



Parkhill

MCKINNEY 380 C&D LANDFILL

PERMIT MODIFICATION APPLICATION – WITH NOTICE NOD 2 RESPONSE

TCEQ MSW Permit No. 2278A
Collin County, Texas

Prepared For
Frontier Waste Solutions
2540 E University Dr
McKinney, TX 75069

Prepared By
Parkhill
3000 Internet Boulevard, Suite 550
Frisco, Texas 75034
TBPE F-560

December | 2024

Parkhill Project # 016775.21



Parkhill

MCKINNEY 380 C&D LANDFILL

PERMIT MODIFICATION APPLICATION – WITH NOTICE NOD 2 RESPONSE

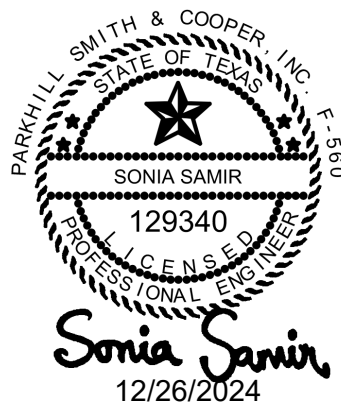
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Texas Commission on Environmental Quality

Waste Permits Division Correspondence

Cover Sheet

Date: 12/26/24

Facility Name: McKinney 380 C&D Landfill

Permit or Registration No.: 2278A

Nature of Correspondence:

☐ Initial/New

☒ Response/Revision to TCEQ Tracking No.:
30492454 (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
<input type="checkbox"/> New Notice of Intent	<input type="checkbox"/> Alternative Daily Cover Report
<input type="checkbox"/> Notice of Intent Revision	<input type="checkbox"/> Closure Report
<input type="checkbox"/> New Permit (including Subchapter T)	<input type="checkbox"/> Compost Report
<input type="checkbox"/> New Registration (including Subchapter T)	<input type="checkbox"/> Groundwater Alternate Source Demonstration
<input type="checkbox"/> Major Amendment	<input type="checkbox"/> Groundwater Corrective Action
<input type="checkbox"/> Minor Amendment	<input type="checkbox"/> Groundwater Monitoring Report
<input type="checkbox"/> Limited Scope Major Amendment	<input type="checkbox"/> Groundwater Background Evaluation
<input checked="" type="checkbox"/> Notice Modification	<input type="checkbox"/> Landfill Gas Corrective Action
<input type="checkbox"/> Non-Notice Modification	<input type="checkbox"/> Landfill Gas Monitoring
<input type="checkbox"/> Transfer/Name Change Modification	<input type="checkbox"/> Liner Evaluation Report
<input type="checkbox"/> Temporary Authorization	<input type="checkbox"/> Soil Boring Plan
<input type="checkbox"/> Voluntary Revocation	<input type="checkbox"/> Special Waste Request
<input type="checkbox"/> Subchapter T Disturbance Non-Enclosed Structure	<input type="checkbox"/> Other:
<input type="checkbox"/> Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
<input type="checkbox"/> New	<input type="checkbox"/> Annual/Biennial Site Activity Report
<input type="checkbox"/> Renewal	<input type="checkbox"/> CPT Plan/Result
<input type="checkbox"/> Post-Closure Order	<input type="checkbox"/> Closure Certification/Report
<input type="checkbox"/> Major Amendment	<input type="checkbox"/> Construction Certification/Report
<input type="checkbox"/> Minor Amendment	<input type="checkbox"/> CPT Plan/Result
<input type="checkbox"/> CCR Registration	<input type="checkbox"/> Extension Request
<input type="checkbox"/> CCR Registration Major Amendment	<input type="checkbox"/> Groundwater Monitoring Report
<input type="checkbox"/> CCR Registration Minor Amendment	<input type="checkbox"/> Interim Status Change
<input type="checkbox"/> Class 3 Modification	<input type="checkbox"/> Interim Status Closure Plan
<input type="checkbox"/> Class 2 Modification	<input type="checkbox"/> Soil Core Monitoring Report
<input type="checkbox"/> Class 1 ED Modification	<input type="checkbox"/> Treatability Study
<input type="checkbox"/> Class 1 Modification	<input type="checkbox"/> Trial Burn Plan/Result
<input type="checkbox"/> Endorsement	<input type="checkbox"/> Unsaturated Zone Monitoring Report
<input type="checkbox"/> Temporary Authorization	<input type="checkbox"/> Waste Minimization Report
<input type="checkbox"/> Voluntary Revocation	<input type="checkbox"/> Other:
<input type="checkbox"/> 335.6 Notification	
<input type="checkbox"/> Other:	



December 26, 2024

Mr. Lyndon Poole, Project Manager
Municipal Solid Waste Permits Section – MC 124
Texas Commission on Environmental Quality (TCEQ)
Building A, Room 122
12100 Park 35 Circle
Austin, Texas 78753-1808

Re: McKinney 380 C&D Landfill, Collin County
MSW Permit No. 2278A
Municipal Solid Waste (MSW) Permit Modification – With Notice
Tracking Nos. 30492454, 30180759, 30033754; RN110878030 | CN606244051

Dear Mr. Poole,

We received the Notice of Deficiency via email (NOD 2) dated December 10, 2024, for the above referenced application. As requested in NOD 2, each comment is listed below with Parkhill's response (referencing applicable revisions by part, section, and page number) immediately following the comment. Included in the enclosed submittal are all application pages that were revised.

Comment 1: Regarding notifying adjacent landowners: The NOD 1 response specified adjacent landowners within a 685-foot radius of the exceedance location would be notified. TCEQ's policy is landowners within a 1,000-foot radius of the exceedance must be notified. Please revise Section 4.1 of the LFGMP to meet this minimum.

Response: *Section 4.1 of the LFGMP has been revised to indicate that owners of property within a 1,000-foot radius of an exceedance location must be notified.*

The original version of the NOD 2 response with one (1) copy of the unmarked version of the revised sheets are enclosed, along with one (1) marked copy (in redline/strikeout format to denote changes) of the revised sheets.

In addition, one (1) unmarked copy of the revised sheets has been sent directly to the TCEQ Region 4 Office.

If you have comments, questions, or need further information, please contact me directly at [REDACTED] or 469-200-7369.

Sincerely,

PARKHILL

By 
Sonia Samir, PE, PhD
Civil Project Manager

SS/amf

Enclosure: MSW Permit Modification Application, NOD 2 Response

Cc: John Gustafson, Frontier Waste Solutions
Grant Gregg, Frontier Waste Solutions
Pedro Garcia, Frontier Waste Solutions
Monica Sowards, Frontier Waste Solutions
Troy Leitschuh, Frontier Waste Solutions
Frank Pugsley, PE, Sector Director, Parkhill
Erin Gorman, Waste Section Manager, TCEQ Region 4 Office



Texas Commission on Environmental Quality

Waste Permits Division Correspondence

Cover Sheet

Date: 11/22/24

Facility Name: McKinney 380 C&D Landfill

Permit or Registration No.: 2278A

Nature of Correspondence:

☐ Initial/New

☒ Response/Revision to TCEQ Tracking No.:
30180759 (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

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<input type="checkbox"/> New Registration (including Subchapter T)	<input type="checkbox"/> Groundwater Alternate Source Demonstration
<input type="checkbox"/> Major Amendment	<input type="checkbox"/> Groundwater Corrective Action
<input type="checkbox"/> Minor Amendment	<input type="checkbox"/> Groundwater Monitoring Report
<input type="checkbox"/> Limited Scope Major Amendment	<input type="checkbox"/> Groundwater Background Evaluation
<input checked="" type="checkbox"/> Notice Modification	<input type="checkbox"/> Landfill Gas Corrective Action
<input type="checkbox"/> Non-Notice Modification	<input type="checkbox"/> Landfill Gas Monitoring
<input type="checkbox"/> Transfer/Name Change Modification	<input type="checkbox"/> Liner Evaluation Report
<input type="checkbox"/> Temporary Authorization	<input type="checkbox"/> Soil Boring Plan
<input type="checkbox"/> Voluntary Revocation	<input type="checkbox"/> Special Waste Request
<input type="checkbox"/> Subchapter T Disturbance Non-Enclosed Structure	<input type="checkbox"/> Other:
<input type="checkbox"/> Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
<input type="checkbox"/> New	<input type="checkbox"/> Annual/Biennial Site Activity Report
<input type="checkbox"/> Renewal	<input type="checkbox"/> CPT Plan/Result
<input type="checkbox"/> Post-Closure Order	<input type="checkbox"/> Closure Certification/Report
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<input type="checkbox"/> Endorsement	<input type="checkbox"/> Unsaturated Zone Monitoring Report
<input type="checkbox"/> Temporary Authorization	<input type="checkbox"/> Waste Minimization Report
<input type="checkbox"/> Voluntary Revocation	<input type="checkbox"/> Other:
<input type="checkbox"/> 335.6 Notification	
<input type="checkbox"/> Other:	



November 22, 2024

Mr. Lyndon Poole, Project Manager
Municipal Solid Waste Permits Section – MC 124
Texas Commission on Environmental Quality (TCEQ)
Building A, Room 122
12100 Park 35 Circle
Austin, Texas 78753-1808

Re: McKinney 380 C&D Landfill, Collin County
MSW Permit No. 2278A
Municipal Solid Waste (MSW) Permit Modification – With Notice
Tracking Nos. 30180759, 30033754; RN110878030 | CN606244051

Dear Mr. Poole,

We received the Notice of Deficiency via email (NOD 1) dated October 31, 2024, for the above referenced application. As requested in NOD 1, each comment is listed below with Parkhill's response (referencing applicable revisions by part, section, and page number) immediately following the comment. Included in the enclosed submittal are all application pages that were revised or were requested to be included.

Comment 1: The electronic copy of your application attached with the October 2, 2024 email from your consultant (Parkhill) does not contain Page 1 of 8 of TCEQ Form 20650. Please ensure all pages of Form 20650 are included in the revised application in response to this NOD.

Response: *All pages of TCEQ Form 20650 (including page 1) have been included with both the electronic and printed copies of this NOD response, as requested.*

Comment 2: The October 1, 2024 cover letter and the October 1, 2024 email from your consultant are unclear as to whether a copy of the application was sent to the TCEQ Region 4 Office. Please ensure an unmarked copy of the application, as revised by your response to this NOD, is provided to the Region 4 Office.

Response: *An unmarked copy of the original permit modification application was mailed to the TCEQ Region 4. A copy of this NOD response, will also be mailed to the TCEQ Region 4 Office, to the attention of the Waste Section Manager, as requested.*

Comment 3: The Customer Reference Number (CN) in the October 1, 2024 cover letter and the TCEQ ePay documentation is indicated as CN604098007; however, the CN associated with this permit in the TCEQ Central Registry is CN606244051. Please ensure that all subsequent correspondence and application documents use the CN contained in the Central Registry.

Response: *This permit recently completed a transfer of ownership from the permittee with the CN number indicated on the TCEQ ePay Receipt to the permittee with the CN number currently indicated in the TCEQ Central Registry. Payment for the modification fee was made on 8/16/2024, prior to this transfer being completed on 8/29/2024, so the old permittee's CN number was effective and is shown on the TCEQ ePay Receipt.*

This cover letter includes the current CN number, and all subsequent correspondence and application documents will use the current CN number moving forward.

Comment 4: The provided land ownership map and landowner list do not clearly address mineral ownership under the facility. Revise the landownership map and list to include all mineral interest ownership under the facility or include a statement indicated that there is no mineral interest ownership, as applicable. [30 TAC §330.59(c)(3)]

Response: It is our understanding that *the referenced rule §330.59(c)(3) for the landownership map is for Part I of MSW permit applications and registrations, and not applicable for this proposed permit modification application with notice.*

The landownership list was included in accordance with 30 TAC §305.70(i)(1)(A) as required for permit modification with notice, which does not require the landownership list to identify mineral interest ownership. Figure I-3.1 is not being revised with this proposed permit modification with notice.

Comment 5: The provided landowner list (Attachment 2 of the application) indicated a link to each parcel identified on the landowner map; however, the list was not provided in a format compatible with the generation of mailing labels. As specified on page 11 of 16 within TCEQ Form 00650, provide mailing labels for the property owners in the adjacent and potentially affected landowners list included in the application, pursuant to 30 TAC §330.59(c)(3).

Provide the mailing labels in an electronic file in Avery 5160 format, with 30 labels to a page. The labels must contain only the name, mailing address, city, state, and zip code with no reference to the lot number or lot location. Each letter in the name and address must be capitalized, contain no punctuation, and must include the appropriate two-character abbreviation for the state. Each entity listed must be blocked and spaced consecutively.

Response: *An electronic file of the mailing labels, formatted as requested, has being emailed to the reviewer with this NOD response.*

Comment 6: Revise the title page of the application for the permit modification to include the engineer's seal as specified by 30 TAC §330.57(g)(2).

Response: *It is our understanding that the referenced rule §330.57(g)(2) is for MSW permit applications and registrations, and not applicable for this proposed permit modification application with notice. The engineer's seal is provided on all title pages and tables of content for portions of the MSW permit that have been revised with this modification.*

However, the engineer's seal has been included on the title page of the permit modification application with this NOD response as requested.

Comment 7: The revised Site Layout Plan (Figure III-4.5) indicates "All utility easements, including the sewer easement, are shown on Figure II-3.7 – Site Easements Map." The sanitary sewer easement indicated on the June 21, 2022 version of Figure II-3.7 appears to extend for at least 2,000 feet. Please explain how the proposed number, location, and spacing of the utility vents indicated on Figure III-4.5 dated October 1, 2024 will provide sufficient ventilation for the trench.

Response: *30 TAC §330.371(b)(1)(E) requires landfill units to implement a routine methane monitoring program to ensure that the concentration of methane gas does not exceed 5% by volume in monitoring points, probes, subsurface soils, or other matrices at the facility boundary as defined in the permit. Additionally, 30 TAC §330.371(f) mandates venting of any underground utility trenches that cross the landfill facility boundary.*

While there is no explicit rule requirement specifying the location, number, or spacing of vents for underground utility trenches, it is standard industry practice to install vents at the points where underground utility trenches cross the landfill facility boundary. This approach facilitates venting within the landfill boundary and ensures compliance with 30 TAC §330.371(b)(1)(E). The proposed number and locations of vents in Figure III-4.5, are based on this standard practice and are designed to monitor and mitigate potential methane accumulation.

To address the concern about sufficient ventilation for the trench, if methane concentrations exceeding the regulatory limit are detected at the proposed utility vent locations, the owner/ operator shall follow §330.371(c) to ensure human health and notify the Texas Commission on Environmental Quality (TCEQ), as required. A permit modification application will also be submitted to include additional vents or other measures as necessary to ensure compliance with 30 TAC §330.371.

Comment 8: Revised Section 4.0 of the LFGMP (Corrective Measures – Exceedance of Landfill Gas) proposes to eliminate “These measures include inspection and repair of the PVCS” (passive venting and control system) “or installation of an active gas extraction system.” Please explain how the elimination of the referenced corrective measures would result in a scenario that would be equally (or more) protective of human health and the environment.

Response: *The referenced change was not intended to “eliminate” options for corrective measures, but was made to re-organize the paragraph for clarity. The first referenced measure (inspection and repair of the PVCS) was moved to the bulleted list in the following paragraph (inspect and repair any installed LFG control features) along with newly proposed measures. Section 4.0 of the LFGMP has been revised to include installation of an active gas extraction system in this list.*

Comment 9: Revised Section 4.1 of the LFGMP (Protective Measures and Notifications) proposes to add new text to limit notice of “the adjacent land owners” to “the adjacent land owner(s) next to the landfill gas monitoring probe(s) where the exceedance above permissible limit is detected.” Please further define the scope of the proposed “next to” qualifier. Please also explain why this modification would not potentially reduce the number of landowners receiving notice of a methane exceedance and the intended protection of human health and safety.

Response: *The currently approved permit text states that “adjacent land owners” will be notified in the event of a detection of methane concentration above permissible limits, without any further clarification of the extent of adjacent land owners to be notified. The proposed revision aims to clarify the definition of “adjacent land owners” to ensure proper notification in the event of any future exceedance.*

Section 4.1 of the LFGMP has been further revised with this NOD response to clarify that all owners of adjacent land within a 685 foot radius of the exceedance location must be notified. This notification radius is equal to the average distance between the permitted monitoring probes for this facility, and would notify owner(s) of all land adjacent to the area represented by any permitted monitoring probe. The revision proposed with this NOD response expands the scope of this statement to include owners of nearby properties, not just owners of property directly adjacent to an exceedance. This proposed revision does not reduce protection of human health or the environment.

Comment 10: Revised Section 10.0 of the LFGMP (Landfill Gas Monitoring in Site Structures) indicates that “All on-site buildings and structures... will be monitored quarterly (at a minimum) with a portable combustible gas indicator or a continuous LFG monitor/alarm (capable of providing an audible alarm if methane concentration exceeds 1.25% by volume).” Please clarify whether the landfill gas monitoring within buildings and structures is conducted on a continuous basis, and not merely once per quarter. If monitoring within buildings and structures is less frequent than continuous, please explain how less frequent monitoring within buildings/structures is sufficiently protective of affected personnel.

Response: *Monitoring of on-site structures is conducted at a minimum frequency of quarterly, in accordance with 30 TAC §330.371(i) (requiring monitoring of on-site structures) and §330.371(b)(2) (requiring monitoring frequency of quarterly at a minimum). This monitoring complies with regulatory requirements and the approved Landfill Gas Management Plan (LFGMP).*

Currently, the scalehouse is the only building on-site. The scalehouse is located approximately 850 feet northeast of GM-6 where the exceedance was observed. As reported in the Landfill Gas Exceedance Remediation Plan letter (dated 8/14/24 and previously submitted to the TCEQ), no methane was detected at the scalehouse and bar probes 12 and 14 (installed between GM6 and the scalehouse). These bar probes 12 and 14 were also monitored for 5 weeks following the exceedance, and no measurable concentration of methane was observed in either probe. This indicates that methane was not migrating in the direction of the scalehouse. Due to the distance of the scalehouse from the methane exceedance and the evidence that methane was not migrating in the direction of the scalehouse, more frequent monitoring of the scalehouse was not implemented in response to the exceedance in GM-6.

In addition to the revisions noted in the responses above, the following revisions have also been completed.

- Revised Figure III-11.1 to remove references to excavation contours and depth from notes. Excavation contours are not shown on this figure.

- Revised Figure III-11.1 to add note 5 stating that vent locations are approximate and maybe adjusted as necessary.

The original version of the NOD 1 response with one (1) copy of the unmarked version of the revised sheets are enclosed, along with one (1) marked copy (in redline/strikeout format to denote changes) of the revised sheets.

In addition, one (1) unmarked copy of the revised sheets has been sent directly to the TCEQ Region 4 Office.

If you have comments, questions, or need further information, please contact me directly at [REDACTED] or 469-200-7369.

Sincerely,

PARKHILL

By 

Sonia Samir, PE, PhD
Civil Project Manager

SS/amf

Enclosure: MSW Permit Modification Application, NOD 1 Response

Cc: John Gustafson, Frontier Waste Solutions
Grant Gregg, Frontier Waste Solutions
Pedro Garcia, Frontier Waste Solutions
Monica Sowards, Frontier Waste Solutions
Troy Leitschuh, Frontier Waste Solutions
Frank Pugsley, PE, Sector Director, Parkhill
Erin Gorman, Waste Section Manager, TCEQ Region 4 Office



Texas Commission on Environmental Quality

Waste Permits Division Correspondence

Cover Sheet

Date: 10/1/2024

Facility Name: McKinney 380 C&D Landfill

Permit or Registration No.: 2278A

Nature of Correspondence:

☐ Initial/New

☒ Response/Revision to TCEQ Tracking No.:
30033754 (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.

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<input type="checkbox"/> Voluntary Revocation	<input type="checkbox"/> Special Waste Request
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Table 2 - Industrial & Hazardous Waste Correspondence

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<input type="checkbox"/> Voluntary Revocation	<input type="checkbox"/> Other:
<input type="checkbox"/> 335.6 Notification	
<input type="checkbox"/> Other:	

October 01, 2024

Lyndon Poole, Project Manager
Municipal Solid Waste Permits – MC 124
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: McKinney 380 C&D Landfill, Collin County
TCEQ MSW Permit No. 2278A
Permit Modification Application Without Notice
Tracking No. 30033754; RN110878030 | CN601098007

Dear Mr. Poole:

On behalf of Frontier 380, LLC (Frontier), Parkhill is pleased to submit the enclosed request for a permit modification with notice for the McKinney 380 C&D Landfill (referred to as “Landfill” for the rest of the letter). As directed by the TCEQ in a letter dated August 23, 2024, and during a meeting on August 27, 2024, this modification is requested in accordance with 30 TAC §305.70(k)(3) for changes to the Part III, Attachment 11, Landfill Gas Management Plan (LGMP). This submission also serves as a re-submittal of our previous request for a permit modification application without notice dated August 14, 2024.

The Landfill currently has 4 perimeter gas monitoring probes installed and monitored quarterly in accordance with MSW Permit 2278A and §330.371(b)(2) and §330.371(k). During the June 2024 2nd quarter gas monitoring event, a methane concentration above the permissible limit of 5% by volume, in accordance with §330.371(a)(2), was measured in landfill gas monitoring probe GM-6. To address the methane exceedance at GM-6 and ensure the protection of human health and the environment, accumulated sediment in the landfill perimeter ditch in the vicinity of GM-6 was removed to facilitate passive venting of the subsurface gas occurrence. GM-6 was monitored weekly until 3 consecutive concentrations below the 5% permissible limit were measured. A Remediation Plan has been prepared in response to the detection of methane concentrations and was submitted previously with the August, 14 2024 permit modification. The proposed changes to the LGMP include additional corrective measures for any future landfill gas exceedance remediation at the Landfill.

Additionally, it was discovered that a currently inactive sanitary sewer line crosses the landfill boundary. Previously, it was our understanding that only an easement had been dedicated for future construction of this sanitary sewer line, but that no line had been constructed. With the understanding that the sanitary sewer line has been constructed, three passive utility vents will be installed where the line crosses the permit boundary to comply with 30 TAC §330.371(f). Revisions are included with this modification request to indicate the locations of these vents and include a typical utility vent detail.

The changes proposed with this modification request include:

- Revising Figures III-4.5 and III-11.1 to indicate the locations of the proposed utility vents.
- Revising the LGMP to clarify requirements for installation and monitoring of passive vents for utility trenches that cross the landfill boundary.
- Revising the LGMP to include additional corrective measures for any future landfill gas exceedance remediation and specify requirements for more frequent monitoring in the event of a landfill gas exceedance in a perimeter probe.
- Adding new Figures III-11.2 and III-11.3 to include typical details for landfill gas perimeter monitoring probes, passive vents, interceptor trenches, and bar probes.

Enclosed is one original, two unmarked copies, and one marked copy (redline/strikeout) of the revised application sheets. Should you or your staff have comments, questions, or need further information, please contact me directly [REDACTED] or 469-200-7369.

Sincerely,

PARKHILL

By 
Sonia Samir, PE, PhD
Civil Project Manager

SS/amf

Enclosure: Permit Modification Application

Cc:

John Gustafson, Frontier Waste Solutions
Grant Gregg, Frontier Waste Solutions
Pedro Garcia, Frontier Waste Solutions
Monica Sowards, Frontier Waste Solutions
Troy Leitschuh, Frontier Waste Solutions
Frank E Pugsley, PE, Sector Director, Parkhill



Texas Commission on Environmental Quality

Application Form for Municipal Solid Waste Permit or Registration Modification or Temporary Authorization

Application Tracking Information

Facility Name: McKinney 380 C&D Landfill

Permittee or Registrant Name: Frontier 380, LLC

MSW Authorization Number: 2278A

Initial Submission Date: 10/01/2024

Revision Date: 12/26/2024

Instructions for completing this form are provided in [form TCEQ-20650-instr](#)¹. If you have questions, contact the Municipal Solid Waste Permits Section by email to [\[REDACTED\]](#) or by phone at 512-239-2335.

Application Data

1. Submission Type

☐ Initial Submission ☒ Notice of Deficiency (NOD) Response

2. Authorization Type

☒ Permit ☐ Registration

3. Application Type

☒ Modification with Public Notice ☐ Modification without Public Notice
☐ Temporary Authorization (TA) ☐ Modification for Name Change or Transfer

4. Application Fee

Amount

The application fee for a modification or temporary authorization is \$150.

Payment Method

☐ Check
☒ Online through ePay portal www3.tceq.texas.gov/epay/

If paid online, enter ePay Trace Number: [\[REDACTED\]](#)

¹ www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20650-instr.pdf

5. Electronic Versions of Application

For modifications that require notice (other than those for arid exempt landfills), TCEQ will publish electronic versions of the application online. Applicants must provide a clean copy of the administratively complete application and technically complete application. TCEQ will also publish electronic versions of NOD responses online.

6. Party Responsible for Mailing Notice

For modifications that require notice, indicate who will be responsible for mailing notice:

☒ Applicant ☐ Agent in Service ☐ Consultant

Contact Name: Monica Sowards

Title: Operations Manager

Email Address: [REDACTED]

7. Confidential Documents

Does the application contain confidential documents?

☐ Yes ☒ No

If "Yes", reference the confidential documents in the application, but submit the confidential documents as an attachment in a separate binder marked "CONFIDENTIAL."

8. Facility General Information

Facility Name: McKinney 380 C&D Landfill

Contact Name: Pedro Garcia Title: NTX Post Collections Gen. Mgr.

MSW Authorization Number (if existing): 2278A

Regulated Entity Reference Number: **RN** 110878030

Physical or Street Address: 2540 E University Dr

City: McKinney County: Collin State: TX Zip Code: 75069

Phone Number: (469) 591-1380

Latitude (Degrees, Minutes, Seconds): N 33° 11' 49"

Longitude (Degrees, Minutes, Seconds): W 96° 34' 18"

9. Facility Types

☐ Type I ☒ Type IV ☐ Type V
☐ Type IAE ☐ Type IVAE ☐ Type VI

10. Description of the Revisions to the Facility

Provide a brief description of revisions to permit or registration conditions and supporting documents referred to by the permit or registration, and a reference to the specific provisions under which the modification or temporary authorization application is being made. Also, provide an explanation of why the modification or temporary authorization is needed:

This permit modification is requested in accordance with 30 TAC §305.70(k)(3) for changes to the Part III Attachment 11 Landfill Gas Management Plan (LGMP). The proposed changes to the LGMP are to include additional corrective measures for any future landfill gas exceedance remediation at the Landfill, and to include three passive utility vents for a sanitary sewer line that crosses the landfill permit boundary.

11. Facility Contact Information

Site Operator (Permittee or Registrant)

Name: Frontier 380, LLC

Customer Reference Number: **CN** 606244051

Contact Name: John Gustafson Title: President & CEO

Mailing Address: 2323 Bryan Street Suite 2620

City: Dallas County: Dallas State: TX Zip Code: 75201

Phone Number: 888-854-2905

Email Address: [REDACTED]

Texas Secretary of State (SOS) Filing Number: 805469349

Operator (if different from Site Operator)

Name: Same

Customer Reference Number: **CN**

Contact Name: Title:

Mailing Address:

City: County: State: Zip Code:

Phone Number:

Email Address:

Texas Secretary of State (SOS) Filing Number:

Consultant (if applicable)Firm Name: ParkhillConsultant Name: Sonia Samir, PE, PhDTexas Board of Professional Engineers Firm Registration Number: 560Contact Name: Sonia Samir, PE, PhD Title: Civil Project ManagerMailing Address: 3000 Internet Blvd, Suite 550City: Frisco County: Collin State: TX Zip Code: 75034Phone Number: (469) 200-7369Email Address: [REDACTED]**Agent in Service (required for out-of-state applicants)**

Name: _____

Mailing Address: _____

City: _____ County: _____ State: TX Zip Code: _____

Phone Number: _____

Email Address: _____

12. Ownership Status of the Facility

Is this a modification that changes the legal description, the property owner, or the Site Operator (Permittee or Registrant)?

☐ Yes ☒ No

If the answer is "No", skip this section.

Does the Site Operator (Permittee or Registrant) own all the facility units and all the facility property?

☐ Yes ☐ No

If "No", provide the following information for other owners.

Owner Name: _____

Mailing Address: _____

City: _____ County: _____ State: TX Zip Code: _____

Phone Number: _____

Email Address: _____

Signature Page

Site Operator or Authorized Signatory

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

Name: JOHN GUSTAFSON Title: PRESIDENT & CEO

Email Address: [REDACTED]

Signature: [Signature] Date: 1/6/2025

Operator or Principal Executive Officer Designation of Authorized Signatory

To be completed by the operator if the application is signed by an authorized representative for the operator.

I hereby designate _____ as my representative and hereby authorize said representative 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 Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

Operator or Principal Executive Officer Name: _____

Email Address: _____

Signature: _____ Date: _____

Notary

SUBSCRIBED AND SWORN to before me by the said John Gustafson

On this 6th day of January, 2025

My commission expires on the 17th day of June, 2028

Andrew Nicol Walker,

Notary Public in and for

Dallas County, Texas

Note: Application Must Bear Signature and Seal of Notary Public

Attachments for Permit or Registration Modification with Public Notice

Refer to instruction document **200650-instr** for professional engineer seal requirements.

Attachments Table 1. Required attachments.

Required Attachments	Attachment Number
Land Ownership Map	2
Landowners List	2
Marked (Redline/Strikeout) Pages	3
Unmarked Revised Pages	4

Attachments Table 2. Additional attachments as applicable.

Additional Attachments as Applicable (select all that apply and add others as needed)	Attachment Number
<input type="checkbox"/> TCEQ Core Data Form(s)	
<input type="checkbox"/> Signatory Authority Delegation	
<input checked="" type="checkbox"/> Fee Payment Receipt	1
<input type="checkbox"/> Confidential Documents	

Attachments for Permit or Registration Modification without Public Notice, or Temporary Authorization

Refer to instruction document **200650-instr** for professional engineer seal requirements.

Attachments Table 3. Required attachments for modifications.

Required Attachments for Modification	Attachment Number
Marked (Redline/Strikeout) Pages	
Unmarked Revised Pages	

Attachments Table 4. Additional attachments for modifications and temporary authorizations, as applicable.

Additional Attachments as Applicable (select all that apply and add others as needed)	Attachment Number
<input type="checkbox"/> TCEQ Core Data Form(s)	
<input type="checkbox"/> Signatory Authority Delegation	
<input type="checkbox"/> Fee Payment Receipt	
<input type="checkbox"/> Confidential Documents	

Attachments for Permit or Registration Name Change or Transfer Modification

Refer to instruction document **200650-instr** for professional engineer seal requirements.

Attachments Table 5. Required attachments.

Required Attachments	Attachment Number
TCEQ Core Data Form(s)	
Property Legal Description	
Property Metes and Bounds Description	
Metes and Bounds Drawings	
On-Site Easements Drawing	
Land Ownership Map	
Land Ownership List	
Property Owner Affidavit	
Verification of Legal Status	
Evidence of Competency	

Attachments Table 6. Additional attachments as applicable.

Additional Attachments as Applicable (select all that apply and add others as needed)	Attachment Number
<input type="checkbox"/> Signatory Authority Delegation	
<input type="checkbox"/> Fee Payment Receipt	
<input type="checkbox"/> Confidential Documents	
<input type="checkbox"/> Final Plat Record of Property	
<input type="checkbox"/> Assumed Name Certificate	

ATTACHMENT 1: FEE PAYMENT RECEIPT

Your transaction is complete. Thank you for using TCEQ ePay.

Note: It may take up to 3 working days for this electronic payment to be processed and be reflected in the TCEQ ePay system. Print this receipt and the vouchers for your records. An email receipt has also been sent.

Transaction Information

Trace Number: 582EA000621905

Date: 08/16/2024 10:46 AM

Payment Method: CC - Authorization

ePay Actor: MONICA SOWARDS

Actor Email:

IP: 12.216.174.99

TCEQ Amount: \$150.00

Texas.gov Price: \$153.63*

* This service is provided by Texas.gov, the official website of Texas. The price of this service includes funds that support the ongoing operations and enhancements of Texas.gov, which is provided by a third party in partnership with the State.

Payment Contact Information

Name: MONICA SOWARDS

Company: FRONTIER 380 LLC

Address: 2323 BRYAN ST SUITE 2620, DALLAS, TX 75201

Phone: 469-591-1380

Cart Items

Click on the voucher number to see the voucher details.

Voucher	Fee Description	AR Number	Amount
717606	MSW PERMIT/REGISTRATION/AMEND/MOD/TEMP AUTHORIZATIONS APPLICATION FEE		\$100.00
717607	30 TAC 305.53B MWP NOTIFICATION FEE		\$50.00
TCEQ Amount:			\$150.00

ePay Again

Exit ePay

Note: It may take up to 3 working days for this electronic payment to be processed and be reflected in the TCEQ ePay system. Print this receipt for your records.

Sonia Samir

From: Monica Sowards [REDACTED]
Sent: Friday, August 16, 2024 10:51 AM
To: Sonia Samir
Cc: David Dugger; Troy Leitschuh
Subject: FW: TCEQ ePay Receipt for 582EA000621905
Attachments: TCEQ ePay Receipt Permit Mod 8-16-2024.pdf

Importance: High

Sonia,

The TCEQ ePay Receipt for the Permit Mod is below and a copy is attached.

Monica Sowards | Operations Manager

FRONTIER WASTE SOLUTIONS

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a 2540 E University Dr, McKinney, TX 75069

o (469) 591-1380

c (940) 224-1771



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Greater Houston & Corpus*

Please follow our socials



-----Original Message-----

From: [REDACTED]
Sent: Friday, August 16, 2024 10:47 AM
To: Monica Sowards [REDACTED]
Subject: TCEQ ePay Receipt for 582EA000621905

EXTERNAL SENDER: Please note that this email originated from an external mailbox and take care when replying, opening attachments, or clicking on links in this message.

This is an automated message from the TCEQ ePay system. Please do not reply.

Trace Number: 582EA000621905

Date: 08/16/2024 10:46 AM

Payment Method: CC - Authorization 0000S61412 TCEQ Amount: \$150.00 Texas.gov Price: \$153.63*

* This service is provided by Texas.gov, the official website of Texas. The price of this service includes funds that support the ongoing operations and enhancements of Texas.gov, which is provided by a third party in partnership with the State.

Actor: MONICA SOWARDS

Email: [REDACTED]

Payment Contact: MONICA SOWARDS
Phone: 469-591-1380
Company: FRONTIER 380 LLC
Address: 2323 BRYAN ST SUITE 2620, DALLAS, TX 75201

Fees Paid:

Fee Description	AR Number	Amount
MSW PERMIT/REGISTRATION/AMEND/MOD/TEMP AUTHORIZATIONS APPLICATION FEE		\$100.00
30 TAC 305.53B MWP NOTIFICATION FEE		\$50.00

TCEQ Amount: \$150.00

Voucher: 717606

Trace Number: [REDACTED]

Date: 08/16/2024 10:46 AM

Payment Method: CC - Authorization 0000S61412 Voucher Amount: \$100.00 Fee Paid: MSW

PERMIT/REGISTRATION/AMEND/MOD/TEMP AUTHORIZATIONS APPLICATION FEE RN Number: RN110878030 Site Name: OSTTEND LANDFILL Site Address: 2540 E UNIVERSITY DR, MCKINNEY, TX 75069 CN Number: CN601098007 Customer Name: CONSTRUCTION RECYCLING AND WASTE CORPORATION Customer Address: 2650 E UNIVERSITY DR, MCKINNEY, TX 75069 Billing Name: MONICA SOWARDS Billing Address: 2540 E UNIVERSITY DR, MCKINNEY, TX 75069 Program Area ID: 2278A Comments: LGMP Permit Mod

Voucher: 717607

Trace Number: 582EA000621905

Date: 08/16/2024 10:46 AM

Payment Method: CC - Authorization [REDACTED] Voucher Amount: \$50.00 Fee Paid: 30 TAC 305.53B MWP NOTIFICATION FEE

To print out a copy of the receipt and vouchers for this transaction either click on or copy and paste the following url into your browser:

https://www3.tceq.texas.gov/epay/index.cfm?fuseaction=cor.search&trace_num_txt=582EA000621905.

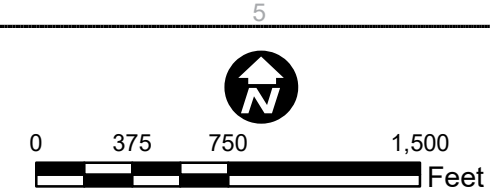
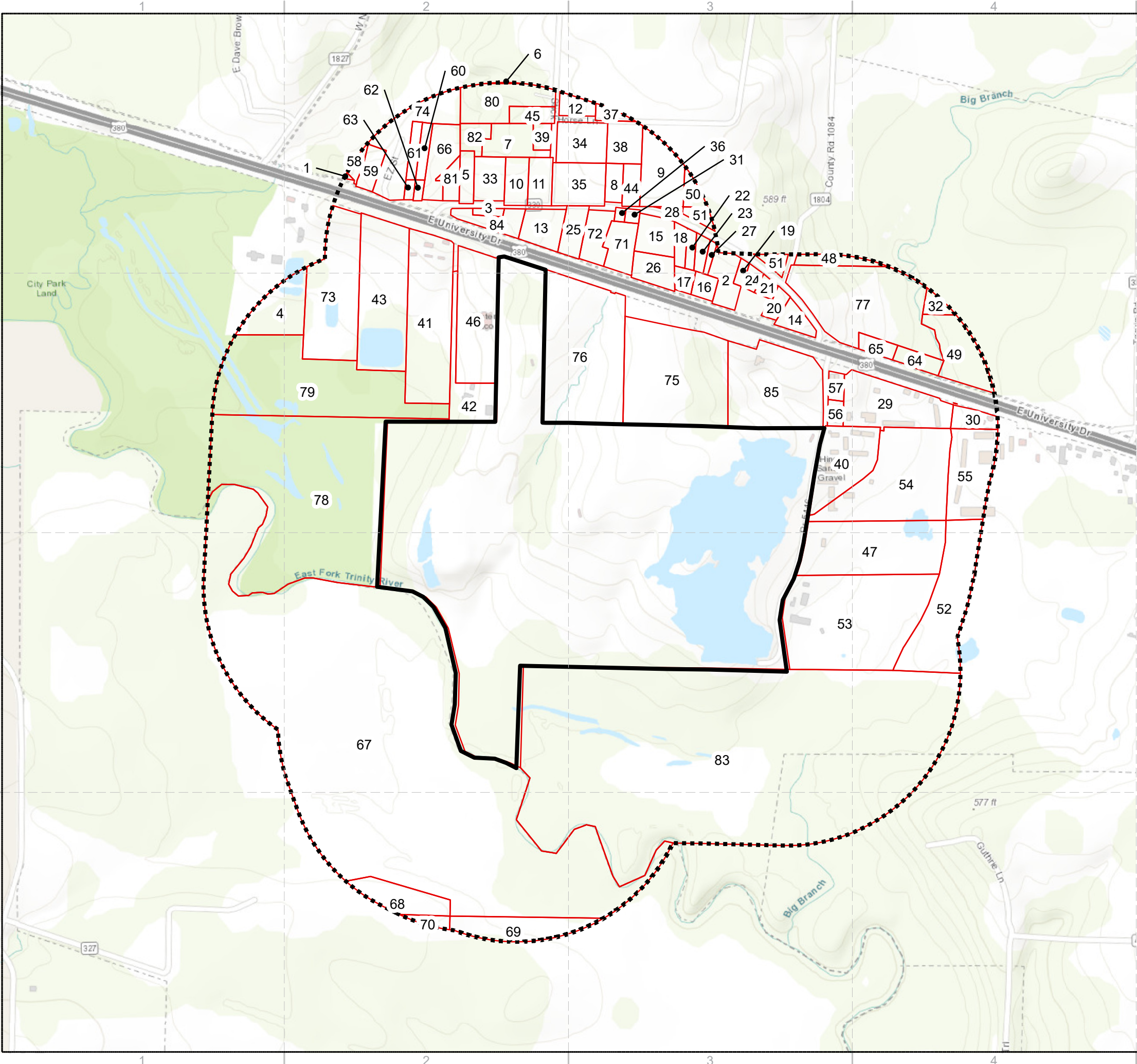
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ATTACHMENT 2: LAND OWNERSHIP MAP AND LANDOWNER'S LIST

FILE NAME: A:\2021\6775.21\03_DSGN01_DWG\050_CIVIL\17_GAS REMEDIATION\Fig.1_Land Ownership Map.mxd LAYOUT NAME: Layers PRINTED: Tuesday, September 24, 2024 - 12:48:43 PM USER: afranklin



LEGEND:
[Thick black line] PERMIT BOUNDARY
[Dashed black line] 0.25 MILE BOUNDARY
[Red outline] PARCELS

NOTE:
1. ADJACENT LAND OWNERSHIP INFORMATION OBTAINED FROM COLLIN COUNTY APPRAISAL DISTRICT ON SEPTEMBER 24, 2024.

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



FOR PERMITTING PURPOSES ONLY

**MCKINNEY 380 C&D LANDFILL
TCEQ MSW PERMIT NO. 2278A**
COLLIN COUNTY, TEXAS



CLIENT
FRONTIER WASTE SOLUTIONS
MCKINNEY 380 C&D LANDFILL
2540 E. UNIVERSITY DRIVE
MCKINNEY, TEXAS 75069

PROJECT NO.
6775.21

#	DATE	DESCRIPTION
---	------	-------------

**LAND OWNERSHIP MAP
FIGURE 1**

LAND OWNERSHIP LIST

Property ownership information obtained from the Collin County Appraisal District, August 28, 2024. Refer to Figure I-3.1 - Land Ownership Map, for parcel locations corresponding to the MAP ID number.

MAP ID	OWNER NAME	OWNER ADDRESS	CITY	STATE	ZIP
1	MALDONADO MARTIN	860 S STATE HIGHWAY 5	FAIRVIEW	TX	75069-9459
2	COLLIN COUNTY RECYCLERS INC	2933 E UNIVERSITY DR	MCKINNEY	TX	75069-0908
3	NETO S PLACE TRUST	2441 COUNTY RD 330	MCKINNEY	TX	75071-0701
4	PATEL MALTI	2236 E UNIVERSITY DR	MCKINNEY	TX	75069-0901
5	GONZALES TERRY GLENN	2461 COUNTY ROAD 330	MCKINNEY	TX	75071-0701
6	CALDWELL CHARLES D & DEBORAH A	2243 STICKHORSE LN	MCKINNEY	TX	75071-0769
7	TREJO RUDDY & GLORIA	2155 STICKHORSE LN	MCKINNEY	TX	75071-0767
8	TAMPLEN MICHEAL D &	2675 COUNTY ROAD 330	MCKINNEY	TX	75071-0705
9	TEMORI WAHAB	5702 S BRIAR RIDGE CIR	MCKINNEY	TX	75072-5460
10	BERHOW JEAN J	2539 COUNTY ROAD 330	MCKINNEY	TX	75071-0704
11	AREVALO-FRANCO ARTURO	2115 STICKHORSE LN	MCKINNEY	TX	75071-0767
12	SHAW JOHN J - LE	2278 STICKHORSE LN	MCKINNEY	TX	75071-0770
13	COLLINS PROPERTY CO THE	PO BOX 578	WYLIE	TX	75098-0578
14	LAWSON LIVING TRUST	PO BOX 2304	MCKINNEY	TX	75070-8169
15	RAFAELOV MOSHE	6423 LINDEN LN	DALLAS	TX	75230-1407
16	MCCLELLAN AMY HINES	PO BOX 3027	MCKINNEY	TX	75070-8181
17	HOLLAND GERALD C	580 RS COUNTY ROAD 3350	EMORY	TX	75440-4559
18	IZAGUIRRE CRESENCIO	2784 COUNTY ROAD 330	MCKINNEY	TX	75071-0706
19	COLLIN COUNTY RECYCLERS INC	2933 E UNIVERSITY DR	MCKINNEY	TX	75069-0908
20	KHORASAN PROPERTIES LLC	2675 E UNIVERSITY DR	MCKINNEY	TX	75069-0905
21	ANDEZ ALEJANDRO LOPEZ & MARIA DOLORES PAREDES CERVA	2944 COUNTY ROAD 330	MCKINNEY	TX	75071-0708
22	HERNANDEZ MARIA &	2804 COUNTY ROAD 330	MCKINNEY	TX	75071-0707
23	MCCLELLAN AMY HINES	PO BOX 3027	MCKINNEY	TX	75070-8181
24	SARVER MILDRED	2910 COUNTY ROAD 330	MCKINNEY	TX	75071-0708
25	AZAMI MOHAMMAD S	2675 E UNIVERSITY DR	MCKINNEY	TX	75069-0905
26	RAFAELOV MOSHE	11836 JUDD CT STE 322	DALLAS	TX	75243-4412
27	MCCLELLAN AMY HINES	PO BOX 3027	MCKINNEY	TX	75070-8181
28	TIMORY WAHAB & SALIHA	5702 S BRIAR RIDGE CIR	MCKINNEY	TX	75072-5460
29	MCCLELLAN BILLY JOEL & AMY GAIL	PO BOX 3027	MCKINNEY	TX	75070-8181
30	MCCLELLAN JOE & AMY	PO BOX 3027	MCKINNEY	TX	75070-8181
31	NORTH COLLIN SPECIAL UTILITY DISTRICT	2333 SAM RAYBURN HWY	MELISSA	TX	75454-0343
32	ETHAN MC PROPERTY LLC - SERIES L	4625 SEBAGO TRL	PLANO	TX	75093-3394
33	COSTELLO LAWRENCE J & DALE	2495 COUNTY ROAD 330	MCKINNEY	TX	75071-0701
34	OSTICK RANDY G & TERRY A	2148 STICKHORSE LN	MCKINNEY	TX	75071-0768
35	BEST WAY PROPERTIES LLC	3616 TREE SHADOW TRL	PLANO	TX	75074-1601
36	NORTH COLLIN SPECIAL UTILITY DISTRICT	2333 SAM RAYBURN HWY	MELISSA	TX	75454-0343
37	KUMAR VINOD & POOJA SHARMA	3444 STICKHORSE LN	MCKINNEY	TX	75071-0783
38	SRISAI BUILDERS LLC	1408 PILLAR BLUFF WAY	MCKINNEY	TX	75072-3154
39	SANDERS WAYNE E	2179 STICKHORSE LN	MCKINNEY	TX	75071-0767
40	MCCLELLAN JOE & AMY	PO BOX 3027	MCKINNEY	TX	75070-8181
41	P4 HOLDINGS LLC	3300 N A ST	MIDLAND	TX	79705-5421
42	WEBSTER RICKY JACK JR	2526 E UNIVERSITY DR	MCKINNEY	TX	75069-4734
43	PANNKUK BOBBY JR &	PO BOX 1309	LEONARD	TX	75452-1309
44	TORRES JULIO CESAR	2733 COUNTY ROAD 330	MCKINNEY	TX	75071-0846
45	LEWIS JASON PATRICK &	16340 REDBUD DR	MCKINNEY	TX	75071-6510
46	MASTER HALCO INC	3010 L B J FWY STE 800	DALLAS	TX	75234-2776
47	ALVARADO ARNULFO SR	805 ELM ST	MCKINNEY	TX	75069-6758
48	JONES KATHY W & KENNETH - LE	2150 COUNTY ROAD 1084	MCKINNEY	TX	75071-0747
49	VALLE ISRAEL D & ALMA	PO BOX 3753	MCKINNEY	TX	75070-8195
50	SAMS DONALD D	3343 STICKHORSE LN	MCKINNEY	TX	75071-0782
51	RELEMKE TRUST	2701 W 15TH ST STE 169	PLANO	TX	75075-7523
52	A&T INVESTMENTS & HOLDINGS INC & JAYASRI DEVALAPALLI &	1388 LOYOLA DR	SANTA CLARA	CA	95051-3932
53	HERNANDEZ GONZALO	2441 E UNIVERSITY DR	MCKINNEY	TX	75069-4795
54	MCCLELLAN JOE & AMY	PO BOX 3027	MCKINNEY	TX	75070-8181
55	MCCLELLAN AMY GAIL & BILLY JOEL	PO BOX 3027	MCKINNEY	TX	75070-8181
56	BORG FAMILY LTD	285 KATE LN	PRINCETON	TX	75407-2631
57	MCCLELLAN BILLY J & AMY &	PO BOX 3027	MCKINNEY	TX	75070-8181
58	MONARCH GROUP LLC	5100 ELDORADO PKWY STE 102	MCKINNEY	TX	75070-9127
59	RILEY DEBBIE TATE	3961 COUNTY ROAD 494	PRINCETON	TX	75407-2339
60	TEXAS RND LLC	5608 SETTLEMENT WAY	MCKINNEY	TX	75070-7005
61	TEXAS RND LLC	2431 E UNIVERSITY DR	MCKINNEY	TX	75069-4795
62	TEXAS RND LLC	5608 SETTLEMENT WAY	MCKINNEY	TX	75070-7005
63	TEXAS RND LLC	2431 E UNIVERSITY DR	MCKINNEY	TX	75069-4795

64	YOHANNAN PRINSON	5029 HARTWELL CT	SAINT CLOUD	FL	34771-7858
65	NESHYBA RYAN & MISTY	14263 COUNTY ROAD 830	ANNA	TX	75409-6039
66	HERNANDEZ GONZALO	2411 COUNTY ROAD 330	MCKINNEY	TX	75071-0701
67	MAP HOLDINGS LP	1410 N CROSSING DR	ALLEN	TX	75013-3457
68	MCKINNEY UPLANDS LP	1410 N CROSSING DR	ALLEN	TX	75013-3457
69	MAP HOLDINGS LP	1410 N CROSSING DR	ALLEN	TX	75013-3457
70	MCKINNEY UPLANDS LP	1410 N CROSSING DR	ALLEN	TX	75013-3457
71	WRIGHT FREDDIE	11416 ALPINE SPRINGS DR	AUBREY	TX	76227-2240
72	RODRIGUEZ MAURO G	2735 E UNIVERSITY DR	MCKINNEY	TX	75069-0906
73	HOPE 380 HOLDINGS LLC	4429 WHITE ROCK LN	PLANO	TX	75024-7298
74	DYNAMIX INVESTMENT LLC	20 BUCKINGHAM LN	ALLEN	TX	75002-8675
75	SILK ROAD INVEST LLC	4993 LIVINGSTON DR	FRISCO	TX	75033-2931
76	FRONTIER 380 LLC	2323 BRYAN ST STE 2620	DALLAS	TX	75201-2603
77	COLLIN COUNTY	210 S MCDONALD ST	MCKINNEY	TX	75069-7602
78	MCKINNEY CITY OF	PO BOX 517	MCKINNEY	TX	75070-8013
79	MCKINNEY CITY OF	PO BOX 517	MCKINNEY	TX	75070-8013
80	PEREZ NOE C HERR &	2195 STICKHORSE LN	MCKINNEY	TX	75071-0767
81	NETO S PLACE TRUST	2441 COUNTY RD 330	MCKINNEY	TX	75071-0701
82	HERNANDEZ GONZALO	2441 E UNIVERSITY DR	MCKINNEY	TX	75069-4795
83	CARNES KEVIN & SUZETTE	742 GUTHRIE LN	MCKINNEY	TX	75069-4760
84	2530 DFW UNIVERSITY LLC	1825 W KNUDSEN DR STE 130B	PHOENIX	AZ	85027-2188
85	DUFF REAL ESTATE LLC	800 HIGHWAY 98 BYP	COLUMBIA	MS	39429-8255

ATTACHMENT 3: UNMARKED COPY

CRWC TYPE IV LANDFILL

TCEQ MSW Permit No. 2278A

Collin County, Texas

Attachment III-4 – Site Layout Plan

Prepared for:

Construction Recycling and Waste Corporation

September 2021

Rev. 01 – November 2021

Rev. 02 – June 2022

Rev. 03 – October 2022

Rev. October 2024

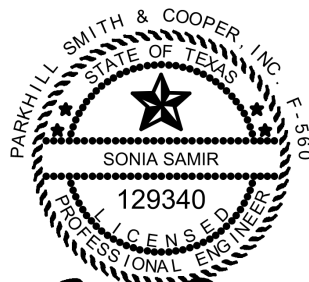
Revised by:

Parkhill

3000 Internet Blvd, Suite 550

Frisco, Texas 75034

TBPE F-560



Sonia Samir

10/01/2024
For Oct 2024 Revisions Only



10/20/2022

Frank E Pugsley, P.E.

Parkhill Project No.: 016048.21

Attachment III-4 – Site Layout Plan

TABLE OF CONTENTS

1. Landfill Layout Plan: Outline of Units, Phases and Fill Sectors	1
2. Location of Interior Access Roads	2
3. Fence Lines, Natural Windbreaks, Green Belts, and Screening	2

FIGURES

FIGURE III-4.1A – EXCAVATION GRADES

FIGURE III-4.1B – ALTERNATE EXCAVATION GRADES

FIGURE III-4.2 – OPERATION SEQUENCE I

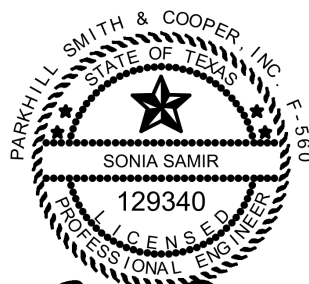
FIGURE III-4.3 – OPERATIONAL SEQUENCE II

FIGURE III-4.4 – OPERATIONAL SEQUENCE III

FIGURE III-4.5 – SITE LAYOUT PLAN

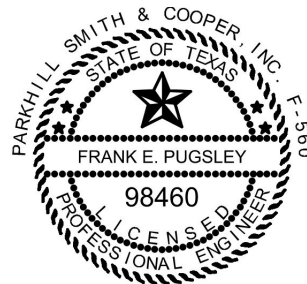
FIGURE III-4.6 – LANDFILL AND QUARRY ACCESS ROADS DURING PHASE I

FIGURE III-4.7 – RECYCLING FACILITY



Sonia Samir

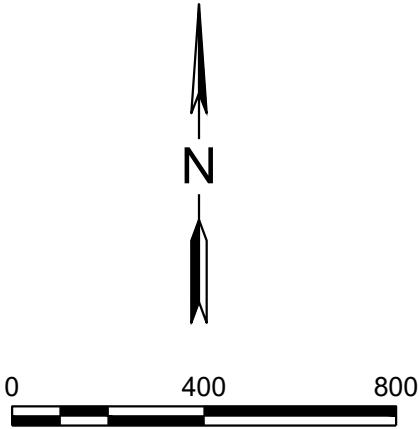
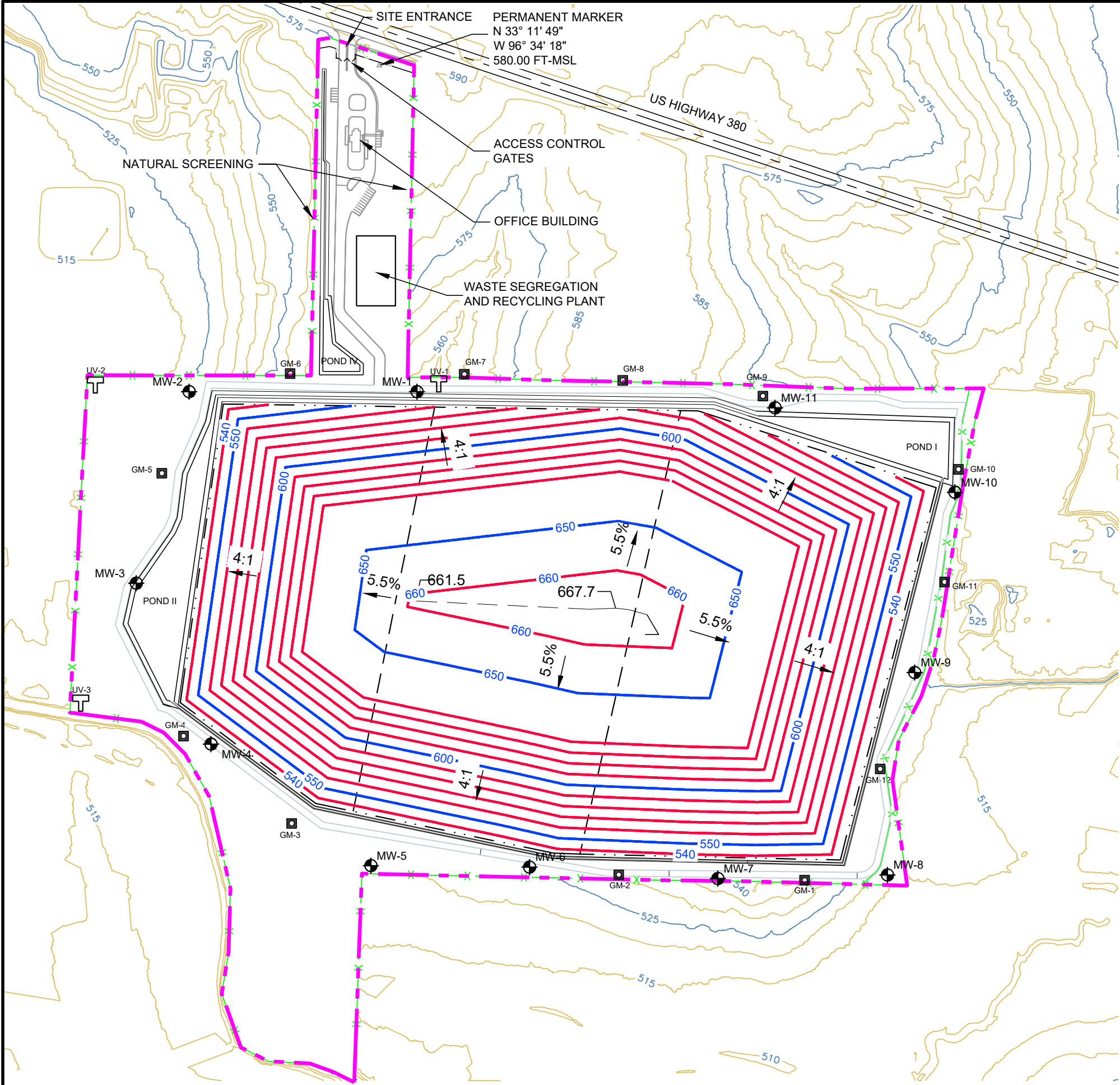
10/01/2024
For Oct 2024 Revisions Only



10/20/2022

Frank E. Pugsley, P.E.

A:\2021\6775.21\03_DSGN\01_DWG\050_CIVIL\17_GAS REMEDIATION\FIG.III-4.5_SITE LAYOUT PLAN.DWG, 9/24/2024 10:14 AM, afranklin



NOTES / REFERENCE

1. MAXIMUM EXCAVATION DEPTH IS 485 FT-MSL.
2. THE INTERNAL ROADS WILL BE CONSTRUCTED AT THE OPERATOR'S DISCRETION TO BEST FIT THE OPERATIONS.
3. THE LANDFILL WILL BE DEVELOPED SEQUENTIALLY BASED ON THE PHASE NUMBERS SHOWN. APPENDIX II-4.A DISCUSSES LANDFILL CONSTRUCTION SEQUENCE AND DEVELOPMENT IN DETAIL.
4. MAXIMUM FINAL COVER ELEVATION 667.7 FT-MSL.
5. ALL UTILITY EASEMENTS, INCLUDING THE SEWER EASEMENT, ARE SHOWN ON FIGURE II.3.7 - SITE EASEMENT MAP.

LEGEND

- PERMIT BOUNDARY
- FENCE
- PHASE LIMITS
- PERIMETER ROAD
- EXISTING TOPOGRAPHIC CONTOURS
- 510 FINAL COVER GRADES
- MONITORING WELLS
- GAS MONITORING WELLS
- UTILITY VENT

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MCKINNEY 380 C&D LANDFILL
TCEQ MSW PERMIT NO. 2278A
COLLIN COUNTY, TEXAS



CLIENT
Frontier Waste Solutions
McKinney 380 C&D Landfill
2540 E University Dr
McKinney, TX 75069

PROJECT NO.
6775.21

4	SEP 2025	ADDED UTILITY VENTS
3	OCT 2022	TECHNICAL NOD #2
2	JUNE 2022	TECHNICAL NOD #1
#	DATE	DESCRIPTION

Site
Layout Plan
FIG.III-4.5

CRWC TYPE IV LANDFILL

TCEQ MSW Permit No. 2278A

Collin County, Texas

Attachment III-11 – Landfill Gas Management Plan

Prepared for:

Construction Recycling and Waste Corporation

September 2021

Rev. 01: November 2022

Rev. 02: June 2022

Rev.03: October 2022

Rev. December 2024

Revised by:

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3000 Internet Blvd, Suite 550

Frisco, Texas 75034

TBPE F-560

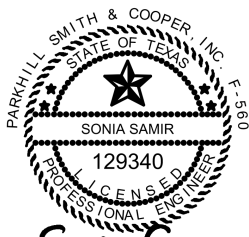
CRWC TYPE IV LANDFILL
MCKINNEY, COLLIN COUNTY, TEXAS
TCEQ PERMIT NO. MSW-2278A

PART III

ATTACHMENT III-11
LANDFILL GAS MANAGEMENT PLAN

Prepared by:

TECHNICO Environmental, Inc.



Sonia Samir
12/26/2024

For Oct/ Nov/ Dec 2024
Revisions Only

S. Kourosh
Sohrab Kourosh, Ph.D., J.D., P.E.



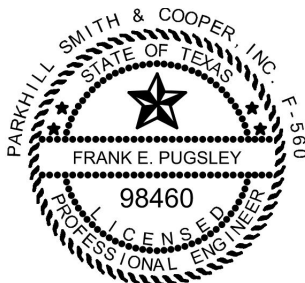
6-3-99
Date

Revised by:

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Revised September 2021,
June 2022, October 2022,
December 2024



10/20/2022

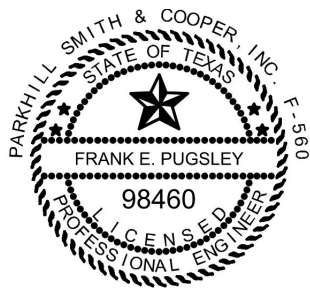
Frank E. Pugsley, P.E.

For May 2021, September 2021,
June 2022, & October 2022
Revisions Only

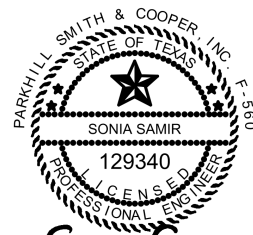


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12/26/2024

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10/20/2022

LANDFILL GAS MANAGEMENT PLAN

Frank E. Pugsley, P.E.

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June 2022, & October 2022
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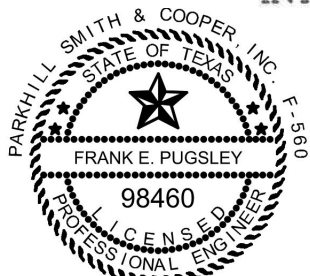
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Rev. 03 October 2022
Rev. December 2024
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III-11-i



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GOLDER ASSOCIATES INC.
Professional Engineering Firm
Registration Number F-2578



(V) LOCATION OF UTILITY LINES & PIPELINES
AT SITE (§330.371(b)(1)(E))

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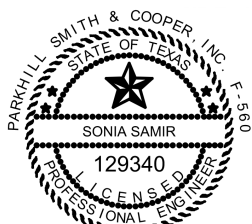
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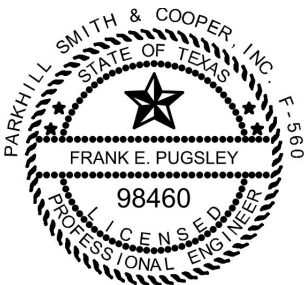
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ATTACHMENTS:

ATTACHMENT III-11A - GAS PROBE INSTALLATION REPORT

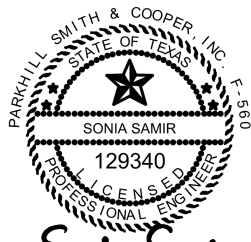


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12/26/2024
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September 2021
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Rev. 02 June 2022
Rev.03 October 2022
Rev. December 2024

2.2 GAS CONCENTRATION LIMITS AT THE FACILITY BOUNDARY

The landfill owner or operator will install a passive venting system within the body of landfill and a methane gas monitoring network around the perimeter of the disposal area to ensure that the concentration of methane gas does not exceed 5% by volume for methane at the facility property boundary.

If methane gas is detected above 5% by volume in the monitoring system, the landfill owner or operator will implement a corrective action plan to bring down the methane gas concentration levels below 5% by volume. Such control measures will include, but not be limited to, inspection and repair of the passive venting and control system (PVCS) as provided in Part III, Attachment III-12, Figure III-12.1 Final Contour Plan. The proposed locations of the PVCS are provided in Figure III-11.1 at the end of this attachment.

For underground utilities that cross the permit boundary within 1,000 ft of in-place waste, utility vents will be installed to monitor for the potential presence of LFG, and to reduce the potential of LFG migration by venting any methane accumulation. Utility vents will be installed into or directly adjacent to the pipe bedding of underground utilities, as shown on the detail in Figure III-11.2. Utility vents will be installed near where the underground utility crosses the permit boundary in accordance with §330.371(b)(1)(E).

Currently, a sanitary sewer line crosses the permit boundary in three locations: i. northwest corner of the permit boundary, ii. southwest corner of the permit boundary, iii. north of the Phase I limits, directly east of the facility access road. As such, utility vents will be installed at these locations, as shown on Figure III-11.1. The vents will be equipped with monitoring ports to facility routine methane monitoring.

Additional utility vents will be installed for any future underground utility trenches that cross the permit boundary within 1,000 ft of in-place waste. For any underground utility trenches located fully within the permit boundary (that is trenches that do not cross the permit boundary), no gas migration is anticipated beyond the permit boundary, and as such no vents are proposed.

3.0 REGULATORY STANDARDS TO BE MET BY OWNER/OPERATOR

The regulatory standards require implementation of a routine methane monitoring program. A monitoring program is devised for this site. The type and frequency of this routine monitoring program is based on the following factors:

3.1 BASIS FOR METHANE GAS MONITORING FREQUENCY §330.371(b)

The methane gas monitoring frequency was determined after consideration of the following factors:

(I) GEOLOGY AND SOIL CONDITIONS (§330.371(b)(1)(A))

The maximum depth of this landfill is 80 feet below the ground surface. According to the geotechnical investigation presented in Attachment III-9, the unweathered Austin Chalk Formation varies in depth from approximately 6 feet below the ground surface near the east edge of the landfill excavation to approximately 24 feet below the ground surface near the west edge of the landfill excavation. This indicates that most of the landfill excavation will be in material with a very low potential for transmission of landfill gas.

(II) HYDROGEOLOGIC CONDITIONS BELOW THE FACILITY (§330.371(b)(1)(B))

Groundwater occurs at about 16 feet below the surface in the northern side of the landfill. The total thickness of the water bearing unit is 31 feet. Of this, the saturated thickness of the water bearing unit consists of the bottom 15 feet.

(III) HYDRAULIC CONDITIONS OF SUBSURFACE GEOLOGY (§330.371(b)(1)(C))

The hydraulic conductivity of the water bearing unit is 1×10^{-6} cm/s. The hydraulic conductivity of the Austin Chalk is 1×10^{-8} cm/s.

(IV) LOCATION OF FACILITY BOUNDARY AND STRUCTURES (§330.371(b)(1)(D))

The landfill scale house and administrative office, and the proposed WSRP are the only facility structures on-site, located approximately 950 feet from the waste footprint. The location of all habitable structures within 500 feet of the site are shown in Figure II-3.3, in Attachment II-3.

(V) LOCATION OF UTILITY LINES & PIPELINES AT SITE (§330.371(b)(1)(E))

All known utility lines are located within the easements shown in Figure II-3.7 – Site Easements Map.

3.2 MINIMUM MONITORING FREQUENCY-QUARTERLY MONITORING §330.371(b)(2) &

§330.371(k)

Due to the exclusion of putrescible materials, the intensity and magnitude of landfill gas generation in Type IV landfills are generally lower than the Type I landfills. Considering the site conditions as reflected in the above factors, the proper gas monitoring frequency for the proposed landfill will be quarterly. This will be the minimum monitoring frequency.

4.0 CORRECTIVE MEASURES -EXCEEDENCE OF LANDFILL GAS (§330.371(c))

Methane gas concentration will not be allowed to exceed 5% by volume at the facility boundary and 1.25% by volume in the facility structures in accordance with §330.371(a). If these limits are exceeded, then immediate actions will be taken by The Landfill owner or operator to assure that the landfill facility is in compliance with the regulations.

Should a methane concentration in excess of 5% by volume be detected at any of the gas monitoring probes shown in Figure III-11.1, the landfill will implement appropriate remediation actions, place a copy of the remediation plan in the operating record, notify the TCEQ that the remediation plan has been implemented, and provide a copy of the remediation plan to the TCEQ. These actions may include, but are not limited to:

- Removing accumulated sediment from the landfill perimeter ditch to provide passive venting from subsurface soil and rock material.
- Inspecting and repairing any installed LFG control features.
- Installing and monitoring temporary bar probes to determine the extent of the migration,
- Installing LFG control features such as passive vents, interceptor trenches, and/or an active gas collection system.

The location, installation, and nature of the remediation will depend on the location and occurrence of the gas exceedance at the perimeter gas monitoring probe. Typical details for passive vents, interceptor trenches, and bar probes are shown on Figures III-11.2 and III-11.3. Installation of any new LFG control feature for the corrective measures discussed above will be accompanied by a non-notice permit modification in accordance with 30 TAC §305.70(j) to indicate the location of the feature. If corrective actions for landfill gas remediation are implemented and are not already part of the facility permit, a permit modification should be submitted to the TCEQ pursuant to 30 TAC §330.70 to include the implemented actions.

4.1 PROTECTIVE MEASURES AND NOTIFICATIONS §330.371(c)(1)

If methane is detected at concentrations higher than the abovementioned levels, protective measures such as evacuation or ventilation of buildings will be taken. Landfill owner or operator will notify the following and implement the most appropriate corrective measures mentioned above to reduce the methane gas concentration to levels below the specified levels:

- the TCEQ Executive Director,
- TCEQ Region 4,
- City of McKinney Mayor and/or City Manager,
- Collin County Judge,
- Collin County Commissioner,
- City's Fire Chief and/or Fire Marshall, and
- the adjacent land owner(s) within a 1,000' radius of the exceedance location.

4.2 ACTION WITHIN SEVEN DAYS OF DETECTION §330.371(c)(2)

Within seven days of detection of methane gas concentration exceeding the above specified levels, Landfill owner or operator will record the methane gas levels and place them in the MSW site operating record and describe the steps to be taken to protect the human health; and

4.3 ACTION WITHIN 60 DAYS OF DETECTION §330.371(c)(3)

Within 60 days of detection of methane gas above the regulatory level, and after an assessment, Landfill owner or operator will implement a methane gas remediation plan for the methane gas releases, place a copy of the remediation plan in the operating record, provide a copy to the Executive Director and notify the Executive Director that the Remediation Plan has been implemented. The Remediation Plan (RP) will describe the nature and the extent of the issue and the proposed remedy, and will be submitted to the Executive Director for review, comments, and suggestions for additional remedial measures as necessary, or approval.

5.0 ALTERNATE SCHEDULE FOR COMPLIANCE §330.371(d)

The Executive Director may establish alternative schedules to for demonstrating compliance with subsections (b) or (c) of 30 TAC §330.371. If gas is detected in the Landfill perimeter probes above the limits in §330.371(a), more frequent monitoring will be implemented (weekly or monthly) during

the remediation plan implementation until 3 consecutive monitoring events show the methane concentration at the affected gas monitoring probe(s) to be less than 5% by volume.

6.0 LANDFILL GAS MONITORING AND CONTROL PROGRAM DURATION §330.371(e)

The landfill gas monitoring and control program will continue for a period of five years after the final closure of the landfill facility. Monitoring will consist of measuring the methane gas concentration in the gas probes network system along the landfill perimeter to determine if the passive gas venting control system is still working to control methane gas levels within the regulated limits. A demonstration can be submitted to the Executive Director to reduce the gas monitoring and control program. The demonstration must prove that there is no potential for gas migration beyond the property boundary or into on-site structures.

7.0 MODIFICATION OF GAS MONITORING AND CONTROL SYSTEMS §330.371(f)

The landfill gas monitoring and control systems will be modified through permit modification requirements, as needed to reflect the changes on site of the MSW site. The post-closure land use will not interfere with the functions of gas monitoring and control systems.

8.0 LANDFILL GAS - MANAGEMENT AND CONTROL PLAN §330.371(g)

A landfill gas management plan has been prepared as presented below which addresses the following:

- A. Management and Control of Landfill Gases
- B. Description of the proposed Landfill Gas Management and Control System(s) including installation procedures, time-lines for installation, monitoring procedures and procedures to be used during maintenance.
- C. A backup plan to be implemented if the main system breaks down or becomes in-effective.

8.1 MANAGEMENT AND CONTROL OF LANDFILL GASSES §330.371(g)(1)

Landfill gases migrate in the subsurface by advection and diffusion. Landfill gas generated in the landfill will be controlled and managed by LFG control features (described in Section 4.0). The passive venting wells /tubes will be installed as necessary during active operations, and/or in phases as the final cover is constructed. The landfill methane gas concentration will be controlled to levels below the levels required in §330.371(a), by installing passive ventilation gas wells.

8.2 LANDFILL GAS MANAGEMENT SYSTEM INSTALLATION (§330.371(g)(2))

The landfill gas control system consists of 30 passive vents that extend from 2 feet above the final cover downward to 10 feet above the bottom liner. They consist of 4" perforated schedule 40 PVC pipes. These pipes are installed in the body of waste by drilling 8" diameter holes through the compacted waste, and installing these pipes in an annulus of compacted silicon sand. These pipes are perforated along their length from 6" above the bottom cap to 3 feet below the final cover, where the annulus will be filled with a slurry of cement and bentonite. At the top they are connected to a T attached to two downward 90° elbow. The locations of these gas vents are presented in Figure III-11.1. These vents will be monitored on a quarterly basis using a Methane Gas Detector that can register methane by percentage of volume. If significant gas concentration is measured in any of the vents, a wind driven turbine will be installed on top of that vent. These vents will be connected to an Active Gas Extraction System (AGS) and will be used for active gas extraction if gas migration takes place, and methane concentration exceeding the specified level is measured at the landfill boundaries or close-by structures.

8.3 BACKUP SYSTEM IF MAIN SYSTEM BREAKS DOWN (§330.371(g)(3))

If the passive gas venting system is found to be ineffective, and methane gas has been determined to have accumulated in the landfill at a concentration exceeding §330.371(a)(2) which causes migration beyond the landfill property at levels exceeding the limits in §330.371(a), an Active Gas Extraction System (AGES) will be installed to actively extract the accumulated gas, and to vent or burn the gas in a gas flare. These systems can consist of wind-driven turbines or electric driven tube- axial fans, or any other acceptable system, to pump out the gas from the landfill.

Since Collin County is a non-attainment area, if the owner or operator proposes to install an active ventilation system with a landfill gas combustion flare, an Air Permit Standard Exemption will be submitted as a part of permit modification to TCEQ.

9.0 LANDFILL PERIMETER GAS MONITORING NETWORK (§330.371(h))

A permanent monitoring system will be installed in this landfill. The landfill perimeter gas monitoring system consists of 12 permanent gas monitoring probes installed around the waste disposal area within the site, portable methane detection equipment, and under slab probes or bar holes. The proposed gas perimeter monitoring network is shown on Figure III-11.1 of this

Attachment. Probes 3, 4, 5 and 6 (as shown on Figure III-11.1) have been installed, and the remaining probes will be installed according to the schedule in Part II, Attachment II-4, Appendix II-4A – Construction and Development of CRWC Type IV Landfill.

The gas monitoring probes consist of a 3/4" perforated (slotted) PVC pipe installed inside the gas monitoring wells. The gas monitoring wells are drilled to the elevation of 495 feet AMSL. The gas probes are installed in the center of a 4" diameter bar-hole, and a silicon sand filter is packed in annulus around the probe. The probes are screened from 4" above the bottom of the well to 5 feet below ground level. A bentonite seal will be placed from this level to 2 feet below ground level, and 2 feet of concrete will be placed on top of the bentonite and will hold the well flash mount cover in place. A quick connect nipple will be installed on top of the probe. The strata being monitored are the alluvial and weathered Austin Chalk layers, and unweathered Austin Chalk to the depth of 495 feet AMSL.

10.0 LANDFILL GAS MONITORING IN SITE STRUCTURES (§330.371(i))

All on-site buildings and structures, including the scalehouse/office and the proposed WSRP, will be monitored quarterly (at a minimum) with a portable combustible gas indicator or a continuous LFG monitor/alarm (capable of providing an audible alarm if methane concentration exceeds 1.25% by volume). The WSRP will be added to the routine methane monitoring program once constructed. Monitoring will be conducted according to the procedures in Section 12.3. If allowable methane concentration limits are exceeded, on-site buildings will be immediately evacuated and ventilated by opening doors and windows, and the steps described in Sections 4.0 through 4.3 will be taken.

If a structure, or other area where potential gas buildup would be of concern, is constructed at this site in the future, then that area will be included in the gas monitoring program and the Gas Monitoring Network design will be revised to include the area.

11.0 SAMPLING REQUIREMENTS FOR LANDFILL GAS (§330.371(j))

All methane gas monitoring probes, utility vents, and on-site structures will be monitored and sampled for methane gas during the monitoring periods and events. Monitoring of temporary and permanent LFG control features (if installed) may also be conducted as applicable. Sampling for additional gases may be required by the Executive Director according to §330.371(j).

12.0 LANDFILL GAS MONITORING FREQUENCY (§330.371(k))

As stated in Section 3.2 above, the minimum landfill gas monitoring frequency in this landfill will be quarterly.

12.1 MORE FREQUENT MONITORING REQUIRED BY TCEQ

A higher monitoring frequency may be implemented if it is determined that the landfill facility has caused gas migration, and methane gas levels continue to exceed the limits established in §330.371(a) at the landfill facility boundary, or within structures located within the landfill facility. In that case, the monitoring will be performed according to the plan suggested by the Executive Director (TCEQ). As noted in Section 5, if gas is detected in the Landfill perimeter probes above the limits in §330.371(a), more frequent monitoring will be implemented (weekly or monthly) during the remediation plan implementation until 3 consecutive monitoring events show the methane concentration at the affected gas monitoring probe(s) to be less than 5% by volume.

12.2 MORE FREQUENT MONITORING REQUIREMENTS

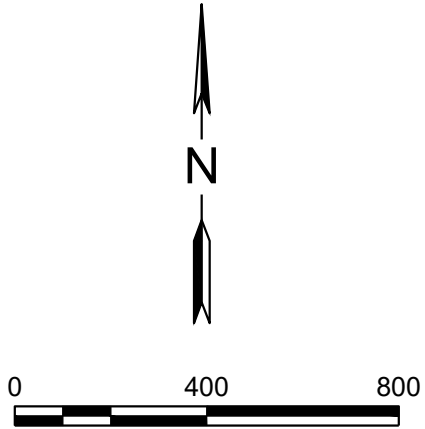
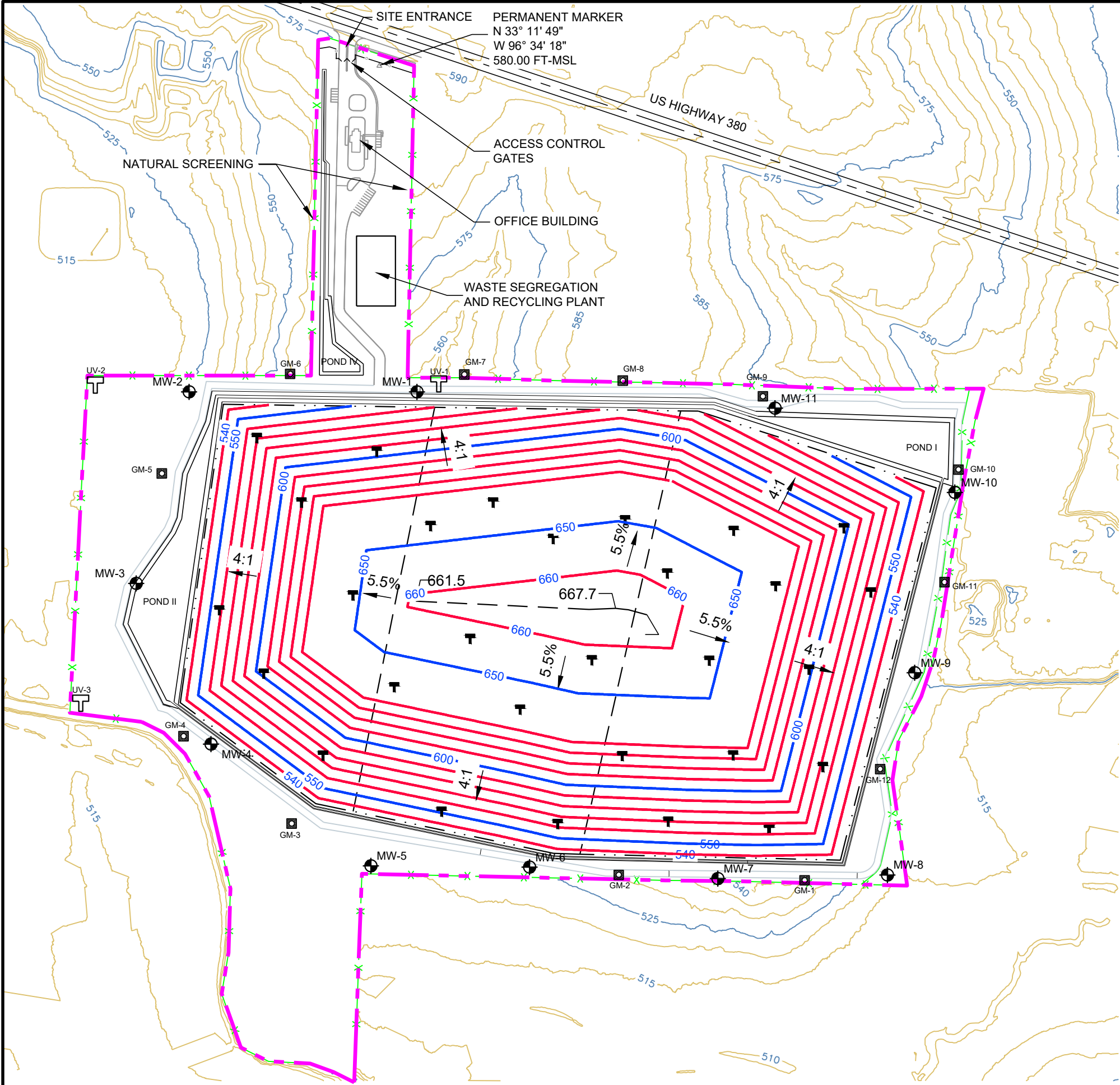
Whenever landfill gas monitoring has determined that landfill gas is migrating beyond the facility boundary or that the landfill gas is accumulating within the structures, a more frequent monitoring of landfill gas will be conducted at those locations.

12.3 GAS MONITORING PROCEDURES AND EQUIPMENTS

Landfill gas will be monitored to determine if methane concentrations exceed 5% by volume at the facility boundary or 1.25% by volume in facility structures in accordance with §330.371(a). Landfill gas monitoring will be performed according to the above plan. The equipment used for this purpose will be a LandTec GEM-2000 landfill gas detector or if available, a similar or more advanced system will be used.

Prior to measurement, the landfill gas monitoring probes will be purged by extracting equivalent of three probe volumes of gas. This can be accomplished by connecting the landfill gas detector (GEM-2000 or equivalent) intake pipe to the probe's monitoring nipple and running the unit's pump for 60 seconds. The unit should be turned off, and the intake pipe be disconnected. The unit should be turned on in the outside air to purge the gas detector. The intake pipe should be connected to the probe nipple again, and the Detector should be turned on. The Detector's reading should be recorded, and if the above conditions are exceeded, the procedure described above be implemented.

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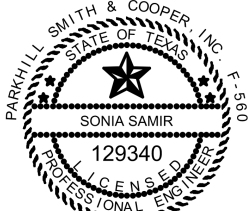
NOTES / REFERENCE

1. SITE LAYOUT AND RECREATED BY PARKHILL BASED ON MAY 13, 2003 DRAWINGS.
2. THE INTERNAL ROADS WILL BE CONSTRUCTED AT THE OPERATOR'S DISCRETION TO BEST FIT THE OPERATIONS.
3. THE LANDFILL WILL BE DEVELOPED SEQUENTIALLY BASED ON THE PHASE NUMBERS SHOWN. APPENDIX II-4.A DISCUSSES LANDFILL CONSTRUCTION SEQUENCE AND DEVELOPMENT IN DETAIL.
4. MAXIMUM FINAL COVER ELEVATION 667.7 FT-MSL.
5. VENT LOCATIONS SHOWN ARE APPROXIMATE AND MAY BE ADJUSTED AS NECESSARY

LEGEND

- PERMIT BOUNDARY
- FENCE
- PHASE LIMITS
- PERIMETER ROAD
- EXISTING TOPOGRAPHIC CONTOURS
- FINAL COVER CONTOURS
- MONITORING WELLS
- GAS MONITORING WELLS
- PASSIVE GAS VENT
- UTILITY VENTS

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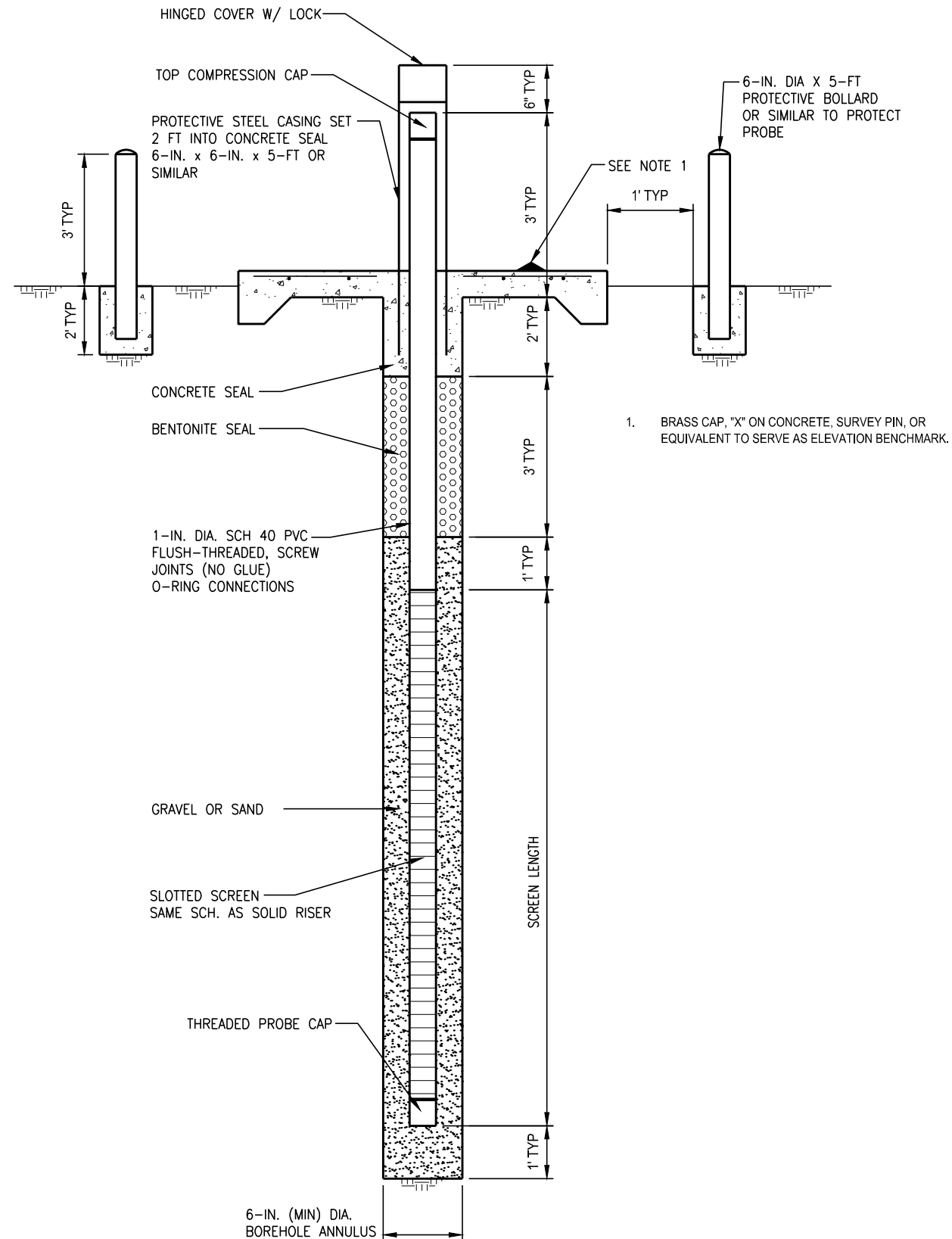
PROJECT NO.
6775.21

5	NOV 2024	UPDATED NOTES
4	SEP 2024	ADDED UTILITY VENTS
3	OCT 2022	TECHNICAL NOD #2
2	JUNE 2022	TECHNICAL NOD #1

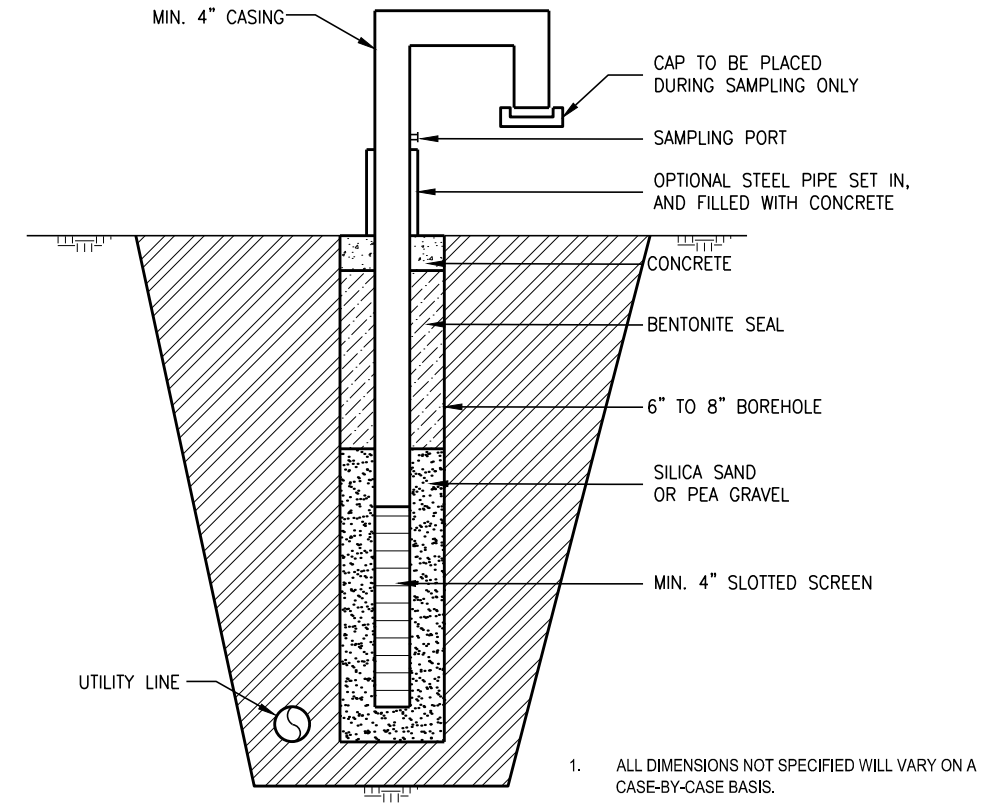
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Landfill Gas
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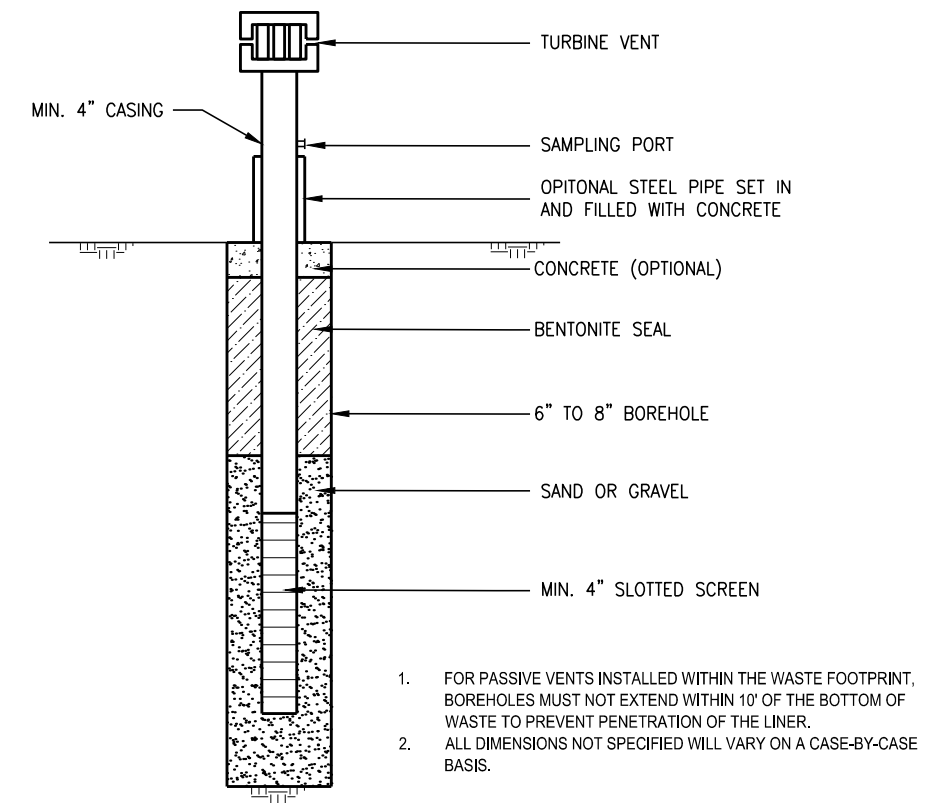
FIG.III-11.1



A1 TYPICAL GAS MONITORING PROBE SECTION
NO SCALE



A2 TYPICAL UTILITY VENT
NO SCALE



A3 TYPICAL PASSIVE GAS VENT
NO SCALE

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**MCKINNEY 380 C&D LANDFILL
TCEQ MSW PERMIT NO. 2278A
COLLIN COUNTY, TEXAS**



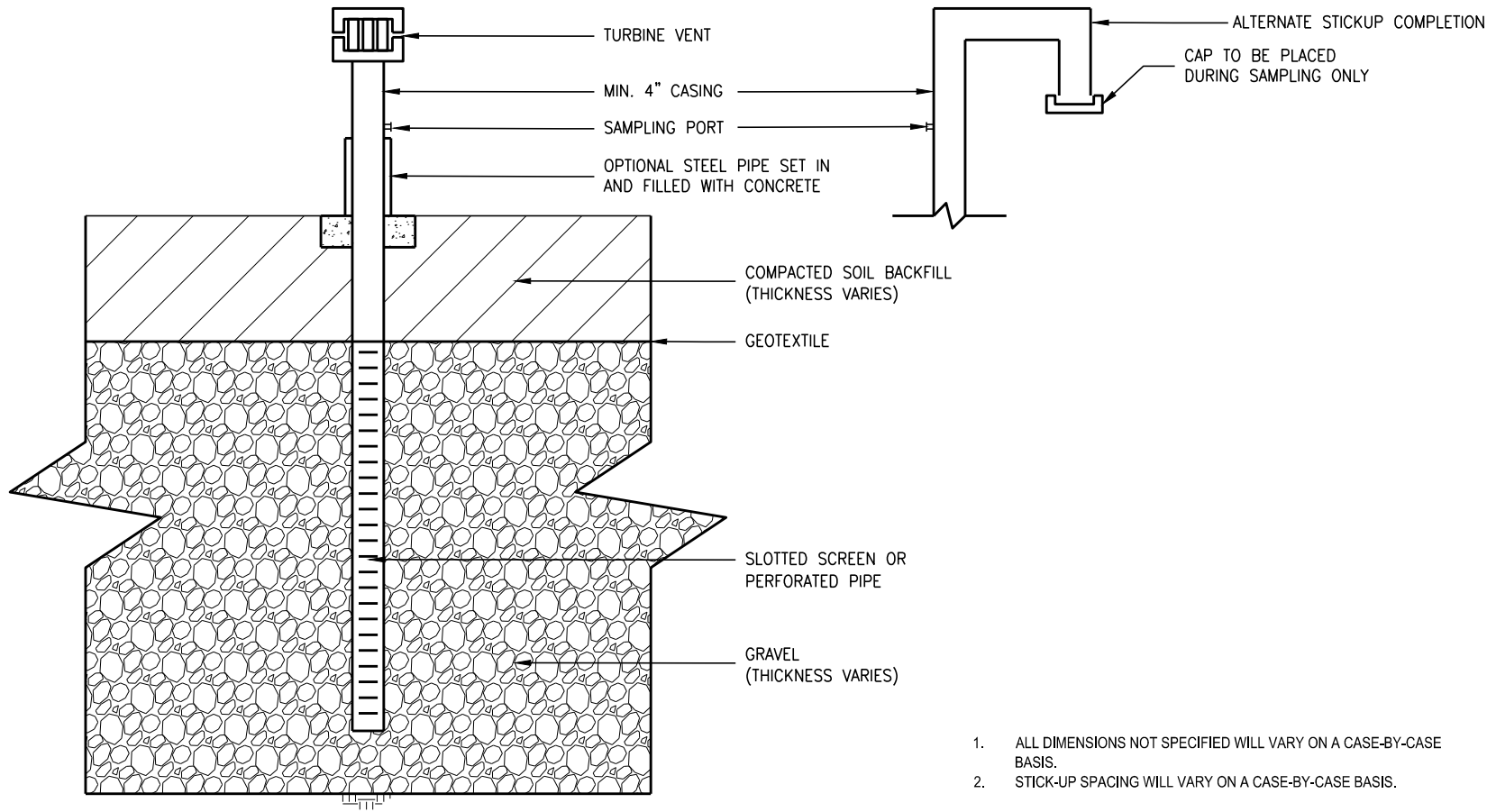
CLIENT
Frontier Waste Solutions
McKinney 380 C&D Landfill
2540 E University Dr
McKinney, TX 75069

PROJECT NO.	
6775.21	
1	SEP 2024 INITIAL
#	DATE DESCRIPTION

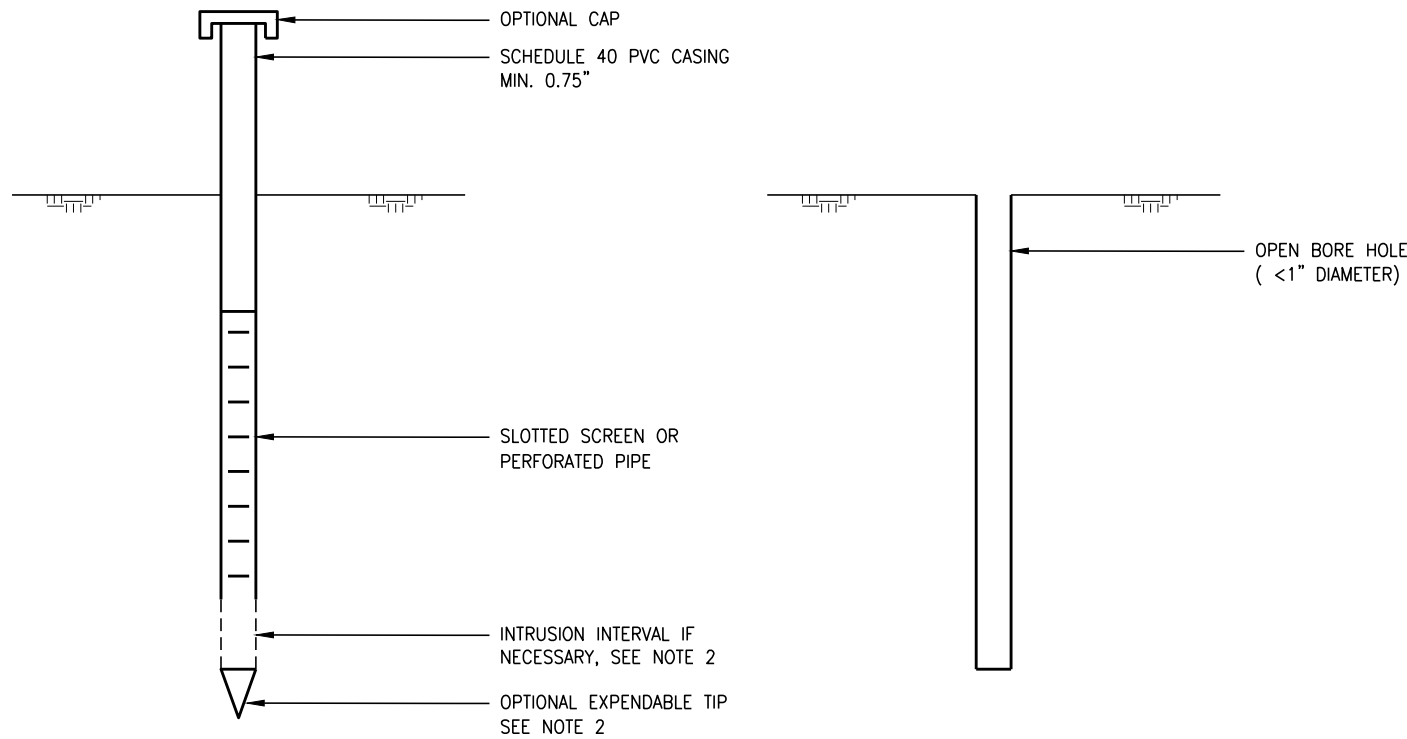
**LANDFILL GAS
VENT AND
MONITORING
PROBE DETAILS**

FIGURE III-11.2

A:\20216775.2103_DSGN01_DWG050_CIVIL17_GAS REMEDIATION\FIG. III-11.3_INTERCEPTOR TRENCH DETAIL_R1.DWG, 9/23/2024 1:22 PM, sfranklin



B1 TYPICAL INTERCEPTOR TRENCH WITH PASSIVE VENT
NO SCALE



1. ALL DIMENSIONS NOT SPECIFIED WILL VARY ON A CASE-BY-CASE BASIS.
2. CREATE BORE HOLE BY HAND AUGER, DRILL, HAMMER, OR EQUIVALENT. DEPTH WILL VARY BY SPECIFIC APPLICATION, BUT IS TYPICALLY 3 TO 10 FT.
3. BOREHOLE DIAMETER SHOULD BE SLIGHTLY LARGER THAN CASING DIAMETER (WHEN CASING IS USED).
4. IF ROD WITH EXPENDABLE TIP IS USED TO ADVANCE BAR HOLE, PROVIDE GAS INTRUSION INTERVAL BETWEEN TIP AND BOTTOM OF PIPE TO ALLOW GAS TO ENTER FROM SURROUNDING SOIL.
5. A FILTER PACK (FINE GRAVEL OR SAND) MAY BE PLACED AROUND THE CASING, AS NECESSARY. A BENTONITE SEAL SHOULD BE PLACED ABOVE THE FILTER PACK WHEN USED.
6. FOR TEMPORARY BAR PROBES INSTALLED OVER WASTE, FILL THE BORE HOLE WITH BENTONITE PELLETS ONCE PROBE IS REMOVED.

A1 TYPICAL BAR HOLE PROBE
NO SCALE

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**INTERCEPTOR
TRENCH AND
BAR PROBE
DETAILS**

FIGURE III-11.3