranges correspond to

TCEQ-calculated, risk-based criteria which will be used to determine whether the closure standard has been met.

Decontamination will be considered complete when no visible evidence of contamination is observed and when the results from verification sampling and analysis indicate that concentrations of applicable chemicals of concern (COCs) are below Remedy Standard A Protective Concentration Levels (PCLs) as specified in the Texas Risk Reduction Program rules (TRRP; 30 TAC 350). Institutional controls such as deed recordation will be implemented as required under TRRP in the event that concentrations of COCs are evaluated with respect to Standard A commercial/industrial PCLs, rather than residential PCLs.

5.0 CLOSURE COST ESTIMATES

5.1 Basis for Closure Cost Estimates

For the purpose of preparing financial assurance documentation, cost estimates have been prepared for tanks on the FBRL facility (see Tables VII.A through VII.C). Third-party unit rates for labor and equipment, transportation, waste disposal, laboratory analyses, and certification are provided on Table VII.B. Closure costs for all units are summarized on Table VII.C. Calculations and assumptions for the cost estimates are provided below.

5.2 Assumptions

In accordance with TCEQ guidance (e.g., TCEQ, 2011a and 2017), closure costs have been estimated based on a scenario of facility abandonment at full permitted capacity (i.e., a scenario that would make closure the most expensive). This scenario assumes that no operable on-site equipment is available, all wastes are shipped and disposed off-site, and that the closure activities are conducted by a third party. Unit rates for closure activities, including labor and equipment for waste removal, transport, and disposal, have been obtained from contractors for such work (see Table VII.B and Attachment VII.B). Conservative assumptions used for preparing the closure cost estimates are as follows.

5.2.1 Tanks

For closure cost estimates, tanks have been assumed to be storing the maximum permitted volume of waste at the time of closure. Of the waste volume in the tank, 98% is assumed to be liquid and 2% is assumed to be sludge; however, the sludge volume is assumed to be no greater than 500 gallons. The volume of decontamination rinsate is equal to 5% of the tank volume. Liquid tank contents and decontamination rinsate will be transported off-site for disposal in a permitted injection well and sludge will be transported off-site for stabilization and disposal in a permitted landfill. Any other assumptions used for the calculation of closure costs are stated in the notes under Table VII.B.

6.0 REFERENCES

TCEQ, 2009a, TRRP Compatibility with RCRA, RG-366/TRRP-03, Revised March 2009.

TCEQ, 2011a, Closure of Waste-Management Units Subject to TRRP, RG-366/TRRP-2A, Remediation Division, July 2011.

TCEQ, 2011b, TCEQ Part B Application Form TCEQ-00376, Revised 18 August 2011.

TCEQ, 2017, Draft Technical Guideline No. 10, Topic: Closure and Post-Closure Cost Estimates, Issued 12 October 1984, Revised 7 December 2017.

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T1: Attachment VII.B – Closure Cost Quotes (fly pages only)

Contents

Deleted: Issued: 20 February 2024¶

ATTACHMENT VII.B: CLOSURE COST CONTRACTOR QUOTES

Fort Bend Regional Landfill, LP
Needville, Texas

ATTACHMENTS

Attachment 1 IKON Tank Cleaning Quote

Deleted: Issued: 20 February 2024¶

ATTACHMENT VII.B: CLOSURE COST CONTRACTOR QUOTES

Fort Bend Regional Landfill, LP
Needville, Texas

ATTACHMENTS

Attachment 2 CIMA Tank and Secondary Cleaning and Dismantling Quote

Deleted: Issued: 20 February 2024¶

ATTACHMENT VII.B: CLOSURE COST CONTRACTOR QUOTES

Fort Bend Regional Landfill, LP
Needville, Texas

ATTACHMENTS

Attachment 3 RL Doskocil Tank and Liner Demolition Quote

Deleted: Issued: 20 February 2024¶

ATTACHMENT VII.B: CLOSURE COST CONTRACTOR QUOTES

Fort Bend Regional Landfill, LP
Needville, Texas

ATTACHMENTS

Attachment 4 RS Means Pressure Washing Cost Estimate

Deleted: Issued: 20 February 2024¶

ATTACHMENT VII.B: CLOSURE COST CONTRACTOR QUOTES

Fort Bend Regional Landfill, LP
Needville, Texas

ATTACHMENTS

Attachment 5 Pace Labs Rinsate Analysis Quote

ATTACHMENT VII.B: CLOSURE COST CONTRACTOR QUOTES

Fort Bend Regional Landfill, LP

Needville, Texas

ATTACHMENTS

Attachment 1 IKON Tank Cleaning Quote

ATTACHMENT VII.B: CLOSURE COST CONTRACTOR QUOTES

Fort Bend Regional Landfill, LP

Needville, Texas

ATTACHMENTS

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ATTACHMENT VII.B: CLOSURE COST CONTRACTOR QUOTES

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Needville, Texas

ATTACHMENTS

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Needville, Texas

ATTACHMENTS

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Fort Bend Regional Landfill, LP

Needville, Texas

ATTACHMENTS

Attachment 5 Pace Labs Rinsate Analysis Quote

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T2: Core Data Form (page 2)

Contents

( ) -		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

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

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

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

Fort Bend Regional Landfill

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	14115 Davis Estate Road							
	City	Needville	**State**	TX	**ZIP**	77461	**ZIP + 4**	
24. County	Fort Bend							

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

25. Description to Physical Location:					
26. Nearest City			**State**	**Nearest ZIP Code**	
Needville			TX	77461	

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	23	46	-95	43	29

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)
4953		562212	562219

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

Municipal solid waste landfill operation

34. Mailing Address:	**14115 Davis Estate Rd**							
	(979) 793-4430							
	City	**Needville**	**State**	**TX**	**ZIP**	**77461**	**ZIP + 4**	

35. E-Mail Address:	[redacted]		
36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*	
(979) 793-4430		( ) -	

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.

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SECTION III: Regulated Entity Information

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	City	Needville	**State**	TX	**ZIP**	77461	**ZIP + 4**	
24. County	Fort Bend							

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

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**
Needville			TX		77461

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
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Municipal solid waste landfill operation

34. Mailing Address:	**14115 Davis Estate Rd**							
	(979) 793-4430							
	City	**Needville**	**State**	**TX**	**ZIP**	**77461**	**ZIP + 4**	
35. E-Mail Address:	[redacted]							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(979) 793-4430		( ) -

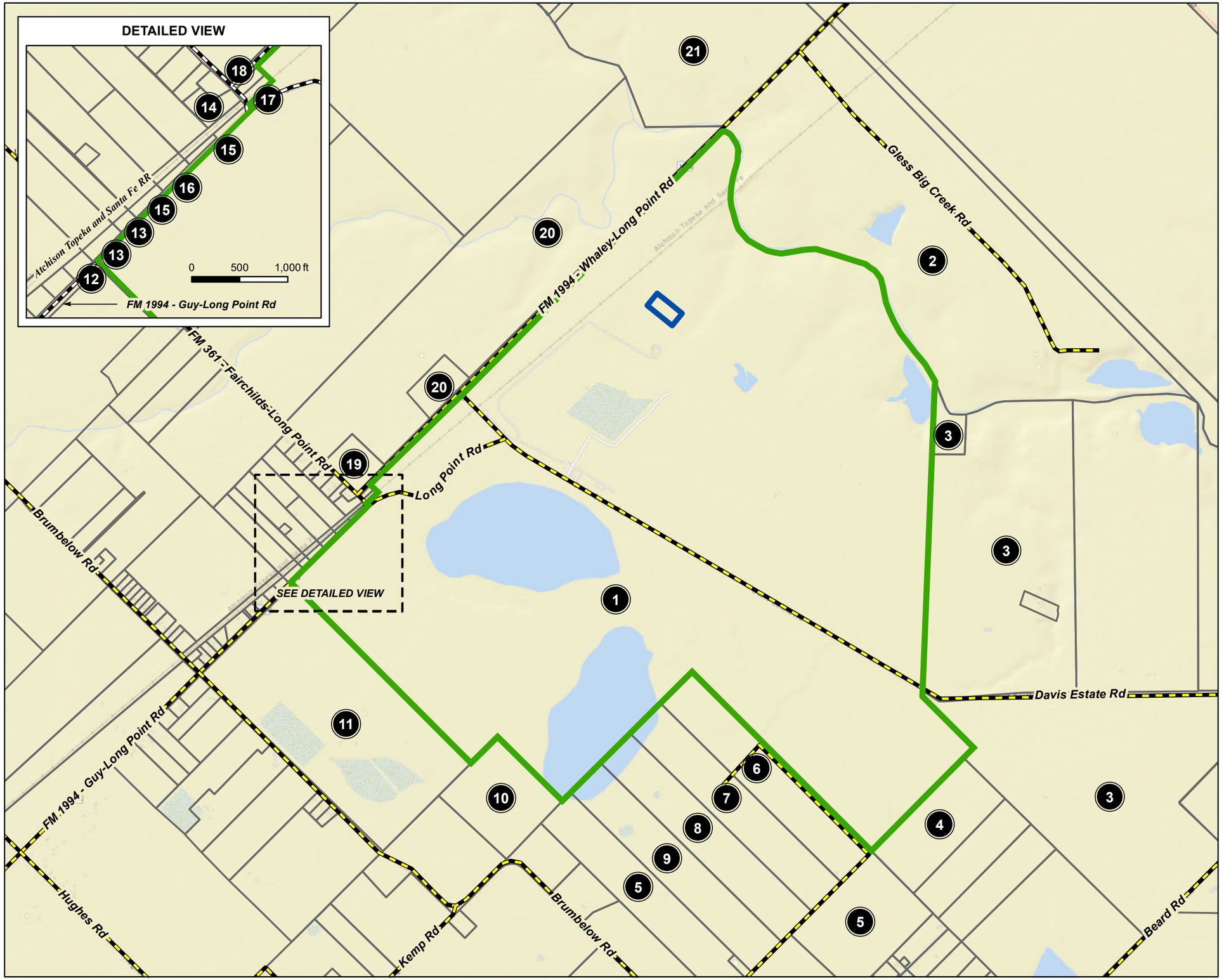
39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T3: Attachment I.L.2 – Adjacent Landowner Map



LEGEND

- Property Owner *(see Attachment I.L.1)*
- UIC Waste Management Area
- Fort Bend Regional Landfill Property Boundary
- Adjacent Property Tracts
- Roadway

Notes

1. Property boundaries from Fort Bend Central Appraisal District property parcel map.
2. Background Imagery: ESRI World Street Map: Sources: Esri, (c) OpenStreetMap contributors, the GIS User Community, et al.

Feet
0 1,000 2,000

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N

GSI ENVIRONMENTAL

ADJACENT LANDOWNERS MAP

Industrial Nonhazardous Waste Permit Application
Fort Bend Regional Landfill, LP
Needville, Texas

GSI Job No.	6731	Drawn By:	CDM
Issued:	20-Feb-2024	Chk'd By:	LMR/JSC
Map ID:	**001_02**	Appv'd By:	JMM

ATTACHMENT I.L.2

GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T6: Attachment IV.B.2 – Process and Instrumentation Diagrams

ADVANTEK WMS

NON-HAZARDOUS DISPOSAL WELL

COVER PAGE & DRAWING INDEX

PIPING

DRAWING INDEX		
DRAWING NO	DRAWING DESCRIPTION	REV NO
ADV003JTAM-ME-00-001	COVER PAGE AND DRAWING INDEX	–
ADV003JTAM-ME-30-001	LEGEND AND SYMBOLS	A
ADV003JTAM-ME-30-002	LEGEND AND SYMBOLS	A
ADV003JTAM-ME-30-100	OFFLOAD AREA & STORAGE TANKS PFD	C
ADV003JTAM-ME-30-101	PUMP & SURFACE EQUIPMENT PFD	C
ADV003JTAM-ME-30-102	BLOCK FLOW DIAGRAM	C

STATE OF TEXAS
OSCAR ALEJANDRO ALDAMA
69993
LICENSED
PROFESSIONAL ENGINEER
1-8-2024

FORT BEND COUNTY, TEXAS

J|TAM ENGINEERING

JANUARY 2024

ISSUED FOR PERMITTING

IDENTIFICATION LETTERS
(INSIDE INSTRUMENT BALLOONS)

AC	ANALYSIS CONTROLLER
AE	ANALYSIS ELEMENT
AI	ANALYSIS INDICATOR
AIC	ANALYSIS INDICATING CONTROLLER
AP	ANALYSIS POINT
BI	BTU INDICATOR
DE	DENSITY (OR SPECIFIC GRAVITY) ELEMENT
DR	DENSITY (OR SPECIFIC GRAVITY) RECORDER
DT	DENSITY (OR SPECIFIC GRAVITY) TRANSMITTER
EA	ELECTRICAL LOSS OF LOAD
FA•	FLOW ALARM
FC	FLOW CONDITIONER
FCD	FLOW CONTROLLER
FCV	FLOW CONTROL VALVE (SELF-CONTAINED)
FE	FLOW ELEMENT
FG	SIGHT GLASS FLOW INDICATOR
FI	FLOW INDICATOR
FIC	FLOW INDICATING CONTROLLER
FIS	FLOW INDICATING SWITCH
FIT	FLOW INDICATING TRANSMITTER
FHC	FLOW MANUAL CONTROL
FQ	FLOW TOTALIZER
FQI	FLOW TOTALIZING INDICATOR
FQR	FLOW TOTALIZING RECORDER
FR	FLOW RECORDER
FRC	FLOW RECORDING CONTROLLER
FS•	FLOW SWITCH
FT	FLOW TRANSMITTER (NOT PdT)
FV	FLOW CONTROL VALVE
FY	FLOW COMPUTER OR RELAY
GT	DENSITY-GRAVITY INSTRUMENT
HC	HAND CONTROL
HCV	HAND CONTROL VALVE
HIC	HAND INDICATING CONTROLLER
HS	HAND SWITCH
HSC	HAND SWITCH CLOSE
HSO	HAND SWITCH OPEN
HV	HAND VALVE
LA•	LEVEL ALARM
LC	LEVEL CONTROLLER
LCV	LEVEL CONTROL VALVE (SELF-CONTAINED)
LG	LEVEL GAUGE GLASS
LHC	LEVEL MANUAL CONTROL
LI	LEVEL INDICATOR (OTHER THAN LG)
LIC	LEVEL INDICATING CONTROLLER
LR	LEVEL RECORDER
LS•	LEVEL SWITCH
LT	LEVEL TRANSMITTER
LV	LEVEL CONTROL VALVE
LY	LEVEL RELAY
MA•	MOISTURE ALARM
ME	MOISTURE ELEMENT
MC	MOISTURE CONTROLLER
MNT	MOISTURE ANALYZER / TRANSMITTER
MOV	MOTOR OPERATED VALVE
MR	MOISTURE RECORDER
MS•	MOISTURE SWITCH
MT	MOISTURE TRANSMITTER
PA•	PRESSURE ALARM
PC	PRESSURE CONTROLLER
PCV	PRESSURE CONTROL VALVE (SELF-CONTAINED)
PDI	PRESSURE DIFFERENTIAL INDICATOR
PDIC	PRESSURE DIFFERENTIAL INDICATING CONTROLLER
PDR	PRESSURE DIFFERENTIAL RECORDER
PDIS	PRESSURE DIFFERENTIAL INDICATING SWITCH
PDIT	PRESSURE DIFFERENTIAL INDICATING TRANSMITTER
PDS•	PRESSURE DIFFERENTIAL SWITCH
PDT	PRESSURE DIFFERENTIAL TRANSMITTER
PHC	PRESSURE MANUAL CONTROL
PI	PRESSURE INDICATOR
PIC	PRESSURE INDICATING CONTROLLER
PIT	PRESSURE INDICATING TRANSMITTER
PR	PRESSURE RECORDER
PRC	PRESSURE RECORDING CONTROLLER
PS•	PRESSURE SWITCH
PSE	RUPTURE DISK
PSV	PRESSURE SAFETY / RELIEF VALVE
PT	PRESSURE TRANSMITTER
PV	PRESSURE CONTROL VALVE
PY	PRESSURE RELAY
RO	RESTRICTION ORIFICE
SC	SPEED CONTROL
SI	TACHOMETER
SIC	SPEED INDICATING CONTROLLER
SS•	SPEED SWITCH
ST	SPEED TRANSMITTER
SY	SPEED RELAY
TA•	TEMPERATURE ALARM
TC	TEMPERATURE CONTROLLER
TCV	TEMPERATURE CONTROL VALVE (SELF-CONTAINED)
TE	TEMPERATURE ELEMENT (W/THERMOWELL)
THC	TEMPERATURE MANUAL CONTROL
TI	TEMPERATURE INDICATOR
TIC	TEMPERATURE INDICATING CONTROLLER
TIT	TEMPERATURE INDICATING TRANSMITTER
TR	TEMPERATURE RECORDER
TS•	TEMPERATURE SWITCH
TT	TEMPERATURE TRANSMITTER
TV	TEMPERATURE CONTROL VALVE OR LOUVER
TW	THERMOWELL
UE	ULTRAVIOLET ELEMENT
UIC	ANTI-SURGE INDICATING CONTROLLER
VA•	VIBRATION ALARM
VS	VIBRATION SWITCH
XA•	ANNUNCIATOR POINT
XI	PIG PASSAGE INDICATOR
XIS	PIG PASSAGE INDICATING SWITCH
ZIC	POSITION INDICATOR (CLOSED)
ZIO	POSITION INDICATOR (OPEN)
ZLC	POSITION INDICATOR LAMP (CLOSED)
ZLO	POSITION INDICATOR LAMP (OPEN)
ZSC	POSITION INDICATOR SWITCH (CLOSED)
ZSO	POSITION INDICATOR SWITCH (OPEN)
ZT	POSITION TRANSMITTER

• ALARMS, SWITCHES, AND ANNUNCIATORS MAY HAVE SUFFIX LETTERS AS FOLLOWS:

L	LOW	DENOTES ALARM ONLY
LL	LOW LOW	DENOTES SHUTDOWN
H	HIGH	DENOTES ALARM ONLY
HH	HIGH HIGH	DENOTES SHUTDOWN

NOTE: UNLESS SPECIFICALLY INDICATED OTHERWISE, SOLENOID VALVES, SPRING RETURN SERVO VALVES, AND SIMILAR DEVICES ARE SHOWN IN THE "SHELF" OR NON-ENERGIZED CONDITION. DIRECTION OF SOLENOID ARROW SHOWS DE-ENERGIZED PORT-PORT PATH.

NOTE: IDENTIFICATION OF INSTRUMENTS NOT COVERED IN THE LISTINGS ABOVE SHALL CONFORM TO ANSI/ISA S5.1 "INSTRUMENTATION SYMBOLS AND IDENTIFICATION".

INSTRUMENT SIGNAL LINES

- INSTRUMENT SUPPLY OR PROCESS CONNECTION
- PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL
- HYDRAULIC SIGNAL
- CAPILLARY TUBE
- FIBER OPTIC
- "DATA LINK" COMMUNICATION
- FIELDBUS
- PROCESS (MAJOR)
- SECONDARY (MINOR)
- FUTURE
- EXIST
- TO/FROM XXX / DWG NO / SERVICE — CONTINUATION LEADER
- SKID BOUNDARY

INSTRUMENT BALLOONS

- LOCAL INSTRUMENT
- INSTRUMENT MOUNTED ON EQUIPMENT CONTROL PANEL
- INSTRUMENT MOUNTED BEHIND STATION CONTROL PANEL
- INSTRUMENT MOUNTED BEHIND EQUIPMENT CONTROL PANEL
- INSTRUMENT FOR TWO FUNCTIONS OR TWO MEASURED VARIABLES
- N — UNIT PLC FUNCTION (NUMBER INDICATES WHICH UNIT)
- STATION PLC FUNCTION
- SHARED DISPLAY, SHARED DCS CONTROL
- INTERLOCK AT PLC

RELAY FUNCTION DESIGNATIONS

- Σ — TOTALIZE
- DEV — DEVICE
- < — LOW SIGNAL SELECT
- Σ/n — AVERAGE
- > — HIGH SIGNAL SELECT
- SEL — SELECT

VALVE SYMBOLS

- GATE VALVE
- BALL VALVE
- PLUG VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- NEEDLE VALVE
- CHOKE VALVE
- ANGLE CHOKE VALVE
- GAUGE VALVE
- 4-WAY VALVE
- 3-WAY VALVE
- ANGLE VALVE
- CHECK VALVE (SWING CHECK TYPE)
- CHECK VALVE (PISTON TYPE)
- CHECK VALVE (SAFETY)
- SOLENOID VALVE
- SOLENOID VALVE W/MANUAL RESET
- PRESSURE REGULATOR (SELF-CONTAINED)
- PRESSURE SAFETY/RELIEF VALVE
- PRESSURE/VACUUM RELIEF VALVE

VALVE ACTUATORS

- DIAPHRAGM
- DOUBLE DIAPHRAGM CYLINDER
- CYLINDER OPERATED VALVE
- S — SOLENOID
- PRESSURE BALANCED
- M — MOTOR OPERATED VALVE
- E/H — ELECTRO HYDRAULIC

IN-LINE INSTRUMENTS

- FLOW ORIFICE (VALVES INFERRED)
- VENTURI TUBE OR FLOW NOZZLE
- TURBINE OR PROPELLER TYPE
- CLAMP-ON ULTRASONIC FLOW METER
- ULTRASONIC FLOW METER
- CORIOLIS METER
- POSITIVE DISPLACEMENT METER
- INLINE FLOW METER OTHER THAN ROTAMETER
- ROTAMETER
- M — MAGNETIC FLOW METER
- P — INSTRUMENT PURGE

PIPING SYMBOLS

- ECCENTRIC REDUCER
- CONCENTRIC REDUCER
- SWAGE REDUCER
- SPECTACLE BLIND (OPEN)
- SPECTACLE BLIND (CLOSED)
- PADDLE BLIND (OPEN)
- PADDLE BLIND (CLOSED)
- PADDLE SPACER
- WELD CAP
- THREADED OR SOCKET WELD CAP
- THREADED PLUG
- BLIND FLANGE
- S OR — Y - TYPE STRAINER
- HOSE CONNECTION
- FLEXIBLE HOSE
- EXPANSION JOINT
- OPEN DRAIN
- C — CLOSED DRAIN
- STARTUP CONE STRAINER
- BARRED TEE

PIPING SYMBOLS

- FLAT STRAINER
- PIPE UNION
- FLANGE CONNECTION
- ID — FLANGE INSULATING KIT
- DUPLEX STRAINER
- T — STEAM TRAP
- FLAME ARRESTOR
- INLET AIR FILTER
- RAIN CAP
- VENT TO ATMOSPHERE
- BLEED RING
- BASKET STRAINER/FILTER
- FLOW CONDITIONER
- ET — INSULATION

MISCELLANEOUS PIPING SYMBOLS

- SP — SPECIALTY ITEM
- 150 | 600 — SPEC BREAK
- TP — TIE-POINT
- PULSATION DAMPENER

VALVE TAG IDENTIFICATION

6" A 2 R F

- 6" — VALVE SIZE
- A — PIPING CLASS
- 2 — VALVE TYPE
- R — VALVE END TYPE
- F — SPECIAL VALVE TYPE

VALVE TYPES

1	GATE	6	NEEDLE
2	BALL	7	BUTTERFLY
3	PLUG	8	MULTIPORT
4	GLOBE	9	GAUGE
5	CHECK		

VALVE END TYPES

F	FLAT FACE	U	UNION
G	GRAYLOC	V	VICTUALIC COUPLING
J	RING TYPE JOINT	W	WELDED
R	RAISED FACE	X	SPECIAL
S	SCREWED	Z	SOCKET WELD

SPECIAL VALVE TYPES

F	FULL PORT	S	SHORT PATTERN
N	NACE	V	VENTURI
P	PISTON	W	WAFER
R	REDUCED PORT	X	SPECIAL, e.g. 3-WAY

LINE IDENTIFICATION

4"-CR-1000-A1-1 1/2" ET

- 4" — LINE SIZE
- CR — LINE SERVICE DESIGNATION
- 1000 — UNIQUE LINE NUMBER
- A1 — PIPING SPECIFICATION
- 1 1/2" — THICKNESS
- ET — INSULATION CLASSIFICATION

PIPING CLASS

A1 - ANSI 150	D1 - ANSI 600
B1 - ANSI 300	E1 - ANSI 900

LINE SERVICE DESIGNATIONS

A	PROCESS AIR	HF	HYDROFLOURIC ACID
AG	ACID GAS	HO	HEAVY OIL
AM	AMINE	HS	H2S
BF	BOILER FEED WATER	IA	INSTRUMENT AIR
BIT	BITUMEN	JF	JET FUEL
BRD	BRINE DISPOSAL	K	KEROSENE
BRR	BRINE RETURN	LO	LUBE OIL
BRS	BRINE SUPPLY	LP	LIQUID PETROL
BS	BOTTOM SLURRY	MS	SULFUR
BU	BUTANE	N	NITROGEN
C	CONDENSATE	NA	NAPHTHA
CA	CAUSTIC	OS	OILY WATER SEWER
CL	CHLORIDE	PP	PROPANE
CR	CRUDE OIL	PV	PROCESS VAPOR
CT	CATALYST	PW	POTABLE WATER
CW	COOLING WATER	RF	REFORMATE
D	DIESEL	RW	RAW WATER
DC	CLOSED DRAIN	SG	SOUR GAS
DO	OPEN DRAIN	SL	STEAM (50#, LOW PRESS)
FG	FUEL GAS	SM	STEAM (150#, MED PRESS)
FL	FLARE	SO	SEAL OIL
FO	FUEL OIL	SR	SLURRY
FW	FIRE WATER	SS	STORM WATER SEWER
GA	GASOLINE	SW	SOUR WATER
GO	GAS OIL	UA	UTILITY AIR
H	HYDROGEN	WO	WASTE OIL/SLOP OIL
HC	GENERAL HYDROCARBON	WW	WELL WATER

PIPING ABREVIATIONS

AG	ABOVE GROUND	QD	QUICK DISCONNECT
CSO	CAR SEAL OPEN	SCS	SITE COLLECTION SYSTEM
CSC	CAR SEAL CLOSED	SC	SAMPLE CONNECTION
CO	CLEAN OUT	SO	STEAM OUT
FC	FAIL CLOSED	TSO	TIGHT SHUT OFF
FL	FAIL IN LAST POSITION	UG	UNDER GROUND
FO	FAIL OPEN	WCV	WAFER CHECK VALVE
NO	NORMALLY OPEN	OWS	OILY WATER SEWER
NC	NORMALLY CLOSED	WS	CLEAN WATER SEWER
LO	LOCK OPEN		

INSULATION CLASSIFICATION

- ST - STEAM TRACED
- ET - ELECTRIC TRACED
- HC - HEAT CONSERVATION
- PP - PERSONNEL PROTECTION
- CC - COLD CONSERVATION

STATE OF TEXAS
OSCAR ALEJANDRO ALDAMA
69993
LICENSED
PROFESSIONAL ENGINEER

ISSUED FOR PERMITTING

REFERENCE DRAWINGS

NUMBER	TITLE

REVISIONS

NO.	DESCRIPTION	BY	CKD	DATE
A	ISSUED FOR PERMITTING	RS	OA	12/08/23

DRAWN BY	RS	DATE 12/08/23
CHECKED BY	HV	DATE 12/08/23
ENGR. APPD.	OA	DATE 12/08/23
PROJ. MGR. APPD.	OA	DATE 12/08/23
CLIENT APPD.		DATE

J|TAM ENGINEERING
TEXAS FIRM: F-18825

ADVANTEK WMS

LEGEND AND SYMBOLS

FORT BEND COUNTY — TEXAS

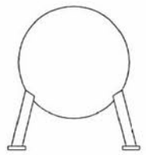
SCALE	DRAWING NUMBER	REV.
NONE	ADV003JTAM-ME-30-001	A

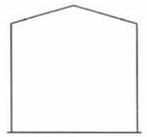
EQUIPMENT IDENTIFICATION

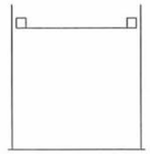
EQUIPMENT CODE

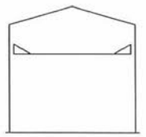
B – STEAM BOILER
MS – METER SKID
MX – MIXER
P – PUMP
PRV – PROVER SKID
S – SUMP TANK
ST – STRAINER
SRS – SURGE RELIEF SKID
TK – TANK

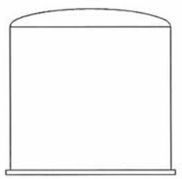
STORAGE TANKS


SPHERICAL TANK

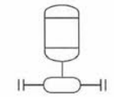

CONICAL ROOF TANK

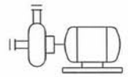

EXTERNAL FLOATING ROOF TANK

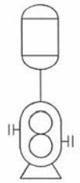

INTERNAL FLOATING ROOF TANK

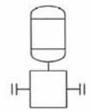

DOME ROOF TANK

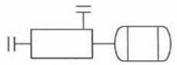
ROTATING EQUIPMENT


VERTICAL INLINE PUMP

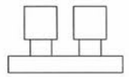

CENTRIFUGAL PUMP

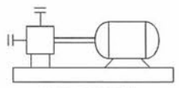

GEAR PUMP

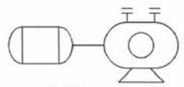

POSITIVE DISPLACEMENT PUMP

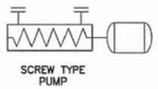

HORIZONTAL PUMP

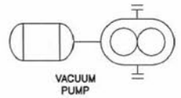

PUMP–C

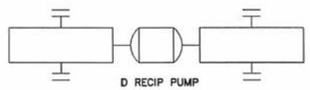

GAS DRIVEN PUMP

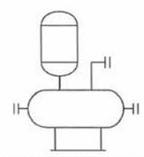

SLIDE VANE PUMP

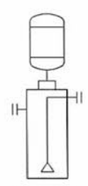

LRV PUMP


SCREW TYPE PUMP

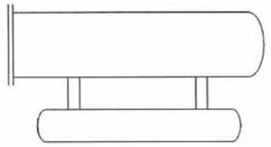

VACUUM PUMP

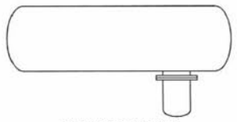

D RECIP PUMP


VERTICAL CENTRIFUGAL PUMP

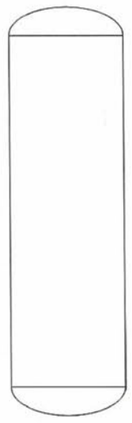

VERTICAL CAN PUMP

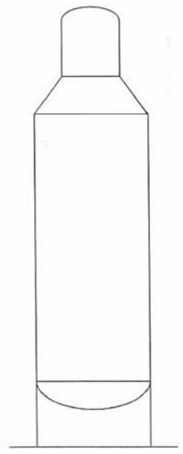
VESSELS


FILTER SEPARATOR

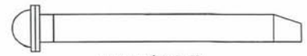

KNOCKOUT SCRUBBER

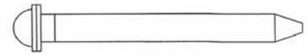

HORIZONAL VESSEL


VERTICAL VESSEL

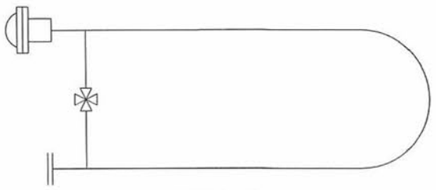

COLUMN

PIG TRAPS


LAUNCHER/RECEIVER ECCENTRIC


LAUNCHER/RECEIVER CONCENTRIC

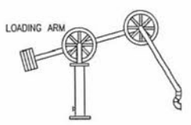
PROVERS


U–SHAPED PROVER


STRAIGHT PROVER


SMALL VOLUME PROVER

MISCELLANEOUS



STATE OF TEXAS
OSCAR ALEJANDRO ALDAMA
69993
LICENSED
PROFESSIONAL ENGINEER
2024

ISSUED FOR PERMITTING

REFERENCE DRAWINGS

NUMBER	TITLE

REVISIONS

NO.	DESCRIPTION	BY	CKD.	DATE
A	ISSUED FOR PERMITTING	RS	OA	12/08/23

DRAWN BY: RS	DATE: 12/08/23
CHECKED BY: HV	DATE: 12/08/23
ENGR. APPD.: OA	DATE: 12/08/23
PROJ. MGR. APPD.: OA	DATE: 12/08/23
CLIENT APPD.	DATE

J|TAM ENGINEERING
TEXAS FIRM: F-18825

ADVANTEK WMS

LEGEND AND SYMBOLS

FORT BEND COUNTY TEXAS

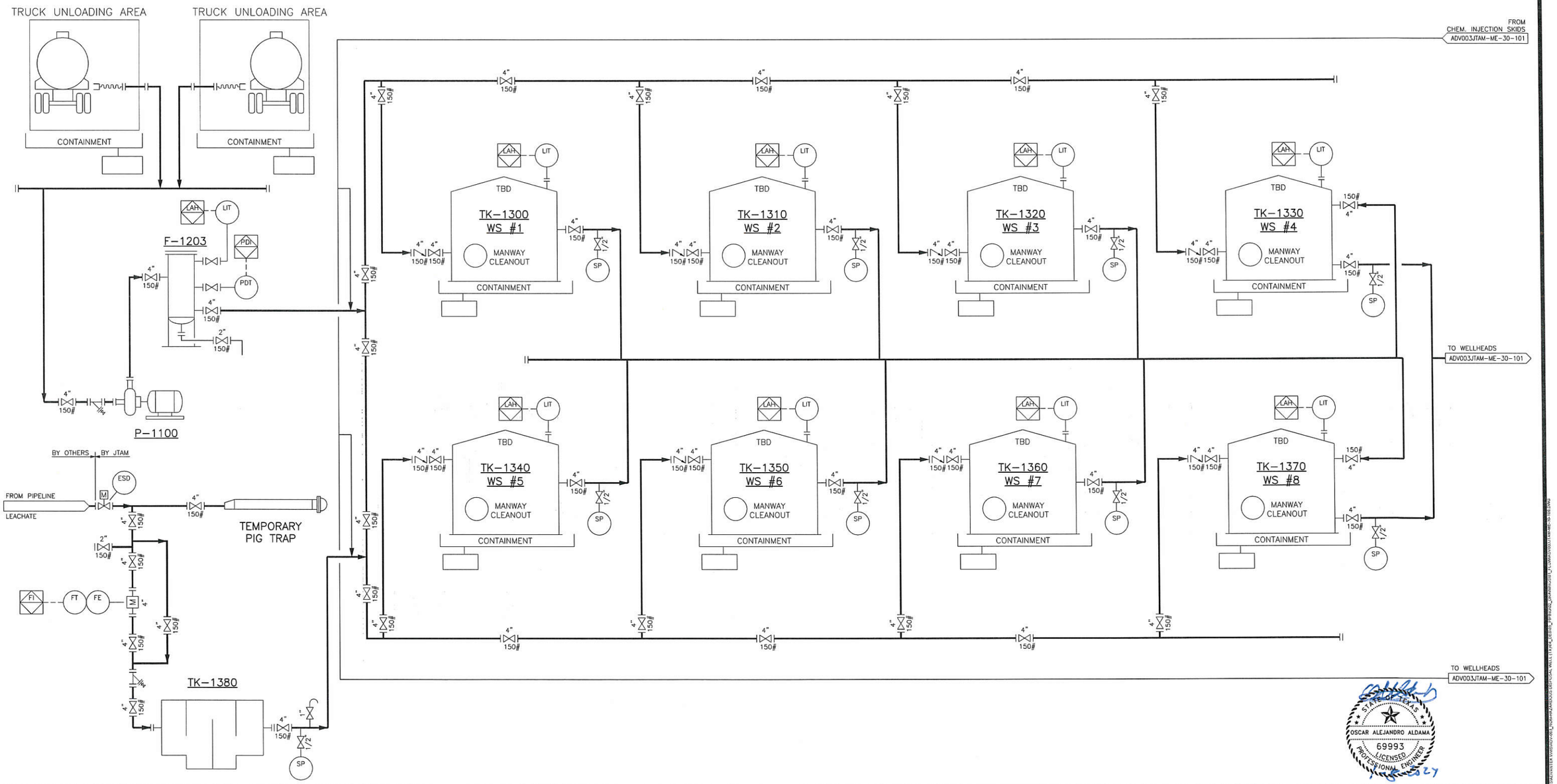
SCALE	DRAWING NUMBER	REV.
NONE	ADV003JTAM–ME–30–002	A

P-1100
UNLOADING PUMP
SERVICE: TBD
PUMP TYPE: CENTRIFUGAL
SIZE: 4" X 4"
FLOW: 400 GPM
MOTOR SIZE: 30 HP

F-1203
FILTER
CAPACITY: 350 GPM

TK-1300/1310/1320/1330/1340/1350/1360/1370
WS #1,2,3,4,5,6,7,8
STORAGE TANKS
CAPACITY: 1000 BBLS (EA.)
8000 BBLS (TOTAL)

TK-1380
WEIR TANK
CAPACITY: 500 BBLS



NOTES:
1. DIMENSIONS AND PLACEMENT AS PROVIDED BY ADVANTEK FOR REFERENCE ONLY, SUBJECT TO CLIENT APPROVAL.
2. TANKS TO HAVE A 10'-0" SPACING.
3. CONTAINMENT WALL HEIGHT OF 3'-2" TO 3'-4".

ISSUED FOR PERMITTING

REFERENCE DRAWINGS	
NUMBER	TITLE

REVISIONS				
NO.	DESCRIPTION	BY	CKD.	DATE
C	ISSUED FOR PERMITTING	RS	OA	01/08/24
B	ISSUED FOR APPROVAL	RS	HV	12/20/23
A	ISSUED FOR REVIEW	RS	DD	12/06/23

DRAWN BY	RS	DATE 12/06/23
CHECKED BY	DD	DATE 12/06/23
ENGR. APPD.	HV	DATE 12/06/23
PROJ. MGR. APPD.	OA	DATE 12/06/23
CLIENT APPD.		DATE

STATE OF TEXAS
OSCAR ALEJANDRO ALDAMA
69993
LICENSED
PROFESSIONAL ENGINEER

J|TAM ENGINEERING
TEXAS FIRM: F-18825

ADVANTEK WMS
PROCESS FLOW DIAGRAM
PRE-INJECTION UNIT
NON-HAZARDOUS DISPOSAL WELL
OFFLOAD AREA & STORAGE TANKS

FORT BEND COUNTY | TEXAS
SCALE: NONE
DRAWING NUMBER: ADV003JTAM-ME-30-100
REV: C

P–1110
CHARGE PUMP
SERVICE: TBD
PUMP TYPE: TBD
SIZE: 6" X 5"
FLOW: 360 GPM
MOTOR SIZE: 40 HP

P–1120
CHARGE PUMP
SERVICE: TBD
PUMP TYPE: TBD
SIZE: 4" X 4"
FLOW: 400 GPM
MOTOR SIZE: 40 HP

P–1121
CHARGE PUMP
SERVICE: TBD
PUMP TYPE: TBD
SIZE: 4" X 4"
FLOW: 400 GPM
MOTOR SIZE: 40 HP

P–1122
CHEMICAL PUMP
SERVICE: TBD
PUMP TYPE: TBD
SIZE: 3" X 3"
FLOW: 400 GPM
MOTOR SIZE: 20 HP

P–1130
HIGH PRESSURE INJECTION PUMP
SERVICE: TBD
PUMP TYPE: PZ–7
SIZE: 5" X 5"
FLOW: 336 GPM
MOTOR SIZE: 500 HP

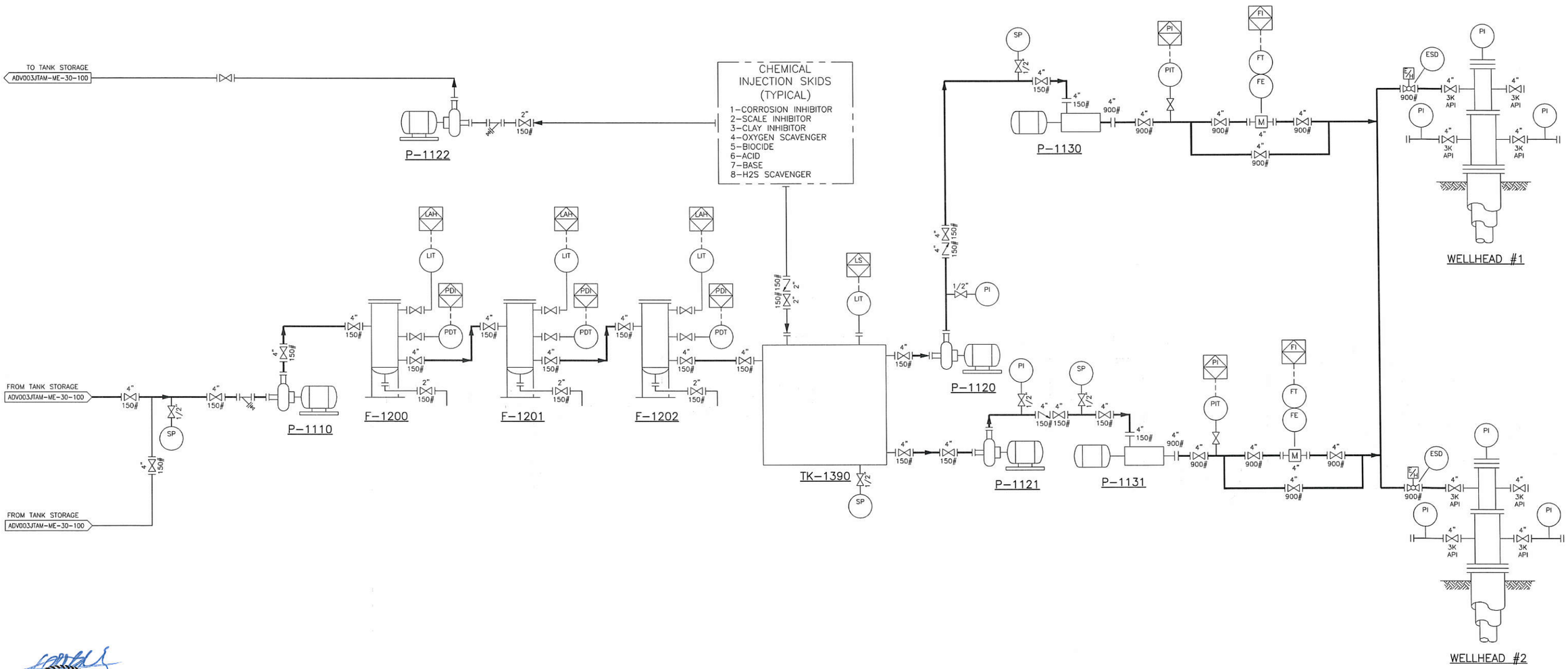
P–1131
HIGH PRESSURE INJECTION PUMP
SERVICE: TBD
PUMP TYPE: PZ–7
SIZE: 5" X 5"
FLOW: 336 GPM
MOTOR SIZE: 500 HP

F–1200
FILTER
CAPACITY: 700 GPM

F–1201
FILTER
CAPACITY: 700 GPM

F–1202
FILTER
CAPACITY: 700 GPM

TK–1390
PRE–INJECTION TANK
CAPACITY: 500 BBLS



NOTES:
1. DIMENSIONS AND PLACEMENT AS PROVIDED BY ADVANTEK FOR REFERENCE ONLY, SUBJECT TO CLIENT APPROVAL.

ISSUED FOR PERMITTING

REFERENCE DRAWINGS	
NUMBER	TITLE

REVISIONS					
NO.	DESCRIPTION	BY	CKD.	DATE
C	ISSUED FOR PERMITTING	RS	OA	01/08/24
B	ISSUED FOR APPROVAL	RS	HV	12/20/23
A	ISSUED FOR REVIEW	RS	DD	12/06/23

DRAWN BY	DATE
RS	12/06/23
CHECKED BY	DATE
DD	12/06/23
ENGR. APPD.	DATE
HV	12/06/23
PROJ. MGR. APPD.	DATE
OA	12/06/23
CLIENT APPD.	DATE

J|TAM ENGINEERING
TEXAS FIRM: F-18825

ADVANTEK WMS
PROCESS FLOW DIAGRAM
PRE–INJECTION UNIT
NON–HAZARDOUS DISPOSAL WELL
PUMP & SURFACE EQUIPMENT
FORT BEND COUNTY TEXAS

SCALE	DRAWING NUMBER	REV.
NONE	ADV003JTAM–ME–30–101	C

P-1100
UNLOADING PUMP
SERVICE: TBD
PUMP TYPE: CENTRIFUGAL
SIZE: 4" X 4"
FLOW: 400 GPM
MOTOR SIZE: 30 HP

P-1110
CHARGE PUMP
SERVICE: TBD
PUMP TYPE: TBD
SIZE: 6" X 5"
FLOW: 360 GPM
MOTOR SIZE: 40 HP

F-1203
FILTER
CAPACITY: 350 GPM

P-1120
CHARGE PUMP
SERVICE: TBD
PUMP TYPE: TBD
SIZE: 4" X 4"
FLOW: 400 GPM
MOTOR SIZE: 40 HP

P-1121
CHARGE PUMP
SERVICE: TBD
PUMP TYPE: TBD
SIZE: 4" X 4"
FLOW: 400 GPM
MOTOR SIZE: 40 HP

P-1122
CHEMICAL PUMP
SERVICE: TBD
PUMP TYPE: TBD
SIZE: 3" X 3"
FLOW: 400 GPM
MOTOR SIZE: 20 HP

P-1130
HIGH PRESSURE INJECTION PUMP
SERVICE: TBD
PUMP TYPE: PZ-7
SIZE: 5" X 5"
FLOW: 336 GPM
MOTOR SIZE: 500 HP

TK-1300/1310/1320/1330/1340/1350/1360/1370
WS #1,2,3,4,5,6,7,8
STORAGE TANKS
CAPACITY: 1000 BBLS (EA.)
8000 BBLS (TOTAL)

P-1131
HIGH PRESSURE INJECTION PUMP
SERVICE: TBD
PUMP TYPE: PZ-7
SIZE: 5" X 5"
FLOW: 336 GPM
MOTOR SIZE: 500 HP

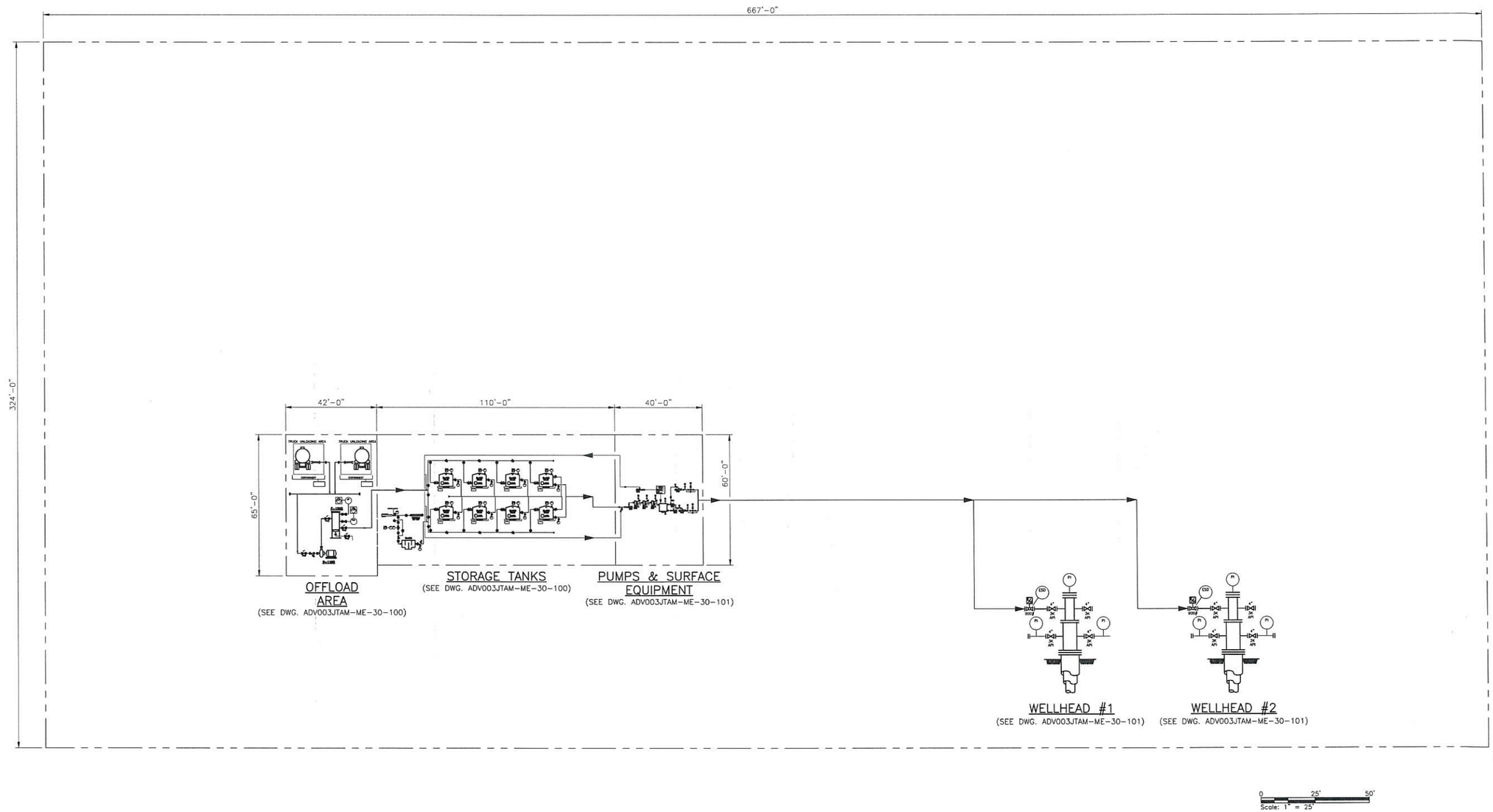
F-1200
FILTER
CAPACITY: 700 GPM

F-1201
FILTER
CAPACITY: 700 GPM

F-1202
FILTER
CAPACITY: 700 GPM

TK-1380
WEIR TANK
CAPACITY: 500 BBLS

TK-1390
PRE-INJECTION TANK
CAPACITY: 500 BBLS



0 25' 50'
Scale: 1" = 25'

STATE OF TEXAS
OSCAR ALEJANDRO ALDAMA
69993
LICENSED
PROFESSIONAL ENGINEER
12/8/2024

NOTES:
1. DIMENSIONS AND PLACEMENT AS PROVIDED BY ADVANTEK FOR REFERENCE ONLY, SUBJECT TO CLIENT APPROVAL.
2. TANKS TO HAVE A 10'-0" SPACING.
3. CONTAINMENT WALL HEIGHT OF 3'-2" TO 3'-4".
4. ONLY BOUNDARY AREAS TO SCALE ALL EQUIPMENT, PIPING, AND WELLHEADS ARE NOT.

ISSUED FOR PERMITTING

REFERENCE DRAWINGS

NUMBER	TITLE

REVISIONS

NO.	DESCRIPTION	BY	CKD.	DATE
C	ISSUED FOR PERMITTING	RS	OA	01/08/24
B	ISSUED FOR APPROVAL	RS	HV	12/19/23
A	ISSUED FOR REVIEW	RS	DD	12/07/23

		DATE
DRAWN BY:	RS	12/07/23
CHECKED BY:	DD	12/07/23
ENGR. APPD.:	HV	12/07/23
PROJ. MGR. APPD.:	OA	12/07/23
CLIENT APPD.:		DATE

J|TAM ENGINEERING
TEXAS FIRM: F-18825

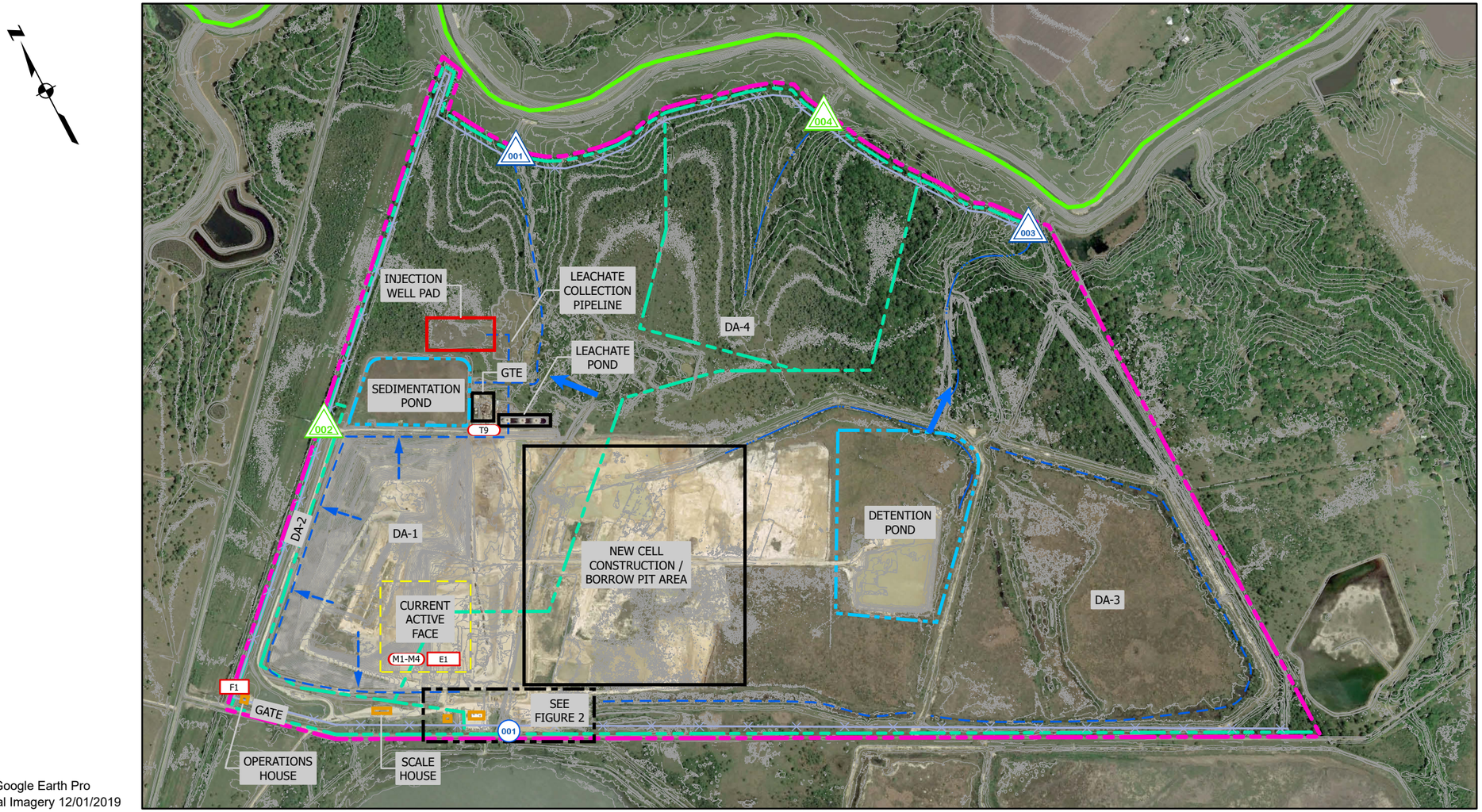
ADVANTEK WMS
BLOCK FLOW DIAGRAM
PRE-INJECTION UNIT
NON-HAZARDOUS DISPOSAL WELL
FORT BEND COUNTY TEXAS
SCALE: 1" = 25'
DRAWING NUMBER: ADV003JTAM-ME-30-102
REV.: C

GSI Job No. 6731

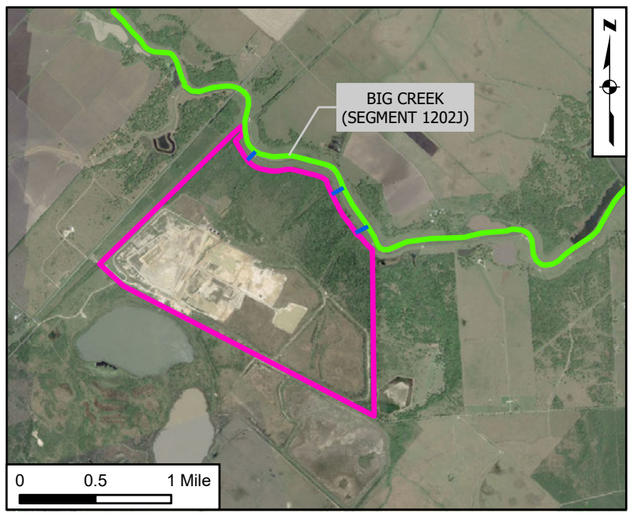
Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T7: Attachment IV.D.1 – Site Map



Aerial: Google Earth Pro
Historical Imagery 12/01/2019



0 500 1,000 2,000 FT

LEGEND

- PROPERTY BOUNDARY
- DRAINAGE BOUNDARY
- DETENTION / SEDIMENTATION POND
- DISCHARGE ROUTE
- RECEIVING WATERBODY
- FENCE
- DITCH / CREEK / SWALE
- DRAINAGE STRUCTURES (PIPES, CULVERTS, LET DOWNS)
- FLOW DIRECTION
- DA-# — DRAINAGE AREA
- LD / ULD — LOADING / UNLOADING
- 000 — OUTFALL (TO BE SAMPLED)
- 000 — OUTFALL (NOT SAMPLED)
- # — INFALL
- TR — TIRE STORAGE
- P — PORT-O-LETS
- STRUCTURE
- SECONDARY CONTAINMENT
- S — SPILL KIT
- DRAIN CONTAINMENT FOR OUTPUT PIC 6
- SCRAP METAL ROLLOFF/HOPPER
- T# — AST (ABOVE GROUND STORAGE TANK) #
- M# — MOBILE TANK #
- E# — OIL FILLED EQUIPMENT #
- D — DRUMS / TOTES / #
- F# — TRANSFORMER #
- TOPOGRAPHIC CONTOURS

NOTES:

1. THE FIRST NAMED RECEIVING WATERBODY IS: BIG CREEK (SEGMENT 1202J), WHICH IS LISTED AS A 303(d) IMPAIRED WATER BODY BY THE TCEQ FOR BACTERIA (RECREATION USE).
2. THE FACILITY DOES NOT DISCHARGE TO A MS4.
3. THE APPROXIMATE LOCATION OF THE ENTRANCE TO THE FACILITY IS: 29.395630°N / -95.715506°W.
4. PROPERTY IS COMPRISED OF APPROXIMATELY 1,150 ACRES.
5. SCALE BAR ONLY APPLIES TO THE LARGE SITE MAP, AND NOT THE INSERT.
6. NORTH ARROW APPLIES TO ONLY THE LARGE SITE MAP AND NOT THE INSERT.
7. INFALL 001 REPRESENTS WHERE WATER FROM DITCHES ON THE OTHER SIDE OF DAVIS ESTATE RD. ENTERS THE PROPERTY.
8. ACTIVE FACE LOCATION SHOWN IS TYPICAL AND WILL VARY DEPENDING ON LANDFILL OPERATIONS. ACTIVE FACE IS ESTABLISHED WITH DIVERSION AND CONTAINMENT BERMS IN ACCORDANCE WITH SITE OPERATING PLAN.
9. FOR LOCATION AND INFORMATION REGARDING LEACHATE COLLECTION AND TREATMENT SYSTEMS REFER TO SEPARATE LEACHATE SITE PLAN.
10. REFERENCE LEACHATE COLLECTION SYSTEM FIGURES FOR DETAILED INFORMATION.
11. THIRD PARTY POWER PLANT (FORT BEND POWER PRODUCERS) OPERATES ON FACILITY GROUNDS.

OUTFALL / SAMPLE POINT COORDINATES:

OF 001: 29.405993°N / -95.709308°W
OF 002: 29.401752°N / -95.719212°W
OF 003: 29.397316°N / -95.696417°W
OF 004: 29.402728°N / -95.700289°W

TANKS

T9	CONDENSATE	2 –106,000 GALLON TANKS

MOBILE TANKS

M1	DIESEL	1 –1,000 GALLON TANK ON MOBILE REFUELER
M2	USED OIL	1 –200 GALLON TANK ON MOBILE REFUELER
M3	MOTOR OIL	1 –180 GALLON TANK ONMOBILE REFUELER
M3	ANTIFREEZE	1 –60 GALLON TANK ONMOBILE REFUELER

OIL FILLED EQUIPMENT

F1	MINERAL OIL	2 –51 GALLON TRANSFORMERS
E1	HYDRAULIC OIL	1 –250 GALLON TANK ON TIPPER

GSI ENVIRONMENTAL

Figure modified 1-June-2024

Permit Application Figure IV.D.1

RABA KISTNER
1011 W. Lewis Street
Conroe, TX 77301
281-210-0084 : www.rkci.com

Fort Bend Landfill
14115 Davis Estate Rd.
Needville, TX 77461

SWPPP / SPCC SITE PLAN

FIGURE: 1

JOB#: AWF1808411 | Rev # 0 | APPR: AH | DSN: JC | SCALE: MAP SCALE | DATE: 10-31-2021

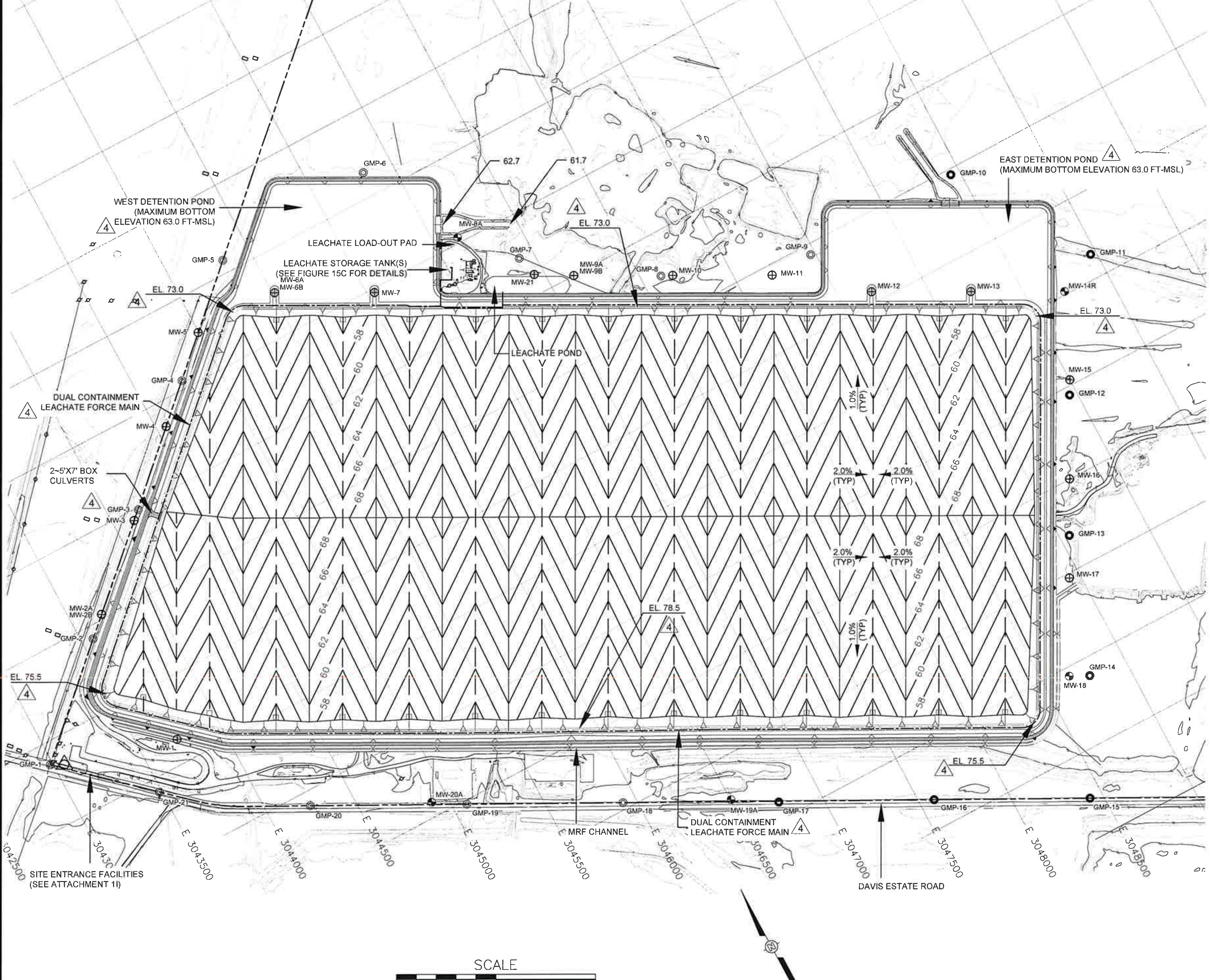
GSI Job No. 6731

Technical NOD Response
New Industrial Non-Hazardous Solid Waste Permit

Fort Bend Regional Landfill, LP
Proposed Industrial Nonhazardous Waste Permit No. 96322

Attachments – Response to T8: Attachment VI.A – Groundwater Monitoring System

Fort Bend Regional Landfill, LP | ***Attachment VI.A***



INTENDED FOR PERMITTING PURPOSES ONLY

LEGEND

- 65 — CURRENT CONTOUR
- N 582000 — STATE PLANE COORDINATE SYSTEM GRID-LINE
- PERMIT BOUNDARY (SEE NOTES 2 AND 3)
- 64 — BASE GRADE CONTOUR WITH ELEVATION (4)
- PROPOSED GROUNDWATER MONITORING WELL (SEE NOTE 9) (4)
- PROPOSED GAS MONITORING PROBE (SEE NOTE 10)
- EXISTING GROUNDWATER WELL
- EXISTING GAS MONITORING PROBE
- SITE BENCHMARK (SEE NOTE 4)
- DUAL CONTAINMENT LEACHATE FORCE MAIN (4)

NOTES

1. CURRENT CONTOURS FROM AERIAL SURVEY PERFORMED BY TechMap INC., JANUARY 23, 2018.
2. PROPERTY LINE AND EASEMENT INFORMATION PROVIDED BY CHARLIE KALKOMEY SURVEYING, INC., 11-13-96 AND 1-17-97.
3. PROPERTY BOUNDARY AND PERMIT BOUNDARY COINCIDE UNLESS OTHERWISE INDICATED.
4. SITE BENCH MARK INFORMATION:
   NORTHING - 582831.62
   EASTING - 3043059.34
   ELEVATION - 70.55 FT-MSL
5. (4) BASE GRADE SIDE SLOPES ARE 3H:1V.
6. (4) MINIMUM TOP OF BASE GRADE AT LCS SUMPS IS 52.0 FT. MSL.
7. LINER AND LEACHATE COLLECTION SYSTEM DETAILS ARE PROVIDED IN ATTACHMENT 6C-LINER, LEACHATE COLLECTION, AND FINAL COVER SYSTEM DETAILS.
8. (4) SEQUENCE OF SITE DEVELOPMENT IS PROVIDED ON ATTACHMENTS 1B THROUGH 1G.
9. PROPOSED GROUNDWATER MONITORING WELLS TO BE CONSTRUCTED IN ACCORDANCE WITH PART III, ATTACHMENT 5.
10. PROPOSED GAS PROBES TO BE CONSTRUCTED IN ACCORDANCE WITH PART III, ATTACHMENT 14.
11. (4) CONTOURS SHOWN REPRESENT THE TOP OF BASE GRADES (I.E. ELEVATION OF LINER GEOSYNTHETICS). ADDITIONAL EXCAVATION WILL BE REQUIRED FOR CLAY LINER INSTALLATION FOR MSW SECTORS THAT WILL HAVE LEACHATE RECIRCULATION AND/OR CLASS 1 WASTE.

STATE OF TEXAS
RYAN L. DERONG
117130
LICENSED
PROFESSIONAL ENGINEER

Ryan Derong
6/24/19

For June 2019 Revisions Only

REV	DATE	DESCRIPTION	BY
0	03/2001	PERMIT ISSUED	KJW
1	01/2011	PERMIT MODIFICATION - ADDED LEACHATE PONDS	LAL
2	07/2011	PERMIT MODIFICATION - ADDED LEACHATE PONDS, UPDATED MONITORING WELLS AND GAS PROBES	LAL
3	08/2012	PERMIT MODIFICATION - UPDATED GROUNDWATER MONITORING WELLS, GAS PROBES, REMOVED ENTRANCE INFORMATION AND DIVERSION CHANNEL	LAL
4	10/2014	UPDATED MINIMUM BOTTOM OF BASE GRADE ELEVATIONS	SCS
5	06/2019	UPDATED MONITORING WELL NETWORK AND MRF LOCATION	SCS

TEXAS BOARD OF PROFESSIONAL ENGINEERS REG. NO. F-3407

ATTACHMENT TITLE
LEACHATE FORCE MAIN ROUTING

PROJECT TITLE
PERMIT MODIFICATION
MSW-2270

WCA

FORT BEND REGIONAL LANDFILL, L.P.
FORT BEND REGIONAL LANDFILL
FORT BEND COUNTY, TEXAS

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PROJ. NO. 16212034.25 | DWN. BY: RJE | Q/A RVW BY: JKR
DSN. BY: RLD | CHK. BY: RLD | APP. BY: RLD

CADD FILE: -15, 15A

DATE: 6/2019

SCALE: AS SHOWN

ATTACHMENT
15A

6/20/2019 4:57 PM Z:\SJ\Projects\16212034.25\CAD\VI-15, 15A