Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: 26 May 2025
Facility Name: Caesars Plaza
Permit or Registration No.: pending

Nature of Correspondence:
☐ Initial/New
☒ Response/Revision to TCEQ Tracking No.: 31501256 (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:	

REVISION 1 –
APPLICATION FOR DEVELOPMENT PERMIT FOR PROPOSED ENCLOSED STRUCTURE OVER CLOSED MUNICIPAL SOLID WASTE LANDFILL

CAESARS PLAZA
957 W CARTWRIGHT RD
MESQUITE, DALLAS COUNTY, TEXAS 75149

Prepared for:

Texas Commission on Environmental Quality
MSW Permit No. [pending]; Tracking No. 31501256
RN110301553 | CN606323335
Prepared on behalf of the Applicant:
Favorite Venture Real Estate LLC
4629 Bronco Blvd
Carrollton, Texas 75010

Property Owner:
PRS Ramsgate LP
3889 Maple Ave, Ste 220
Dallas, Texas 75219-3917

Initial Submission: 31 March 2025
Revision 1 Submission: 26 May 2025

Susan T. Litherland, P.E.
Principal
Texas P.E. No. 57428, F-15202
Signed electronically on 5/16/2025

Sam Enis, P.G.
Principal Project Manager

PN: 1239.001.001

SQ Environmental, LLC
PO Box 1991
Austin, Texas 78767-1991
(512) 900-7731
www.SQEnv.com

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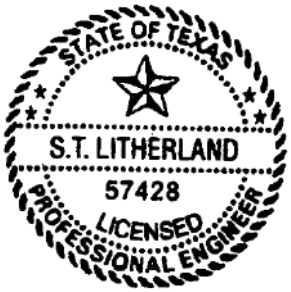
Susan T. Litherland, P.E.
Principal
Texas P.E. No. 57428, F-15202
Signed electronically on 5/16/2025



APPLICATION FOR DEVELOPMENT PERMIT

SQ Environmental, LLC (SQE) prepared this Texas Commission on Environmental Quality (TCEQ) Application for Development Permit for Proposed Enclosed Structure on behalf of Favorite Venture Real Estate LLC (Applicant) for the property located at 957 West (W) Cartwright Road (Rd) in Mesquite, Dallas County, Texas (Subject Property). The Subject Property is a 0.92-acre portion of the 8.59-acre Dallas Central Appraisal District (DCAD) parcel (Account No. 381601000A0020000), addressed at 23300 Lyndon B Johnson (LBJ) Freeway (Fwy). The planned future use of the Subject Property is a commercial retail structure up to 5,217 square feet (ft^2) and associated paved parking areas. A Request for Authorization to Disturb Final Cover Over Closed MSW Landfill for Non-Enclosed Structure was submitted on 23 January 2018 for the 15.18-acre former DCAD parcel (formerly Account No. 65034055510020000), addressed at 23300 LBJ Fwy (Larger Property). The request was submitted to MSW Permits due to the identification of the Mesquite Sanitary Landfill (MSW No. U1350/U1351) beneath portions of the Larger Property (including the Subject Property). Additional details on the Mesquite Landfill are provided in Section 2. The Request was submitted for environmental and geotechnical investigation activities associated with a feasibility study for property development. The investigation activities were conducted in November 2017 and included the entire 15.18-acre property. MSW Authorization was issued by TCEQ on 26 March 2018. Following the results of the investigation activities, an Application for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill (Application) was submitted to MSW Permits on 10 October 2019. The proposed development in the 2019 Application included self-storage units, an office, a residence, and paved parking areas on a 6.58-acre portion of the Larger Property, addressed at 955 W Cartwright Rd (Adjacent Property). MSW Permit was issued by TCEQ on 1 October 2020. Construction of the self-storage development began in late 2020 and finished in mid-2021.

A summary of the three properties associated with this Application is provided below, and the boundaries are shown on **Figure 2** in **Attachment 2**.

Property Designation	Address, Size, & DCAD Info	Description
"Subject Property"	957 W Cartwright Rd. Approx. 0.92 acres (green on **Figure 2**). A portion of 8.59-acre DCAD Parcel: 381601000A0020000 addressed at 23300 LBJ Fwy	Up to 5,217-ft^2 commercial retail center & paved parking is proposed
"Adjacent Property"	955 W Cartwright Rd. Approx. 6.58 acres (blue on **Figure 2**). Comprised of two DCAD Parcels: 381601000A01A0000; 381601000A01B0000	102,557-ft^2 Self-storage warehouse and 5,850-ft^2 office
"Larger Property"	23300 LBJ Fwy. Approx. 15.18 acres (red on **Figure 2**). Formerly one DCAD Parcel: 65034055510020000	Includes the Subject Property and Adjacent Property

A Request for Authorization to Disturb Final Cover for the Subject Property was submitted on 14 October 2024. The Request was submitted to complete two soil borings in the footprint of the proposed commercial retail center on the Subject Property and was approved in a letter dated 15 November 2024. The soil borings were advanced on 24 November 2024. The soil from each boring was continuously logged and inspected to identify the potential presence of native/non-native soil and/or waste. Soil vapor samples were also collected at these locations for landfill gas characterization. The results are discussed below.

This Application for Development Permit is being submitted for the development of a commercial retail center up to 5,217 ft^2 with associated paved parking areas on the Subject Property. The soil boring locations and planned layout of the Subject Property are provided on the Site Plan Layout in **Attachment 14**, and the location of the Subject Property relative to the Larger Property is provided on **Figure 2** in **Attachment 2**.

SUBJECT PROPERTY ASSESSMENT ACTIVITIES AND RESULTS

Assessment activities on the Subject Property were conducted by SQE on 26 November 2024 and included two soil borings, SB-1 and SB-2, advanced in the footprint of the planned building to approximately 30 feet (ft) below ground surface (bgs) and into the saturated zone. The sample locations are shown on **Figure 3** in **Attachment 2**. A landfill gas analyzer was utilized to measure and record the concentrations of landfill gases during boring activities and a photoionization detector (PID) was used to measure volatile organic vapors (excluding methane). No elevated PID measurements were observed.

The shallow lithology is comprised of mostly clays, encountered from the ground surface to the maximum total depth of 30 ft bgs. Waste, which included pieces of wood, tarp, plastic and glass, was observed in the soil boring cuttings at depths between 4 and 22 ft bgs. The saturated zone was encountered between 22 and 25 ft bgs. Boring logs are included in **Attachment 10C**.

Based on landfill gas field measurements, the interval with the highest observed methane concentration (14 to 15 ft bgs in both boreholes) was selected for soil vapor sampling (SV-1 and SV-2). The samples were analyzed for methane, carbon monoxide, carbon dioxide, nitrogen, oxygen, hydrogen, ammonia, volatile organic compounds (VOCs), hydrogen sulfide, carbonyl sulfide, carbon disulfide, and other mercaptans. Water vapor was measured in the field by attaching colorimetric to tubing to a hand pump.

Methane and carbon dioxide were reported at elevated concentrations in sample SV-2. Additional details are provided in **Section 2**. Data summary tables of soil vapor sample analytical results are provided in **Attachment 12**. As discussed in this Application, a vapor mitigation system (VMS) is planned beneath the enclosed structure on the Subject Property.

A previous site assessment in 2017 included the installation of seven groundwater monitoring wells, all installed on the Larger MSW Nos. 62039/67023 property, and located adjacent and upgradient of the Subject Property. The well locations are provided on **Figure 2** in **Attachment 2**. The saturated zone was encountered at a depth of approximately 12 to 17 ft bgs in the monitoring wells, and the groundwater flow direction was to the southeast. Groundwater samples were collected and analyzed for total petroleum hydrocarbons (TPH), VOCs, semi-volatile organic compounds (SVOCs), Resource Conservation and Recovery Act (RCRA) 8 metals, and polychlorinated biphenyls (PCBs). None of the analyzed constituents were reported above TCEQ Texas Risk Reduction Program (TRRP) Protective Concentration Levels (PCLs) for residential property use. None of the reported concentration of PCBs were detected above the laboratory method detection limits (MDLs); however, the MDLs were above the PCLs.

SITE PLAN

The planned future use of the Subject Property is a commercial retail center. Site Plans are included in **Attachment 14**. A VMS has been designed and will be installed during construction of the structure on the Subject Property. The VMS design plan is provided in **Attachment 9**. This system will direct any vapors (methane or other) out from beneath the building, and the vapors monitored to verify that there is no vapor accumulation beneath the building and that the concentrations of the vented methane are well below the lower explosive limit (LEL). The VMS will consist of a 12-inch granular layer which will act as bedding for a series of slotted vent pipes. The vent pipes will be extended from beneath the concrete slab foundation to the outside of the structure. The granular layer and vent pipe system will be covered with a plastic layer, which will be sealed at overlaps, and all penetrations. As part of the installation oversight, smoke tests will be performed on the system to verify that it is properly sealed, prior to pouring of the concrete foundation. Some or all of the vent pipes will be fitted with fans so that active venting can be performed if passive venting is not sufficient to prevent the buildup of vapors under the building. In addition to monitoring

selected vent pipes, a monitoring point within the building will be included in the VMS so that the interior location can be sampled, as needed. Additional details on the VMS are provided in **Sections 9** and **12**.

A deed notice concerning the presence of the waste beneath the Subject Property was previously filed in the County records.

The planned building on the Subject Property will have an at or near grade foundation. No subsurface structures are planned. The only excavations that will be performed are for utilities (which will likely be limited to the upper 3 to 4 ft) and the foundation piers (14 ft bgs). In no case will the excavations exceed the depths of the saturated zone (greater than 15 ft bgs). The planned concrete slab foundation with an underlying VMS, along with the asphalt parking areas, will result in a similar or better impervious cap than is currently present on the Subject Property.

Groundwater is encountered at approximately 22 ft bgs at the Subject Property and has been sampled from seven monitoring wells located adjacent and upgradient of the Subject Property. No impacts have been identified to shallow groundwater at concentrations above TCEQ residential PCLs. Based on this information, no environmental impacts due to the planned development of the Subject Property during or after construction would be anticipated.

ATTACHMENT I

TCEQ FORM-20785 & FORM-20960

Texas Commission on Environmental Quality

Application for Development Permit for Proposed Enclosed Structure Over Closed Municipal Solid Waste Landfill

Application Tracking Information

Applicant Name: Favorite Venture Real Estate LLC

Facility Name: Caesars Plaza

Development Permit Number: pending

Initial Submission Date: 2 April 2025

Revision Date: 26 May 2025

Use this form to apply for a development permit for proposed enclosed structure over a closed municipal solid waste (MSW) landfill. Rules about use of land over a closed MSW landfill are in Title 30, Texas Administrative Code[1], Chapter 330, Subchapter T. Instructions for completing this form are provided in form TCEQ 20785-instr[2]. Include a Core Data Form, available at www.tceq.texas.gov/goto/coredata with the application. If you have questions, contact the Municipal Solid Waste Permits Section by email to [redacted] or by phone at 512-239-2335.

If you have an existing enclosed structure, use form TCEQ-20786[3], Registration for Existing Enclosed Structure Over Closed Municipal Solid Waste Landfill. If you are proposing a non-enclosed structure, use form TCEQ-20787[4], Authorization to Disturb Final Cover Over Closed Municipal Solid Waste Landfill for Non-Enclosed Structure.

Application Data

1. Application Type

☒ New Development Permit ☐ Revisions of Existing Permit

☐ Transfer of an Existing Permit

If existing Permit, indicate the Permit Number: _____

2. Submission Type

☐ Initial Submission ☒ Notice of Deficiency (NOD) Response

[1] www.tceq.texas.gov/goto/view-30tac
[2] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20785-instr.pdf
[3] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20786.pdf
[4] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20787.pdf

3. Application Fee

The application fee for a development permit is $2,500.

☒ Paid by Check

☐ Paid Online

If paid online, ePay Confirmation Number: _____

4. Enrollment in Other TCEQ Programs

Indicate if the site is enrolled in the Voluntary Cleanup Program or other Remediation Program.

☐ Yes ☒ No

If Yes, indicate the program: _____

5. Development Type

Is the development a single-family or double-family home that is not part of a housing subdivision?

☐ Yes ☒ No

If "Yes", the construction is exempt from the development permit requirement.

6. Enclosed Structure Description

Provide a brief description of the proposed enclosed structure for which the development permit is requested.

The planned future use of the 0.92-acre Subject Property is a single-story commercial retail building up to 5,217 sq ft and associated paved parking areas. A VMS has been designed and will be installed beneath the building.

7. Soil Tests

Size of the property (acres): 0.92

Was the existence of the landfill determined through:

☐ Test I

☐ Test II

☐ Test III

☒ Other. Please describe: The Mesquite Sanitary Landfill is listed in the Closed Landfill Inventory and is well documented.

If soil tests were performed prior to development in accordance with 30 TAC §330.953, the test results shall be included in this application.

8. Notification of MSW Landfill Determination

If soil tests were used to determine the presence of a closed MSW landfill, provide evidence that the engineer who performed the soil tests has notified the following persons of that determination in accordance with 30 TAC §330.953(d).

☐ Each owner and lessee

☐ Executive Director

☐ Local Government Officials

☐ Regional Council of Governments

9. Landfill Permit Status

What is the permit status of the landfill?

☐ Active MSW Permit ☐ Landfill in Post-Closure Care

☐ Revoked MSW Permit ■ Non-Permitted Landfill

If the landfill is still in the post-closure care period subject to an active MSW Permit, this development permit application for proposed enclosed structures shall be accompanied by a Permit Modification application prepared in accordance with 30 TAC §305.70, and by a certification signed by an independent engineer in accordance with 30 TAC §330.957(b)(2).

If the landfill has completed the post-closure care period, but the MSW permit has not been revoked (site affected by an active MSW Permit), a Voluntary Revocation request of the MSW Permit shall be submitted in accordance with 30 TAC §330.465 prior to the submittal of this development permit application for proposed enclosed structures over a closed MSW landfill.

10. Electronic Versions of Application

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.

11. Public Place for Copy of Application

Name of the Public Place: Mesquite Public Library

Physical Address: 300 W Grubb Dr

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: 972-216-6220

Normal Operating Hours: 9am - 8pm

12. Party Responsible for Publishing Notice

Indicate who will be responsible for publishing notice:

☐ Applicant ☒ Consultant

Contact Name: Sam Enis

Title: Principal Project Manager

Email Address: [redacted]

13. Alternative Language Notice

Use the Alternative Language Checklist on Public Notice Verification Form TCEQ-20244-Waste-NAORPM available at www.tceq.texas.gov/permitting/waste_permits/msw_permits/msw_notice.html to determine if an alternative language notice is required.

Is an alternative language notice required for this application?

☒ Yes ☐ No

Indicate the alternative language: Spanish

14. Confidential Documents

Does the application contain confidential documents?

☐ Yes ☒ No

If "Yes", cross-reference the confidential documents throughout the application and submit as a separate attachment in a binder clearly marked "CONFIDENTIAL."

15. Permits and Construction Approvals

Mark the following tables to indicate status of other permits or approvals.

Permits and Construction Approvals

Permit or Approval	Received	Pending	Not Applicable
Zoning Approval	X		
Preliminary Subdivision Plan		X	
Final Plat		X	
Fire Inspector's Approval		X	
Building Inspector's Approval on Plans		X	
Water Service Tap		X	
Wastewater Service Tap		X	
On-site Wastewater Disposal System Approval		X	

Other Environmental Permits

Other Environmental Permits (list)	Received	Pending
Authorization to Disturb Final Cover	X	

16. General Project Information

Facility Name: Caesars Plaza

SubT Development Permit Number (if available): _____

Regulated Entity Reference Number (if issued): **RN** 110301553

Street or Physical Address: 957 W Cartwright Road

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: --

If Regulated Entity Reference Number has not been issued for the facility, complete a Core Data Form (TCEQ-10400) and submit it with this application.

17. Contact Information

Applicant (Lessee/Project Owner)

Name: Favorite Venture Real Estate LLC

Customer Reference Number (if issued): **CN** 606323335

Mailing Address: 4629 Bronco Blvd

City: Carrollton County: Denton State: TX Zip Code: 75010

Phone Number: 469-387-1383

Email Address: [redacted]

If Customer Reference Number has not been issued, complete a Core Data Form (TCEQ-10400) and submit it with this application. List the Applicant as the Customer.

Property Owner

Name: PRS Ramsgate LP

Mailing Address: 3889 Maple Ave, Ste 220

City: Dallas County: Dallas State: TX Zip Code: 75219

Phone Number: 214-397-0175

Email Addres [redacted]

If the Property Owner is the same as Applicant, indicate "Same as "Applicant".

Consultant (if applicable)

Firm Name: SQ Environmental LLC

Texas Board of Professional Engineers and Land Surveyors Firm Number: F-15202

Mailing Address: PO Box 1991

City: Austin County: Travis State: TX Zip Code: 78767

Consultant Name: Susan T. Litherland, P.E.

Phone Number: 512-656-9445

Email Address: [redacted]

Engineer Who Performed Soil Tests

Firm Name: Henley Johnston & Associates

Texas Board of Professional Engineers and Land Surveyors Firm Number: F-1238

Mailing Address: 235 Morgan Ave

City: Dallas County: Dallas State: TX Zip Code: 75203

Engineer Name: James F. Phipps, P.E.

Phone Number: 214-941-3808

Email Address: [redacted]

18. Other Governmental Entities Information:

Fire Chief, Fire Marshal or Fire Inspector Information

Fire Department Name: Mesquite Fire Department

Person's Name: Keith Hopkins

Mailing Address: 1515 N Galloway Ave

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: 972-329-8316

Email Address [redacted]

Local Floodplain Authority (if applicable)

Authority Name: North Central Texas Council of Governments

Contact Person's Name: Susan Alvarez

Street or P.O. Box: Centerpoint II, 616 Six Flags Dr

City: Arlington County: Tarrant State: TX Zip Code: 76011

Phone Number: 817-704-2549

Email Addres [redacted]

City Mayor Information

City Mayor's Name: Daniel Aleman Jr

Office Address: 757 N Galloway Ave

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: 972-288-7711

Email Address: [redacted]

City Health Authority Information

Contact Person's Name: Barry Jenkins

Office Address: 1515 N Galloway Ave

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: 972-216-8138

Email Address [redacted]

Director of Public Works

Department Name: City of Mesquite Public Works Department

Contact Person's Name: Eric Gallt

Office Address: 1515 N Galloway Ave

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: 972-216-6301

Email Address: [redacted]

Director of Utilities

Utility Name: City of Mesquite Utilities

Contact Person's Name: Eric Gallt

Office Address: 1515 N Galloway Ave

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: 972-288-7711

Email Address: [redacted]

Director of Planning

Agency Name: City of Mesquite Planning & Zoning

Contact Person's Name: Garrett Langford, AICP

Office Address: 1515 N Galloway Ave

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: 972-216-6216

Email Addres [redacted]

Building Inspector

Agency Name: City of Mesquite Building Inspection

Contact Person's Name: Michael Wallander, C.B.O.

Office Address: 1515 N Galloway Ave

City: Mesquite County: Dallas State: TX Zip Code: 75149

Phone Number: 972-216-6212

Email Address: [redacted]

County Judge Information

County Judge's Name: Judge Clay Lewis Jenkins

Office Address: 500 Elm St, Ste 7000

City: Dallas County: Dallas State: TX Zip Code: 75202

Phone Number: 214-653-7949

Email Address: [redacted]

County Engineer Information

County Engineer's Name: Cecelia Rutherford, P.E.

County Engineer's P.E. Registration No.: _____

Office Address: 500 Elm St, Ste 5300

City: Dallas County: Dallas State: TX Zip Code: 75202

Phone Number: 214-653-6677

Email Address: [redacted]

County Health Authority

Agency Name: Dallas County Health and Human Services

Contact Person's Name: Dr. Philip Huang

Office Address: 2377 N Stemmons Fwy

City: Dallas County: Dallas State: TX Zip Code: 75207

Phone Number: 214-819-2000

Email Address [redacted]

State Representative Information

District Number: 113

State Representative's Name: Rep. Rhetta Andrews Bowers

District Office Address: 3200 Broadway Blvd. Suite 275

City: Garland County: Dallas State: TX Zip Code: 75043

Phone Number: 972-463-0464

Email Address: [redacted]

State Senator Information

District Number: 16

State Senator's Name: Sen. Nathan Johnson

District Office Address: Merit Tower, 12222 Merit Drive, Suite 1010

City: Dallas County: Dallas State: TX Zip Code: 75251

Phone Number: 972-701-0349

Email Address: [redacted]

Council of Government (COG)

COG Name: North Central Texas Council of Governments

COG Representative's Name: Susan Alvarez

COG Representative's Title: Director, Environment & Development Department

Street Address or P.O. Box: 616 Six Flags Dr

City: Arlington County: Tarrant State: TX Zip Code: 76011

Phone Number: 817-704-2549

Email Address: [redacted]

Local Government Jurisdiction

Is the property located within the limits or in the ETJ of any City?

■ Yes ☐ No

If "Yes" city regulations may apply. Issuance of Development Permit for an Enclosed Structure does not exempt the applicant from complying with city codes and zoning.

Within City Limits of: Mesquite

Within Extraterritorial Jurisdiction of City of: _____

19. Deed Recordation

■ Verify that the property owner filed a written notice for record in the real property records in the county where the land is located in accordance with 30 TAC §330.962 stating: (a) the former use of the land; (b) the legal description of the tract of land that contains the closed MSW landfill; (c) notice that restrictions on the development or lease of the land exist in the Texas Health and Safety Code and in MSW rules; and (d) the name of the owner.

■ A certified copy of the Notice to Real Property Records is included in this application in accordance with 30 TAC §330.957(p).

20. Notice to Buyers, Lessees, and Occupants of the Structure

Did the property owner give written notice to all prospective buyers, lessees and/or occupants of the structure in accordance with 30 TAC §330.963 stating the land's former use as a landfill, and the structural controls in place to minimize potential future danger posed by the closed MSW landfill?

☐ Yes ■ New Structure Not Yet Constructed

If "Yes" certified copies of the notices shall be submitted to TCEQ in accordance with 30 TAC §330.957(p).

If "New Structure Not Yet Constructed" a draft notice to all prospective buyers, lessees and/or occupants of the proposed structure, and procedures for its implementation upon structure's construction shall be included in this application.

21. Notice of Lease Restrictions on the Property

Is the property leased?

☐ Yes ■ No

If "Yes", verify that the property owner provided written notice to all prospective lessees of the property in accordance with 30 TAC §330.964 concerning:

☐ (a) what is required to bring the property into compliance with 30 TAC Chapter 330, Subchapter T?

☐ (b) the prohibitions or requirements for future disturbance of the final cover?

☐ A certified copy of the notice is included in the application in accordance with 30 TAC §330.957(p).

Professional Engineer's Certification of No Potential Threat to Public Health or the Environment

The applicant's engineer for this project shall complete one of the following certifications:

"I, _____, Texas PE Number _____, certify that the proposed development is necessary to reduce a potential threat to public health or the environment. Further, I certify that the proposed development will not damage the integrity or function of any component of the Closed Municipal Solid Waste Landfill Unit, including, but not limited to, the final cover, containment systems, monitoring system, or liners. This certification includes all documentation of all studies and data on which I relied in making these determinations."

Engineer's seal, with signature and date:

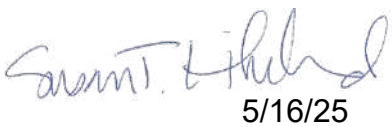
Engineering Firm Name: _____

Texas Board of Professional Engineers and Land Surveyors Firm Number: _____

Or:

" I, Susan T. Litherland, P.E., Texas PE Number 57428, certify that the proposed development will not increase or create a potential threat to public health or the environment. Further, I certify that the proposed development will not damage the integrity or function of any component of the Closed Municipal Solid Waste Landfill Unit, including, but not limited to, the final cover, containment systems, monitoring system, or liners. This certification includes all documentation of all studies and data on which I relied in making these determinations."

Engineer's seal, with signature and date:



5/16/25

Engineering Firm Name: SQ Environmental, LLC

Texas Board of Professional Engineers and Land Surveyors Firm Number: F-15202

Signature Page

Applicant Certification

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

Name: Pervez Bhojani Title: Member

Signature: [signature] Date: 05-19-2025

Email Address: [redacted]

SUBSCRIBED AND SWORN to before me by the said _____

On this 19th day of May, 2025

My commission expires on the 15th day of NOV, 2025

Notary's Name: Michelle Fang

Notary Public in and for

Dallas County, Texas

NOTARY PUBLIC STATE OF TEXAS
Michelle Fang
My Commission Expires
11/15/2025
Notary ID
124667994

Property Owner Authorization

To be completed by the property owner if the property owner is not the applicant.

I _____, the owner of the property identified by the address _____,hereby authorize the applicant to proceed with the project described in this application, and to apply for any necessary authorizations in order to conduct this project. I understand that, as property owner, I am responsible for maintaining the integrity of the final cover over the closed MSW landfill.

Property Owner Name: _____

Signature: _____ Date: _____

Email Address: _____

SUBSCRIBED AND SWORN to before me by the said _____

On this _____ day of _____, _____

My commission expires on the _____ day of _____, _____

Notary's Name:_____

Notary Public in and for

_____ County, Texas

Signature Page

Applicant Certification

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

Name: Pervez Bhojani Title: Member

Signature: _____ Date: _____

Email Address: [redacted]

SUBSCRIBED AND SWORN to before me by the said _____

On this _____ day of _____, _____

My commission expires on the _____ day of _____, _____

Notary's Name: _____

Notary Public in and for

_____ County, Texas

Property Owner Authorization

To be completed by the property owner if the property owner is not the applicant.

I Richard D. Squires, the owner of the property identified by the address 957 W. Cartwright Rd., Mesquite, TX, hereby authorize the applicant to proceed with the project described in this application, and to apply for any necessary authorizations in order to conduct this project. I understand that, as property owner, I am responsible for maintaining the integrity of the final cover over the closed MSW landfill.

Property Owner Name: PRS Ramsgate, LP

Signature: _____ Date: 5-19-2025

Email Address: [redacted]

SUBSCRIBED AND SWORN to before me by the said Richard D. Squires

On this 19 day of May, 2025

My commission expires on the 11 day of January, 2026

Notary's Name: Chrissy Le

Notary Public in and for

Dallas County, Texas

CHRISSY LE
Notary Public, State of Texas
Comm. Expires 01-11-2026
Notary ID 133528164

Attachments for New Development Permit

Required Attachments

A. Narrative

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Existing Conditions Summary	2
Legal Authority	3
Evidence of Competency	4
Notice of Engineer Appointment	5
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B. Maps and Plans

Attachment	Attachment Number
Adjacent Landowners Map	13
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Property Legal Description	15
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Additional Attachments as Applicable

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■ TCEQ Core Data Form(s)	18
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Attachments for Revisions to Existing Development Permit

Required Attachments

A. Revised Pages

Attachment	Attachment Number
Marked (Redline/Strikeout) Pages	A
Unmarked Revised Pages	B

B. Narrative

Attachment	Attachment Number
Description of Proposed Revisions	Cover Letter
Foundation Plans (if revised)	
Closure Plan (if revised)	
Site Operating Plan (if revised)	
Structures Gas Monitoring Plan (if revised)	
Safety and Evacuation Plan (if revised)	

C. Maps and Plans

Attachment	Attachment Number
General Location Map	
Site Layout Plan	
Structure Layout Plan	
Methane Monitoring Equipment Location Plans	

Additional Attachments as Applicable

Attachment	Attachment Number

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☒ New Permit or Registration Application

☐ New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☐ Considered to have significant public interest, **and**

☒ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☒ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

A Request for Authorization to Disturb Final Cover was submitted in 2018 for the 15.18-acre property addressed at 23300 LBJ Fwy (Larger Property). The request was submitted due to the Mesquite Sanitary Landfill (MSW No. U1350/U1351) beneath portions of the Larger Property (including the Subject Property). An Application for Development Permit for Proposed Enclosed Structure was submitted to MSW Permits in 2019. The proposed development in the 2019 Application included self-storage units, an office, a residence, and paved parking areas on a 6.58-acre portion of the Larger Property, addressed at 955 W Cartwright Rd (Adjacent Property). Construction of the self-storage development began in late 2020 and finished in mid-2021. The Mesquite Sanitary Landfill is listed in the Closed Landfill Inventory and is well documented, and approximately half of the Larger Property that overlies the landfill has been re-developed for commercial use.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☐ Texas Pollutant Discharge Elimination System (TPDES)

- ☐ Texas Land Application Permit (TLAP)
- ☐ State Only Concentrated Animal Feeding Operation (CAFO)
- ☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

(City)

(County)

(Census Tract)
Please indicate which of these three is the level used for gathering the following information.

☐ City ☐ County ☐ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

(b) Per capita income for population near the specified location

(c) Percent of minority population and percent of population by race within the specified location

(d) Percent of Linguistically Isolated Households by language within the specified location

(e) Languages commonly spoken in area by percentage

(f) Community and/or Stakeholder Groups

(g) Historic public interest or involvement

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☐ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☐ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☐ Yes ☐ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office ☐ TCEQ Central Office

☐ Public Place (specify)

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

1 PROPOSED PROJECT DESCRIPTION

The planned future use of the 0.92-acre Subject Property is a single-story commercial retail building up to 5,217 ft^2 and associated paved parking areas. As planned, the development on the Subject Property is comprised of an approximately 75-ft by 71-ft commercial building with a concrete slab-on-grade foundation. Asphalt/concrete-covered parking lots will surround the building and cover the majority of the remaining surface area of the Subject Property. Some landscaped areas are planned along the perimeter of the property and are further discussed in **Section 11**. Site Plans are included in **Attachment 14**.

The planned building on the Subject Property will have an at or near grade foundation. No subsurface parking or other subsurface structures are planned. The only excavations that will be performed are for utilities (which will likely be limited to the upper 3 to 4 ft) and for the foundation piers (14 ft bgs). The former landfill is capped with 2 to 4 ft of clay. In general, all of the waste is deeper than 4 ft bgs. In no case will the excavations exceed the depths of the saturated zone (greater than 15 ft bgs).

A VMS has been designed and will be installed beneath the building. The VMS will direct any vapors (methane or other) out from beneath the building, and the vapors monitored to verify that there is no vapor accumulation beneath the building. As discussed above, the planned concrete building slab foundation with an underlying VMS, along with the asphalt roadways and parking areas, will result in a similar or better impervious cap over the Subject Property that is currently present.

No enclosed areas below ground surface to be occupied by people will be constructed on the Subject Property. Minor amounts of waste may be encountered during construction. The waste and surrounding soil will be stockpiled on plastic sheeting or loaded directly into 55-gallon drums, trucks, trailers, or containers, and removed from the site for disposal at an appropriate, permitted MSW landfill. Locations where waste is removed will be backfilled with 2-ft of clean, low-plasticity, compacted clay and graded with the surrounding onsite soil to be slightly higher than the existing grade and provide positive drainage. The majority of the Subject Property will be covered with the building and asphalt, and designed so that surface water will not pool on the property.

It is not anticipated that any stormwater will come into contact with waste on the Subject Property during construction. However, groundwater upgradient of the Subject Property has been sampled and no impacts have been identified. There is no indication that groundwater beneath the Subject Property is impacted by the waste located above the saturated zone. None of the waste is located at the ground surface, and precautions will be implemented during development of the Subject Property to prevent excavated material, if any, from coming into contact with stormwater. Any surface water that does come into contact with waste materials will be properly contained, characterized, and disposed of.

If excavation activities result in exposed waste, the exposed waste area will be temporarily covered with clean soil or other materials as soon as practical, but no later than the end of the day. The contractor will provide adequate temporary cover consisting of a minimum of 6 inches of soil or an impermeable membrane material to prevent rainfall from contacting the waste. Temporary diversion berms will be installed around the exposed waste area to prevent stormwater from contacting the waste and will be used upslope of all excavations where waste will be exposed to minimize the amount of surface water coming into contact with waste materials. In addition, temporary containment berms will be constructed around areas of exposed waste to collect surface water. At no time will water that comes into contact with waste materials be allowed to discharge to surface waters. Regarding the management procedures described above, especially the covering of waste and precautions implemented in advance of inclement weather, the generation of water that has made contact with waste materials is expected to be minimal. However, if generated, the water will be collected and disposed of in accordance with standards set forth herein and in

accordance with City and State requirements for disposal of such water. Any water generated during construction will be stored onsite, then transported via vacuum truck to an approved wastewater treatment or disposal facility permitted to accept the wastewater.

The stormwater management will include measures to control sediment discharge during construction including, but not be limited to, the use of earthen berms, hay bales, and silt fencing downgradient of slopes which may experience erosion (including material stockpiles). Erosion damage from rainfall events will be repaired by the contractor after such events. All erosion control measures will also be inspected and maintained throughout the redevelopment process. Berms, when used for control of potentially impacted water, will also be maintained as necessary to control erosion. The contractor will pay special attention to erosion on any soil cover over waste materials. Any cover damage to the existing landfill, or in areas where cover must be maintained over solid waste materials that are part of construction, will be repaired immediately and steps taken to prevent a recurrence of that type of damage.

The requirements of §330.961(g), concerning the double-containment of subgrade conduits intended for the transport or carrying of fluids over or within the Subject Property, will be implemented. Subgrade utility conduits will be installed with double-containment, which will likely be double-wall pipes. The other option is a single-wall utility, that is within a lined trench. On excavation, 2 ft of compacted, clay-rich soil with a permeability not greater than $1x10E^{-7}$ cm/sec will be placed in the base of the trench and a high-density polyethylene (HDPE) 30-mil sealed liner will be installed along the bottom and sides of the trench and sealed. Based on discussions with the project construction contractors (and MSW permits), it is not feasible to install 2 ft of compacted clay on the sides of the trenches, as there is no way to compact the clay vertically. The conduit for carrying fluids will then be placed above the HDPE liner and clean fill added to the sides. The HDPE liner will extend approximately 1 ft on top of the trench, be overlapped, and sealed. This is shown in **Figure 1** in **Attachment 9**. In accordance with §330.453(a) and (b), 18 inches of compacted clayey soil that is free of waste and 6 inches of topsoil that can support native vegetation will be in place for utility trenches in areas that are not covered by building, asphalt, or pavement. A quality control plan will be prepared detailing the design, materials, and procedures for construction and testing to meet liner system specifications based on Regulatory Guidance for Liner Construction and Testing for a Municipal Solid Waste Landfill (RG-534, September 2017). Construction details, plans, materials to be used, and a cross-section of the utility trench and the underlying waste down to native soil are provided in **Attachment 9**.

2 EXISTING CONDITIONS SUMMARY

The 0.92-acre Subject Property is currently vacant and undeveloped, with the exception of a paved driveway on the southern portion. The Subject Property is a portion of an approximately 50-acre area that operated as a landfill from 1963 to 1965. The landfill is identified as the non-permitted Mesquite Sanitary Landfill in the Closed Landfill Inventory database. Following the official cessation of landfill operations in 1965, a clay cap was placed over the former landfill. Development of a residential neighborhood within this 50-acre area began in 1984 and landfill waste was encountered. Between 1985 and 1987, the waste materials from areas to the north and east were transferred to four cells on the 15.18-acre Larger Property (which includes the Subject Property). The Subject Property is reportedly located above a portion of Cell No. 3 of the former landfill, as shown on **Figure 2**. The cells were designed and constructed to hold the re-located waste. Based on documentation in the Closed Landfill Inventory, the cells included shale walls and base, waste compacted in 7-ft lifts with 1-ft layers of clay between each lift, and capped with 2 to 4 ft of clay. In late 1987, a secondary containment system was constructed, comprised of a landfill gas collection system along the northern, northeastern, and eastern boundaries of the Larger Property with an impermeable cutoff wall located along the southeastern boundary.

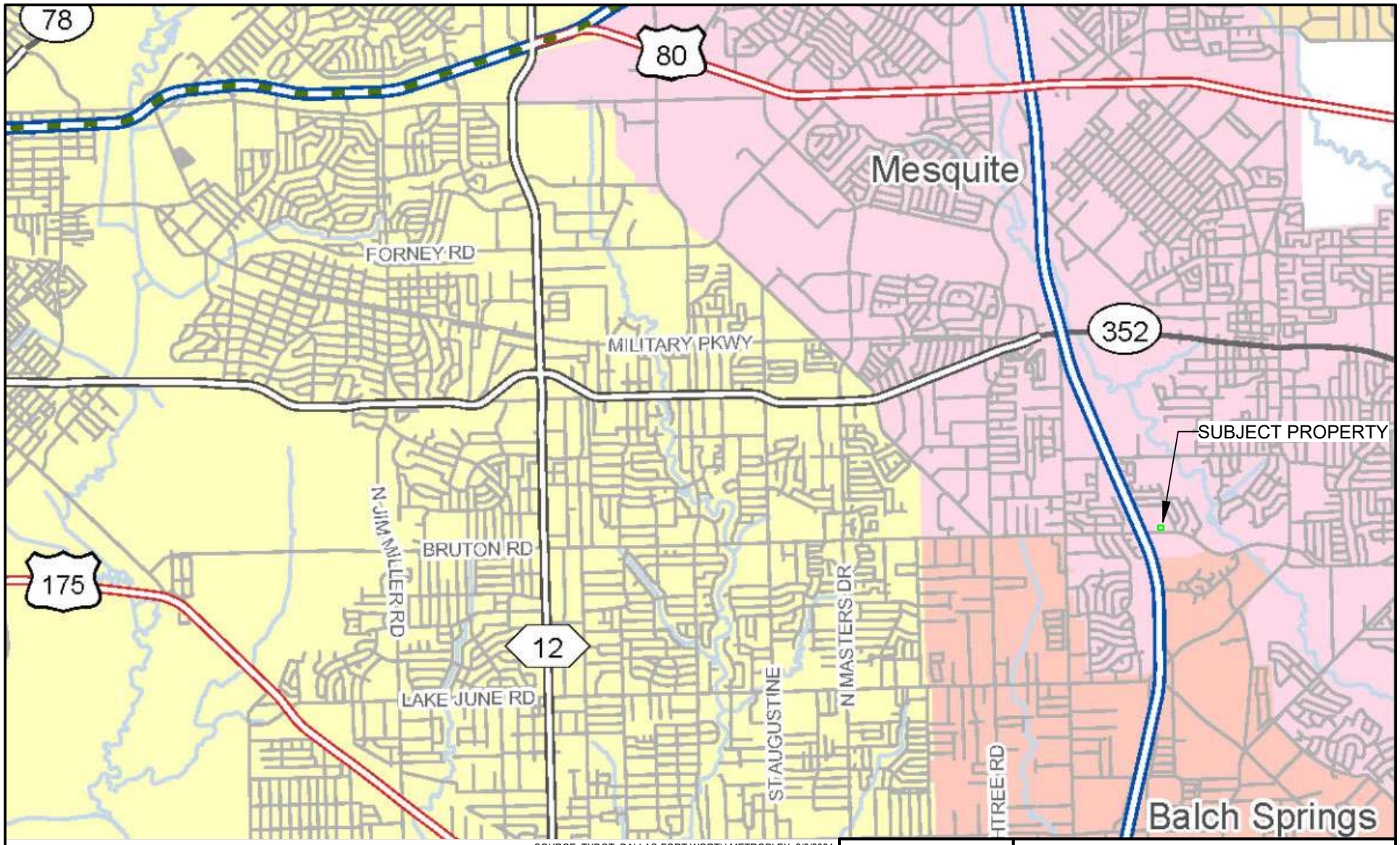
Assessment activities on the Subject Property were conducted by SQE on 26 November 2024 and included two soil borings, SB-1 and SB-2, advanced to approximately 30 ft bgs. The sample locations are shown on **Figure 3** in **Attachment 2**. The soil borings were completed by hollow-stem auger (HSA) methods. Borings were continuously sampled and logged in general accordance with ASTM International (ASTM) Standard No. D2488-00 and screened using a multi-function five-gas landfill gas analyzer (Landtec GEM5000) and PID. The landfill gas analyzer was utilized to measure and record the concentrations of landfill gases during boring activities and immediately after each 5-ft advancement of the two soil borings. A tube connected to the landfill gas analyzer was dropped into the borehole and allowed to run for approximately 5 minutes. The gases monitored include methane (CH_4), carbon dioxide (CO_2), carbon monoxide (CO), oxygen (O_2), and hydrogen sulfide (H_2S). The PID was utilized to measure volatile organic vapors of each 5-ft soil core. No elevated PID measurements were observed. Landfill gas field measurements are summarized in **Table 2-1** in **Attachment 2**.

Based on landfill gas field measurements, the interval with the highest observed methane concentration was selected for a soil vapor sample, which was the 14 to 15 ft bgs interval in both boreholes. Once the total boring depth of approximately 30 ft was reached, the lower portion each borehole was backfilled with granular bentonite from 30 ft bgs up to 15 ft bgs in preparation for soil vapor sampling at the 14 to 15-ft interval. A dedicated stainless-steel vapor collection point was connected to Teflon tubing and then was placed in the open borehole between 14 and 15 ft bgs. Approximately 2 ft of sand (at a depth of approximately 13 to 15 ft bgs) was placed in the annular space of the borehole and surrounding the implant. A bentonite seal was placed above the sand in the annular space, and a grout/cement seal was installed to ground surface to seal the sample point. Boring logs are provided in **Attachment 10D**. The sample point was allowed to set, the system was checked to make sure that ambient air was not entering the sample point, and the tubing was purged using a PID. Following the purging of the line, an initial PID reading was recorded, and the two soil vapor samples, SV-1 and SV-2 (once from each borehole), were collected in evacuated Summa canisters at a rate of approximately 200 mL/min. The samples were submitted to ALS Environmental in Simi Valley, California for analysis by EPA Method 3C which includes methane, carbon monoxide, carbon dioxide, nitrogen, oxygen, and hydrogen; Method ASTM D 5504-20 which includes hydrogen sulfide, carbonyl sulfide, carbon disulfide, and other mercaptans; ammonia by Method NIOSH 6015; and VOCs by Method TO-15. Water vapor was measured in the field by attaching colorimetric to tubing to a hand pump (Method ASTM D4888).

A summary of the results of the boring and sampling activities is provided below. Additional details are provided in **Section 10** and **Section 12**, including data summary tables and laboratory reports.

- Lithology – Based on borings completed on the Subject Property, the shallow lithology is comprised of mostly clays, encountered from the ground surface to the maximum total depth of 30 ft bgs. Waste within the soil borings was observed between 4 and 22 ft bgs on the Subject Property. The waste included pieces of wood, tarp, plastic and glass. The saturated zone was encountered between 22 and 25 ft bgs. Boring logs are included in **Attachment 10C**.
- Groundwater – A previous site assessment in 2017 included the installation of seven groundwater monitoring wells, all located adjacent and upgradient of the Subject Property. The saturated zone was encountered at a depth of approximately 12 to 17 ft bgs near the Subject Property and the groundwater flow direction was to the southeast. Groundwater samples were collected and analyzed for TPH, VOCs, SVOCs, RCRA 8 metals, and PCBs. None of the analyzed constituents were reported above TCEQ TRRP PCLs for residential property use. None of the reported concentration of PCBs were detected above the laboratory MDLs; however, the MDLs were above the PCLs.
- Soil Vapor Samples – Hydrogen sulfide, ammonia, carbon monoxide, and hydrogen were not detected above the laboratory MDLs in either of the soil vapor samples. Carbon disulfide was not detected above the MDL in sample SV-2. Multiple VOCs were reported above the MDLs in both samples. Methane and carbon dioxide were reported at elevated concentrations in sample SV-2. Data summary tables of soil vapor sample analytical results are provided in **Attachment 12**. As discussed in this Application, a VMS is planned beneath the enclosed structure on the Subject Property.

ATTACHMENT 2
FIGURES



SOURCE: TXDOT, DALLAS-FORT WORTH METROPLEX, 3/8/2024

SUBJECT PROPERTY, MSW AUTHORIZATION No. 67137 (0.92 ACRES)

N

0 2,500 5,000

SCALE IN FEET

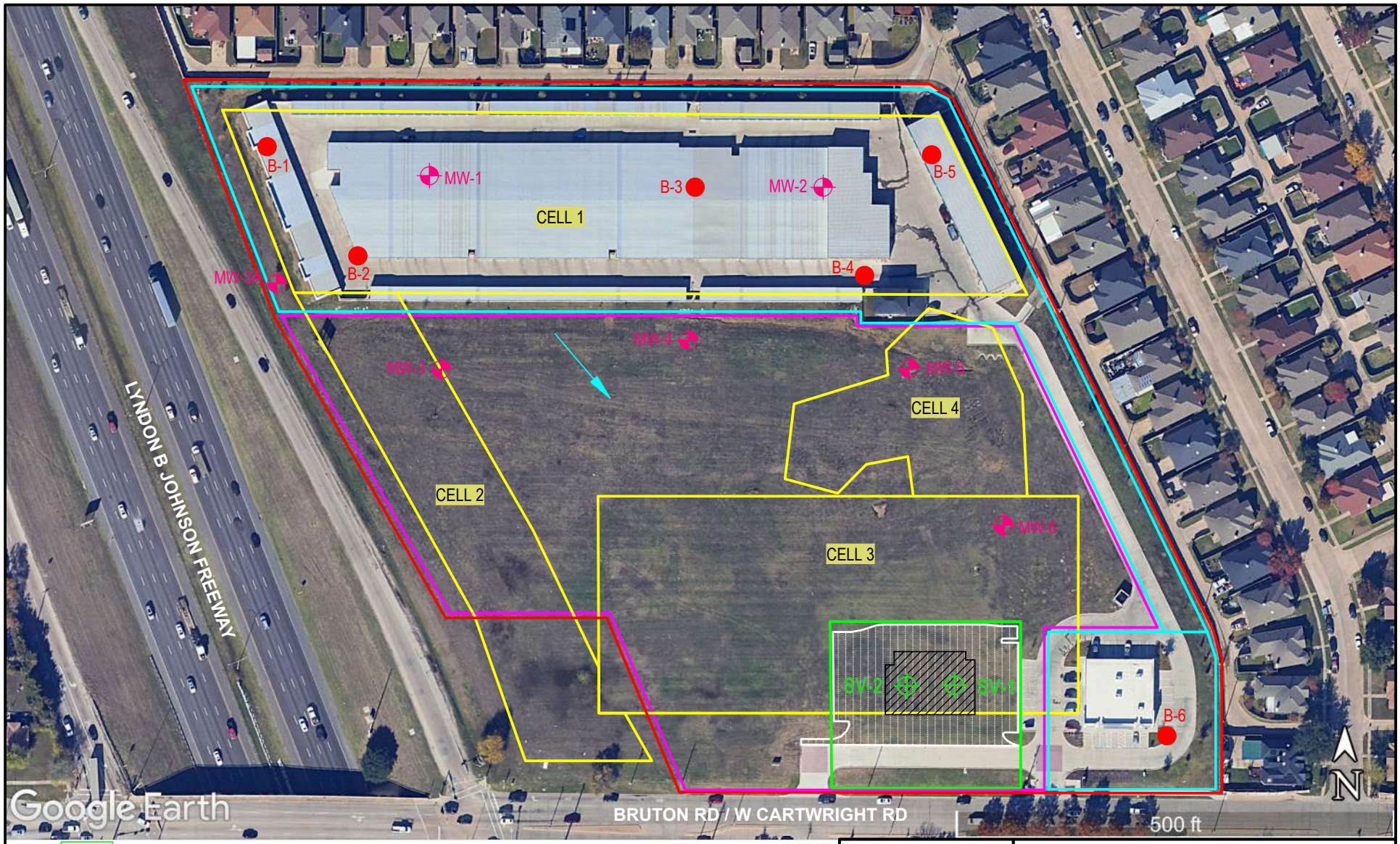
SQ Environmental, LLC

FIGURE 1

GENERAL LOCATION MAP

CAESARS PLAZA
957 W CARTWRIGHT ROAD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
1 IN = 5,000 FT	DEC 2024	1239.001.001



SUBJECT PROPERTY, MSW AUTHORIZATION No. 67137 (0.92 ACRES)

LARGER PROPERTY (MSW AUTHORIZATION & PERMIT Nos. 62039 & 67023 (15.18 ACRES))

DCAD PARCEL #381601000A0020000 (8.59 ACRES)

ADJACENT PROPERTY (6.58 ACRES)

FORMER LANDFILL CELLS

SOIL BORING LOCATION, 2018 (SOIL & SOIL VAPOR SAMPLES)

GROUNDWATER FLOW DIRECTION

SOIL BORING LOCATION, 2024 (SOIL VAPOR SAMPLES)

MONITORING WELL LOCATION, PRE-2017 (GROUNDWATER & VAPOR SAMPLES)

GOOGLE EARTH DATED 11/30/23

N

0 85 170

SCALE IN FEET

SQ Environmental, LLC

FIGURE 2

GENERAL LAYOUT MAP

CAESARS PLAZA
957 W CARTWRIGHT ROAD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
1 IN = 175 FT	DEC 2024	1239.001.001

GOOGLE EARTH DATED 2/2024

SUBJECT PROPERTY, MSW AUTHORIZATION No. 67137 (0.92 ACRES)

SOIL BORING LOCATION, 2024 (SOIL VAPOR SAMPLES)

N

0 30 60

SCALE IN FEET

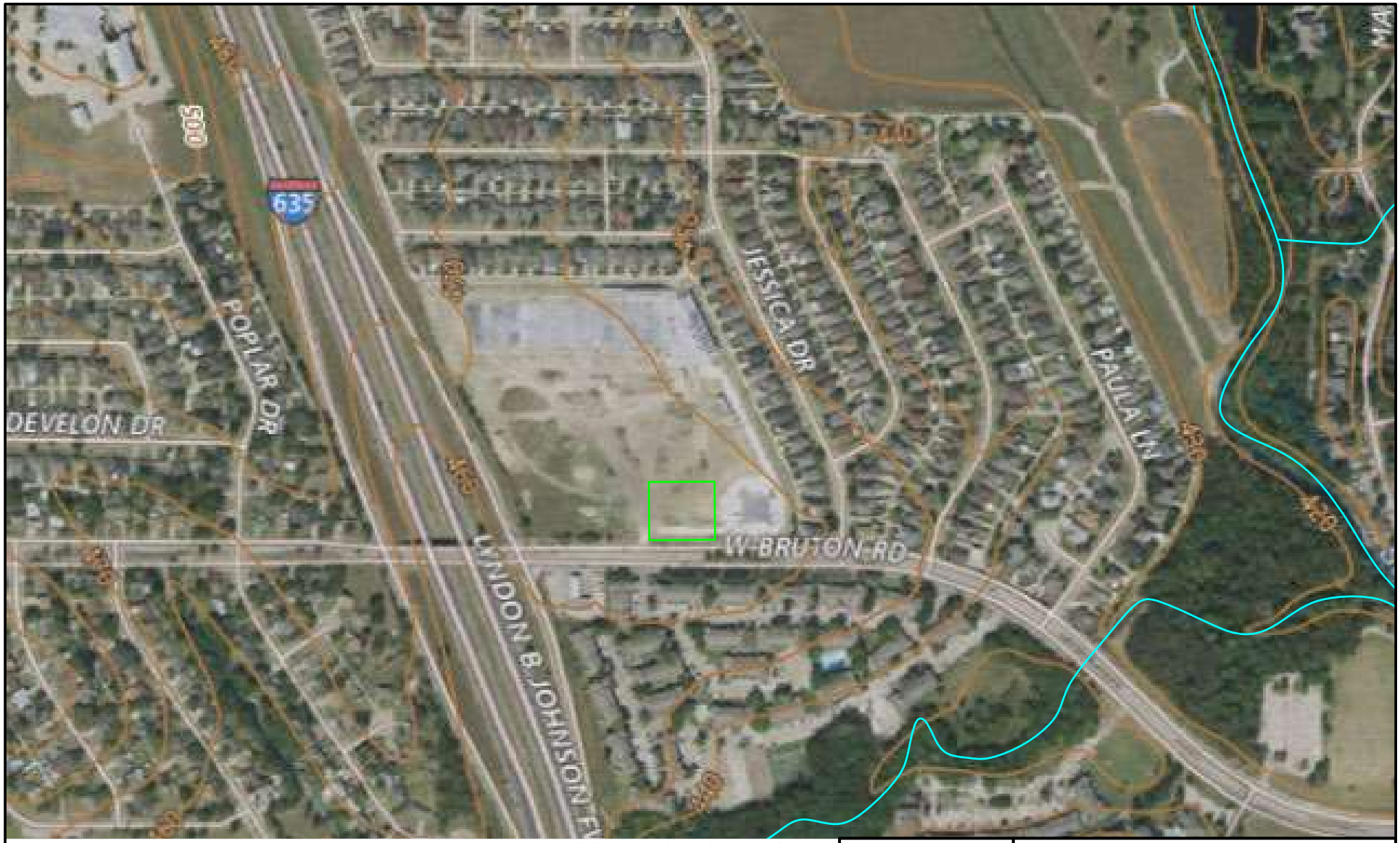
SQ Environmental, LLC

FIGURE 3

EXISTING CONDITIONS MAP

CAESARS PLAZA
957 W CARTWRIGHT ROAD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
1 IN = 60 FT	DEC 2024	1239.001.001



USGS 2022 QUADRANGLES MESQUITE & SEAGOVILLE TX

SUBJECT PROPERTY, MSW AUTHORIZATION No. 67137 (0.92 ACRES)

CREEK

10-FT TOPOGRAPHIC CONTOUR INTERVAL (FT ABOVE MEAN SEA LEVEL)

N

0 225 450

SCALE IN FEET

SQ Environmental, LLC

FIGURE 4

GENERAL TOPOGRAPHIC MAP

CAESARS PLAZA
957 W CARTWRIGHT ROAD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
1 IN = 450 FT	DEC 2024	1239.001.001

GOOGLE EARTH DATED 11/6/2023

SUBJECT PROPERTY, MSW AUTHORIZATION No. 67137 (0.92 ACRES)
500-FT RADIUS
GROUNDWATER MONITORING WELL LOCATION
UNDERGROUND STORMWATER UTILITY

N

0 125 250
SCALE IN FEET

SQ Environmental, LLC

FIGURE 5

GENERAL REQUIREMENTS MAP

CAESARS PLAZA
957 W CARTWRIGHT ROAD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
1 IN = 250 FT	DEC 2024	1239.001.001

TABLE 2-1
SUMMARY OF LANDFILL GAS FIELD MEASUREMENTS
Caesars Plaza
957 W Cartwright Rd
Mesquite, TX 75149

	Soil Boring	SB-1						SB-2					
	Depth	0 - 5 ft	5 - 10 ft	10 - 15 ft	15 - 20 ft	20 - 25 ft	25 - 30 ft	0 - 5 ft	5 - 10 ft	10 - 15 ft	15 - 20 ft	20 - 25 ft	25 - 30 ft
	Date	11/26/2024	11/26/2024	11/26/2024	11/26/2024	11/26/2024	11/26/2024	11/26/2024	11/26/2024	11/26/2024	11/26/2024	11/26/2024	11/26/2024
Analyte	Units	%	%	%	%	%	%	%	%	%	%	%	%
Methane		0.1	0.2	10.0	1.7	0.9	0.7	0.0	0.2	11.1	8.1	0.2	0.9
Carbon Dioxide		0.1	1.5	23.6	5.2	1.8	0.5	2.2	1.1	1.7	1.9	1.3	1.2
Oxygen		21.5	20.2	10.1	17.9	18.4	21.7	20.3	20.7	19.8	20.1	20.3	20.5
Carbon Monoxide (ppm)		0.0	0.0	7.0	3.0	1.6	0.0	0.0	0.0	0.6	0.4	0.2	0.4
Hydrogen Sulfide (ppm)		0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0

NOTES:
Measured with LandTec GEM5000

3 LEGAL AUTHORITY

The filing Certificate of Formation for Favorite Venture Real Estate LLC, issued by the Texas Secretary of State, is provided as **Attachment 3**.

ATTACHMENT 3
CERTIFICATE OF FILING ISSUED BY THE TEXAS SECRETARY OF STATE

Corporations Section
P.O.Box 13697
Austin, Texas 78711-3697

John B. Scott
Secretary of State

Office of the Secretary of State

CERTIFICATE OF FILING
OF

FAVORITE VENTURE REAL ESTATE LLC
File Number: 804644242

The undersigned, as Secretary of State of Texas, hereby certifies that a Certificate of Formation for the above named Domestic Limited Liability Company (LLC) has been received in this office and has been found to conform to the applicable provisions of law.

ACCORDINGLY, the undersigned, as Secretary of State, and by virtue of the authority vested in the secretary by law, hereby issues this certificate evidencing filing effective on the date shown below.

The issuance of this certificate does not authorize the use of a name in this state in violation of the rights of another under the federal Trademark Act of 1946, the Texas trademark law, the Assumed Business or Professional Name Act, or the common law.

Dated: 07/13/2022

Effective: 07/14/2022

John B. Scott
Secretary of State

4 EVIDENCE OF COMPETENCY

The names of the project principals and supervisors of the Applicant's organization for the Caesars Plaza development are provided below.

- Pervez Bhojani, Member

5 NOTICE OF ENGINEER APPOINTMENT

The Notice of Appointment Letter identifying the Applicant's engineer is provided as **Attachment 5**.

ATTACHMENT 5
NOTICE OF ENGINEER APPOINTMENT

17 March 2025

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

RE: **Notice of Engineer Appointment**
Caesars Plaza
957 W Cartwright Rd, Mesquite, Dallas County, Texas
MSW Authorization No. 67137; RN110301553 | CN606323335

Dear Sir/Madame:

This is to advise the TCEQ that Favorite Venture Real Estate LLC has duly appointed SQ Environmental LLC (SQE) as consulting engineers for the purpose of submitting design and planning material for a Subchapter T Development Permit Application for the Caesars Plaza located at 957 W Cartwright Road in Mesquite, Dallas County, Texas. SQE is an engineering firm employing professional engineers in good standing in accordance with State statutes, and the firm has experience in the design and construction of Vapor Mitigation Systems and monitoring. Ms. Susan T. Litherland, P.E. of SQE is the engineer of record for this application.

Favorite Venture Real Estate LLC hereby authorizes TCEQ to review and comment on such reports, planning material, and data on this project as SQE may submit to you.

By: Pervez Bhojani, Member
Favorite Venture Real Estate LLC

Signature

03 - 17 - 2025

Date

6 NOTICE OF COORDINATION

Coordination with the applicable local, state, and federal government officials and agencies is currently being conducted in preparation for site development. Documentation of the Notice of Coordination letters sent to the Governmental Entities listed in Item 18 of Form TCEQ-20785 is provided in **Attachment 6**.

ATTACHMENT 6
NOTICES OF COORDINATION

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 1:00 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza Fire Dept 20250116.pdf

Mr. Hopkins,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Keith Hopkins
Mesquite Fire Department
1515 N Galloway Ave
Mesquite, Texas 75149

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Mr. Hopkins:

SQ Environmental LLC (SQE) prepared this letter on behalf of Favorite Venture Real Estate LLC and in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) requirements as outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 330 Rule 330.957(g) for a 0.92-acre site located at 957 W Cartwright Rd in Mesquite, Texas (the subject property).

The subject property is located within the boundaries of an approximately 50-acre area that operated as the Mesquite Sanitary Landfill from 1963 to 1965. The Mesquite Sanitary Landfill is listed in the Closed Landfill Inventory. A Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill under §330.960 Subchapter T (Use of Land Over Closed Municipal Solid Waste Landfills) for a 15.18-acre area within the former 50-acre landfill, and which encompasses the subject property, was issued by TCEQ in October 2020 for a self-storage development. Construction of the self-storage development, addressed at 955 W Cartwright Rd and located adjacent to the subject property, was completed in mid-2021. The subject property is currently undergoing a revision to the above-referenced application for a proposed development that includes one commercial building.

This letter serves as notification to you that project development will be coordinated through your agency or organization, if required. Please let me know if you have any questions or comments regarding this application or need any additional information. I may be reached at 512-574-1199 or [redacted]

Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:58 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza Floodplain & NCTOG 20250116.pdf

Ms. Alvarez,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Susan Alvarez
North Central Texas Council of Governments; Floodplain Management
Centerpoint II, 616 Six Flags Dr
Arlington, Texas 76011

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Ms. Alvarez:

SQ Environmental LLC (SQE) prepared this letter on behalf of Favorite Venture Real Estate LLC and in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) requirements as outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 330 Rule 330.957(g) for a 0.92-acre site located at 957 W Cartwright Rd in Mesquite, Texas (the subject property).

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Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:59 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza Mayor 20250116.pdf

Mayor Aleman,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Daniel Aleman Jr.
Mayor's Office
757 N Galloway Ave
Mesquite, Texas 75149

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Mr. Aleman:

SQ Environmental LLC (SQE) prepared this letter on behalf of Favorite Venture Real Estate LLC and in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) requirements as outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 330 Rule 330.957(g) for a 0.92-acre site located at 957 W Cartwright Rd in Mesquite, Texas (the subject property).

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Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:58 P
[redacted]
Cc: [redacted]
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza Health Auth 20250116.pdf

Mr. Jenkins,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Barry Jenkins
City of Mesquite Health Division
1515 N Galloway Ave
Mesquite, Texas 75149

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Mr. Jenkins:

SQ Environmental LLC (SQE) prepared this letter on behalf of Favorite Venture Real Estate LLC and in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) requirements as outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 330 Rule 330.957(g) for a 0.92-acre site located at 957 W Cartwright Rd in Mesquite, Texas (the subject property).

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Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 1:00 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza Public Works & Utilities 20250116.pdf

Mr. Gallt,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Eric Gallt
City of Mesquite Public Works Department; Utilities
1515 N Galloway Ave
Mesquite, Texas 75149

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Mr. Gallt:

SQ Environmental LLC (SQE) prepared this letter on behalf of Favorite Venture Real Estate LLC and in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) requirements as outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 330 Rule 330.957(g) for a 0.92-acre site located at 957 W Cartwright Rd in Mesquite, Texas (the subject property).

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Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 1:00 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza Planning 20250116.pdf

Mr. Langford,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Garrett Langford, AICP
City of Mesquite Planning & Zoning
1515 N Galloway Ave
Mesquite, Texas 75149

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Mr. Langford:

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SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:59 PM
To: [redacted]
Cc: [redacted]
[redacted] Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza Bldg Inspector 20250116.pdf

Mr. Wallander,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Michael Wallander, C.B.O.
City of Mesquite Building Inspection
1515 N Galloway Ave
Mesquite, Texas 75149

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Mr. Wallander:

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Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:58 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza County Judge 20250116.pdf

Judge Jenkins,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Judge Clay Lewis Jenkins
Dallas County Records Building
500 Elm St, Ste 7000
Dallas, Texas 75202

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Judge Jenkins :

SQ Environmental LLC (SQE) prepared this letter on behalf of Favorite Venture Real Estate LLC and in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) requirements as outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 330 Rule 330.957(g) for a 0.92-acre site located at 957 W Cartwright Rd in Mesquite, Texas (the subject property).

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Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:59 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza County Engineer 20250116.pdf

Ms. Rutherford,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Cecelia Rutherford, P.E.
Dallas County Engineering and Construction Division
500 Elm St, Ste 5300
Dallas, Texas 75202

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Ms. Rutherford:

SQ Environmental LLC (SQE) prepared this letter on behalf of Favorite Venture Real Estate LLC and in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) requirements as outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 330 Rule 330.957(g) for a 0.92-acre site located at 957 W Cartwright Rd in Mesquite, Texas (the subject property).

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Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:58 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza County Health 20250116.pdf

Dr. Huang,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Dr. Philip Huang
Dallas County Health and Human Services
2377 N Stemmons Fwy
Dallas, Texas 75207

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Dr. Huang:

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Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:58 PM
To: [redacted]
Cc:
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza State Rep 20250116.pdf

Rep. Bowers,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Rep. Rhetta Andrews Bowers
State Representative, District 113
3200 Broadway Blvd. Suite 275
Garland, Texas 75043

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Rep. Bowers:

SQ Environmental LLC (SQE) prepared this letter on behalf of Favorite Venture Real Estate LLC and in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) requirements as outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 330 Rule 330.957(g) for a 0.92-acre site located at 957 W Cartwright Rd in Mesquite, Texas (the subject property).

The subject property is located within the boundaries of an approximately 50-acre area that operated as the Mesquite Sanitary Landfill from 1963 to 1965. The Mesquite Sanitary Landfill is listed in the Closed Landfill Inventory. A Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill under §330.960 Subchapter T (Use of Land Over Closed Municipal Solid Waste Landfills) for a 15.18-acre area within the former 50-acre landfill, and which encompasses the subject property, was issued by TCEQ in October 2020 for a self-storage development. Construction of the self-storage development, addressed at 955 W Cartwright Rd and located adjacent to the subject property, was completed in mid-2021. The subject property is currently undergoing a revision to the above-referenced application for a proposed development that includes one commercial building.

This letter serves as notification to you that project development will be coordinated through your agency or organization, if required. Please let me know if you have any questions or comments regarding this application or need any additional information. I may be reached at 512-574-1199[redacted]

Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

Clint Weaver

From: Clint Weaver [redacted]
Sent: Monday, January 20, 2025 12:59 PM
[redacted]
Cc: [redacted]
Subject: Notice of Coordination for Development Permit for Proposed Enclosed Structure Over Closed MSW Landfill
Attachments: Notice of Coordination Caesars Plaza State Senator 20250116.pdf

Sen. Johnson,

In accordance with the Texas Commission on Environmental Quality (TCEQ) and Texas Administrative Code (TAC) §330.957(g), and on behalf of Favorite Venture Real Estate LLC, SQ Environmental LLC has prepared the attached letter for Notice of Coordination with all local, state, and federal government officials and agencies on the use of land over a closed municipal solid waste landfill. If you have any questions, please do not hesitate to contact me.

Thank you,

Clint Weaver, P.G.
SQ Environmental, LLC
[redacted]
(806) 773-9326

SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767-1991
(512) 900-7731
www.SQEnv.com

16 January 2025

Attn: Sen. Nathan Johnson
State Senator, District 16
Merit Tower, 12222 Merit Drive, Suite 1010
Dallas, Texas 75251

Via E-Mail: [redacted]

RE: Notification of Coordination
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
MSW Authorization No. 67137; RN110301553; CN606323335
Previous MSW Permit No. 62039
SQE PN: 1239.001.001

Dear Sen. Johnson:

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Sincerely,
SQ Environmental, LLC

Sam Enis, P.G.
Principal Project Manager

cc: Pervez Bhojani, Favorite Venture Real Estate LLC
Susan T. Litherland, P.E., SQ Environmental LLC

7 GENERAL GEOLOGY STATEMENT

According to the USGS Geologic Atlas of Dallas County, the shallow lithology in the area consists of the Ozan Formation ("lower Taylor marl"), which is comprised of a blocky marl approximately 500 ft in thickness.

The United States Department of Agriculture (USDA) Soil Conservation Service classifies the dominant soil component on the Subject Property as Mabank fine sandy loam (51), a sandy loam transitioning to clay up to 80 inches in depth with a very slow infiltration rate.

Based on boring logs completed on the Subject Property in November 2024, shallow lithology is comprised of mostly clays, encountered from the ground surface to the maximum total depth of 30 ft bgs. Waste within the soil borings was observed between 4 and 22 ft bgs on the Subject Property. The saturated zone was encountered between 22 and 25 ft bgs. Boring logs are included in **Attachment 10C**.

The former landfill is capped with 2 to 4 ft of clay. Based on soil borings completed on the Subject Property, waste is first encountered at depths greater than 4 ft bgs. The proposed construction associated with this development permit application is not expected to result in significant removal of existing soil and is not expected to disturb soil deeper than 14 ft.

8 GROUNDWATER & SURFACE WATER STATEMENT

No surface water features were identified on the Subject Property. The elevation is approximately 467 ft above mean sea level (MSL), based on the United States Geological Survey (USGS) 2022 Quadrangle Dallas, TX Sheet. The topography is relatively flat and gently slopes to the east across the Subject Property, as shown on **Figure 4** in **Attachment 2**. Stormwater on the Subject Property generally travels via sheet flow to the southeast to stormwater conveyances along W Cartwright Rd. The Subject Property was identified within Zone X by the Federal Emergency Management Agency (FEMA), which indicates an area of minimal flood hazard. South Mesquite Creek is located approximately 1,750 ft east of the Subject Property.

The saturated zone on the Subject Property was encountered between 22 and 25 ft bgs. A previous site assessment in 2017 included the installation of seven groundwater monitoring wells, all located adjacent and upgradient of the Subject Property. Based on these previously completed soil borings, the saturated zone was encountered at a depth of approximately 12 to 17 ft bgs near the Subject Property. The results of groundwater elevation surveys indicated that the groundwater gradient is to the southeast. Results of groundwater samples collected from six monitoring wells on the Larger Property indicated that concentrations of TPH, VOCs, SVOCs, and metal analytes were reported above TCEQ Residential PCLs. It is unlikely that the saturated zone will be encountered during construction. Previous assessment reports are provided in **Section 10**.

It is not anticipated that any stormwater will come into contact with waste on the Subject Property during construction. There is no indication that groundwater beneath the Subject Property is impacted by the waste located above the saturated zone. None of the waste is located at the ground surface, and precautions will be implemented during development of the Subject Property to prevent excavated material, if any, from coming into contact with stormwater. Additional details are provided in **Section 1**.

9 FOUNDATION PLANS

A VMS has been designed in accordance with 30 TAC 330.957(m), and will be installed during development and construction of the building on the Subject Property. The VMS includes a geotextile filer fabric on top of the ground surface beneath the pad, followed by a 12-inch-thick permeable aggregate bed, and an impermeable barrier installed below the concrete slab of the structure. There will be a series of slotted pipes within the permeable aggregate bed, with vent risers located up through building. This system will allow any vapors (methane or other) that migrate though the soil beneath the foundation to be vented outside of the structure. The second component is a monitoring system within the VMS piping network beneath the building and within the building that will include a controller unit and remote sensor that can detect methane and other explosive gases. This system will have audible and visual alarms. A sample port for field monitoring will be installed for the aggregate layer. The foundation plan and VMS design plan are included as **Attachment 9**. Geotechnical soil investigation reports are provided as **Attachments 10A** and **10B**. The Methane Monitoring Plan is discussed in **Section 12**. A Liner Quality Control Plan for the utility trench is provided below.

LINER QUALITY CONTROL PLAN

This Liner Quality Control Plan (LQCP) was developed for Caesars Plaza to describe the inspection and construction control and testing requirements in support of the application. This Plan was prepared in general accordance with *Guidance for Liner Construction and Testing for a Municipal Solid Waste Landfill*, TCEQ Regulatory Guidance RG-534 dated September 2017 and is intended to fulfil requirements of 30 Texas Administrative Code 330. This LQCP is to be implemented if the subgrade conduits in the utility trenches are installed with a clay base and wrapped in an HDPE liner. This plan is not applicable if the double-containment requirements for the subgrade conduits is satisfied by using double-wall pipes.

A General Requirements

This LQCP provides the basis for the type and rate of quality control performance testing. A copy will be maintained on site during construction or available for electronic download in the event an inspection is performed. For ease in this document preparation, any components that are not specifically addressed in this document will default to the requirements of *Guidance for Liner Construction and Testing for a Municipal Solid Waste Landfill*, TCEQ Regulatory Guidance RG-534.

B Overview of Project

All conduits intended for the transport or carrying of fluids over or within the closed MSW landfill will be double-containment. The installation of double-wall pipes would meet the requirements, or the following method may be performed.

Two ft of compacted, clay-rich soil with a permeability not greater than $1x10E^{-7}$ cm/sec will be placed in the base of the trench and a HDPE 30-mil sealed liner will be installed on the bottom and sides of the trench. The conduit for carrying fluids will then be placed above the HDPE liner in the trench and clean backfill added to the sides. The HDPE liner will extend approximately 1 ft on top of the trench, be overlapped, and sealed. In accordance with §330.453(a) and (b), 18 inches of compacted clayey soil that is free of waste and 6 inches of topsoil that can support native vegetation will be in place for utility trenches in areas that are not covered by building, asphalt, or pavement. A cross-section of the trench is provided on **Figure 1** in **Attachment 9**.

C Soil Material Requirements

C.1 Protective Topsoil Requirements

Protective cover is required to be placed above the liner system as shown on the cross section. Pavement will likely be installed above the subgrade conduits. If not, topsoil will be free of deleterious materials and not previously mixed with any onsite soils that were previously mixed with garbage, rubbish, or other solid waste materials. Permeability must be greater than 1 x 10^{-4} cm/s. The thickness must be greater than or equal to 6 inches. Compaction is not necessary for installation and density controls are not needed; however, the contractor should place the protective topsoil as soon as possible after installation of the liner and compacted clay-rich soil.

The contractor shall endeavor to place the protective topsoil over the HPDE liner during the coolest part of the 8-hour workday. Soil shall be deployed along the surface of the liner to control the amount of slack and minimize any damage to the liner. The liner shall be continuously monitored during installation and any damage to the liner immediately repaired. Only light equipment will be used during construction and a minimum of 12 inches of protective material must be placed on top of the liner before light construction equipment can access the area.

Protective topsoil will not have any rocks greater than 0.375 inches in diameter. The Contractor will keep the protective topsoil layer wet during dry periods to prevent cracking.

C.2 Clay-Rich Soil Requirements

Clay-rich soil will meet the following requirements. One sample from each source must be collected before any material is brought onsite. Test methods will generally follow Standard ASTM Test Methods as outlined in Table B-1 of RG-534 and will include field density, gradation analysis, Atterberg limits, and permeability.

Soil Property	*Value*
Plasticity Index (PI)	≥ 15
Liquid Limit (LL)	≥ 30
Percent Passing No. 200 Mesh Sieve	≥ 30%
Percent Passing One-Inch Sieve	= 100%
Permeability	≤ 1 x 10^{-7} cm/sec

In-situ soils will not be used for clay-rich soil. The clay-rich soil will be sampled every 1,000 cubic yards for total petroleum hydrocarbons (TPH) by Texas Method 1005 and metals SW-846 Methods to ensure the materials are suitable for use.

Clay-rich soils will be placed in three 8-inch lifts (a total of 3 lifts). Compaction testing will be performed at a frequency of every 1 acre and one per lift (minimum of three locations). The clay-rich soil will be compacted to at least 95% of standard proctor.

C.3 HDPE Liner Requirements

The HDPE Liner must have a minimum of 30 mil thickness. Recycled or reclaimed HDPE materials are not acceptable. HDPE material and required welding rods shall contain between 2 and 3% carbon black and may contain no more than 1% additives.

The liner will be inspected upon delivery for any damage and defects. The liner must be free from any pinholes, surface blemishes, scratches, or other defects that could affect the integrity of the liner. The liner will be stored at a clean and dry location onsite and protected from any objects that could damage the liner.

All manufacturer's recommendations for the installation of the liner will be followed. In addition, general installation requirements outlined in Table 3-1 of RG-534 must be followed.

- The liner will be placed above the compacted clay-rich soil that will be free of stones and rocks and other waste greater than 3/8-inch. The compacted clay-rich soil will be finished by rolling with flat wheel roller until smooth uniform surface is achieved. The subgrade areas will be inspected for any desiccation, cracks, erosion, or ponding prior to installation and repaired before liner is placed. If necessary, regular watering and proof rolling will be performed.
- Prohibit construction equipment from traveling directly on the liner.
- Do not place during inclement weather.
- Limit vehicular traffic on the liner to low-ground pressure supporting equipment only. Any damaged areas must be repaired and inspected.
- Only unroll liner sheets that are to be placed and seamed in the same day. Position liner with overlap recommended by manufacturer but not less than 3 inches. Typical overlaps are 3 to 6 inches. There should be no loose flap on the top side of the liner. Overlap distance must be sufficient so that all seam tests can be performed as described below.
- Folds, wrinkles, and fish mouths are not acceptable. Cut, overlap, and weld the material where wrinkles or folds occur. A fish mouth is defined as an area in the seam where one liner panel is first folded over on itself, and a second liner panel is placed and welded over this fold. Where fish mouths occur, the liner must be cut, overlapped, and covered with a patch.
- Use only heat-only tack welds, when necessary. No double-sided tape or glue may be used.
- Fusion or extrusion welding may be used for field seaming and repairs.
- Seaming is permitted only when ambient air conditions are below 104°F.
- At the end of each workday, all unseamed edges will be anchored with sandbags or other approved devices. No penetrating anchors are accepted (stables, U-rods).

C.4 HDPE Liner Testing Requirements

Verification of HDPE Liner Testing Requirements

Manufacturer information will be reviewed to ensure that QA/QC testing, conformance testing, and seam testing requirements of Table 3-2 of RF-534 are met.

Welds, Repair Welds, and Patches

Shear Strength – the seam, when stressed perpendicular to the direction of the weld should not under any condition fail before stretching and breaking of the liner panel adjacent to the weld. The numerical value of the shear strength of any sample should not be less than 90% of the sheet tensile strength according to manufacturer-provided information.

Trial Seam Testing

Each day, prior to commencing field seaming, each individual employee performing seaming will conduct a trial seam. Each trial seam will be 3 ft long by 1 ft wide. Trial seam criteria is outlined in Table 3-3 of RG 534.

Destructive Testing

Destructive test samples of field seams will be performed at a minimum of one stratified location for every 500 linear feet or major fraction thereof or at the direction of the Engineer. Destructive test requirements will conform with Table 3-4 of RG-534.

Non-Destructive Testing

Non-destructive tests should be performed by the Contractor or engineer on all field seams, patches, and repair welds. Accepted non-destructive test methods include vacuum box testing for extrusion welds and air-pressure testing for dual-tract fusion welds. Specific procedures for these tests is included on Table 3-5 of RG-534.

D Documentation

Following installation, the following documentation will be compiled and kept onsite in the facility records. This will include the following elements:

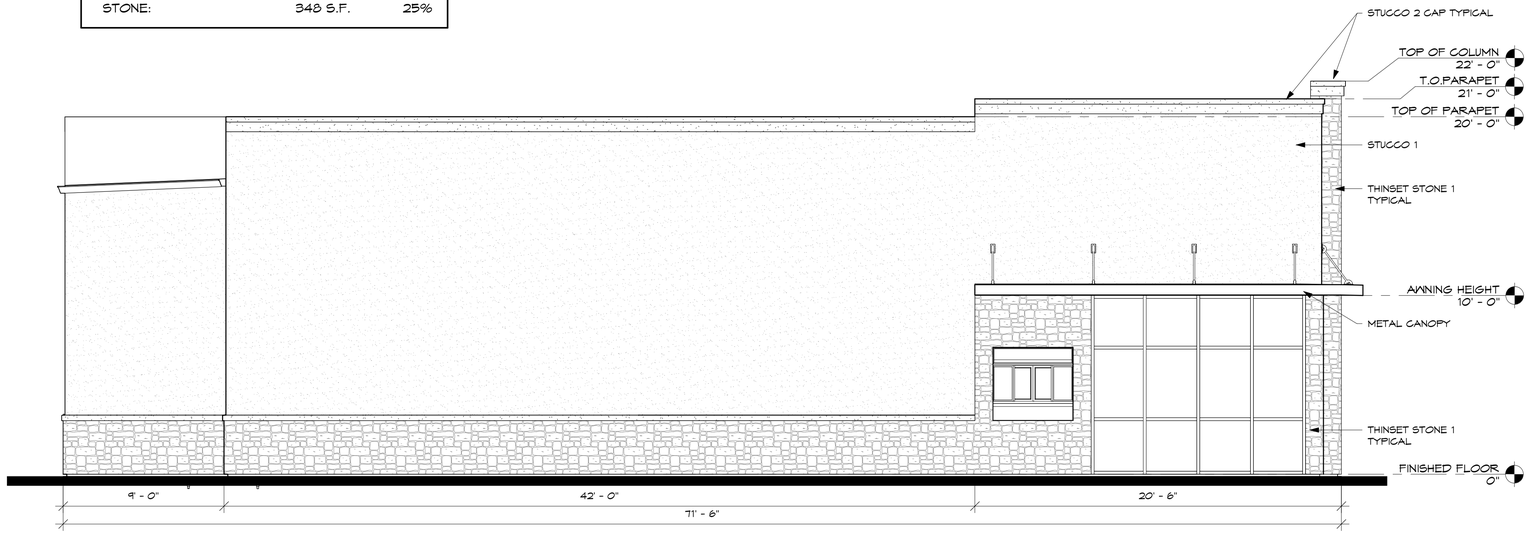
- All field and laboratory test documentation.
- All test documentation.
- Liner certification information and results of manufacturer independent testing.
- Field documentation of field testing, repairs, etc.
- Photographs and field notes.
- A survey of the final liner area.

ATTACHMENT 9
FOUNDATION PLAN & VMS DESIGN PLAN

WALL MATERIALS - WEST		
TOTAL:	1,391 S.F.	100%
DOORS & WINDOWS:	140 S.F.	10%
STUCCO:	903 S.F.	65%
STONE:	348 S.F.	25%

EXTERIOR ELEVATION GENERAL NOTES

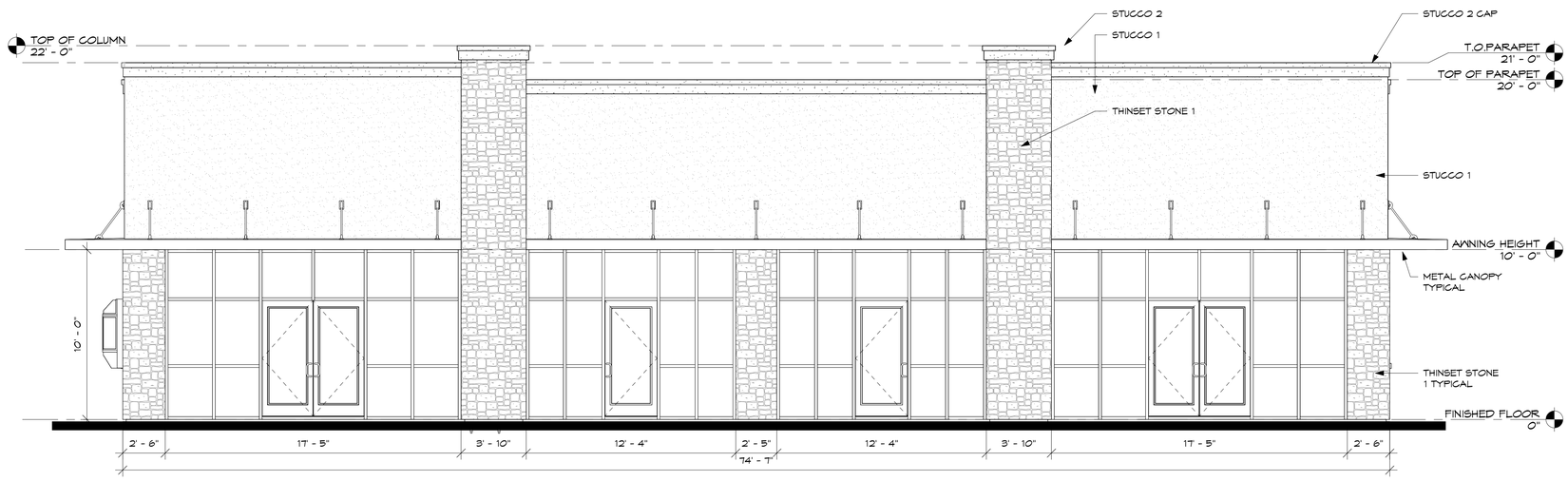
1. SEE FINISH SCHEDULE - EXTERIOR ON A0.2 FOR FINISHES AND SPECIFICATIONS.



02 -WEST

1/4" = 1'-0"

WALL MATERIALS - SOUTH		
TOTAL:	1,546 S.F.	100%
DOORS & WINDOWS:	595 S.F.	38%
STUCCO:	714 S.F.	46%
STONE:	237 S.F.	16%



01 - SOUTH

1/4" = 1'-0"

901 N. McDonald St.
Suite 203
McKinney, Texas 75069
972.529.9790

rawls·culver ARCHITECTS, LP

"ISSUED FOR PRELIMINARY REVIEW, NOT FOR PERMITTING, BIDDING, OR CONSTRUCTION" DECEMBER 30, 2024.

A NEW PROJECT FOR

PERVEZ BHOJANI

CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Job No: 24032

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND AR NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

CAMERON CULVER
TEXAS RA NO. 26504
DATE: DEC. 30, 2024

Date: DEC. 30, 2024

Revision:

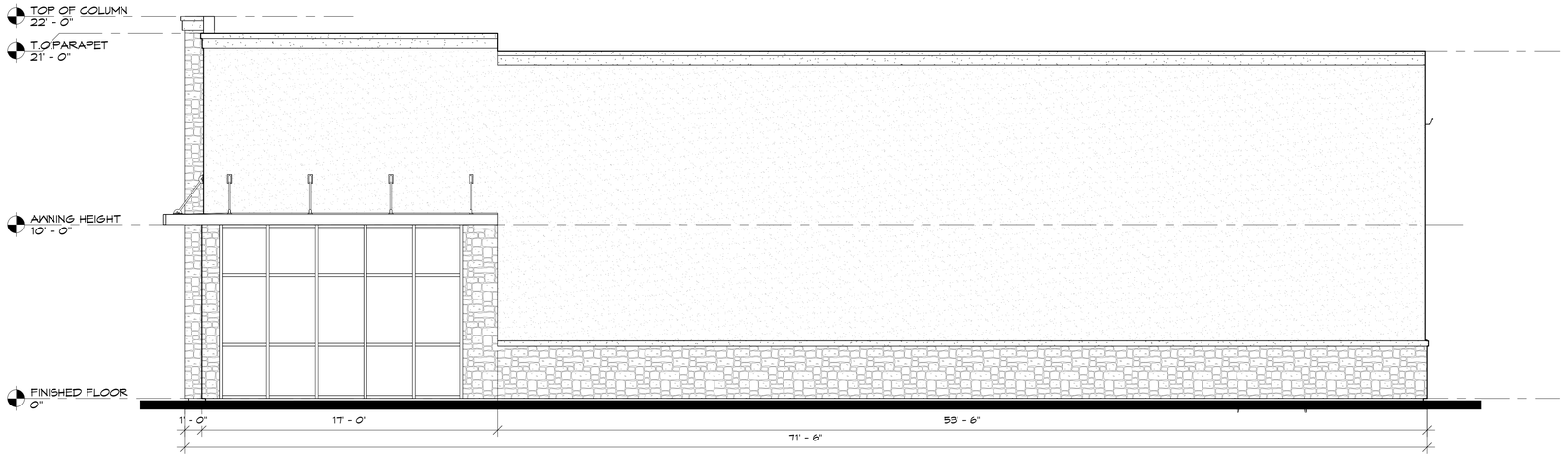
Sheet Title: EXTERIOR ELEVATIONS

Drawn By: JF

Sheet Number: A3.1

WALL MATERIALS - EAST		
TOTAL:	1,427 S.F.	100%
DOORS & WINDOWS:	140 S.F.	10%
STUCCO:	934 S.F.	66%
STONE:	348 S.F.	24%

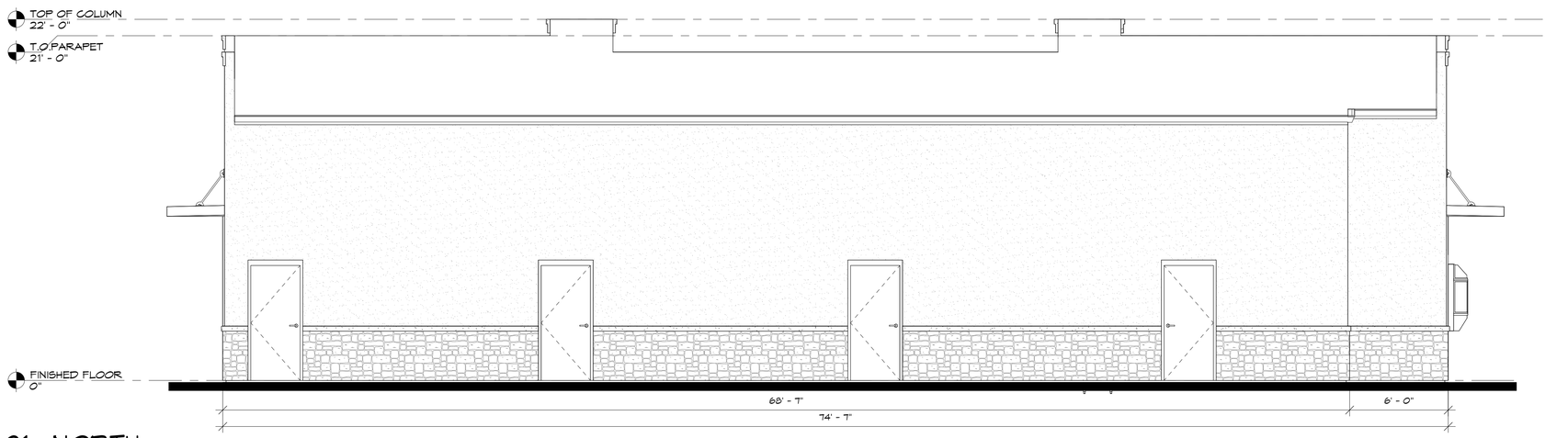
EXTERIOR ELEVATION GENERAL NOTES
1. SEE FINISH SCHEDULE - EXTERIOR ON A0.2 FOR FINISHES AND SPECIFICATIONS.



02 -EAST

1/4" = 1'-0"

WALL MATERIALS - NORTH		
TOTAL:	1,027 S.F.	100%
DOORS & WINDOWS:	100 S.F.	10%
STUCCO:	723 S.F.	70%
STONE:	204 S.F.	20%



01 - NORTH

1/4" = 1'-0"

901 N. McDonald St.
Suite 203
McKinney, Texas 75069
972.529.9790

rawls·culver ARCHITECTS, LP

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PERVEZ BHOJANI

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Job No: 24032

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CAMERON CULVER
TEXAS RA NO. 26504
DATE: DEC. 30, 2024

Date: DEC. 30, 2024

Revision:

Sheet Title: EXTERIOR ELEVATIONS

Drawn By: JF

Sheet Number: A3.2

GENERAL NOTES

1. STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE PROVISIONS OF THE 2021 INTERNATIONAL BUILDING CODE.

2. THE BUILDING STRUCTURE HAS BEEN DESIGNED TO RESIST THE FOLLOWING CODE PRESCRIBED LOADS:

   LIVE LOADS

ROOF	20 PSF
FLOOR	100 PSF

   SNOW LOADS

GROUND SNOW LOAD, Pg.	5 PSF
SNOW IMPORTANCE FACTOR,Is	1.0
SNOW EXPOSURE FACTOR, Ce	0.9
THERMAL FACTOR, Ct	1.0

   WIND LOADS

ULTIMATE DESIGN WIND SPEED (RISK CATEGORY II)	105 MPH
EXPOSURE CATEGORY	B
SURFACE ROUGHNESS	B

   SEISMIC LOADS

OCCUPANCY CATEGORY	II
SEISMIC IMPORTANCE FACTOR, IE	1.0
SPECTRAL RESPONSE COEFFICIENT, SS	9.8%g
SPECTRAL RESPONSE COEFFICIENT, S1	5.5%g
SITE CLASS	D
SEISMIC DESIGN CATEGORY	B

3. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMEN AND OTHER PERSONS DURING CONSTRUCTION.

4. THE STRUCTURAL DRAWINGS SHALL NOT BE SCALED FOR DETERMINATION OF QUANTITY, LENGTH OR FIT OF MATERIALS.

5. PRINCIPAL OPENINGS ARE INDICATED ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, BLOCKOUTS, INSERTS, CURBS, OPENINGS AND SLAB DEPRESSIONS NOT SHOWN.

6. CONTRACTOR SHALL COMPARE STRUCTURAL AND ARCHITECTURAL DRAWINGS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.

7. CONTRACTOR SHALL INSURE THAT CONSTRUCTION MATERIALS WHOSE WEIGHT EXCEEDS THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS ARE NOT STORED ON STRUCTURALLY SUPPORTED FLOOR OR ROOF FRAMING.

8. THE CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACING AND SHORING OF ALL STRUCTURAL WORK AS REQUIRED FOR STABILITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONDITION WHICH, IN HIS OR HER OPINION, MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE DISTRESS IN THE STRUCTURE.

9. LOADINGS FOR MECHANICAL EQUIPMENT ARE BASED ON THE UNIT(S) SHOWN ON THE STRUCTURAL DRAWINGS. ANY CHANGES IN TYPE, SIZE, WEIGHT OR NUMBER OF UNIT(S) SHALL BE REPORTED TO THE ARCHITECT PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS OR MECHANICAL EQUIPMENT.

10. REPRODUCTION OF THE STRUCTURAL DRAWINGS, EITHER IN PART OR IN WHOLE, FOR SUBMITTALS OR SHOP DRAWINGS SIGNIFIES ACCEPTANCE OF INFORMATION SHOWN AS CORRECT AND OBLIGES THE USER TO ANY EXPENSE, REAL OR IMPLIED, ARISING FROM THEIR USE.

11. CONTRACTOR SHALL SCHEDULE SITE OBSERVATION VISITS WITH THE ENGINEER OF RECORD AND/OR TESTING LABORATORY A MINIMUM OF FORTY-EIGHT HOURS PRIOR TO THE REQUIRED TIME OF THE VISIT.

12. CONTRACTOR SHALL ALLOW TEN (10) WORKING DAYS FOR THE ENGINEER TO REVIEW EACH STRUCTURAL SUBMITTAL OR SHOP DRAWING.

FOUNDATION NOTES

1. THE FOUNDATION DESIGN IS BASED ON THE PROJECT GEOTECHNICAL REPORT PREPARED BY HENLEY JOHNSTON & ASSOCIATES, INC. (HJA REPORT NO. 26618G) DATED OCTOBER 7, 2024.

2. THE FOUNDATION DESIGN IS BASED ON A POTENTIAL VERTICAL MOVEMENT, PVM, ON THE ORDER OF ONE (1) INCH OR LESS. IF THIS VALUE IS NOT ACCEPTABLE TO THE OWNER OR TENANTS, THE FOUNDATION DESIGN MUST BE REVISED.

2. THE FOUNDATION SHALL CONSIST OF AUGER-EXCAVATED, UNDER-REAMED (BELLED) REINFORCED CONCRETE PIERS. REFER TO TYPICAL PIER DETAIL FOR BEARING STRATA. PIERS HAVE BEEN PROPORTIONED AN ALLOWABLE BEARING PRESSURE OF 5,000 PSF.

3. ALL GRADE BEAM SIDES SHALL BE HARD FORMED, EARTH-FORMING IS NOT ACCEPTABLE.

4. CORRUGATED PAPER FORMS, AS MANUFACTURED BY SUREVOID PRODUCTS INC., SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER TO PROVIDE A NOMINAL EIGHT (8) INCH VOID BENEATH ALL GRADE BEAMS. SURE RETAINER BY MOTZBLOCK PLASTIC BACKFILL RETAINER BOARDS, AS MANUFACTURED BY SUREVOID PRODUCTS, INC., SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER CONTINUOUSLY ALONG EACH SIDE OF ALL GRADE BEAMS.

5. THE BUILDING SLAB ON GRADE SHALL BE PLACED ON A VAPOR BARRIER/ RETARDER OVER TWELVE (12) INCHES OF A PERMEABLE LATER OF OPEN-GRADED, CLEAN AGGREGATE MATERIAL OVER A GEOTEXTILE FABRIC FILTER OVER A MINIMUM OF TEN (10) FEET OF NEW IMPORTED SELECT FILL OR ON-SITE SOILS THAT HAVE BEEN EXCAVATED, TO A DEPTH OF TEN (10) FEET, AND CLEANED, IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT.

6. WITHIN TWELVE (12) THICK PERMEABLE LAYER, PERFORATED PVC VENTING PIPES (OR ALTERNATIVE) SHALL BE INSTALLED, TO OPERATE WITHOUT CLOGGING, AND CONNECTED TO AN INDUCED-DRAFT EXHAUST SYSTEM, IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT. AUTOMATIC METHANE GAS SENSORS SHALL BE INSTALLED, IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT.

7. VAPOR BARRIER/RETARDER SHALL BE IN COMPLIANCE WITH ASTM E 1745 CLASS A, HAVE A MINIMUM THICKNESS OF FIFTEEN (15) MILS AND A PERMEANCE AS TESTED AFTER MANDATORY CONDITIONING (ASTM E 154 SECTIONS 8, 11, 12, 13) LESS THAN 0.01 PERMS (GRAINS/(FT2*HR*IN.HG)) PER ASTM E 96 OR F 1249. MEMBRANE, TAPE, AND ACCESSORIES SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

8. INFORMATION ABOVE IS PRESENTED ONLY AS A SUMMARY OF THE PROJECT GEOTECHNICAL REPORT. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND COMPLYING WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD DIFFERENT TO THOSE ASSUMED FOR DESIGN.

9. IF MORE THAN SIX (6) MONTHS ELAPSE FROM THE ISSUE DATE OF THE CONSTRUCTION DOCUMENTS TO THE COMMENCEMENT OF CONSTRUCTION, IT IS RECOMMENDED THAT THE BUILDING OWNER CONSULT WITH THE PROJECT GEOTECHNICAL ENGINEER TO DETERMINE IF THE FOUNDATION DESIGN RECOMMENDATIONS ARE CONSISTENT WITH THE CURRENT SOIL CONDITIONS.

STRUCTURAL CONCRETE NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 301 AND ACI 318. ALL CONCRETE SHALL BE LABORATORYDESIGNED AND CONTROLLED.

2. UNLESS NOTED OTHERWISE, ALL CONCRETE SHALL HAVE SAND AND GRAVEL OR CRUSHED STONE COARSE AGGREGATES AND A CORRESPONDING TWENTY-EIGHT (28) DAY COMPRESSIVE STRENGTH OF 3,000 PSI. ALL CONCRETE THAT WILL BE PERMANENTLY EXPOSED TO WEATHER SHALL CONTAIN AN AIR ENTRAINING AGENT THAT PROVIDES FOUR (4) TO SIX (6) PERCENT AIR BY VOLUME.

3. CONCRETE PROTECTION FOR STEEL REINFORCEMENT SHALL BE AS FOLLOWS (SEE ACI 318, SECTION 7.7 FOR CONDITIONS NOT INDICATED):

ALL CONCRETE PLACED AGAINST SOIL	3"
SLABS ON GRADE	AT SLAB MID-DEPTH
GRADE BEAMS	3" BOTTOM, 2" TOP AND SIDES

4. LOCATE JOINTS TO LEAST IMPAIR STRENGTH AND APPEARANCE OF STRUCTURE. LOCATE HORIZONTAL JOINTS IN CONCRETE ONLY WHERE THEY NORMALLY OCCUR OR WHERE INDICATED ON PLAN. LOCATE VERTICAL JOINTS IN THE MIDDLE THIRD OF SPAN.

5. ROUGHEN SURFACE OF HORIZONTAL OR NEARLY HORIZONTAL CONSTRUCTION JOINTS SO THAT AGGREGATE SHALL BE EXPOSED UNIFORMLY, LEAVING NO LAITANCE, LOOSENED PARTICLES OR DAMAGED CONCRETE.

6. THE PLACEMENT OF SLEEVES OR OPENINGS THRU CONCRETE MEMBERS IS PROHIBITED UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER OF RECORD.

7. PROVIDE CHAMFERS AND REVEALS AS INDICATED IN THE ARCHITECTURAL DRAWINGS.

8. THE BUILDING OWNER SHALL SECURE AN INDEPENDENT TESTING LABORATORY TO PERFORM AT LEAST ONE COMPRESSIVE STRENGTH TEST FOR EACH ONE HUNDRED (100) CUBIC YARDS, OR FRACTION THEREOF, OF EACH MIX DESIGN OF CONCRETE PLACED ON ANY ONE DAY. THE LABORATORY SHALL RECORD THE MIX DESIGN, LOCATION OF PLACEMENT, AND SLUMP OF EACH SPECIMEN.

9. A COMPRESSIVE STRENGTH TEST SHALL BE COMPRISED OF FOUR (4) 6"X12" OR FIVE (5) 4"X8" CYLINDER SPECIMENS OBTAINED IN ACCORDANCE WITH ASTM C31. ONE (1) CYLINDER SPECIMEN SHALL BE TESTED AT SEVEN (7) DAYS FOR INFORMATION AND TWO (2) 6"X12" CYLINDER SPECIMENS OR THREE (3) 4"X8" CYLINDER SPECIMENS SHALL BE TESTED AT TWENTY-EIGHT (28) DAYS FOR ACCEPTANCE. THE REMAINING CYLINDER SPECIMEN SHALL BE HELD FOR TESTING AS DIRECTED.

REINFORCING STEEL NOTES

1. ALL DETAILING OF STEEL REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI COMMITTEE 315 PUBLICATION SP-66, "ACI DETAILING MANUAL."

2. DEFORMED BAR REINFORCEMENT SHALL BE DOMESTIC NEW BILLET STEEL IN CONFORMANCE WITH ASTM A615, GRADE 60.

3. WELDED WIRE FABRIC SHALL BE ELECTRICALLY WELDED, COLD-DRAWN WIRE IN CONFORMANCE WITH ASTM A185, GRADE 65. WELDED WIRE FABRIC SHALL BE PLACED IN FLAT SHEETS ONLY.

4. LAP WELDED WIRE FABRIC AT LEAST 1 1/2 SQUARES PLUS WIRE END EXTENSIONS BUT NOT LESS THAN TWELVE (12) INCHES, UNLESS NOTED OTHERWISE. EXTEND MESH ACROSS SUPPORTING BEAMS AND WALLS.

ADHESIVE ANCHOR AND DOWEL NOTES

1. WHERE NOTED IN THE PLANS AND DETAILS, ADHESIVE ANCHORS AND DOWELS SHALL BE INSTALLED WITH HILTI HY200 SAFE SET EPOXY IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

2. ADHESIVE ANCHORS AND/OR DOWELS NOT NOTED IN THE PLANS AND DETAILS ARE NOT ALLOWED WITHOUT PRIOR WRITTEN CONSENT OF THE STRUCTURAL ENGINEER OF RECORD.

3. UNLESS NOTED OTHERWISE, THE MINIMUM EMBEDMENT DEPTH OF ADHESIVE ANCHORS AND DOWELS SHALL BE AS FOLLOWS:

ANCHOR/DOWEL	EMBEDMENT
3/8" DIA. OR #3 BAR	4 1/2"
1/2" DIA. OR #4 BAR.	6"
5/8" DIA. OR #5 BAR	9 5/8"
3/4" DIA. OR #6 BAR	11 1/4"
7/8" DIA. OR #7 BAR	13 1/8"
1" DIA. OR #8 BAR	15"

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL DETAILING, FABRICATION AND INSTALLATION SHALL CONFORM TO THE STANDARDS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).

2. PROVIDE NEW DOMESTIC STRUCTURAL STEEL IN ACCORDANCE WITH THE FOLLOWING:

WIDE FLANGE SHAPES	ASTM A992
CHANNELS, PLATES AND ANGLES	ASTM A36
STEEL TUBE	ASTM A500, GRADE B
STEEL PIPE	ASTM A53 (TYPES E OR S), GRADE B

3. THE DETAILER SHALL DESIGN ALL CONNECTIONS TO RESIST FIFTY (50) PERCENT OF THE ALLOWABLE SHEAR CAPACITY OF THE BEAM, UNLESS NOTED OTHERWISE. AS A MINIMUM, PROVIDE THE NUMBER OF BOLTS SHOWN BELOW FOR EACH BEAM SIZE:

BEAM SIZE	NUMBER OF BOLTS
W8 & W10	2 MINIMUM
W12, W14, W16	3 MINIMUM
W18 & W21	4 MINIMUM
W24 & W27	5 MINIMUM

4. CONNECTION BOLTS FOR STRUCTURAL STEEL MEMBERS SHALL BE 3/4 INCH DIAMETER ASTM A325-N BOLTS, UNLESS NOTED OTHERWISE.

5. ANCHOR BOLTS SHALL BE UNFINISHED THREADED FASTENERS THAT CONFORM TO ASTM F1554, GRADE 36 BOLTS AND NUTS WITH HEXAGONAL HEADS.

6. SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED EXCEPT AS SPECIFICALLY INDICATED IN STRUCTURAL DRAWINGS.

7. ERECT ALL STEEL BEAMS WITH NATURAL OR SPECIFIED CAMBER UP.

8. UNLESS NOTED OTHERWISE, HOT DIP GALVANIZE ALL STRUCTURAL STEEL MEMBERS AND EMBEDS EXPOSED TO WEATHER OR SOIL AND WHERE INDICATED ON DRAWINGS. GALVANIZING SHALL CONFORM TO ASTM A123.

9. TOUCH UP FIELD WELDS ON GALVANIZED ITEMS WITH PAINT CONFORMING TO TT-P-641.

10. DO NOT ATTACH EXTERIOR WALL ELEMENTS TO STEEL FRAMING UNTIL ALL DECKING HAS BEEN ATTACHED TO FRAME AND STRUCTURAL BRACING IS IN PLACE (OR ADEQUATE TEMPORARY BRACING HAS BEEN INSTALLED). EXTERIOR WALL ELEMENTS ATTACHING TO STEEL FRAMING SHALL HAVE CONNECTIONS WHICH ALLOW FOR BOTH HORIZONTAL AND VERTICAL ADJUSTMENT TO COMPENSATE FOR MEMBER ROTATION AND DEFLECTION.

WELDING NOTES

1. WELDING OF STRUCTURAL STEEL SHALL CONFORM TO AWS D1.1. USE E70XX ELECTRODES FOR FIELD AND SHOP WELDS. USE ONLY LOW-HYDROGEN ELECTRODES ON ASTM A242, A514, A572 AND A588 STEEL.

2. WELDS NOT INDICATED IN DRAWINGS SHALL BE MINIMUM SIZE CONTINUOUS FILLET WELD IN ACCORDANCE WITH AWS D1.1. FILLET WELDS SHALL BE CONTINUOUS, UNLESS NOTED OTHERWISE.

3. PROVIDE FILLET WELDS AT ALL CONTACT JOINTS BETWEEN STEEL MEMBERS SUFFICIENT TO DEVELOP THE ALLOWABLE TENSILE CAPACITY OF THE SMALLER MEMBER AT THE JOINT, UNLESS NOTED OTHERWISE.

4. ALL GROOVE WELDS SHALL BE FULL PENETRATION, UNLESS NOTED OTHERWISE.

5. AUTOMATICALLY END WELD HEADED STUDS AND DEFORMED BARS WHERE INDICATED ON DRAWINGS. STUDS SHALL CONFORM TO ASTM A108.

STEEL JOIST NOTES

1. DESIGN, DETAILING, FABRICATION AND INSTALLATION OF STEEL JOISTS AND BRIDGING SHALL CONFORM TO THE STANDARDS OF THE STEEL JOIST INSTITUTE (SJI).

2. UNLESS NOTED OTHERWISE, DESIGN STEEL ROOF JOISTS FOR FIFTEEN (15) PSF NET UPLIFT NORMAL TO ROOF SURFACE.

3. ATTACH CONCENTRATED LOADS TO STEEL JOISTS AT JOIST PANEL POINTS OR PROVIDE ADDITIONAL CHORD BRACING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

4. WHERE JOIST BOTTOM CHORD EXTENSIONS ARE REQUIRED, DO NOT ATTACH TO COLUMNS, BEAMS OR WALLS, UNLESS NOTED OTHERWISE.

STEEL DECK NOTES

1. ALL STEEL DECK DETAILING, FABRICATION AND INSTALLATION SHALL CONFORM TO THE STANDARDS OF THE STEEL DECK INSTITUTE (SDI).

2. STEEL DECK SHALL BE INSTALLED CONTINUOUSLY ACROSS THREE OR MORE SPANS. DECKING SHALL BE ATTACHED TO STRUCTURAL MEMBERS IMMEDIATELY AFTER ALIGNMENT.

3. ROOF DECK SHALL BE 1.5B, 22 GAGE GALVANIZE STEEL DECK AS MANUFACTURED BY VULCRAFT OR APPROVED SUBSTITUTE. UNLESS NOTED OTHERWISE, FASTEN DECK TO SUPPORTING MEMBERS WITH 5/8 INCH PUDDLE WELDS IN A 36/4 PATTERN WITH THREE (3) #10 TEK SCREW SIDELAP FASTENERS PER SPAN TO RESIST A NET UPLIFT OF FIFTEEN (15) PSF AND A MINIMUM DIAPHRAGM SHEAR VALUE OF 280 PLF.

LIGHTGAGE STEEL STUD FRAMING NOTES

1. LIGHTGAGE STEEL FRAMING SHALL BE MANUFACTURED BY DEITRICH INDUSTRIES, OR APPROVED SUBSTITUTE.

2. DESIGN, DETAILING, FABRICATION AND INSTALLATION OF LIGHTGAGE STEEL FRAMING SHALL COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS.

3. LIGHTGAGE STEEL FRAMING SHALL BE FORMED FROM STEEL HAVING A GALVANIZED COATING MEETING THE REQUIREMENTS OF ASTM A653.

4. ALL EXTERIOR WALL STUDS THAT PROVIDE BACKUP TO MASONRY VENEER SHALL BE DESIGNED BY THE MANUFACTURER FOR A MAXIMUM DEFLECTION OF L/600 UNDER CODE PRESCRIBED LATERAL LOADS.

5. AS A MINIMUM, EXTERIOR WALL STUDS SHALL BE SIX (6) INCH CSJ, 18 GAGE STEEL STUDS AT SIXTEEN (16) INCHES ON CENTER, UNLESS NOTED OTHERWISE.

6. AS A MINIMUM, CONTINUOUS TOP AND BOTTOM TRACK FOR EXTERIOR WALLS SHALL BE SIX (6) INCH TSC, 20 GAGE STEEL TRACK. UNLESS NOTED OTHERWISE, FASTEN TRACK TO EACH STUD WITH #8 TEK SCREWS AT EACH SIDE OF WALL.

7. AS A MINIMUM, THE BOTTOM TRACK OF EXTERIOR WALLS SHALL BE FASTENED TO THE FOUNDATION WITH 0.177 INCH DIAMETER POWDER ACTUATED FASTENERS, WITH A MINIMUM OF 1 7/16 INCHES EMBEDMENT, AT TWENTY-FOUR (24) INCHES ON CENTER.

STRUCTURAL ABBREVIATIONS:

THE FOLLOWING ABBREVIATIONS ARE REFERENCED IN THE STRUCTURAL DRAWINGS. PLEASE CONTACT THE STRUCTURAL ENGINEER OF RECORD FOR ANY CLARIFICATION, PRIOR TO FABRICATION.

ACI	AMERICAN CONCRETE INSTITUTE	LBS	POUNDS
ADDL	ADDITIONAL	LL	LIVE LOAD
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LLH	LONG LEG HORIZONTAL
		LLV	LONG LEG VERTICAL
AISI	AMERICAN IRON AND STEEL INSTITUTE	LSL	LAMINATED STRAND LUMBER
		LT. GAGE	LIGHT GAGE
ALT.	ALTERNATE	LVL	LAMINATED VENEER LUMBER
APA	AMERICAN PLYWOOD ASSOCIATION (ENGINEERED WOOD ASSOCIATION)	MAT'L	MATERIAL
		MAX.	MAXIMUM
ARCH'L	ARCHITECTURAL, ARCHITECT	MECH'L	MECHANICAL
ASS'Y	ASSEMBLY	MFR.	MANUFACTURER
ASTM	ASTM INTERNATIONAL (FORMERLY AMERICAN SOCIETY FOR TESTING AND MATERIALS)	MIN.	MINIMUM
		NDS	NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
B/	BOTTOM OF	NTS	NOT TO SCALE
B/BEAM	BOTTOM OF BEAM		
BLDG.	BUILDING	O.C.	ON CENTER
BOT.	BOTTOM	O.D.	OUTSIDE DIAMETER
BRG.	BEARING	OPNG.	OPENING
C.L.	CENTERLINE	OPP.	OPPOSITE
CLG.	CEILING		
CMU	CONCRETE MASONRY UNIT(S)	P.E.M.B.	PRE-ENGINEERED METAL BUILDING
COL.	COLUMN	PL.	PLATE
CONC.	CONCRETE	PLF	POUNDS PER LINEAR FOOT
CONN.	CONNECTION	PREFAB.	PRE-FABRICATED
CONT.	CONTINUOUS	PSF	POUNDS PER SQUARE FOOT
CONST.	CONSTRUCTION	PSI	POUNDS PER SQUARE INCH
COORD.	COORDINATE	PSL	PARALLEL STRAND LUMBER
CRSI	CONCRETE REINFORCING STEEL INSTITUTE	P.T.	POST-TENSIONED
		R	REMAINING
DB	DROP BEAM	REF.	REFERENCE
D.B.A.	DEFORMED BAR ANCHOR	REINF.	REINFORCE, REINFORCED
DFL	DOUGLAS FIR/LARCH	REQ'D	REQUIRED
DIA.	DIAMETER	REV.	REVISION
DIM.	DIMENSION	RTU	ROOF TOP UNIT
DL	DEAD LOAD		
DTL	DETAIL	SCHED.	SCHEDULE(D)
DWL	DOWEL	SIM.	SIMILAR
		SJI	STEEL JOIST INSTITUTE
EL.	ELEVATION	SPA.	SPACE(S), SPACED
EMBED.	EMBEDMENT	SQ.	SQUARE
EQ.	EQUAL	STD.	STANDARD
EXP.	EXPANSION	STIRR.	STIRRUP(S)
		SYP	SOUTHERN PINE
FB	FLUSH BEAM		
F/	FLOOR FINISHED FLOOR	T/	TOP OF
FLR.	FLOOR	T/CONC.	TOP OF CONC
FTG.	FOOTING	T/FOOTING	TOP OF FOOTING
		T/METAL	TOP OF METAL
GALV.	GALVANIZED	T/PANEL	TOP OF PANEL
GYP.	GYPSUM	T/PARAPET	TOP OF PARAPET
		T/PIER	TOP OF PIER
HORIZ.	HORIZONTAL	T/PILECAP	TOP OF PILECAP
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	T/SHEATHING	TOP OF SHEATHING
		T/SLAB	TOP OF SLAB
		T/STEEL	TOP OF STEEL
IBC	INTERNATIONAL BUILDING CODE	T/WALL	TOP OF WALL
		TYP.	TYPICAL
I.D.	INSIDE DIAMETER		
INFO.	INFORMATION	U.N.O.	UNLESS NOTED OTHERWISE
		VERT.	VERTICAL
KIP	KILOPOUND (1,000 POUNDS)		
KSI	KILOPOUNDS PER SQUARE INCH	W/	WITH
		W/O	WITHOUT
		W.W.F.	WELDED WIRE FABRIC

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A NEW PROJECT FOR

PERVEZ BHOJANI

CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Job No: 24032

Date: 2025.01.30

Revision:

Sheet Title: STRUCTURAL NOTES

Drawn By: RTP

Sheet Number: S1.1

STATE OF TEXAS
R. TRENT PERKINS
84264
REGISTERED
PROFESSIONAL ENGINEER
1/30/2025

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CONCRETE REINFORCING LAP SPLICE SCHEDULE

BAR SIZE	LAP
3	1'-6"
4	2'-0"
5	2'-6"
6	3'-0"
7	4'-2"
8	4'-8"
9	5'-4"
10	6'-0"
11	6'-8"

01 **SCHEDULE**
NO SCALE

CONCRETE DOWEL SCHEDULE

MARK	SIZE	A	B	C
DWL. A	#4	2'-6"	1'-0"	"
DWL. B	#5	3'-0"	3'-0"	"
DWL. C	#3	1'-6"	1'-6"	"
DWL. D	#5	2'-0"	1'-0"	"
DWL. E	#4	2'-0"	AS REQ'D	"
DWL. F	#4	AS REQ'D	0'-8"	"
DWL. G	#4	2'-6"	0'-8"	0'-8"

NOTES:

1. SCHEDULED DOWELS ARE MARKED "DWL." ON THE SECTIONS AND DETAILS.

2. DOWEL SPACING TO BE THE SAME AS VERTICAL BEAM OR WALL REINFORCEMENT, UNLESS NOTED OTHERWISE.

3. STRAIGHT BARS SHALL BE PLACED WITH ONE HALF OF BAR LENGTH ON EACH SIDE OF COLD JOINT, UNLESS NOTED OTHERWISE.

02 **SCHEDULE**
NO SCALE

SPECIAL INSPECTION

1. RTP STRUCTURAL, PLLC (RTP) IS NOT THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT. SPECIAL INSPECTION IS NOT PART OF RTP'S CONTRACT, BUT THE FOLLOWING IS PRESENTED HERE FOR THE BENEFIT OF THE CONTRACTOR AND THE BUILDING OFFICIAL.

2. THE OWNER OR REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION DURING CONSTRUCTION IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

3. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS SPECIFIED IN SECTION 109 OF THE INTERNATIONAL BUILDING CODE.

4. SPECIAL INSPECTORS SHALL MAINTAIN AND SUBMIT REPORTS IN ACCORDANCE WITH SECTION 1704.1.2 OF THE INTERNATIONAL BUILDING CODE.

5. INSPECTIONS REQUIRED:

INSPECTION TASKS PER 2021 IBC	INSPECTION FREQUENCY	
	CONTINUOUS	PERIODIC
STEEL CONSTRUCTION (SECTION 1704.3 AND TABLE 1704.3)		
STEEL FABRICATION PROCESS PER 1704.2		X
MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS		X
INSPECTION OF HIGH-STRENGTH BOLTING (REFER TO SECTION 1704.3.3 FOR INSPECTION TYPE)	X	X
MATERIAL VERIFICATION OF STRUCTURAL STEEL		X
MATERIAL VERIFICATION OF WELD FILLER MATERIALS SHALL BE IN ACCORDANCE WITH AISC 360, SECTION A3.5		X
WELDING (REFER TO 1704.3 FOR EXCEPTIONS TO CONTINUOUS INSPECTION)	X	X
STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS		X
CONCRETE CONSTRUCTION (SECTION 1704.4 AND TABLE 1704.4)		
REINFORCING STEEL PLACEMENT		X
REINFORCING STEEL WELDING SHALL BE IN ACCORDANCE WITH TABLE 1704.3, ITEM 5B	–	–
BOLTS INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE	X	
ANCHORS INSTALLED IN HARDENED CONCRETE		X
VERIFICATION OF USE OF REQUIRED MIX DESIGN		X
TESTING OF FRESH CONCRETE SLUMP, AIR CONTENT AND TEMPERATURE	X	
CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	
MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X
VERIFICATION OF CONCRETE STRENGTH PRIOR TO STRESSING OF TENDONS AND PRIOR TO SHORE AND FORM REMOVAL		X
FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X
SOILS (SECTION 1704.7)		
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X
PIER FOUNDATIONS (SECTION 1704.9)		
OBSERVE DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH PIER	X	
VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM PIER DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE) AND ADEQUATE END BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES	X	
FOR CONCRETE PIERS, PERFORM ADDITIONAL INSPECTIONS IN ACCORDANCE WITH SECTION 1704.4	-	-

03 **SCHEDULE**
NO SCALE

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A NEW PROJECT FOR
PERVEZ BHOJANI
CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Job No: 24032

Date: 2025.01.30

Revision:

Sheet Title: STRUCTURAL SCHEDULES

Drawn By: RTP

Sheet Number: S1.2

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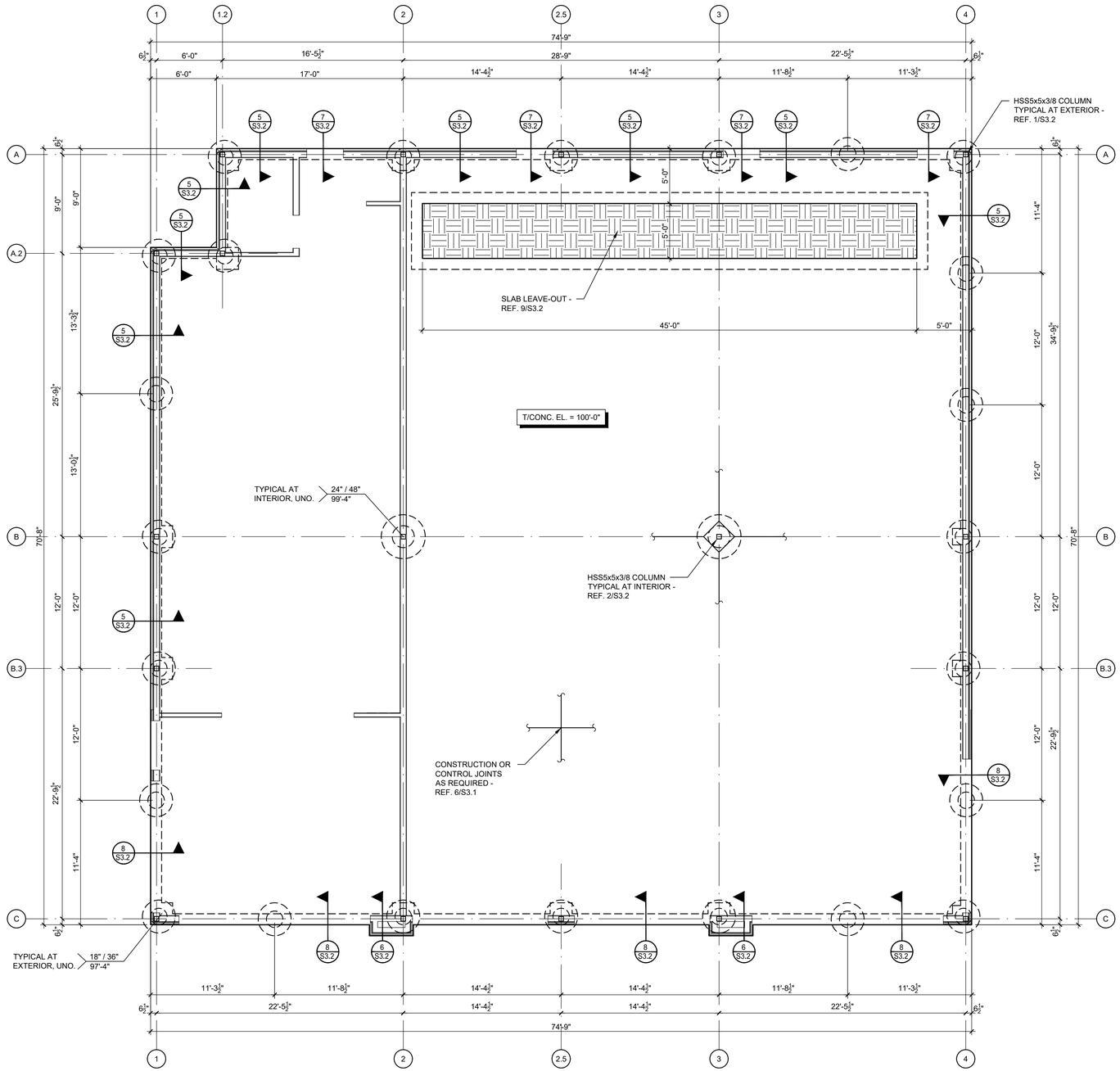
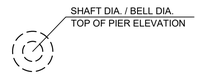


01 **FOUNDATION PLAN**
SCALE: 3/16" = 1'-0"

NORTH

FOUNDATION PLAN NOTES:

1. REFER TO SHEETS S1.1 AND S1.2 FOR STRUCTURAL NOTES AND SCHEDULES.
2. REFER TO SHEETS S3.1 AND S3.2 FOR TYPICAL FOUNDATION DETAILS.
3. PIERS ARE CENTERED BENEATH GRADE BEAMS, UNLESS NOTED OTHERWISE.
4. T/CONC. = TOP OF CONCRETE ELEVATION. T/CONC. = TOP OF EXISTING CONCRETE FLOOR, UNLESS NOTED OTHERWISE.
5. SLAB ON GRADE SHALL BE 5" THICK CONCRETE SLAB ON GRADE OVER SUBGRADE PREPARED IN ACCORDANCE WITH THE FOUNDATION NOTES. REINFORCE SLAB ON GRADE WITH #3 BARS AT 18" O.C. EACH WAY, UNLESS NOTED OTHERWISE.
6. COORDINATE FLOOR DEPRESSIONS, DROPS, SLOPES, AND DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
7. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO FABRICATION OR INSTALLATION OF ANY NEW MATERIALS OR ASSEMBLIES.
8. PIERS ARE NOTED THUS ON PLAN (REF. 1/S3.1) :



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A NEW PROJECT FOR
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CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Job No: 24032

Date: 2025.01.30
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Sheet Title: FOUNDATION PLAN

Drawn By: RTP
Sheet Number: S2.1

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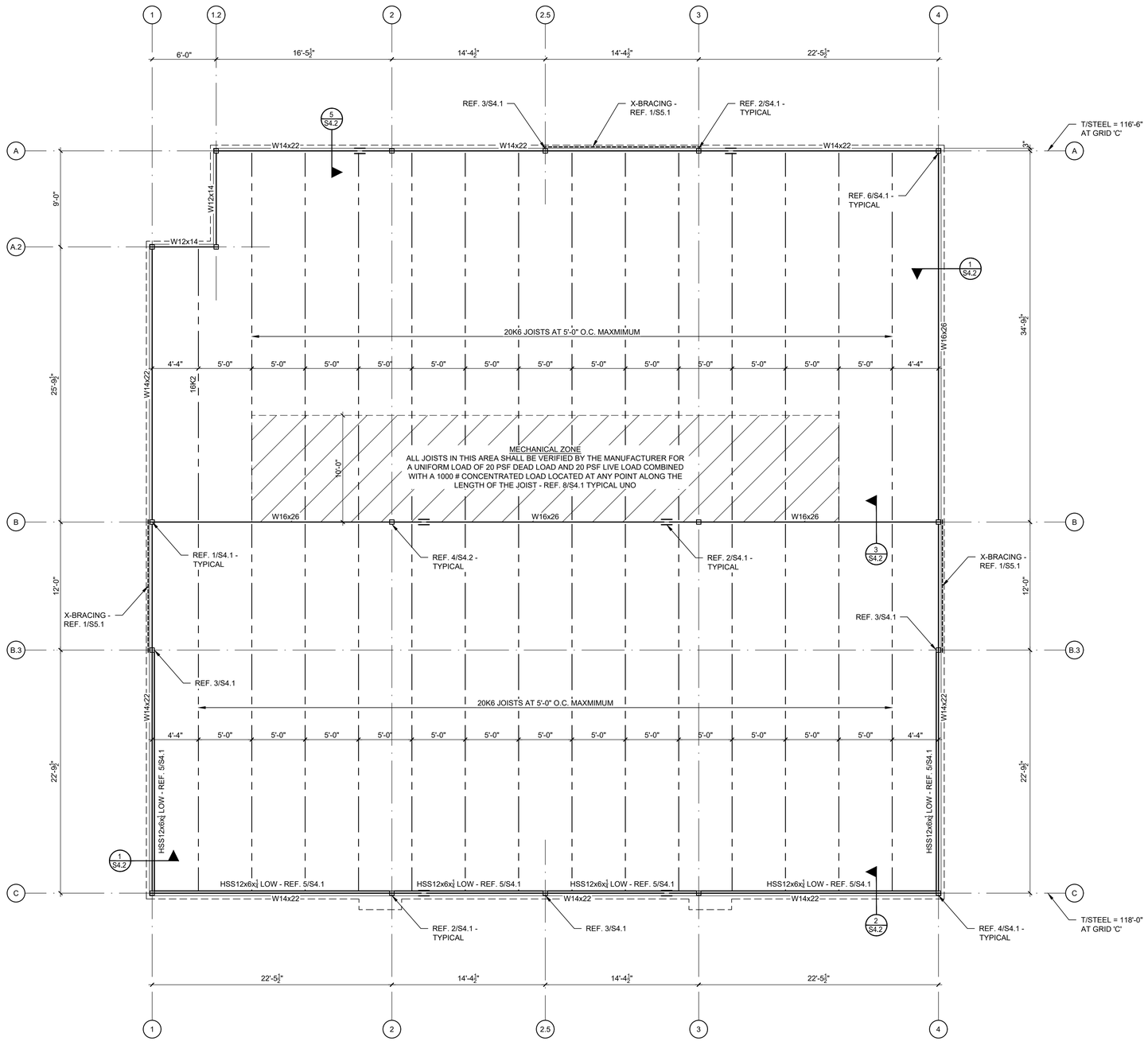
ROOF FRAMING PLAN NOTES:

1. REFER TO SHEETS S1.1 AND S1.2 FOR STRUCTURAL NOTES AND SCHEDULES.
2. REFER TO SHEETS S4.1 AND S4.2 FOR TYPICAL FRAMING DETAILS.
3. COLUMNS ARE CENTERED ON GRID LINES, UNLESS NOTED OTHERWISE.
4. T/STEEL = TOP OF STRUCTURAL STEEL AND STEEL JOISTS (BOTTOM OF ROOF DECK) ELEVATION. REFER TO CIVIL/SITE PLAN FOR RELATIVE DATUM ELEVATION.
5. STEEL JOISTS SHALL BE DESIGNED BY THE MANUFACTURER TO SUPPORT ALL ROOF MECHANICAL EQUIPMENT IN ADDITION TO UNIFORM ROOF LOADS. CONTRACTOR SHALL COORDINATE WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.
6. COORDINATE ALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, REF. 7/S4.1.



01 ROOF FRAMING PLAN

SCALE: 3/16" = 1'-0"

NORTH

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STATE OF TEXAS
1/30/2025
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RTP#: 25018

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A NEW PROJECT FOR
PERVEZ BHOJANI
CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Job No: 24032

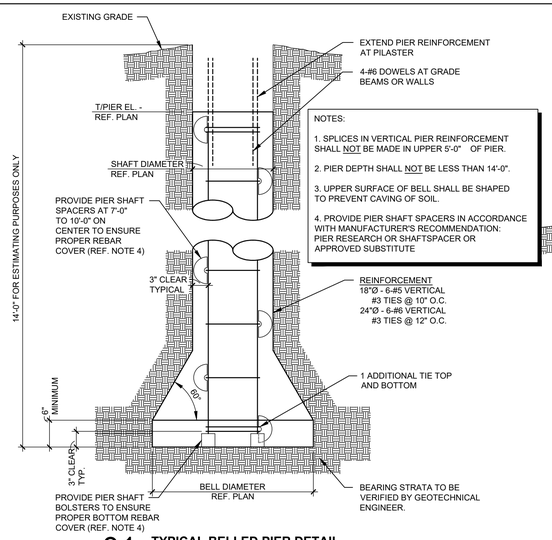
Date: 2025.01.30

Revision:

Sheet Title: ROOF FRAMING PLAN

Drawn By: RTP

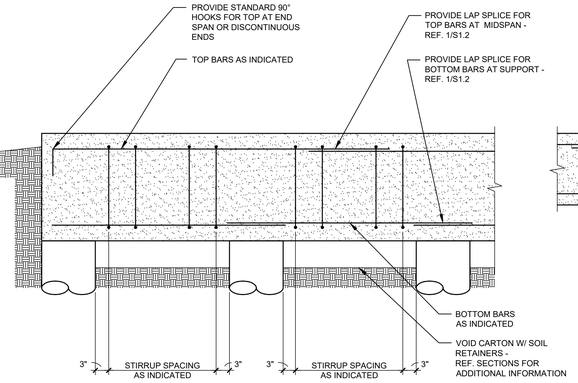
Sheet Number: S2.2



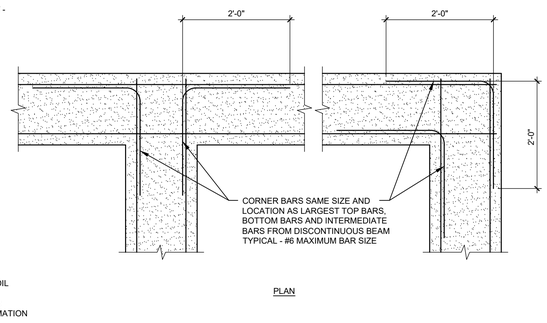
NOTES:

1. SPLICES IN VERTICAL PIER REINFORCEMENT SHALL NOT BE MADE IN UPPER 5'-0" OF PIER.
2. PIER DEPTH SHALL NOT BE LESS THAN 14'-0".
3. UPPER SURFACE OF BELL SHALL BE SHAPED TO PREVENT CAVING OF SOIL.
4. PROVIDE PIER SHAFT SPACERS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION: PIER RESEARCH OR SHAFTSPACER OR APPROVED SUBSTITUTE

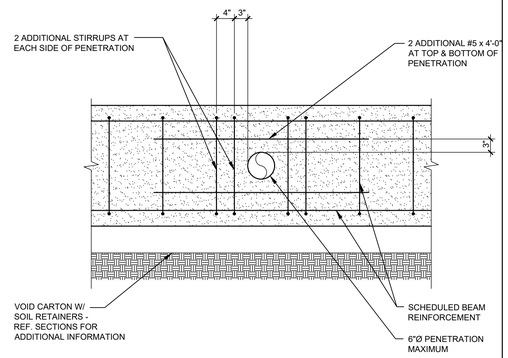
01 TYPICAL BELLED PIER DETAIL
NO SCALE



02 TYPICAL UNSCHEDULED CONCRETE BEAM REINFORCEMENT DETAIL
NO SCALE



03 TYPICAL CORNER BARS AT CONCRETE WALL, BEAM AND FOOTING INTERSECTION DETAIL
NO SCALE



04 TYPICAL GRADE BEAM PENETRATION DETAIL
NO SCALE

05 TYPICAL GRADE BEAM CONSTRUCTION JOINT DETAIL
NO SCALE

NOTES:
1. CONTROL JOINTS SHALL BE CUT INTO SLAB WITHIN 8 HOURS OF CONCRETE PLACEMENT AT COLUMN CENTERLINES AND/OR 16'-0" O.C. MAXIMUM.
2. CONTRACTOR SHALL PROVIDE A CONTROL/CONSTRUCTION JOINT PLAN FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION OF MATERIALS.
3. CONTRACTOR SHALL COORDINATE LOCATION OF CONTROL/CONSTRUCTION JOINTS WITH ARCHITECTURAL FLOOR FINISHES.

06 TYPICAL JOINTS IN SLAB-ON-GRADE DETAIL
NO SCALE

07 TYPICAL DROP IN SLAB-ON-GRADE DETAILS
NO SCALE

08 TYPICAL RE-ENTRANT SLAB CORNER REINFORCING DETAIL
NO SCALE

09 TYPICAL PILASTER DETAILS
NO SCALE

10 TYPICAL SLAB LEAVE OUTS
NO SCALE

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A NEW PROJECT FOR
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Job No: 24032

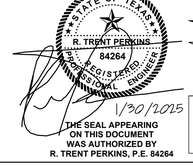
Date: 2025.01.30

Revision:

Sheet Title: FOUNDATION DETAILS

Drawn By: RTP

Sheet Number: S3.1



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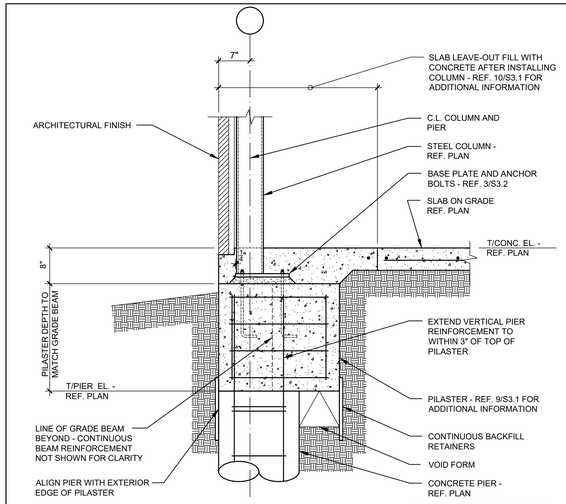
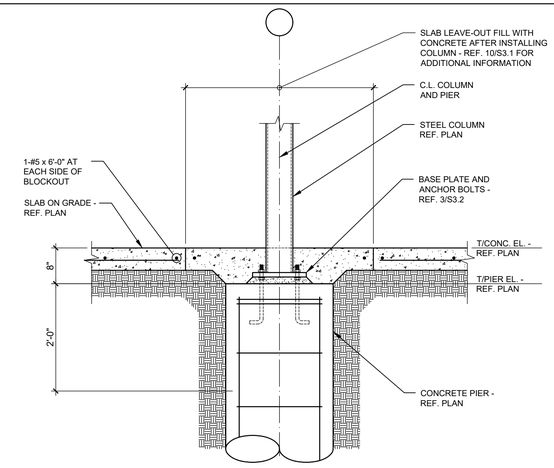


NOTE:
STUDS OMITTED FOR CLARITY.

01 TYPICAL EXTERIOR PIER AT COLULMN DETAIL
NO SCALE



02 TYPICAL INTERIOR PIER AT COLUMN DETAIL
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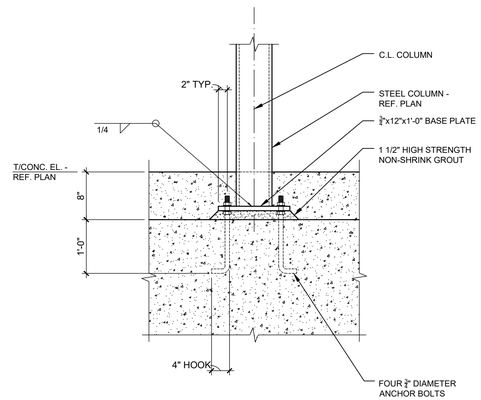
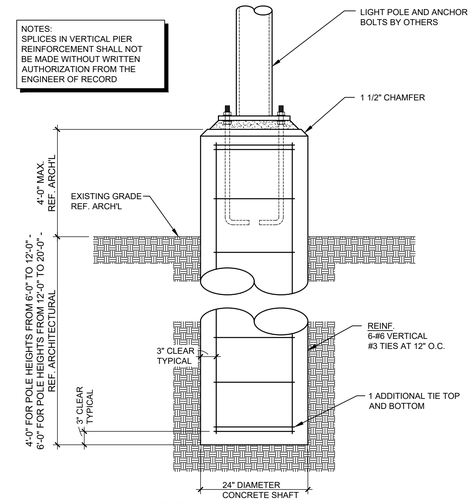


03 TYPICAL COLUMN BASE PLATE DETAIL
NO SCALE



04 TYPICAL LIGHT POLE FOUNDATION
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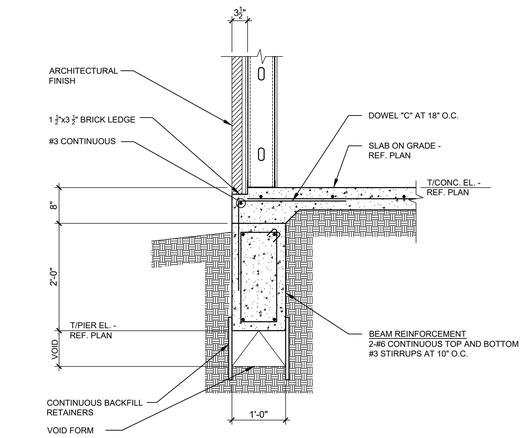
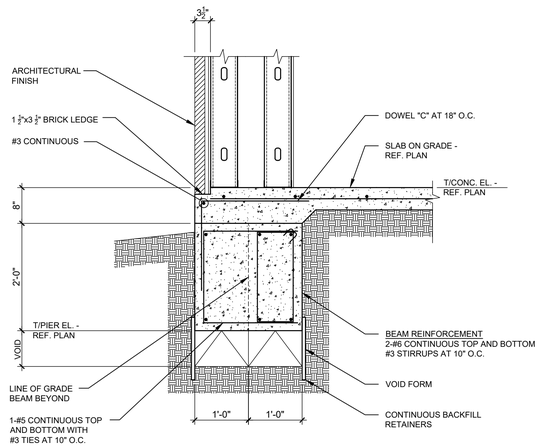
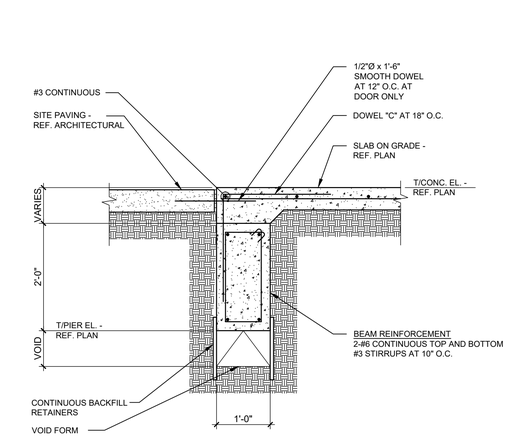


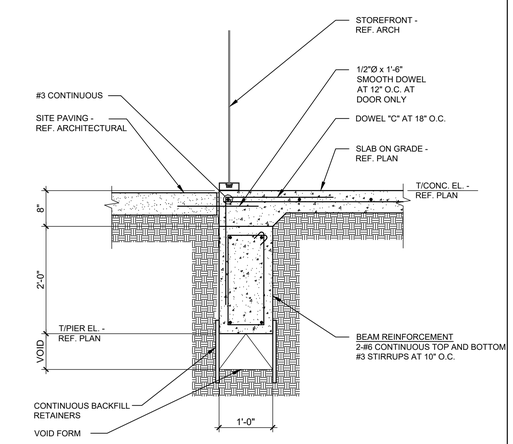
05 TYPICAL GRADE BEAM SECTION
NO SCALE



06 TYPICAL GRADE BEAM SECTION
NO SCALE



07 TYPICAL GRADE BEAM SECTION AT PERSONEL DOOR
NO SCALE



08 TYPICAL GRADE BEAM SECTION AT STOREFRONT
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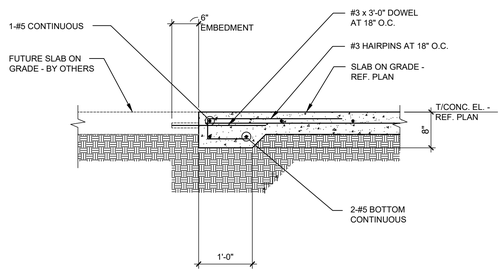

09 TYPICAL DETAIL AT SLAB LEAVE-OUT
NO SCALE

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A NEW PROJECT FOR
PERVEZ BHOJANI
CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Job No: 24032

Date: 2025.01.30

Revision:

Sheet Title: FOUNDATION DETAILS

Drawn By: RTP

Sheet Number: S3.2

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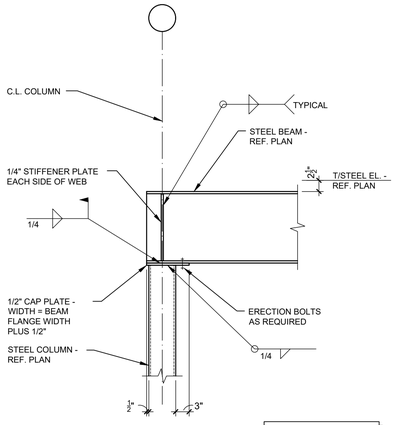

01 TYPICAL BEAM TO COLUMN CONNECTION DETAIL
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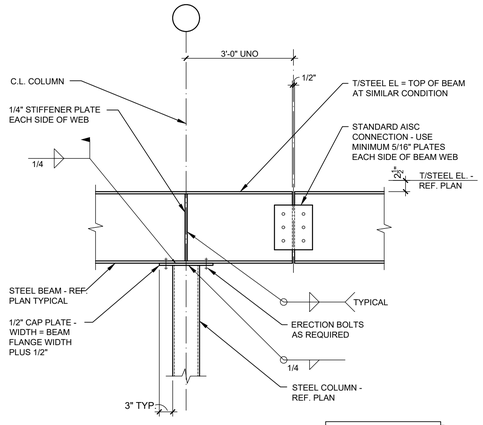

02 TYPICAL BEAM SPLICE DETAIL
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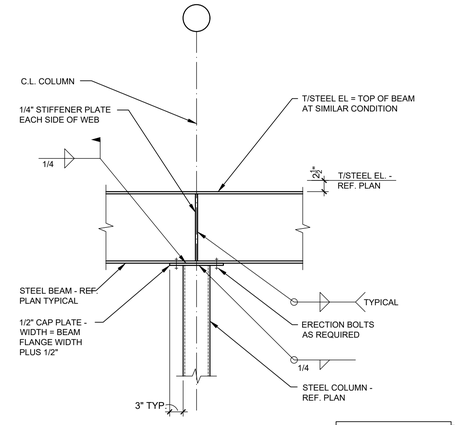

03 TYPICAL CONTINUOUS BEAM DETAIL
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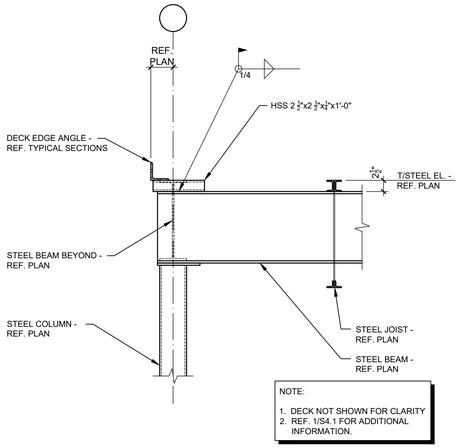

04 TYPICAL DECK EDGE ANGLE SUPPORT DETAIL AT CORNER
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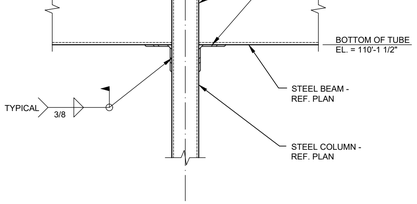

05 TYPICAL BEAM TO COLUMN SHEAR CONNECTION DETAIL
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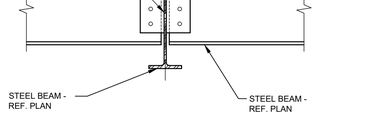

06 TYPICAL BEAM TO BEAM SHEAR CONNECTION DETAIL
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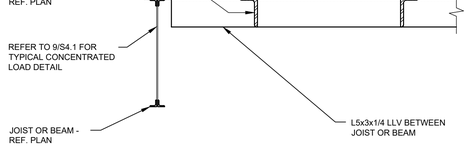
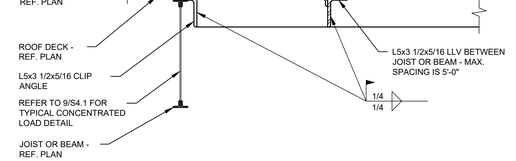


07 TYPICAL ROOF OPENING DETAIL
NO SCALE



08 TYPICAL HVAC UNIT FRAMING DETAIL
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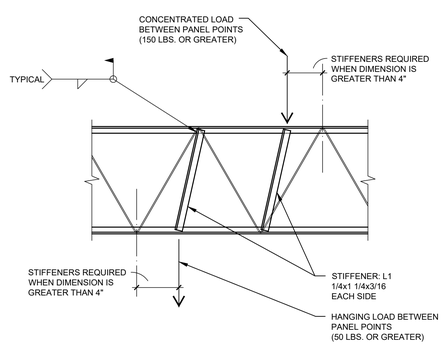

09 TYPICAL JOIST AT CONCENTRATED LOAD DETAIL
NO SCALE

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A NEW PROJECT FOR
PERVEZ BHOJANI
CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Job No: 24032

Date: 2025.01.30

Revision:

Sheet Title: FRAMING DETAILS

Drawn By: RTP

Sheet Number: S4.1

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1/30/2025

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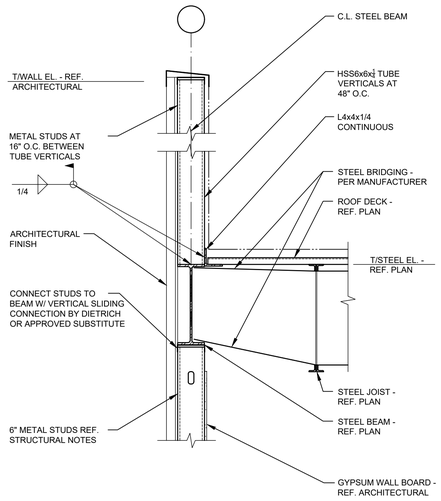

01 **TYPICAL ROOF FRAMING DETAIL**
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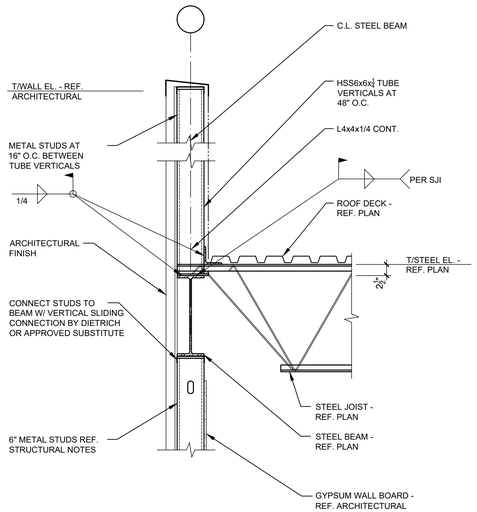

02 **TYPICAL ROOF FRAMING DETAIL**
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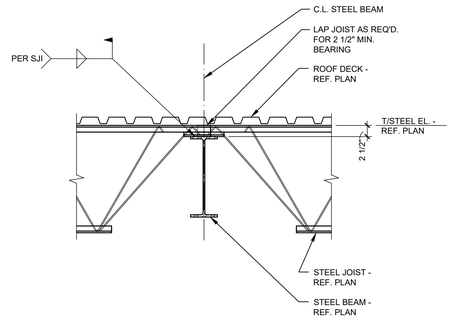
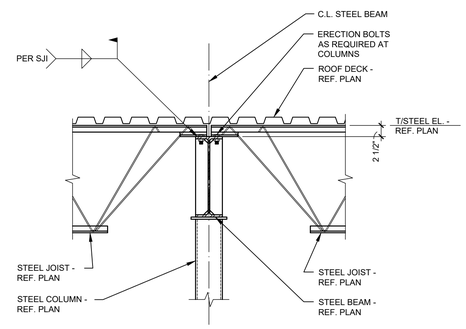
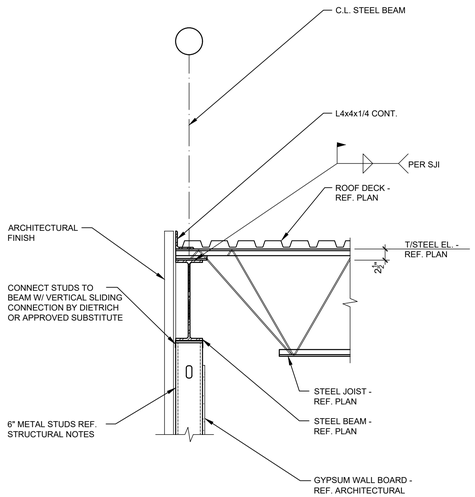


03 **TYPICAL JOIST TO WIDE FLANGE BEAM CONNECTION DETAIL**
NO SCALE

NOTE: REF. 2/S4.1 FOR ADDITIONAL INFORMATION NOT NOTED



04 **TYPICAL JOIST TO BEAM AT COLUMN CONNECTION DETAIL**
NO SCALE



05 **TYPICAL ROOF FRAMING DETAIL**
NO SCALE

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A NEW PROJECT FOR
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CARTWRIGHT ROAD MESQUITE, TEXAS 75149

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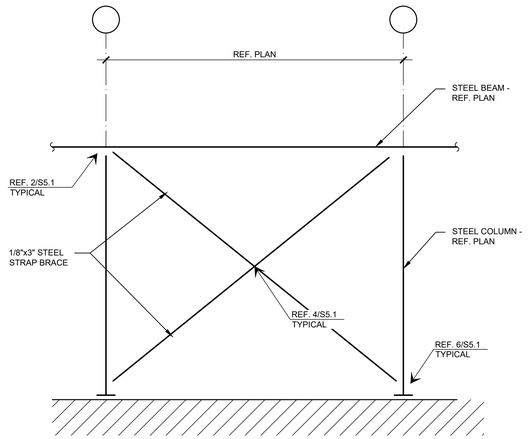
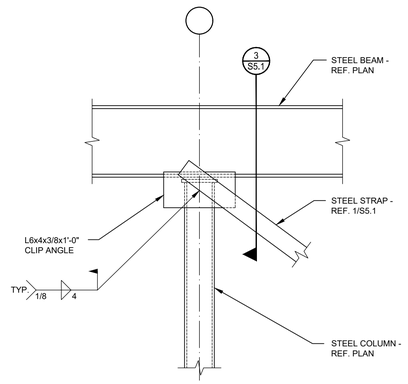


01 **TYPICAL BRACING ELEVATION**
NO SCALE



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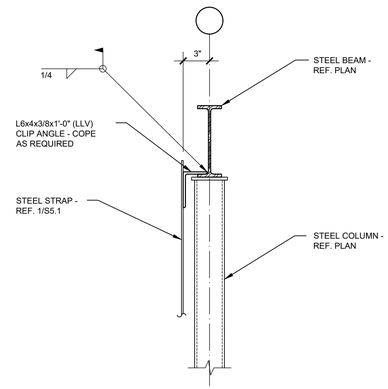

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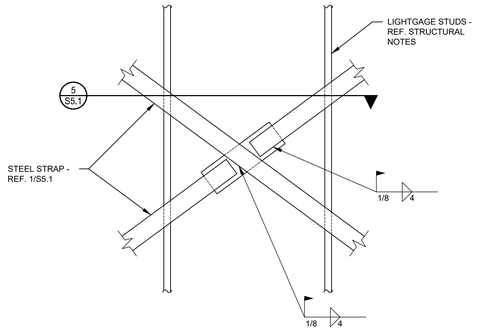

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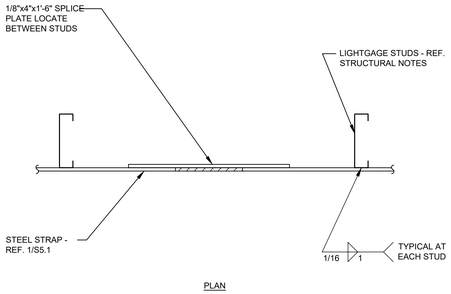
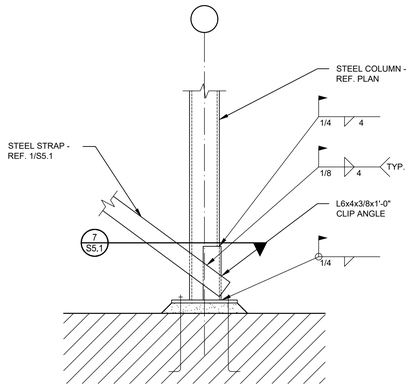


PLAN

05 **TYPICAL BRACING DETAIL**
NO SCALE



06 **TYPICAL BRACING DETAIL**
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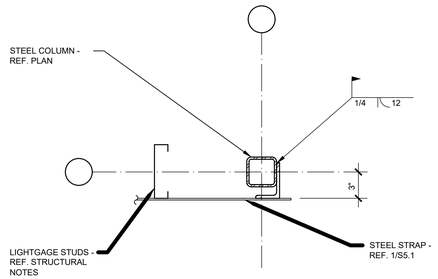

PLAN

07 **TYPICAL BRACING DETAIL**
NO SCALE

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Job No: 24032

Date: 2025.01.30

Revision:

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Drawn By: RTP

Sheet Number: S5.1

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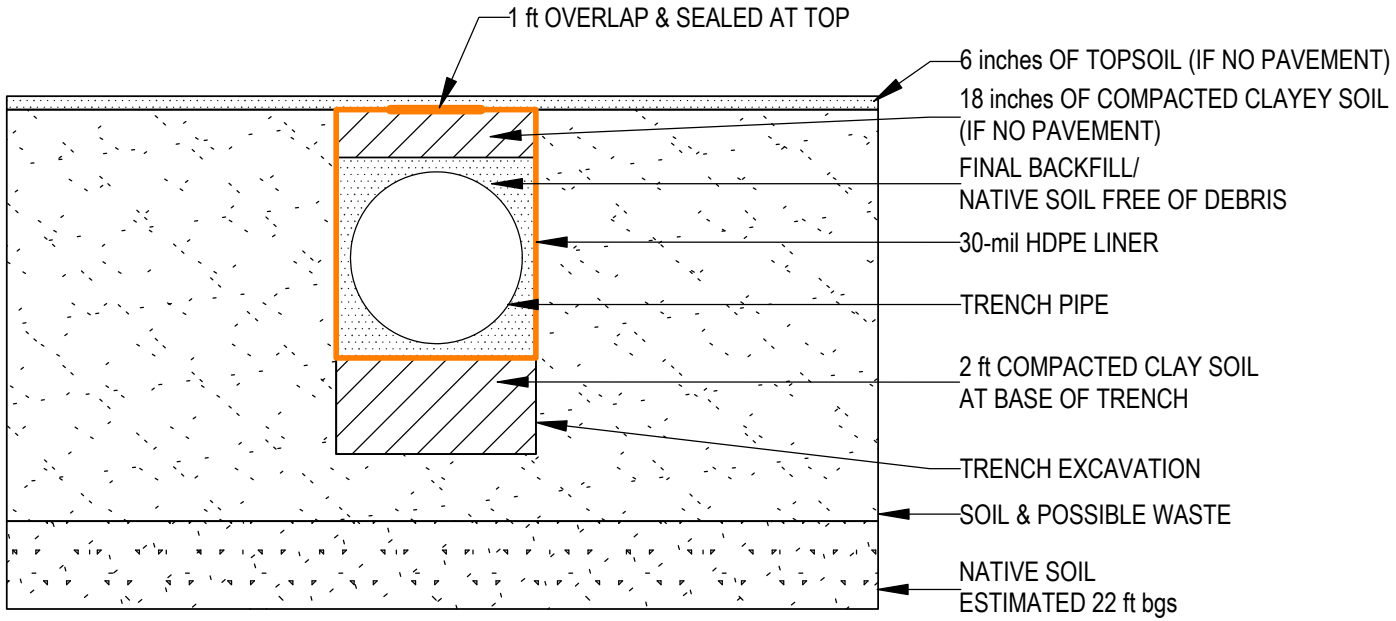


STATE OF TEXAS
S.T. LITHERLAND
57428
LICENSED PROFESSIONAL ENGINEER

3/16/25

NOTES

1. UTILITY TRENCH LINER DETAIL WILL APPLY TO ALL UTILITY LINES INCLUDING WATER LINES, SANITARY SEWER LINES, AND STORM SEWER LINES.
2. IN AREAS NOT COVERED BY BUILDINGS, ASPHALT, OR PAVEMENT, A FINAL COVER OF 18 INCHES CLAYEY SOIL AND 6 INCHES TOPSOIL WILL BE IN PLACE OVER THE UTILITY TRENCHES.

SQ Environmental, LLC

FIGURE 3

UTILITY TRENCH SECTION DETAIL

CAESARS PLAZA
957 W CARTWRIGHT RD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
NOT TO SCALE	FEB 2025	1239.001.001

MEMORANDUM

SQ Environmental, LLC

To:	Favorite Venture Real Estate LLC
From:	Susan Litherland, P.E., Sam Enis, P.G., and Clint Weaver, P.G.
Date:	16 March 2025
Subject:	Caesars Plaza – Vapor Mitigation System Design Basis

This memo provides the design basis for the Vapor Mitigation System (VMS) for Caesars Plaza located at 957 W Cartwright Rd in Mesquite, Texas. This document is part of the design package and this entire package should be provided to the General Contractor and appropriate subcontractors (including specialty VMS, structural, electrical, and plumbing). The package includes:

- Design Basis Memorandum
- VMS Design Notes
- VMS Details
- Sheet VS2.1: Overall VMS Layout Plan
- Sheets VA3.1 & VA3.2: Vent Locations on Exterior Elevations
- Sample Port Figure
- Monitor/Sensor Spec Sheets
- FanTech Spec Sheet for Vent Fans, if needed

BACKGROUND

The Subject Property is 0.92 acres in size and is a portion of an approximately 50-acre area that operated as a landfill from 1963 to 1965. Following the official cessation of landfill operations in 1965, a clay cap was placed over the former landfill. Development of a residential neighborhood within this 50-acre area began in 1984 and landfill waste was encountered. Between 1985 and 1987, the waste materials from areas to the north and east were transferred to four cells on the 15.18-acre Larger Property (which includes the Subject Property). The Subject Property is reportedly located above a portion of Cell No. 3. The cells were designed and constructed to hold the re-located waste. The cells were reported to include shale walls and base. The waste was reported to have been compacted in 7-foot (ft) lifts with 1-ft layers of clay between each lift, and capped with 2 to 4 ft of clay. In late 1987, a secondary containment system was constructed, comprised of a landfill gas collection system along the northern, northeastern, and eastern boundaries of the Larger Property with an impermeable cutoff wall located along the southeastern boundary.

Elevated methane levels have been found approximately 14 ft to 15 ft below ground surface (bgs). Clay is present from ground surface to 14 ft bgs, providing a barrier from the subsurface methane. As part of the property development, no penetrations through the clay layer deeper than 14 ft bgs (the depth of foundation piers) are planned.

A VMS is being installed beneath the foundation of the building to minimize the potential for any intrusion of residual vapors from the historical property usage, and/or methane.

DESIGN APPROACH

The proposed design approach includes the installation of an active VMS consisting of a vent layer (geotextile filter, 12-inch-thick coarse aggregate, slotted vent pipes (bedded in the aggregate), and vapor-tight membrane) below the foundation of the building. The aggregate layer can be benched from 12 inches thick to 0 inches thick near the grade beams and piers, if needed for construction purposes. As planned, the system will have six active, vertical vents. Vents exiting on an exterior wall will be run up through the wall and to the roof. Two vents will exit up through an interior wall and to the roof. Fans will be installed on each vent pipe. As part of the design, electrical connections should be included on the roof at the vent locations to accommodate the fans. The exit point of the vent pipes will be fitted with a ¼-inch mesh screen and protected in a manner that will allow venting of any vapors but prevent entry of animals and/or rainwater. It is recommended that testing be performed approximately six months after the installation to verify that the system is performing as designed, and then tested again annually for two additional years.

A methane sensor will be installed within a pipe connected to the VMS, as well as a sensor in the building interior. In addition, there will be one sample test port installed on the ground floor which will be connected to the aggregate layer to allow for field monitoring / testing of the system. The sample test port will be installed in a small vault that will be set at the final elevation of the floor surface. The approximate locations of these features are shown on Sheet VS2.1.

For any questions or clarifications regarding the VMS design, please contact us. Susan Litherland may be reached by phone at 512-656-9445 or e-mail at [redacted] Sam Enis may be reached by phone at 512-574-1199 or e-mail at [redacted] and Clint Weaver may be reached by phone at 806-773-9326 or e-mail at [redacted]

Caesars Plaza
Mesquite, Texas
VMS Design Notes – 16 March 2025

General

1. An active Vapor Mitigation System (VMS) is to be installed under the building. The VMS layout is illustrated on Sheet VS2.1. The VMS will allow venting of soil vapors from beneath the building. Vent locations are shown on Sheets VS2.1, VA3.1, and VA3.2.
2. Alternative systems are acceptable with engineer's review and approval, although there are certain requirements from 30 TAC §330.957(m)(1)(A), such as the requirement for a 12-inch layer of aggregate, that cannot be modified.
3. For areas underlain with the VMS, this system will also serve as the moisture barrier.
4. We have assumed that the piers and exterior beams will be installed prior to the installation of the VMS. It will be important that the interior surfaces of the beams and the exterior surface of the piers are smooth so that a competent seal can be made between the VMS membrane and concrete.
5. The VMS Contractor will be responsible for "stubbing" up the VMS vent pipes at the approximate locations shown on Sheet VS2.1. The stub-ups will be field located, and as planned, will run through the walls to the roof. The VMS vertical vent pipes should be a minimum of 2-inch PVC and stubbed up at least 24 inches above the finished grade of the first floor. These must be clearly marked in red "VAPOR – Sub-Slab Vent Pipe." A cap or removable cover must be placed on each of the stub-ups to prevent materials from getting into the pipes during subsequent construction activities. During framing, these vent pipes will need to be extended to the roof.
6. The VMS Contractor will also be responsible for running the piping from the VMS beneath the building to the VMS sample test port at the location shown on Sheet VS2.1 and installing the test port pipe within an 8-inch vault set at the final surface grade.
7. Others (concrete, plumbing and/or electrical contractors) will be responsible for:
    a. Placing 8-inch PVC sleeve through the concrete slab foundation at the location shown on Sheet VS2.1, where the sample test port vault will be located.
    b. Placing a 12-inch aggregate layer to allow bedding of the VMS piping.
    c. Clearly labeling the VMS vent pipes where exposed and protecting the vent pipes during construction.
    d. Installation of the electrical outlets on the roof at each of the vent locations and on completion of the building, installing the fans on each of the vent pipes.
8. The VMS is described below. See layout and detail sheets for additional information.
    a. A geotextile filter fabric will be placed on top of the structural fill.
    b. An aggregate venting layer, 12 inches thick, will be placed on top of the geotextile filter fabric. The permeable aggregate bed will be comprised of graded No. 57 stone with no more than 5 wt % fines. The aggregate layer can be benched from 12 inches thick to 0 inches thick near the grade beams and pier structures, if this is needed for construction purposes.
    c. Slotted PVC vent pipes (diameters of 2-inch minimum, 3-inch maximum, with 0.020-inch slots), will be bedded in the aggregate layer by the VMS contractor. These pipes are shown as dashed and bolded lines on the VMS layout drawings. With prior engineer approval, piping with larger slots can be used with appropriate filter sock with Maximum Apparent Opening Size of no greater than 0.6 millimeters. The pipes will be laid in a manner as to avoid the piers. Other permeable piping system with openings that will not allow the aggregate to pass are acceptable with engineer's approval. Where slotted pipes meet or cross, typical connectors should be used.
    d. Vent pipes must be stubbed up through the foundation by the VMS contractor, and extend at least 24 inches above the planned finished grade of the floor. The stub-up should be a minimum of 2-inch diameter PVC, clearly marked in red "VAPOR – Sub-Slab Vent Pipe," and fitted with a cap or removable cover to prevent materials from getting into the pipe during subsequent construction activities.
    e. A methane sensor will be installed within a pipe that's connected to the VMS at the location shown on Sheet VS2.1. This sensor will be placed inside the pipe at the access point within the vault, where the sample test port is also located. An electrical connection will be needed at this location for the sensor.

Caesars Plaza
Mesquite, Texas
VMS Design Notes – 16 March 2025

f. Solid piping through and interior and/or exterior beams should be installed perpendicular to beams.
g. PVC (8-inch diameter) will be installed to allow access between the VMS and the VMS sample test port.
h. The vent pipes will be run through the exterior and interior walls, so at each vent location a "90^{o}" will be used. The VMS contractor will be responsible for providing a 24-inch stub-up for each of the vents, and these stub-ups should be clearly labeled as sub-slab vents, using a sticker such as the one below or other similar permanent marking.

i. A testing vault will be installed by the VMS contractor at the approximate location shown on Sheet VS2.1. This vault will be 8-inch diameter with bolted covers, as is typically used for "at grade" monitoring well installations. There will need to be close coordination between the vault installation and ongoing construction so that the vault is set at the final elevation of the interior surface.
j. A membrane liner on top of aggregate/piping, a minimum of 30 millimeters thick, with 6-inch sealed overlaps and sealed at the exterior beams and interior piers, will be installed by the VMS contractor. This can be a single sheet of plastic, two sheets of plastic, or one sheet of plastic with a spray-on coating. All edges and penetrations are to be taped and/or sealed with mastic. Materials for taping and sealing must be compatible with the sub-slab environment. If the exterior beams and piers are installed prior to the installation of the VMS, the membrane should be sealed to the concrete with a mastic or other material that is appropriate for this use. This will require a minimum overlap of 4 inches. This is not needed for the exterior beams if the membrane extends beneath the exterior beams (i.e. if exterior beams are poured after installation of the VMS.
k. Smoke testing of the system must be performed by the VMS Contractor following installation and sealing of the membrane, and prior to the installation of the rebar and/or post-tension cables. The smoke test should be documented and observed by the engineer. Any leaks must be repaired prior to the engineer's approval of the membrane installation. An additional inspection is required following the installation of the rebar and/or post-tension cables, and any holes or tears repaired prior to pouring of the concrete.
l. During framing, the vent pipes must be extended to exit through the roof.
m. On completion of the building, fans will be installed at all vents. To accommodate fans at these vents, the appropriate electrical connections should be installed on the roof at each of these locations by the electrical contractor in order to accommodate a fan (FanTech HP 190 or equivalent).
n. All materials used in the VMS construction must be compatible with methane.
o. A sample test port for field monitoring of the aggregate layer will be installed using Schedule 40 4-inch PVC casing and screen. The port will be located within a vault that is flush mount with the finished floor.

9. It is assumed that the 12-inch aggregate layer can be considered part of the select fill beneath the foundation, but the geotechnical and/or structural engineer should be consulted to confirm that this is the case. The aggregate layer can be benched from 12 inches thick to 0 inches thick near the grade beams and/or piers.
10. VMS Construction Quality Control:
    a. Spec sheets for <u>all</u> materials to be used must be provided to the engineer for approval prior to delivery to the job site.

Caesars Plaza
Mesquite, Texas
VMS Design Notes – 16 March 2025

b. Particle size distribution must be provided for engineer approval, for every 250 CY of aggregate, prior to aggregate delivery to job site. Particle size distribution documentation should be provided for any alternate/additional sources of aggregate.
c. Smoke testing of the liner must be performed for every "pour." These tests are to be performed by the VMS contractor following installation and sealing of the membrane, and prior to installation of the rebar and/or post-tension cables. The smoke test should be scheduled with the engineer so that the test may be observed and documented.
d. Care must be taken during the placement of rebar and/or post tension cables to minimize the potential for damage or puncture of the liner. This should include the use of rebar supports that do not have sharp ends or edges. A final inspection must be made by the engineer following rebar/post tension cable placement and prior to pouring of the foundations to verify that there are no tears or holes. Any such tears or holes will be repaired and the repairs documented.

11. Others (concrete, plumbing and/or electrical contractors) will be responsible for:
    a. Placing a 12-inch aggregate layer to allow bedding of the VMS piping. The aggregate layer can be benched from 12 inches thick to 0 inches thick near the grade beams.
    b. All vent pipes should be extended vertically through walls or along the walls to the roof. The vents should extend at least 12 inches above the roof.
    c. An 8-inch PVC sleeve must be installed vertically from the aggregate level to the floor surface at the location shown on Sheet VS2.1 (at the Sample Test Port Vault location). This sleeve will allow the connection between the VMS beneath the building and the 8-inch vault where the sample test port is located. The vault will also be installed during the pouring of the foundation.
    d. Vent pipes will need to be protected during construction to prevent damage, filling with debris, entry of rain, and or covering during construction activities. This should be accomplished by covering the opening of the vents with plastic, securely taping the plastic to the pipe, and clearly marking the vent pipes.
    e. During framing, the vent pipes will need to be extended to approximately 12 inches above the height of the roof. On completion, the vents should be fitted with a ¼-inch mesh to prevent entry by small animals, and protected to allow free movement of air, but prevent rainwater from entering the VMS.
    f. Electrical connections should be installed on the roof at all vent locations to accommodate a fan (FanTech HP 190 or equivalent).

CONTRACTOR NOTES:

Concrete/Foundation

1. It is assumed that the 12 inches of aggregate on the foundation area will replace an equal thickness of select fill, but this must be verified by the geotechnical and/or structural engineer. The aggregate layer can be benched from 12 inches thick to 0 inches thick near the grade beams.
2. A grain-size distribution report should be provided for the planned aggregate source for engineer approval prior to the purchase and delivery.
3. Care should be taken when placing rebar and/or post tension cables to minimize the potential for holes or tears to the VMS liner. Rebar and/or post tension cable supports should not have sharp edges.

Plumbing or GC

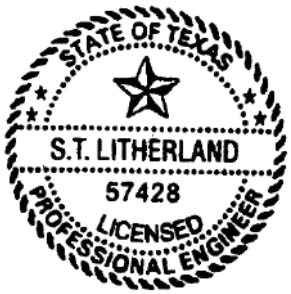
1. The VMS contractor will "stub up" the vents at the locations shown on the drawings. The sub ups will be approximately 24 inches above the final floor level, will be a minimum of 2 inches in diameter and will be marked with a sign documenting that they are sub-slab vents. The vents will need to be extended up the walls to exit through the roof. The exit point of the vents needs to be at least 12 inches from the roof. The vent openings should be fitted with ¼-inch mesh to prevent entry of animals, and protected to allow the free flow of vapors, but prevent rainfall from entering the pipe.

Caesars Plaza
Mesquite, Texas
VMS Design Notes – 16 March 2025

Electrical

1. Electrical connections should be installed by the electrical contractor on the roof at all vent locations to accommodate fans (FanTech HP 190 or equivalent).
2. An electrical connection should be installed by the electrical contractor at the location of the methane sensor that will be connected to the VMS.

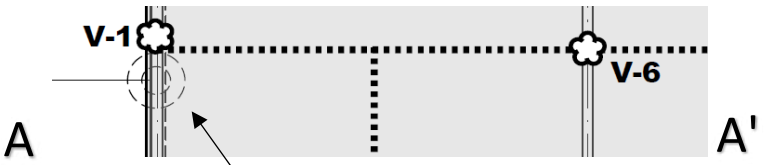
Susan T. Litherland, P.E.
Principal
Texas P.E. No. 57428, F-15202
Signed electronically on 3/16/2025



Caesars Plaza
VMS Details
3/16/2025
(not to scale)

Detail 1: VMS Layout for Vents

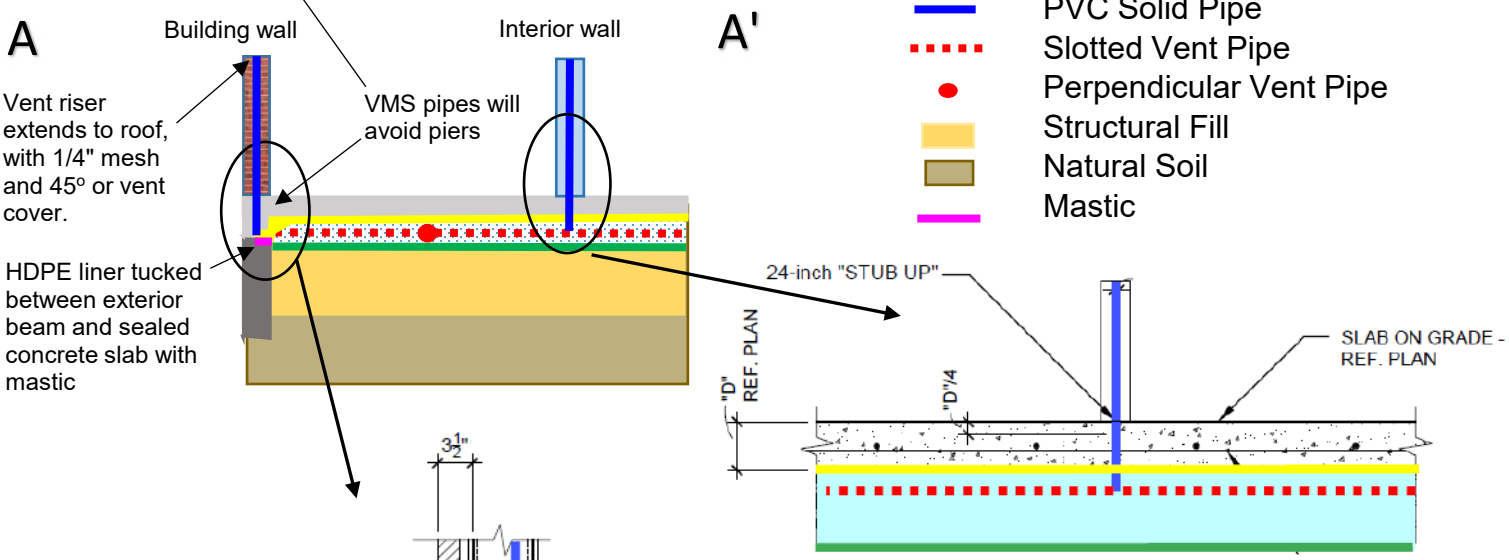
Plan View (See VS2.1):

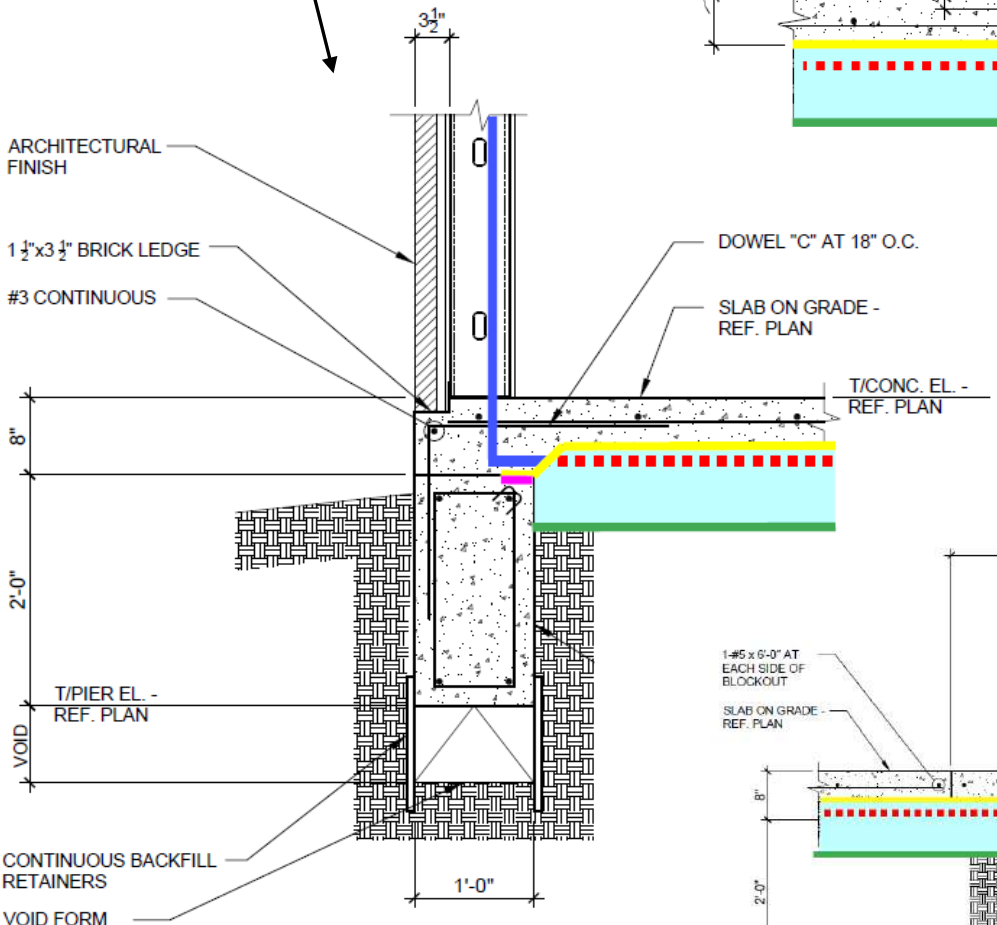


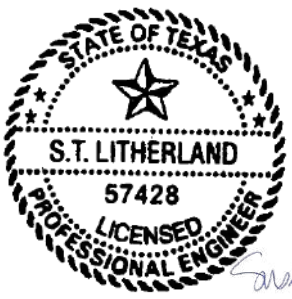
Legend:

- Exterior Concrete Beam
- Concrete Slab
- HDPE Liner
- 12" Aggregate Layer
- Geotextile Filter Fabric
- PVC Solid Pipe
- Slotted Vent Pipe
- Perpendicular Vent Pipe
- Structural Fill
- Natural Soil
- Mastic

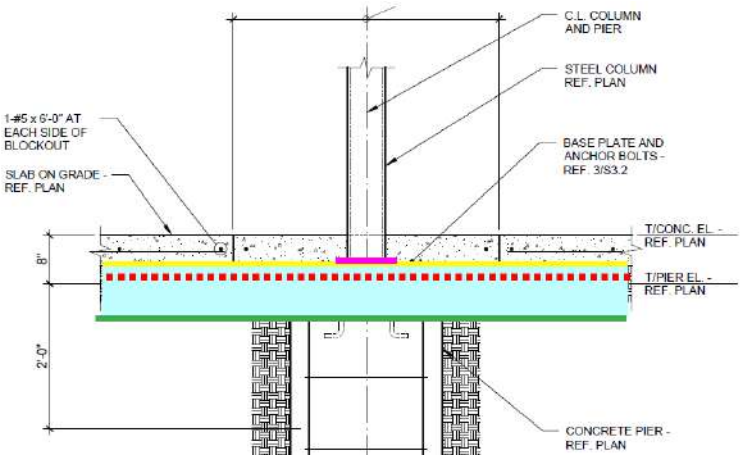
Cross-Section:

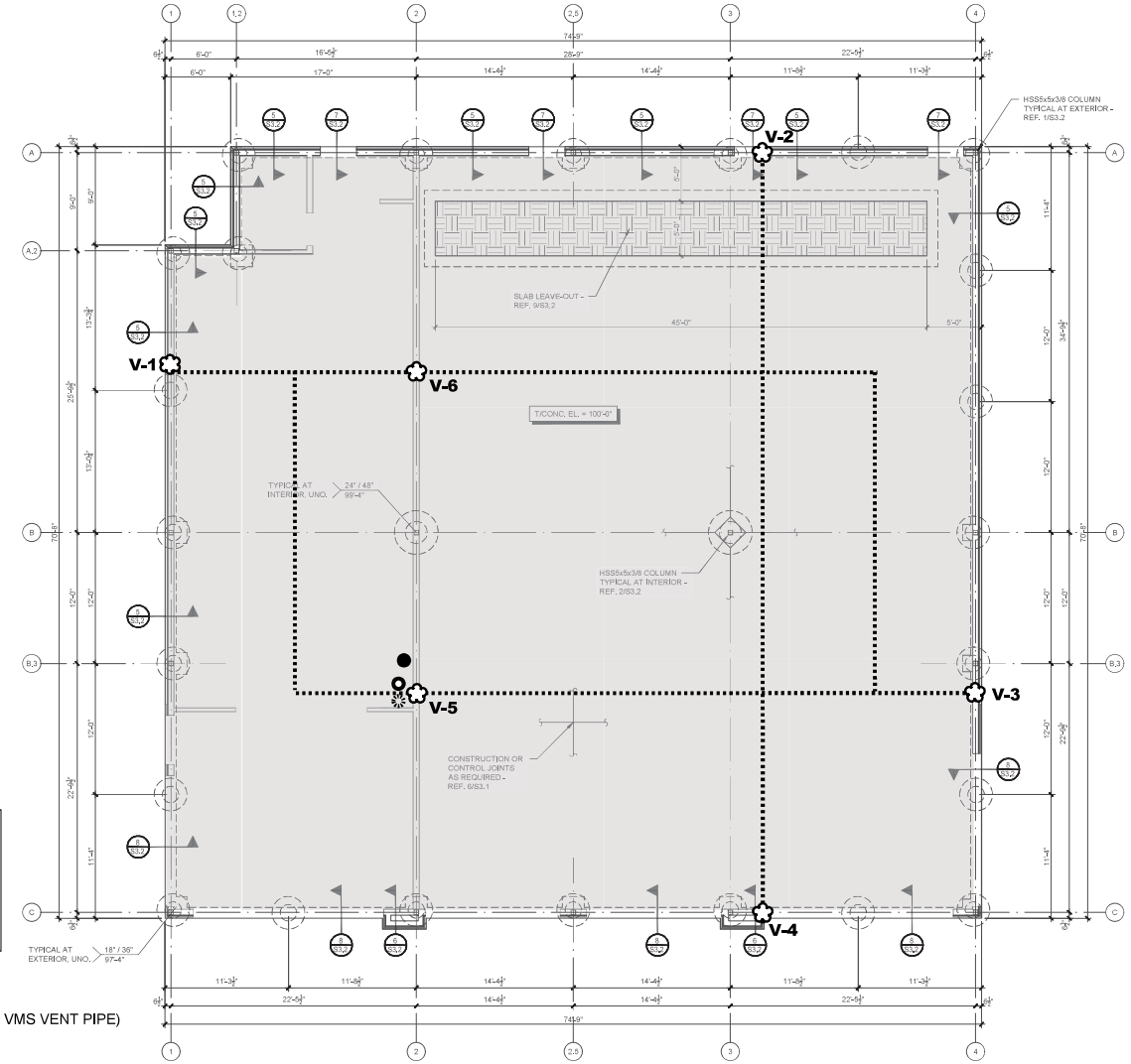






3/16/25





Note: Base Drawings used by SQE prepared by others. Changes to base drawings made by SQE include: areas covered by the VMS; vent locations; vent pipes; and methane monitors (Legend provided on each page). PE sealing by Susan T. Litherland P.E. refers only to the VMS. Modifications to the VMS may be needed if there are changes to the foundation and/or building layout.

LEGEND

- METHANE MONITOR (BENEATH BUILDING & INSIDE VMS VENT PIPE)
- METHANE MONITOR (INSIDE BUILDING)
- SAMPLE TEST PORT VAULT
- AREAS COVERED BY VMS (HDPE LINER, AGGREGATE LAYER, & GEOTEXTILE FABRIC FILTER)
- VENT LOCATION
- **V-3** VENT NAME
- VENT PIPE

01 FOUNDATION PLAN
SCALE: 3/16" = 1'-0"

NORTH

STATE OF TEXAS
S.T. LITHERLAND
57428
LICENSED
PROFESSIONAL ENGINEER

3/16/25

A NEW PROJECT FOR
PERVEZ BHOJANI
ARTWRIGHT ROAD MESQUITE, TEXAS 75149

Date: 2025.01.30
Revision:

Sheet Title: FOUNDATION PLAN

VS2.1

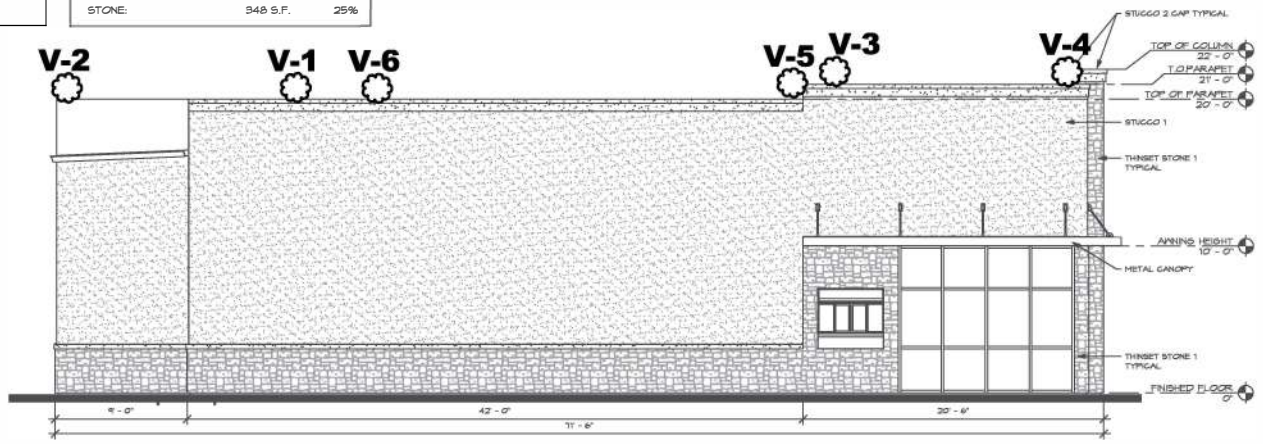
K. TRENT PERKINS, P.E. 96284

Note: Base Drawings used by SQE prepared by others. Changes to base drawings made by SQE include: areas covered by the VMS; vent locations; vent pipes; and methane monitors (Legend provided on each page). PE sealing by Susan T. Litherland P.E. refers only to the VMS. Modifications to the VMS may be needed if there are changes to the foundation and/or building layout.

LEGEND

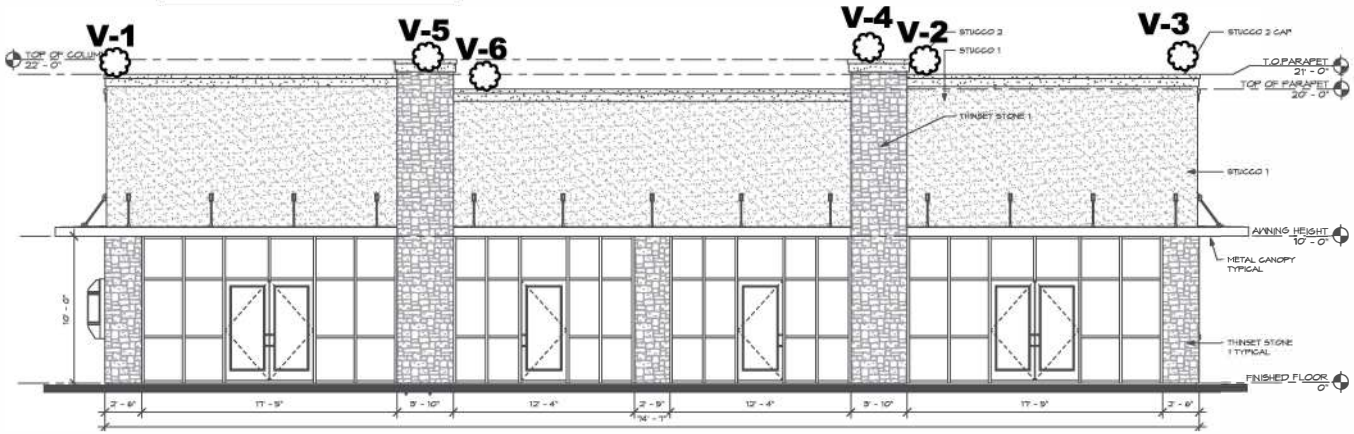
- VENT LOCATION
- **V-3** VENT NAME

WALL MATERIALS - WEST		
TOTAL:	1,991 S.F.	100%
DOORS & WINDOWS:	140 S.F.	10%
STUCCO:	903 S.F.	65%
STONE:	348 S.F.	25%



02 -WEST
1/4" = 1'-0"

WALL MATERIALS - SOUTH		
TOTAL:	1,546 S.F.	100%
DOORS & WINDOWS:	595 S.F.	38%
STUCCO:	714 S.F.	46%
STONE:	237 S.F.	16%



01 -SOUTH
1/4" = 1'-0"

STATE OF TEXAS
S.T. LITHERLAND
57428
LICENSED
PROFESSIONAL ENGINEER

3/16/25

A NEW PROJECT FOR
PERVEZ BHOJANI
CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Date: DEC. 30, 2024
Revision:

Sheet Title:
EXTERIOR ELEVATIONS

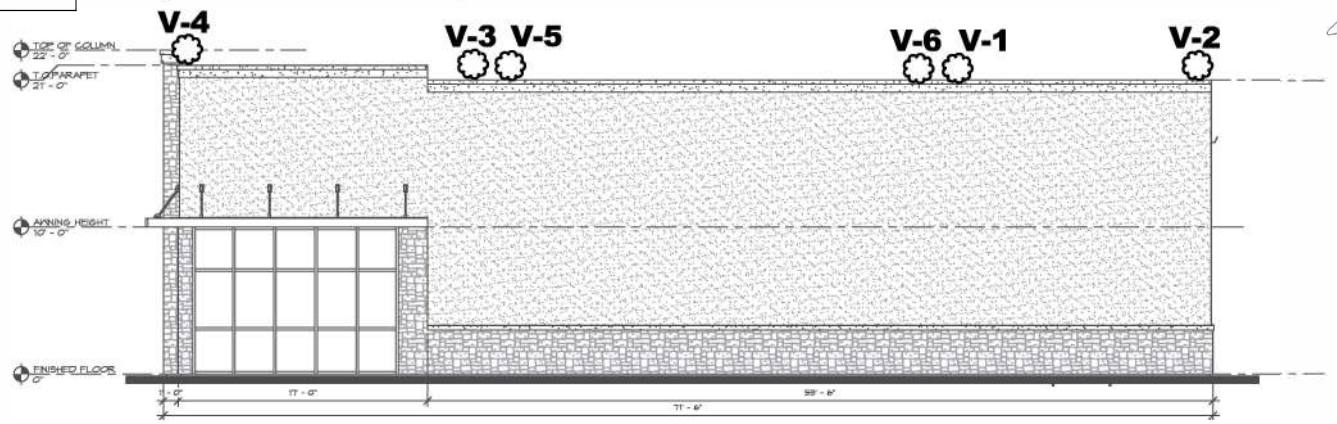
VA3.1

Note: Base Drawings used by SQE prepared by others. Changes to base drawings made by SQE include: areas covered by the VMS; vent locations; vent pipes; and methane monitors (Legend provided on each page). PE sealing by Susan T. Litherland P.E. refers only to the VMS. Modifications to the VMS may be needed if there are changes to the foundation and/or building layout.

WALL MATERIALS - EAST		
TOTAL:	1,427 S.F.	100%
DOORS & WINDOWS:	140 S.F.	10%
STUCCO:	934 S.F.	66%
STONE:	348 S.F.	24%

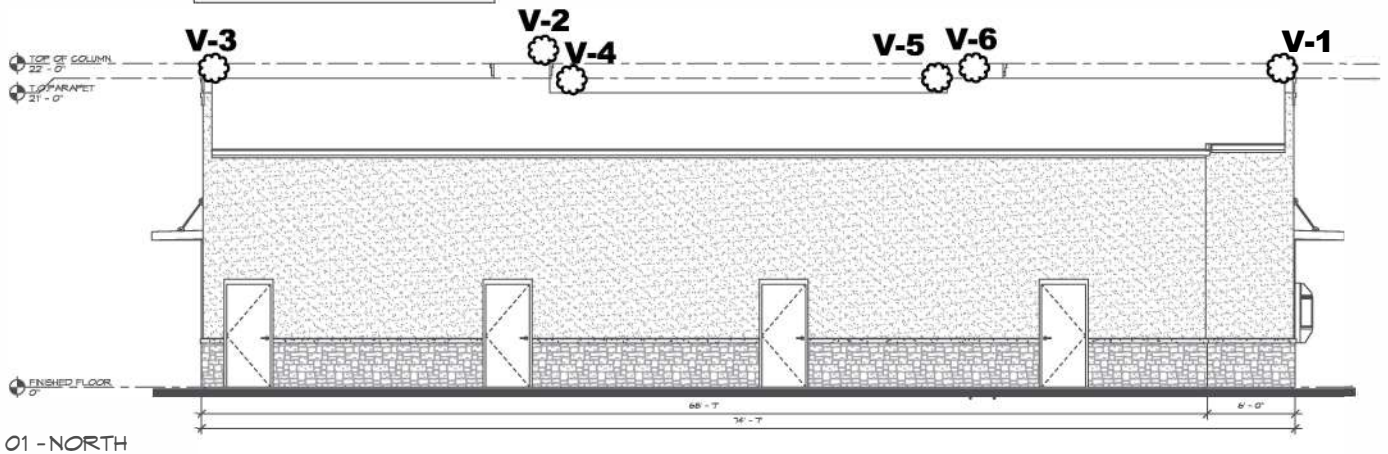
LEGEND

- VENT LOCATION
- **V-3** VENT NAME



02 -EAST
1/4" = 1'-0"

WALL MATERIALS - NORTH		
TOTAL:	1,027 S.F.	100%
DOORS & WINDOWS:	100 S.F.	10%
STUCCO:	723 S.F.	70%
STONE:	204 S.F.	20%



01 - NORTH
1/4" = 1'-0"

STATE OF TEXAS
S.T. LITHERLAND
57428
LICENSED
PROFESSIONAL ENGINEER

3/16/25

A NEW PROJECT FOR
PERVEZ BHOJANI
CARTWRIGHT ROAD MESQUITE, TEXAS 75149

Date: DEC. 30, 2024
Revision:

Sheet Title:
EXTERIOR ELEVATIONS

VA3.2

GEM5000 Series

The Next Generation of GEM™ Instrument

The GEM™5000 is designed specifically for use on landfills to monitor Landfill Gas (LFG) Collection & Control Systems. The GEM™5000 samples and analyzes the methane, carbon dioxide and oxygen content of landfill gas with options for additional analysis.

GEM5000 Complete Package Includes:
Instrument, hoses, heavy duty water trap filter, soft case, A.C. battery charger, electronic manual accompanies software, LANDTEC System Gas Analyzer Manager (LSGAM) software, USB download cable and hard-case. Reads: Methane, Carbon Dioxide, Oxygen, temperature (when used with optional probe), atmospheric pressure,

Check also:

GF5.8 External Battery
GEM5000 External Battery

SEM5000
Portable Methane Detector

GA5000
Portable LFG Analyzer

GEM5000 Series
Portable LFG Analyzer

BIOGAS 5000
Portable Biogas Analyzer

differential pressure and calculates gas flow.

NAV and Plus model packages also include more features such as GPS and additional gas measurements

GEM5000 Accessories & Spare Parts

Description | Technical Specification

Description

The GEM™5000 is the next generation in the GEM™ Series of LANDTEC instruments for accurate measurement and monitoring on landfills

Now Available. Please call our sales team to request further information or to place your order.

FEATURES

• Measures % CH4, CO2 and O2 Volume, static pressure and differential pressure
• Calculates balance gas, flow (SCFM) and calorific value (KW or BTU)>
• High Accuracy and Fast Response Time
• Lighter and More Compact
• Annual recommended factory service
• Certified intrinsically safe for landfill use
• Calibrated to ISO/IEC 17025
• 3 year warranty

BENEFITS

• Designed specifically for use on landfills to monitor landfill gas (LFG) extraction systems, flares, and migration control systems.
• No need to take more than one instrument to site

• Can be used for monitoring subsurface migration probes and for measuring gas composition, pressure and flow in gas extraction systems

• The user is able to set up comments and questions to record information at site and at each sample point

• Ensures consistent collection of data for better analysis

• Streamlined user experience reduces operational times

DOWNLOADS

Manual – LSGAM Software – Brochure – Easy Steps – Discharge Battery Pack – Easy Steps, Gas Check – Easy Steps, Workflow

Related Products

GF5.8 External Battery GEM5000 External Battery

BIOGAS 5000 Portable Biogas Analyzer

BIOGAS 3000 FIXED GAS ANALYZER

Accessories Spare Parts

differential pressure and calculates gas flow.

NAV and Plus model packages also include more features such as GPS and additional gas measurements

GEM5000 Accessories & Spare Parts

Description | Technical Specification

Technical Specification

Gas Ranges

Gases Measured	CH_4	By dual wavelength infrared cell with reference channel	
	CO_2	By dual wavelength infrared cell with reference channel	
	O_2	By internal electrochemical cell	
	CO	By internal electrochemical cell	
	H_2S	By internal electrochemical cell	
Ranges	CH_4	0-100% (vol)	
	CO_2	0-100% (vol)	
	O_2	0-25% (vol)	
	CO	0-2000ppm***	
	H_2S	0-500ppm***	
Gas Accuracy*	CH_4	0-5% ± 0.3% (vol)	0-70% ± 0.5% (vol) 70-100% ± 1.5% FS
	CO_2	0-5% ± 0.3% (vol)	0-60% ± 0.5% (vol) 60-100% ± 1.5% FS
	O_2	0-25% ± 1.0% (vol)	
	$CO(H_2)$**	0-2000ppm ± 1.0% FS	
	H_2S	0-500ppm ± 2.0% FS	

* Typical accuracy after calibration as recommended in the operations manual.
**Hydrogen compensated Carbon Monoxide measurement.
***Additional ranges available, contact LANDTEC for more information

Other Parameters

	Unit	Resolution	Comments
Energy	BTU/hr	1000 BTU/hr	Calculated from specific parameters
Static Pressure	in. H_2O	0.01 in. H_2O	Direct Measurement
Differential Pressure	in. H_2O	0.001 in. H_2O	Direct Measurement

Important Note: The information in this document is correct at the time of generation. We do, however, reserve the right to change the specification without prior notice as a result of continuing development.

Pump

Flow	Typically 550cc/min
Flow with 80 in. H2O vacuum	Approximately 80cc/min

Environmental Conditions

Operating Temperature Range	14°F – 122°F (-10°C to +50°C)
Operating Pressure	-100 in. H_2O, +100 in. H_2O (-250mbar, +250mbar)
Relative Humidity	0-95% non condensing
Barometric Pressure	± 14.7 in.Hg (±500mbar) from calibration pressure
Barometric Pressure Accuracy	± 1% typically

Power Supply

Battery Life	Typical use 8 hours from fully charged
Charge Time	Approximately 3 hours from complete discharge

Certification Rating

ATEX	II 2G Ex ib IIA T1 Gb (Ta= -10°C to +50°C)
ISO17025	ISO/IEC17025:2005 Accreditation #86916
CSA	Ex ib IIA T1 (Ta= -10°C to +50°C) (Canada), AEx ib IIA T1 (Ta= -10°C to +50°C) USA

Related Products

GF5.8 External Battery GEM5000 External

BIOGAS 5000 Portable Biogas Analyzer

BIOGAS 3000 FIXED GAS ANALYZER

Accessories Spare Parts

EXAMPLE

FOUR CHANNEL WALL MOUNT CONTROLLER

INSTRUMENTS

Gas Detection For Life

Beacon™ 410A Model

Features

- Simultaneously control up to 4 gas monitoring channels
- OLED display of all 4 channels
- LEL / O2 / CO2 / toxic direct connect sensors
- Accepts any 4-20 mA transmitter, 2 or 3 wire
- Up to 3 programmable alarm levels per channel
- Up to 3 configurable alarm relays per channel
- 4-20 mA analog & Modbus digital output standard
- 115 / 220 VAC or 24 VDC operation
- Audible alarm with silence feature
- RFI / EMI Resistant
- Alarm reset switch
- Built in trouble alarm with relay
- Weather and corrosion resistant NEMA 4X enclosure

Applications

- Petrochemical plants
- Refineries
- Water & wastewater treatment plants
- Pulp & paper mills
- Gas, telephone, & electric utilities
- Parking garages
- Manufacturing facilities
- Steel

The Beacon 410A is a highly configurable, microprocessor-based, flexible and easy to use 4 channel gas monitoring controller. It simultaneously displays the gas type, readings, and status for four channels of gas detection. It can monitor any combination of direct connect sensors (LEL, O2, CO2, and toxic gas sensors), as well as any 4-20mA transmitter.

Each channel has up to three fully configurable alarm points. A built-in silenceable audible alarm alerts you to alarm conditions. Each channel also has two dedicated fully configurable relays and there is a bank of common relays as well. The common relays can optionally be configured as additional relays allowing up to 3 alarm relays per channel. Each channel provides a 4-20mA output signal. A digital Modbus interface for remote logging of data via a Modbus network is standard. A Min-Max feature retains high & low peak readings for review at any time.

Optional Strobe Light

A fully configurable, high visibility strobe is available as an option. The unit can be powered from 115/220 VAC, or an external 24 VDC source. A trickle charging battery backup feature with battery assembly is also available as an option.

All features and functions of the Beacon 410A are controlled by easy to use menus on the OLED display. All features including form-C relay contacts of the Beacon 410A are built into the unit so you never need to purchase or maintain any “add-on” cards or components.

RKI Instruments, Inc. • 33248 Central Ave. Union City, CA 94587 • Phone (510) 441-5656 • (800) 754-5165 • Fax (510) 441-5650

Beacon™ 410A Model

Physical

Dimensions	Height: 12.5” (31.8 cm) x Width: 11” (27.9 cm) x Depth: 6.4” (13.6 cm)
Enclosure	NEMA 4X Fiberglass / polyester with lexan window for indoor and outdoor locations
Conduit Connection	3/4” NPT conduit hubs, 4 provided, for sensor, power, & relay wiring
Wiring Termination	Screw Type terminal block, 14 gauge max
Power	115 VAC, 220 VAC, or 24 VDC nominal. Battery backup option available
Optional Accessories	Strobe light, and Battery Backup Assembly
Controls	Display PCB Control Switches: • UP/YES push button switch • ESCAPE push button switch • External reset switch • DOWN/NO push button switch • ENTER push button switch • On/Off toggle switch

Environmental

Operating Temperature	-4°F to 122°F (-20°C to 50°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Enclosure Rating	NEMA-4X enclosure, chemical and weather resistant. Suitable for indoor and outdoor installations

Inputs

Direct Wired Sensors	LEL, Oxygen, Carbon Dioxide, and toxic gas sensors. Remote amp not required for less than 500 feet
4-20 mA	Accepts any 4-20 mA transmitter (24 VDC, 2 or 3 wire). A wide variety of RKI/Riken sensors are available with 4-20 mA signals. Wiring distances up to 8,000 feet
Sampling Methods	Diffusion and sample draw heads available

Outputs

Relays	Two flexible, programmable Form-C (C, NO, NC) relays per channel, plus five common relays (Fail, Alarm-1, Alarm-2, Alarm-3, Alarm-Any). Common relays may optionally be assigned to function as additional channel alarm relays, providing for up to three alarm relays per channel. 10A contact rating, 250V.
4-20 mA	Signal output, 4-20 mA (maximum load impedance 500 ohms), per channel
RS-485	Modbus format RS-485 serial output of all channel data, including gas reading and alarm status.
Display	Four line OLED display
Audible	Built-in audible alarm, 94 dB, mounted on enclosure Coded output: pulsing = gas alarm, steady = fail
Visual	1. Alarm LED’s (on Display PCB) • Alarm 1 = yellow • Alarm 2 = orange • Alarm 3 = red • Fail = yellow 2. Green Pilot LED to indicate AC power connected (on Display PCB) 3. An optional 24 VDC NEMA 4X strobe mounted to top of case.

Approvals	CSA Certified to CSA C22.2 No. 61010-1-12 and UL61010-1
Warranty	One year materials and workmanship

RKI INSTRUMENTS

RKI INSTRUMENTS, INC. UL REGISTERED FIRM ISO 9001 10000363

• Toll Free: (800) 754-5165 • Phone: (510) 441-5656
• Fax: (510) 441-5650 • www.rkiinstruments.com

Authorized Distributor:

EXAMPLE

M2A STAND ALONE TRANSMITTER

RKI INSTRUMENTS

- Operates with or without a controller
- Direct digital readout with OLED cold temperature display
- Available gases include
  - LEL, O2, H2S, CO, CO2, and 100% Vol CH4
  - Toxic gases include NH3, AsH3, Cl2, ClO2, HCN, & SO2
- Infrared sensor for combustibles and CO2
- 4-20 mA & digital Modbus outputs standard
- 2 fully programmable alarm relays & fail relay
- Non-intrusive calibration via magnetic wand
- Explosion proof construction
- Patented water repellent sensor cover
- User friendly setup, push buttons & OLED menus
- Long-life sensors (2 + years typical)

The RKI M2A™ is a state-of-the-art transmitter that can operate as an independent, stand-alone monitor or as part of an integrated system. The M2A connects with an analog or digital signal to virtually any controller, PLC, or DCS. Setup procedures are simplified with user friendly push buttons and OLED menus. It utilizes a magnetic wand technique for performing non-intrusive calibration. The M2A provides an automatic zero drift correction feature, which results in more stable readings and reduces the need for adjustments due to sensor aging.

The housing of the M2A does not need to be opened for zeroing or calibration, making it unnecessary to declassify the area for routine maintenance. It is designed so that a complete field calibration can be performed by one person. Sensor construction is rated Class I, Div. 1 Groups B, C, D for flammables, CO, H2S, O2, and CO2, and Class I, Div. 2 for all other toxics.

The transmitter provides a 4-20 mA output in addition to a Modbus digital output. It also has two levels of alarms with relays, plus a fail alarm with relay. A digital display of the gas concentration, as well as alarm and status lights, can be viewed through the front window.

The toxic sensors are electrochemical type plug-in sensors, which provide high specificity, fast response, and long life. The plug-in design allows quick replacement in the field with no tools required. Toxic sensors are designed for use in Class I, Div. 2 hazardous locations. Sensors available for NH3, AsH3, Cl2, ClO2, HCN, PH3, and SO2

The M2A represents the latest leading edge technology in sensor / transmitters today.

RKI Instruments, Inc. | 33248 Central Ave. Union City, CA 94587 | Phone (800) 754-5165 | (510) 441-5656 | Fax (510) 441-5650

www.rkiinstruments.com

Explosion Proof

Class I, Div. 1 , Groups B, C, D

		Combustibles		LEL	O2	H2S	CO	CH4	HC	CO2
		LEL	PPM	H2 Specific	Oxygen	Hydrogen Sulfide	Carbon Monoxide	Methane	Hydrocarbons	Carbon Dioxide
Part #	UL	65-2640RK	65-2647RK	65-2641RK	65-2643RK-05	65-2645RK-05	65-2646RK-05	65-2649RK-CH4 65-2658RK-CH4	65-2649RK-HC	65-2660RK-02 65-2660RK-03 65-2660RK-05 65-2660RK-10
	CSA	65-2640RK-05	65-2647RK-05	65-2641RK-05						

Sensors	Catalytic			Galvanic cell	Electrochemical		Infrared				
Measuring Ranges	0 - 100% LEL	0 - 9000 ppm CH4	0 - 100% LEL	0 - 25.0% Vol.	0 - 100 ppm	0 - 300 ppm	0 - 100% LEL 0 - 100% Vol.	0 - 100% LEL	-02	0 - 5000 ppm	
									-03 -05	0 - 5% Vol. 0 - 50% Vol.	
									-10	0 - 100% Vol.	
Resolution	1% LEL	20 ppm	1% LEL	0.1% Vol.	1 ppm		1% LEL / 1% Vol.		20 ppm / 0.01% Vol / 0.1% Vol. / 1% Vol.		
Lower Detectable Limit (LDL)	2% of full scale			0.1% Vol.	2% of full scale						
Max Current Draw (24VDC)	160 mA with alarm 1 and alarm 2 active and all relays energized			125 mA with alarm 1 and alarm 2 active and all relays energized			160 mA with alarm 1 and alarm 2 active and all relays energized				
Response Time (T-90)	35 Seconds or less			90 Seconds or less	60 Seconds or less	90 Seconds or less	30 Seconds or less				
Life Expectancy	2 to 3 years with normal service		3 to 5 years with normal service	2 to 3 years with normal service			5 years plus with normal service				
Accuracy (which ever is greater)	± 5% of reading or ± 2% of full scale			± 0.5% Vol. O2	± 5% of reading or ± 2 ppm H2S	± 5% of reading or ± 5 ppm CO	± 5% of reading or ± 2 % of full scale				
Weather Resistant	Patented water repellent sensor coating										

Alarms

Alarm Settings	Two fully programmable alarm set points, increasing / decreasing, latching / self-resetting, on delays, off delays, normally energized or de-energized
Alarm Indication	Visual LEDs. Alarm 1, Amber; Alarm 2, Red; Fail, Red
Relays	5 amp form 'C' contacts for alarm 1, alarm 2, and fail

Physical

Dimensions	Height: 8.5" (215 mm), Width: 5.2" (132 mm), Depth: 4.5" (114 mm)
Display	Alphanumeric OLED display. 8 characters per line; 2 lines for gas concentration readout, plus user-friendly calibration and setup
Enclosure	Explosion proof for Class I, Div 1, Groups B, C, D.
Enclosure Rating	NEMA 4X, explosion proof, watertight, cast aluminum with o-ring seal and epoxy powder coating
Controls	Magnet used for calibration functions. Calibrates without opening the housing. Internal push-button controls also available for calibration and setup

Operating Environment

Operating Temperature	-40°F to 167°F -40°C to 75°C	-4°F to 113°F -20°C to 45°C	-40°F to 104°F -40°C to 40°C	23°F to 104°F -5°C to 40°C	-40°F to 122°F -40°C to 50°C
Relative Humidity	5 - 95% RH non-condensing				
Location	Indoor or outdoor. Explosion proof for Class I, Div. 1, Groups B, C, D.				

Operating Voltage	10 VDC - 30 VDC

Outputs

Analog	Linear 4-20 mA signal, into 1000 ohms impedance max (24DC), 0 - 500 ohms max (12VDC) corresponding to 0 - full scale
Digital	Modbus RTU output standard, fully configurable, 2-wire RS-485, 1200 to 19.2k baud

Approvals	65-2640RK UL	65-2641RK UL	C CSA US	C UL US
	65-2640RK-05 C CSA US	65-2641RK-05 C CSA US		

Controllers	Beacon 110, Beacon 200, Beacon 410A, Beacon 800 as well as most DCS / PLC systems
Warranty	One year material and workmanship

Toxic Gas Transmitters

Class I, Div. 2

	O2 Oxygen	H2S Hydrogen Sulfide	CO Carbon Monoxide	Toxics See Chart Below	CO2 Carbon Dioxide
 **Part#**	65-2666RK *65-2644RK	65-2662RK	65-2663RK	See Chart Below	65-2661RK-02 65-2661RK-03 65-2661RK-05 65-2661RK-10
Sensors	Galvanic cell	Electrochemical			Infrared
Measuring Ranges	0-25% Vol.	0-100 ppm	0-300 ppm	See Chart Below	-02 0 - 5000 ppm -03 0 - 5% Vol. -05 0 - 50% Vol. -10 0 - 100% Vol.
Resolution	0.1% Vol.	1 ppm		See Chart Below	20 ppm / 0.01% Vol. / 0.1% Vol. / 1%Vol.
Lower Detectable Limit (LDL)	0.1% Vol.	2% of full scale			
Response Time (T-90)	35 Seconds or less			60 Seconds or less	30 Seconds or less
Max Current Draw (24VDC)	125 mA with alarm 1 and alarm 2 active and all relays energized				160 mA with alarm 1 and alarm 2 active and all relays energized
Life Expectancy	2 to 3 years with normal service				5 years plus
Accuracy (which ever is greater)	± 0.5% Vol. O2	± 5% of reading or ± 2 ppm H2S	± 5% of reading or ± 5 ppm CO	± 10% of reading or ± 5% of full scale	± 5% of reading or ± 2% of full scale
Alarms					
Alarm Settings	Two fully programmable alarm set points, increasing / decreasing, latching / self-resetting, on delays, off delays, normally energized or de-energized,				
Alarm Indication	Visual LEDs. Alarm 1=Amber; Alarm 2=Red; Fail=Red				
Relays	5 Amp form 'C' contacts for alarm 1, alarm 2, and fail				
Physical					
Dimensions	Height: 8.5" (215 mm), Width: 5.2" (132 mm), Depth: 4.5" (114 mm)				
Display	Alphanumeric OLED display. 8 characters per line; 2 lines for gas concentration readout, plus user-friendly calibration and setup				
Sensor Rating	Non explosion proof construction, designed for Class I, Div. 2, Groups B, C, D (no certification)				
Housing J-Box	NEMA 4X, explosion proof, watertight, cast aluminum with o-ring seal and epoxy powder coating				
Controls	Magnet used for calibration functions. Calibrates without opening the housing. Internal push-button controls also available for calibration and setup				
Sensor	Aluminum / Plastic (non explosion proof)				
Operating Environment					
Operating Temperature	-4°F to 113°F -20°C to 45°C	-40°F to 104°F -40°C to 40°C	23°F to 104°F -5°C to 40°C	14°F to 104°F -10°C to 40°C	-40°F to 122°F -40°C to 50°C
Relative Humidity	5 - 95% RH non-condensing				
Location	Indoor or outdoor				
Operating Voltage	10 VDC - 30 VDC				
Outputs					
Analog	Linear 4-20 mA signal, into 1000 ohms impedance max (24DC), 0 - 500 ohms max (12VDC) corresponding to 0 - full scale				
Digital	Modbus RTU output standard, fully configurable, 2-wire RS-485, 1200 to 19.2k baud				
Controllers	Beacon 110, Beacon 200, Beacon 410A, Beacon 800 as well as most DCS / PLC systems				
Warranty	One year materials and workmanship				

*Partial pressure sensor for helium (He) applications. Consult factory for details.

ESM-01

CT-7

*** Sensor being phased out, use CT-7 type when possible.**

M2A Toxic Transmitter Sensor Ordering Information

Part Number With J-Box	Gas	Range	Resolution	Sensor Type
65-2670RK-NH3-75	Ammonia (NH3)	0 - 75.0 ppm	0.1 ppm	CT-7
65-2670-NH3-1	Ammonia (NH3)	0 - 100 ppm	1 ppm	CT-7
65-2670-NH3-2	Ammonia (NH3)	0 - 200 ppm	1 ppm	CT-7
65-2670-NH3-5	Ammonia (NH3)	0 - 500 ppm	1 ppm	CT-7
65-2648RK-AsH3	Arsine (AsH3)	0 - 1.50 ppm	0.1 ppm	ESM -01
65-2670RK-CL2-3	Chlorine (Cl2)	0 - 3.00 ppm	0.01 ppm	CT-7
65-2670RK-CL2-10	Chlorine (Cl2)	0 - 10.0 ppm	0.1 ppm	CT-7
65-2670RK-CLO2	Chlorine Dioxide (ClO2)	0 - 1.00 ppm	0.01 ppm	CT-7
65-2648RK-HCN	Hydrogen Cyanide (HCN)	0 - 15.0 ppm	0.1 ppm	ESM -01
65-2648RK-PH3	Phosphine (PH3)	0 - 1.00 ppm	0.01 ppm	ESM -01
65-2648RK-SO2	Sulfur Dioxide (SO2)	0 - 6.00 ppm	0.01 ppm	ESM -01

AVAILABLE ACCESSORIES

Remote Mount Calibration Adaptor

Flow through adaptors

Air aspirator adaptors / panels

Remote horns & lights

Calibration adaptors

Calibration kits

Direct Interface with Beacon 110 / 200 / 410A / 800 Controllers

M2A Wiring Matrix				
	Number of Wires to Controller	Maximum Distance to Controller		
		18 AWG wire	16 AWG wire	14 AWG wire
M2A Transmitter	3	2500 ft.	5,000 ft.	8,000 ft.

Made in the USA

Authorized Distributor:

fety Products, Inc.

en gas detection

Since 1993

Protecting your family

HOME

Radon Detector

Gas Detecto

[redacted]

Carbon Monoxide, Propane and Methane Gas Detector

Model No. HS80504

USD $64.95

Add to Cart

- 3-in-1 detector.
- Senses dangerous levels of Carbon Monoxide, Propane and Methane Gas.
- Two independent 85dB alarm sounds, one for CO, the other for methane/liquid propane.
- Every detector has computerized calibration to help eliminate false alarms.
- Built-in self-dagnostics assures the unit is operating properly.
- Easily plugs into any standard 110-120v AC electrical outlet and samples the air every 2 1/2 minutes.
- Lock tab feature makes the detector tampor proof.
- 5 year warranty.

Manual

Combustible Gas Detector

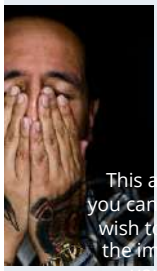
Model No. HS80501

USD $57.95

Add to Cart

- Detects dangerous levels of Methane and Propane Gas.
- Computerized calibration helps eliminate false alarms.
- Built-in self-diagnotics asures the unit is operating properly.
- Eassily plugs into any standard 110-120v AC electrical outlet and samples the air every 2 1/2 minutes.
- Lock tab feature makes the detector tamper proof.
- Advanced surface mount circuitry.
- Powerful 85dB Alarm.
- 5 year warranty.

Manual



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of CO Poisoning

mptoms are related to carbon monoxide poisoning iscussed with all members of the household:

nausea, vomiting, fatigue (often described as "flu-

re
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This area is 100% editable and you can use it to say whatever you wish to your website visitors. All the images are fully editable so you can add your own to customize each page.

Facts and Concerns about Carbon Monoxide (CO)

Carbon Monoxide (CO) is a colorless, odorless, tasteless gas, which is very toxic and nearly impossible to detect without the use of sensing equipment. Carbon Monoxide can be absorbed into the body's bloodstream nearly 10 times faster than pure oxygen. Thus it can limit the body's ability to absorb oxygen whenever carbon monoxide is present, even in small amounts. This reduced ability of the body to absorb oxygen is known as chemical asphyxiation and it can result in death whenever carbon monoxide is present in small quantities over a period of time.

This area is 100% editable and you can use it to say whatever you wish to your website visitors. All the images are fully editable so you can add your own to customize each page.

Sources of CO Gas

Carbon monoxide results from of carbon-based fuels such as r wood, coal, heating oil, kerosen propane. Many of these fules c the home, for example in kitche water heaters, fireplaces, porta grills and automobiles. If incom occurs in any of these devices a vented to the outside, the dang exists.

ınd pets may be the first affected by CO poisoning.

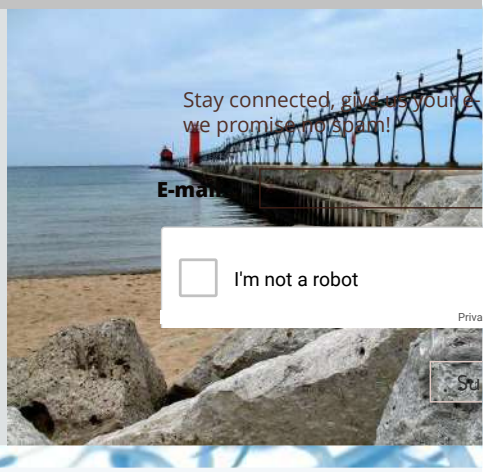
DISASTROUS EXPLOSIONS CAN OCCUR FROM LEAKS OF COMBUSTIBLE GASES

Such as natural gas (methane) and LPG gas (propane).

These types of gases are used to fuel a variety of common appliances found in the home. Cooking stoves/ovens, hot-water heaters, clothes dryers, space heaters, fireplace starters and heating furnaces are the most common gas-fuel burning appliances. Natural gas and propane can cause devasting explosions from even the smallest leaks from any of these appliances.

ress:
Remico Street SW
ıdville, MI. 49418

516-530-6540
[redacted]



Safety Siren™

Carbon Monoxide, Propane & Methane DETECTOR

Owner's Manual

Model Number
HS80004
HS80104
HS80204
HS80504

Family Safety Products Inc.

Family Safety Products, Inc.
2879 Remico SW
Grandville, MI 49418
(616) 530-6540
www.fspi-radon.com
Made in USA

Table of Contents

FACTS AND CONCERNS ABOUT CARBON MONOXIDE:

Carbon Monoxide (CO) is a colorless, odorless, tasteless gas, which is very toxic and nearly impossible to detect without the use of sensing equipment. Carbon monoxide can be absorbed into the body's bloodstream nearly 10 times faster than pure oxygen. Thus it can limit the body's ability to absorb oxygen whenever carbon monoxide is present, even in small amounts. This reduced ability of the body to absorb oxygen is known as chemical asphyxiation and it can result in death whenever carbon monoxide is present in small quantities over a period of time.

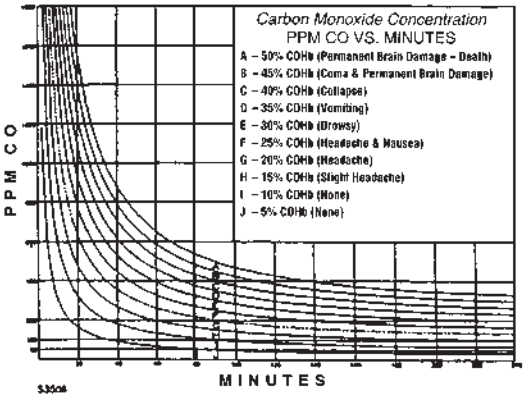
As the level of carbon monoxide rises in a closed environment, the toxic effects require less and less time to occur. This relationship can be seen in Figure 1. While it takes over three hours for an atmosphere with 0.01% CO to produce a headache, it takes only one hour for 0.02% CO to produce the same effects. At 0.04% CO the time required to produce the same headache is only 25 minutes. The HS 80004 SafetySiren™ unit is designed to generate an alarm at the following exposure levels as defined by Underwriters Laboratories:

in less than 90 minutes at 0.01% CO (100ppm CO)
in less than 35 minutes at 0.02% CO (200ppm CO)
in less than 15 minutes at 0.04% CO (400ppm CO)

Warning:

This device may not alarm at low carbon monoxide levels. The federal Occupational Safety and Health Administration (OSHA) has established that continuous exposure to CO levels of 50 ppm should not be exceeded in an eight hour period. This detector has not been investigated for carbon monoxide detection below 100 ppm. Individuals with a medical condition may consider using a more sensitive device.

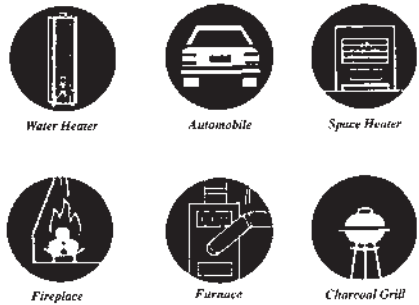
Figure 1 – Carbon Monoxide Concentration versus Time and % COHb



Sources of Carbon Monoxide:

Carbon monoxide results from incomplete combustion of carbon-based fuels such as natural gas, charcoal, wood, coal, heating oil, kerosene, gasoline and propane. Many of these fuels can be found throughout the home, for example in kitchen appliances, furnaces, water heaters, fireplaces, portable heaters, barbecue grills, and automobiles. If incomplete combustion occurs in any of the of the devices shown below and they are improperly vented to the outside, the danger of CO poisoning exists.

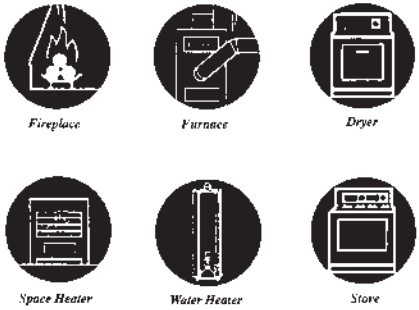
Figure 2. Sources of carbon monoxide



Sources of Combustible Gas

Disastrous explosions can occur from leaks of combustible gases, such as natural gas (methane) and LPG gas (propane). These gases are used to fuel a variety of common appliances found in the home. Cooking stoves/ovens, hot-water heaters, clothes dryers, space heaters, fireplace starters, and heating furnaces are the most common gas-fuel burning appliances. Natural gas and propane can cause devastating explosions from even the smallest leaks from any of these appliances.

Sources of Combustible Gases



Symptoms of Carbon Monoxide Poisoning

The following symptoms are related to carbon monoxide poisoning and should be discussed with all members of the household:

Mild Exposure:

Slight headache, nausea, vomiting, fatigue (often described as "flu-like" symptoms).

Medium Exposure:

Severe throbbing headache, drowsiness, confusion, rapid heart rate.

Extreme Exposure:

Unconsciousness, convulsions, cardiopulmonary failure, death.

Many cases of reported carbon monoxide poisoning have indicated that although victims were aware they were not well, they became disoriented to the point they were unable to save themselves by either exiting the building or calling for assistance. Young children and household pets may be the first affected by CO poisoning.

OPERATING INSTRUCTIONS

Installation

This HS 80004 SafetySiren™ Carbon Monoxide and Combustible Gas Sensor plugs directly into a standard 110-volt AC household outlet. The unit should be oriented vertically so that all of the script on the face of the unit appears in the upright position. The ventilation slots must not be blocked and the unit must be kept dust free. A proper airflow must be maintained through the unit to obtain an air sampling representative of the local environment. The only maintenance the unit requires is a thorough vacuuming once every six months.

WARNING: There are no user serviceable parts inside the unit. Do not remove the back cover. Removal of the back cover will void the warranty.
CAUTION: When the unit has been stored unplugged for several weeks, its sensitivity to combustible gases will decline. To restore the unit to normal sensitivity, allow a 24-hour warmup period.

Once the unit is plugged into the wall outlet, the green power indicator should light up. The red indicator will flash approximately once every three seconds to indicate the unit is operating properly. It should be noted that the sounding of the alarm will indicate whether the sensor has detected unsafe levels of CO or combustible gas. Continuous appearance of the red indicator and the continuous sounding of the audible buzzer indicates a presence of potentially dangerous levels of CO. Continuous appearance of the red indicator and the intermittent sounding of the audible alarm indicates the presence of potentially dangerous levels of combustible gases. If the unit begins beeping once every 5 seconds or the red LED light is not flashing once very 3 seconds, then a fault has

occurred in the unit. If either condition exists, disconnect the unit from the AC power immediately and call Family Safety Products at 616-530-6540.

WARNING: Make sure that the unit is not plugged into a wall outlet controlled by a light switch.

CAUTION: This carbon monoxide and combustible gas detector is designed to detect carbon monoxide gas and ANY source of combustion or the combustible gases of methane and propane. It is NOT designed to detect smoke, fire, or other gases.

Location of the Detector

The Consumer Product Safety Commission recommends that each household have at least one Carbon Monoxide detector placed in the sleeping areas of the home. A second detector located near appliances or equipment using combustible fuel adds an extra measure of safety. Figure 3 shows suggested locations in the home. Make sure that airflow through the unit's ventilation slots is not inhibited by curtains, furniture or other items. The audible alarms should be able to be heard from all sleeping areas in the home. Units must not be placed within five feet of open flame cooking appliances. Also, avoid placing units near paint thinner fumes or in areas where the temperature varies outside the range of 40.0°F (4.4°C) to 100°F (37.8°C).

CAUTION: This detector will only indicate the presence of carbon monoxide and combustible gas at the sensor. Carbon monoxide and combustible gas may be present in other areas.

Figure 3 – Suggested locations for SafetySiren™ for Carbon Monoxide and Combustible Gas sensors.

Testing the SafetySiren™ for Carbon Monoxide and Combustible Gas Sensor

To verify the circuitry is operating properly, use the Test/Reset button built into the unit. Simply press down on the button during normal operation and note the red indicator. The red indicator will light continuously and the audible alarm will sound as long as the button is held down. Once you release the Test/Reset, the red indicator will return to blinking at a three-second rate and the audible alarm will cease, indicating the unit has returned to a normal operating mode. Test the unit monthly. If the unit begins beeping once every 5 seconds or the red LED light is not flashing once every 3 seconds, then a fault has occurred in the unit. Disconnect the unit from the AC power immediately and call Family Safety Products at 616-530-6540.

Resetting the Alarm

The Test / Reset button may also be used to reset the audible alarm during the alarm mode. Once the alarm is activated by detection of high CO or combustible gas levels, simply press the Test/Reset button to disable the audible alarm. If the high CO level or combustible gas level continues, the audible alarm will again sound within a 2.5 minute period. The red indicator will remain lit during the time the audible alarm is disabled, indicating that the alarm condition still exists.

WHAT TO DO WHEN THE ALARM SOUNDS

WARNING

If a continuous alarm sounds for Carbon Monoxide

Activation of this device indicates the presence of carbon monoxide which can be FATAL.

1) **If anyone has a headache or an upset stomach, call the Fire Department and move to a location which has fresh air. DO A HEAD COUNT TO CHECK THAT ALL PERSONS ARE ACCOUNTED FOR. DO NOT RE-ENTER THE PREMISES UNTIL IT HAS BEEN AIRED OUT AND THE PROBLEM CORRECTED!**

If no one exhibits symptoms of discomfort associated with carbon monoxide poisoning, simply:

2) Operate the reset button.

3) Turn off appliances, vehicle, or other sources of combustion at once (furnace, water heater, wood burning stove, RV, automobile, or the like).

4) Get fresh air into premises or vehicle.

5) Call a qualified technician and have the problem fixed before restarting appliances or vehicle.

If the intermittent alarm sounds for Combustible Gas

An intermittent audible alarm from this device indicates the presence of combustible gases, the source of which may be an appliance such as a furnace, water heater, oven/stove, or dryer.

- Do not operate any electrical devices such as light switches or telephones.
- Do not plug or unplug any electrical devices because they may cause a spark.
- Immediately extinguish any flames or pilot lights.
- Ventilate the area by opening doors and windows.
- Determine the source of the gas. Seek a qualified technician or call your local gas company.
- Turn off the gas supply.

SafetySiren™ for Carbon Monoxide and Combustible Gas Sensor Model HS 80004 Specifications

Power Source	110-volt AC/60Hz at 15 Watts
CO Sensor	CO Sensor calibrated at 200 ppm CO specific to avoid false alarms.
CG Sensor	Alarm trip-point set at less than 25% LEL (Lower Explosive Limit) 3.8% by volume Natural gas (methane) in air 2.1% by volume LP-gas (propane) in air
Temperature	4.4°C (40°F) to 37.8°C (100°F)
CO Audible Alarm	Continuous 85dB alarm at 10 ft. for CO
CG Audible Alarm	Intermittent alarm for Combustible Gas
Visual Alarm	(3 second blinking rate for normal operation). Continuous RED LED during alarm condition.
Green LED Operation	Continuous Operation When Power On
Detection frequency	Air sampled every 2.5 minutes for CO. Air sampled continuously for Combustible Gas after an initial warm-up of 2.5 minutes
Test	Test button verifies proper operation when unit is in normal operation. Once in alarm mode the Test button will reset audible alarm until next air sampling
Dimensions	4.7 inches x 3.1 inches x 2.1 inches
Weight	12 ounces

Limited Warranty

Your Safety Siren™ for Carbon Monoxide and Combustible Gas has a five-year warranty from date of purchase against defects in material and workmanship. Units returned to the manufacturer during this period because of such defects will be repaired or replaced free of charge. For repairs within the warranty period or receipt of a faulty unit, call Family Safety Products at 616-530-6540 to receive a Return Authorization Number (RAN). Include a written description of the problem. You may then ship the unit to the address listed below along with the RAN, and proof of purchase.

The warranty covers only defects in material or workmanship in normal use and not damage from negligent handling, misuse, or lack of proper care. Important: Do not remove the back cover. Such removal will void the warranty. This warranty stands in place of any other warranty either expressed or implied.

Family Safety Products, Inc. is not liable for any personal injury, property damage or any incidental or consequential damage resulting from gas leakage, fire, or explosion. The sole remedy for breach of this limited warranty does not, in any instance, exceed the purchase price. Your SafetySiren™ for Carbon Monoxide and Combustible Gas sensor does not constitute property, disability, life or any other type of insurance.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

Family Safety Products, Inc.
2879 Remico SW
Grandville, MI 49418
USA

Indice

DATOS Y PREOCUPACIONES RELACIONADOS CON EL MONÓXIDO DE CARBONO

El monóxido de carbono (CO) es un gas incoloro, inodoro e insaboro que es muy tóxico y casi imposible de detectar, si no se utiliza un equipo sensor. El monóxido de carbono puede ser absorbido por la circulación de la sangre del cuerpo con una rapidez casi diez veces mayor a la del oxígeno puro. En consecuencia, puede limitar la capacidad que tiene el cuerpo de absorber oxígeno cuando existe una presencia de monóxido de carbono, incluso cuando se en pequeñes cantidades. Esta capacidad reducida del cuerpo para absorber oxígeno se conoce con el nombre de asfixia química y puede causar la muerte cuando existe una presencia de pequeñas cantidades de monóxido de carbono durante un periodo determinado de tiempo.

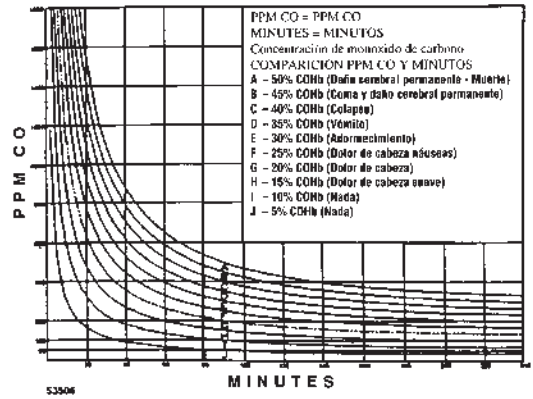
A medida que sube el nivel de monóxido de carbono en un ambiente cerrado, los efectos tóxicos tardan cada vez menos en presentarse. Si bien es cierto que son necesarias más de tres horas para que una atmósfera con un 0.01% de CO ocasione dolores de cabeza, cuando esta cantidad sube hasta el 0.02% sólo es necesaria una hora para que se produzcan los mismos efectos. Si el porcentaje sube hasta el 0.04% de CO, el tiempo necesario para que se ocasionen dolores de cabeza es sólo de 25 minutos. La unidad SafetySiren™ HS 80004 ha sido diseñada para activar la alarma cuando se alcanzan los tiempos de exposición que se indican a continua, tal y como los define la entidad Underwriters Laboratories:

en menos de 90 minutos con un 0.01% (100 ppm CO)
en menos de 35 minutos con un 0.02% (200 ppm CO)
en menos de 15 minutos con un 0.04% (400 ppm CO)

Advertencia:

Es posible que no se active la alarma de este dispositivo cuando los niveles de monóxido de carbono son bajos. La entidad del gobierno federal, denominada Administración para la Seguridad y la Salud Ocupacional (OSHA) ha determinado que la exposición continuada a niveles de CO de 35 ppm no debe prolongarse por un período superior a las ocho horas. No se ha estudiado la capacidad de este detector para responder a niveles de monóxido de carbono inferiores a los 100 ppm. Es posible que a las personas con problemas de salud les convenga utilizar un dispositivo de detección de mayor sensibilidad.

Figura 1 – Concentración de monóxido de carbono comparada en función del tiempo y del % de COHb.



Fuentes de monóxido de carbono

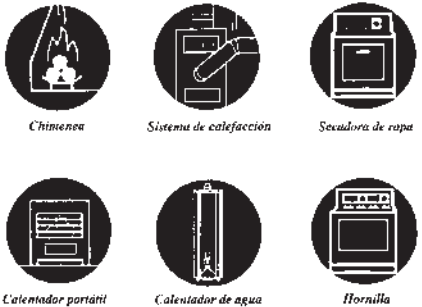
El monóxido de carbono proviene de la combustión incompleta de los combustibles derivados del carbono como, por ejemplo, gas, carbón de quemar, madera, carbón, combustibles para sistemas de calefacción, gasolina y propano. Muchos estos combustibles se pueden encontrar en las casas; por ejemplo, en los aparatos de cocina, sistemas de calefacción, calentadores de agua, chimeneas, calentadores portátiles, barbacoas con parrillas y vehículos. Cuando se produce una combustión incompleta en cualquiera de los artículos indicados anteriormente, sin que exista una ventilación adecuada al exterior, se presenta el peligro de intoxicación por CO.

Figura 2 – Fuentes de monóxido de carbono

Fuentes de gas combustible

Pueden ocurrir explosiones desastrosas como resultado de fugas de gases combustibles tales como el gas natural (metano) y los gases LPG (butano y propano). Estos tipos de gas se utilizan para prender una variedad de equipos de uso doméstico. Entre los más comunes se encuentran las hornillas y los hornos para cocinar, los calentadores de agua caliente, las secadoras de ropa, los calefactores portátiles, los dispositivos para prender chimeneas y los hornos para calefacción. El gas natural, el butano y el propano pueden causar explosiones devastadoras, aun cuando la fuga emitida por tales equipos es mínima.

Fuentes de gas combustible



Síntomas de la intoxicación por monóxido de carbono

Los síntomas que se indican a continuación se encuentran relacionados con la intoxicación por monóxido de carbono y todas las personas que habitan en la casa deberían ser conscientes de los mismos:

Exposición de grado menor:

Dolor de cabeza suave, náuseas, vómitos, fatiga (los síntomas se describen frecuentemente como si fueran similares a los provocados por la gripe).

Exposición de grado medio:

Dolor de cabeza con palpitaciones, adormecimiento, confusión, ritmo cardiaco rápido.

Exposición de grado extremo:

Pérdida de conciencia, convulsiones, problemas cardiopulmonares, muerte.

Muchos de los casos de intoxicación por monóxido de carbono que se han dado a conocer han indicado que, si bien las víctimas eran conscientes de que no se sentían bien, se desorientaron hasta el punto de ser incapaces de prevenir las consecuencias saliendo del edificio o pidiendo ayuda. Sus hijos y sus animales domésticos pueden ser los primeros en sufrir los efectos de una intoxicación por CO.

INSTRUCCIONES PARA EL FUNCIONAMIENTO

Instalación

El HS 8000A SafetySiren™ para Sensor de Monóxido de Carbono y de Gas Combustible se enchufa directamente en un tomacorrientes residencial común de 110 voltios CA. La unidad debe quedar verticalmente orientada de manera que toda la inscripción situada en la cara de la misma aparezca en tal posición. Las aberturas de ventilación no deberán estar bloqueadas y la unidad deberá estar siempre desempolvada. Se debe mantener la circulación de aire adecuada a través de la unidad con el fin de obtener una muestra de aire que sea representativa de la atmósfera local. El único tipo de servicio de mantenimiento que la unidad requiere consiste en limpiarla completamente con una aspiradora cada seis meses.

ADVERTENCIA: En el interior de la unidad no existen componentes de interés para el usuario. No retire la cubierta trasera. Si se retira la cubierta trasera, la garantía será anulada.
PRECAUCION: Si no se utiliza la unidad durante varias semanas estando desenchufada de la electricidad, disminuirá su capacidad de detección. La unidad requerirá un período de recalentamiento de 24 horas para volver a funcionar con su capacidad de detección normal.

Una vez que la unidad esté conectada al tomacorrientes de la pared, se encenderá el indicador de luz verde. El indicador de luz roja se iluminará intermitentemente cada tres segundos para indicar que la unidad está funcionando correctamente. Si el indicador de luz roja se ilumina continuamente y se escucha un zumbido, esto quiere decir que la atmósfera contiene un nivel de CO que puede ser peligroso.

Si se detecta un alto nivel de gas combustible, la operación continua del indicador con luz roja y y el sonido intermitente de la alarma de zumbido indicarán la posibilidad de que exista una condición peligrosa. Si la unidad comienza a sonar cada 5 segundos, o si el indicador de luz roja no se enciende cada tres segundos, esto indica que existe un fallo en el sistema. Si cualquiera de estas dos condiciones persiste, desconecte inmediatamente la unidad y llame a Family Safety Products marcando el 616-530-6540.

ADVERTENCIA: Asegúrese de que la unidad no esté conectada a un tomacorrientes contralado por un interruptor de luz.

PRECAUCION: Este detector de monóxido de carbono ha sido diseñado para detectar gas de monóxido de carbono proveniente de CUALQUIER fuente de combustión. No ha sido diseñado para detectar humo, fuego u otro tipo de gases.

Ubicación del Detector

El Consumer Product Safety Commission (Comisión para la Seguridad de los Productos) recomienda que cada hogar tenga al menos un detector colocado en el área que se utiliza para dormir. Otro detector situado cerca de electrodomésticos o de equipo que consuma gas combustible constituye una medida de seguridad adicional. En la Figura 3 se sugieren ubicaciones dentro de una casa. Asegúrese de que la circulación de aire a través de las aberturas de ventilación de la unidad no se encuentre obstaculizada por cortinas, muebles u otros objetos. Se deberán instalar las alarmas de forma que se puedan escuchar en todas las áreas del hogar utilizadas para dormir. Se deberá mantener una distancia mínima de cinco pies entre las unidades y cualquier equipo de cocina que funcione con llamas abiertas. Además, evite colocar las unidades cerca de los vapores emitidos por un diluyente de pintura o en áreas cuya temperatura sea inferior a los 40.0°F (4,4°C) o superior a los 100°F (37,8°C).

Precaución: Este detector sólo indica la presencia en el sensor de gas de monóxido de carbono o de gas combustible. Es posible que en otras áreas también exista monóxido de carbono y gas combustible.

Figura 3. Sugerencias de ubicaciones para los sensores de SafetySiren™ para Monóxido de Carbono y de Gas Combustible

Comprobación del funcionamiento de SafetySiren™ para Sensor de Monóxido de Carbono y de Gas Combustible

Para comprobar que el conjunto de circuitos esté funcionando correctamente, utilice el botón "Test/Reset" (Comprobación/Reactivación) incorporado a la unidad. Sólo tiene que oprimir el botón durante el funcionamiento normal y observar el indicador de luz roja. El indicador de luz roja permanecerá iluminado y la alarma sonará mientras el botón se mantenga oprimido. Una vez que suelte el botón "Test/Reset", el indicador de luz roja volverá a iluminarse de forma intermitente a intervalos de tres segundos y la alarma dejará de sonar, lo cual indica que la unidad ha vuelto a su funcionamiento normal. Compruebe mensualmente el funcionamiento de la unidad. Si la unidad no funciona de la manera indicada anteriormente, desconéctela inmediatamente del suministro de electricidad de CA y llame a Family Safety Products marcando al 616-520-6540.

Reactivación del dispositivo de alarma

También se puede utilizar el botón "Test/Reset" para reactivar el dispositivo de alarma sonora mientras la unidad se encuentra en el modo de alarma. Si se activa la alarma debido a la detección de altos niveles de CO o de gas combustible, simplemente oprima el botón "Test/Reset" para desactivar la alarma sonora. Si continúa existiendo un alto nivel de CO o gas combustible, la alarma volverá a sonora al cabo de 2.5 segundos. El indicador de luz roja permanecerá iluminado mientras la alarma sonora se encuentre desactivada, para indicar que persisten las condiciones de alarma.

QUE HACER CUANDO SUENA LA ALARMA

ADVERTENCIA

Si la alarma suena continuamente debido a la detección de Monóxido de Carbono

La activación de este dispositivo indica la presencia de monóxido de carbono, lo cual puede tener consecuencias FATALES.

1) Si alguien tiene dolor de cabeza o mal de estómago, llame a los Bomberos y trasládese a un área donde circule aire fresco. CUENTE LAS PERSONAS QUE SE ENCUENTRAN PRESENTES PARA ASEGURARSE DE QUE NO FALTE NADIE. ¡NO VUELVA A ENTRAR A LA CASA O AL LOCAL HASTA QUE SE HAYA EVACUADO EL AIRE CONTAMINADO Y SE HAYA CORREGIDO EL PROBLEMA!

Se nadie tiene síntomas de malestar relacionados con la intoxicación por monóxido de carbono, simplemente:

2) Oprima nuevamente el botón de reactivación.
3) Apague de inmediato todo electrodoméstico, vehículo u otra fuente de combustión (horno, calentador de agua, hornilla de carbón de madera, vehículo recreativo, automóvil, o cualquier equipo de esta índole).
4) Haga que el aire fresco circule por el interior de la casa, del local o del vehículo.
5) Llame a un técnico competente para que corrija el problema antes de volver a encender los electrodomésticos o vehículos.

Si suena la alarma intermitente debido a la detección de Gas Combustible

La alarma de este dispositivo suena intermitente para indicar la presencia de gases combustibles, cuya fuente puede ser un horno de recalentar, un calentador de agua, un horno o hornilla para cocinar o una secadora de ropa.

- **No active o utilice ningún equipo eléctrico; por ejemplo, interruptores de luz o teléfonos.**
- **No enchufe o desenchufe ningún dispositivo eléctrico, puesto que se pueden producir chispas.**
- **Extinga inmediatamente cualquier llama abierta o llama de piloto.**
- **Abra puertas y ventanas para ventilar el área.**
- **Determine la fuente de la emisión de gas. Solicite el servicio de un técnico competente o llame a la compañía de suministro de gas correspondiente a su área.**
- **Apague o cierre el suministro de gas.**

Datos específicos relacionados con el SafetySiren™ para Sensor de Monóxido de Carbono y de Gas Combustible

Suministro eléctrico	110 voltios CA/60Hz a 10 Vatios
Sensor de CO	El Sensor ha sido regulado para detectar específicamente CO a 200 ppm, lo cual permite evitar falsas alarmas
Sensor de GC	La alarma se activa cuando el sensor detecta que existe menos de un 25% del límite inferior de nivel le gas explosivo; 3.8% por volumen de gas natural (metano) en el ambiente; 2.1% por volumen de gas LP (propano) en el ambiente
Temperatura	4.4°C (40°F) a 37.8°C (100°F)
Alarma sonora	Para CO, 85dB continuos a 10 pies Para gas combustible, alarma intermitente
Alarma visible	(a intervalos de 3 segundos durante funcionamiento normal); el indicador de luz ROJA permanece encenido cuando existe una condición de alarma.
Funcionamiento del indicador con luz verde	Iluminación continua cuando la unidad se encuentra funcionando bajo condiciones de peligro.
Frecuencia de detección	Para CO, Toma de muestra de aire cada 2.5
Para Gas Combustible, toma de muestra de aire continua, después de calentamiento inicial de 2.5 minutos	
Prueba	El botón "Test" permite comprobar que le unidad esté funcionando correctamente. Al ponerlo nuevamente en el modo de alarma, el botón "Test" volverá a activar la alarma sonora hasta que se efectúe una nueva toma de aire
Dimensiones	4.7 pulgadas x 3.1 pulgadas x 2.1 pulgadas
Peso	12 onzas

Garantía Limitada

Su SafetySiren™ para Monóxido de Carbono y Gas Combustible tiene una garantía de cinco años contra defectos de los materiales o de la mano de obra. Esta garantía comienza a partir de la fecha de adquisición. Las unidades que sean devueltas al fabricante durante este período por motivo de tales defectos, serán reparadas o reemplazadas sin cargo alguno. Para solicitar reparaciones dentro del período cubierto por la garantía, o después de después de haber recibido una unidad defectuosa, llame a Family Safety Products al 616-530-6540 y se la dará un Return Authorization Number (RAN - Número de Aprobación de Devoluciones). Escriba una nota describiendo el problema. Dirija el envíe de la unidad a la dirección que figura más abajo e incluya el RAN.

La garantía cubre únicamente los defectos de material o de mano de obra en unidades sometidas a uso normal, pero no cubre daños por manejo negligente, uso indebido o cuidado inapropiado. Importante: no retire la cubierta trasera. El hecho de retirar la cubierta trasera tendrá como resultado la anulación de la garantía. Esta garantía prevalece sobre cualquier otra garantía, bien sea ésta explícita o implícita.

Family Safety Products, Inc., no asume la responsabilidad de ningún lesión que pueda sufrir una persona, de ningún daño a la propiedad o de ningún daño accidental o emergente que pueda tener origen en una fuga de gas, incendio o explosión. El único recurso derivado del incumplimiento de esta garantía limitada no sobrepasará, bajo ninguna circunstancia, el precio de adquisición del producto. Su SafetySiren™ para Monóxido de Carbono y Gas Combustible no constituye un seguro de la propiedad, un seguro contra daños y perjuicios, un seguro de vida o de cualquier otro tipo.

Esta garantía le otorga derechos legales específicos. Puede que usted goce de otros derechos que pueden variar de un estado a otro.

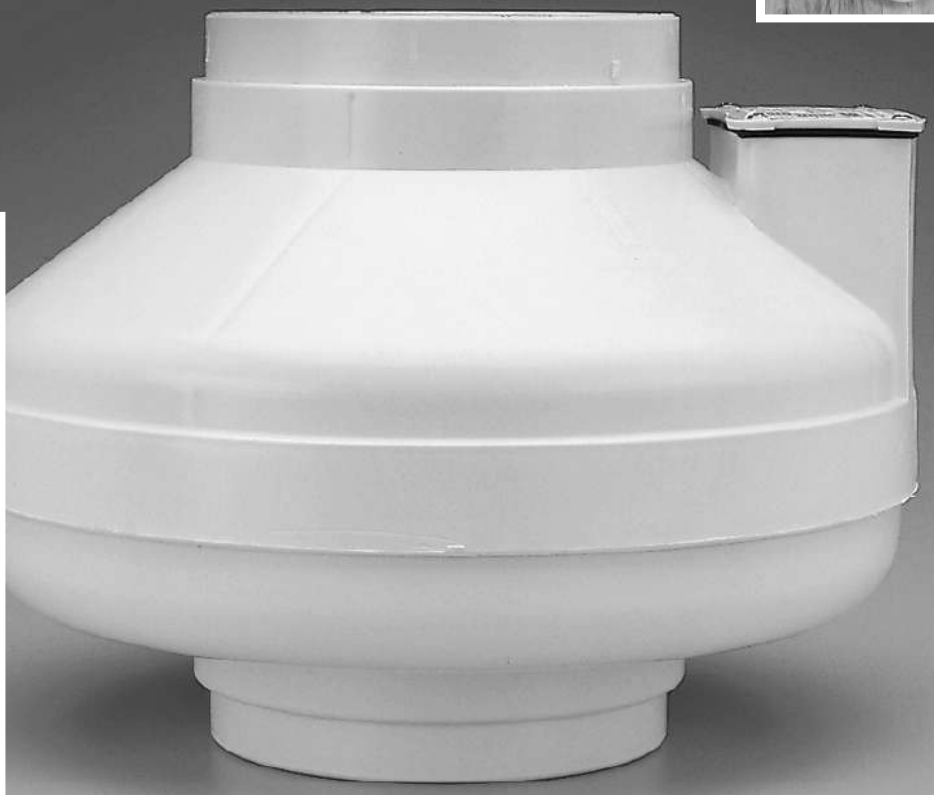
Family Safety Products, Inc.
2879 Remico SW
Grandville, MI 49418
USA

EXAMPLE

Fantech

HP SERIES

FANS FOR RADON APPLICATIONS
WITH IMPROVED UV RESISTANCE!



TRUST THE INDUSTRY STANDARD.
HERE'S WHY:

Don't put your reputation at stake by installing a fan you know won't perform like a Fantech! For nearly twenty years, Fantech has manufactured quality ventilation equipment for Radon applications. Fantech is the fan Radon contractors have turned to in over 1,000,000 successful Radon installations worldwide.

Fantech external rotor motor

FANTECH HP SERIES FANS MEET THE CHALLENGES OF RADON APPLICATIONS:

HOUSING
- UV resistant, UL Listed durable plastic
- UL Listed for use in commercial applications
- Factory sealed to prevent leakage
- Watertight electrical terminal box
- Approved for mounting in wet locations - i.e. Outdoors

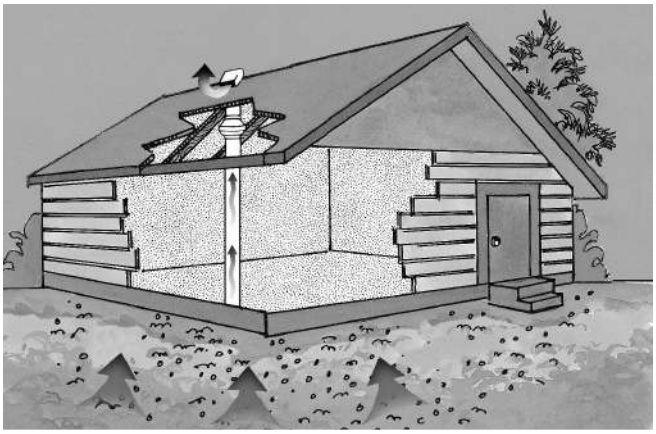
MOTOR
- Totally enclosed for protection
- High efficiency EBM motorized impeller
- Automatic reset thermal overload protection
- Average life expectancy of 7-10 years under continuous load conditions

RELIABILITY
- Five Year Full Factory Warranty
- Over 1,000,000 successful radon installations worldwide

Fantech

HP Series Fans are Specially Designed with Higher Pressure Capabilities for Radon Mitigation Applications

MOST RADON MITIGATORS WHO PREVIOUSLY USED THE FANTECH FR SERIES FANS HAVE SWITCHED TO THE NEW HP SERIES.



PERFORMANCE DATA

Fan Model	Volts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.								Max. Ps
				0"	0.5"	0.75"	1.0"	1.25"	1.5"	1.75"	2.0"	
HP2133	115	14 - 20	0.17	134	68	19	-	-	-	-	-	0.84
HP2190	115	60 - 85	0.78	163	126	104	81	58	35	15	-	1.93
HP175	115	44 - 65	0.57	151	112	91	70	40	12	-	-	1.66
HP190	115	60 - 85	0.78	157	123	106	89	67	45	18	1	2.01
HP220	115	85 - 152	1.30	344	260	226	193	166	137	102	58	2.46

HVI MEMBER™

PERFORMANCE CURVES

Fantech provides you with independently tested performance specifications.

The performance curves shown in this brochure are representative of the actual test results recorded at Texas Engineering Experiment Station/Energy Systems Lab, a recognized testing authority for HVI. Testing was done in accordance with AMCA Standard 210-85 and HVI 916 Test Procedures. Performance graphs show air flow vs. static pressure.

Use of HP Series fans in low resistance applications such as bathroom venting will result in elevated sound levels. We suggest FR Series or other Fantech fans for such applications.

HP FEATURES INCLUDE

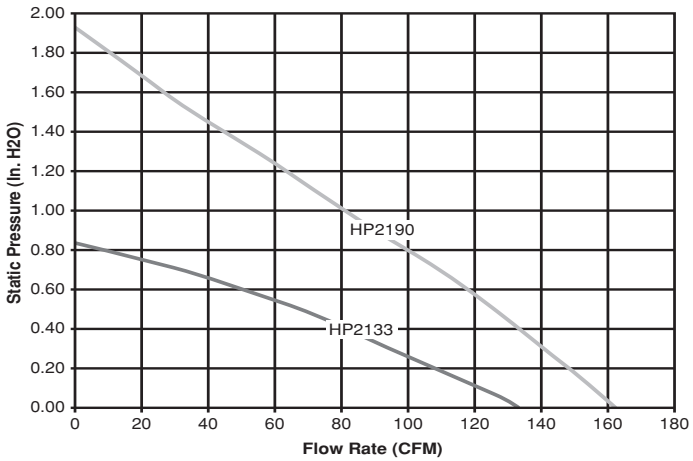
- Improved UV resistant housings approved for commercial applications.
- UL Approved for Wet Locations (Outdoors)
- Sealed housings and wiring boxes to prevent Radon leakage or water penetration
- Energy efficient permanent split capacitor motors
- External wiring box
- Full Five Year Factory Warranty

c UL us

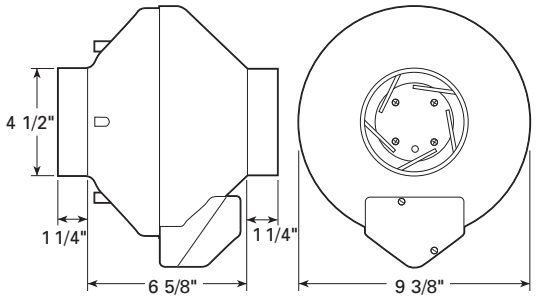
NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

HP2133 & HP2190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.

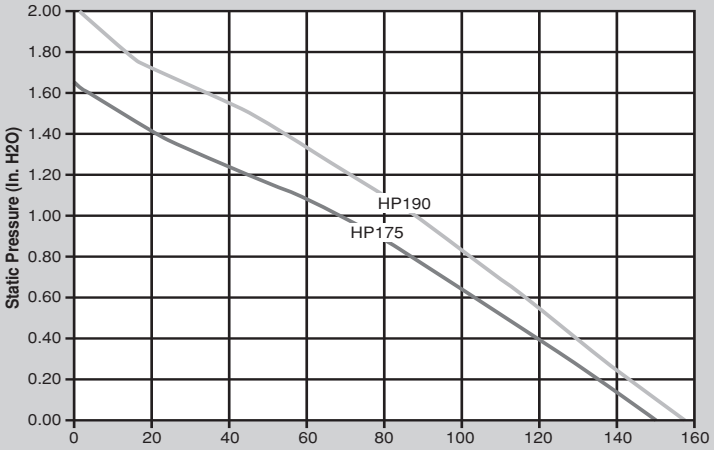


HP2133 – For applications where lower pressure and flow are needed. Record low power consumption of 14-20 watts! Often used where there is good sub slab communication and lower Radon levels.

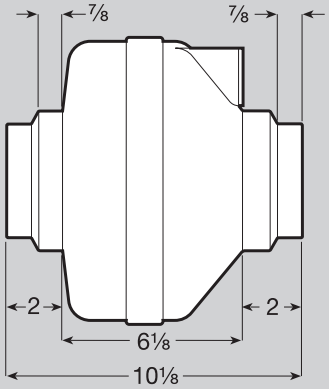
HP2190 – Performance like the HP190 but in a smaller housing. Performance suitable for the majority of installations.

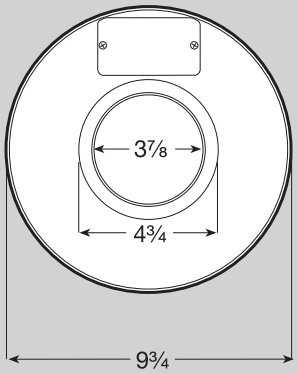
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #156-44, Pipeconx PCX 56-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP175 & HP190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.



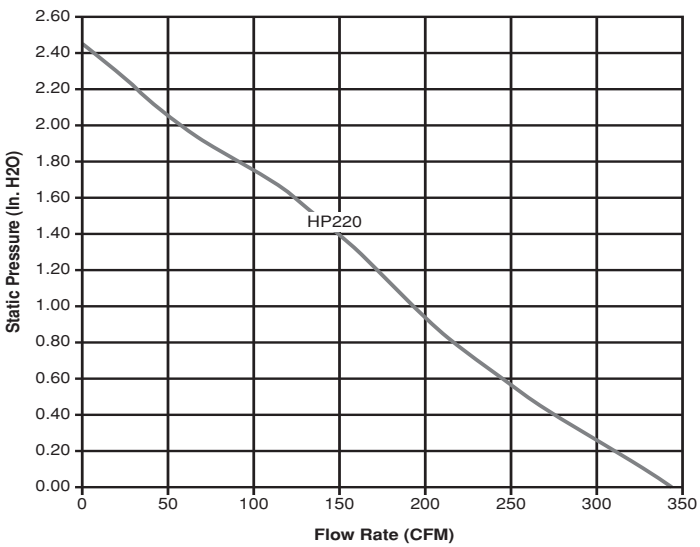


HP175 – The economical choice where slightly less air flow is needed. Often used where there is good sub slab communication and lower Radon levels.

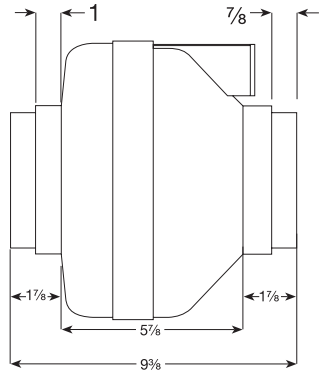
HP190 – The standard for Radon Mitigation. Ideally tailored performance curve for a vast majority of your mitigations.

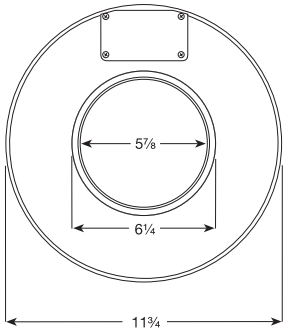
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #151-44, Pipeconx PCX 51-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP220 RADON MITIGATION FAN



Tested with 6" ID duct and standard couplings.





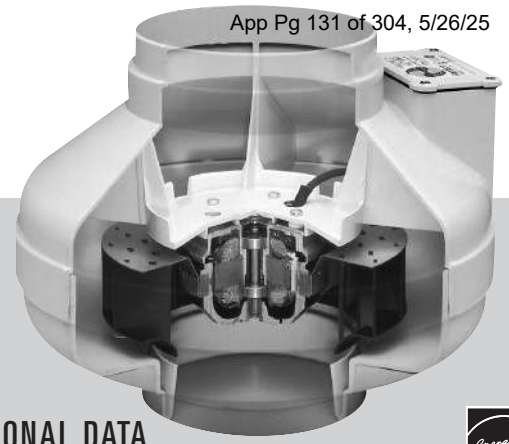
HP 220 – Excellent choice for systems with elevated radon levels, poor communication, multiple suction points and large subslab footprint. Replaces FR 175.

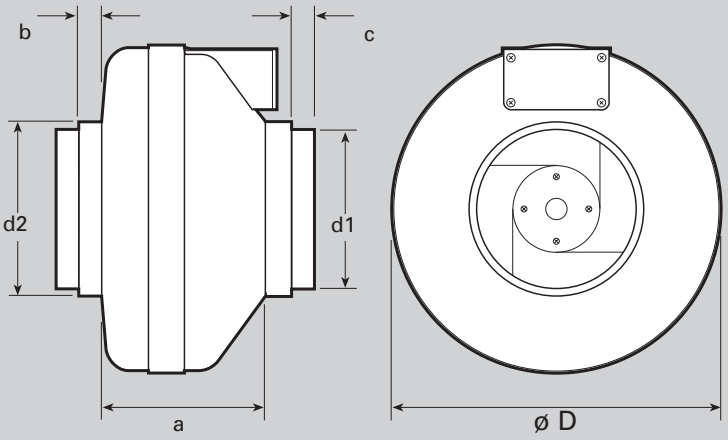
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #156-64, Pipeconx PCX 56-64 or equivalent.
For 3" PVC pipe use Indiana Seals #156-63, Pipeconx PCX 56-63 or equivalent.

Fantech

FR SERIES

THE ORIGINAL MITIGATOR





DIMENSIONAL DATA

model	øD	d1	d2	a	b	c
FR100	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR110	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR125	9 1/2	–	4 7/8	6 1/8	7/8	–
FR140	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR150	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR160	11 3/4	5 7/8	6 1/4	6 3/8	1	7/8
FR200	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR225	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR250	13 1/4	–	9 7/8	6 1/4	–	1 1/2

All dimensions in inches

PERFORMANCE DATA

Fan Model	Energy Star	RPM	Volts	Rated Watts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.							Max. Ps	Duct Dia.
							0"	.2"	.4"	.6"	.8"	1.0"	1.5"		
FR100	✓	2950	120	21.2	13 - 22	0.18	137	110	83	60	21	-	-	0.90"	4"
FR125	✓	2950	115	18	15 - 18	0.18	148	120	88	47	-	-	-	0.79"	5"
FR150	✓	2750	120	71	54 - 72	0.67	263	230	198	167	136	106	17	1.58"	6"
FR160	-	2750	115	129	103 - 130	1.14	289	260	233	206	179	154	89	2.32"	6"
FR200	✓	2750	115	122	106 - 128	1.11	408	360	308	259	213	173	72	2.14"	8"
FR225	✓	3100	115	137	111 - 152	1.35	429	400	366	332	297	260	168	2.48"	8"
FR250*	-	2850	115	241	146 - 248	2.40	649	600	553	506	454	403	294	2.58"	10"

FR Series performance is shown with ducted outlet. Per HVI's Certified Ratings Program, charted air flow performance has been derated by a factor based on actual test results and the certified rate at .2 inches WG.
** Also available with 8" duct connection. Model FR 250-8. Special Order.*

NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

FIVE YEAR WARRANTY

DURING ENTIRE WARRANTY PERIOD:

FANTECH will replace any fan which has a factory defect in workmanship or material. Product may need to be returned to the Fantech factory, together with a copy of the bill of sale and identified with RMA number.

FOR FACTORY RETURN YOU MUST:

- Have a Return Materials Authorization (RMA) number. This may be obtained by calling FANTECH either in the USA at 1.800.747.1762 or in CANADA at 1.800.565.3548. Please have bill of sale available.
- The RMA number must be clearly written on the outside of the carton, or the carton will be refused.
- All parts and/or product will be repaired/replaced and shipped back to buyer; no credit will be issued.

OR

The Distributor may place an order for the warranty fan and is invoiced.
The Distributor will receive a credit equal to the invoice only after product is returned prepaid and verified to be defective.

FANTECH WARRANTY TERMS DO NOT PROVIDE FOR REPLACEMENT WITHOUT CHARGE PRIOR TO INSPECTION FOR A DEFECT. REPLACEMENTS ISSUED IN ADVANCE OF DEFECT INSPECTION ARE INVOICED, AND CREDIT IS PENDING INSPECTION OF RETURNED MATERIAL. DEFECTIVE MATERIAL RETURNED BY END USERS SHOULD NOT BE REPLACED BY THE DISTRIBUTOR WITHOUT CHARGE TO THE END USER, AS CREDIT TO DISTRIBUTOR'S ACCOUNT WILL BE PENDING INSPECTION AND VERIFICATION OF ACTUAL DEFECT BY FANTECH.

THE FOLLOWING WARRANTIES DO NOT APPLY:

- Damages from shipping, either concealed or visible. Claim must be filed with freight company.
- Damages resulting from improper wiring or installation.
- Damages or failure caused by acts of God, or resulting from improper consumer procedures, such as:

1. Improper maintenance
2. Misuse, abuse, abnormal use, or accident, and
3. Incorrect electrical voltage or current.

- Removal or any alteration made on the FANTECH label control number or date of manufacture.
- Any other warranty, expressed, implied or written, and to any consequential or incidental damages, loss or property, revenues, or profit, or costs of removal, installation or reinstallation, for any breach of warranty.

WARRANTY VALIDATION

- The user must keep a copy of the bill of sale to verify purchase date.
- These warranties give you specific legal rights, and are subject to an applicable consumer protection legislation. You may have additional rights which vary from state to state.

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Item #: 411741
Rev Date: 021010

10 SOIL TESTS

SUBJECT PROPERTY ASSESSMENT RESULTS

This Section provides the results of soil tests and site assessment activities completed on the Larger Property that encompasses the Subject Property. Multiple subsurface investigations conducted at the development site for geotechnical or environmental purposes (i.e., Soil Test III) were completed in 2018, complying with §330.953(c)(3). Additional testing was performed by SQE in 2024. Below are the attachments included in this Section.

- **Attachment 10A**: *Limited Groundwater and Vapor Assessment Report, 15.175 Acres of Undeveloped Land, 23300 Lyndon B. Johnson (LBJ) Freeway, Mesquite, Dallas County, Texas*, prepared by Farmer Environmental Group, prepared for Project Services Group, Inc., dated 3 January 2018.
- **Attachment 10B**: *Environmental Support of Geotechnical Investigation, 15.175 Acres of Undeveloped Land, 23300 LBJ Freeway, Mesquite, Dallas County, Texas,* prepared by Farmer Environmental Group, prepared for Project Services Group, Inc., dated 25 April 2018.
- **Attachment 10C**: *Geotechnical Investigation, Mesquite Self Storage, NEC IH-635 and Cartwright Road, Mesquite, Texas,* prepared by Henley Johnston & Associates, prepared for Project Services Group, Inc., dated 25 May 2018.
- **Attachment 10D***: Soil Borings Logs, Caesars Plaza, 0.92 Acres, 957 W Cartwright Rd, Mesquite, Texas,* prepared by SQE, prepared for Favorite Venture Real Estate LLC, dated November 2024.

ATTACHMENT 10A
LIMITED GROUNDWATER AND VAPOR ASSESSMENT REPORT

January 3, 2018

Mr. Daniel Boswell
Project Services Group, Inc.
2040 Century Center Boulevard, Ste. #10
Irving, Texas 75062

RE: Limited Groundwater and Vapor Assessment Report
15.175 Acres of Undeveloped Land
23300 Lyndon B. Johnson (LBJ) Freeway
Mesquite, Dallas County, Texas
Farmer Project No.: 4031.02

Dear Mr. Boswell:

Farmer Environmental Group, LLC (Farmer) is pleased to present the following report to Project Services Group, Inc. (PSG) documenting the limited groundwater and vapor assessment activities at the closed municipal solid waste (MSW) landfill at 23300 LBJ Freeway in Mesquite, Dallas County, Texas (see Figure 1, Site Location Map). The assessment activities were performed for due diligence purposes and to aid Farmer's written authorization request to the Texas Commission on Environmental Quality (TCEQ) per Texas Administrative Code (TAC) Title 30, Part 1, Chapter 330-Municipal Solid Waste, Subchapter T-Use of Land Over Closed Municipal Solid Waste Landfills, Rule §330.954(e) [Authorization to disturb final cover for non-enclosed structures]. The Subchapter T Authorization Request will be prepared and submitted to the TCEQ for the planned geotechnical and environmental investigations prior to pursuit of a required development permit (if deemed feasible). These activities were designed to assess the environmental condition of the Subject Site and to establish the feasibility of developing the Subject Site with the proposed enclosed structures over the closed MSW landfill. Informal consultation with the TCEQ confirmed that these assessment activities would assist with obtaining the required development permit from the TCEQ by providing additional and recent analytical data with respect to the subsurface conditions on the Subject Site.

Scope of Work

Farmer utilized a multi-function landfill gas analyzer to measure monitor well vapor for landfill gasses including: methane, carbon dioxide, oxygen, hydrogen sulfide, and carbon monoxide from six (6) of the eleven (11) existing on-site groundwater monitor wells (see Figure 2, Aerial Site Map). The sampling locations were specifically chosen due to the proximity of the monitor wells to the proposed improvements and enclosed structures on the Subject Site. An electronic interface probe was employed to gauge water levels and total depths of the six monitor wells selected for assessment. Farmer collected representative groundwater samples from the six monitor wells and submitted the groundwater samples to a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory for the analysis of total petroleum hydrocarbons (TPH), Volatile Organic Compounds (VOCs), Semi-Volatile Organics (SVOAs), RCRA 8 Metals, and Polychlorinated Biphenyls (PCBs). This Limited Groundwater and Vapor Assessment Report is suitable for submittal to the TCEQ.

Vapor Monitoring Procedures

Farmer mobilized to the Subject Site on the morning of November 29, 2017. The weather was clear, with temperatures of 57-61 °F, a stable barometric pressure of 30.22 inches, and westerly winds at 7-10 mph. Farmer utilized a Landtec Gem5000 Landfill Gas Monitor (LGM) provided by Pine Environmental Services, LLC. (Pine) for the measurement of monitor well vapors. Pine provided an Instrument Calibration Report, documenting the calibration of LGM Instrument ID: 22315, Serial Number G501372, dated 11/28/2017 (attached). Farmer inserted the inlet tubing of the LGM approximately 3.5 feet into the monitor well casing, recording the vapor readings on a field log. The readings were transferred to the attached Table 1, Landfill Vapor Monitoring Results.

Vapor Monitoring Results

Methane (CH4) readings were 0.0% in monitor wells MW-1, MW-3, MW-3A, and MW-4. CH4 readings of 0.1% were recorded in monitor wells MW-2 and MW-5. A maximum reading of 3.0% CH4 was recorded in monitor well MW-6. Vapor Limits for CH4 are a Lower Explosive Limit (LEL) of 5.0% and an Upper Explosive Limit (UEL) of 15%, and a 20% LEL (1.0% by volume) TCEQ requirement for monitoring in existing structures on a closed municipal solid waste landfill.

Carbon dioxide (CO2) readings were between a low of 0.2%, recorded in MW-3A, and a high of 6.4%, recorded in MW-5. CO2 vapors are non-combustible, hence, LELs and UELs are not applicable. OSHA standards for CO2 are a Threshold Limit Value/Time Weighted Average (TLV/TWA) of 5,000 parts per million (ppm), and an Immediately Dangerous to Life or Health (IDLH) of 40,000 ppm.

Oxygen (O2) readings ranged from 15.6% to 21.5% in the six monitor wells sampled. An O2 reading of 19.5% or less is recognized as being Oxygen Deficient. The O2 readings in monitor wells MW-1, MW-5, and MW-6 indicated an oxygen deficient environment, while the O2 readings in monitor wells MW-2, MW-3, and MW-3A were at or near the normal atmospheric O2 concentration of 21.5%.

Hydrogen Sulfide (H2S) was not detected in the monitor wells with all readings being 0.0 ppm. However, a slight odor was discernable by olfactory methods. Carbon Monoxide (CO) was not detected in monitor wells MW-3, MW-4, and MW-6, and was detected at a concentration of 1.0 ppm in monitor wells MW-1, MW-2, MW-3A, and MW-5. OSHA standards for CO are a TLV/TWA of 25 ppm, and an IDLH of 1,200 ppm.

Groundwater Monitoring Procedures

Farmer employed groundwater gauging and sampling methodologies in general compliance with United States Environmental Protection Agency (EPA) and TCEQ publications including: EPA/540/S-95/504, and EPA SW-846. Farmer's Professional Geologists maintained a field log, recording pertinent site information and field data. The depth to groundwater was measured to the nearest 0.01 foot with an electronic interface probe (water level indicator), and the total depth (TD) of the monitor wells was measured relative to the top of casing (TOC).

Farmer utilized low-flow sampling (LFS) groundwater purging and sampling procedures, performed in general compliance with the previously referenced EPA/540/S-95/504 (April 1996) and/or the QED LFS Procedure document (June 2009). New, dedicated 0.25-inch OD, HDPE tubing was installed in each monitor well sampled. The tubing length was measured so that the inlet was at the approximate center of the measured water column when being purged and sampled. Groundwater was purged from each monitor well utilizing a peristaltic pump at a pump

rate of 0.1 to 0.5 liters/minute, or generally <0.1 gallons per minute (gpm), to minimize draw-down and disturbance in the monitor well. The flow rate was demonstrated by a v-notch weir on the flow cell utilized by Farmer during the purging and sampling of the monitor wells. The flow rate was calibrated by recording the time required to accumulate 0.1 gallon (378.5 milliliters [ml]) of water in a graduated cylinder and adjusting the pump rate until 0.1 gallon accumulates in one minute. A corresponding mark was placed on the weir in the flow cell. Provided that the water flow remained below the mark on the weir, the purge flow rate was <0.1 gpm. Medical grade silicone peristaltic tubing was used in the pump head and was also dedicated to the monitor well in which it was deployed. A short length of 0.25-inch HDPE tubing was used for the pump discharge. This tubing is also new and dedicated to each monitor well. An Oakton pH/Con-1O meter was utilized to measure water quality parameters of temperature, pH and conductivity. The Oakton pH/Con-IO water quality meter was calibrated with commercial calibration standards for pH and conductivity on November 28, 2017. A minimum of two standards were used for each parameter to provide the proper range of calibration. The measured water quality parameters were recorded on the attached Groundwater Sampling Logs.

Groundwater was pumped through the flow cell until pH was observed to stabilize to ± 0.2 pH units, and conductance stabilized to within ± 5% of the reading value. Groundwater samples were collected immediately after the water quality parameters were observed to have stabilized. The order that samples are collected for specific analyses was maintained between wells whenever possible. QA/QC samples including a temperature blank and trip blank were included in the groundwater samples. The samples were placed into laboratory supplied containers, appropriate for the specified analysis. Chemical preservatives (if required) were also provided by the laboratory, and were present in the sample containers prior to sampling. Sample identification labels were applied to the containers. The containers were sealed in zip-lock bags and placed inside a cooler, chilled to <4°C. Before leaving the site, the field notes, Groundwater Sampling Logs, and sample container labels were checked for consistency, and the Chain-of-Custody filled out. The groundwater samples were transported with a properly maintained Chain-of-Custody to the laboratory. Sample condition/integrity was reported on the laboratory Sample Login Sheets.

Farmer decontaminated our field equipment with a surfactant wash, followed by a distilled water rinse. Dedicated sampling equipment was used whenever practical. Farmer personnel wore clean nitrile gloves when sampling or decontaminating equipment. Purged groundwater was temporarily in 5-gallon buckets. Upon the completion of sample collection, the purged groundwater was returned to the monitor well from which it was generated.

Groundwater Monitoring Results

The groundwater samples were transported to Xenco Laboratories in Dallas, Texas for analysis. The groundwater analytical results were reported in Xenco's Analytical Report 569700, dated December 23, 2017 and included as an attachment to this report. The analytical results are summarized on Table 2, Groundwater Sample Analytical Results (attached).

The analytical results for TPH analysis by Texas Method 1005 were less than the laboratory Sample Detection Limits (SDLs) or non-detect, for the groundwater samples collected from the six monitor wells selected for the assessment. The maximum SDL of <0.658 ppm was well below the TCEQ regulatory limit of 0.98 ppm for TPH.

The laboratory analysis for VOCs by EPA Method SW-846 8260B detected 9 of 61 analytes included in the VOC analysis. The 9 VOCs were detected in monitor wells MW-1, MW-3, MW-4, MW-5, and MW-6. NO VOCs were detected in monitor well MW-2. The analytes detected in the

VOC analysis included: sec-Butylbenzene, tert-Butylbenzene, Chlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, cis-1,2-Dichloroethene, 1,2-Dichloropropane, Isopropylbenzene, and n-Propylbenzene. None of the VOC analytes detected were present at a concentration equal to or exceeding the applicable TCEQ regulatory limit.

The SVOA analysis by EPA Method SW-846 8270C detected 6 of the 61 SVOA analytes. The SVOC di-n-Butyl Phthalate was detected in monitor well MW-4. All other SVOAs detected at the Subject Site, including: 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dinitrophenol, 4-Chloro-3-methylphenol, and di-n-Octyl Phthalate were detected in monitor well MW-5. It should be noted that the analyte 1,4-Dichlorobenze was detected as an analyte in both the VOC and SVOA analyses. None of the detected SVOAs were present at concentrations equal to or exceeding applicable TCEQ regulatory limits.

The analytical results for PCB analysis by EPA Method SW-846 8082 were less than the laboratory SDLs or non-detect, for the groundwater samples collected from the six monitor wells selected for the assessment. However, interference in groundwater samples MW-2, MW-4, and MW-5 required laboratory cleanup and the 10X dilution of the samples. The dilutions increased the laboratory SDLs to concentrations above their respective TCEQ regulatory limits for PCB aroclors 1221, 1232, 1242, 1248, and 1254 in the groundwater samples from monitor wells MW-2, MW-4, and MW-5. Therefore, it cannot be determined that PCB aroclors 1221, 1232, 1242, 1248, and 1254 are not present at concentrations below the elevated SDLs, but above the TCEQ regulatory limit in the groundwater samples from monitor wells MW-2, MW-4, and MW-5.

The analysis of groundwater samples from the six monitor wells for RCRA 8 Metals by EPA Methods SW6020A/SW7470A detected Arsenic in monitor wells MW-2, MW-3, MW-4 and MW-5. Barium was detected in all six groundwater samples. Chromium was detected only in the MW-5 water sample. Lead was detected in the samples from monitor wells, MW-1, MW-4, MW-5, and MW-6. The metals Cadmium, Selenium, Silver, and Mercury were not detected in any groundwater sample. None of the laboratory SDLs or the detected concentrations of RCRA 8 Metals exceeded TCEQ regulatory limits.

TCEQ Regulatory Limits

The assessment of vapor accumulation in the six groundwater monitor wells on the Subject Site detected methane gas at a maximum concentration of 3.0% in monitor well MW-6. While this concentration is below the LEL of 5.0% Methane, it exceeds the TCEQ regulatory limit of 20% of the LEL (1.0% by volume) per Subchapter T: Use of Land Over Closed Municipal Solid Waste Landfills §§330.951 – 330.964, Effective March 27, 2006.

The groundwater sample results were compared to TCEQ Texas Risk-Reduction Program (TRRP) Protective Concentration Levels (PCLs) per 30 TAC §350. The specific PCLs were Table 3, Tier 1 Groundwater PCLs – Residential Ingestion of Class 1 or 2 Groundwater, Revised March 31, 2017. These are the most conservative groundwater PCLs, equivalent to the Residential Assessment Level (RAL). No constituents of concern (COCs) were detected in the groundwater samples at concentrations equal to or exceeding the applicable TCEQ TRRP Tier 1 PCLs.

Interference in the analysis of PCBs in groundwater samples MW-2, MW-4 and MW-5 necessitated a laboratory cleanup procedure and the dilution of the samples by a factor of 10 to best quantify the PCB aroclors. This resulted in the increase of the laboratory SDLs in PCB aroclors 1221, 1232, 1242, 1248, and 1254 to values exceeding the TCEQ TRRP Tier 1 PCL of 0.0005 ppm for Total PCBs. Therefore, while no PCBs were detected at or above the 0.0005

ppm PCL, five of the seven PCB aroclors in samples MW-2, MW-4, and MW-5 were reported with SDLs above the PCL. In this scenario, the analyses are insufficient to exclude the possibility that a concentration of PCB aroclor 1221, 1232, 1242, 1248, or 1254 exists that is less than the laboratory SDL, but greater than the 0.0005 ppm PCL for Total PCBs.

Conclusions and Recommendations

The limited assessment of 6 of the 11 groundwater monitor wells on the Subject Site produced results indicating that the proposed development of the Subject Site appears to be feasible if conducted in accordance with applicable TCEQ requirements. Vapor monitoring detected a maximum concentration of 3.0% Methane in monitor well MW-6, located on the southeast portion of the Subject Site. This concentration, while below the LEL of 5%, exceeds the TCEQ regulatory limit of 20% of the LEL (1.0% by volume), indicating the capability for Methane generation and the need for vapor monitors/alarms in the proposed enclosed structures as required by TCEQ regulations.

Groundwater monitoring results did not identify the presence of any COC at a concentration exceeding the most conservative TCEQ regulatory limits. Nine (9) VOCs, 6 SVOAs, and 4 metals were detected in one or more groundwater samples at concentrations well below their respective regulatory limits. TPH was not detected in any of the 6 groundwater samples. PCBs were not detected in the 6 groundwater samples analyzed. Although an interference issue and subsequent sample dilutions caused the laboratory sample detection limits to exceed the TCEQ regulatory limit for 5 of the 7 aroclors in 3 of the 6 groundwater samples, no PCB concentrations were detected in the undiluted samples of the remaining 3 groundwater samples and there is no reason to suspect the presence of elevated PCB concentrations at the Subject Site.

Farmer recommends that this report documenting the limited assessment of groundwater and vapor at the Subject Site be included in the documentation provided to the TCEQ for the Subchapter T Authorization Request (cap disturbance) and subsequent development permit application (if pursued). Farmer appreciates this opportunity to provide environmental services to PSG. If you have any questions or comments please contact the undersigned.

Sincerely,

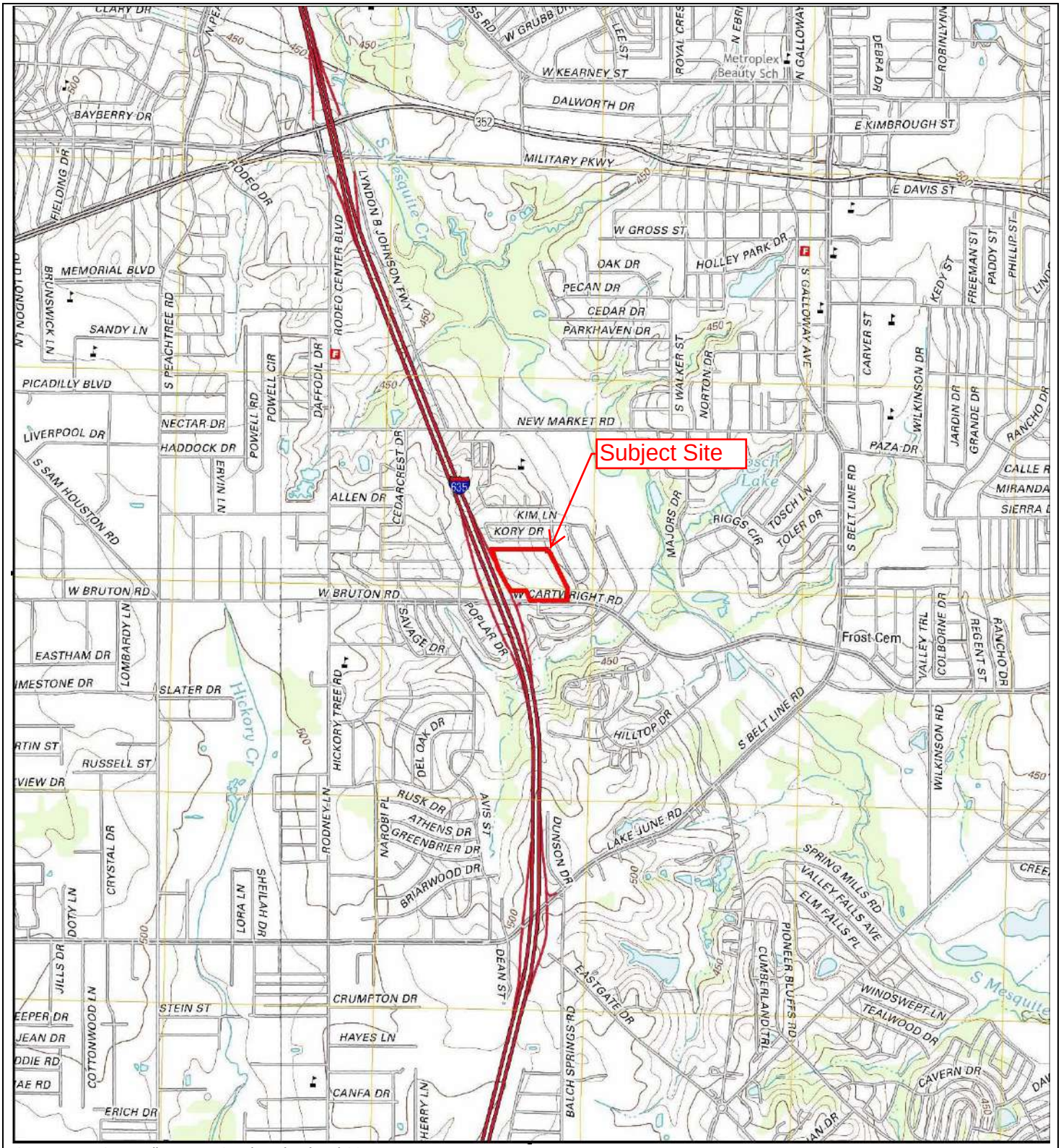
Chris Jackson,
Senior Project Manager
[redacted]

David Allen, PG, CAPM
Environmental Geologist
[redacted]

STATE OF TEXAS
Jan 3, 2018
DAVID L. ALLEN
GEOLOGY
4136
LICENSED
PROFESSIONAL GEOSCIENTIST

Attachments:

Figure 1, Site Location Map
Figure 2, Aerial Site Map
Table 1, Landfill Vapor Monitoring Results
Table 2, Groundwater Sample Analytical Results
Laboratory Analytical Report WO# 569700
Instrument Calibration Report



Source: TP - Seagoville, Texas Quadrangle, dated 2015

LEGEND

N

SITE LOCATION

TOPOGRAPHIC SITE MAP

15.175-Acre Undeveloped Property
23300 LBJ Freeway
Mesquite, Dallas County, Texas 75149

FIGURE 1

Job No: 4031.02

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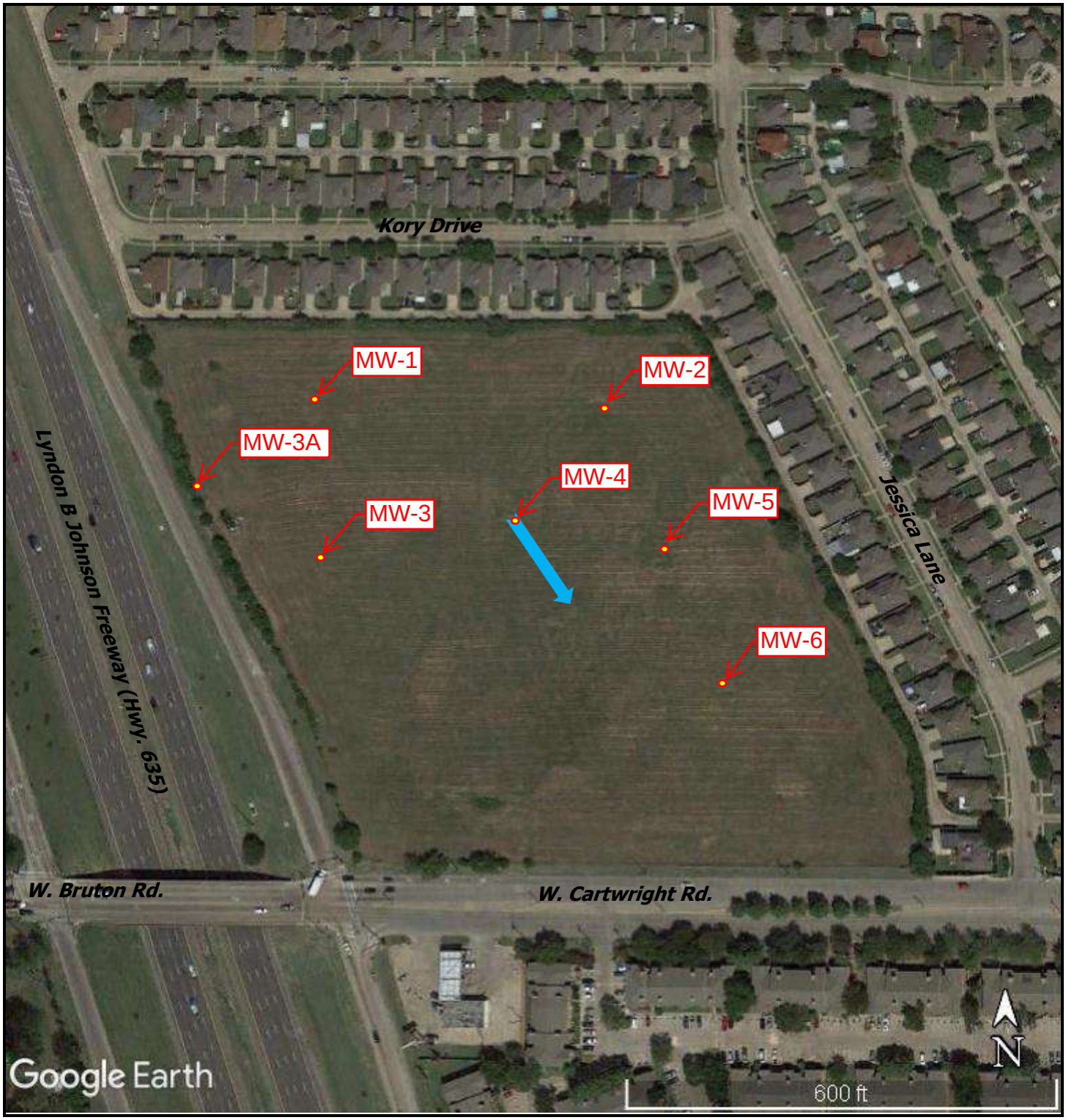

Source: Google Earth® image dated September 6, 2017

LEGEND	
N	Approximate Subject Site Boundary
	Inferred Groundwater Flow Direction
	Groundwater Monitor Well

AERIAL SITE MAP

15.175-Acre Undeveloped Property
23300 LBJ Freeway
Mesquite, Dallas County, Texas 75149

FIGURE 2
Job No: 4031.02

FARMER ENVIRONMENTAL GROUP

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TABLE 1
LANDFILL VAPOR MONITORING RESULTS
Mesquite Landfill
23300 LBJ Freeway, Mesquite, Dallas County, Texas

Location	Time	CH4 (%)	CO_2 (%)	O_2 (%)	Balance (%)	H_2S (ppm)	CO (ppm)	Observations
MW-1	10:30	0.0	4.6	17.7	77.7	0.0	1.0	Bubbling
MW-2	10:38	0.1	0.4	21.1	78.5	0.0	1.0	
MW-3	10:42	0.0	0.7	21.1	78.3	0.0	0.0	
MW-3A	12:37	0.0	0.2	21.5	78.3	0.0	1.0	Well is obstructed @ 11.9' bgs
MW-4	10:46	0.0	1.8	19.7	78.5	0.0	0.0	Slight Bubbling
MW-5	10:49	0.1	6.4	15.6	78.0	0.0	1.0	Bubbling
MW-6	10:53	3.0	2.9	18.3	76.1	0.0	0.0	Vigorous Bubbling
Vapor Limits								
LEL 100%		5.0	N/C	-	-	40,000	125,000	
LEL 20%		1.0	N/C	-	-	-	-	
UEL		15.0	N/C	-	-	-	-	
O_2 – Oxygen Deficiency		-	-	19.5	-	-	-	
O_2 – Flammability Hazard		-	-	23.5	-	-	-	
TLV/TWA (ppm)		A	5,000	-	-	10	25	
IDLH (ppm)		A	40,000	-	-	100	1,200	

Sample Date – 11/29/2017
LEL- Lower Explosive Limit
UEL – Upper Explosive Limit
N/C – Non-Combustible
ppm – Parts Per Million
TLV/TWA – Threshold Limit Value/Time Weighted Average
IDLH – Immediately Dangerous to Life or Health
A - Asphyxiant

TABLE 2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
Mesquite Landfill
23300 LBJ Freeway, Mesquite, Dallas County, Texas

Parameter	Groundwater Sample Reported Concentration (ppm)						Regulatory Limit
TPH	MW-1	MW-2	MW-3	MW-4	MW-5	WM-6	TCEQ TRRP
C6 – C12	<0.646	<0.668	<0.665	<0.666	<0.685	<0.671	0.98
>C12 – C28	<0.646	<0.668	<0.665	<0.666	<0.685	<0.671	0.98
>C28 – C35	<0.646	<0.668	<0.665	<0.666	<0.685	<0.671	0.98
VOCs*	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	TCEQ TRRP
sec-Butylbenzene	**0.000230**	<0.000124	<0.000124	<0.000124	**0.000310**	<0.000124	0.98
tert-Butylbenzene	**0.000200**	<0.000177	<0.000177	<0.000177	<0.000177	<0.000177	0.98
Chlorobenzene	<0.000110	<0.000110	**0.00122**	**0.000230**	**0.0258**	**0.000750**	0.10
1,4-Dichlorobenzene	**0.000250**	<0.000222	**0.00129**	<0.000222	**0.00392**	**0.000340**	0.075
1,1-Dichloroethane	<0.000182	<0.000182	<0.000182	**0.000390**	<0.000182	<0.000182	4.9
cis-1,2-Dichloroethene	<0.000162	<0.000162	**0.000200**	**0.000930**	<0.000162	<0.000162	0.070
1,2-Dichloropropane	<0.000170	<0.000170	<0.000170	**0.000580**	<0.000170	<0.000170	0.005
Isopropylbenzene	**0.000280**	<0.000218	<0.000218	<0.000218	**0.00127**	<0.000218	2.4
n-Propylbenzene	<0.000173	<0.000173	<0.000173	<0.000173	**0.000240**	<0.000173	0.98
SVOAs*	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	TCEQ TRRP
1,3-Dichlorobenzene	<0.000926	<0.000926	<0.000926	<0.000926	**0.00212**	<0.000926	0.73
1,4-Dichlorobenzene	<0.000947	<0.000947	<0.000947	<0.000947	**0.00274**	<0.000947	0.075
2,4-Dinitrophenol	<0.000869	<0.000869	<0.000869	<0.000869	**0.0129**	<0.000869	0.049
4-Chloro-3-methylphenol	<0.000950	<0.000950	<0.000950	<0.000950	**0.00412**	<0.000950	0.12
di-n-Butyl Phthalate	<0.000510	<0.000510	<0.000510	**0.000730**	<0.00102	<0.000510	2.4
di-n-Octyl Phthalate	<0.000408	<0.000408	<0.000408	<0.000408	**0.00548**	<0.000408	0.24
PCBs	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	TCEQ TRRP
PCB-1016	<0.0000120	<0.000120	<0.0000124	<0.000120	<0.000120	<0.0000120	0.0005
PCB-1221	<0.000110	**<0.00110**	<0.000113	**<0.00110**	**<0.00110**	<0.000110	0.0005
PCB-1232	<0.0000980	**<0.000980**	<0.000101	**<0.000980**	**<0.000980**	<0.0000980	0.0005
PCB-1242	<0.000181	**<0.00181**	<0.000187	**<0.00181**	**<0.00181**	<0.000181	0.0005
PCB-1248	<0.000133	**<0.00133**	<0.000137	**<0.00133**	**<0.00133**	<0.000133	0.0005
PCB-1254	<0.0000940	**<0.000940**	<0.0000969	**<0.000940**	**<0.000940**	<0.0000940	0.0005
PCB-1260	<0.0000090	<0.0000899	<0.0000093	<0.0000899	<0.0000899	<0.0000090	0.0005
Metals	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	TCEQ TRRP
Arsenic	<0.000246	**0.000255**	**0.000836**	**0.00124**	**0.000394**	<0.000246	0.01
Barium	**0.231**	**0.350**	**0.0798**	**0.0370**	**0.656**	**0.459**	2.0
Cadmium	<0.000147	<0.000147	<0.000147	<0.000147	<0.000147	<0.000147	0.005
Chromium	<0.000525	<0.000525	<0.000525	<0.000525	**0.000922**	<0.000525	0.10
Lead	**0.000180**	<0.000152	<0.000152	**0.000349**	**0.000385**	**0.000157**	0.015
Selenium	<0.000454	<0.000454	<0.000454	<0.000454	<0.000454	<0.000454	0.05
Silver	<0.000251	<0.000251	<0.000251	<0.000251	<0.000251	<0.000251	0.12
Mercury	<0.0000263	<0.0000263	<0.0000263	<0.0000263	<0.0000263	<0.0000263	0.002

Groundwater sample date – 12/01/2017. ppm (mg/L) - all results reported as parts per million.
TCEQ TRRP Tier 1 PCL – Table 3, Tier 1 Groundwater PCLs – Residential Ingestion of Class 1 or 2 Groundwater, Revised March 31, 2017
VOCs*- Only the VOC parameters detected in the assessment are presented in the table. The attached Analytical Report includes all 61 VOCs
SVOAs*- Only the SVOA parameters detected in the assessment are presented in the table. The attached Analytical Report includes all 61 VOAs
Bold – Concentration detected above the laboratory SDL, but below TCEQ TRRP PCL.
Highlight – Laboratory SDL exceeds TCEQ TRRP PCL.

ATTACHMENT 10B
ENVIRONMENTAL SUPPORT OF GEOTECHNICAL INVESTIGATION

April 25, 2018

Mr. Daniel Boswell
Project Services Group, Inc.
2040 Century Center Boulevard, Ste. #10
Irving, Texas 75062

RE: Environmental Support of Geotechnical Investigation
15.175 Acres of Undeveloped Land
23300 LBJ Freeway
Mesquite, Dallas County, Texas

Dear Mr. Boswell:

Farmer Environmental Group, LLC (Farmer) is pleased to present the following report to Project Services Group, Inc. (PSG) documenting Farmer's environmental support of the geotechnical investigation activities at the closed municipal solid waste (MSW) landfill at the above-referenced location. The geotechnical investigation was necessary to determine the physical characteristics of the subsurface for suitability for development and structural design parameters.

Scope of Work
Farmer accompanied the geotechnical crew during their investigation of the Subject Site. Farmer used a multi-function landfill gas analyzer to measure the soil vapor for landfill gasses during the advancement of the soil borings. Investigation derived waste (e.g., soil cuttings) were contained in D.O.T. 55-gallon drums, pending characterization for acceptance at a permitted disposal facility. Farmer utilized a Photo-Ionization Detector (PID) to screen the soil samples for evidence of contamination and retained up to one sample per boring for laboratory analysis. The soil boring logs, field screening results, and soil analytical results are intended to be provided by PSG to the geotechnical company for inclusion in their geotechnical report.

Procedures
Farmer utilized a multi-function landfill gas analyzer (Landtec GEM5000) to measure and record the concentrations of landfill gasses during and immediately after the advancement of the 5 environmental/geotechnical soil borings and the 1 proposed geotechnical boring. The monitored gasses included: Methane, Carbon Dioxide, Carbon Monoxide, and Hydrogen Sulfide. The landfill gas monitoring was conducted under the indirect supervision of a Farmer's licensed P.E. #118086, Ms. Jennifer Day. The landfill gas analyzer was utilized at set intervals in each boring to monitor the presence of landfill gasses. In the event of readings greater than 20 percent of the lower explosive limit for methane, Farmer would cease drilling activities until the potentially explosive concentrations had stabilized. In addition, Farmer field screened the soil samples from all 6 soil borings with a PID for evidence of contamination. Based on the field screening results, one soil sample was retained from each of the 5 environmental/geotechnical soil borings for laboratory analysis. If field screening indicated the potential presence of contamination or landfill material in the 1 proposed geotechnical boring, an additional soil sample would be retained for laboratory analysis.

Soil samples were placed into laboratory supplied containers, appropriate for the specified analysis. Sample identification labels were applied, and the containers were sealed in zip-lock bags and placed inside a cooler, chilled to <4°C. Before leaving the site, the field notes and sample container labels were checked for consistency, and the Chain-of-Custody filled out. The soil samples were transported with a properly maintained Chain-of-Custody to a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. The requested soil analyses included Total Petroleum Hydrocarbons (TPH), Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), RCRA 8 Metals, and Polychlorinated Biphenyls (PCBs).

At the completion of each soil boring, the boring annuli were plugged by the Driller. The entire depth of each boring was plugged with hydrated bentonite chips. The surface of each boring was covered with high plasticity index (PI) soil, compacted and mounded to positive relief to direct rainfall away from the boring. All soil cuttings generated during the assessment activities were containerized in 55-gallon D.O.T. drums and stored on-site pending waste characterization and off-site disposal at a permitted disposal facility. The Driller will submit State of Texas Plugging Reports to the Texas Department of License and Regulation (TDLR), documenting the proper plugging and abandonment of the soil borings.

Description of Soil Borings

The six soil borings were advanced as proposed at the locations illustrated on the attached Figure 4, Aerial Site Map. The B-1 boring was advanced near the northwest corner of landfill cell 1. The soils encountered in boring B-1 included: 4 feet of high PI clay with silt (landfill cap) followed by approximately 6 feet of silty clay fill soil with some pieces of charred lumber. Native silty clay was encountered below a depth of approximately 10 feet below ground surface (bgs) to approximately 28 feet bgs, where competent shale was present to the termination of the boring at 35 feet bgs. No groundwater was encountered. Soil sample B-1@9' was retained for laboratory analysis based on a slightly elevated PID reading.

Soil boring B-2 was advanced on the southwest portion of landfill cell 1, encountering approximately 1 foot of silty clay loam followed by approximately 2 feet of high PI clay with glass and plastic fragments. High PI clay with no debris was present below 4 feet to approximately 13 feet BGS, where native silty clay was encountered. Competent shale was present at a depth of 35 feet to the termination of the boring at 40 feet bgs. No groundwater was encountered in the boring. Soil sample B-2@2' was retained for laboratory analysis based on the presence of debris.

Soil boring B-3 was advanced in the east-central portion of landfill cell 1, encountering approximately 6 feet of high PI clay landfill cap. Trash, consisting primarily of plastic and wood debris was present from 6 feet bgs to a depth of approximately 8.5 feet bgs. Clay fill with plastic debris was encountered between depths of 8.5 feet to approximately 24 feet bgs. Apparent clay fill with no observed trash or debris was recorded from 24 feet to approximately 40 feet bgs. Groundwater was initially encountered at a depth of approximately 34 feet bgs. A stabilized water level of 29.14 feet was recorded the following day. Competent shale was present at a depth of approximately 40 feet to the termination of the boring at 45 feet bgs. Soil sample B-3@20' was retained for laboratory analysis based on the maximum observed PID reading.

Soil boring B-4 was advanced near the apparent southeast boundary of landfill cell 1. High PI clay landfill cap was present from the surface to approximately 4 feet bgs. Apparently native silty clay of medium to low PI was encountered between depths of 4 to approximately 25 feet bgs. Competent shale was present at a depth of approximately 25 feet to the termination of the boring

at 30 feet bgs. No groundwater was encountered in the B-4 soil boring. Soil sample B-4@4' was retained for laboratory analysis based on the transition from landfill cap to apparently native soil.

Soil boring B-5 was advanced near the northeast corner of landfill cell 1. High PI clay landfill cap was present from the surface to approximately 6 feet bgs. Apparent clay fill soil with gravel and silt partings at 6 feet bgs and wood, plastic, and concrete debris at 8 feet to 8.5 feet bgs was encountered in soil samples. Native silty clay of medium to low PI was encountered between depths of 8.5 to approximately 15 feet bgs. Competent shale was present below a depth of approximately 15 feet to the termination of the boring at 30 feet bgs. No groundwater was encountered in the B-5 soil boring. Soil sample B-5@8-8.5' was retained for laboratory analysis based on presence of landfill trash and a slightly elevated PID reading.

Soil Boring B-6 was advanced near the southeast corner of the Subject Site, outside of any identified landfill cell or area known to have received fill. Approximately 1.5 feet of silty clay loam followed by silty clay with calcareous silt partings and pockets to a depth of 8 feet bgs. A mixture of clay, silt, and sand was present from 8 feet to 12 feet bgs, followed by wet sand from 12 to 19 feet bgs. Competent shale was present at a depth of approximately 19 feet to the termination of the boring at 30 feet bgs. Groundwater was initially encountered at a depth of 12 feet bgs, with a final reading of 11 feet bgs in the B-6 soil boring. No soil sample was retained for laboratory analysis based on absence of any apparent fill and no elevated PID readings.

Landfill Vapor Monitoring Results

Periodic vapor readings from the Landtec GEM5000 landfill gas analyzer were recorded on a field log during the field activity and are reproduced on the attached Table 1, Landfill Vapor Monitoring Results. The only elevated vapor readings were observed in soil boring B-3. Methane was recorded as 15.9% and Oxygen was recorded as 16.4% of the total vapors present subsequent to the B-3 boring achieving a depth of 40 feet bgs. 15.9% Methane exceeds both the Lower Explosive Limit (LEL) of 5.0% Methane and the Upper Explosive Limit (UEL) of 15% Methane. 16.4% Oxygen is below the 19.5% limit defining an Oxygen deficient atmosphere. Farmer obtained a final reading from the B-3 boring the following morning on April 5th. Groundwater had stabilized at a depth of 29.14 feet bgs in the B-3 soil boring and Methane had decreased to 2.5%. A reading of 2.5% Methane is below the LEL of 5%, but exceeds the TCEQ prescribed standard of 1.25%, which is 25% of the LEL.

Soil Analytical Results

TPH was detected in two of the five soil samples selected by Farmer for laboratory analysis in the geotechnical assessment. The maximum TPH concentration of 297 parts per million (ppm) was detected in the B-1@9' sample. The 297 ppm concentration was in the >C12-C28 (middle distillate or diesel) fraction. Potentially applicable regulatory limits or Protective Concentration Levels (PCLs) are 200 ppm for the Residential Assessment Level (RAL) and 300 ppm for a Commercial/Industrial property with a source area >5-30 acres (C/I >5-30). The other detected TPH concentration was in the B-3@20' sample. The 116 ppm concentration was in the (heavy or oil) fraction. Potential regulatory limits are 200 ppm for the RAL and 300 ppm for C/I >5-30 acres. The analytical results are illustrated on the attached Table 2. The complete Analytical Report is also provided as an attachment to this report.

A total of 14 VOCs were detected in one or more of the soil samples, leaving 51 of the 65 VOC analytes undetected at a concentration above the laboratory sample detection limit (SDL). All detected VOC analyte concentrations were below the potentially applicable regulatory limits. The VOC analyte Naphthalene was the only analyte with a detected concentration approaching a

regulatory limit. A concentration of 30.3 ppm Naphthalene was detected in the B-1@9' soil sample. The RAL for Naphthalene is 31 ppm.

A total of 18 SVOCs were detected in one or more of the soil samples, leaving 35 of the 53 VOC analytes undetected at a concentration above the laboratory sample detection limit (SDL). A total of 5 SVOCs were detected in the B-1@9' soil sample at concentrations exceeding potentially applicable regulatory limits. The SVOC Benzo(a)anthracene was detected at a concentration of 21.4 ppm, exceeding the 5.7 ppm RAL and the 20 ppm C/I >5-30 PCLs. Benzo(b)fluoranthene was detected at a concentration of 40.8 ppm, exceeding both the 5.7 ppm RAL and the 24 ppm C/I >5-30 PCLs. The SVOC Benzo(a)pyrene was detected at a concentration of 12.7 ppm, exceeding both the 7.6 ppm RAL and the 2.4 ppm C/I >5-30 PCLs. Indeno(1,2,3-cd) pyrene was detected at a concentration of 7.81 ppm, exceeding the 5.7 ppm RAL PCL but below the 24 ppm C/I >5-30 PCL. Finally, Naphthalene (reported as both a VOC and SVOC analyte, but more appropriately a SVOC) was detected at a concentration of 51.7 ppm, exceeding both the 31 ppm RAL and the 47 ppm C/I >5-30 PCLs.

The analysis of the 5 geotechnical soil samples detected 6 of the 8 RCRA Total Metal analytes in one or more of the samples. Three of the Total Metal analytes were detected at concentrations exceeding potentially applicable regulatory limits. Arsenic was detected at concentrations of 9.67 ppm in B-2@2', 7.04 ppm in sample B-3@20', 6.23 ppm in sample B-4 @4', and at a concentration of 10.1 ppm in the B-5@8-8.5'. These concentrations exceed the Texas-Specific Soil Background Concentration (TSSBC) of 5.9 ppm for Arsenic. Cadmium was detected in the B-5@8-8.5' soil sample at a concentration of 2.31 ppm, exceeding both the 1.5 ppm RAL and the 0.75 ppm C/I >5-30 PCLs. Lead was detected at concentrations of 24.2 ppm in sample B-1@9', at 488 ppm in B-2@2', 40.3 ppm in sample B-3@20', and at a concentration of 513ppm in the B-5@8-8.5' soil sample. These concentrations exceed the TSSBC of 15 ppm for Lead.

Potentially Applicable Regulatory Limits

The determination of specific regulatory limits for contaminants of concern (COCs) identified in the soil and groundwater of the Subject Site would require a level of assessment beyond the scope of services proposed by Farmer. The site is designated as an unauthorized, closed municipal waste landfill. As such, the Subject Site is under the jurisdiction of the Municipal Solid Waste Permits Section of the TCEQ. The potentially applicable regulatory limits are the TCEQ Texas Risk Reduction Program (TRRP) protective concentration levels (PCLs) published in the 30 TAC §350 rule. The PCLs referenced in Table 2 of this report are protective of receptors potentially exposed to the identified COCs. The presence of COCs in the landfill on the Subject Site at concentrations exceeding Tier 1 PCLs does not necessarily imply that corrective action would be required. Farmer's reference to specific Tier 1 PCLs are made for comparison only. Farmer compared the detected concentrations of COCs in the soil of the Subject Site to the following PCLs:

TCEQ TRRP Tier 1 PCLs, per Table 1, Tier 1 Residential Soil PCLs provides soil concentrations protective for the residential ingestion of Class 1 or Class 2 groundwater ($^{GW}Soil_{Ing}$) and, soil concentrations protective for residential inhalation, ingestion, dermal, and vegetable consumption pathways ($^{Tot}Soil_{Comb}$). The TCEQ published Texas-Specific Soil Background Concentrations (TSSBCs) for metals that are naturally occurring in the environment. The Residential Assessment Level (RAL) is the greatest value of the most conservative PCLs.

Farmer also compared detected COC concentrations to TCEQ TRRP Tier 1 PCL – Table 2 Commercial/Industrial (C/I) Soil PCLs for a 30-acre source area, considering both $^{GW}Soil_{Ing}$ and $^{Tot}Soil_{Comb}$ exposure routes. The TCEQ TRRP Tier 1 PCL – Table 2 Commercial/Industrial (C/I)

Soil PCLs, provides PCLs for 0.5 acre and 30-acre source areas. The size of the source area for COCs at the Subject Site is not readily apparent, because the COCs are associated with trash or fill randomly placed in lifts in the landfill cells. Farmer referenced the PCLs for a 30-acre source area because this value is typically more conservative.

Conclusions

Farmer provides the following conclusions, based on the findings of the geotechnical assessment performed at the Subject Site. Soil borings B-1 through B-5 were advanced in landfill cell 1 across the northern portion of the Subject Site, the proposed location of the storage buildings. Soil boring B-3 was the only boring with a trash/fill thickness approaching the reported 40' depth of cell 1, with approximately 5 feet of landfill cap, 17 feet of trash, and 18 feet of fill soil, comprising approximately 40 feet of total fill. Soil borings B-1, B-2, B-4, & B-5 appeared to have 0-10' of fill. This may have been due to those boring locations being near the perimeter of cell 1. The presence of native soil at approximate depths of 4 to 10 feet bgs, and shale as shallow as 15 feet bgs in the perimeter soil borings, indicates the walls of cell-1 were probably sloped for stability. Soil boring B-6 was advanced near the southeast corner of the Subject Site, in an area reportedly not occupied by a landfill cell. The soils encountered in the B-6 boring were native clay, silt, and sand, becoming wet at 12' bgs, with shale at a depth of approximately 19 feet bgs.

Soil vapors were nominal in soil borings B-1, B-2, B-4, B-5, and B-6. Soil vapor, specifically, Methane was detected at a maximum concentration of 15.9% in soil boring B-3 subsequent to the advancement of the boring to 40 feet bgs. The following morning, Methane was measured at 2.5% in the B-3 boring. These results, along with the results of landfill vapor monitoring previously performed in the existing groundwater monitor wells, indicate the potential for the generation of an explosive and/or oxygen deficient atmosphere in confined spaces on the portions of the Subject Site that have received fill.

The laboratory analysis of soil samples collected during the geotechnical assessment detected predominantly low concentrations of COCs, including TPH, VOCs, SVOCs, and Total Metals. No PCBs were detected in the soil samples. The TPH concentration and the SVOC concentrations which exceeded potentially applicable regulatory limits were found in the B-1@9' soil sample. Concentrations of Arsenic exceeding the Texas-Specific Soil Background Concentration (TSSBC) of 5.9 ppm were detected in the B-2, B-3, B-4, and B-5 soil samples. These concentrations ranged from 6.23 to 10.1 ppm and are likely background concentrations. Cadmium was detected at a concentration of 2.31 ppm, exceeding the RAL of 1.5 ppm and the C/I PCL of 0.75 ppm. Lead was detected at concentrations of 14.5 ppm to 513 ppm, with the Lead concentrations in the B-1, B-2, B-3, and B-5 samples exceeding the TSSBC of 15 ppm. The presence of COCs within the landfill cells is to be expected. Provided that the COCs are contained within the landfill proper, and sensitive receptors are not exposed, corrective action may not be required.

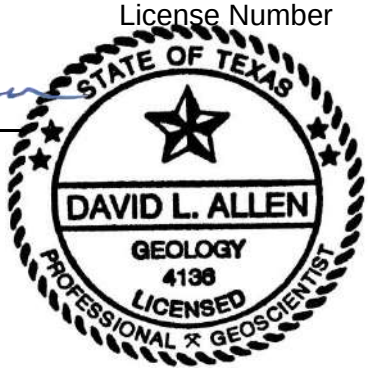
Farmer recommends that the Project Services Group provide this report to the geotechnical firm for inclusion in their report and to assist with the permitting application for the proposed development of the Subject Site. Farmer appreciates the opportunity to perform environmental services for the Project Services Group. Please contact Chris Jackson or David Allen of Farmer Environmental Group with any questions that you may have regarding this report or the Mesquite Landfill project.

Sincerely,

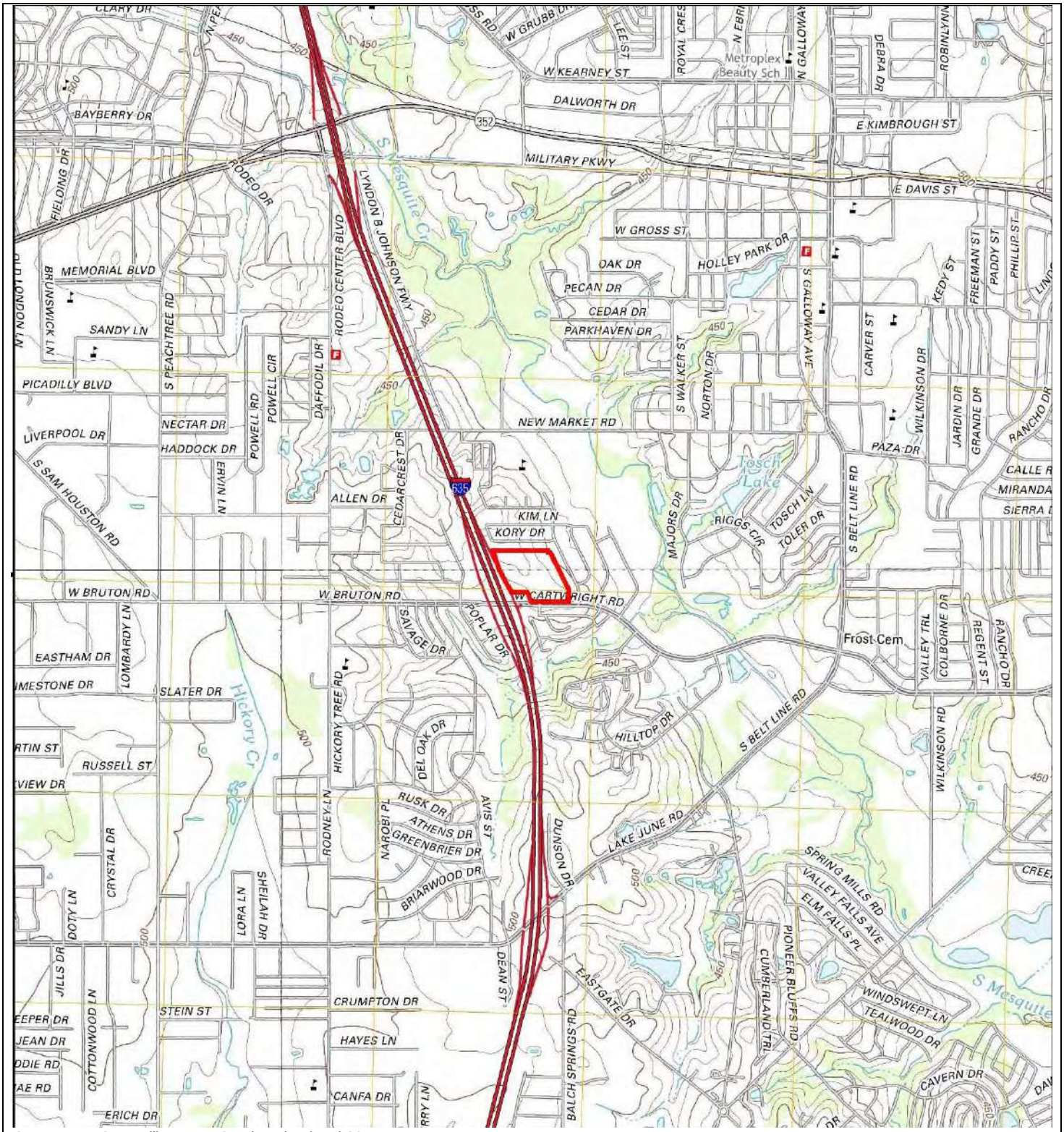
Chris Jackson
Senior Project Manager
[redacted]

Professional Signature & Seal

Farmer Environmental Group, LLC Geoscience Firm	50095 Registration Number	February 28, 2019 Expiration Date
David L. Allen, PG Professional Geoscientist	4136 License Number	December 31, 2018 Expiration Date
Signature [redacted]		April 25, 2018 Date



FIGURES



Source: TP - Seagoville, Texas Quadrangle, dated 2015

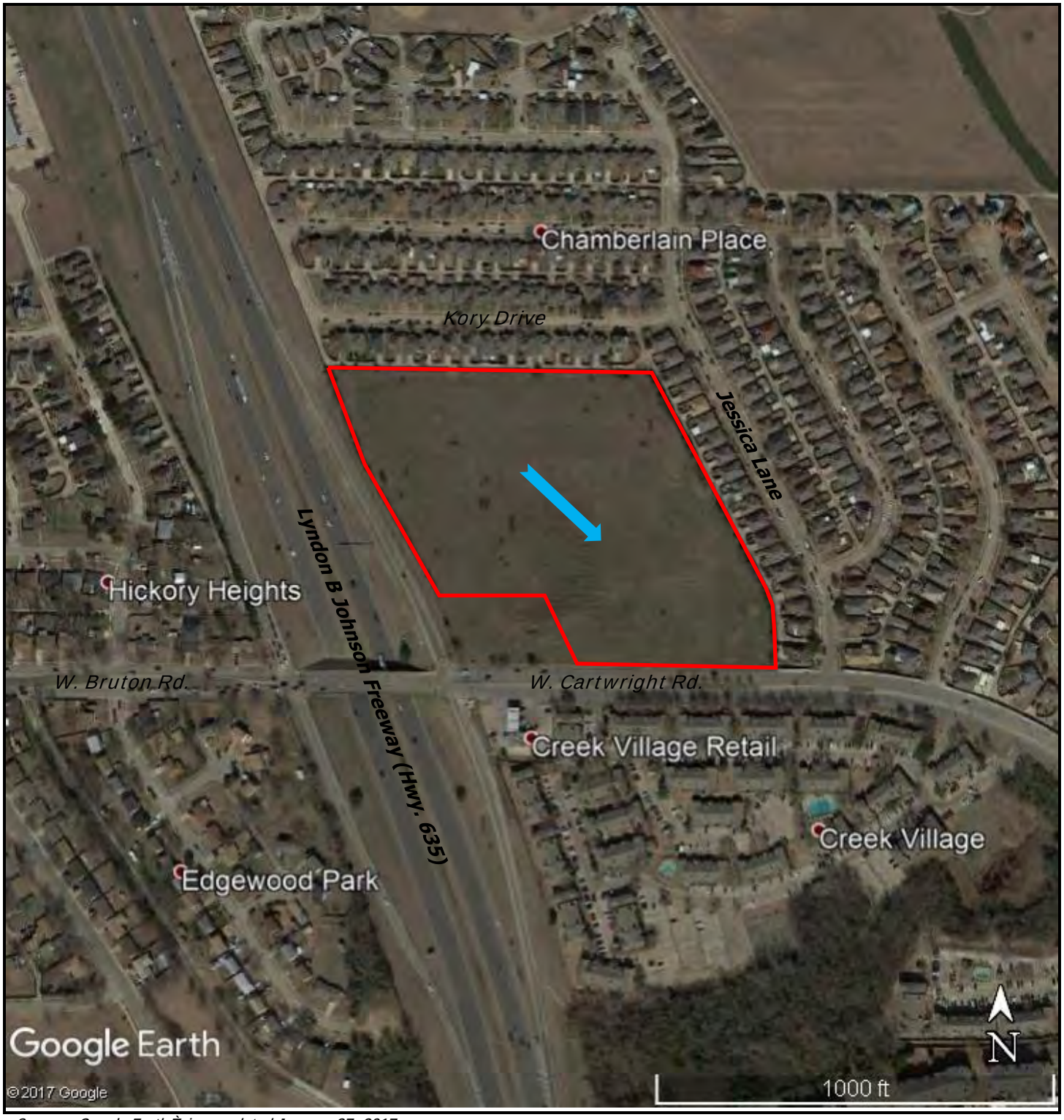
LEGEND	
N	SITE LOCATION

TOPOGRAPHIC SITE MAP

15.175-Acre Undeveloped Property
23300 LBJ Freeway
Mesquite, Dallas County, Texas 75149

FIGURE 1
Project No.
4031.04

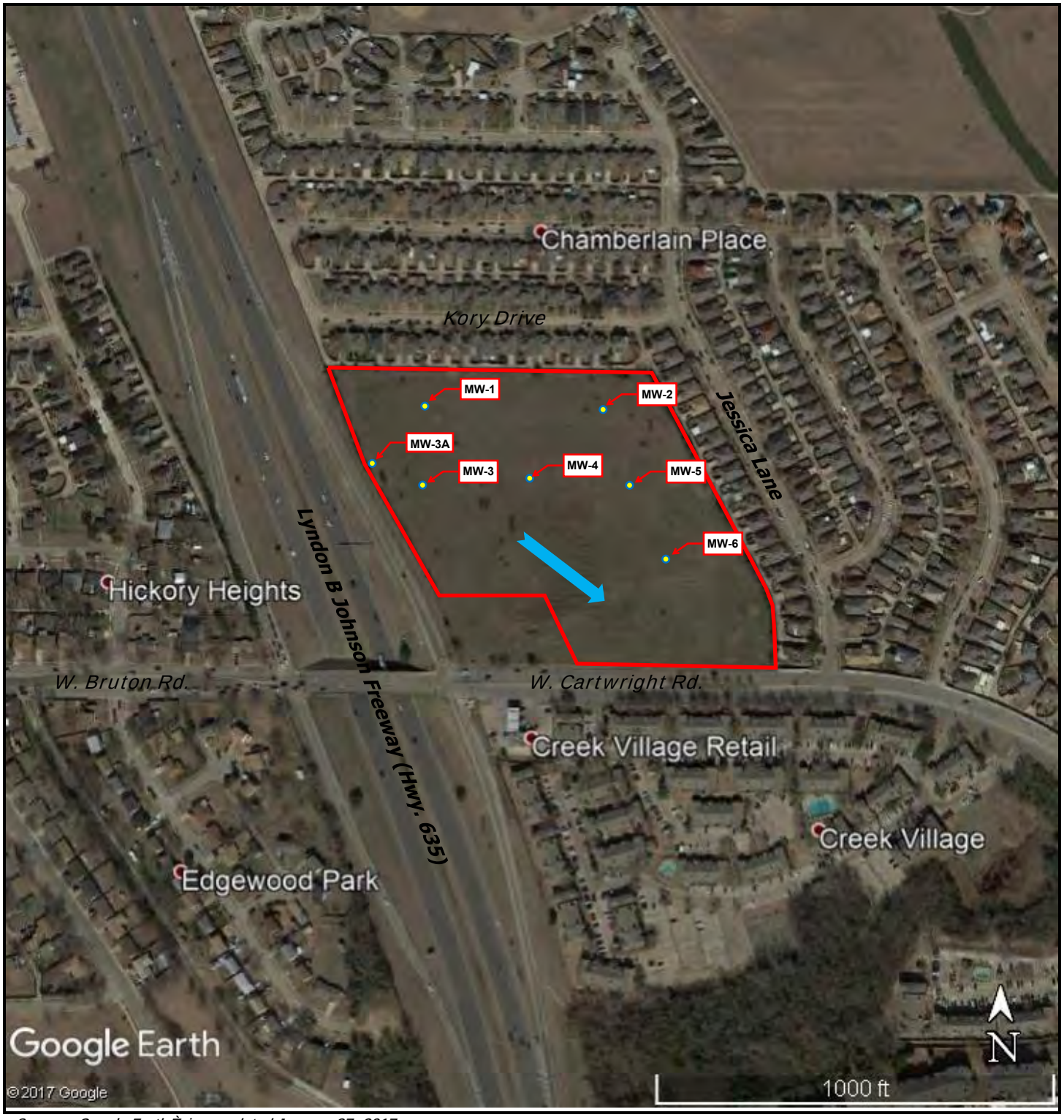
FARMER ENVIRONMENTAL GROUP



Source: Google Earth È image dated January 27, 2017

LEGEND
N
Approximate Subject Site Boundary
Inferred Groundwater Flow Direction

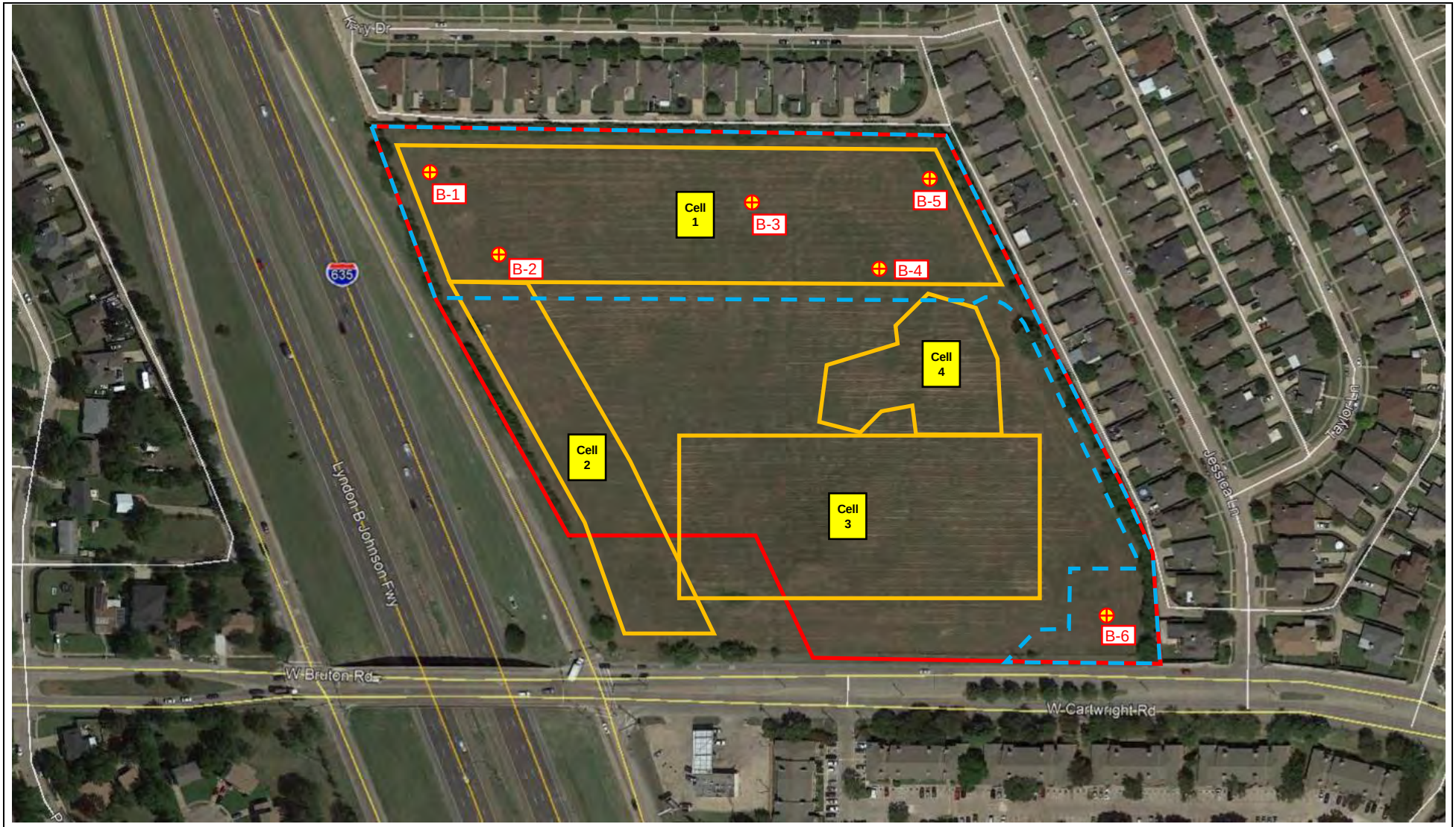
AERIAL SITE MAP - GENERAL	
15.175-Acre Undeveloped Property 23300 LBJ Freeway Mesquite, Dallas County, Texas 75149	
FIGURE 2 Project No: 4031.04	FARMER ENVIRONMENTAL GROUP



Source: Google Earth È image dated January 27, 2017

LEGEND
N
Approximate Subject Site Boundary
Inferred Groundwater Flow Direction
Existing Monitoring Well

AERIAL SITE MAP – MWs	
15.175-Acre Undeveloped Property 23300 LBJ Freeway Mesquite, Dallas County, Texas 75149	
FIGURE 3 Project No: 4031.04	FARMER ENVIRONMENTAL GROUP



Source: Google Earth® image dated September 6, 2017.

LEGEND

N

Approximate Subject Site Boundary

Approximate Development Area (Proposed)

Approximate Soil Boring Location

AERIAL SITE MAP – LANDFILL CELLS AND SOIL BORING LOCATIONS

15.175-Acre Undeveloped Property
23300 LBJ Freeway
Mesquite, Dallas County, Texas 75149

FIGURE 4
Project No.
4031.04

FARMER ENVIRONMENTAL GROUP

U.S. Fish and Wildlife Service
National Wetlands Inventory

October 9, 2017

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

FEMA's National Flood Hazard Layer (Official)

Data from Flood Insurance Rate Maps (FIRMs) where available digitally. New NFHL FIRMette Print app available: http://tinyurl.com/j4xwp5e

USGS The National Map: Orthoimagery | National Geospatial-Intelligence Agency (NGA); Delta State University; Esri | Print here instead: http://tinyurl.com/j4xwp5e Support: [redacted] | USGS The National Map: Orthoimagery

BORING LOG: B-1

Project:	*PRG Mesquite Landfill*	**Project No:**	*4031.04*
Location:	*NEC IH-635 @ Brutton Rd., Mesquite, TX*	**Date Drilled:**	*4/4/2018*
Engineer/Geologist:	*Roy King*	**Initial Water Level (ft.):**	*NA*
Drilling Method(s):	*SFA with Mobile Drill B42C*	**Final Water Level (ft.):**	*NA*

Well Depth (ft):	*NA*	**Hole Depth (ft.):**	*35*	**Hole Dia. (in.):**	*5.75*	
Screen Length (ft.):	*NA*	**Screen Dia. (in.):**	*NA*	**Slot Size (in.):**	*NA*	*LOCATION: Far NWC of Site*
Casing Length (ft.):	*NA*	**Casing Dia. (in.):**	*NA*	**Type:**	*NA*	

Depth (Ft.)	Soil Sample	Sample Time	PID (ppm) Bag	PID (ppm) Direct	Sample Description	USCS Symbol	Soil Sample	Well Diagram	Remarks	DEPTH (Ft.)
			0.2	0	CLAY with Silt - Olive, High PI, stiff, moist with no odor	CH				
2			0.1	0		Cover				2
			0.3	0						
4			0.3	0						4
			0.1	0			Shelby			
6					SILTY CLAY - Md. PI, stiff, Sl. moist	Fill				6
					Large piece of charred lumber with decay odor at 4.5' & 9'					
8										8
			19.7	0.7						
10	**9'**	**0827**	2.3	0.3						**10**
					SILTY CLAY - Md. PI, stiff, Sl. Moist, becomes hard with depth	CL				
12						Native				12
				0			SS			
14			0.5	0						14
16										16
18										18
				0			SS			
20			1.0	0						**20**
22										22
				0			SS			
24			1.2	0						24
26										26
28										28
				0	SHALE - Dark gray, very hard, finely laminated, microcrystalline, Low PI, dry with	Shale	SS			
30			0.2	0	no odor					**30**
32										32
34										34
36					Terminate boring at 35' at 1045		SS			36
					No groundwater present in borehole					
38										38
40										**40**
42										42
44										44
46										46
48										48
50										**50**

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Riser
Screen
Bentonite

Sand
Grout
Formation Saturation

Initial Water Level
Water Level after 2 hours

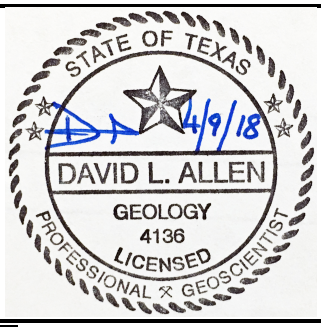
BORING LOG: B-2

Project:	*PRG Mesquite Landfill*	**Project No:**	*4031.04*
Location:	*NEC IH-635 @ Brutton Rd., Mesquite, TX*	**Date Drilled:**	*4/4/2018*
Engineer/Geologist:	*Roy King*	**Initial Water Level (ft.):**	*NA*
Drilling Method(s):	*SFA with Mobile Drill B42C*	**Final Water Level (ft.):**	*NA*

Well Depth (ft):	*NA*	**Hole Depth (ft.):**	*40*	**Hole Dia. (in.):**	*5.75*
Screen Length (ft.):	*NA*	**Screen Dia. (in.):**	*NA*	**Slot Size (in.):**	*NA*
Casing Length (ft.):	*NA*	**Casing Dia. (in.):**	*NA*	**Type:**	*NA*

LOCATION: Far NWC of Site, S. of B1

Depth (Ft.)	Soil Sample	Sample Time	PID (ppm) Bag	PID (ppm) Direct	Sample Description	USCS Symbol	Soil Sample	Well Diagram	Remarks	DEPTH (Ft.)
			0.3	0.1	SILTY CLAY LOAM - Med. Yel. brown, soft-stiff, Md. PI, Sl. moist w/ no odor	OH				
2	2'	1200	0.1	0	CLAY - Dark gray to black, Md. stiff-stiff, High PI with glass & plastic fragments	Top Fill				2
			0.1	0	at 2', Sl. moist w/ no odor					
4			1.7	0.3		CH				4
			0	0	CLAY - Yel.-Brown, stiff, moist		Shelby			
6			0.1	0						6
			0.3	0.1						
8			0.1	0						8
		1201	0.1	0						
10			0.1	0						10
12										12
14				0	SILTY CLAY - Grayish brown, stiff, Md. - Low PI, Sl. moist, and shaley at 13.5'	CL Native	SS			14
			0	0						
16										16
18										18
				0			SS			
20			0	0						20
					SILTY CLAY - Dark gray, stiff, Low PI, Sl. Moist w/ weathered lamina					
22										22
24				0			SS			24
			0	0						
26										26
28										28
				0			SS			
30			0	0						30
32										32
34				0			SS			34
			0	0						
36					SHALE - Dark gray, very hard, finely laminated, microcrystalline, dry with no odor	Shale				36
38										38
40										40
				0	Terminate boring at 40' at 1350		SS			
42			0	0	No groundwater present in boring					42
44										44
46										46
48										48
50										50



Riser
Screen
Bentonite

Sand
Grout
Formation Saturation

Initial Water Level
Water Level after 2 hours

BORING LOG: B-3

Project:	*PRG Mesquite Landfill*	**Project No:**	*4031.04*
Location:	*NEC IH-635 @ Brutton Rd., Mesquite, TX*	**Date Drilled:**	*4/4/2018*
Engineer/Geologist:	*Roy King*	**Initial Water Level (ft.):**	*34*
Drilling Method(s):	*SFA with Mobile Drill B42C*	**Final Water Level (ft.):**	*29.14*

Well Depth (ft):	*NA*	**Hole Depth (ft.):**	*40*	**Hole Dia. (in.):**	*5.75*	
Screen Length (ft.):	*NA*	**Screen Dia. (in.):**	*NA*	**Slot Size (in.):**	*NA*	*LOCATION: North-Central, East of B2*
Casing Length (ft.):	*NA*	**Casing Dia. (in.):**	*NA*	**Type:**	*NA*	

Depth (Ft.)	Soil Sample	Sample Time	PID (ppm) Bag	PID (ppm) Direct	Sample Description	USCS Symbol	Soil Sample	Well Diagram	Remarks	DEPTH (Ft.)
		1405	0	0	CLAY - Medium yellowish brown, stiff, High PI, Sl. moist with no odor	CH				
2			0	0		Cover				2
			0	0						
4		1415	0	0			Shelby			4
			0	0						
6			0	0		Fill				6
			0	0		CL				
8			0.3	0	7-8.5' TRASH - miscellaneous plastic and wood debris					8
			0.1	0	CLAY - As above, soft with miscellaneous plastic debris throughout					
10			0	0						10
12										12
14				0			SS			14
			0	0						
16										16
18										18
				0.1			SS			
20	20'	1502	9.5	0.7						20
22										22
24				0			SS			24
				0	CLAY - Brown mottled fill, no trash @ 24', Md. stiff, Md. PI, moist	Fill				
26						CL				26
28										28
		1538		0			SS			
30			2.4	0.1						30
32										32
34				0.1			SS			34
		1552	2.2	0.3	CLAY, as above, water standing in borehole at 34'					
36										36
38										38
				0			SS			
40			0.9	0						40
					SHALE - Dark gray, v. hard, finely laminated, microcrystalline, dry w/ no odor	Shale				
42						Native				42
44				0			SS			44
			0	0						
46					Terminate boring at 45' at 1730					46
48										48
50										50

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Initial Water Level
Water Level after 2 hours

BORING LOG: B-4

Project:	*PRG Mesquite Landfill*	**Project No:**	*4031.04*
Location:	*NEC IH-635 @ Brutton Rd., Mesquite, TX*	**Date Drilled:**	*4/5/2018*
Engineer/Geologist:	*Roy King*	**Initial Water Level (ft.):**	*NA*
Drilling Method(s):	*SFA with Mobile Drill B42C*	**Final Water Level (ft.):**	*NA*

Well Depth (ft):	*NA*	**Hole Depth (ft.):**	*30*	**Hole Dia. (in.):**	*5.75*
Screen Length (ft.):	*NA*	**Screen Dia. (in.):**	*NA*	**Slot Size (in.):**	*NA*
Casing Length (ft.):	*NA*	**Casing Dia. (in.):**	*NA*	**Type:**	*NA*

LOCATION: SE of B-3

Depth (Ft.)	Soil Sample	Sample Time	PID (ppm) Bag	PID (ppm) Direct	Sample Description	USCS Symbol	Soil Sample	Well Diagram	Remarks	Depth (Ft.)
0			0	0	CLAY, some Silt - Medium yellowish brown, stiff to soft, High PI, moist with no odor	CH Cover				0
2			0	0						2
			0	0						
4			0	0						4
	4'	0811	0	0	SILTY CLAY - Grayish brown, stiff, Md. - Low PI, Sl. Moist		Shelby			
6			0	0		CL Native				6
			0	0						
8			0	0						8
			0	0						
10			0	0						10
12										12
14				0			SS			14
			0	0						
16										16
18										18
				0			SS			
20			0	0						20
22										22
24				0			SS			24
			0	0						
26					SHALE - Gray, very hard and dense with 1-3mm laminations, dry with no odors	Shale				26
28										28
30										30
				0	Terminate boring at 30' at 0930		SS			
32			0	0	No groundwater present in borehole					32
34										34
36										36
38										38
40										40
42										42
44										44
46										46
48										48
50										50

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Formation Saturation

Initial Water Level
Water Level after 2 hours

BORING LOG: B-5

Project:	*PRG Mesquite Landfill*	**Project No:**	*4031.04*
Location:	*NEC IH-635 @ Brutton Rd., Mesquite, TX*	**Date Drilled:**	*4/5/2018*
Engineer/Geologist:	*Roy King*	**Initial Water Level (ft.):**	*NA*
Drilling Method(s):	*SFA with Mobile Drill B42C*	**Final Water Level (ft.):**	*NA*

Well Depth (ft):	*NA*	**Hole Depth (ft.):**	*30*	**Hole Dia. (in.):**	*5.75*
Screen Length (ft.):	*NA*	**Screen Dia. (in.):**	*NA*	**Slot Size (in.):**	*NA*
Casing Length (ft.):	*NA*	**Casing Dia. (in.):**	*NA*	**Type:**	*NA*

LOCATION: Far NEC of Site

Depth (Ft.)	Soil Sample	Sample Time	PID (ppm) Bag	PID (ppm) Direct	Sample Description	USCS Symbol	Soil Sample	Well Diagram	Remarks	Depth (Ft.)
			0	0	CLAY, some Silt - Medium yellowish brown, stiff to soft, High PI, moist with no odor	CH				
2			0	0		Cover				2
			0	0						
4			0	0						4
			0	0			Shelby			
6			0	0						6
			0	0	Clay seam (6") with Gravel & Silty parting at 6'	Fill				
8			0	0						8
	8-8.5'	**1005**	0.6	0	Wood, Concrete & Plastic debris 8-8.5'					
10			0.2	0		CL				**10**
					CLAY with Silt, Mottled brown, Md. stiff, Md.- Low PI, moist	Native				
12										12
				0						
14							SS			14
		1010	0	0						
16					SHALE - Tan, weathered and hard	Shale				16
18										18
				0			SS			
20			0	0	SHALE - Dark gray, hard, microcrystalline with 1-3mm laminations					**20**
22										22
				0			SS			
24										24
			0	0						
26					SHALE - Gray, very hard and dense with 1-3mm laminations, dry with no odor					26
28										28
30										**30**
				0	Terminate boring at 30' at 1120		SS			
32			0	0	No groundwater present in borehole					32
34										34
36										36
38										38
40										**40**
42										42
44										44
46										46
48										48
50										**50**

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Formation Saturation

Initial Water Level
Water Level after 2 hours

BORING LOG: B-6

Project:	*PRG Mesquite Landfill*	**Project No:**	*4031.04*
Location:	*NEC IH-635 @ Brutton Rd., Mesquite, TX*	**Date Drilled:**	*4/5/2018*
Engineer/Geologist:	*Roy King*	**Initial Water Level (ft.):**	*12*
Drilling Method(s):	*SFA with Mobile Drill B42C*	**Final Water Level (ft.):**	*11*

Well Depth (ft):	*NA*	**Hole Depth (ft.):**	*30*	**Hole Dia. (in.):**	*5.75*
Screen Length (ft.):	*NA*	**Screen Dia. (in.):**	*NA*	**Slot Size (in.):**	*NA*
Casing Length (ft.):	*NA*	**Casing Dia. (in.):**	*NA*	**Type:**	*NA*

LOCATION: SWC of Site

Depth (Ft.)	Soil Sample	Sample Time	PID (ppm) Bag	PID (ppm) Direct	Sample Description	USCS Symbol	Soil Sample	Well Diagram	Remarks	Depth (Ft.)
		1239	0	0	0-1.5' SILTY CLAY LOAM - Medium grayish brown, stiff, High PI, Sl. moist with no odors	OH Native				
2			0	0						2
			0	0	1.5-8' SILTY CLAY - Medium yellowish brown, stiff, Md. - Low PI, Sl. moist, with calcareous silt partings and pockets (10-15%)	CL				
4			0	0						4
			0	0			Shelby			
6			0	0						6
			0	0						
8			0	0						8
		1250	0	0	8-12' CLAY/SILT/SAND - Orangish brown and greenish gray, equal portions,	SC				
10			0	0	Sand is very fine, subrounded, well sorted and uncemented, Md. dense, slightly moist with no odor					10
						SP			▽	
12					10-12' SAND - Orangish brown with greenish gray mottle, poorly graded medium-fine, subrounded, Md. dense, damp becoming wet at 11' with no odor					12
14				0			SS			14
			0	0	12-19' SAND - Medium orangish brown with trace greenish gray streaks, poorly					
16					sorted medium-fine grain, subrounded with trace of fine (2-3mm), rounded quartz gravel from 13-15', saturated with no odor					16
18										18
				0			SS			
20		1330	1.0	0	19-25' SHALE - Dark gray, no lamina, stiff, dry with no odor	Shale				20
22										22
24				0			SS			24
			0	0						
26					SHALE - Gray, very hard and dense with 1-3mm laminations, dry with no odor					26
28										28
30										30
				0	Terminate boring at 30' at 1500		SS			
32			0	0	No soil sample submitted for laboratory analysis					32
34										34
36										36
38										38
40										40
42										42
44										44
46										46
48										48
50										50

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Formation Saturation

▽ Initial Water Level
▽ Water Level after 2 hours

TABLE 1
LANDFILL VAPOR MONITORING RESULTS
Mesquite Landfill Geotechnical Assessment
23300 LBJ Freeway, Mesquite, Dallas County, Texas

Location	Bore Depth	Time	CH4 (%)	CO_2 (%)	O_2 (%)	CO (ppm)	H_2S (ppm)	Balance (%)	Observations
B-1	5	08:10	0	0	21.5	0	0	78.5	Sample Date – 04/04/2018
	9	08:27	0	0.2	21.2	0	4	78.4	
	20	09:30	0	0.1	21.5	0	0	78.5	
	25	09:50	0	0	21.5	0	0.1	78.4	
	30	10:15	0	0	21.5	0	0	78.5	
	35	10:45	0	0.1	21.6	0	01	78.5	
B-2	5	12:11	0.1	0.1	21.8	0	0	78.1	
	25	13:00	0	0	21.6	0	0	78.4	
	30	13:10	0	0.1	21.5	0	0	78.4	
	35	13:30	0	0	21.6	0	0	78.4	
	40	13:50	0	0	21.7	0	0.1	78.3	
B-3	0	14:05	0	0	21.7	0	0.1	78.3	
	4	14:15	0	0	21.6	0	0	78.4	
	15	--	0	0.1	21.8	0	0	78.2	
	20	15:02	0	0.1	21.7	0	0	78.2	
	25	--	0	0	21.7	0	0.1	78.2	
	30	15:38	0	0	21.9	0	0.1	78.2	
	35	15:52	0	0	22.0	0	0	77.9	
	40	17:30	15.9	2.5	16.4	209	0	65.1	alcohol odor
Background	--	08:00	0	0.1	21.9	0	0	78.4	Sample Date – 04/05/2018
B-4	0	08:10	0	0	21.7	0	0	78.4	
	10	08:12	0	0.1	21.3	0	0	78.5	
	14	08:15	0	0	21.6	0	1	78.2	
	--	08:30	0	0.1	21.7	0	0	78.4	
	20	--	0	0	21.6	0	0	77.7	
	25	--	0	0	21.6	0	0	78.3	
	30	--	0	0.1	21.7	0	0	78.3	
	31	09:30	0.2	0.1	21.9	0	0	78.1	
B-5	0	09:45	0	0.1	22.0	0	0	78.0	
	15	10:10	0	0.1	21.8	0	0	77.9	
	20	--	0	0.2	21.8	0	0	78.2	
	25	--	0	0.1	21.8	0	0	78.1	
	30	11:20	0	0.1	21.8	0	0	78.2	
B-6	10	12:50	0	0.1	21.8	0	0	78.8	
	20	13:03	0	0.1	21.9	0	1	79.1	
B-3	29.14	08:35	2.5	0.4	20.9	0	0	76.3	open bore to water @ 29.14' BGS
Vapor Limits									
LEL 100%			5.0	N/C	-	-	40,000	125,000	
LEL 25%			1.25	N/C	-	-	10,000	31,250	
UEL			15.0	N/C	-	-	-	-	
O_2 – Oxygen Deficiency			-	-	19.5	-	-	-	
O_2 – Flammability Hazard			-	-	23.5	-	-	-	
TLV/TWA (ppm)			A	5,000	-	-	10	25	
IDLH (ppm)			A	40,000	-	-	100	1,200	

LEL- Lower Explosive Limit
UEL – Upper Explosive Limit
N/C – Non-Combustible
ppm – Parts Per Million
TLV/TWA – Threshold Limit Value/Time Weighted Average
IDLH – Immediately Dangerous to Life or Health
A - Asphyxiant

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
Mesquite Landfill Geotechnical Assessment
23300 LBJ Freeway, Mesquite, Dallas County, Texas

Parameter	Soil Sample Reported Concentration (ppm)					Regulatory Limits TCEQ TRRP Tier 1 PCLs (ppm)	
TPH	B-1@9'	B-2@ 2'	B-3@20'	B-4@4'	B-5@8-8.5'	RAL	C/I >5-30 acre
C6 – C12	<68.5	<56.8	<84.1	<57.7	<64.6	65 $^{GW}Soil_{Ing}$	97 $^{GW}Soil_{Ing}$
>C12 – C28	**297**	<56.8	<84.1	<57.7	<64.6	200 $^{GW}Soil_{Ing}$	300 $^{GW}Soil_{Ing}$
>C28 – C35	<68.5	<56.8	116	<57.7	<64.6	200 $^{GW}Soil_{Ing}$	300 $^{GW}Soil_{Ing}$
VOCs*	B-1@9'	B-2@ 2'	B-3@20'	B-4@4'	B-5@8-8.5'	RAL	C/I >5-30 acre
sec-Butylbenzene	0.00766	<0.00126	0.00606	<0.00131	<0.00132	85 $^{GW}Soil_{Ing}$	130 $^{GW}Soil_{Ing}$
tert-Butylbenzene	0.00290	<0.00131	<0.00140	<0.00137	<0.00138	100 $^{GW}Soil_{Ing}$	150 $^{GW}Soil_{Ing}$
Chlorobenzene	0.00330	<0.00106	0.00401	<0.00110	0.00250	1.1 $^{GW}Soil_{Ing}$	0.55 $^{GW}Soil_{Ing}$
1,4-Dichlorobenzene	0.00886	<0.00157	0.00742	<0.00164	0.0132	2.1 $^{GW}Soil_{Ing}$	1.1 $^{GW}Soil_{Ing}$
Ethylbenzene	0.00377	<0.00156	<0.00167	<0.00163	<0.00164	7.6 $^{GW}Soil_{Ing}$	3.8 $^{GW}Soil_{Ing}$
Isopropylbenzene	0.00840	<0.00125	0.00251	<0.00130	<0.00131	350 $^{GW}Soil_{Ing}$	520 $^{GW}Soil_{Ing}$
2-Butanone	0.0172	<0.0151	<0.0162	<0.0158	<0.0159	290 $^{GW}Soil_{Ing}$	44 $^{GW}Soil_{Ing}$
Naphthalene	30.3	0.0980	0.00970	<0.00898	<0.00905	31 $^{GW}Soil_{Ing}$	47 $^{GW}Soil_{Ing}$
n-Propylbenzene	0.00496	<0.00145	0.00164	<0.00152	<0.00153	45 $^{GW}Soil_{Ing}$	67 $^{GW}Soil_{Ing}$
1,1,2,2-Tetrachloroethane	<0.000940	<0.000890	0.00651	<0.000797	<0.000937	30 $^{Tot}Soil_{Comb}$	0.26 $^{GW}Soil_{Ing}$
1,2,4-Trimethylbenzene	0.0345	<0.00117	<0.00126	<0.00123	<0.00124	49 $^{GW}Soil_{Ing}$	72 $^{GW}Soil_{Ing}$
1,2,3-Trimethylbenzene	0.0280	<0.00157	<0.00168	<0.00164	<0.00166	32 $^{GW}Soil_{Ing}$	47 $^{GW}Soil_{Ing}$
1,3,5-Trimethylbenzene	0.0118	<0.00198	<0.00212	<0.00207	<0.00209	53 $^{GW}Soil_{Ing}$	79 $^{GW}Soil_{Ing}$
Xylenes	0.00880	<0.00579	<0.00619	<0.00604	<0.00609	120 $^{GW}Soil_{Ing}$	61 $^{GW}Soil_{Ing}$

Soil sample date – 04/04-05/2018. ppm (mg/Kg) - all results reported as parts per million.
Residential Assessment Level (RAL) TCEQ TRRP Tier 1 PCL – Table 1, Tier 1 Residential Soil PCLs– $^{GW}Soil_{Ing}$, soil concentration protective for the residential ingestion of Class 1 or Class 2 groundwater or, $^{Tot}Soil_{Comb}$, soil concentration protective for residential inhalation, ingestion, dermal, and vegetable consumption pathways, Revised March 31, 2017
Commercial / Industrial (C/I) TCEQ TRRP Tier 1 PCL – Table 2, Tier 1 Commercial/Industrial Soil PCLs - 30 acre source area $^{GW}Soil_{Ing}$
VOCs*- Only the VOC parameters detected in the soil assessment are presented in the table. The attached Analytical Report includes all 65 VOC parameters
Highlight – Concentration detected above the regulatory limit.

TABLE 2 (cont.)
SOIL SAMPLE ANALYTICAL RESULTS
Mesquite Landfill Geotechnical Assessment
23300 LBJ Freeway, Mesquite, Dallas County, Texas

Parameter	Soil Sample Reported Concentration (ppm)					Regulatory Limits TCEQ TRRP Tier 1 PCLs (ppm)	
SVOCs*	B-1@9'	B-2@ 2'	B-3@20'	B-4@4'	B-5@8-8.5'	RAL	C/I >5-30 acre
Acenaphthene	19.9	<0.0777	<0.00831	<0.00812	<0.00818	240 $^{GW}Soil_{Ing}$	350 $^{GW}Soil_{Ing}$
Acenaphthylene	4.48	<0.0812	<0.00869	<0.00848	<0.00855	410 $^{GW}Soil_{Ing}$	610 $^{GW}Soil_{Ing}$
Anthracene	20.7	<0.0765	<0.00818	<0.00799	<0.00806	6900 $^{GW}Soil_{Ing}$	10000 $^{GW}Soil_{Ing}$
Benzo(a)anthracene	**21.4**	<0.0518	<0.00554	<0.00541	<0.00546	5.7 $^{Tot}Soil_{Comb}$	20 $^{GW}Soil_{Ing}$
Benzo(b)fluoranthene	**40.8**	<0.0841	<0.00900	<0.00879	<0.00886	5.7 $^{Tot}Soil_{Comb}$	24 $^{Tot}Soil_{Comb}$
Benzo(k)fluoranthene	9.34	<0.0704	<0.00754	<0.00736	<0.00742	57 $^{Tot}Soil_{Comb}$	240 $^{Tot}Soil_{Comb}$
Benzo(g,h,i)perylene	7.22	<0.0873	<0.00934	<0.00912	<0.00919	1800 $^{Tot}Soil_{Comb}$	19000 $^{Tot}Soil_{Comb}$
Benzo(a)pyrene	**12.7**	<0.0663	<0.00710	<0.00693	<0.00698	7.6 $^{GW}Soil_{Ing}$	2.4 $^{Tot}Soil_{Comb}$
Chrysene	26.4	<0.0672	<0.00719	<0.00702	<0.00707	560 $^{Tot}Soil_{Comb}$	1700 $^{Tot}Soil_{Comb}$
Dibenz(a,h)anthracene	2.34	<0.0994	<0.0106	<0.0104	<0.0105	15 $^{GW}Soil_{Ing}$	2.4 $^{Tot}Soil_{Comb}$
Fluoranthene	77.2	<0.0600	0.0105	<0.00627	<0.00632	1900 $^{GW}Soil_{Ing}$	2900 $^{GW}Soil_{Ing}$
Fluorene	70.6	<0.0825	<0.00883	<0.00862	<0.00869	300 $^{GW}Soil_{Ing}$	450 $^{GW}Soil_{Ing}$
Indeno(1,2,3-cd)pyrene	**7.81**	<0.0934	<0.0100	<0.00976	<0.00984	5.7 $^{Tot}Soil_{Comb}$	24 $^{Tot}Soil_{Comb}$
Naphthalene	**57.7**	<0.108	0.0163	0.0118	<0.0113	31 $^{GW}Soil_{Ing}$	47 $^{GW}Soil_{Ing}$
Phenanthrene	135	<0.0639	0.00862	<0.00668	<0.00673	420 $^{GW}Soil_{Ing}$	620 $^{GW}Soil_{Ing}$
Bis(2-ethylhexyl)phthalate	4.64	<0.145	0.0511	<0.0152	0.0568	43 $^{Tot}Soil_{Comb}$	82 $^{GW}Soil_{Ing}$
di-n-Octyl Phthalate	<0.580	0.631	0.0260	<0.0115	<0.0116	640 $^{Tot}Soil_{Comb}$	6800 $^{Tot}Soil_{Comb}$
Pyrene	49.7	<0.149	<0.0159	<0.0156	<0.0112	1100 $^{GW}Soil_{Ing}$	1700 $^{GW}Soil_{Ing}$

Soil sample date – 04/04-05/2018. ppm (mg/Kg) - all results reported as parts per million.
Residential Assessment Level (RAL) TCEQ TRRP Tier 1 PCL – Table 1, Tier 1 Residential Soil PCLs– $^{GW}Soil_{Ing}$, soil concentration protective for the residential ingestion of Class 1 or Class 2 groundwater or, $^{Tot}Soil_{Comb}$, soil concentration protective for residential inhalation, ingestion, dermal, and vegetable consumption pathways, Revised March 31, 2017
Commercial / Industrial (C/I) TCEQ TRRP Tier 1 PCL – Table 2, Tier 1 Commercial/Industrial Soil PCLs - 30 acre source area $^{GW}Soil_{Ing}$ or $^{Tot}Soil_{Comb}$
SVOCs*- Only the SVOC parameters detected in the soil assessment are presented in the table. The attached Analytical Report includes all 53 SVOCs
Highlight – Concentration detected above the regulatory limit.

TABLE 2 (cont.)
SOIL SAMPLE ANALYTICAL RESULTS
Mesquite Landfill Geotechnical Assessment
23300 LBJ Freeway, Mesquite, Dallas County, Texas

Parameter	Soil Sample Reported Concentration (ppm)					Regulatory Limits TCEQ TRRP Tier 1 PCLs (ppm)	
PCBs	B-1@9'	B-2@ 2'	B-3@20'	B-4@4'	B-5@8-8.5'	RAL	CI >5-30 acre
PCB-1016	<0.00448	<0.00424	<0.00454	<0.00443	<0.00447	1.1 $^{Tot}Soil_{Comb}$	5.3 $^{GW}Soil_{Ing}$
PCB-1221	<0.00687	<0.00650	<0.00695	<0.00679	<0.00684	1.1 $^{Tot}Soil_{Comb}$	5.3 $^{GW}Soil_{Ing}$
PCB-1232	<0.00533	<0.00504	<0.00540	<0.00527	<0.00531	1.1 $^{Tot}Soil_{Comb}$	5.3 $^{GW}Soil_{Ing}$
PCB-1242	<0.00406	<0.00384	<0.00411	<0.00402	<0.00405	1.1 $^{Tot}Soil_{Comb}$	5.3 $^{GW}Soil_{Ing}$
PCB-1248	<0.00403	<0.00381	<0.00408	<0.00398	<0.00401	1.1 $^{Tot}Soil_{Comb}$	5.3 $^{GW}Soil_{Ing}$
PCB-1254	<0.00604	<0.00572	0.0128	<0.00597	0.0365	1.1 $^{Tot}Soil_{Comb}$	5.3 $^{GW}Soil_{Ing}$
PCB-1260	<0.00632	<0.00598	<0.00640	<0.00625	<0.00630	1.1 $^{Tot}Soil_{Comb}$	5.3 $^{GW}Soil_{Ing}$
Metals	B-1@9'	B-2@ 2'	B-3@20'	B-4@4'	B-5@8-8.5'	RAL	CI >5-30 acre
Arsenic	5.42	**9.67**	**7.04**	**6.23**	**10.1**	5.9 TSSBC	5.9 TSSBC
Barium	118	312	141	84.9	85.6	440 $^{GW}Soil_{Ing}$	300 TSSBC
Cadmium	0.213	0.336	0.135	0.124	**2.31**	1.5 $^{GW}Soil_{Ing}$	0.75 $^{GW}Soil_{Ing}$
Chromium (Total)	34.1	34.6	32.5	27.8	43.1	2400 $^{GW}Soil_{Ing}$	1200 $^{GW}Soil_{Ing}$
Lead	**24.2**	**488**	**40.3**	14.5	**513**	15 TSSBC	15 TSSBC
Selenium	<0.947	<0.896	<0.958	<0.936	<0.943	2.3 $^{GW}Soil_{Ing}$	1.1 $^{GW}Soil_{Ing}$
Silver	<0.358	<0.339	<0.363	<0.354	<0.357	0.48 $^{GW}Soil_{Ing}$	0.71 $^{GW}Soil_{Ing}$
Mercury	0.0386	0.0440	0.173	0.0332	0.0898	2.1 $^{GW}Soil_{Ing}$	1.0 $^{GW}Soil_{Ing}$

Soil sample date – 04/04-05/2018. ppm (mg/Kg) - all results reported as parts per million.
TCEQ TRRP Tier 1 PCL – Table 1, Tier 1 Residential Soil PCLs – $^{GW}Soil_{Ing}$, soil concentration protective for the residential ingestion of Class 1 or Class 2 groundwater or, $^{Tot}Soil_{Comb}$, soil concentration protective for residential inhalation, ingestion, dermal, and vegetable consumption pathways, Revised March 31, 2017
Commercial / Industrial (C/I) TCEQ TRRP Tier 1 PCL – Table 2, Tier 1 Commercial/Industrial Soil PCLs - 30 acre source area $^{GW}Soil_{Ing}$ or $^{Tot}Soil_{Comb}$
TSSBC – TCEQ TRRP Texas-Specific Soil Background Concentration
Highlight – Concentration detected above the regulatory limit.

ATTACHMENT 10C
GEOTECHNICAL INVESTIGATION

HENLEY | JOHNSTON
& ASSOCIATES

geotechnical and construction materials consultants

May 25, 2018
Report No. 18413G - REVISED

Project Services Group
2040 Century Center Blvd. #10
Irving, Texas 75062
ATTN: Mr. Daniel Boswell
Phone: 972-812-7370
Email: [redacted]

RE: Geotechnical Investigation
Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

Mr. Boswell:

Presented herein is the report of a geotechnical investigation conducted by Henley-Johnston & Associates, Inc. for the above referenced project.

We appreciate the opportunity to provide this report to you. If we can be of further service or if you desire any additional information, please do not hesitate to call.

Signed,
HENLEY-JOHNSTON & Associates, Inc.

Jordan Scoville, E.I.T.
Project Manager

James F. Phipps, P.E.
Vice President

STATE OF TEXAS
JAMES F. PHIPPS
84778
LICENSED
PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by James F. Phipps, P.E. 84778 on May 25, 2018.

Firm Registration No.: F-1238

Copies submitted (1) Project Services Group – Mr. Daniel Boswell

INDEX

INVESTIGATION AND ANALYSIS

Introduction

This report presents the results of a subsurface investigation performed for a proposed 7-acre self-storage facility, associated parking garage, and facility manager's residence to be located at the northeast corner of IH-635 and Cartwright Road in Mesquite, Texas.

It is understood that the property was once used as an unlicensed municipal landfill. It is anticipated that foundations will consist of soil-supported shallow foundations while site paving will consist of both asphalt pavement and a concrete drive.

The purpose of this investigation was to evaluate subsurface conditions and provide recommendations for design and construction of the foundations, paving sections, and earthwork criteria.

This report is specific to this site. Persons using the recommendations herein for projects and/or designs not covered by this report do so at their own risk.

Field Investigation

The field investigation at this site consisted of drilling six soil borings. Five soil borings were conducted for the proposed structures (Boring Nos. 1 through 5), and the remaining boring was conducted in the area of the facility manager's residence (Boring No. 6). Borings were advanced to depths of 30 to 40 feet below the existing ground surface (April 2018).

All borings were accomplished by means of a truck-mounted rotary drilling rig equipped with continuous flight augers, which utilized dry sampling techniques to advance the borings through the overburden soils and the shale strata of the Upper Cretaceous Ozan Formation. Borings were drilled by a Henley-Johnston & Associates, Inc., drill crew. These locations were identified in the field by a member of a Henley-Johnston & Associates, Inc. drill crew referencing from existing landmarks. The locations should be considered accurate only to the degree implied by the methods used.

Samples of cohesive soils and weathered shale encountered in the borings were obtained by means of a thin-walled, seamless, Shelby-tube sampler advanced into the formation by a rapid, continuous thrust from a hydraulic ram on the drilling rig in general accordance with ASTM D-1587. Samples of granular soils, fill materials, and weathered shale were obtained and evaluated in-situ utilizing procedures of the Standard Penetration Test (ASTM D-1586). This sampling technique employs a 140-pound hammer, dropped 30 inches, to drive a 2-inch O.D. split-barrel sampler into the soil. The sampler initially is seated six inches and then driven in two additional six-inch increments while recording the number of blows for each increment. The total number of blows for the last two six-inch increments, the "N" value, is recorded on the accompanying Boring Log illustrations. Refusal is defined as 50 blows for any one increment with 6 inches or less advancement of the sampler, 100 total blows or 10 blows with no advancement of the sampler.

Portions of the shale strata were also evaluated in-situ using the TxDOT Cone Penetration Test (Tex-E-132E). In this test a tapered metal cone is driven into the rock using a 170-pound weight, dropped

a distance of 24 inches by a hydraulically driven chain. The cone is initially seated using 12 successive blows and the drill pipe marked to provide a reference to measure from. The weight is dropped for an initial set of 50 blows and the amount of penetration is recorded. A second increment of 50 blows is then done and the corresponding penetration is again recorded. The total amount of penetration is used to empirically evaluate the bearing capacity of the rock.

Water levels were observed during drilling and upon completion of each boring. Water levels observed during drilling are noted on the "Log of Boring" illustrations.

All soil samples obtained from the borings were encased in polyethylene plastic to prevent changes in moisture content and to preserve in situ physical properties. The samples were classified as to basic type and texture, labeled as to appropriate boring number and depth and placed in boxes for transport to the laboratory.

Laboratory Testing

All soil samples were classified in accordance with the Unified Soil Classification System. Samples of primary materials were described using standard geologic nomenclature. Terms and symbols used on the boring logs are described on the enclosed sheet entitled "Legend, Lithology, Soil Consistency & Relative Rock Hardness."

To aid in the classification process, Atterberg Limits, partial gradations (percent passing no. 200 sieve), and moisture content determinations were performed on representative samples. All of the above test data are summarized on Plates 2 through 4.

The potential for heave was evaluated using Free-Swell tests. This test involves placing a 1-inch thick sample of soil in a 2.5-inch ID confining ring into a consolidation machine and adding weight equal to the load imposed by the overburden soils at the sample depth. The soil is then inundated with water and allowed to swell freely until movement has stopped. Results of these tests are summarized on Plate 4.

The potential for heave was also evaluated using the Absorption Pressure-Swell test. This test involves placing a 1-inch thick sample of soil in a 2.5-inch ID confining ring into a consolidation machine and inundating it with water. Weight is added in appropriate increments to maintain the original height and volume of the sample. Once the sample has "balanced", the weight is reduced to approximately 200 psf and the soil allowed to swell. Results of these tests are summarized on Plate 4.

The strength of each cohesive sample was estimated using a hand penetrometer. The results of these estimates are recorded graphically on the "Log of Boring" illustrations. The strength properties of selected soil samples were investigated by Unconfined Compression tests. In the Unconfined Compression test, axial load is applied to a laterally unsupported cylindrical sample until failure occurs within the sample. This test is conducted fairly rapidly (failure within about 10 minutes) and generally conforms to ASTM D-2166 for soil samples. Results of the Unconfined Compression tests performed are summarized on Plate 4.

Site Physiography

At the time of the field investigation the property was open and undeveloped. The project site was bounded by IH-635 to the east, Cartwright Road to the south, and by a single-family residential subdivision to the north and to the east.

Geology and Stratigraphy

The specific type, depth and thickness of materials penetrated by the borings are reflected on the individual "Log of Boring" illustrations, which follow the illustrations for this report.

Site Geology

The site is located within fill materials associated with the existing landfill and clay soils over weathered and unweathered shale and the Upper Cretaceous Ozan formation.

At the surface of Boring Nos. 1 through 3, 5, and 6, fill materials were encountered. These fill materials consisted of light brown to dark brown clay soils that were highly plastic (CH), contained varying amounts of gravel, shale fragments, plastic, concrete, glass, and metal debris. These fill materials continued to depths of 1 to 33-1/2 feet below existing grades.

Residual clay soils were present below the fill materials in Boring Nos. 1 and 2, and at the surface of Boring No. 4. These clays were highly plastic (CH), ranged from dark brown to light brown in appearance, contained varying amounts of gravel and plant roots, and continued to depths of 2 to 23-1/2 feet below existing grades.

Sandy clay soils were present below the fill materials in Boring No. 6. These sandy clays soils were moderately plastic (CL), light brown in appearance, contained varying amounts of calcareous deposits, and continued to a depth of 10 feet below existing grade, where they were underlain by an alluvial deposit of sand. This sand was light brown in appearance, nonplastic, fine- to coarse-grained, contained varying amounts of gravel, and continued to a depth of 18 feet below existing grade.

Weathered to slightly weathered shale was present below the clay soils in Boring Nos. 1, 2, and 4, and below the sand in Boring No. 6. This weathered shale was light brown, light gray, and gray in appearance, laminated and calcareous in nature, soft (rock hardness classification), contained varying amounts of iron staining, and continued to depths of 24 to 38 feet below existing grades. The weathered shale possessed the engineering properties of CH clay, as noted in the laboratory summary. It should be noted that Boring No. 6 terminated within the weathered shale at a depth of 30 feet below existing grade.

Unweathered shale was present below the weathered shale in Boring Nos. 1 through 4, and below the fill materials in Boring No. 5. This unweathered shale was laminated and calcareous in nature, firm, gray in appearance, and extended through the termination depths in these borings.

Ground Water

Ground water was observed to be present in Boring No. 6 during the field investigation at a depth of 12 feet below existing grade, and at a depth of 17 feet below existing grade at the completion of drilling operations. The presence and depth to ground water will change with seasonal rainfall.

When present, ground water will perch above the unweathered shale, migrating through the cracks and fissures of the overlying soils and weathered rock.

Seismic Design Criteria

Based on the materials encountered within the borings and the geologic setting, this site may be classified as Seismic Class C according to the 2015 International Building Code and ASCE 7-10.

Potential Vertical Movement Analysis

Subsurface conditions at the site are comprised of clay soils and weathered shale. Potential Vertical Movements (PVM) related to soil at this site will be a combination of seasonal movements within the upper clays, and heave within the weathered shale.

It should be noted that the amount of trash encountered in the borings was relatively low compared to previous investigations in municipal landfills. As such, only minor amounts of settlement should be anticipated as the debris decomposes. The majority of movement will be manifested as heave as the clays and weathered shale absorb moisture and swell.

For clay soils, movements are associated with changes in seasonal moisture conditions. After periods of rain, the clays expand resulting in heave of overlying elements. During dry seasons, these soils shrink resulting in settlement of ground-supported features. In weathered shale, movements are associated with an increase in subsurface moisture after construction of the foundation. These movements are manifested as a gradual and sustained heave of the foundation.

Potential Vertical Movements (PVM) were evaluated using TxDOT Method 124E[1] and results of the swell tests. Based on this analysis, total soil movements from a dry to saturated state are anticipated to be on the order of 6 to 7 inches in the area of the storage structures, and 3 to 3-1/2 inches in the area of the proposed facility manager's residence. Both of these estimates are considering that less than 2 feet of fill is placed below the foundation under controlled conditions as outlined in the **Earthwork Recommendations** section.

If the foundation were to be constructed over a dry subgrade and/or the subgrade soils were given unlimited access to moisture, such as from leaking irrigation or utility lines, greater amounts of movement should be anticipated.

DESIGN AND CONSTRUCTION RECOMMENDATIONS

Introduction

It is anticipated that shallow foundations consisting of soil-supported slabs coupled with a perimeter, monolithic grade beam will be used for this facility. Alternately, the foundation systems may consist of stiffened, ground-supported slabs. Understanding that these structures will not be

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[1] "Method for Determining the Potential Vertical Rise, PVR." Texas Department of Transportation Method Tex-124-E, 1978.

occupied, the foundations may be constructed over an undisturbed subgrade if post-construction, differential movements on the order of 6 to 7 inches are acceptable. The potential for post-construction movement can be reduced through remedial earthwork if the owner determines that this amount of heave is not acceptable.

Recommendations for design and construction of the foundations, and remedial earthwork criteria are presented in the following sections.

Remedial Earthwork Recommendations

Considering lightly loaded, unoccupied structures, the foundations may be placed over an undisturbed subgrade if 6 to 7 inches of movement is acceptable. Alternately, the potential for heave after construction may be reduced through remedial earthwork. It should be noted that even with the performance of remedial earthwork some movement of the foundations will occur. If no movement can be tolerated, a suspended floor coupled with a pier and beam foundation should be used.

In order to disturb the cap as little as possible, it is recommended that foundations be constructed over a minimum of 4 feet of moisture-conditioned soil, placed under controlled conditions as outlined in the **Earthwork Recommendations** section of this report. These soils can be comprised of both on-site soils and any imported fill required to bring the building pads to their finished elevation.

This process consists of excavating the building pad to a depth of 3-1/2 feet below existing or finished grade, whichever is deepest. The excavation should extend a minimum of three feet beyond the general outline of the buildings. Soil exposed at the base of the excavation should be scarified to a depth of six inches and compacted in accordance with the **Earthwork Recommendations** section.

Excavated soils may then be used to bring the pad to within 12 inches of finished elevation. The final twelve (12) inches should consist of imported "select" fill or plastic sheeting covered by on-site soils. Material and placement specifications are presented in the **Earthwork Recommendations** section.

Proper implementation of remedial earthwork is expected to limit floor slab movements to the order of 4-1/2 inches.

Foundation Design Considerations

Foundation support may be provided by either ground-supported stiffened slabs, or shallow footings placed monolithically with a soil-supported floor.

Movement of these shallow foundations should be anticipated, even with the performance of remedial earthwork. If no soil related movement is acceptable to the owner, then consideration should be given to using a pier-and-beam foundation system. Recommendations for this type of foundation can be provided upon request.

Ground-Supported Foundation Recommendations

A ground-supported foundation may be either conventionally reinforced or post-tensioned. A conventionally reinforced foundation may be designed using the Wire Reinforcement Institute (WRI) and/or the Building Research and Advisory Board (BRAB)[2] method. For this site, an Average Weighted Plasticity Index (PI_w) of 51 was recommended. Considering slopes of less than 5% and using an unconfined compressive strength (Q_u) of 4.0 kips per square foot (ksf), a Slope Correction Factor (C_S) of 1.0 and an Over-Consolidation Correction Factor (C_O) of 0.85 should be used with the WRI Method. This results in an Effective PI of 43. A Climatic Rating (C_W) of 20 is considered appropriate for this site.

Based on the above values, a Support Index (C) of 0.67 is applicable for the BRAB Method, and a value of 0.26 (1-C) should be used for a WRI design. With the WRI method, a cantilevered length (l_c) of 7.8 feet was derived using the previous information. It is recommended the l_c be increased by a factor of 1.5 with a minimum length of 6 feet for analysis purposes[3].

Design of post-tensioned slabs is based on the Edge Moisture Variation Distance (e_m), and the anticipated Differential Movements (y_m) that can occur over this distance e_m. The e_m is based on the amount of anticipated annual rainfall and is derived from the Thornthwaite Index (TI). This index is measured in inches and indicates the amount of rainfall above or below the amount needed to support plant growth. It has been found that irrigation and landscaping can increase the TI by several inches. For this project, a modified TI range of -10 to +10 was used.

Differential movements (y_m) for design of slabs can be determined according to the Post-Tensioning Institute (PTI)[4]. Differential movements for center lift and edge lift conditions are based on type of clay minerals, velocity of moisture flow through the subgrade, and depth to constant soil suction. If the adverse effects of vegetation, site drainage, and slope have been corrected, differential movements may be calculated using the method presented in the PTI manual.

Based on experience in the North Texas area, differential movements for slabs on-ground can approach the total potential movement estimated from laboratory test results.

It should be noted that post-tensioned slabs are typically not installed in situations where there will be more than 4-1/2 inches of differential movement.

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[2] Building Research Advisory Board, "Report 33 to the Federal Housing Administration Criteria for Selection and Design of Residential Slab-on-Ground," Publication 1571 National Academy of Sciences, Washington, D.C., 1968.

[3] *Recommended Practice for the Design of Residential Foundations*, Version 1, Texas Section of the American Society of Civil Engineers (2002), p 10.

[4] *Design and Construction of Post-Tensioned Slabs-on-Ground*, 3rd Edition, Post-Tensioning Institute, Phoenix, AZ (2008).

The e_m and y_m values presented in Table 1 were derived using the PTI method. These values were modified considering the effect of irrigation on the TI and the results of the PVM analysis. Values in Table 1 may be used for dry soil moisture conditions, while those in Table 2 may be used considering remediated subsurface conditions. Table 3 presents values for the Facility Manager's Office considering dry soil conditions.

Table 1
PTI DESIGN VALUES for DRY SUBSURFACE CONDITIONS
(PVM = 6 to 7 inches)
NEC IH-635 and Cartwright Road – Mesquite, Texas

Lift Condition	Edge Moisture Variation Distance e_m (ft.)	Differential Movement y_m (in.)
Center Lift	6.1	2.0
Edge Lift	4.3	2.5

Table 2
PTI DESIGN VALUES for REMEDIATED SUBSURFACE CONDITIONS
(PVM = 4-1/2 inches)
NEC IH-635 and Cartwright Road – Mesquite, Texas

Lift Condition	Edge Moisture Variation Distance e_m (ft.)	Differential Movement y_m (in.)
Center Lift	6.1	1.2
Edge Lift	4.3	2.1

Table 3
PTI DESIGN VALUES for FACILITY MANAGER'S OFFICE
(PVM = 3 to 3-1/2 inches)
NEC IH-635 and Cartwright Road – Mesquite, Texas

Lift Condition	Edge Moisture Variation Distance e_m (ft.)	Differential Movement y_m (in.)
Center Lift	6.1	1.0
Edge Lift	4.3	1.7

Grade beams should penetrate a minimum of 18 inches below finished grade and rest on undisturbed soil or compacted and tested fill. Beams may be sized using an allowable net bearing pressure of 2.5 ksf. This allowable bearing value contains a Factor of Safety of 3 considering a shear failure.

The foundation should be designed to conform to the stiffness criteria presented in Table 6.2 of the current PTI Manual for different types of construction.

Shallow Foundations

An alternative to a stiffened slab foundation is to use a perimeter grade beam or strip footing placed monolithically with a soil-supported floor. Continuous footings may be designed using an allowable bearing capacity of 2.5 ksf. This allowable bearing value contains a Factor of Safety of 3 considering a shear or failure.

Footings should penetrate a minimum of 18 inches below finished grade and rest on undisturbed soil or compacted and tested fill. Footings should also be designed to allow for total settlements on the order of 1 inch, with total differential settlements on the order of 3/4 inch. Total settlements may be reduced to the order of 1/2 inch for both spread and continuous footings by using an allowable bearing capacity of 2.0 ksf.

Continuous footings should also be designed to accommodate the anticipated amount of differential movement that could occur based on the soil moisture conditions at the time of construction. The anticipated range of movement is estimated at 4-1/2 to 7 inches depending upon the condition of the subgrade at the time of construction.

Site Retaining Wall Recommendations

Site retaining walls may be designed based on the lateral earth pressures that will act against them. The magnitude of pressure will be a function of the type of materials used to backfill against the walls. Considering the use of on-site materials, an equivalent fluid pressure of 65 pounds per cubic foot (pcf) can be used for "active" conditions. For the "at-rest" condition, an equivalent fluid pressure of 85 pcf should be used. These values are based on drained conditions. For undrained conditions, equivalent fluid pressures of 95 pcf and 105 pcf may be used for "active" and "at-rest" conditions, respectively.

Alternately, if the site walls are backfilled with free-draining gravel (ASTM C33 Size 57 or equivalent), a lateral earth pressure of 45 pcf may be used for at-rest conditions.

The volume of soil that will act against any site retaining wall may be calculated as a wedge having an angle of 35° past the vertical at the base of the wall and extending into the retained soils.

Resistance to sliding will be a function of "passive" earth pressure, friction between the base of the wall and the underlying soils, and the weight of the soil over the toe of the wall. A passive earth pressure of 250 pcf can be used to estimate resistance to sliding. The upper one foot of soil should be neglected when evaluating passive pressure. A coefficient of 0.3 should be used to evaluate

sliding between the base of the wall and the underlying sand. A dry unit weight of 95 pcf may be used to calculate the dead weight of the soil over the toe of the wall.

Proper drainage should be provided behind any walls to limit the development of hydrostatic pressures. As a minimum, two-inch diameter weeps should be placed through the panels on 20-foot centers and drain by gravity flow to the exterior. The inside end of each weep should be covered with filter fabric and the pipes inclined on a minimum 5% slope. Alternately, a four-inch diameter, perforated flexible pipe wrapped in filter fabric may be placed at the base of the exterior wall. This pipe should be installed on a minimum 2% slope and discharge into a central drain or sump. The pipe should be placed in a minimum 12-inch by 12-inch gravel bed. The gravel should conform to ASTM C33 Size 57 standards and be wrapped in filter fabric. Place the pipe with a minimum of 2 inches of gravel between the subgrade and the bottom of the pipe.

On-site soils used to backfill behind the wall should be placed in accordance with the **Earthwork Recommendations** section. The final three feet of fill behind any wall should consist of on-site soils compacted as outlined in the **Earthwork Recommendations** section.

If some movement is acceptable, retaining walls may be supported on shallow strip footings founded a minimum of 18 inches below existing or finished grade. Footings may be designed using an allowable bearing capacity of 2.5 kips per square foot (ksf). This allowable bearing value contains a Factor of Safety of 3 considering a shear failure. The walls should be designed to accommodate total settlements of approximately 1 inch, with differential settlements not to exceed ¾ of an inch.

If no movement of the walls is acceptable, piers should be used for foundation support. Piers should be designed and installed in accordance with the **Foundation Design Considerations** section.

Prevention of Gas Migration

In order to prevent the migration of gas from the existing landfill into the proposed structures, buildings must be designed in accordance with TCEQ Chapter 330.957. This will require gas ventilation or an active collection system consistent with the structures gas monitoring plan required by TCEQ Chapter 330.957, Subsection t.

Between the building slabs and subgrade, a geomembrane (or equivalent) with a low gas permeability should be installed. A permeable layer of an open-graded, clean aggregate material should be installed between the geomembrane and the subgrade. This layer should be a minimum of 12 inches in thickness.

To prevent fine soil or other particulates from migrating into the permeable layer, a geotextile filter should be utilized.

Within the permeable layer, perforated PVC venting pipes (or alternative) must be installed and designed to operate without clogging. The gas venting devices should be connected to an induced-draft exhaust system.

Automatic methane gas sensors should be installed within the venting pipe and inside of the structures in order to set off an audible alarm when concentrations of methane gas that are greater than 20% of the lower explosive limit are detected.

An idealized cross-section of this system is presented on Plate 5.

Utility Excavations

Utility excavations within the overburden soils may be laid back on a temporary slope of 1.5 Horizontal to 1 Vertical within the on-site alluvial soils. Water must not be allowed to pond at the top of any slope or along the top of a trench. Any water collecting within an excavation should be immediately discharged. Construction equipment and materials should not be placed within four feet of the edge of the excavation.

If steeper slopes are required or the depth of a utility excavation will exceed 20 feet, this office should be contacted to provide recommendations for a temporary retention system. Any excavations over a depth of 20 feet will require an engineered excavation and safety plan per OSHA regulations. Recommendations for temporary retention systems can be made upon request.

On-site soils should be classified as Type C per 29 CFR Part 1926, Chapter 17, Subpart P, Appendix A.

Construction Considerations

Expansion joints should be installed at locations selected by the architect to allow for deflection of grade-supported interior walls.

All loose soils, debris, and water should be removed from grade beam and pier excavations prior to placing concrete. The width and depth of grade beams should not vary across the length of the beam. Earth forming of grade beams should not be permitted.

Any site paving adjacent to a foundation should be sloped away from the structures to permit rapid runoff of surface water. The joint between the perimeter of the foundation and adjacent paving should be sealed and maintained to limit the infiltration of water into the subgrade.

If site paving cannot extend to the perimeter of each building, it is recommended that a vertical moisture barrier be installed to a depth of 4 feet below existing or final grades, whichever is deeper, using a "root-barrier" system similar to that produced by DeepRoot®. Vegetation should be planted outside of the root barrier, away from the foundation. Alternately, a 4-foot wide concrete apron may be installed along those sections of a building perimeter that will not abut pavement. The apron should be sloped to drain away from the building, and the joint between the foundation and flatwork should be sealed and maintained to limit the infiltration of water into the subgrade.

A vapor barrier should be installed below all ground-supported floor slabs. All penetrations and joints should be sealed to lower the potential for migration of moisture through the floor. Plastic sheeting used for vapor retarders below the slabs should be draped or cut in such a way as to allow concrete to be placed directly against the sidewalls of the grade beam excavations.

Utility excavations should be backfilled using on-site soils placed under controlled conditions as outlined in the **Earthwork Recommendations** section. If possible, all utility trenches should be sloped to drain away from the foundation.

Sand and gravel should not be used to bed utility lines. Utility excavations should be backfilled using on-site soils placed under controlled conditions as outlined in the **Earthwork Recommendations** section. As a minimum, a four-foot long clay plug should be installed below the exterior grade beam where utility lines transition below the foundation. This clay plug should be installed as outlined in the **Earthwork Recommendations** section. If possible, all utility trenches should be sloped to drain away from the foundation.

Positive drainage away from each foundation should be established during construction and maintained throughout the life of the structure. Landscaping beds should be designed and maintained to prevent water from ponding next to the foundation. Ponded water will increase subsurface moisture and consequently increase the potential for heave.

Irrigation lines or heads should not be placed directly next to the foundation. It is recommended that all irrigation lines be kept a minimum of five feet from the edge of the buildings.

If possible, trees should not be planted directly next to a foundation. Over time, vegetation will desiccate the clays, resulting in shrinkage of the subgrade. This shrinkage will be manifested as settlement of ground supported foundations. All trees should be planted a minimum of 1-1/2 times the mature height of the tree from the foundation. If trees will be planted next to the structure, consideration should be given to installing a vertical root barrier between the tree and the foundation. As a minimum the barrier should consist of a four-inch wide lean concrete wall extending to a depth of 6 feet from current grades. An alternative is to use a minimum 6-mil thick plastic sheet draped within the excavation and backfilled using sand or gravel. Alternately, a "root-barrier" system similar to that produced by DeepRoot® may be installed around the perimeter of the foundation. Vegetation should be planted outside of the root barrier, away from the foundation.

Any trees to be cleared from or within ten feet of a building pad should have the root systems removed and the excavations filled with on-site soils placed under controlled conditions. Soils should be placed as presented in the **Earthwork Recommendations** section.

Joints between site paving and the perimeter of a foundation should be sealed and maintained over the life of the structures. This is to limit the infiltration of water into the subgrade.

Corrosion due to interaction of concrete with the soil is considered to be relatively minor. Standard Type I or Type II cements may be used for this project.

Paving Recommendations

It is understood that site paving will consist of flexible asphalt, while the drive from the office to the main facility will consist of rigid concrete. It should be noted that asphalt has historically had a

lower construction cost compared to concrete, but does require greater amounts of maintenance over the life of the pavement than concrete usually has.

Asphalt Pavement:

Flexible asphalt pavement may be used for parking and drives. The upper six inches of subgrade below asphalt pavement should be stabilized using approximately 6% hydrated lime (27 pounds per square yard) to achieve a treated soil with a Plasticity Index of 15 or less. It is recommended that site specific testing of the subgrade be performed to evaluate the actual amount of lime required to provide a stabilized subgrade. Lime should be placed in general accordance with Item 301.2 LIME TREATMENT the North Central Texas Council of Government (NCTCOG) *Public Works Construction Standards, Fifth Edition* published in 2017. Lime treated soils should also be compacted to a minimum of 95% of the maximum dry unit weight (ASTM D-698) with moisture contents at or above optimum.

For light truck and car traffic the following section is recommended:

1" Type D HMAC Asphalt Surface Course over,

2" Type A or B HMAC Coarse Graded Base Course.

For heavy truck traffic the following section is recommended:

2" Type D HMAC Asphalt Surface Course over,

4" Type A or B HMAC Coarse Graded Base Course.

Routes for trash trucks should have the following:

3" Type D HMAC Asphalt Surface Course over,

6" Type A or B HMAC Coarse Graded Base Course.

All asphalt should be placed in accordance with Item 302 of the NCTCOG standard. Compaction tests and air void verification should be conducted to evaluate the in-place density of the asphalt pavement.

All joints within asphalt pavements should be sealed and maintained to limit water infiltration into the subgrade soils.

Concrete Pavement:

Sections for reinforced concrete paving were evaluated using the Interim AASHO and PCA

methods[5]. Considering light vehicular traffic and less than six, fully loaded trucks per day, the following sections are recommended for a 20-year life span.

For light truck and car traffic the following section is recommended:

5" of 3,000 psi Portland Cement Concrete over,

6" of recompacted subgrade.

For heavy truck traffic up to 6 vehicles per day the following section is recommended:

6" of 3,000 psi Portland Cement Concrete over,

6" of recompacted subgrade.

Routes for trash trucks should have the following:

7" of 3,000 psi Portland Cement Concrete over,

6" of recompacted subgrade.

Subgrade soils below concrete pavements should be compacted to a minimum of 95% (ASTM D-698) with moisture contents between 0 and +4 percentage points.

Concrete pavement should be reinforced with No. 3 deformed bars on 18-inch centers. No. 4 smooth dowels should be used at expansion and construction joints on 12-inch centers.

Control joints should be installed in the pavement within four hours after concrete has been placed, not after completion of the pour. Joint spacing and depth should conform to the recommendations presented in the latest version of *Joint Design for Concrete Highways and Street Pavements*, produced by PCA. Spacing between control joints should not exceed 15-feet. All joints should be sealed and periodically maintained. This will limit the potential for water to infiltrate into the subgrade.

Expansion joints should consist of doweled keyways, thickened sections, or steel dowels supported on a non-deteriorating medium such as bituminous mastic or bituminous impregnated cellulous[6]. All expansion joints should be filled completely with sealant to the pavement surface.

---

[5] Yoder, E.J., and Witczak, M.W., *Principles of Pavement Design*, 2nd Ed., John Wiley & Sons, Inc., New York, NY, pp 605 to 608.

[6] *Guide for Design and Construction of Concrete Parking Lots*, ACI Committee 330, NRMCA Publication MSP 34, January 1988, p 330R-8.

Earthwork Recommendations

Prior to construction, the site should be stripped of all organic soils. Areas that will underlay fill or pavement should be proof-rolled prior to fill operations. Any soft areas should be excavated to firm soils (pocket penetrometer reading of 2.0 tons per square foot or greater), and then filled using on-site materials. On-site soils should be placed in maximum eight-inch loose lifts and compacted to a minimum of 95% of the maximum density as determined by ASTM D-698. Moisture content should be a minimum of +2% above optimum.

Fill around perimeter grade beams should be on site clay, cleaned of all construction debris and placed in a controlled manner as discussed in the previous paragraph. Use of clean, compacted fill will lower the potential for water to migrate below the slab and into the subgrade soils.

Construction Testing and Observation

It is recommended that a representative of Henley-Johnston & Associates, Inc. be retained to visually inspect the foundation excavation prior to placement of concrete to confirm proper bearing stratum and adherence with the recommendations of this report.

Field density tests should be taken at a rate of one test per every 2,500 square-feet of fill area, per lift. Density tests should be made on utility trench backfill at a rate of one test per lift for every 100 linear feet or trench. Paving subgrade should be tested for compaction at a rate of one test per every 5,000 square-feet.

Field density testing must be conducted during placement of fill. Samples of the fill material should be submitted to the testing laboratory a minimum of 72 hours prior to commencing earthwork operations to allow for evaluation of the maximum density and optimum moisture of the fill soils.

Qualifications

In the event that any changes in the nature, design or location of the new structures are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the revisions are reviewed and the conclusions of this report modified or verified in writing.

The analyses and recommendations submitted in this report are based upon the data obtained from the borings drilled for this project and data developed from previous investigations. The nature and extent of subsurface variations at the site may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

It is recommended that the geotechnical engineer be provided the opportunity for general review of final design drawings and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design drawings and specifications.

LEGEND

SOIL BORING

NOT TO SCALE

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TEXAS FIRM REGISTRATION NO. F-1238

MESQUITE SELF STORAGE
NEC IH-635 AND CARTWRIGHT ROAD
MESQUITE, TEXAS

HJA No.: 18413G

DATE: APRIL 2018

BORING LOCATION PLAN

PLATE 1

GEOTECHNICAL INVESTIGATION
REPORT NO. 18413G
MESQUITE SELF STORAGE
NEC IH-635 AND CARTWRIGHT ROAD
MESQUITE, TEXAS

SUMMARY OF INDEX PROPERTIES

BORING NUMBER	DEPTH (ft.)	LIQUID LIMIT (%)	PLASTIC INDEX	DUW (pcf)	FINER #200 (%)	MOISTURE CONTENT (%)	UNIFIED SOIL CLASSIFICATION
1	0.0 – 1.0					28.1	
1	1.0 – 2.0					27.3	
1	2.0 – 3.0			93.5	97.3	28.6	
1	3.0 – 4.0	69	47	95.4		28.9	CH
1	4.0 – 5.0					23.3	
1	5.0 – 6.0					24.8	
1	6.0 – 7.0					22.1	
1	7.0 – 8.0					24.6	
1	8.0 – 9.0					27.7	
1	9.0 – 10.5	64	42			28.9	CH
1	13.5 – 15.0					27.1	
2	0.0 – 1.0					19.2	
2	1.0 – 2.0					26.8	
2	2.0 – 3.0	59	37	92.2		29.3	CH
2	3.0 – 4.0					26.5	
2	4.0 – 5.0					25.9	
2	5.0 – 6.0					22.1	
2	6.0 – 7.0					18.4	
2	7.0 – 8.0					28.3	
2	8.0 – 9.0					26.7	
2	9.0 – 10.0					25.7	
3	0.0 – 1.0					24.9	
3	1.0 – 2.0					27.1	
3	2.0 – 3.0					26.2	
3	3.0 – 4.0					19.5	
3	4.0 – 5.0					18.6	
3	5.0 – 6.0	68	45	101.0		22.4	CH
3	6.0 – 7.0					28.0	
3	8.5 – 10.0					29.5	

GEOTECHNICAL INVESTIGATION
REPORT NO. 18413G
MESQUITE SELF STORAGE
NEC IH-635 AND CARTWRIGHT ROAD
MESQUITE, TEXAS

SUMMARY OF INDEX PROPERTIES

BORING NUMBER	DEPTH (ft.)	LIQUID LIMIT (%)	PLASTIC INDEX	DUW (pcf)	FINER #200 (%)	MOISTURE CONTENT (%)	UNIFIED SOIL CLASSIFICATION
3	13.5 – 15.0					32.7	
4	0.0 – 1.0					27.1	
4	1.0 – 2.0			95.1	97.2	28.5	
4	2.0 – 3.0					25.1	
4	3.0 – 4.0					25.5	
4	4.0 – 5.0					24.4	
4	5.0 – 6.0					24.7	
4	6.0 – 7.0					23.7	
4	7.0 – 8.0					23.9	
4	8.0 – 9.0					25.1	
4	9.0 – 10.0					24.8	
4	14.0 – 15.0	75	52	96.9		25.8	CH
5	0.0 – 1.0					27.1	
5	1.0 – 2.0					28.7	
5	2.0 – 3.0					28.1	
5	3.0 – 4.0					26.3	
5	4.0 – 5.0					24.5	
5	5.0 – 6.0					24.1	
5	6.0 – 7.0					24.3	
5	7.0 – 8.0	65	40	97.2		38.0	CH
5	8.5 – 10.0					29.8	
5	13.5 – 15.0					26.6	
6	0.0 – 1.0					21.2	
6	1.0 – 2.0					16.0	
6	2.0 – 3.0					15.0	
6	3.0 – 4.0					13.0	
6	4.0 – 5.0	34	21	114.9		15.3	CL
6	5.0 – 6.0					13.0	

GEOTECHNICAL INVESTIGATION
REPORT NO. 18413G
MESQUITE SELF STORAGE
NEC IH-635 AND CARTWRIGHT ROAD
MESQUITE, TEXAS

SUMMARY OF INDEX PROPERTIES

BORING NUMBER	DEPTH (ft.)	LIQUID LIMIT (%)	PLASTIC INDEX	DUW (pcf)	FINER #200 (%)	MOISTURE CONTENT (%)	UNIFIED SOIL CLASSIFICATION
6	6.0 – 7.0					12.3	
6	7.0 – 8.0					13.9	
6	8.0 – 9.0					13.4	
6	9.0 – 10.0					13.0	
6	13.5 – 15.0				11.4	12.0	

SUMMARY OF FREE-SWELL TESTS

BORING NUMBER	DEPTH (ft.)	SWELL PRESSURE (psf)	GAIN IN MOISTURE (%)	PERCENT SWELL (%)	MATERIAL DESCRIPTION
1	3.0 – 4.0	434.0	4.2	3.4	FILL: CLAY, stiff, light brown and dark brown
2	2.0 – 3.0	289.0	3.6	2.1	CLAY, very stiff to hard, dark brown
6	4.0 – 5.0	579.0	3.1	1.1	SANDY CLAY, very stiff to hard, light brown

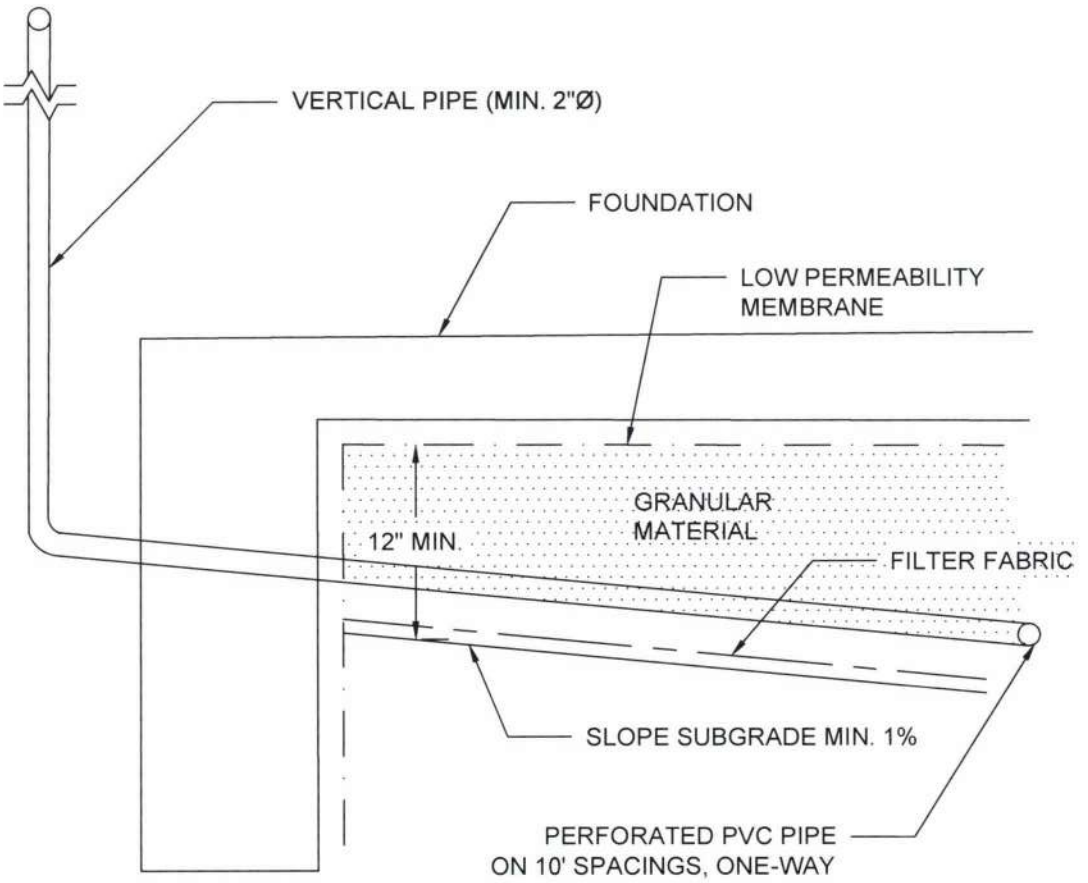
SUMMARY OF ABSORPTION PRESSURE-SWELL TESTS

BORING NUMBER	DEPTH (ft.)	SWELL PRESSURE (psf)	GAIN IN MOISTURE (%)	PERCENT SWELL (%)	MATERIAL DESCRIPTION
3	5.0 – 6.0	3,902.0	7.5	7.2	FILL: CLAY, soft to hard, light brown, brown, and dark brown
4	14.0 – 15.0	1,170.0	4.1	1.5	SHALE, weathered
5	7.0 – 8.0	1,677.0	4.5	2.6	FILL: CLAY, soft to hard, light brown, brown, and dark brown

SUMMARY OF UNCONFINED COMPRESSION TESTS - SOIL

BORING NUMBER	DEPTH (ft.)	PEAK STRESS (psi)	FAILURE STRAIN (%)	MATERIAL DESCRIPTION
1	2.0 – 3.0	18.2	10.7	FILL: CLAY, stiff, light brown and dark brown
4	1.0 – 2.0	23.7	10.7	CLAY, very stiff, light brown and light gray

VERTICAL PIPE TO BE ATTACHED TO ACTIVE VENTING SYSTEM



NOT TO SCALE

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MESQUITE SELF STORAGE
NEC IH-635 AND CARTWRIGHT ROAD
MESQUITE, TEXAS

GAS MITIGATION SYSTEM

HJA No.: 18413G

DATE: APRIL 2018

PLATE 5

HENLEY | JOHNSTON & ASSOCIATES

TEXAS FIRM REGISTRATION NO. F-1238

LEGEND, LITHOLOGY, SOIL CONSISTENCY & RELATIVE ROCK HARDNESS

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

OF BORINGS: 6
PROJECT No.: 18413G
DRILL DATE: 4/6/18
METHOD: Shelby Tube w/Split

Strata symbols


FILL


HIGH PLASTICITY CLAYS (CH)


SHALE, weathered


SHALE, unweathered


LOW PLASTICITY CLAYS, SANDY CLAYS, OR GRAVELLY CLAYS (CL)


SAND

Misc. Symbols


Pocket Penetrometer (tsf)


Standard Penetration (BPF)


TxDOT CPT (inches per 100 blows)


Ground Water During Drilling (ft)

Soil Samplers


Undisturbed thick wall Shelby tube


Split Spoon

FOR SANDS, GRAVELS, & SANDY SILTS

Modified from Peak, Hanson & Thornburn (1974)

Consistency	Standard Penetration Resistance (N)
Very Loose	Less than 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	Greater than 50

FOR CLAYS AND SANDY CLAYS
(COHESIVE SOILS)

Modified from Peak, Hanson & Thornburn (1974)

Consistency	Unconfined Compression (tsf)	Standard Penetration Resistance (N)
Very Soft	Less than 0.25	Less than 2
Soft	0.25 to 0.5	2 to 4
Medium Stiff	0.5 to 1.0	4 to 8
Stiff	1.0 to 2.0	8 to 15
Very Stiff	2.0 to 4.0	15 to 30
Hard	Greater than 4.0	Greater than 30

RELATIVE HARDNESS MODIFIERS (ROCK)
(RELATED TO FRESH SAMPLE)

Modified from SCS EWP, Tech Guide No. 4

Hardness	Rule of Thumb Test
Soft	Permits denting by moderate finger pressure
Firm	Resists denting by fingers but can be penetrated by pencil point to medium to shallow depth (No. 2 pencil)
Mod. Hard	Very shallow penetration of pencil point, can be scratched by knife and in some instances cut with knife
Hard	No pencil penetration, can be scratched with knife, can be broken by light to moderate hammer blows
Very Hard	Cannot be scratched by knife, can be broken by repeated hammer blows

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TEXAS FIRM REGISTRATION NO. F-1238

LEGEND, LITHOLOGY, SOIL CONSISTENCY & RELATIVE ROCK HARDNESS

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

OF BORINGS: 6
PROJECT No.: 18413G
DRILL DATE: 4/6/18
METHOD: Shelby Tube w/Split

Soil Samplers

TxDOT CPT

FOR SANDS, GRAVELS, & SANDY SILTS Modified from Peak, Hanson & Thornburn (1974)	
Consistency	**Standard Penetration Resistance (N)**
Very Loose	Less than 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	Greater than 50

FOR CLAYS AND SANDY CLAYS (COHESIVE SOILS) Modified from Peak, Hanson & Thornburn (1974)		
Consistency	**Unconfined Compression (tsf)**	**Standard Penetration Resistance (N)**
Very Soft	Less than 0.25	Less than 2
Soft	0.25 to 0.5	2 to 4
Medium Stiff	0.5 to 1.0	4 to 8
Stiff	1.0 to 2.0	8 to 15
Very Stiff	2.0 to 4.0	15 to 30
Hard	Greater than 4.0	Greater than 30

RELATIVE HARDNESS MODIFIERS (ROCK) (RELATED TO FRESH SAMPLE) Modified from SCS EWP, Tech Guide No. 4	
Hardness	**Rule of Thumb Test**
Soft	Permits denting by moderate finger pressure
Firm	Resists denting by fingers but can be penetrated by pencil point to medium to shallow depth (No. 2 pencil)
Mod. Hard	Very shallow penetration of pencil point, can be scratched by knife and in some instances cut with knife
Hard	No pencil penetration, can be scratched with knife, can be broken by light to moderate hammer blows
Very Hard	Cannot be scratched by knife, can be broken by repeated hammer blows

HJA HENLEY | JOHNSTON & ASSOCIATES

DRILL DATE: 4/4/18
METHOD: Shelby Tube w/Split Spoon to 40'

LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

PROJECT No.: 18413G
BORING No.: 1
STATION:
SHEET: 1 of 2
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)
0			FILL: CLAY, with subangular to subrounded gravel, stiff, light brown and dark brown			
5			with plastic			
10			CLAY, stiff, brown			
15			with tree root			
20						
25			SHALE, weathered, laminated, calcareous, soft, light brown and light gray			
30			SHALE, slightly weathered, laminated, calcareous, with iron staining, soft, gray			
35			SHALE, laminated, calcareous, firm, gray			

TxDOT CPT ⊗ (inches per 100 blows) 1 2 3 4 5 6
STANDARD PENETRATION (BPF) + 10 20 30 40 50 60
POCKET PENETROMETER × (tsf) 1 2 3 4 + ++

7
9
7
18
43
3" ⊗

Ground Water During Drilling (ft.): DRY

Ground Water After Drilling (ft.): DRY

HENLEY | JOHNSTON

DRILL DATE: 4/4/18
METHOD: Shelby Tube w/Split Spoon to 40'

LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

PROJECT No.: 18413G
BORING No.: 1
STATION:
SHEET: 2 of 2
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)	TxDOT CPT ⊗ (inches per 100 blows) 1 2 3 4 5 6 / STANDARD PENETRATION (BPF) + 10 20 30 40 50 60 / POCKET PENETROMETER × (tsf) 1 2 3 4 + ++
40			SHALE, laminated, calcareous, firm, gray				3" ⊗
			TOTAL DEPTH: 40.0'				
45							
50							
55							
60							
65							
70							

Ground Water During Drilling (ft.): DRY

Ground Water After Drilling (ft.): DRY

HENLEY | JOHNSTON

DRILL DATE: 4/4/18
METHOD: Shelby Tube w/Split Spoon to 40'

LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

PROJECT No.: 18413G
BORING No.: 2
STATION:
SHEET: 1 of 2
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)
0			FILL: CLAY, with subangular to subrounded gravel, very stiff, light brown			
			CLAY, very stiff to hard, dark brown			
5			CLAY, hard, light brown			
			SHALE, weathered, laminated, calcareous, soft, light brown and light gray			
10						
15						
20			SHALE, slightly weathered, laminated, calcareous, with iron staining, soft, gray			
25						
30						
			SHALE, laminated, calcareous, firm, gray			
35						

TxDOT CPT ⊗ (inches per 100 blows) 1 2 3 4 5 6
STANDARD PENETRATION (BPF) + 10 20 30 40 50 60
POCKET PENETROMETER × (tsf) 1 2 3 4 + ++

12
23
4" ⊗

Ground Water During Drilling (ft.): DRY

Ground Water After Drilling (ft.): DRY

HENLEY | JOHNSTON

DRILL DATE: 4/4/18
METHOD: Shelby Tube w/Split Spoon to 40'

LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

PROJECT No.: 18413G
BORING No.: 2
STATION:
SHEET: 2 of 2
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)	TxDOT CPT ⊗ (inches per 100 blows) 1 2 3 4 5 6 / STANDARD PENETRATION (BPF) + 10 20 30 40 50 60 / POCKET PENETROMETER × (tsf) 1 2 3 4 + ++
40			SHALE, laminated, calcareous, firm, gray TOTAL DEPTH: 40.0'				3.25" ⊗
45							
50							
55							
60							
65							
70							

Ground Water During Drilling (ft.): DRY

Ground Water After Drilling (ft.): DRY

HENLEY | JOHNSTON

DRILL DATE: 4/4/18
METHOD: Shelby Tube w/Split Spoon to 45'

LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

PROJECT No.: 18413G
BORING No.: 3
STATION:
SHEET: 1 of 2
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)	TxDOT CPT @ (inches per 100 blows) 1 2 3 4 5 6 / STANDARD PENETRATION (BPF) + 10 20 30 40 50 60 / POCKET PENETROMETER × (tsf) 1 2 3 4 + ++
0			FILL: CLAY, with subangular to subrounded gravel, soft to hard, light brown, brown, and dark brown				
5							
			with plastic				5 +
10							
			with trace amounts of plastic				6 +
15							
			with concrete				7 +
20							
			with glass				10 +
25							
			with metal				5 +
30							
			SHALE, weathered, laminated, calcareous, soft, light brown and light gray				6 +
35							

Ground Water During Drilling (ft.): DRY

Ground Water After Drilling (ft.): DRY

HENLEY | JOHNSTON & ASSOCIATES

DRILL DATE: 4/4/18
METHOD: Shelby Tube w/Split Spoon to 45'

LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

PROJECT No.: 18413G
BORING No.: 3
STATION:
SHEET: 2 of 2
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)	TxDOT CPT ⊗ (inches per 100 blows) 1 2 3 4 5 6 / STANDARD PENETRATION (BPF) + 10 20 30 40 50 60 / POCKET PENETROMETER × (tsf) 1 2 3 4 + ++
40			SHALE, laminated, calcareous, firm, gray				63 +
45			TOTAL DEPTH: 45.0'				2.75" ⊗
50							
55							
60							
65							
70							

Ground Water During Drilling (ft.): DRY

Ground Water After Drilling (ft.): DRY

HENLEY | JOHNSTON & ASSOCIATES

DRILL DATE: 4/5/18
METHOD: Shelby Tube to 30'

LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

PROJECT No.: 18413G
BORING No.: 4
STATION:
SHEET: 1 of 1
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)
0			CLAY, with subangular to subrounded gravel, very stiff, light brown			
			SHALE, weathered, laminated, calcareous, soft, light brown and light gray			
25			SHALE, laminated, calcareous, firm, gray			
30			TOTAL DEPTH: 30.0'			
35						

TxDOT CPT ⊗ (inches per 100 blows) 1 2 3 4 5 6
STANDARD PENETRATION (BPF) + 10 20 30 40 50 60
POCKET PENETROMETER × (tsf) 1 2 3 4 + ++

1" ⊗
4" ⊗

Ground Water During Drilling (ft.): DRY

Ground Water After Drilling (ft.): DRY

HENLEY | JOHNSTON & ASSOCIATES

DRILL DATE: 4/5/18
METHOD: Shelby Tube w/Split Spoon to 30'

LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

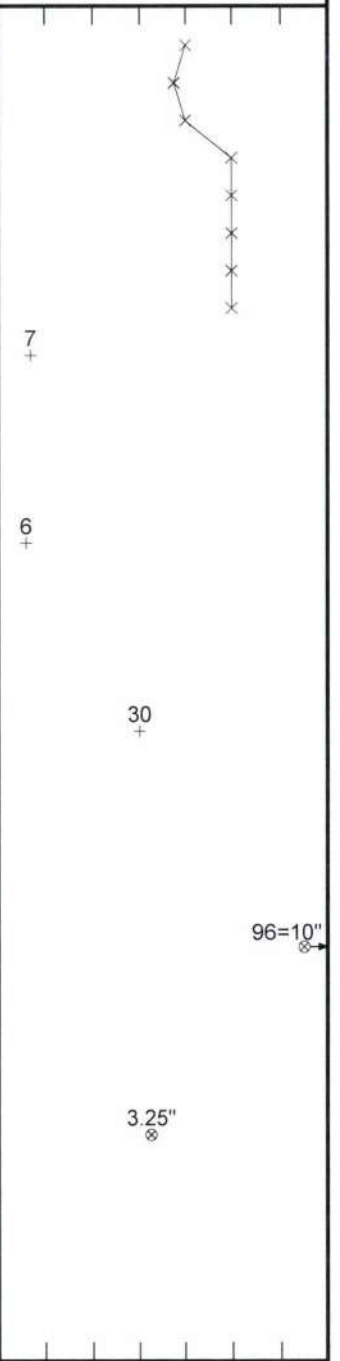
PROJECT No.: 18413G
BORING No.: 5
STATION:
SHEET: 1 of 1
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)
0			FILL: CLAY, with shale fragments and trace amounts of subrounded gravel, soft to hard, light brown, brown, and dark brown			
20			SHALE, laminated, calcareous, firm, gray			
30			TOTAL DEPTH: 30.0'			

TxDOT CPT ⊗ (inches per 100 blows) 1 2 3 4 5 6

STANDARD PENETRATION (BPF) + 10 20 30 40 50 60

POCKET PENETROMETER × (tsf) 1 2 3 4 + ++



Ground Water During Drilling (ft.): DRY

Ground Water After Drilling (ft.): DRY

HENLEY | JOHNSTON

DRILL DATE: 4/6/18
METHOD: Shelby Tube w/Split Spoon to 30'

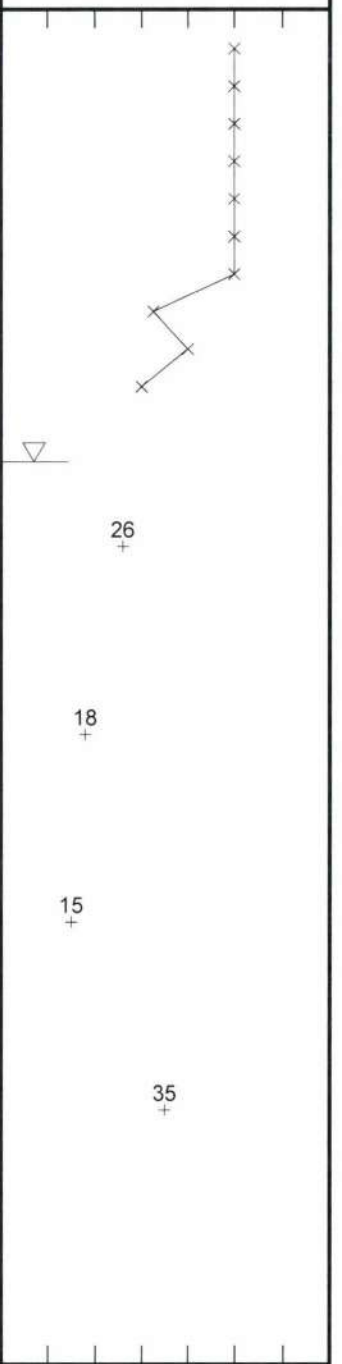
LOG OF BORING

Mesquite Self Storage
NEC IH-635 and Cartwright Road
Mesquite, Texas

PROJECT No.: 18413G
BORING No.: 6
STATION:
SHEET: 1 of 1
LOCATION: See Plate 1
GROUND ELEVATION:

DEPTH (feet)	SYMBOL	SAMPLES	MATERIAL DESCRIPTION	ELEVATION (feet)	CORE RECOVERED (ft.)	CORE RQD (%)
0			FILL: CLAY, with subrounded gravel, hard, light brown and brown			
			SANDY CLAY, with calcareous deposits, very stiff to hard, light brown			
10			SAND, fine- to coarse-grained, with subangular to subrounded gravel, medium dense, light brown			
			SHALE, weathered, laminated, calcareous, soft, light brown and light gray			
30			TOTAL DEPTH: 30.0'			

TxDOT CPT ⊠ (inches per 100 blows) 1 2 3 4 5 6
STANDARD PENETRATION (BPF) + 10 20 30 40 50 60
POCKET PENETROMETER × (tsf) 1 2 3 4 + ++



Ground Water During Drilling (ft.): 12'

Ground Water After Drilling (ft.): 17'

ATTACHMENT 10D
2024 SOIL BORING LOGS

SQ ENVIRONMENTAL, LLC
PO BOX 1991
AUSTIN, TX 78767-1991
(512) 900-7731

BORING/WELL LOG

BORING ID: SB-1

WELL ID: SV-1

PROJECT INFORMATION

PROJECT NUMBER: 1239.001.001
SITE LOCATION: 955 W Cartwright Rd, Mesquite TX
PROJECT MANAGER: Sam Enis, P.G.
LOGGED BY: Muhammad Chhaidan.
DATE DRILLED: 11/26/2024

PROJECT INFORMATION

DRILLING COMPANY: Pacific West Drilling
DRILLING METHOD: Drill by Auger
TOTAL DEPTH: 30 feet (ft) below ground surface (bgs)
BORING DIAMETER: 4-IN WELL DIAMETER: N/A

TOP OF CASING ELEV: N/A
GROUND ELEV: N/A

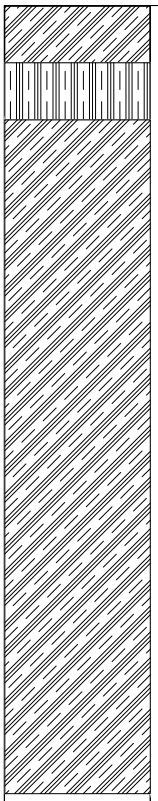
N. LATITUDE:	W. LONGITUDE:
32.749°	-96.611444°

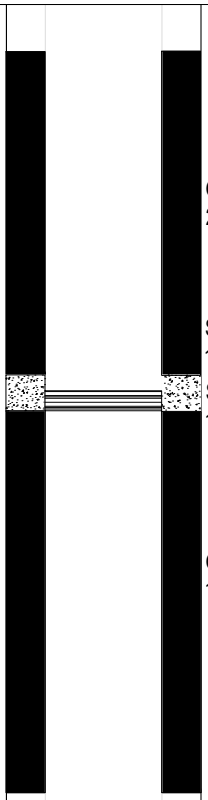
REMARKS: Following sample collection, tubing was pulled and boring plugged with bentonite

WATER LEVEL IN WELL: N/A

PRODUCT LEVEL IN WELL: N/A

DEPTH	LITHOLOGY	USCS	DESCRIPTION	SAMPLE ID	REC%	PID	WELL COMPLETION	INSTALLATION NOTES
0		CL	0-2': CLAY, black with red and brown, medium plasticity, moist	CH4 Reading 0 ft - 5 ft = 1000 ppm	Hand Auger	0.0		
		ML	2-4': CLAYEY SILT, black with gray and brown, slight plasticity, dry					
5		CL	4-5': CLAY, brown with black, medium plasticity, stiff, moist Trash: pieces of tarp, wood and plastic 5-10': CLAY, black with brown, medium to low plasticity, moist Trash @ 8-10 FT: pieces of wood	CH4 Reading 5 ft - 10 ft = 2000 ppm	20	0.0		
10			10-15': CLAY, black/brown, medium plasticity, very moist Trash @ 10-15 FT: pieces of wood, plastic and pieces of wires	CH4 Reading 10 ft - 15 ft = 100,000 ppm	40	0.0		
15			15-20': CLAY, black/brown, medium plasticity, moist	CH4 Reading 15 ft - 20 ft = 17,000 ppm	40	0.0		
20			20-22': CLAY, black, medium plasticity, very moist Trash: pieces of wood and plastic	CH4 Reading 10 ft - 15 ft = 9,000 ppm	100	0.0		
25			22-30': CLAY, black medium plasticity, moist	CH4 Reading 10 ft - 15 ft = 7,000 ppm	100	0.0		
30								
35								
40								
45								
50								





12/1/2024

SQ ENVIRONMENTAL, LLC
PO BOX 1991
AUSTIN, TX 78767-1991
(512) 900-7731

BORING/WELL LOG

BORING ID: SB-2

WELL ID: SV-2

PROJECT INFORMATION

PROJECT NUMBER: 1239.001.001
SITE LOCATION: 955 W Cartwright Rd, Mesquite TX
PROJECT MANAGER: Sam Enis, P.G.
LOGGED BY: Muhammad Chhaidan.
DATE DRILLED: 11/26/2024

PROJECT INFORMATION

DRILLING COMPANY: Pacific West Drilling
DRILLING METHOD: Drill by Auger
TOTAL DEPTH: 30 feet (ft) below ground surface (bgs)
BORING DIAMETER: 4-IN WELL DIAMETER: N/A

TOP OF CASING ELEV: N/A
GROUND ELEV: N/A

N. LATITUDE:	W. LONGITUDE:
32.749°	-96.611667°

REMARKS: Following sample collection, tubing was pulled and boring plugged with bentonite

WATER LEVEL IN WELL: N/A

PRODUCT LEVEL IN WELL: N/A

DEPTH	LITHOLOGY	USCS	DESCRIPTION	SAMPLE ID	REC%	PID	WELL COMPLETION	INSTALLATION NOTES
0		CL	0-4': CLAY, tan with black, medium plasticity, moist 4-5': CLAY, tan with black, medium plasticity, dry Trash: tiny bits of plastic	CH4 Reading 0 ft - 5 ft = 1000 ppm	Hand Auger	0.0		
5			5-10': CLAY, black/brown, medium plasticity, moist Trash @ 5-10 FT: pieces of wood and plastic	CH4 Reading 5 ft - 10 ft = 2000 ppm	20	0.0		Granular Bentonite: 2 ft - 13 ft
10		CL	10-15': CLAY, black, medium plasticity, very moist Trash @ 10-15 FT: pieces of wood and plastic	CH4 Reading 10 ft - 15 ft = 111,000 ppm	40	0.0		Sand (40/20): 13 ft - 15 ft
15			15-18': CLAY, black, medium plasticity, moist 18-20': CLAY, tan/black, medium plasticity, moist Trash: tiny pieces of glass	CH4 Reading 15 ft - 20 ft = 81,000 ppm	40	0.0		Screen (0.01"): 14 ft - 15 ft
20			20-23': CLAY, black with brown, medium plasticity, moist Trash: pieces of wood and plastic 23-25': CLAY, black, medium to low plasticity, dry	CH4 Reading 10 ft - 15 ft = 2,000 ppm	100	0.0		Granular Bentonite: 15 ft - 30 ft
25		CL	25-30': CLAY, black, medium plasticity, moist	CH4 Reading 10 ft - 15 ft = 9,000 ppm	100	0.0		Bottom of Well: 30 ft bgs
30								Annular Space filled with sand and bentonite
35								
40								
45								
50								

STATE OF TEXAS
TIMOTHY C WEAVER
GEOLOGY
11761
LICENSED
PROFESSIONAL GEOSCIENTIST

12/1/2024

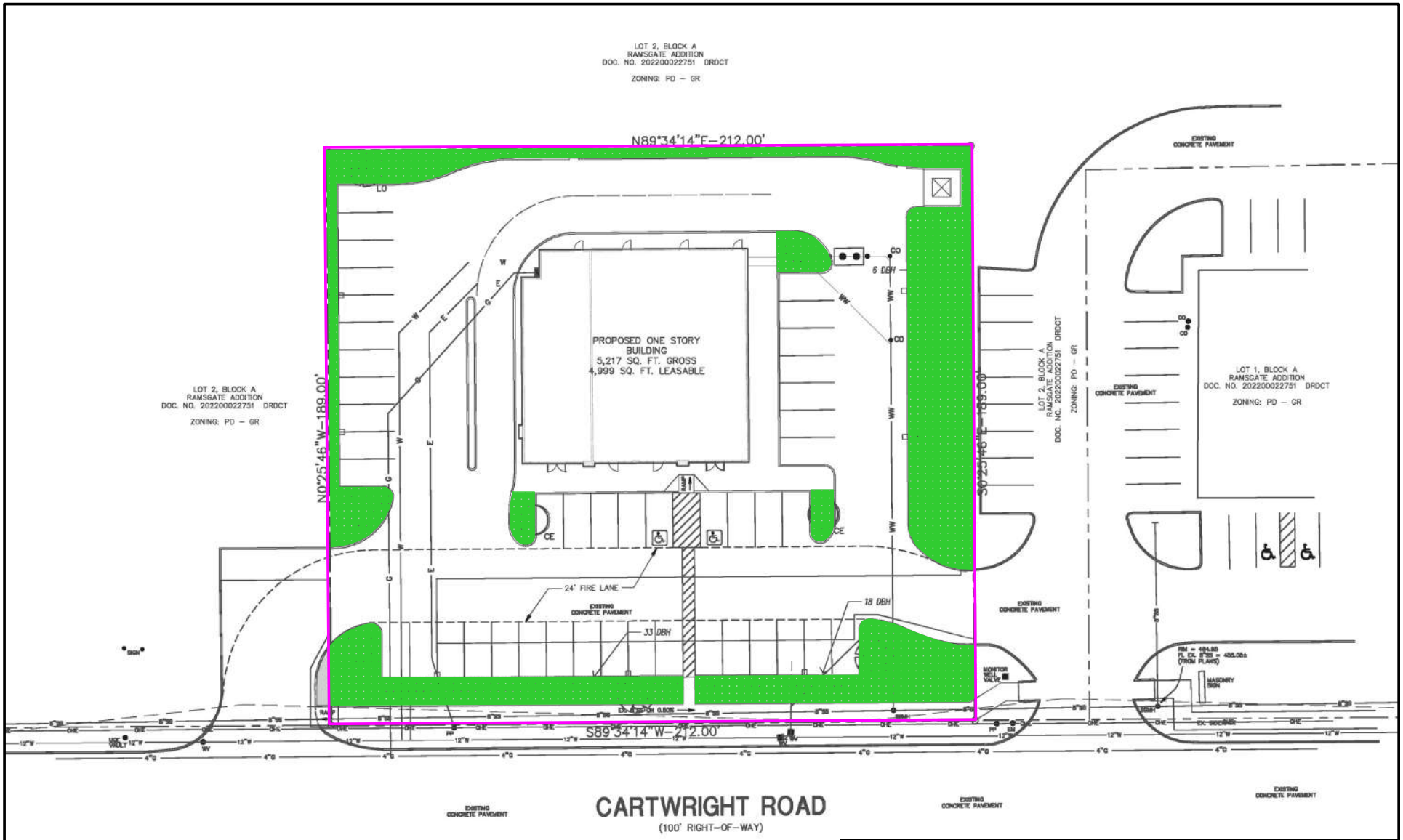
[signature]

11 CLOSURE PLAN

A VMS has been designed and will be installed beneath the concrete foundation. The VMS will direct any vapors (methane or other) out from beneath the building, and the vapors monitored to verify that there is no vapor accumulation beneath the building. Concrete/asphalt-covered parking lots will surround the building and cover other areas of the Subject Property. The former landfill is capped with 2 to 4 ft of clay and the building and parking lots will result in a similar or better impervious cap over the Subject Property than is currently present.

The remaining area that will not be covered, i.e., landscaped areas, will conform to §330.957(q). If the existing clay cap is removed in areas during construction from areas that will not be covered with the building and parking/driveway areas, then in accordance with §330.453(a) and (b), 18 inches of compacted clayey soil that is free of waste and 6 inches of topsoil that can support native vegetation will be placed in areas of soil disturbance that are not covered by building, asphalt, or pavement. The grass/landscaped areas are on shown on **Figure 1** of **Attachment 11**.

ATTACHMENT 11
GRASS/LANDSCAPED AREA MAP



SUBJECT PROPERTY BOUNDARY, APPROXIMATE

LANDSCAPED AREA

N

SOURCE:
RAWLS CULVER ARCHITECTS LP

0 25 50

SCALE IN FEET

SQ Environmental, LLC

FIGURE 1

LANDSCAPED AREA MAP

CAESARS PLAZA
957 W CARTWRIGHT ROAD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
1 IN = 50 FT	DEC 2024	1239.001.001

12 STRUCTURE GAS MONITORING, SITE OPERATING, SAFETY & EVACUATION PLAN

A VMS (provided in **Attachment 9**) designed in accordance with 30 TAC 330.957(m) will be installed during development and construction of the building on the Subject Property, which will direct any vapors (methane or other) out from beneath the building, and the vapors monitored to verify that there is no vapor accumulation beneath the building. A methane sensor will also be located within the building. The Methane Monitoring Plan provided in **Attachment 12** includes the requirements of a Structure Gas Monitoring Plan, Site Operating Plan, and Safety and Evacuation Plan related to the VMS and Subject Property.

ATTACHMENT 12
METHANE MONITORING PLAN

STRUCTURE GAS MONITORING PLAN

This Structure Gas Monitoring Plan (SGMP) fulfills the requirements of 30 TAC §330.957(t). It will be part of the operating record for the development permit. A copy of this information will be maintained onsite throughout the life of the facility. -The SGMP includes a VMS with an impermeable barrier installed below the structure with vent risers extending through the roof of the building. This system will allow any vapors (methane or other) that migrate though the soil to the area beneath the structure to be vented outside of the structure, as shown in **Section 9**. A monitoring system will be installed within the VMS piping network beneath the building that will include a controller unit and remote sensor that can detect methane and other explosive gases at concentrations below 1% by volume (BV) or 20% of the LEL. This system will have audible and visual alarms that will trigger if methane concentrations exceed 1% beneath a building. The monitoring system is intended to confirm that the concentration of vapor (methane or other) beneath the facility structure does not exceed 20% of the LEL. A methane sensor will also be installed within the building, and a sample port for field monitoring will be installed for the aggregate layer.

Facility Characteristics and Potential Migration Pathways (§330.957(t)(2)(A))

Based on soil vapor sample results described in **Section 2**, elevated methane concentrations appear to be present at 14 ft bgs. The former landfill is capped with 2 to 4 ft of clay. The only excavations that will be performed are for utilities (which will likely be limited to the upper 3 to 4 ft) and the foundation piers (14 ft bgs). In no case will the excavations exceed the depths of the saturated zone (greater than 15 ft bgs).

The planned commercial retail center will consist of one building. The planned facility layout is included in **Section 14**. The building will be constructed on a reinforced concrete slab foundation. The VMS, which will consist of a geotextile filter fabric, a 12-inch-thick permeable layer of aggregate with a network of vent pipes, and covered with a sealed HDPE geomembrane liner, will be installed beneath the building and. The planned commercial retail building duration of occupation could be up to 18 hours. The foundation design and VMS will minimize the potential for any vapors in the underlaying soil to enter the building. As has been discussed, monitoring of the vapors within the VMS piping network will be performed so that vapors beneath the building will be maintained at 20% or less of the LEL, to eliminate the potential for explosive conditions within or near the building. A methane sensor will also be installed within the building.

Building Design Characteristics Related to Gas Accumulation Prevention (§330.957(t)(2)(B))

As described in **Section 9**, the design of the commercial building includes several features that will minimize the potential for the accumulation of methane gas within the building. The vapor barrier and ventilation system design will be installed beneath the foundation of the building. The system will consist of a granular layer, 12-inches in thickness, which will act as bedding for a network of slotted vent pipes. The vent pipes will be extended vertically through or adjacent to walls within the building to allow venting of the area where vapors could accumulate. The pipes will be extended through the roof. The granular layer and vent pipe system will be covered with a plastic layer, which will be sealed at overlaps, and all penetrations. A geotextile filter fabric will be installed beneath the granular layer. As part of the VMS installation smoke tests will be performed on the system to verify that it is property sealed, prior to pouring of the concrete foundation. Some or all of the vent pipes will be constructed to allow the addition of fans so that active venting can be performed if passive venting is not sufficient to prevent the buildup of vapors under the building. The vapor barrier and ventilation system provide the primary systems to prevent vapor migration into the structure and minimize the potential for methane gas accumulation beneath the building. The sub-slab gas collection system will be under negative pressure from electric exhaust fans. Methane is lighter than air and will dissipate upward and away from vents.

The vapor monitoring system within the VMS piping network will provide continuous monitoring for methane to provide early detection and warning in the event of methane gas accumulation beneath the building. In

addition to the monitoring equipment in the VMS piping, methane monitoring will be conducted continuously using a methane sensor within the building to verify that methane is not entering the building in concentrations above residential risk-based levels. In addition, the landfill gas collection system will have a port for sampling the aggregate layer beneath the slab. The proposed location of the methane gas sensor is provided in the VMS design plan included in **Section 9**.

Gas Collection and Ventilation System Description (§330.957(t)(2)(C))

The VMS will consist of an impermeable methane barrier layer, aggregate layer, and geotextile filter fabric, as described in **Section 9**. The barrier and ventilation layer will be installed beneath the slab foundation of the building.

Gas Monitoring Equipment (§330.957(t)(2)(D))

The vapor monitoring system will include one controller and one sensor in the VMS piping system. Landfill gas will be monitored by a sensor. Within the occupied spaces, a permanently mounted Family Safety Products, Inc. Safety Siren Pro Series methane detector (Model No. HS80504), or similar, will be used. On the sub-slab landfill gas collection system, a permanently mounted RKI Instruments M2A gas sensor, or similar, will monitor the exhaust gas stream. The exhaust fan will be a FanTech HP 190 or similar. The location of the sensor is provided in **Attachment 9**. For port landfill gas measurements, a Landtec GEM 5000 portable landfill gas detector, or similar, will be used. The VMS design plan included in **Section 9** provides a plan for the location of the vapor monitoring equipment. Specification sheets for the monitoring equipment will be provided following finalization of the VMS design. Calibration will be performed at least twice annually or every six months.

Implementation Schedule for Monitoring Equipment (§330.957(t)(2)(E))

Monitoring equipment will be installed and tested prior to completion of construction of the proposed structure. The monitoring equipment will be in continuous operation at least one week prior to building being occupied.

Sampling and Analysis Plan (§330.957(t)(2)(F))

Indoor air samples will be initially collected prior to occupancy. This will be a one-time sampling event to characterize the indoor air. Two samples will be collected using an evacuated “Summa” canister fitted with a regulator that will collect the sample over an 8-hour period. The selected analytical laboratory will provide canisters and chain of custody forms for the sampling activities.

The sampling method to collect the indoor air sample includes using an evacuated 1.4-liter Summa canister equipped with a flow controller calibrated to draw in 1.4-liters of ambient indoor air over an approximate 8-hour time period. The main valve on the Summa canister will be opened to initiate the sampling and then closed after approximately 8 hours has elapsed, while observing the gauge on the flow controller to ensure the Summa canister does not equilibrate to ambient conditions.

The ambient indoor air sample collected from the building will be analyzed for methane by EPA method TO-3. The sample will be shipped to an accredited laboratory offsite that will perform the approved testing.

Laboratory QA/QC procedures will be provided by the laboratory chosen to perform the analysis and will be included with the test results.

Analysis Of Landfill Gas Samples (§330.957(t)(2)(G))

Two landfill gas samples (SV-1 and SV-2) were collected at 14 ft bgs in the footprint of the planned building. The samples were analyzed for methane, carbon monoxide, hydrogen sulfide, mercaptans, VOCs, and ammonia by ALS Environmental in Simi Valley, California. Water vapor was measured in the field by

attaching colorimetric to tubing to a hand pump. Laboratory results are provided at the end of this attachment. The analytical results of constituents are summarized below.

Analyte	SV-1	SV-2
Hydrogen sulfide	ND (<0.010 mg/m^3)	ND (<0.011 mg/m^3)
Carbonyl sulfide	0.074 mg/m^3	ND (<0.019 mg/m^3)
Carbon disulfide	0.025 mg/m^3	0.014 mg/m^3
Ammonia	ND (<0.20mg/m^3)	ND (<0.20mg/m^3)
Water vapor	4 ppm	6 ppm
Carbon dioxide	0.360%	17.4%
Carbon monoxide	ND (<0.14%)	ND (<0.16%)
Hydrogen	ND (<0.14%)	ND (<0.16%)
Oxygen	21.4%	8.40%
Nitrogen	77.9%	30.6%
Methane	0.319%%	43.6%
VOCs	See **Table 12-1**	

Based on these landfill gas samples, the landfill gases do not contain significant concentrations of mercaptans, hydrogen sulfide, carbon monoxide, ammonia, or VOCs. Carbon dioxide and methane were reported at elevated concentrations. Carbon dioxide and methane will be monitored quarterly from the sample port.

Sampling Plan and Procedures

During each landfill gas monitoring event, the integrity of each monitoring port or probe will be inspected and recorded on the Landfill Gas Monitoring System Data Sheets included in this attachment. If any monitoring port or probe is observed to be damaged, the port or probe will be repaired. If irreparable, the damaged port or probe will be decommissioned and replaced with a new monitoring port or probe.

The landfill gas collection system under the building will be continuously monitored for methane concentration by a permanently installed sensor. In addition, field monitoring will be periodically performed for the port on the landfill gas collection system under each building. This period field monitoring will include measurements of for methane, carbon dioxide, and oxygen as a check on the permanently installed sensor. The frequency of the field monitoring of the port beneath the building will occur quarterly for the first year, and then annually for the following three years.

For the field monitoring, a CES-Landtec GEM 5000 Landfill Gas Monitor (GEM 5000), or similar, will be used to measure the methane and carbon dioxide concentrations at each port. This meter provides the readings of methane and carbon dioxide (and oxygen) as a percentage by volume in air.

The field monitoring of the landfill gas collection system will be conducted on a quarterly basis for the first year and then annually for the following three years. The field monitoring events will be conducted in accordance with the following procedure:

1. Perform equipment checks and calibration tests.
2. Inspect the sampling location. The inspection is to include the following:
    a. Verify that the location is accessible as necessary for monitoring.
    b. Verify that any surface protective devices are in place and are in good condition, and
    c. Verify that the label is in place and clearly readable.
3. Open any protective cover.
4. Turn on the CES-Landtec GEM 5000, or similar, meter and allow for the meter to adjust to the ambient air.
5. Connect the GEM 5000, or similar, meter to the quick-connector or port.
6. Open the valve on the port.
7. Turn on the GEM 5000 pump, or similar, and allow for the meter to purge the port.
8. Allow the meter to purge the trapped air for at least 30 seconds to get an accurate reading.
9. Record the observed methane, carbon dioxide, and oxygen readings.
10. Record the ambient barometric pressure from the GEM 5000, or similar, meter.
11. Disconnect the GEM 5000, or similar, methane meter from the quick-connector or port.
12. Close the port and reinstall any protective cover.

All readings and inspection results will be recorded on the Landfill Gas Monitoring System Data Sheets with any needed maintenance and/or repairs noted. All results will be placed in the operating record of the facility.

SITE OPERATING PLAN

The proposed commercial retail center will consist of one building. The building will be a wood or metal framed structure and be constructed over reinforced concrete structural slabs. The VMS beneath the building will be equipped with a methane sensor that will produce both an audible and visual alarm if concentrations of methane exceed 1% BV or 20% of the LEL. A methane sensor will also be installed within the building.

In accordance with §330.958, construction plans and specifications of the proposed structure will be prepared and maintained onsite during construction. After completion of construction, one set of as-built construction plans and specifications will be maintained at the permitted development. Plans maintained at the development may be made available for inspection by executive director representatives.

This SGMP, Site Operating Plan, and Safety and Evacuation Plan will be implemented and maintained in accordance with the requirements of §330.961(a) through (h) by an environmental professional or person(s) trained by an environmental professional. These documents will be considered a part of the operating record of the development and a copy will be maintained onsite in an office at the development for the life of the structure to aid in the implementation and maintenance of the SGMP, Site Operating Plan, and Safety and Evacuation Plan. Additionally, the remaining documents listed in §330.961(a)(1) will be considered part of the operating record and maintained onsite, including but not limited to the Development Permit and Closure Plan. Any deviation from the development permit and incorporated plans or other related documents associated with the development permit will seek approval of the executive director. The development permit holder will notify the executive director, and any local pollution agency with jurisdiction that has requested to be notified of any incident involving the facility relative to the development permit and provisions for the remediation of the incident.

The owner or lessee of the development will provide equipment for monitoring the on-site structure. Monitoring of the onsite structure will include a permanently installed monitoring probe and a continuous monitoring system. The structure located on top of the waste area shall be monitored on a continuous basis, and monitoring equipment shall be designed to trigger an audible alarm if the volumetric concentration of methane in the sampled air is greater than 1% within the venting pipe or permeable layer, and/or inside the structure. Areas of the structure where gas may accumulate will be monitored. Gas monitoring and control systems will be modified as needed to reflect modifications to the structure.

All sampling results will be placed in the operating record of the facility and be made available for inspection by the executive director, and any local pollution agency with jurisdiction that has requested to be notified. If methane gas levels exceeding the limits are detected, the owner, operator, or lessee shall notify the executive director and take action.

The ponding of water over waste in the closed MSW landfill will be prevented. Ponded water that occurs on a closed MSW landfill unit will be eliminated as quickly as possible.

Surface drainage in and around the structure will be controlled to minimize surface water running onto, into, and off the closed MSW landfill.

All conduits intended for the transport or carrying of fluids over or within the closed MSW landfill will be double-containment. This could include the use of double-walled pipes or 2 ft of compacted, clay-rich soil with a permeability not greater than $1x10E^{-7}$ cm/sec will be placed in the base of the trench and a HDPE 30-mil sealed liner will be installed on the bottom and sides of the trench. The conduit for carrying fluids will then be placed above the HDPE liner in the trench and clean backfill added to the sides. The HDPE liner will extend approximately 1 ft on top of the trench, be overlapped, and sealed. In accordance with §330.453(a) and (b), 18 inches of compacted clayey soil that is free of waste and 6 inches of topsoil that can support native vegetation will be in place for utility trenches in areas that are not covered by building, asphalt, or pavement.

The owner or lessee shall promptly record and retain in the operating record the following information:

- all results from gas monitoring and any remediation plans pertaining to explosive and other gases;
- all unit design documentation for the placement of gas monitoring systems and leachate or gas condensate removal or disposal related to the closed MSW landfill unit;
- copies of all correspondence and responses relating to the development permit;
- all documents relating to the operation and maintenance of the building, facility, or monitoring systems as they relate to the development permit; and
- any other document(s) as specified by the approved development permit or by the executive director.

The owner, operator, or lessee shall provide written notification to the executive director, and any local pollution agency with jurisdiction that has requested to be notified, for each occurrence that documents listed in subsection (h) of this section are placed into or added to the operating record. All information contained in the operating record shall be furnished upon request to the executive director and shall be made available at all reasonable times for inspection by the executive director or his representative.

The following equipment is expected to be used at the structure and a maintenance schedule for this equipment is provided below.

Description	Procedures and Function	Maintenance Schedule
Cleaning/maintenance equipment	General housekeeping/maintenance	As-needed maintenance/cleaning

HVAC	Interior climate control	Semi-annually
Electric water heaters	Hot water control	Annually
Lighting	Interior lighting control	As-needed replacement
IT/Network equipment	Telephone, internet, cameras, etc.	As-needed repair/replacement

The equipment list will be reviewed and updated as needed.

SAFETY AND EVACUATION PLAN

The commercial retail structure will consist of two large rooms. As previously discussed, the VMS beneath each building will be equipped with a methane sensor that will produce both an audible and visual alarm if concentrations of methane beneath the building exceed 1% BV or 20% of the LEL.

By maintaining the potential concentration of methane beneath the building at 1% (or 20% of the LEL), methane cannot accumulate to these levels in the building. Typically, “attenuation” levels through a building slab are 0.03 meaning that even as a worst case, the methane concentrations in the building cannot exceed 33% of 20% of the LEL since the “trigger” will be the methane concentration beneath the building, and not in the building. Methane will also be installed within the building and will be equipped with a methane monitor with an audible alarm. In the event that the methane monitor within the VMS detects elevated levels of methane, the VMS vent fans will immediately be turned on (if they were not already running) and monitoring at the sample port will be performed to verify that the concentrations within the building are below the threshold levels.

Building occupants will be notified that the building is located over methane gas, and that controls are in place to minimize the potential danger posed by the methane gas. In the event that the methane monitor inside the building detect elevated levels of methane, alarms will be triggered, and occupants will evacuate the building and only re-enter when conditions are safe. Each living space will be equipped with a graphic evacuation plan map directing occupants where to go in the event of an alarm including a rally point and contact phone numbers.

LANDFILL GAS SAMPLE PORT MONITORING DATA SHEET

SAMPLE PORT LOCATION ID	SAMPLER NAME	DATE	TIME	METHANE (%)	CARBON DIOXIDE (%)	OXYGEN (%)	OTHER
NOTES (CONDITION/DAMAGE):							
NOTES (CONDITION/DAMAGE):							
NOTES (CONDITION/DAMAGE):							
NOTES (CONDITION/DAMAGE):							

TABLE 12-1
SUMMARY OF SOIL VAPOR SAMPLE RESULTS
Caesars Plaza
957 W Cartwright Rd
Mesquite, TX 75149

Analyte[1]	Sample ID	SV-1		SV-2	
	Lab ID	P2404845-001		P2404845-002	
	Date	11/26/2024		11/26/2024	
	Rate	200 mL/min		200 mL/min	
	Units	mg/m^3		mg/m^3	
Petroleum Constituents					
Benzene		0.0034	J	**0.027**	
Ethyl benzene		0.012	J	0.0085	J
Hexane		**0.037**		**1.1**	
Naphthalene		<0.0037		0.0048	J
Toluene		**0.020**		0.011	J
Trimethylbenzene, 1,2,4-		<0.0021		0.0094	J
Trimethylbenzene, 1,3,5-		<0.0022		0.0041	J
Xylene, m,p-		0.0072	J	0.018	J
Xylene, o-		0.0034	J	0.0064	J
Chlorinated Solvent Constituents					
Dichloroethene, cis-1,2-		<0.0021		0.016	J
Vinyl chloride		<0.0037		0.014	J
Other Constituents					
Acetone		0.110	J	<0.0380	
Carbon disulfide		0.015	J	0.0093	J
Chlorobenzene		0.0076	J	0.074	J
Cumene (Isopropylbenzene)		0.0060	J	**0.040**	
Cyclohexane		0.0045	J	**0.250**	
Dichlorobenzene, 1,4-		0.0063	J	**0.033**	
Dichlorodifluoromethane (Freon 12)		<0.0025		**0.023**	
Freon 114		0.0039	J	**1.3**	
Heptane		**0.034**		**0.310**	
Methyl ethyl ketone (2-Butanone)		0.013	J	0.014	J
Styrene		0.0027	J	0.0052	J

NOTES:

[1] Only those VOCs detected above MDL included in table. For full list of VOCs, see lab report.

< - analyte was not detected above the method detection limit (MDL)

mg/m^3 - milligrams per cubic meter

Bold values indicate concentration reported above the method quantitation limit (MQL).

ALS Environmental
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Simi Valley, CA 93065
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LABORATORY REPORT

December 9, 2024

Sam Enis
SQ Environmental, LLC
PO Box 1991
Austin, TX 78767

RE: Bhojani / 1239.001.001

Dear Sam:

Enclosed are the results of the samples submitted to our laboratory on November 27, 2024. For your reference, these analyses have been assigned our service request number P2404845.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at [redacted] Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

ALS | Environmental

shaarazetta.robinson 12/9/24 3:38 pm

Shaarazetta Robinson
Project Manager

ALS Environmental
2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T +1 805 526 7161

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Client: SQ Environmental, LLC
Project: Bhojani / 1239.001.001

Service Request No: P2404845

CASE NARRATIVE

The samples were received intact under chain of custody on November 27, 2024 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not included in the NELAP accreditation.

Sulfur Analysis

The samples were analyzed for twenty sulfur compounds per ASTM D 5504-20 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). All compounds with the exception of hydrogen sulfide and carbonyl sulfide are quantitated against the initial calibration curve for methyl mercaptan. This method is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. The method was modified to include the use of helium as a diluent gas in place of zero-grade air for container pressurization. When necessary, analytical sample volumes were adjusted by a correction factor for containers pressurized with helium. A summary sheet has been included listing the affected samples. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.4 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	https://dec.alaska.gov/spar/csp/lab-approval/list-of-approved-labs	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	https://internet.deq.louisiana.gov/portal/divisions/lelap/accredited-laboratories	203013
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtm	CA01627
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	006-999-456
New Jersey DEP (NELAP)	https://dep.nj.gov/dsr/oqa/certified-laboratories/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oklahoma DEQ (NELAP)	labaccreditation.deq.ok.gov/labaccreditation/	2207
Oregon PHD (NELAP)	https://orelap.state.or.us/searchLabs	4068-012
Pennsylvania DEP	hhttp://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413
Utah DOH (NELAP)	https://uphl.utah.gov/certifications/environmental-laboratory-certification/	CA016272024-16
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: SQ Environmental, LLC
Service Request: P2404845
Project ID: Bhojani / 1239.001.001

Date Received: 11/27/2024
Time Received: 09:32

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pfl (psig)	3C Modified - Fxd Gases Can	ASTM D 5504-20 - Sulfur Can	TO-15 Modified - VOC Cans
SV-1	P2404845-001	Air	11/26/2024	11:20	1SS00702	-0.38	5.80	X	X	X
SV-2	P2404845-002	Air	11/26/2024	13:45	1SS00949	-1.52	6.00	X	X	X

ALS Environmental
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

Air - Chain of Custody Record & Analytical Service Request

P2404845

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No.

Company Name & Address (Reporting Information)	SQ Environmental
Project Manager	Sam Enis
Phone	512-574-1199
Fax	
Email Address for Result Reporting	[redacted]
Project Name	Bhojani
Project Number	1239.001.001
P.O. # / Billing Information	Po Box 1991 Austin TX 78767
Sampler (Print & Sign)	MUHAMMAD CHHAGAN M.

ALS Contact:

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15		Comments e.g. Actual Preservative or specific instructions
SV-1		11/26/24	11:20	15500702	SG50949	-28	-2		✓		
SV-2		↕	13:45	15500949	SG500060	-28	-2		✓		

Report Tier Levels - please select

Tier I - Results (Default if not specified) _____
Tier II (Results + QC Summaries) _____
Tier III (Results + QC & Calibration Summaries) ✓
Tier IV (Data Validation Package) 10% Surcharge _____

EDD required Yes / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 11/26/24	Time:	Received by: (Signature) FEDEX	Date:	Time:
Relinquished by: (Signature) FEDEX	Date:	Time:	Received by: (Signature)	Date: 11/27/24	Time: 0932

Cooler / Blank Temperature ____°C

Signature denotes acceptance of ALS Group USA, Corp. Terms and Conditions - Detailed Terms & Conditions can be reviewed at the link below:
https://www.alsglobal.com/ALSGroupUSACorpTC

ALS Environmental
Sample Acceptance Check Form

Client: SQ Environmental, LLC Work order: P2404845

Project: Bhojani / 1239.001.001

Sample(s) received on: 11/27/2024 Date opened: 11/27/2024 by: ANTHONY.VASQUEZ

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒
12	Lab Notification: Analyst and PM were alerted of Short HT or RUSH samples?	☐	☐	☒
13	Client Notification: Client has been notified regarding HT exceedances and/or other CoC discrepancies?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2404845-001.01	1.0 L Source Silonite Canister					
P2404845-002.01	1.0 L Source Silonite Canister					
P2404845-003.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers):

Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-1**
Client Project ID: **Bhojani / 1239.001.001**

ALS Project ID: P2404845
ALS Sample ID: P2404845-001

Test Code: EPA Method 3C Modified
Instrument ID: Agilent 8890/GC38/TCD
Analyst: Braden Kalous
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:
Container ID: 1SS00702

Date Collected: 11/26/24
Date Received: 11/27/24
Date Analyzed: 12/5/24
Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -0.38 Final Pressure (psig): 5.80

Container Dilution Factor: 1.43

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.14	
7782-44-7	**Oxygen***	**21.4**	0.14	
7727-37-9	**Nitrogen**	**77.9**	0.14	
630-08-0	Carbon Monoxide	ND	0.14	
74-82-8	**Methane**	**0.319**	0.14	
124-38-9	**Carbon Dioxide**	**0.360**	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-2** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-002

Test Code: EPA Method 3C Modified Date Collected: 11/26/24
Instrument ID: Agilent 8890/GC38/TCD Date Received: 11/27/24
Analyst: Braden Kalous Date Analyzed: 12/5/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 ml(s)
Test Notes:
Container ID: 1SS00949

Initial Pressure (psig): -1.52 Final Pressure (psig): 6.00

Container Dilution Factor: 1.57

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.16	
7782-44-7	**Oxygen***	**8.40**	0.16	
7727-37-9	**Nitrogen**	**30.6**	0.16	
630-08-0	Carbon Monoxide	ND	0.16	
74-82-8	**Methane**	**43.6**	0.16	
124-38-9	**Carbon Dioxide**	**17.4**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **SQ Environmental, LLC**
Client Sample ID: **Method Blank** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241205-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: Agilent 8890/GC38/TCD Date Received: NA
Analyst: Braden Kalous Date Analyzed: 12/05/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **SQ Environmental, LLC**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241205-DLCS

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: Agilent 8890/GC38/TCD Date Received: NA
Analyst: Braden Kalous Date Analyzed: 12/05/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ppmV	Result LCS ppmV	Result DLCS ppmV	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
1333-74-0	Hydrogen	40,100	43,400	42,800	**108**	**107**	96-117	0.9	5	
7782-44-7	Oxygen*	24,300	24,400	24,500	**100**	**101**	92-112	1.0	7	
7727-37-9	Nitrogen	49,700	48,500	49,200	**98**	**99**	89-113	1	7	
630-08-0	Carbon Monoxide	50,100	50,500	50,000	**101**	**100**	96-113	1.0	5	
74-82-8	Methane	39,200	39,800	39,400	**102**	**101**	95-111	1.0	5	
124-38-9	Carbon Dioxide	50,100	53,900	53,500	**108**	**107**	93-112	0.9	6	

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-2** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-002DUP

Test Code: EPA Method 3C Modified Date Collected: 11/26/24
Instrument ID: Agilent 8890/GC38/TCD Date Received: 11/27/24
Analyst: Braden Kalous Date Analyzed: 12/5/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 ml(s)
Test Notes:
Container ID: 1SS00949

Initial Pressure (psig): -1.52 Final Pressure (psig): 6.00

Container Dilution Factor: 1.57

CAS #	Compound	Sample Result %, v/v	Duplicate Sample Result %, v/v	Average	% RPD	RPD Limit	Data Qualifier
1333-74-0	Hydrogen	ND	ND	-	**-**	5	
7782-44-7	Oxygen*	**8.40**	**8.41**	8.405	**0.1**	7	
7727-37-9	Nitrogen	**30.6**	**30.6**	30.6	**0**	7	
630-08-0	Carbon Monoxide	ND	ND	-	**-**	5	
74-82-8	Methane	**43.6**	**43.5**	43.55	**0.2**	5	
124-38-9	Carbon Dioxide	**17.4**	**17.4**	17.4	**0**	6	

ND = Compound was analyzed for, but not detected.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

Response Factor Report GCI

Method Path : I:\GC38\METHODS\
Method File : C38021122.M
Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
Last Update : Tue Mar 08 12:45:41 2022
Response Via : Initial Calibration

Calibration Files
1 =02112202.D 2 =02112203.D 3 =02112204.D
4 =02112205.D 5 =02112206.D 6 =02112207.D

	Compound	1	2	3	4	5	6	Avg	%RSD
1)	Hydrogen	6.496	6.910	6.686	7.250	8.492		7.167 E6	11.05
2)	Oxygen	1.313	1.359	1.404	1.408		1.303	1.332 E8	4.84
3)	Nitrogen	1.623	1.579	1.617	1.546	1.368		1.481 E8	9.51
4)	Carbon Monoxide	1.348	1.440	1.385	1.462	1.453		1.418 E8	3.48
5)	Methane	1.025	1.082	1.054	1.110	0.982		1.039 E8	5.01
6)	Carbon Dioxide	1.551	1.643	1.644	1.736	1.637		1.624 E8	4.49

(#) = Out of Range ### Number of calibration levels exceeded format ###

C38021122.M Thu Jun 29 11:12:23 2023

Modified EPA Method 3C Daily QC Summary

Client : SQ Environmental, LLC
Analyst : BK
Method Name : EPA 3C, ASTM D 1946-90, VOA-EPA3C

Instrument : GC38
Date Analyzed : 12/5/2024

RT Summaries and QC Check (minutes)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
ICAL Mean RT	**2.121**	**4.409**	**5.343**	**10.218**	**6.996**	**3.582**		
RT Windows (+/- min)	**0.330**	**0.330**	**0.330**	**0.330**	**0.330**	**0.330**		
STD S33-05222401	2.114	4.405	5.340	10.210	6.995	3.683	12052402.D	07:59
+/- 0.33min of ICAL Mean RT	Pass	Pass	Pass	Pass	Pass	Pass		
MB STD00251		4.440 Pass	5.399 Pass				12052404.D	08:39
Lab Air		4.275 Pass	5.002 Fail			3.742 Pass	12052405.D	08:55
LCS S33-07312403	2.114 Pass	4.404 Pass	5.340 Pass	10.213 Pass	6.995 Pass	3.679 Pass	12052407.D	09:34
LCSD S33-07312403	2.114 Pass	4.404 Pass	5.340 Pass	10.214 Pass	6.995 Pass	3.679 Pass	12052408.D	09:49
STD S33-05222401	2.115 Pass	4.406 Pass	5.342 Pass	10.218 Pass	6.997 Pass	3.683 Pass	12052419.D	12:59
P2404845-001		4.263 Pass	4.978 Fail		7.061 Pass	3.742 Pass	12052424.D	14:13
P2404845-002		4.332 Pass	5.122 Pass		6.620 Fail	3.530 Pass	12052425.D	14:26
P2404845-002dup		4.334 Pass	5.122 Pass		6.622 Fail	3.532 Pass	12052426.D	14:41
STD S33-05222401	2.115 Pass	4.406 Pass	5.343 Pass	10.221 Pass	6.998 Pass	3.683 Pass	12052428.D	15:14

Continuing Calibration Standards Summary (ppm)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
ACTUAL	40300.0	24900.0	49700.0	50400.0	40300.0	50400.0		
CCV Criteria (+/- %D)	**15.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**		
STD S33-05222401	44209.8 9.7%	24795.5 0.4%	49106.3 1.2%	51301.3 1.8%	40370.5 0.2%	54590.2 8.3%	12052402.D	07:59
STD S33-05222401	44286.9 9.9%	25107.8 0.8%	49671.1 0.1%	51408.3 2.0%	40390.2 0.2%	53731.8 6.6%	12052419.D	12:59
STD S33-05222401	43113.0 7.0%	24417.3 1.9%	48364.8 2.7%	50018.0 0.8%	39316.4 2.4%	52097.1 3.4%	12052428.D	15:14

Lab Dup Summary (ppm, without DF correction and nomalization)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
Duplicate Criteria % RPD	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**		
P2404845-002		98612.2	359245.1		511374.6	204180.5	12052425.D	14:26
P2404845-002dup		98189.6	357629.9		507713.9	203233.4	12052426.D	14:41
Duplicate % RPD		0.4% Pass	0.5% Pass		0.7% Pass	0.5% Pass		

LCS / LCS Dup Summary (ppm, without DF correction)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
LCS Actual Conc. (ppm)	40100.0	24300.0	49700.0	50100.0	39200.0	50100.0		
LCS Criteria (% Range)	**96%-117%**	**92%-112%**	**89%-113%**	**96%-113%**	**95%-111%**	**93%-112%**		
LCS S33-07312403	43351.3	24401.4	48460.5	50511.0	39800.5	53947.3	12052407.D	09:34
LCS % Recovery	108% Pass	100% Pass	98% Pass	101% Pass	102% Pass	108% Pass		
LCSD S33-07312403	42763.2	24482.0	49170.8	50014.7	39380.0	53466.0	12052408.D	09:49
LCS % Recovery	107% Pass	101% Pass	99% Pass	100% Pass	100% Pass	107% Pass		
Duplicate % RPD	1.4%	0.3%	1.5%	1.0%	1.1%	0.9%		
Duplicate Criteria % RPD	**5%** Pass	**7%** Pass	**7%** Pass	**5%** Pass	**5%** Pass	**6%** Pass		

Lab Air QC Summary

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	Lab Air Criteria Total (90%-110%)
Lab Air		212251.7	754215.6			626.7	96.7% Pass
Lab Air Normalized (%)		21.95%	77.98%			0.06%	100.0%

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: **SQ Environmental, LLC**
Client Sample ID: **SV-1**
Client Project ID: **Bhojani / 1239.001.001**

ALS Project ID: P2404845
ALS Sample ID: P2404845-001

Test Code: ASTM D 5504-20
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Gilbert Gutierrez
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:
Container ID: 1SS00702

Date Collected: 11/26/24
Time Collected: 11:20
Date Received: 11/27/24
Date Analyzed: 12/2/24
Time Analyzed: 10:18
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -0.38 Final Pressure (psig): 5.80

Container Dilution Factor: 1.43

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	10	ND	7.2	
463-58-1	Carbonyl Sulfide	**74**	18	**30**	7.2	
74-93-1	Methyl Mercaptan	ND	14	ND	7.2	
75-08-1	Ethyl Mercaptan	ND	18	ND	7.2	
75-18-3	Dimethyl Sulfide	ND	18	ND	7.2	
75-15-0	Carbon Disulfide	**25**	11	**8.0**	3.6	
75-33-2	Isopropyl Mercaptan	ND	22	ND	7.2	
75-66-1	tert-Butyl Mercaptan	ND	26	ND	7.2	
107-03-9	n-Propyl Mercaptan	ND	22	ND	7.2	
624-89-5	Ethyl Methyl Sulfide	ND	22	ND	7.2	
110-02-1	Thiophene	ND	25	ND	7.2	
513-44-0	Isobutyl Mercaptan	ND	26	ND	7.2	
352-93-2	Diethyl Sulfide	ND	26	ND	7.2	
109-79-5	n-Butyl Mercaptan	ND	26	ND	7.2	
624-92-0	Dimethyl Disulfide	ND	14	ND	3.6	
616-44-4	3-Methylthiophene	ND	29	ND	7.2	
110-01-0	Tetrahydrothiophene	ND	26	ND	7.2	
638-02-8	2,5-Dimethylthiophene	ND	33	ND	7.2	
872-55-9	2-Ethylthiophene	ND	33	ND	7.2	
110-81-6	Diethyl Disulfide	ND	18	ND	3.6	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: **SQ Environmental, LLC**
Client Sample ID: **SV-2**
Client Project ID: **Bhojani / 1239.001.001**

ALS Project ID: P2404845
ALS Sample ID: P2404845-002

Test Code: ASTM D 5504-20
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Gilbert Gutierrez
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:
Container ID: 1SS00949

Date Collected: 11/26/24
Time Collected: 13:45
Date Received: 11/27/24
Date Analyzed: 12/2/24
Time Analyzed: 10:40
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -1.52 Final Pressure (psig): 6.00

Container Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	11	ND	7.9	
463-58-1	Carbonyl Sulfide	ND	19	ND	7.9	
74-93-1	Methyl Mercaptan	ND	15	ND	7.9	
75-08-1	Ethyl Mercaptan	ND	20	ND	7.9	
75-18-3	Dimethyl Sulfide	ND	20	ND	7.9	
75-15-0	Carbon Disulfide	**14**	12	**4.6**	3.9	
75-33-2	Isopropyl Mercaptan	ND	24	ND	7.9	
75-66-1	tert-Butyl Mercaptan	ND	29	ND	7.9	
107-03-9	n-Propyl Mercaptan	ND	24	ND	7.9	
624-89-5	Ethyl Methyl Sulfide	ND	24	ND	7.9	
110-02-1	Thiophene	ND	27	ND	7.9	
513-44-0	Isobutyl Mercaptan	ND	29	ND	7.9	
352-93-2	Diethyl Sulfide	ND	29	ND	7.9	
109-79-5	n-Butyl Mercaptan	ND	29	ND	7.9	
624-92-0	Dimethyl Disulfide	ND	15	ND	3.9	
616-44-4	3-Methylthiophene	ND	32	ND	7.9	
110-01-0	Tetrahydrothiophene	ND	28	ND	7.9	
638-02-8	2,5-Dimethylthiophene	ND	36	ND	7.9	
872-55-9	2-Ethylthiophene	ND	36	ND	7.9	
110-81-6	Diethyl Disulfide	ND	20	ND	3.9	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **Method Blank** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241202-MB

Test Code: ASTM D 5504-20 Date Collected: NA
Instrument ID: Agilent 6890A/GC13/SCD Time Collected: NA
Analyst: Gilbert Gutierrez Date Received: NA
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 12/02/24
Test Notes: Time Analyzed: 09:40
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	
463-58-1	Carbonyl Sulfide	ND	12	ND	5.0	
74-93-1	Methyl Mercaptan	ND	9.8	ND	5.0	
75-08-1	Ethyl Mercaptan	ND	13	ND	5.0	
75-18-3	Dimethyl Sulfide	ND	13	ND	5.0	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
75-33-2	Isopropyl Mercaptan	ND	16	ND	5.0	
75-66-1	tert-Butyl Mercaptan	ND	18	ND	5.0	
107-03-9	n-Propyl Mercaptan	ND	16	ND	5.0	
624-89-5	Ethyl Methyl Sulfide	ND	16	ND	5.0	
110-02-1	Thiophene	ND	17	ND	5.0	
513-44-0	Isobutyl Mercaptan	ND	18	ND	5.0	
352-93-2	Diethyl Sulfide	ND	18	ND	5.0	
109-79-5	n-Butyl Mercaptan	ND	18	ND	5.0	
624-92-0	Dimethyl Disulfide	ND	9.6	ND	2.5	
616-44-4	3-Methylthiophene	ND	20	ND	5.0	
110-01-0	Tetrahydrothiophene	ND	18	ND	5.0	
638-02-8	2,5-Dimethylthiophene	ND	23	ND	5.0	
872-55-9	2-Ethylthiophene	ND	23	ND	5.0	
110-81-6	Diethyl Disulfide	ND	12	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **SQ Environmental, LLC**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241202-DLCS

Test Code: ASTM D 5504-20 Date Collected: NA
Instrument ID: Agilent 6890A/GC13/SCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 12/02/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ppbV	Result LCS ppbV	Result DLCS ppbV	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	933	888	**93**	**89**	72-122	4	18	
463-58-1	Carbonyl Sulfide	1,000	1,140	1,100	**114**	**110**	72-121	4	17	
74-93-1	Methyl Mercaptan	1,000	1,070	1,030	**107**	**103**	74-127	4	18	

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-1** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-001DUP

Test Code: ASTM D 5504-20 Date Collected: 11/26/24
Instrument ID: Agilent 6890A/GC13/SCD Time Collected: 11:20
Analyst: Gilbert Gutierrez Date Received: 11/27/24
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 12/2/24
Test Notes: Time Analyzed: 11:00
Container ID: 1SS00702 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -0.38 Final Pressure (psig): 5.80

Container Dilution Factor: 1.43

CAS #	Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average **ppbV**	% RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	ND	ND	ND	-	-	18	
463-58-1	Carbonyl Sulfide	73.5	29.9	70.8	28.8	29.35	**4**	17	
74-93-1	Methyl Mercaptan	ND	ND	ND	ND	-	-	18	
75-08-1	Ethyl Mercaptan	ND	ND	ND	ND	-	-	18	
75-18-3	Dimethyl Sulfide	ND	ND	ND	ND	-	-	18	
75-15-0	Carbon Disulfide	24.8	7.96	24.5	7.86	7.91	**1**	18	
75-33-2	Isopropyl Mercaptan	ND	ND	ND	ND	-	-	18	
75-66-1	tert-Butyl Mercaptan	ND	ND	ND	ND	-	-	18	
107-03-9	n-Propyl Mercaptan	ND	ND	ND	ND	-	-	18	
624-89-5	Ethyl Methyl Sulfide	ND	ND	ND	ND	-	-	18	
110-02-1	Thiophene	ND	ND	ND	ND	-	-	18	
513-44-0	Isobutyl Mercaptan	ND	ND	ND	ND	-	-	18	
352-93-2	Diethyl Sulfide	ND	ND	ND	ND	-	-	18	
109-79-5	n-Butyl Mercaptan	ND	ND	ND	ND	-	-	18	
624-92-0	Dimethyl Disulfide	ND	ND	ND	ND	-	-	18	
616-44-4	3-Methylthiophene	ND	ND	ND	ND	-	-	18	
110-01-0	Tetrahydrothiophene	ND	ND	ND	ND	-	-	18	
638-02-8	2,5-Dimethylthiophene	ND	ND	ND	ND	-	-	18	
872-55-9	2-Ethylthiophene	ND	ND	ND	ND	-	-	18	
110-81-6	Diethyl Disulfide	ND	ND	ND	ND	-	-	18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

Method Path : J:\GC13\METHODS\
Method File : GC13_080720.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Fri Aug 07 13:29:15 2020
Response Via : Initial Calibration

Calibration Files
5ppb =08072014.D 20 =08072015.D 100 =08072016.D
1000 =08072017.D 5000 =08072018.D 10k =08072019.D

		Compound	5ppb	20	100	1000	5000	10k	Avg		%RSD
1)	Z	Hydrogen_Sulfide	5.450	4.957	3.955	4.248	4.690	4.644	4.789	E4	12.37
2)	W	Carbonyl_Sulfide	5.773	5.970	5.144	5.055	5.434	5.395	5.517	E4	6.43
3)	T	Methyl_Mercaptan	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
4)	T	Ethyl_Mercaptan	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
5)	T	Dimethyl_Sulfide	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
6)	T	Carbon_Disulfide	0.839	0.793	0.746	0.889	0.980	0.984	0.905	E5	13.90
7)	T	2-Propyl_Merc...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
8)	T	t-Butyl_Merca...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
9)	T	Propyl_Mercaptan	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
10)	T	Ethyl_Methyl_...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
11)	T	Thiophene	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
12)	T	i-Butyl_Merca...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
13)	T	Diethyl_Sulfide	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
14)	t	n-Butyl_Merca...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
15)	t	Dimethyl_Disu...	0.839	0.793	0.746	0.889	0.980	0.984	0.905	E5	13.90
16)	T	2-Methyl_Thio...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
17)	t	3-Methyl_Thio...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
18)	T	Tetrahydrothi...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
19)	t	2,5-Dimethyl_...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
20)	T	2-Ethyl_Thiop...	4.196	3.965	3.729	4.447	4.900	4.920	4.527	E4	13.90
21)	T	Diethyl_Disul...	0.839	0.793	0.746	0.889	0.980	0.984	0.905	E5	13.90
22)	T	Methyltrisulfide	1.258	1.191	1.119	1.334	1.470	1.476	1.358	E5	13.88

(#) = Out of Range ### Number of calibration levels exceeded format ###

ALS Environmental

REPORT SUMMARY

Method : GC13SCD2.M
Client : SQ Environmental, LLC
Analyst : GG

Service Request : P2404845
Instrument : GC13
Date Acquired : 12/2/24

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Compounds	MDL	RL	MB QC		Dry Wall QC		Lab Dup			Continuing Calibration Standards Summary (ppbv)											
			MB					dup	%RSD	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff
Sample Information :	ppb	ppb	MB 1.0ml				P2404845-001 1.0ml	P2404845-001Dup 1.0ml		STD S33-10222403		STD S33-10222403									
Inj. Vol. (ml)	1.0	1.0	1.00		1.0	1.0	1.00	1.00		0.10		0.10		0.10		0.10		0.10		0.10	
Dilution	1.0	1.0	1.00		1.0	1.0	1.0	1.0													
Pi:	1.0	1.0	1.0		1.0	1.0	-0.38	-0.38													
Pi:	1.0	1.0	1.0		1.0	1.0	5.80	5.80													
PiPf DF:	1.0	1.0	1.0		1.0	1.0	1.43	1.43													
Hydrogen_Sulfide	1.900	5.000	ND	P			0.00	0.00		830.01	16.1%	969.878	1.9%								
Carbonyl_Sulfide	1.700	5.000	ND	P			**29.95**	**28.84**	3.7%	1124.64	10.9%	1170.388	15.4%								
Methyl_Mercaptan	1.200	5.000	ND	P			0.00	0.00		996.98	0.5%	1090.280	9.9%								
Ethyl_Mercaptan	1.200	5.000	ND	P			0.00	0.00													
Dimethyl_Sulfide	1.200	5.000	ND	P			0.00	0.00		8:30 AM		12:03 PM									
Carbon_Disulfide	0.600	2.500	ND	P			**7.96**	**7.86**	1.2%	12022402.D		12022414.D									
2-Propyl_Mercaptan	1.200	5.000	ND	P			0.00	0.00													
t-Butyl_Mercaptan	1.200	5.000	ND	P			0.00	0.00													
Propyl_Mercaptan	1.200	5.000	ND	P			0.00	0.00													
Ethyl_Methyl_Sulfide	1.200	5.000	ND	P			0.00	0.00													
Thiophene	1.200	5.000	ND	P			0.00	0.00													
i-Butyl_Mercaptan	1.200	5.000	ND	P			0.00	0.00													
Diethyl_Sulfide	1.200	5.000	ND	P			0.00	0.00													
n-Butyl_Mercaptan	1.200	5.000	ND	P			0.00	0.00													
Dimethyl_Disulfide	0.600	2.500	ND	P			0.00	0.00													
2-Methylthiophene	1.200	5.000	ND	P			0.00	0.00													
3-Methylthiophene	1.200	5.000	ND	P			0.00	0.00													
Tetrahydrothiophene	1.200	5.000	ND	P			0.00	0.00													
2,5-Dimethylthiophene	1.200	5.000	ND	P			0.00	0.00													
2-Ethylthiophene	1.200	5.000	ND	P			0.00	0.00													
Diethyl_Disulfide	0.600	2.500	ND	P			0.00	0.00													
Methyltrisulfide	0.600	2.500	ND	P			0.00	0.00													
Acqisition Time			9:40 AM				10:18 AM	11:00 AM													
DataFile			12022407.D				12022408.D	12022410.D													

LCS / LCS Dup Summary (ppbv)

	ppbv	%R		ppbv	% R	%RPD	Actual
Hydrogen_Sulfide	932.80	94.4%		888.37	89.9%	**4.88%**	**987.80**
Carbonyl_Sulfide	1137.94	112.2%		1095.71	108.1%	**3.78%**	**1014.00**
Methyl_Mercaptan	1065.46	107.5%		1028.44	103.8%	**3.54%**	**991.20**
Acqisition Time	8:48 AM			8:57 AM			
DataFile	12022404.D			12022405.D			

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-1** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-001

Test Code: EPA TO-15 Modified Date Collected: 11/26/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 11/27/24
Analyst: Simon Cao Date Analyzed: 12/7/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00702

Initial Pressure (psig): -0.38 Final Pressure (psig): 5.80

Canister Dilution Factor: 1.43

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	15	3.7	ND	8.8	2.2	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	15	2.5	ND	3.0	0.50	
74-87-3	Chloromethane	ND	15	2.5	ND	7.5	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	**3.9**	16	2.4	**0.56**	2.3	0.34	**J**
75-01-4	Vinyl Chloride	ND	15	3.7	ND	5.9	1.5	
106-99-0	1,3-Butadiene	ND	15	2.5	ND	6.9	1.1	
74-83-9	Bromomethane	ND	15	2.1	ND	3.8	0.55	
75-00-3	Chloroethane	ND	16	1.9	ND	6.0	0.72	
67-64-1	Acetone	**110**	150	34	**48**	62	14	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	ND	15	2.3	ND	2.6	0.41	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	28	6.3	ND	12	2.6	
75-35-4	1,1-Dichloroethene	ND	13	2.1	ND	3.2	0.53	
75-09-2	Methylene Chloride	ND	13	4.3	ND	3.8	1.2	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	13	2.2	ND	1.7	0.28	
75-15-0	Carbon Disulfide	**15**	30	4.6	**4.8**	9.6	1.5	**J**
156-60-5	trans-1,2-Dichloroethene	ND	15	3.7	ND	3.8	0.94	
75-34-3	1,1-Dichloroethane	ND	15	3.1	ND	3.7	0.78	
1634-04-4	Methyl tert-Butyl Ether	ND	15	1.8	ND	4.3	0.50	
108-05-4	Vinyl Acetate	ND	150	34	ND	44	9.8	
78-93-3	2-Butanone (MEK)	**13**	29	6.9	**4.4**	9.9	2.3	**J**
156-59-2	cis-1,2-Dichloroethene	ND	15	2.1	ND	3.8	0.54	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-1** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-001

Test Code: EPA TO-15 Modified Date Collected: 11/26/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 11/27/24
Analyst: Simon Cao Date Analyzed: 12/7/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00702

Initial Pressure (psig): -0.38 Final Pressure (psig): 5.80

Canister Dilution Factor: 1.43

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
141-78-6	Ethyl Acetate	ND	57	22	ND	16	6.0	
110-54-3	n-Hexane	**37**	15	3.1	**10**	4.3	0.89	
67-66-3	Chloroform	ND	15	2.0	ND	3.2	0.42	
109-99-9	Tetrahydrofuran (THF)	ND	29	6.0	ND	9.7	2.0	
107-06-2	1,2-Dichloroethane	ND	15	1.7	ND	3.6	0.42	
71-55-6	1,1,1-Trichloroethane	ND	15	1.9	ND	2.7	0.35	
71-43-2	Benzene	**3.4**	15	2.2	**1.1**	4.6	0.69	**J**
56-23-5	Carbon Tetrachloride	ND	15	2.1	ND	2.4	0.34	
110-82-7	Cyclohexane	**4.5**	31	4.3	**1.3**	9.1	1.2	**J**
78-87-5	1,2-Dichloropropane	ND	15	1.9	ND	3.3	0.41	
75-27-4	Bromodichloromethane	ND	15	2.2	ND	2.3	0.33	
79-01-6	Trichloroethene	ND	15	2.1	ND	2.8	0.38	
123-91-1	1,4-Dioxane	ND	15	4.0	ND	4.1	1.1	
142-82-5	n-Heptane	**34**	15	2.4	**8.3**	3.7	0.59	
10061-01-5	cis-1,3-Dichloropropene	ND	15	2.4	ND	3.3	0.52	
108-10-1	4-Methyl-2-pentanone	ND	30	5.4	ND	7.3	1.3	
10061-02-6	trans-1,3-Dichloropropene	ND	14	3.1	ND	3.1	0.69	
79-00-5	1,1,2-Trichloroethane	ND	16	1.5	ND	2.9	0.28	
108-88-3	Toluene	**20**	15	1.9	**5.2**	4.1	0.49	
591-78-6	2-Hexanone	ND	29	5.4	ND	7.1	1.3	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-1** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-001

Test Code: EPA TO-15 Modified Date Collected: 11/26/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 11/27/24
Analyst: Simon Cao Date Analyzed: 12/7/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00702

Initial Pressure (psig): -0.38 Final Pressure (psig): 5.80

Canister Dilution Factor: 1.43

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
124-48-1	Dibromochloromethane	ND	15	2.0	ND	1.7	0.24	
106-93-4	1,2-Dibromoethane	ND	15	1.8	ND	1.9	0.23	
127-18-4	Tetrachloroethene	ND	15	2.0	ND	2.3	0.29	
108-90-7	Chlorobenzene	**7.6**	15	2.0	**1.7**	3.4	0.44	**J**
100-41-4	Ethylbenzene	**12**	16	2.1	**2.7**	3.6	0.49	**J**
179601-23-1	m,p-Xylenes	**7.2**	31	4.0	**1.7**	7.0	0.92	**J**
75-25-2	Bromoform	ND	16	3.1	ND	1.5	0.30	
100-42-5	Styrene	**2.7**	15	2.5	**0.64**	3.6	0.58	**J**
95-47-6	o-Xylene	**3.4**	15	2.2	**0.78**	3.6	0.51	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	15	2.1	ND	2.2	0.31	
98-82-8	Cumene	**6.0**	15	2.2	**1.2**	3.0	0.45	**J**
622-96-8	4-Ethyltoluene	ND	15	2.4	ND	3.0	0.49	
108-67-8	1,3,5-Trimethylbenzene	ND	15	2.2	ND	3.1	0.45	
95-63-6	1,2,4-Trimethylbenzene	ND	15	2.1	ND	3.0	0.43	
100-44-7	Benzyl Chloride	ND	59	10	ND	11	1.9	
541-73-1	1,3-Dichlorobenzene	ND	15	2.3	ND	2.5	0.38	
106-46-7	1,4-Dichlorobenzene	**6.3**	15	2.3	**1.1**	2.5	0.39	**J**
95-50-1	1,2-Dichlorobenzene	ND	15	2.3	ND	2.5	0.38	
120-82-1	1,2,4-Trichlorobenzene	ND	31	9.7	ND	4.1	1.3	
91-20-3	Naphthalene	ND	15	3.7	ND	2.8	0.71	
87-68-3	Hexachlorobutadiene	ND	15	3.1	ND	1.4	0.30	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-2** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-002

Test Code: EPA TO-15 Modified Date Collected: 11/26/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 11/27/24
Analyst: Simon Cao Date Analyzed: 12/7/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00949

Initial Pressure (psig): -1.52 Final Pressure (psig): 6.00

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	17	4.1	ND	9.7	2.4	
75-71-8	Dichlorodifluoromethane (CFC 12)	**23**	16	2.7	**4.6**	3.3	0.55	
74-87-3	Chloromethane	ND	17	2.7	ND	8.2	1.3	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	**1,300**	17	2.6	**180**	2.5	0.38	
75-01-4	Vinyl Chloride	**14**	17	4.1	**5.4**	6.5	1.6	**J**
106-99-0	1,3-Butadiene	ND	17	2.8	ND	7.5	1.2	
74-83-9	Bromomethane	ND	16	2.3	ND	4.1	0.60	
75-00-3	Chloroethane	ND	17	2.1	ND	6.5	0.79	
67-64-1	Acetone	ND	160	38	ND	68	16	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	16	2.5	ND	2.9	0.45	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	31	6.9	ND	13	2.8	
75-35-4	1,1-Dichloroethene	ND	14	2.3	ND	3.6	0.59	
75-09-2	Methylene Chloride	ND	14	4.7	ND	4.2	1.4	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	14	2.4	ND	1.8	0.31	
75-15-0	Carbon Disulfide	**9.3**	33	5.0	**3.0**	10	1.6	**J**
156-60-5	trans-1,2-Dichloroethene	ND	17	4.1	ND	4.2	1.0	
75-34-3	1,1-Dichloroethane	ND	16	3.5	ND	4.0	0.85	
1634-04-4	Methyl tert-Butyl Ether	ND	17	2.0	ND	4.7	0.55	
108-05-4	Vinyl Acetate	ND	170	38	ND	48	11	
78-93-3	2-Butanone (MEK)	**14**	32	7.5	**4.9**	11	2.6	**J**
156-59-2	cis-1,2-Dichloroethene	**16**	16	2.4	**4.0**	4.1	0.59	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
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J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-2** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-002

Test Code: EPA TO-15 Modified Date Collected: 11/26/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 11/27/24
Analyst: Simon Cao Date Analyzed: 12/7/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00949

Initial Pressure (psig): -1.52 Final Pressure (psig): 6.00

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
141-78-6	Ethyl Acetate	ND	63	24	ND	17	6.6	
110-54-3	n-Hexane	**1,100**	17	3.5	**320**	4.7	0.98	
67-66-3	Chloroform	ND	17	2.2	ND	3.5	0.46	
109-99-9	Tetrahydrofuran (THF)	ND	31	6.6	ND	11	2.2	
107-06-2	1,2-Dichloroethane	ND	16	1.9	ND	4.0	0.46	
71-55-6	1,1,1-Trichloroethane	ND	16	2.1	ND	3.0	0.38	
71-43-2	Benzene	**27**	16	2.4	**8.4**	5.0	0.76	
56-23-5	Carbon Tetrachloride	ND	16	2.3	ND	2.6	0.37	
110-82-7	Cyclohexane	**250**	35	4.7	**73**	10	1.4	
78-87-5	1,2-Dichloropropane	ND	17	2.1	ND	3.7	0.45	
75-27-4	Bromodichloromethane	ND	17	2.4	ND	2.5	0.36	
79-01-6	Trichloroethene	ND	16	2.3	ND	3.0	0.42	
123-91-1	1,4-Dioxane	ND	16	4.4	ND	4.5	1.2	
142-82-5	n-Heptane	**310**	17	2.7	**76**	4.1	0.65	
10061-01-5	cis-1,3-Dichloropropene	ND	17	2.6	ND	3.7	0.57	
108-10-1	4-Methyl-2-pentanone	ND	33	6.0	ND	8.0	1.5	
10061-02-6	trans-1,3-Dichloropropene	ND	15	3.5	ND	3.4	0.76	
79-00-5	1,1,2-Trichloroethane	ND	17	1.7	ND	3.2	0.31	
108-88-3	Toluene	**11**	17	2.0	**2.9**	4.5	0.54	**J**
591-78-6	2-Hexanone	ND	32	6.0	ND	7.8	1.5	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **SV-2** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P2404845-002

Test Code: EPA TO-15 Modified Date Collected: 11/26/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 11/27/24
Analyst: Simon Cao Date Analyzed: 12/7/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00949

Initial Pressure (psig): -1.52 Final Pressure (psig): 6.00

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
124-48-1	Dibromochloromethane	ND	16	2.2	ND	1.9	0.26	
106-93-4	1,2-Dibromoethane	ND	16	1.9	ND	2.1	0.25	
127-18-4	Tetrachloroethene	ND	17	2.2	ND	2.5	0.32	
108-90-7	Chlorobenzene	**74**	17	2.2	**16**	3.7	0.48	
100-41-4	Ethylbenzene	**8.5**	17	2.4	**2.0**	4.0	0.54	**J**
179601-23-1	m,p-Xylenes	**18**	34	4.4	**4.3**	7.7	1.0	**J**
75-25-2	Bromoform	ND	17	3.5	ND	1.7	0.33	
100-42-5	Styrene	**5.2**	17	2.7	**1.2**	3.9	0.63	**J**
95-47-6	o-Xylene	**6.4**	17	2.4	**1.5**	3.9	0.56	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	17	2.3	ND	2.5	0.34	
98-82-8	Cumene	**40**	16	2.4	**8.2**	3.3	0.49	
622-96-8	4-Ethyltoluene	ND	16	2.7	ND	3.3	0.54	
108-67-8	1,3,5-Trimethylbenzene	**4.1**	17	2.4	**0.82**	3.5	0.49	**J**
95-63-6	1,2,4-Trimethylbenzene	**9.4**	16	2.3	**1.9**	3.3	0.47	**J**
100-44-7	Benzyl Chloride	ND	65	11	ND	13	2.1	
541-73-1	1,3-Dichlorobenzene	ND	16	2.5	ND	2.7	0.42	
106-46-7	1,4-Dichlorobenzene	**33**	16	2.6	**5.4**	2.7	0.43	
95-50-1	1,2-Dichlorobenzene	ND	16	2.5	ND	2.7	0.41	
120-82-1	1,2,4-Trichlorobenzene	ND	34	11	ND	4.5	1.4	
91-20-3	Naphthalene	**4.8**	16	4.1	**0.92**	3.1	0.78	**J**
87-68-3	Hexachlorobutadiene	ND	16	3.5	ND	1.5	0.32	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **Method Blank** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241206-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 12/6/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.53	0.13	ND	0.31	0.076	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.52	0.087	ND	0.11	0.018	
74-87-3	Chloromethane	ND	0.54	0.086	ND	0.26	0.042	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.55	0.084	ND	0.079	0.012	
75-01-4	Vinyl Chloride	ND	0.53	0.13	ND	0.21	0.051	
106-99-0	1,3-Butadiene	ND	0.53	0.088	ND	0.24	0.040	
74-83-9	Bromomethane	ND	0.51	0.074	ND	0.13	0.019	
75-00-3	Chloroethane	ND	0.55	0.066	ND	0.21	0.025	
67-64-1	Acetone	ND	5.1	1.2	ND	2.2	0.51	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.51	0.081	ND	0.091	0.014	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	0.99	0.22	ND	0.40	0.090	
75-35-4	1,1-Dichloroethene	ND	0.45	0.074	ND	0.11	0.019	
75-09-2	Methylene Chloride	ND	0.46	0.15	ND	0.13	0.043	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.45	0.076	ND	0.059	0.0099	
75-15-0	Carbon Disulfide	ND	1.0	0.16	ND	0.33	0.051	
156-60-5	trans-1,2-Dichloroethene	ND	0.53	0.13	ND	0.13	0.033	
75-34-3	1,1-Dichloroethane	ND	0.52	0.11	ND	0.13	0.027	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	0.063	ND	0.15	0.017	
108-05-4	Vinyl Acetate	ND	5.4	1.2	ND	1.5	0.34	
78-93-3	2-Butanone (MEK)	ND	1.0	0.24	ND	0.35	0.081	
156-59-2	cis-1,2-Dichloroethene	ND	0.52	0.075	ND	0.13	0.019	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **SQ Environmental, LLC**
Client Sample ID: **Method Blank** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241206-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 12/6/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
141-78-6	Ethyl Acetate	ND	2.0	0.76	ND	0.56	0.21	
110-54-3	n-Hexane	ND	0.53	0.11	ND	0.15	0.031	
67-66-3	Chloroform	ND	0.54	0.071	ND	0.11	0.015	
109-99-9	Tetrahydrofuran (THF)	ND	1.0	0.21	ND	0.34	0.071	
107-06-2	1,2-Dichloroethane	ND	0.51	0.059	ND	0.13	0.015	
71-55-6	1,1,1-Trichloroethane	ND	0.52	0.066	ND	0.095	0.012	
71-43-2	Benzene	ND	0.51	0.077	ND	0.16	0.024	
56-23-5	Carbon Tetrachloride	ND	0.52	0.074	ND	0.083	0.012	
110-82-7	Cyclohexane	ND	1.1	0.15	ND	0.32	0.044	
78-87-5	1,2-Dichloropropane	ND	0.54	0.066	ND	0.12	0.014	
75-27-4	Bromodichloromethane	ND	0.53	0.077	ND	0.079	0.011	
79-01-6	Trichloroethene	ND	0.52	0.072	ND	0.097	0.013	
123-91-1	1,4-Dioxane	ND	0.52	0.14	ND	0.14	0.039	
142-82-5	n-Heptane	ND	0.53	0.085	ND	0.13	0.021	
10061-01-5	cis-1,3-Dichloropropene	ND	0.53	0.083	ND	0.12	0.018	
108-10-1	4-Methyl-2-pentanone	ND	1.1	0.19	ND	0.26	0.046	
10061-02-6	trans-1,3-Dichloropropene	ND	0.49	0.11	ND	0.11	0.024	
79-00-5	1,1,2-Trichloroethane	ND	0.55	0.054	ND	0.10	0.0099	
108-88-3	Toluene	ND	0.54	0.065	ND	0.14	0.017	
591-78-6	2-Hexanone	ND	1.0	0.19	ND	0.25	0.046	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: **SQ Environmental, LLC**

Client Sample ID: **Method Blank** ALS Project ID: P2404845

Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241206-MB

Test Code: EPA TO-15 Modified Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA

Analyst: Simon Cao Date Analyzed: 12/6/24

Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
124-48-1	Dibromochloromethane	ND	0.51	0.070	ND	0.060	0.0082	
106-93-4	1,2-Dibromoethane	ND	0.52	0.062	ND	0.068	0.0081	
127-18-4	Tetrachloroethene	ND	0.54	0.069	ND	0.080	0.010	
108-90-7	Chlorobenzene	ND	0.54	0.071	ND	0.12	0.015	
100-41-4	Ethylbenzene	ND	0.55	0.075	ND	0.13	0.017	
179601-23-1	m,p-Xylenes	ND	1.1	0.14	ND	0.25	0.032	
75-25-2	Bromoform	ND	0.55	0.11	ND	0.053	0.011	
100-42-5	Styrene	ND	0.53	0.086	ND	0.12	0.020	
95-47-6	o-Xylene	ND	0.54	0.077	ND	0.12	0.018	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.54	0.074	ND	0.079	0.011	
98-82-8	Cumene	ND	0.52	0.077	ND	0.11	0.016	
622-96-8	4-Ethyltoluene	ND	0.52	0.085	ND	0.11	0.017	
108-67-8	1,3,5-Trimethylbenzene	ND	0.54	0.077	ND	0.11	0.016	
95-63-6	1,2,4-Trimethylbenzene	ND	0.52	0.074	ND	0.11	0.015	
100-44-7	Benzyl Chloride	ND	2.1	0.35	ND	0.40	0.068	
541-73-1	1,3-Dichlorobenzene	ND	0.52	0.080	ND	0.087	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.52	0.082	ND	0.087	0.014	
95-50-1	1,2-Dichlorobenzene	ND	0.52	0.079	ND	0.087	0.013	
120-82-1	1,2,4-Trichlorobenzene	ND	1.1	0.34	ND	0.14	0.046	
91-20-3	Naphthalene	ND	0.51	0.13	ND	0.097	0.025	
87-68-3	Hexachlorobutadiene	ND	0.51	0.11	ND	0.048	0.010	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **SQ Environmental, LLC**
Client Project ID: **Bhojani / 1239.001.001** ALS Project ID: P2404845

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 11/26/24
Analyst: Simon Cao Date(s) Received: 11/27/24
Sample Type: 1.0 L Silonite Summa Canister(s) Date(s) Analyzed: 12/6 - 12/7/24
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P241206-MB	**96**	**103**	**108**	70-130	
Lab Control Sample	P241206-LCS	**96**	**102**	**110**	70-130	
Duplicate Lab Control Sample	P241206-DLCS	**96**	**102**	**109**	70-130	
SV-1	P2404845-001	**96**	**104**	**109**	70-130	
SV-2	P2404845-002	**96**	**101**	**103**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **SQ Environmental, LLC**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241206-DLCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 12/6/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
115-07-1	Propene	212	185	178	**87**	**84**	50-133	4	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	206	190	185	**92**	**90**	66-122	2	25	
74-87-3	Chloromethane	208	186	180	**89**	**87**	56-131	2	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	208	207	209	**100**	**100**	63-120	0	25	
75-01-4	Vinyl Chloride	210	218	212	**104**	**101**	57-129	3	25	
106-99-0	1,3-Butadiene	212	232	231	**109**	**109**	62-132	0	25	
74-83-9	Bromomethane	210	231	228	**110**	**109**	72-120	0.9	25	
75-00-3	Chloroethane	212	200	197	**94**	**93**	67-123	1	25	
67-64-1	Acetone	1,050	940	935	**90**	**89**	61-120	1	25	
75-69-4	Trichlorofluoromethane (CFC 11)	208	190	188	**91**	**90**	65-122	1	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	416	412	410	**99**	**99**	59-132	0	25	
75-35-4	1,1-Dichloroethene	208	210	206	**101**	**99**	75-120	2	25	
75-09-2	Methylene Chloride	204	191	189	**94**	**93**	71-123	1	25	
76-13-1	Trichlorotrifluoroethane (CFC 113)	210	205	203	**98**	**97**	65-121	1	25	
75-15-0	Carbon Disulfide	430	410	406	**95**	**94**	69-115	1	25	
156-60-5	trans-1,2-Dichloroethene	218	212	209	**97**	**96**	67-123	1	25	
75-34-3	1,1-Dichloroethane	218	200	197	**92**	**90**	66-120	2	25	
1634-04-4	Methyl tert-Butyl Ether	216	203	201	**94**	**93**	65-124	1	25	
108-05-4	Vinyl Acetate	1,090	1170	1180	**107**	**108**	76-147	0.9	25	
78-93-3	2-Butanone (MEK)	412	411	404	**100**	**98**	70-125	2	25	
156-59-2	cis-1,2-Dichloroethene	214	204	203	**95**	**95**	64-120	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **SQ Environmental, LLC**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241206-DLCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 12/6/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
141-78-6	Ethyl Acetate	398	396	388	**99**	**97**	56-120	2	25	
110-54-3	n-Hexane	212	189	188	**89**	**89**	60-125	0	25	
67-66-3	Chloroform	216	205	203	**95**	**94**	64-121	1	25	
109-99-9	Tetrahydrofuran (THF)	404	397	393	**98**	**97**	67-117	1	25	
107-06-2	1,2-Dichloroethane	204	191	188	**94**	**92**	64-138	2	25	
71-55-6	1,1,1-Trichloroethane	210	204	203	**97**	**97**	67-125	0	25	
71-43-2	Benzene	206	189	187	**92**	**91**	73-128	1	25	
56-23-5	Carbon Tetrachloride	210	206	204	**98**	**97**	71-134	1	25	
110-82-7	Cyclohexane	430	415	412	**97**	**96**	71-118	1	25	
78-87-5	1,2-Dichloropropane	214	203	203	**95**	**95**	68-121	0	25	
75-27-4	Bromodichloromethane	218	224	222	**103**	**102**	70-125	1	25	
79-01-6	Trichloroethene	214	208	207	**97**	**97**	68-124	0	25	
123-91-1	1,4-Dioxane	214	244	243	**114**	**114**	76-127	0	25	
142-82-5	n-Heptane	214	207	207	**97**	**97**	72-121	0	25	
10061-01-5	cis-1,3-Dichloropropene	212	225	223	**106**	**105**	87-137	0.9	25	
108-10-1	4-Methyl-2-pentanone	426	462	458	**108**	**108**	67-137	0	25	
10061-02-6	trans-1,3-Dichloropropene	196	202	203	**103**	**104**	73-127	1	25	
79-00-5	1,1,2-Trichloroethane	216	216	215	**100**	**100**	71-119	0	25	
108-88-3	Toluene	216	208	206	**96**	**95**	64-121	1	25	
591-78-6	2-Hexanone	424	471	473	**111**	**112**	70-136	0.9	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **SQ Environmental, LLC**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2404845
Client Project ID: **Bhojani / 1239.001.001** ALS Sample ID: P241206-DLCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 12/6/24
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-48-1	Dibromochloromethane	216	232	231	**107**	**107**	67-128	0	25	
106-93-4	1,2-Dibromoethane	204	220	220	**108**	**108**	69-129	0	25	
127-18-4	Tetrachloroethene	214	216	215	**101**	**100**	55-132	1	25	
108-90-7	Chlorobenzene	216	208	207	**96**	**96**	63-124	0	25	
100-41-4	Ethylbenzene	218	222	221	**102**	**101**	64-119	1	25	
179601-23-1	m,p-Xylenes	432	431	431	**100**	**100**	64-121	0	25	
75-25-2	Bromoform	218	261	261	**120**	**120**	63-132	0	25	
100-42-5	Styrene	214	235	235	**110**	**110**	71-125	0	25	
95-47-6	o-Xylene	216	217	217	**100**	**100**	66-122	0	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	210	210	**97**	**97**	71-128	0	25	
98-82-8	Cumene	214	216	215	**101**	**100**	66-126	1	25	
622-96-8	4-Ethyltoluene	218	224	225	**103**	**103**	67-128	0	25	
108-67-8	1,3,5-Trimethylbenzene	216	220	221	**102**	**102**	66-125	0	25	
95-63-6	1,2,4-Trimethylbenzene	212	217	217	**102**	**102**	67-130	0	25	
100-44-7	Benzyl Chloride	426	451	455	**106**	**107**	58-151	0.9	25	
541-73-1	1,3-Dichlorobenzene	212	207	208	**98**	**98**	57-135	0	25	
106-46-7	1,4-Dichlorobenzene	212	199	201	**94**	**95**	56-129	1	25	
95-50-1	1,2-Dichlorobenzene	212	202	203	**95**	**96**	57-138	1	25	
120-82-1	1,2,4-Trichlorobenzene	436	410	411	**94**	**94**	50-137	0	25	
91-20-3	Naphthalene	218	184	185	**84**	**85**	50-157	1	25	
87-68-3	Hexachlorobutadiene	212	209	211	**99**	**100**	50-133	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Response Factor Report MS09

Method Path : I:\MS09\METHODS\
Method File : R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Nov 19 16:47:40 2024
Response Via : Initial Calibration

11/20/24

Calibration Files
0.1 =11192407.D 0.2 =11192408.D 0.5 =11192409.D 1.0 =11192410.D 5.0 =11192411.D 25 =11192
100 =11192414.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------									
2)	T	Propene	1.269	1.227	1.324	1.334	1.436	1.378	1.330	1.383	1.335	4.96
3)	T	Dichlorodifluo...	2.341	2.401	2.486	2.493	2.475	2.507	2.383	2.463	2.444	2.47
4)	T	Chloromethane	1.699	1.833	1.917	1.956	1.830	1.956	1.777	1.549	1.815	7.68
5)	T	1,2-Dichloro-1...	1.061	1.135	1.141	1.174	1.162	1.171	1.174	1.236	1.157	4.26
6)	T	Vinyl Chloride	1.121	1.259	1.326	1.383	1.443	1.446	1.559	1.633	1.396	11.71
7)	T	1,3-Butadiene	0.712	0.843	0.852	0.879	0.928	0.967	1.001	1.182	0.920	14.95
8)	T	Bromomethane	0.818	0.969	0.978	1.004	0.723	1.005	0.757	0.792	0.881	13.57
9)	T	Chloroethane	0.558	0.715	0.744	0.756	0.742	0.773	0.789	0.803	0.735	10.45
10)	T	Ethanol	0.808	0.791	0.952	0.979	0.992	0.974	0.973	0.927	0.925	8.64
11)	T	Acetonitrile			2.037	2.201	2.294	2.277	2.679	2.781	2.378	12.15
12)	T	Acrolein	0.629	0.722	0.734	0.782	0.844	0.859	0.876	0.877	0.790	11.35
13)	T	Acetone	0.818	0.858	0.847	0.860	0.858	0.835	0.838	0.819	0.842	2.04
14)	T	Trichlorofluor...	2.155	2.235	2.262	2.316	2.304	2.328	2.327	2.405	2.292	3.25
15)	T	2-Propanol (Is...	2.149	3.047	3.104	3.230	3.112	3.301	3.188	2.982	3.014	12.08
16)	T	Acrylonitrile	1.080	1.352	1.407	1.513	1.653	1.664	1.656	1.688	1.502	14.17
17)	T	1,1-Dichloroet...	0.968	0.979	1.005	1.041	1.054	1.107	1.114	1.158	1.053	6.52
18)	T	2-Methyl-2-Pro...	2.491	2.709	2.861	2.929	2.111	2.656	2.134	1.429	2.415	20.75
19)	T	Methylene Chlo...	1.107	1.210	1.181	1.164	1.175	1.209	1.200	1.230	1.184	3.21
20)	T	3-Chloro-1-pro...	1.840	2.071	2.111	2.088	1.991	1.933	1.887	1.800	1.965	6.03
21)	T	Trichlorotrifl...	1.002	1.031	0.993	1.026	1.033	1.061	1.042	1.082	1.034	2.80
22)	T	Carbon Disulfide	3.363	3.563	3.760	3.923	4.009	4.070	3.953	3.819	3.808	6.31
23)	T	trans-1,2-Dich...	1.248	1.459	1.509	1.599	1.713	1.788	1.794	1.834	1.618	12.59
24)	T	1,1-Dichloroet...	1.835	1.964	1.950	1.997	2.049	2.091	2.080	2.100	2.008	4.52
25)	T	Methyl tert-Bu...	2.564	2.842	2.964	3.143	3.146	3.333	3.194	2.708	2.987	8.86
26)	T	Vinyl Acetate	0.124	0.169	0.172	0.197	0.231	0.245	0.245	0.247	0.204	22.46
27)	T	2-Butanone (MEK)	0.495	0.623	0.652	0.678	0.716	0.747	0.745	0.753	0.676	12.95
28)	T	cis-1,2-Dichlo...	1.346	1.428	1.526	1.571	1.626	1.694	1.693	1.727	1.576	8.66
29)	T	Diisopropyl Ether	0.743	0.911	0.833	0.861	0.875	0.877	0.858	0.850	0.851	5.77
30)	T	Ethyl Acetate	0.295	0.368	0.419	0.436	0.471	0.469	0.449	0.432	0.417	14.14
31)	T	n-Hexane	1.804	1.911	1.962	1.962	1.986	1.920	1.802	1.676	1.878	5.72
32)	T	Chloroform	1.753	1.976	2.042	2.046	2.076	2.115	2.113	2.158	2.035	6.23
33)	S	1,2-Dichloroet...	1.673	1.678	1.686	1.670	1.678	1.687	1.735	1.818	1.703	2.98
34)	T	Tetrahydrofura...	0.514	0.547	0.612	0.644	0.676	0.702	0.700	0.705	0.638	11.58
35)	T	Ethyl tert-But...	1.007	1.107	1.194	1.238	1.270	1.339	1.339	1.357	1.231	10.09
36)	T	1,2-Dichloroet...	1.509	1.618	1.722	1.729	1.742	1.810	1.806	1.852	1.724	6.51
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.388	0.403	0.430	0.436	0.446	0.463	0.450	0.445	0.433	5.83
39)	T	Isopropyl Acetate									0.000	-1.00
40)	T	1-Butanol									0.000	-1.00
41)	T	Benzene	1.022	1.046	0.996	0.999	1.009	1.019	0.982	0.953	1.003	2.79
42)	T	Carbon Tetrach...	0.346	0.380	0.392	0.397	0.416	0.437	0.424	0.419	0.401	7.22
43)	T	Cyclohexane	0.308	0.341	0.351	0.357	0.370	0.375	0.357	0.341	0.350	5.94
44)	T	tert-Amyl Meth...	0.555	0.599	0.626	0.646	0.689	0.720	0.691	0.662	0.648	8.34
45)	T	1,2-Dichloropr...	0.206	0.238	0.246	0.250	0.257	0.262	0.254	0.246	0.245	7.07
46)	T	Bromodichlorom...	0.279	0.330	0.337	0.341	0.365	0.384	0.375	0.370	0.347	9.78
47)	T	Trichloroethene	0.274	0.285	0.278	0.283	0.291	0.301	0.291	0.284	0.286	2.94
48)	T	1,4-Dioxane	0.115	0.146	0.168	0.171	0.191	0.206	0.200	0.192	0.174	17.67
49)	T	2,2,4-Trimethy...	0.952	0.984	1.055	1.088	1.115	1.123	1.072	1.009	1.050	5.94
50)	T	Methyl Methacr...	0.058	0.075	0.081	0.093	0.104	0.109	0.107	0.104	0.092	20.12
51)	T	n-Heptane	0.187	0.210	0.224	0.228	0.243	0.241	0.233	0.225	0.224	8.12
52)	T	cis-1,3-Dichlo...	0.294	0.338	0.359	0.393	0.470	0.470	0.461	0.453	0.400	16.43
53)	T	4-Methyl-2-pen...	0.144	0.184	0.206	0.222	0.245	0.256	0.243	0.226	0.216	17.25
54)	T	trans-1,3-Dich...			0.277	0.307	0.366	0.410	0.406	0.405	0.362	15.79

55)	T	1,1,2-Trichlor...	0.200	0.230	0.240	0.245	0.258	0.264	0.255	0.250	0.243	8.34
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	5.680	5.604	5.566	5.595	5.534	5.434	5.482	5.466	5.545	1.48
58)	T	Toluene	5.482	5.466	5.312	5.403	5.411	5.426	5.226	4.958	5.335	3.26
59)	T	2-Hexanone	1.763	2.272	2.436	2.718	3.001	3.096	2.901	2.613	2.600	16.87
60)	T	Dibromochlorom...	1.323	1.376	1.470	1.559	1.692	1.801	1.765	1.745	1.591	11.68
61)	T	1,2-Dibromoethane	1.215	1.395	1.398	1.536	1.612	1.706	1.675	1.625	1.520	11.18
62)	T	n-Butyl Acetate	2.057	2.450	2.646	3.027	3.405	3.548	3.305	2.937	2.922	17.49
63)	T	n-Octane	0.942	1.015	1.101	1.185	1.198	1.195	1.146	1.067	1.106	8.42
64)	T	Tetrachloroethene	1.459	1.533	1.603	1.625	1.625	1.661	1.614	1.578	1.587	4.04
65)	T	Chlorobenzene	3.655	3.721	3.838	3.832	3.865	3.917	3.741	3.543	3.764	3.28
66)	T	Ethylbenzene	5.128	5.572	5.621	6.005	6.390	6.484	6.179	5.817	5.899	7.73
67)	T	m- & p-Xylenes	4.241	4.472	4.786	5.061	5.226	5.255	4.991	4.593	4.828	7.63
68)	T	Bromoform	0.966	1.024	1.117	1.204	1.373	1.512	1.480	1.440	1.264	16.99
69)	T	Styrene	2.384	2.646	2.990	3.340	3.826	4.092	3.946	3.762	3.373	18.94
70)	T	o-Xylene	4.015	4.362	4.788	5.068	5.128	5.213	4.977	4.674	4.778	8.67
71)	T	n-Nonane	2.088	2.275	2.580	2.722	2.855	2.821	2.623	2.343	2.538	10.87
72)	T	1,1,2,2-Tetrac...	1.895	2.141	2.230	2.380	2.456	2.461	2.376	2.252	2.274	8.37
73)	S	Bromofluoroben...	1.911	1.888	1.911	1.922	1.915	1.907	1.914	1.941	1.914	0.77
74)	T	Cumene	5.409	5.609	5.890	6.144	6.363	6.412	6.063	5.669	5.945	6.12
75)	T	alpha-Pinene	2.429	2.527	2.711	2.966	3.254	3.350	3.208	3.018	2.933	11.74
76)	T	n-Propylbenzene	5.700	6.652	6.943	7.541	7.786	7.750	7.310	6.706	7.049	9.96
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	4.490	4.941	5.478	5.789	6.198	6.383	6.035	5.510	5.603	11.46
79)	T	1,3,5-Trimethy...	4.128	4.331	4.856	5.208	5.387	5.402	5.123	4.754	4.899	9.69
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	3.866	4.422	4.964	5.382	5.626	5.592	5.171	4.615	4.955	12.47
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride			2.996	3.601	4.446	4.913	4.548	3.895	4.067	17.34
85)	T	1,3-Dichlorobe...	2.674	3.027	3.110	3.273	3.292	3.353	3.143	2.877	3.094	7.42
86)	T	1,4-Dichlorobe...	2.908	2.987	3.161	3.291	3.311	3.445	3.277	3.105	3.185	5.64
87)	T	sec-Butylbenzene	5.608	6.077	6.654	7.003	7.209	7.153	6.706	6.081	6.562	8.87
88)	T	4-Isopropyltol...	4.200	4.979	5.392	5.827	6.083	6.149	5.733	5.225	5.448	11.91
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	2.779	3.009	3.103	3.276	3.289	3.363	3.186	3.016	3.128	6.10
91)	T	d-Limonene	0.939	1.292	1.429	1.620	1.858	1.946	1.855	1.719	1.582	21.68
92)	T	1,2-Dibromo-3-...	0.768	0.876	0.954	1.076	1.205	1.271	1.220	1.152	1.065	17.02
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	1.680	1.913	1.981	2.189	2.419	2.591	2.444	2.205	2.178	14.07
95)	T	Naphthalene			5.077	5.940	6.911	7.833	7.383	6.667	6.635	15.05
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	1.577	1.536	1.565	1.646	1.709	1.755	1.686	1.618	1.636	4.66
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	3.994	4.370	4.648	5.040	5.165	5.072	4.691	4.230	4.651	9.20
100)	T	n-Butylbenzene	3.918	4.471	4.983	5.480	5.828	5.905	5.532	4.995	5.139	13.39
101)	T	1,1,1,2-Tetrac...	1.218	1.275	1.362	1.392	1.448	1.486	1.431	1.373	1.373	6.50

(#) = Out of Range

R09111924.M Wed Nov 20 10:15:11 2024

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2024 12\06\12062402.D Vial: 3
Acq On : 6 Dec 2024 10:40 Operator: SC
Sample : CCV R09120624 25ng Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Dec 06 11:03:06 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

12/6/24

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	105	0.03
2	T	Propene	1.335	1.072	19.7	82	0.03
3	T	Dichlorodifluoromethane (CF	2.444	2.082	14.8	87	0.04
4	T	Chloromethane	1.815	1.384	23.7	74	0.03
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.157	1.008	12.9	90	0.03
6	T	Vinyl Chloride	1.396	1.328	4.9	96	0.03
7	T	1,3-Butadiene	0.920	0.923	-0.3	100	0.03
8	T	Bromomethane	0.881	0.882	-0.1	92	0.03
9	T	Chloroethane	0.735	0.652	11.3	89	0.03
10	T	Ethanol	0.925	0.794	14.2	86	0.09
11	T	Acetonitrile	2.378	1.832	23.0	84	0.00
12	T	Acrolein	0.790	0.703	11.0	86	0.00
13	T	Acetone	0.842	0.692	17.8	87	0.00
14	T	Trichlorofluoromethane	2.292	1.965	14.3	89	0.03
15	T	2-Propanol (Isopropanol)	3.014	2.677	11.2	85	-0.02
16	T	Acrylonitrile	1.502	1.352	10.0	85	0.00
17	T	1,1-Dichloroethene	1.053	0.938	10.9	89	0.03
18	T	2-Methyl-2-Propanol (tert-B	2.415	1.917	20.6	76	0.00
19	T	Methylene Chloride	1.184	1.006	15.0	87	0.02
20	T	3-Chloro-1-propene (Allyl C	1.965	1.532	22.0	83	0.03
21	T	Trichlorotrifluoroethane	1.034	0.897	13.2	89	0.03
22	T	Carbon Disulfide	3.808	3.413	10.4	88	0.04
23	T	trans-1,2-Dichloroethene	1.618	1.454	10.1	85	0.04
24	T	1,1-Dichloroethane	2.008	1.706	15.0	86	0.03
25	T	Methyl tert-Butyl Ether	2.987	2.415	19.1	76	0.04
26	T	Vinyl Acetate	0.204	0.203	0.5	87	0.02
27	T	2-Butanone (MEK)	0.676	0.616	8.9	87	0.02
28	T	cis-1,2-Dichloroethene	1.576	1.375	12.8	85	0.03
29	T	Diisopropyl Ether	0.851	0.734	13.7	88	0.05
30	T	Ethyl Acetate	0.417	0.381	8.6	85	0.03
31	T	n-Hexane	1.878	1.555	17.2	85	0.06
32	T	Chloroform	2.035	1.764	13.3	88	0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.703	1.627	4.5	101	0.04
34	T	Tetrahydrofuran (THF)	0.638	0.576	9.7	86	0.04
35	T	Ethyl tert-Butyl Ether	1.231	1.134	7.9	89	0.05
36	T	1,2-Dichloroethane	1.724	1.479	14.2	86	0.05
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	105	0.02
38	T	1,1,1-Trichloroethane	0.433	0.387	10.6	87	0.02
39	T	Isopropyl Acetate	0.000	0.000	0.0	74	0.03
40	T	1-Butanol	0.000	0.000	0.0	85	0.03
41	T	Benzene	1.003	0.849	15.4	87	0.02
42	T	Carbon Tetrachloride	0.401	0.365	9.0	88	0.03
43	T	Cyclohexane	0.350	0.312	10.9	87	0.03
44	T	tert-Amyl Methyl Ether	0.648	0.608	6.2	88	0.02
45	T	1,2-Dichloropropane	0.245	0.216	11.8	86	0.03
46	T	Bromodichloromethane	0.347	0.322	7.2	88	0.03
47	T	Trichloroethene	0.286	0.257	10.1	89	0.03
48	T	1,4-Dioxane	0.174	0.167	4.0	84	0.03
49	T	2,2,4-Trimethylpentane (Iso	1.050	0.909	13.4	85	0.03
50	T	Methyl Methacrylate	0.092	0.093	-1.1	89	0.03
51	T	n-Heptane	0.224	0.200	10.7	87	0.03
52	T	cis-1,3-Dichloropropene	0.400	0.393	1.8	88	0.04
53	T	4-Methyl-2-pentanone	0.216	0.206	4.6	84	0.03
54	T	trans-1,3-Dichloropropene	0.362	0.340	6.1	87	0.05
55	T	1,1,2-Trichloroethane	0.243	0.222	8.6	88	0.04

Data File : I:\MS09\DATA\2024 12\06\12062402.D Vial: 3
Acq On : 6 Dec 2024 10:40 Operator: SC
Sample : CCV R09120624 25ng Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Dec 06 11:03:06 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	100	0.00
57	S	Toluene-d8 (SS2)	5.545	5.696	-2.7	105	-0.01
58	T	Toluene	5.335	4.803	10.0	88	-0.02
59	T	2-Hexanone	2.600	2.548	2.0	82	-0.03
60	T	Dibromochloromethane	1.591	1.616	-1.6	90	-0.02
61	T	1,2-Dibromoethane	1.520	1.511	0.6	88	-0.01
62	T	n-Butyl Acetate	2.922	2.923	-0.0	82	-0.02
63	T	n-Octane	1.106	1.013	8.4	85	-0.02
64	T	Tetrachloroethene	1.587	1.525	3.9	92	-0.01
65	T	Chlorobenzene	3.764	3.473	7.7	89	-0.02
66	T	Ethylbenzene	5.899	5.698	3.4	88	-0.01
67	T	m- & p-Xylenes	4.828	4.626	4.2	88	-0.01
68	T	Bromoform	1.264	1.369	-8.3	90	-0.01
69	T	Styrene	3.373	3.583	-6.2	87	-0.01
70	T	o-Xylene	4.778	4.575	4.2	88	-0.01
71	T	n-Nonane	2.538	2.342	7.7	83	0.00
72	T	1,1,2,2-Tetrachloroethane	2.274	2.146	5.6	87	-0.01
73	S	Bromofluorobenzene (SS3)	1.914	2.110	-10.2	111	0.00
74	T	Cumene	5.945	5.671	4.6	88	-0.01
75	T	alpha-Pinene	2.933	2.955	-0.8	88	-0.01
76	T	n-Propylbenzene	7.049	6.759	4.1	87	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	88	-0.01
78	T	4-Ethyltoluene	5.603	5.632	-0.5	88	0.00
79	T	1,3,5-Trimethylbenzene	4.899	4.754	3.0	88	-0.01
80	T	alpha-Methylstyrene	0.000	0.000	0.0	84	-0.02
81	T	2-Ethyltoluene	0.000	0.000	0.0	88	-0.01
82	T	1,2,4-Trimethylbenzene	4.955	4.937	0.4	88	-0.01
83	T	n-Decane	0.000	0.000	0.0	92	-0.01
84	T	Benzyl Chloride	4.067	4.250	-4.5	86	-0.01
85	T	1,3-Dichlorobenzene	3.094	2.989	3.4	89	-0.01
86	T	1,4-Dichlorobenzene	3.185	3.067	3.7	89	-0.01
87	T	sec-Butylbenzene	6.562	6.341	3.4	89	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.448	5.440	0.1	88	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	88	-0.01
90	T	1,2-Dichlorobenzene	3.128	2.991	4.4	89	-0.01
91	T	d-Limonene	1.582	1.663	-5.1	85	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.065	1.147	-7.7	90	-0.01
93	T	n-Undecane	0.000	0.000	0.0	84	0.00
94	T	1,2,4-Trichlorobenzene	2.178	2.327	-6.8	90	0.00
95	T	Naphthalene	6.635	6.731	-1.4	86	0.00
96	T	n-Dodecane	0.000	0.000	0.0	100	0.00
97	T	Hexachlorobutadiene	1.636	1.603	2.0	91	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.25#
99	T	tert-Butylbenzene	4.651	4.510	3.0	89	0.00
100	T	n-Butylbenzene	5.139	5.128	0.2	87	0.00
101	T	1,1,1,2-Tetrachloroethane	1.373	1.329	3.2	89	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

ANALYTICAL REPORT

Report Date: December 06, 2024

Sam Enis
SQ Environmental, LLC
P.O. Box 1991
Austin, TX 78767

Phone: [redacted]

E-mail: [redacted]

Workorder: **34-2433255**
Client Project ID: 955 W Cartwright Rd
Purchase Order: NA
Project Manager: Lisa Reid

Analytical Results

Sample ID: **SV-1 (2082402433)**
Lab ID: 2433255001
Sampling Location: 955 W Cartwright Rd
Collected: 11/26/2024
Received: 11/27/2024

Method: NIOSH 6015 Mod.
Media: SKC 226-10-06, Silica gel tube (Sulfuric acid) (100/200mg)
Instrument: WET17
Dilution: 1
Sampling Parameter: Air Volume 6 L
Analyzed: 12/06/2024 (323275)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Ammonia	<1.2	<0.20	<0.29	1.2

Sample ID: **SV-2 (2082402420)**
Lab ID: 2433255002
Sampling Location: 955 W Cartwright Rd
Collected: 11/26/2024
Received: 11/27/2024

Method: NIOSH 6015 Mod.
Media: SKC 226-10-06, Silica gel tube (Sulfuric acid) (100/200mg)
Instrument: WET17
Dilution: 1
Sampling Parameter: Air Volume 6 L
Analyzed: 12/06/2024 (323275)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Ammonia	<1.2	<0.20	<0.29	1.2

Sample ID: **2082402435**
Lab ID: 2433255003
Sampling Location: 955 W Cartwright Rd
Collected: 11/26/2024
Received: 11/27/2024

Method: NIOSH 6015 Mod.
Media: SKC 226-10-06, Silica gel tube (Sulfuric acid) (100/200mg)
Instrument: WET17
Dilution: 1
Sampling Parameter: Air Volume Not Provided
Analyzed: 12/06/2024 (323275)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Ammonia	<1.2	NA	NA	1.2

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method (Analysis Batch)	Analyst	Peer Review
NIOSH 6015 Mod. (323275)	/S/ Brian S. Stites 12/06/2024 16:43	/S/ Christopher R. Hansen 12/06/2024 17:25

ANALYTICAL REPORT

Workorder: **34-2433255**
Client Project ID: 955 W Cartwright Rd
Purchase Order: NA
Project Manager: Lisa Reid

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: [redacted]
Web: [redacted]

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.
Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.
Samples have not been blank corrected unless otherwise noted.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L24-29	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.
LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.
ND = Not Detected, Testing result not detected above the LOD or LOQ.
NA = Not Applicable.
** No result could be reported, see sample comments for details.
< Means this testing result is less than the numerical value.
( ) This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

13 ADJACENT LANDOWNER MAP & LANDOWNER LIST

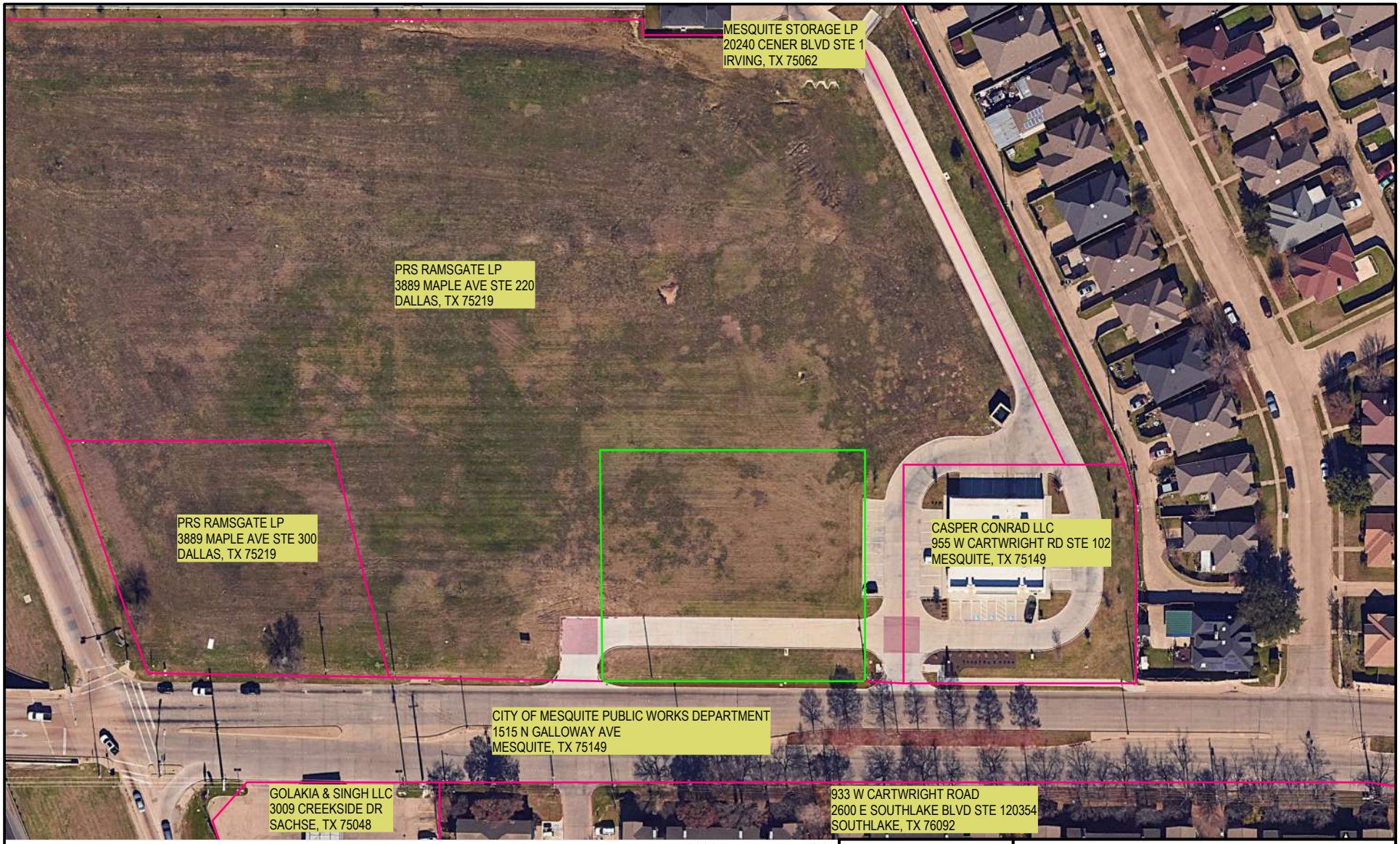
A map that identifies the properties owned by adjacent landowners that share a property line with the Subject Property, as well as those properties across a public right-of-way, is provided in **Attachment 13**.

Also in **Attachment 13** is an electronic mailing list for the adjacent landowners map that contains each property owner's name, mailing address, city, state, and zip code, and mailing labels. The landowners map and list include all mineral interest ownership under the facility.

ATTACHMENT 13
ADJACENT LANDOWNER MAP & LIST

ATTACHMENT 13
ADJACENT LANDOWNERS MAILING ADDRESS LIST
Caesars Plaza
957 W Cartwright Rd, Mesquite, Texas 75149

OWNER NAME	MAILING ADDRESS	CITY	STATE	ZIP
PRS RAMSGATE LP	3889 MAPLE AVE STE 220	DALLAS	TX	75219
CASPER CONRAD LLC	955 W CARTWRIGHT RD STE 102	MESQUITE	TX	75149
MESQUITE STORAGE LP	20240 CENER BLVD STE 1	IRVING	TX	75062
PRS RAMSGATE LP	3889 MAPLE AVE STE 300	DALLAS	TX	75219
933 W CARTWRIGHT ROAD	2600 E SOUTHLAKE BLVD STE 120354	SOUTHLAKE	TX	76092
GOLAKIA & SINGH LLC	3009 CREEKSIDE DR	SACHSE	TX	75048
CITY OF MESQUITE PUBLIC WORKS DEPARTMENT	1515 N GALLOWAY AVE	MESQUITE	TX	75149



GOOGLE EARTH DATED 2/2024

SUBJECT PROPERTY (0.92 ACRES)

ADJACENT DCAD PARCEL

N

0 60 120

SCALE IN FEET

SQ Environmental, LLC

ATTACHMENT 13

ADJACENT LANDOWNERS MAP

CAESARS PLAZA
957 W CARTWRIGHT ROAD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
1 IN = 120 FT	MAY 2025	1239.001.001

PRS RAMSGATE LP
3889 MAPLE AVE STE 220
DALLAS TX 75219

CASPER CONRAD LLC
955 W CARTWRIGHT RD STE 102
MESQUITE TX 75149

MESQUITE STORAGE LP
20240 CENER BLVD STE 1
IRVING TX 75062

PRS RAMSGATE LP
3889 MAPLE AVE STE 300
DALLAS TX 75219

933 W CARTWRIGHT ROAD
2600 E SOUTHLAKE BLVD STE 120354
SOUTHLAKE TX 76092

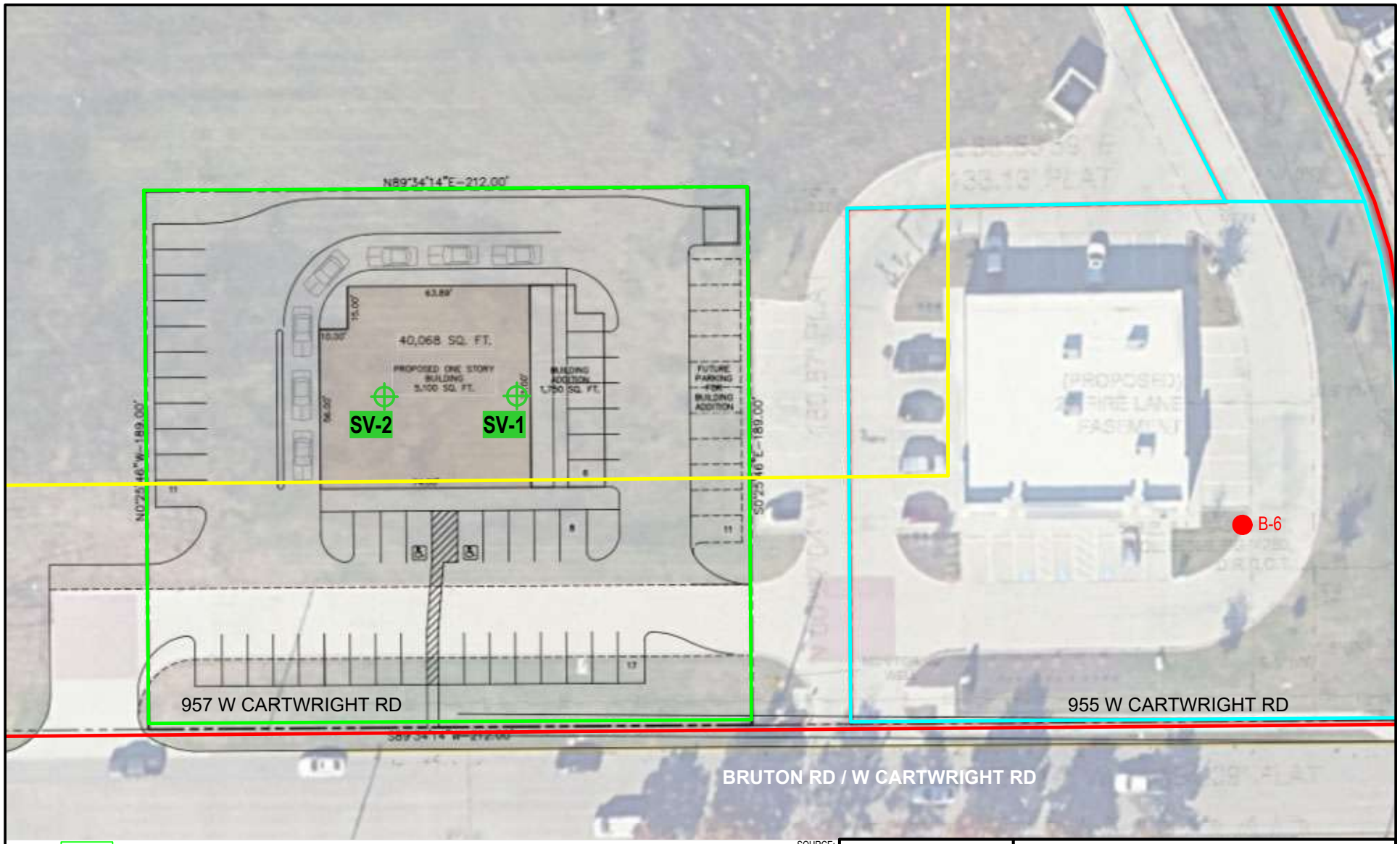
GOLAKIA & SINGH LLC
3009 CREEKSIDE DR
SACHSE TX 75048

CITY OF MESQUITE PUBLIC WORKS
DEPARTMENT
1515 N GALLOWAY AVE
MESQUITE TX 75149

14 SITE LAYOUT PLAN

Site Plans that present the Subject Property boundaries and proposed enclosed structure are provided as **Attachment 14**.

ATTACHMENT 14
SITE PLANS



SUBJECT PROPERTY, MSW AUTHORIZATION No. 67137 (0.92 ACRES)
LARGER PROPERTY (MSW AUTHORIZATION & PERMIT Nos. 62039 & 67023 (15.18 ACRES))
ADJACENT PROPERTY (6.58 ACRES)
FORMER LANDFILL CELL 3
SOIL BORING LOCATION, 2024 (SOIL VAPOR SAMPLES)

SOURCE: RAWLS CULVER ARCHITECTS LP

N

0 25 50
SCALE IN FEET

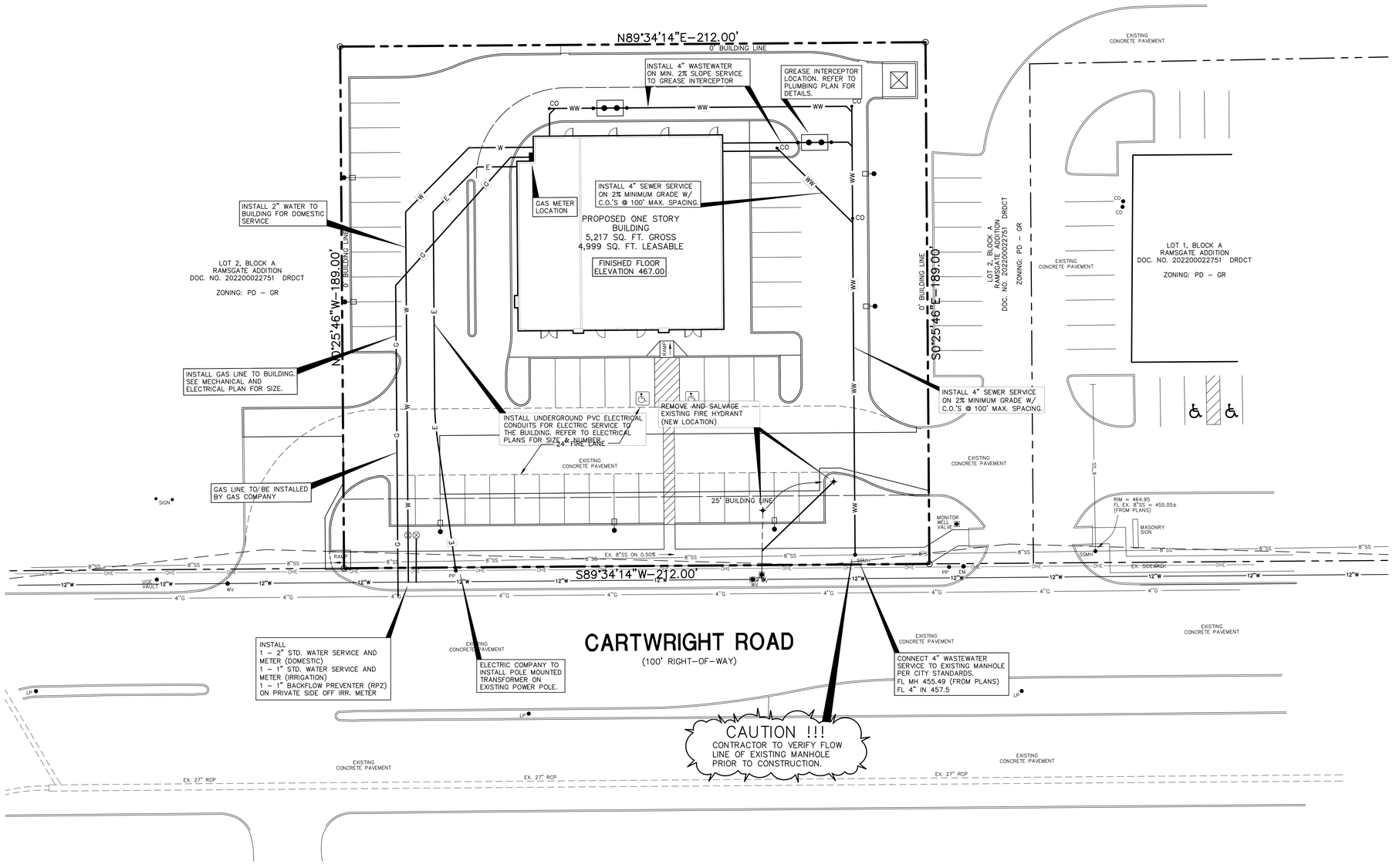
SQ Environmental, LLC

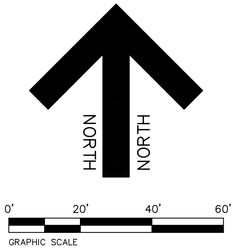
ATTACHMENT 14

SITE LAYOUT PLAN

CAESARS PLAZA
957 W CARTWRIGHT ROAD
MESQUITE, TEXAS 75149

SCALE:	DATE:	PN:
1 IN = 50 FT	DEC 2024	1239.001.001





GENERAL NOTES:

1. ALL CONSTRUCTION TO BE DONE IN STRICT ACCORDANCE TO THESE PLANS, ALL APPLICABLE MUNICIPAL BUILDING CODES AND STANDARDS.

2. THE CONTRACTOR SHALL MAKE APPLICATION FOR SERVICES, OBTAIN ALL PERMITS, AND PAY ALL CHARGES, FEES, AND CONNECTION COSTS REQUIRED FOR EACH UTILITY SERVICE. (THESE COSTS AND FEES SHALL NOT BE INCLUDED IN THE BASE BID).

3. SEE PLUMBING AND ELECTRICAL PLANS FOR EXACT LOCATIONS AND DETAILS OF SERVICES INTO BUILDING.

4. CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

5. PLUMBING CONTRACTOR SHALL MAKE ARRANGEMENTS FOR GAS SERVICE INSTALLATION BY GAS COMPANY.

6. SEE ELECTRICAL PLANS FOR ELECTRIC DEMAND SUMMARY.

7. SEE SITE LIGHTING PLAN FOR DETAILS AND LOCATIONS OF THE SITE ELECTRICAL LINES AND POLE LIGHTS.

8. SEE CITY OF IRVING STANDARD DETAIL SHEETS FOR ALL WATER AND WASTEWATER DETAILS.

EXISTING UTILITIES NOTES:

1. THE LOCATION OF ALL UNDERGROUND FACILITIES AS INDICATED ON THE PLANS ARE TAKEN FROM PUBLIC RECORDS. JDJR ENGINEERS & CONSULTANTS ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF SUCH RECORDS AND DOES NOT GUARANTEE THAT ALL UNDERGROUND UTILITIES ARE SHOWN OR ARE LOCATED PRECISELY AS INDICATED.

2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ARRANGEMENTS WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES PRIOR TO WORKING IN THE AREA TO CONFIRM THEIR EXACT LOCATION AND TO DETERMINE WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT.

3. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND FACILITIES FOUND.

4. NOTIFY JDJR ENGINEERS & CONSULTANTS IF ANY UNDERGROUND UTILITIES ARE NOT IN THE LOCATIONS INDICATED ON THESE PLANS (HORIZONTALLY AND VERTICALLY) OR CONFLICT WITH ANY PROPOSED IMPROVEMENTS ASSOCIATED WITH THESE PLANS.

5. ANY EXISTING UTILITY APPERTUNANCES (MH, VALVES, METER BOXES, ETC.) TO BE ADJUSTED TO MATCH THE PROPOSED FINISHED GRADES AS INDICATED ON THESE PLANS. NOTIFY JDJR ENGINEERS & CONSULTANTS, INC. IF THERE IS A PROBLEM MAKING SAID ADJUSTMENTS.

WATER METER TABLE	
USE	SIZE
DOMESTIC	2"
IRRIGATION	1"

SITE T.B.M.: X–CUT SET ON CONCRETE PAVEMENT LOCATED ON NORTH SIDE OF CARTWRIGHT ROAD AT CENTER OF DRIVE ENTRANCE ON THE EAST SIDE OF THIS PROPERTY AS SHOWN ON PLAN.

ELEVATION 464.11

Texas 811

CALL 811 FOR UTILITY LOCATES PRIOR TO CONSTRUCTION

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF MESQUITE, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CASE NO.: SP1124–0465

REVISIONS:	
12–20–24	CITY COMMENTS
3–17–25	CITY COMMENTS

STATE OF TEXAS
JAMES DEWEY, JR.
61484
LICENSED PROFESSIONAL ENGINEER
03/17/2025

SHEET TITLE:

PRELIMINARY UTILITY SERVICES PLAN

PROPOSED MULTI TENANT BUILDING

40,068 SQ. FT. OR 0.920 ACRES
975 W CARTWRIGHT ROAD
MESQUITE, TEXAS

JDJR
PREPARED BY:
ENGINEERS & CONSULTANTS, INC.
TSBPE REGISTRATION NUMBER F-8527
ENGINEERS • SURVEYORS • LAND PLANNERS
2500 Texas Drive Suite 100 Irving, Texas 75062
Tel 972-252-5357 Fax 972-252-8958

DATE: 11–20–24	DRAWN BY: JDJR	SHEET NO.
SCALE: 1" = 20'	CHECKED BY: JDJR	C9 OF 9

JDJR FILE NO. PENDING

15 PROPERTY LEGAL DESCRIPTION

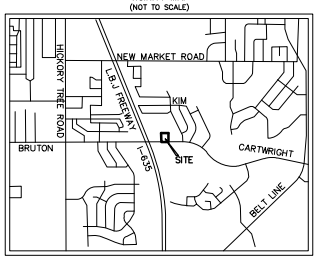
A legal description of the Subject Property is provided as **Attachment 15**.

ATTACHMENT 15
PROPERTY LEGAL DESCRIPTION

NOTES:

1. IRF – Iron Rod Found
2. IRS – Iron Rod Set w/ "PEISER & MANKIN SURV" red plastic cap
3. YOIRF – Iron Rod Found w/ yellow plastic cap
4. Bearings of lines shown hereon refer to Grid North of the Texas Coordinate System of 1983 (North Central Zone 4202; NAD83 (2011) Epoch 2010) as derived locally from Allterra Central's Continuously Operating Reference Stations (CORS) via Real Time Kinematic (RTK) Methods. An average Combination Factor of 1.0001316402 was used to scale grid coordinates and distances to surface.
3. There are no observable evidence of cemeteries on site.
4. There are no observable evidence of earth moving work, building construction or building additions within the recent months.
5. There are not observable markings delineating wetlands on site.
6. There are no changes in street right-of-way lines either completed or proposed, and available from the controlling jurisdiction. No observable evidence of recent street or sidewalk construction or repairs.
7. There are no observable evidence of site use as a solid waste dump, sump or sanitary landfill.
8. This survey was performed in connection with the transaction described in Commitment by First American Title Insurance Company, GF 1002-3996.37-RTT, effective June 3, 2024, and issued on June 13, 2024. USE OF THIS SURVEY FOR ANY OTHER PURPOSE OR BY OTHER PARTIES SHALL BE AT THEIR OWN RISK AND UNDERSIGNED IS NOT RESPONSIBLE TO OTHERS FOR ANY LOSS RESULTING THEREFROM.
9. Property has direct access to and from dedicated Public right-of-way known as Bruton Road (West Cartwright Road) as shown.
10. This boundary forms a mathematical closed figure, with no gaps, gores, or overlaps.
11. This is an above-ground survey. The underground utilities, if shown, are based on information provided by the various utility companies and these locations should be considered approximate. There may be additional underground utilities not shown on this drawing.

VICINITY MAP
(NOT TO SCALE)



This is to certify that I have, this date, made an on the ground survey of the property located on West Cartwright Road in the City of Mesquite, Texas, described as follows:

Being all that certain 0.920 acre tract of land situated in Alexander Chumley Survey, Abstract No. 340, City of Mesquite, Dallas County, Texas, same being a portion of Lot 2, Block A, Ramsgate Addition, an Addition to the City of Mesquite, Dallas County, Texas, according to the plat thereof recorded in Instrument Number 202200022751, Official Public Records of Dallas County, Texas, same being a portion of that certain tract of land conveyed to PRS Ramsgate, L.P., by Special Warranty Deed recorded in Volume 95195, Page 3293, Deed Records, Dallas County, Texas, and being more particularly described as follows:

COMMENCING at an "X" cut found for the most southerly southeast corner of said Lot 2, same being the southwest corner of Lot 1A, Block A, Replat Ramsgate Addition, an addition to the City of Mesquite, Dallas County, Texas, according to the plat thereof recorded in Instrument Number 202300057071, Official Public Records, Dallas County, Texas, same being in the north right-of-way line of Bruton Road (West Cartwright Road) (a 100 foot right-of-way);

THENCE South 89 deg. 34 min. 14 sec. West, along the common line of said Lot 2 and said Bruton Road, a distance of 35.76 feet to a 1/2 inch iron rod with red plastic cap stamped "Peiser & Mankin SURV" set (hereinafter referred to as 1/2 inch iron rod set) for the southeast corner of the herein described tract, same being the POINT OF BEGINNING;

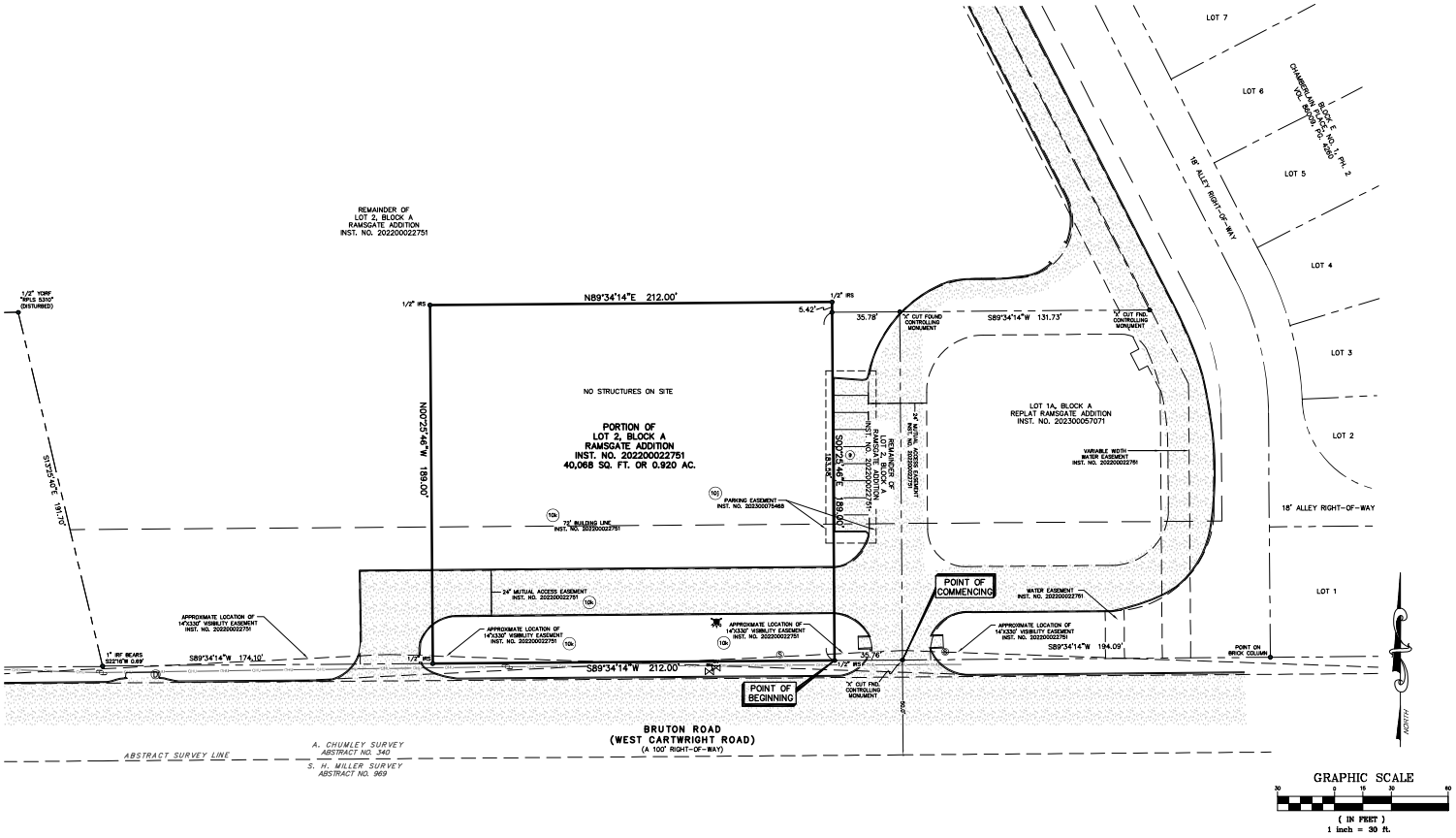
THENCE South 89 deg. 34 min. 14 sec. West, continuing along the common line of said Lot 2 and said Bruton Road, a distance of 212.00 feet to a 1/2 inch iron rod set for the southwest corner of the herein described tract;

THENCE through the interior of said Lot 2 as follows:

North 00 deg. 25 min. 46 sec. West, a distance of 189.00 feet to a 1/2 inch iron rod set for the northwest corner of the herein described tract;

North 89 deg. 34 min. 14 sec. East, a distance of 212.00 feet to a 1/2 inch iron rod set for the northeast corner of the herein described tract;

South 00 deg. 25 min. 46 sec. East, a distance of 189.00 feet to the POINT OF BEGINNING and containing 40,068 square feet or 0.920 acre of compute land, more or less.



GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

NOTES CORRESPONDING TO SCHEDULE B:

10e. Limited or lack of access to road or highway abutting subject property as set forth in instrument filed 11/27/1967, recorded in Volume 67230, Page 1261, Real Property Records, Dallas County, Texas, does not affect subject property.

10f. Easement granted by Shelley Coleman et al to Texas Power & Light Company, filed 05/18/1948, recorded in Volume 2979, Page 328, Real Property Records, Dallas County, Texas, may or may not affect, cannot be located as written, no power lines or poles located on subject property.

10g. Limited or lack of access to road or highway abutting subject property as set forth in instrument filed 02/04/1965, recorded in Volume 497, Page 1287, Real Property Records, Dallas County, Texas, does not affect subject property.

10h. Terms, provisions, and conditions of Non-Barrier Agreement dated 06/03/1987 by and between Great Reliance Corporation and Exxon Corporation filed 08/25/1987, recorded in Volume 87165, Page 2152, Real Property Records, Dallas County, Texas, does not affect subject property..

10i. Terms, provisions, and conditions of Notice Pursuant to V.T.C.A. Health and Safety Code Section 361.539 filed 10/11/1994, recorded in Volume 94196, Page 2484, Real Property Records, Dallas County, Texas, does affect and is blanket in nature.

10j. Terms, provisions, conditions, and easements contained in Easement Agreement, file 04/19/2023, recorded in cc# 202300075468, Real Property Records, Dallas County, Texas, does affect, as shown hereon.

10k. Easements and building lines, as shown on plat recorded in cc# 202200022751, Real Property Records, Dallas County, Texas, do affect, as shown hereon.

FLOOD CERTIFICATE
As determined by the FLOOD INSURANCE RATE MAPS for Dallas County, the subject property Does Not appear to lie within a Special Flood Hazard Area (100 Year Flood), Map date 7/7/2014 Community Panel No. 48113C0530K subject lot is located in Zone "X".
If this site is not within an identified flood hazard area, this Flood Statement does not imply that the property and/or structures thereon will be free from flooding or flood damage. On rare occasions, greater floods can and will occur and flood heights may be increased by man-made or natural causes. This Flood Statement shall not create liability on the part of the Surveyor.

To: Republic Title of Texas, Inc., First American Title Insurance Company, PRS RAMSGATE, L.P., and Favorite Venture Real Estate LLC:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1-4, 8, 9, and 16, 17, 18 of Table A thereof. The latest field work was completed on 08/01/2024.
Date of Plat or Map: 08/19/2024

STATE OF TEXAS
REGISTERED
Timothy R. Mankin
6122
PROFESSIONAL
LAND SURVEYOR

08/19/2024

Timothy R. Mankin
Registered Professional Land Surveyor No. 6122

LEGEND

GAS METER	FIRE HYDRANT	WATER MANHOLE	SIGN
IRR. CONTROL VALVE	WATER METER	TRAFFIC SIGNAL POLE	LIGHT POLE
TELEPHONE PEDESTAL	FUEL PORT	TELEPHONE MANHOLE	JUNCTION BOX
POWER POLE	WATER VALVE	SWB MANHOLE	CONCRETE
DOWN GUY	TRANSFORMER PAD	GAS MANHOLE	BOLLARD
S.S. MANHOLE	ELECTRIC METER	VAULT	COVERED AREA
CLEAN OUT	STORM DRAIN MANHOLE	HANDICAP SPACE	A/C PAD

Errors: The Client or Client's Representatives will have 45 days from the date the survey was issued to change any misspellings or any errors on the survey report, after this time has expired all parties involved must accept the survey as issued.

ALTA/NSPS LAND TITLE SURVEY

BRUTON ROAD

MESQUITE, TEXAS 75149

NO.	DATE	REVISION
1.	8/19/24	UPDATED CERTIFICATION PARTIES
2.		
3.		

JOB NO.: 24-0707
DATE: 08/15/2024
FIELD DATE: 08/01/2024
SCALE: 1" = 30'
FIELD: J.W.
DRAWN: J.B.W.
CHECKED: T.R.M.

PEISER & MANKIN SURVEYING, LLC
www.peisersurveying.com
1612 HART STREET
SUITE 201
SOUTHLAKE, TEXAS 76092
817-481-1806 (O)
tmankin@peisersurveying.com
FIRM No. 100999-00
COMMERCIAL
RESIDENTIAL
BOUNDARIES
TOPOGRAPHY
MORTGAGE
Texas Society of Professional Surveyors
Member Since 1977

SHEET 1 OF 1

16 NOTICE OF LANDFILL DETERMINATION & TO REAL PROPERTY RECORDS

Notices of Landfill Determination were not applicable in 2018 and 2020 and are currently not applicable. The Mesquite Sanitary Landfill is listed in the Closed Landfill Inventory and is well documented. The Authorization to Disturb Final Cover Approval Letter issued by TCEQ on 15 November 2024 is provided as **Attachment 16A**. The Permit for Use of Landover a Closed MSW Landfill issued by TCEQ on 1 October 2020 is provided as **Attachment 16B**.

Attachment 16C is the Deed Notice filed in the real estate records of the County Clerk in the Tarrant County Records Filing Office (and proof of filing) for the Subject Property (western portion of TAD Account No. 03924394), where the “landfill” area is located.

ATTACHMENT 16A
2024 AUTHORIZATION TO DISTURB FINAL COVER APPROVAL LETTER

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 15, 2024

Mr. Pervez Bhojani
Favorite Venture Real Estate, LLC
4629 Bronco Boulevard
Carrollton, Texas 75010

Via email

Subject: Caesars Plaza – Dallas County
Municipal Solid Waste (MSW) – Authorization No. 67137
Authorization to Disturb the Final Cover Over a Closed MSW Landfill - Issued
Tracking No. 30399032; RN110301553/CN606323335

Dear Mr. Bhojani:

We have reviewed your request dated October 14, 2024, for an authorization to disturb the final cover of a closed municipal solid waste (MSW) landfill**.** The request is to conduct two soil borings on property within the boundary of a non-permitted MSW landfill located at 957 W Cartwright Road, Mesquite, Texas in Dallas County. The authorization request was prepared, sealed, and signed by Ms. Susan T. Litherland, P.E. with SQ Environmental, LLC.

Authorization to proceed with the proposed activities is hereby granted as allowed by Title 30 Texas Administrative Code (30 TAC), §330.954(e) and in accordance with the submitted plans. The proposed project has been assigned the Authorization No. 67137. Please reference this number in all future correspondence regarding this project. Any future activities, as well as any deviations from the approved plans, which will disturb the cover over the closed landfill, must be submitted for prior approval. In addition, other authorizations, including construction permits, floodplain modifications, and air permits may need to be obtained.

The construction activities must comply with all applicable provisions of 30 TAC §330.955(d) through (h) concerning the protection of the final cover and the proper disposal of the excavated materials. Any waste removed must be evaluated and disposed of at an authorized disposal facility. Any exposed waste left in place must be properly covered with at least two feet of compacted clay-rich soil. Water coming in contact with MSW is considered contaminated and must be collected and disposed of at an authorized facility. A report documenting the work performed is required to be submitted at the completion of the project.

If you have questions concerning this letter, please contact Maddy Howard at (512) 239-0834, by email to [redacted] or in writing at the address on our letterhead (please include mail code MC 124 on the first line).

Sincerely,

Megan Henson, Manager
Municipal Solid Waste Permits Section
Waste Permits Division
Texas Commission on Environmental Quality

MH/MH/md

cc: Ms. Susan T. Litherland, P.E., SQ Environmental, LLC, Austin
Mr. Sam Enis, P.G., SQ Environmental, LLC, Austin

ATTACHMENT 16B

2020 DEVELOPMENT PERMIT FOR USE OF LAND OVER A CLOSED MSW LANDFILL

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 8, 2020

Mr. Daniel Boswell
Project Services Group, Inc.
2040 Century Center Boulevard, Suite #10
Irving, Texas 75062

Subject: Mesquite Self Storage - Dallas County
Municipal Solid Waste (MSW) - Development Permit No. 62039
Transmittal of Development Permit
Tracking Nos. 24628122 and 25417935; CN605483510/RN110301553

Dear Mr. Boswell:

Enclosed is a copy of the above-referenced development permit issued pursuant to Chapter 361, Texas Health & Safety Code. The Foundation Plans, the Site Operating Plan, Structures Gas Monitoring Plan, and all other documents, including the report prepared and submitted to support the permit application, shall be considered as operational requirements of this development permit.

If you have any questions concerning this matter, please contact Mr. Chandra S. Yadav, P.E. at (512) 239-6727, or in writing at the address on our letterhead (please include mail code MC 124 on the first line).

This action is taken under authority delegated by the executive director of the Texas Commission on Environmental Quality.

Sincerely,

Charly Fritz

Charly Fritz, Director
Waste Permits Division

CF/CY/sm

cc: Mr. Jeff Arrington, P. E., SCS Engineers, Bedford

Enclosures

Texas Commission on Environmental Quality

Permit for Use of Land Over a Closed Municipal Solid Waste (MSW) Landfill

Issued under provisions of Texas
Health & Safety Code
Chapter 361

MSW Permit No.:	62039
Name of Site Operator/Permittee:	Daniel Boswell, Mesquite Storage LP
Property Owner:	Mesquite Storage LP
Development Name:	Mesquite Storage LP
Development Address:	23300 Lyndon B. Johnson (LBJ) Freeway Mesquite, TX 75149
Development Classification:	Enclosed Structure Over a Closed MSW Landfill

The permittee is authorized to construct and operate enclosed structures over a closed MSW landfill in accordance with the limitations, requirements, and other conditions set forth herein. This permit is granted subject to the rules and orders of the Commission and laws of the State of Texas. Nothing in this permit exempts the permittee from compliance with other applicable rules and regulations of the Texas Commission on Environmental Quality. This permit will be valid until canceled, amended, or revoked by the Commission.

Approved, *Issued* and *Effective* in accordance with Title 30, Texas Administrative Code (30 TAC), Chapter 330, Subchapter T.

Issued Date: October 1, 2020

For the Commission

Contents

I. Development Location and Size

A. The development address is 23300 Lyndon B. Johnson (LBJ) Freeway, Mesquite, TX 75149 in Dallas County, Texas. The enclosed structures consist of eight self-storage units along with an office and a residence building, with a total footprint of about 119,150 square feet, and associated driveways and parking areas, and support utilities. The entire development is on a tract of land of approximately 82.6 acres.

B. The property drawing and legal descriptions are provided in Section 10 of Attachment A of this permit.

C. Coordinates:

Latitude: 32° 44' 58.8" N

Longitude: 96° 36' 43.6" W

D. Changes, Additions, and Expansions

Changes to the proposed development must be authorized in accordance with 30 TAC Chapter 305 (Consolidated Permits), and 30 TAC Chapter 330, Subchapter T (Use of Land Over Closed Municipal Solid Waste Landfills). Minor construction modifications shall be allowed, provided these construction modifications are consistent with provisions of this permit and commission rules, and are further depicted on final as-built drawings. Any construction modification shall in no way reduce the enclosed structure's ability to prevent methane migration into the structure and to monitor for methane within and around the structure.

II. Development Design, Construction, and Operation

A. The development design, construction, and operation must comply with the provisions of this permit; Commission rules; the permit application incorporated by reference in Attachment A of this permit; and amendments, corrections, and modifications incorporated by reference in Attachment B of this permit. The development construction and operation shall be conducted in a manner that is protective of human health and the environment.

B. The development shall be designed, constructed, operated, and maintained to prevent the release and migration of any waste, contaminant, or pollutant, and to prevent inundation from the surrounding areas.

C. The development shall be designed and operated so as not to cause a violation of:

1. The requirements of the Texas Water Code, §26.121;

2. Any requirements of the Federal Clean Water Act, including but not limited to the National Pollutant Discharge Elimination System (NPDES) requirements, §402 as amended, and/or the Texas Pollutant Discharge Elimination System (TPDES) as amended;

3. The requirements under the Federal Clean Water Act, §404 as amended; and

4. Any requirement of an area-wide or statewide water quality management plan that has been approved under the Federal Clean Water Act, §208 or §319 as amended.

D. Landfill Gas Migration Barrier

The gas migration barrier system is described in Section 13 found in Attachment A of this permit and consists of a 40-mil HDPE liner beneath the entire enclosed structures. The HDPE liner is underlain by a 12-inch thick layer of fine aggregate and a non-woven geotextile. The liner will be installed around the concrete peers using pipe boots or collars to seal the spacing between the drilled shafts and liner material. Slotted PVC piping will be installed within the aggregate layer to extend beneath the structure and around the building. Riser vents will provide points to allow surface venting of gas collected by the piping. The subsurface barrier and gas ventilation system including the 12-inch layer of drainage aggregate and geotextile will be installed beneath all the structures.

E. Structures Ventilation System

The ventilation system consists of an impermeable methane barrier layer consisting of a 40 mil HDPE liner underlain with a 12-inch thick layer of aggregate material with slotted PVC piping embedded in the aggregate and vented outside the structure through risers. The barrier and ventilation layer will be installed below the level of the perimeter concrete grade beams to minimize the foundation penetrations through the liner material. Building ventilation will be provided by HVAC systems in the office buildings. The ventilation system is described and depicted in Drawings EN2.0-2.1 of Attachment A of this permit.

F. Safety and Evacuation Plan

The permittee shall ensure that the Safety and Evacuation Plan, as presented in Section 21 found in Attachment A of this permit, is maintained up-to-date, and that appropriate personnel are knowledgeable of the provisions and procedures in the plan.

G. Landfill Final Cover

1. The final cover over the landfill serves as a barrier to the infiltration of water and to prevent waste exposure. Construction of this development shall not create any ponding of water, and any observed ponding during and after construction shall be promptly repaired.

2. Areas of the landfill final cover that are disturbed due to construction activities and where structures are not being constructed shall be graded to prevent ponding and ensure a minimum of 2.0 feet of soil is present over the waste. These areas shall be vegetated to minimize erosion.

3. Upon completion of construction, the integrity of the final cover shall not be disturbed in any way without prior authorization of the executive director.

H. Methane Monitoring and Reporting

1. The enclosed structure shall be monitored in accordance with the facility's Structures Gas Monitoring Plan. The Structures Gas Monitoring Plan is described in Section 20 found in Attachment A of this permit, and consists of a permanently installed, continuous methane monitoring system within the enclosed structure and within the gas migration barrier system riser pipes. The continuous methane monitoring system is equipped with automatic methane gas sensors designed to trigger an audible alarm if the concentration of methane exceeds 1% by volume in air. The sensor locations are illustrated in Drawing EN 2.1 of Attachment A of this permit.
2. The continuous methane monitoring system shall be calibrated, operated, and maintained in accordance with the manufacturer's specifications.
3. All recorded monitoring results shall be placed in the operating record of the facility and made available for inspection by the executive director and any local pollution agency with jurisdiction that has requested to be notified.
4. If the volumetric concentration of methane in air exceeds 1% within the vent pipes or building, the permittee shall take immediate action to ensure the safety of the building occupants, notify the executive director, and manage the landfill gas exceedance in accordance with 30 TAC §330.961(b)(2)(A).

I. Construction Plans

1. Plans and specifications of the proposed development shall be maintained at the project site at all times during construction.
2. After completion of construction, one set of as-built construction plans and specifications shall be maintained at the enclosed structure and made available for inspection by the executive director in accordance with 30 TAC §330.958.

III. Development Closure

A. Closure of the development shall commence:

1. Upon direction by the executive director of the TCEQ for failure by the permittee to comply with the terms and conditions of the permit, or violation of state or federal regulations;
2. Upon abandonment of the site by the permittee;
3. Upon direction by local or state fire marshal or health departments; and/or
4. Upon the permittee's notification to the Commission that the enclosed structure is to be razed.

IV. Standard Permit Conditions

A. This permit is based on, and the permittee shall follow, the permit application dated October 9, 2019 and received November 1, 2019 and the revisions dated October 30, 2019, December 18, 2019, April 7, 2020, April 30, 2020, July 20, 2020, July 28, 2020, and August 24, 2020. These application submittals are hereby approved subject to the terms of this permit, the rules and regulations, and any orders of the TCEQ, and are incorporated into this permit by reference in Attachment A as if fully set out herein. Any and all revisions to these application submittals shall become conditions of this permit upon the date of approval by the Commission. The permittee shall maintain the application and all revisions and supporting documentation at the enclosed structure and make them available for inspection by TCEQ personnel.

B. Attachment B of this permit shall consist of all duly executed amendments, modifications, and corrections to this permit.

C. The permittee has a duty to comply with all conditions of this permit. Failure to comply with any permit condition may constitute a violation of the permit and statutes under which it was issued, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility or development.

D. During construction and operation of the facility, measures shall be taken to control runoff, erosion, and sedimentation from disturbed areas. Erosion and sedimentation control measures shall be inspected and maintained at least monthly and after each storm event. Erosion and sedimentation controls shall remain functional until disturbed areas are stabilized with established permanent vegetation.

E. The permittee shall comply with 30 TAC §330.161 (Oil, Gas, and Water Wells) as appropriate. The permittee shall submit plugging reports for all wells encountered during construction to the TCEQ.

F. Inspection and entry onto the site by authorized personnel shall be allowed during the development operating life.

G. The provisions of this permit are severable. If any permit provision or the application of any permit provision to any circumstance is held invalid, the remainder of this permit shall not be affected.

H. Regardless of a specific design or specification contained in the application, as adopted by reference in Attachments A and B of this permit, the permittee shall be required to meet all performance standards required by the permit, the Texas Administrative Code, and local, state, and federal laws or ordinances.

I. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application, or in any report to the executive director, it shall promptly submit such facts or information.

J. The permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy in accordance with 30 TAC §305.125(22).

K. Any proposed development changes, additions, or expansions must be authorized in accordance with the rules in 30 TAC Chapters 305 and 330.

L. If differences arise between permit provisions and the rules under 30 TAC Chapter 330, the rule provisions shall hold precedence.

V. Incorporated Regulatory Requirements

A. The permittee shall comply with all applicable federal, state, and local regulations and shall obtain any and all other required permits prior to the beginning of any onsite improvements or construction approved by this permit.

B. To the extent applicable, the requirements of 30 TAC Chapters 37, 281, 305, and 330 are adopted by reference and are hereby made provisions and conditions of this permit.

VI. Special Provisions

Not applicable.

Attachment A

The permit application.

Attachment B

Amendments, corrections, and modifications issued for MSW Permit No. 62039.

ATTACHMENT 16C
DEED NOTICE & PROOF OF FILING

AFTER RECORDING RETURN TO:
Southwest Land Title Company
3815 Gus Thomasson Road
Mesquite, Texas 75150

Affadavit to
Public
for N section
only

COUNTY OF DALLAS
STATE OF TEXAS
I hereby certify that this instrument was filed on the
date and time stamped hereon by me and was duly re-
corded in the volume and page of the named records
of Dallas County, Texas as stamped hereon by me.

JAN 23 1984

Earl Bullock
COUNTY CLERK, Dallas County, Texas

FILED
COUNTY CLERK
DALLAS COUNTY
'84 JAN 20 PM 1:12

84015 3510

NOTICE PURSUANT TO V.T.C.A. HEALTH & SAFETY CODE § 361.539

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF DALLAS §

DEED 9.00
TOTL 9.00
A001 7829 0000000 1321 3:51PM 10/11/94

That certain real property situated in the County of Dallas, State of Texas, more fully described on Exhibit A attached hereto, presently overlies solid wastes that were relocated from a closed municipal solid waste landfill facility. There are restrictions on the development or lease of said property pursuant to V.T.C.A. Health & Safety Code §§ 361.531-540 (1994). The owner of said property as of the date of this notice is Great Reliance Corporation, a Texas corporation.

GREAT RELIANCE CORPORATION,
a Texas corporation

By: [signature]
President

ACKNOWLEDGMENT

THE STATE OF Missouri §
§
COUNTY OF Jackson §

This instrument was acknowledged before me on the 26th day of September, 1994, by [signature], President of Great Reliance Corporation, a Texas corporation, on behalf of said corporation.

2-23-97
My commission expires:

[signature]
Notary Public
State of Missouri

SHIRLEY J. CSICSILA
Notary Public - Notary Seal
STATE OF MISSOURI
Jackson County
My Commission Expires 2/23/97

SHIRLEY J. CSICSILA
Notary's name printed

LAW OFFICES OF RENDA J.
2527 FAIRMOUNT, 2ND FLOOR
DALLAS, TEXAS 75201

94196 02484

States where trash relocated to.

EXHIBIT A

BEING a 15.175 acre tract of land situated in the A. Chumley Survey, Abstract No. 340 and the L. J. Sweet Survey, Abstract No. 1367 and being part of a 74.628 acre tract of land recorded in Volume 16, Page 108, Deed Records, Dallas County, Texas, and part of a 2.699 acre tract of land recorded in Volume 70216, Page 2194, Deed Records, Dallas County, Texas, being more particularly described as follows:

BEGINNING at a found 1 inch iron rod for the northwest corner of a 0.918 acre tract of land recorded in Volume 87111, Page 2233, Deed Records, Dallas County, Texas, said iron rod being in the east line of I. H. 635 (a variable R.O.W.);

THENCE North 20° 14' 50" West, along said east line, 20.98 feet to a set 1/2 inch iron rod;

THENCE North 29° 33' 25" West, continuing along said east line, 385.00 feet to a set 1/2 inch iron rod;

THENCE North 21° 41' 59" West, continuing along said east line, 276.12 feet to a set 1/2 inch iron rod for the most northerly southwest corner of Chamberlain Place No. 1, Phase No. 2, an addition to the City of Mesquite, Texas according to the plat thereof recorded in Volume 88126, Page 5221, Map Records, Dallas County, Texas;

THENCE South 89° 58' 19" East, along the most northerly south line of said addition, 846.08 feet to a set 1/2 inch iron rod for the point of curvature of a curve to the right having a central angle of 63° 46' 18" and a radius of 40.00 feet;

THENCE along said curve, and along said south line, an arc distance of 44.52 feet to a set 1/2 inch iron rod;

THENCE South 26° 12' 01" East, along the most southerly west line of said addition 650.53 feet to a set 1/2 inch iron rod for the point of curvature of a curve to the right having a central angle of 26° 40' 52" and a radius of 157.00 feet;

THENCE along said curve and along said west line, an arc distance of 73.11 feet to a set 1/2 inch iron rod;

THENCE South 00° 28' 51" West, continuing along said west line 128.55 feet to a set 1/2 inch iron rod in the north line of Bruton Road (a 100' R.O.W.);

THENCE North 89° 31' 09" West, along said north line 615.76 feet to a found 1 inch iron rod for the southeast corner of said 0.918 acre tract;

THENCE North 12° 29' 58" West, along the east line of said 0.918 acre tract 191.96 feet to a found 1 inch iron rod;

THENCE North 89° 31' 09" West, along the north line of said 0.918 acre tract 227.67 feet to the POINT OF BEGINNING and CONTAINING 661,042 square feet or 15.175 acres of land, more or less.

LAW OFFICES OF RENDA J. MILLER
2527 FAIRMOUNT, 2ND FLOOR
DALLAS, TEXAS 75201

94196 02485

94196 02486

FILED

94 OCT 11 AM 11:36

EARL BULLOCK
COUNTY CLERK
DALLAS COUNTY

STATE OF TEXAS COUNTY OF DALLAS

OCT 11 1994

COUNTY CLERK, Dallas County, Texas

17 NOTICE TO LESSEES & OCCUPANTS OF THE STRUCTURE

A draft notice that will be given to all prospective lessees and occupants of the proposed structure upon the structure's completion is provided as **Attachment 17**. The notice informs future occupants of the presence of waste, subsurface methane, and VMS. This notice will be provided to lessees and occupants upon signing a lease agreement on the Subject Property.

ATTACHMENT 17
DRAFT NOTICE TO LESSEES & OCCUPANTS OF THE STRUCTURE

DRAFT

Date

Future Lessee and/or Occupant Name
Address
City, State Zip

RE: Notice to Potential Lessee and/or Occupant
Caesars Plaza
957 W Cartwright Rd, Mesquite, Dallas County, Texas 75149
Portion of Lot 2 Block A Ramsgate Addition, Inst. No. 202200022751, 40,068 ft^2 or 0.920 ac

Dear Lessee and/or Occupant:

This letter is intended to inform you that the property you are considering leasing or occupying, located at 957 W Cartwright Road (Rd) in Mesquite, Texas, was historically operated as a landfill, referred to as the Mesquite Sanitary Landfill and is listed in the Closed Landfill Inventory. Prior to any development taking place, the necessary permits were acquired through Texas Commission on Environmental Quality (TCEQ) and others for all current development. Necessary precautions were taken when designing and constructing the building to minimize safety hazards. A vapor mitigation system has been designed and installed, and will be operated and monitored to minimize the potential for methane or any other soil vapors from entering the building. The vapor mitigation system was designed by an engineering firm licensed in the State of Texas, in good standing in accordance with State statutes, and with experience in the design and construction of vapor mitigation systems and monitoring. Additional information regarding the vapor mitigation system and/or the monitoring results are available on request.

Sincerely,

Property Owner

18 TCEQ CORE DATA FORMS

Attachment 18 includes the Core Data Forms for the property owner and MSW applicant.

ATTACHMENT 18
CORE DATA FORMS

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

☐ Other **Revision to Existing Development Permit**

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 606323335		**RN 110301553**

SECTION II: Customer Information

4. General Customer Information	**5. Effective Date for Customer Information Updates** (mm/dd/yyyy)	11/15/2024

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)*	*If new Customer, enter previous Customer below:*
Favorite Venture Real Estate LLC	PRS Ramsgate LP

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
804644242		88-3271303	

11. Type of Customer:	☐ Corporation	☐ Individual	Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other		☐ Sole Proprietorship	☐ Other:

12. Number of Employees	**13. Independently Owned and Operated?**
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher	☒ **Yes** ☐ **No**

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

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:	4629 Bronco Blvd						
	City	Carrollton	**State**	TX	**ZIP**	75010	**ZIP + 4**

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

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
(469) 387-1383		( ) -

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.)*

Caesars Plaza

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	957 W Cartwright Rd							
	City	Mesquite	**State**	TX	**ZIP**	75149	**ZIP + 4**	
24. County	Dallas							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	Located approximately 500 ft east of LBJ Fwy on W Cartwright Rd (Bruton Rd)				
26. Nearest City			**State**	**Nearest ZIP Code**	
Mesquite			TX	75149	

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:	32.74896111		**28. Longitude (W) In Decimal:**	-96.61146111	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
32	44	56.26	-96	36	41.26

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)
5999			

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

commercial retail center (planned)

34. Mailing Address:	**4629 Bronco Blvd**							
	City	**Carrollton**	**State**	**TX**	**ZIP**	**75010**	**ZIP + 4**	
35. E-Mail Address:	[redacted]							

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(469) 387-1383		( ) -

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

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☒ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
67137 (previously 67023 & 62039)				
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Sam Enis	**41. Title:**	Principal Project Manageru

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 574-1199		( ) -	[redacted]

SECTION V: Authorized Signature

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

Company:	Favorite Venture Real Estate LLC	**Job Title:**	Member
Name *(In Print)*:	Pervez Bhojani	**Phone:**	(469) 387- 1383
Signature:	[signature]	**Date:**	05-19-2025

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)*	*If new Customer, enter previous Customer below:*
PRS Ramsgate LP	

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
		75-2599728	

11. Type of Customer:	☐ Corporation	☐ Individual	Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other		☐ Sole Proprietorship	☐ Other:

12. Number of Employees	**13. Independently Owned and Operated?**
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher	☒ **Yes** ☐ **No**

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

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant
☒ Other: Property Owner

15. Mailing Address:	3889 Maple Ave							
	Ste 220							
	City	Dallas	**State**	TX	**ZIP**	75219	**ZIP + 4**	3912

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(214) 397-0175		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

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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).

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Caesars Plaza

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25. Description to Physical Location:	Located approximately 500 ft east of LBJ Fwy on W Cartwright Rd (Bruton Rd)				
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commercial retail center (planned)

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35. E-Mail Address:	[redacted]							

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(469) 387-1383		( ) -

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

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☒ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
Authorization to Disturb Final Cover No. 67137				
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Sam Enis	**41. Title:**	Principal Project Manageru

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 574-1199		**( ) -**	[redacted]

SECTION V: Authorized Signature

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

Company:	PRS Ramsgate LP	**Job Title:**	President of the Corp
Name *(In Print):*	Rischard D. Squires	**Phone:**	**(** 214 **)** 397- **0175**
Signature:		**Date:**	05/20/2025

19 FEE PAYMENT RECEIPT

The application fee of $2,500 has been paid by check and a copy is provided as **Attachment 19**.

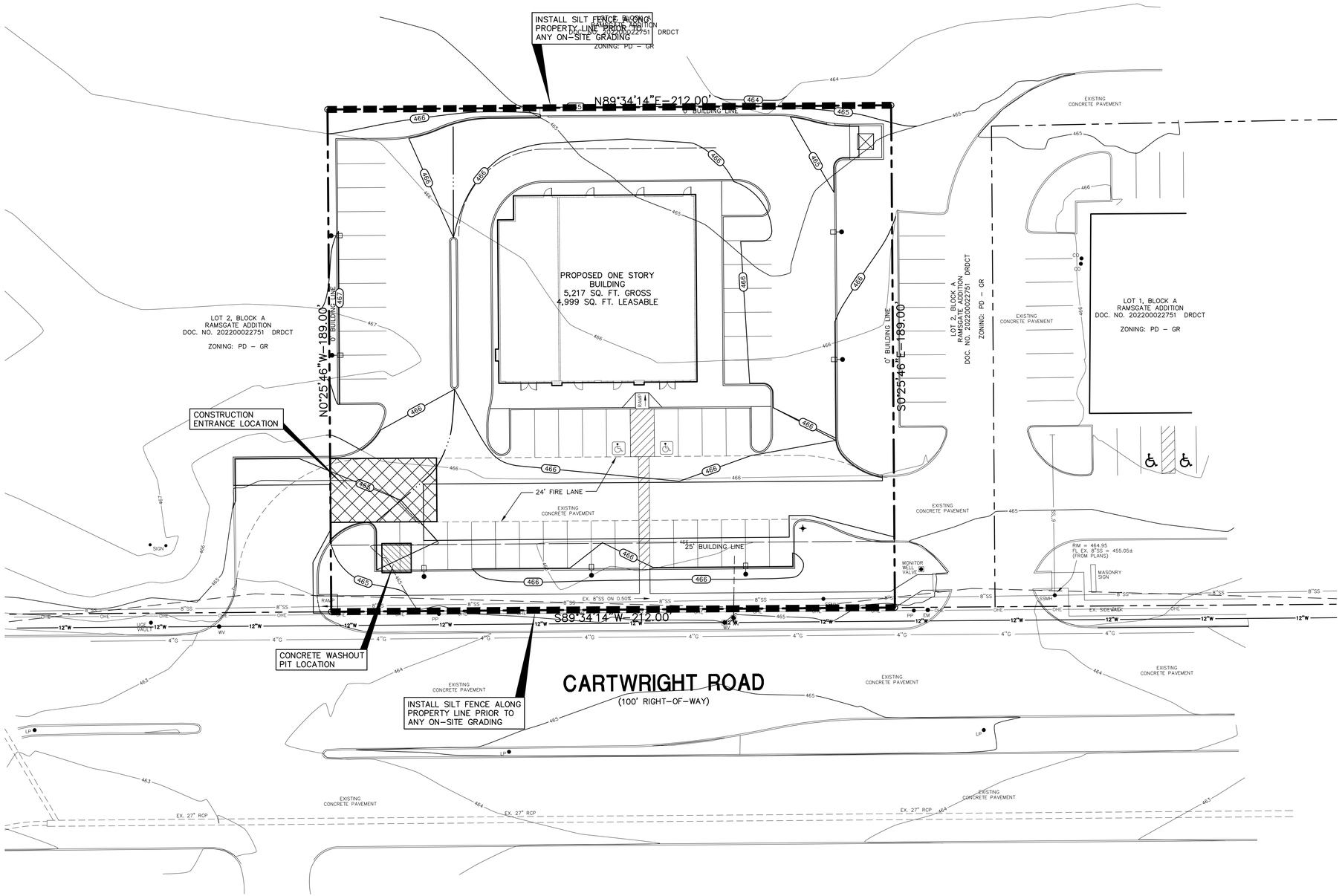
ATTACHMENT 19
FEE PAYMENT

ATTACHMENT 19

20 OTHER PLANS

Grading and drainage plans are provided as **Attachment 20**. There are no irrigation plans for the property.

ATTACHMENT 20
OTHER PLANS



NOTE: SEE SHEET C8 FOR EROSION CONTROL DETAILS.

AREA OF DISTURBANCE = ±1.02 ACRES

LEGEND

- 142 — EXISTING CONTOUR LINE
- 525 — PROPOSED CONTOUR LINE
- PROPOSED SILT FENCE OR STRAW WATTLES
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED CONCRETE WASHOUT PIT

CALL 811 FOR UTILITY LOCATES PRIOR TO CONSTRUCTION

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF MESQUITE, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CASE #: SP1124-0465

REVISIONS:	
12-20-24	CITY COMMENTS

STATE OF TEXAS
JAMES DEWEY, JR.
61484
REGISTERED PROFESSIONAL ENGINEER
12/20/2024

SHEET TITLE:

EROSION CONTROL PLAN

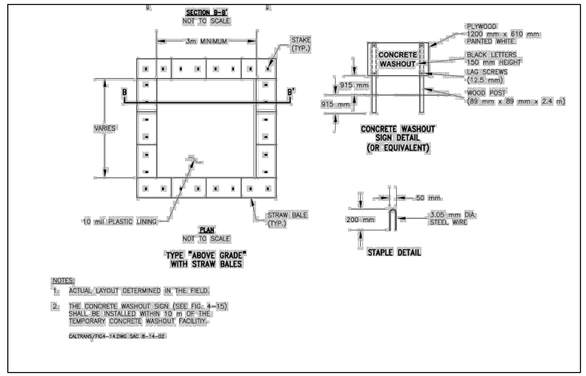
PROPOSED MULTI TENANT BUILDING

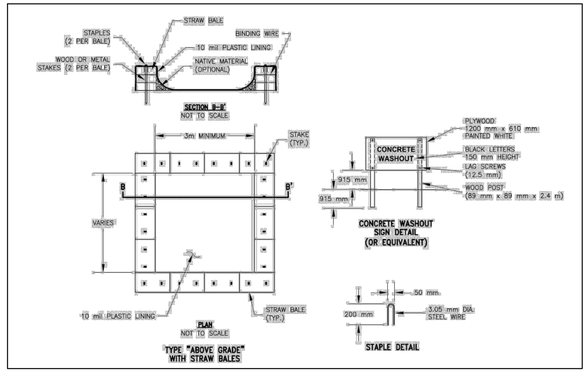
40,068 SQ. FT. OR 0.920 ACRES
975 W CARTWRIGHT ROAD
MESQUITE, TEXAS

JDJR
PREPARED BY:
ENGINEERS & CONSULTANTS, INC.
TSBPE REGISTRATION NUMBER F-8527
ENGINEERS • SURVEYORS • LAND PLANNERS
2500 Texas Drive Suite 100 Irving, Texas 75062
Tel 972-252-5357 Fax 972-252-8958

DATE: 11-20-24	DRAWN BY: JDJR	SHEET NO.
SCALE: 1" = 20'	CHECKED BY: JDJR	C7 OF 9

JDJR FILE NO. PENDING





NOTE: THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

NOTE: CONTRACTOR MAY USE ANY OF THE CONCRETE WASHOUTS SHOWN.

CONCRETE WASHOUT CONTAINMENT DETAILS

CONCRETE WASTE MANAGEMENT NOTES:

1. WASHOUT OF CONCRETE TRUCKS SHALL BE PERFORMED IN DESIGNATED AREAS ONLY.

2. INSPECTION: CHECK ALL CONCRETE WASHOUT FACILITIES DAILY TO DETERMINE IF THEY HAVE BEEN FILLED TO 75% CAPACITY. THE FACILITY NEEDS TO BE CLEANED OR CHANGED WHEN 75% FULL. INSPECT SELF–INSTALLED WASHOUTS DAILY TO ENSURE THAT PLASTIC LININGS ARE INTACT AND SIDEWALLS HAVE NOT BEEN DAMAGED BY CONSTRUCTION ACTIVITIES.

3. CONCRETE WASHOUT FROM CONCRETE PUMPER BINS CAN BE WASHED INTO CONCRETE PUMPER TRUCKS AND DISCHARGED INTO DESIGNATED WASHOUT AREA OR PROPERLY DISPOSED OF OFFSITE.

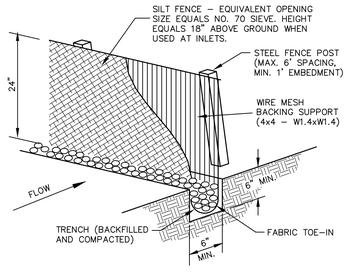
4. MATERIAL REMOVAL: IF THE WASHOUT IS NEARING CAPACITY, VACUUM AND DISPOSE OF THE WASTE MATERIAL IN AN APPROVED MANNER. DO NOT DISCHARGE LIQUIDS TO WATERWAYS, STORM DRAINS OR DIRECTLY ONTO GROUND. DO NOT USE SANITARY SEWER WITHOUT LOCAL APPROVAL.

5. WHEN YOU REMOVE MATERIALS FROM THE CONCRETE WASHOUT, INSPECT FOR SIGNS OF WEAKENING OR DAMAGE, AND REBUILD STRUCTURE OR MAKE NECESSARY REPAIRS. INSTALL A NEW PLASTIC LINER AFTER EVERY CLEANING.

6. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF PER APPLICABLE SOLID WASTE REGULATIONS.

7. DISPOSE OF HARDENED CONCRETE ON A REGULAR BASIS.

8. REMOVE LIQUIDS OR COVER THE STRUCTURES BEFORE PREDICTED STORMS TO PREVENT OVERFLOWS.



SILT FENCE NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.

3. THE TRENCH MUST BE A MIN. OF 6" DEEP AND 6" WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

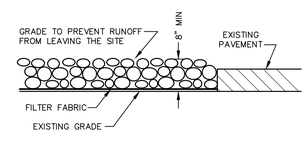
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 6" OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR EMPEDE STORM FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6". THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

SILT FENCE DETAIL



NOTES:

1. STONE SHALL BE 3 TO 5 INCH DIAMETER CRUSHED ROCK OR ACCEPTABLE CRUSHED PORTLAND CEMENT CONCRETE.
2. LENGTH SHALL BE SHOWN ON PLANS, WITH A MINIMUM LENGTH OF 30 FEET FOR LOTS WHICH ARE LESS THAN 150 FEET FROM THE EDGE OF PAVEMENT. THE MINIMUM DEPTH IN ALL OTHER CASES SHALL BE 50 FEET.
3. THE THICKNESS SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, OR WATERCOURSE USING APPROVED METHODS.
6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES, MUST BE REMOVED IMMEDIATELY.
7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

GENERAL NOTES:

1. THE GENERAL CONTRACTOR AND OWNER ARE RESPONSIBLE FOR PREVENTING SEDIMENT AND OTHER POLLUTANTS FROM LEAVING THE SITE. CARE SHALL BE EXERCISED TO PREVENT THE FLOW OR OFF–SITE TRACKING OF SEDIMENT AND OTHER POLLUTANTS TO ADJACENT PAVED DRIVEWAYS, INLETS, AND ALL STORM DRAIN SYSTEMS.

2. ALL LOCATIONS USED AS AN EXIT MUST HAVE ROCK STABILIZATION 50' MINIMUM LENGTH – 3" DIAMETER STONE OVER GEOTEXTILE FABRIC.

3. THE STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE USED AS A WHEEL WASH AREA FOR ALL TRUCKS LEAVING THE SITE.

4. INSTALL A LIQUID TIGHT BERM (LINER REQUIRED) OR OTHER SPILL PROTECTION MEASURE, PER THE FIRE CODE, FOR ANY TEMPORARY FUEL TANKS PLACED ON SITE DURING CONSTRUCTION.

5. ALL TRASH SHALL BE CONTAINED IN AN ENCLOSURE UNTIL PROPER DISPOSAL AT OFF–SITE FACILITIES.

6. VEHICLE PARKING AREAS, STAGING AREAS, STOCKPILES, SPOILS, ETC. SHALL BE LOCATED SUCH THAT THEY WILL NOT ADVERSELY AFFECT STORM WATER QUALITY. OTHERWISE, COVERING OR ENCIRCLING THE AREAS WITH PROTECTIVE MEASURES SHALL BE NECESSARY.

7. A DENSITY OF TEMPORARY OR PERMANENT GROUND COVER (I.E., VEGETATION, EROSION CONTROL, MATTING, ETC.) SUFFICIENT TO PREVENT EROSION SHALL BE ESTABLISHED ON ALL SWALES AND SLOPES IN A TIMELY MANNER IN ORDER TO PREVENT EROSION PROBLEMS FROM DEVELOPING IN THESE AREAS.

8. ALL SURFACE AREAS DISTURBED WITHIN OR ADJACENT TO THE CONSTRUCTION LIMITS MUST BE PERMANENTLY STABILIZED. STABILIZATION IS OBTAINED WHEN THE SITE IS COVERED WITH IMPERVIOUS STRUCTURES, PAVING OR A UNIFORM PERENNIAL VEGETATIVE COVER. THE PERENNIAL VEGETATION MUST HAVE A COVERAGE DENSITY OF AT LEAST 70 PERCENT. STABILIZATION IS REQUIRED BEFORE TERMINATING MAINTENANCE AND REMOVAL OF EROSION CONTROL MEASURES.

9. ALL PERIMETER EROSION CONTROL MEASURES AND A ROCK STABILIZED ENTRANCE/EXIT MUST BE IN PLACE BEFORE THE START OF SOIL DISTURBING ACTIVITIES.

10. EROSION CONTROL MEASURES THAT PROVE TO BE INEFFECTIVE SHALL BE REPLACED WITH MORE EFFECTIVE MEASURES OR ADDITIONAL MEASURES.

11. A MAINTENANCE PROGRAM FOR ALL PROPOSED EROSION CONTROL MEASURES SHALL BE ESTABLISHED.

12. PREVENT ENTRY OF SEDIMENT INTO PROPOSED STORM SEWERS DURING CONSTRUCTION BY INSTALLING PIPE SEDIMENT FILTERS, SEDIMENT FILTERS, OR SEDIMENT BARRIERS AT THE END OF EACH WORK DAY.

13. CONTRACTOR TO CONSTRUCT A PIT OR WASH BASIN ON–SITE FOR WASH–OUT OF CONCRETE TRUCKS.

14. IF PUMPS ARE USED TO REMOVE WATER FROM PONDED AREAS, FILTER THE DISCHARGE TO REMOVE SEDIMENT AND OTHER POLLUTANTS BEFORE THE WATER LEAVES THE SITE OR ENTERS A STORM DRAIN SYSTEM. DO NOT BYPASS SILT BARRIERS OR INLET SEDIMENT FILTERS WITH THE DISCHARGE.

15. PREVENT DAMAGE TO VEGETATION IN DOWNSTREAM WATER COURSES BY LIMITING ANY PROPOSED LIME STABILIZATION OPERATIONS TO THAT WHICH CAN BE MIXED AND COMPACTED BY THE END OF EACH WORK DAY. A SILT FENCE IS NOT EFFECTIVE IN FILTERING LIME SINCE THE GRAIN SIZE IS SIGNIFICANTLY SMALLER THAN THE OPENING IN THE FABRIC.

16. THE CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS AFTER A STORM EVENT OF 1/2 INCH OR GREATER. REPAIR OR REPLACE DAMAGED MEASURES AS NECESSARY TO RETAIN SEDIMENT ON SITE. EROSION CONTROL MEASURES THAT PROVE TO BE INEFFECTIVE SHALL BE REPLACED WITH MORE EFFECTIVE MEASURES OR ADDITIONAL MEASURES WITHIN SEVEN (7) CALENDAR DAYS.

17. FOR ALTERNATIVE STABILIZATION AND EROSION CONTROL MEASURES, REFER TO THE CONSTRUCTION BEST MANAGEMENT PRACTICES (BMP) MANUAL PUBLISHED BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS.

18. DO NOT TRENCH WITHIN THE DRIPLINE OF TREES TO BE SAVED WHEN INSTALLING SEDIMENT BARRIERS.

19. CONTRACTOR TO CHECK AREAS ADJACENT TO PROPERTY DAILY FOR CONSTRUCTION WASTE MATERIALS AND DEBRIS THAT HAVE BLOWN OR WASHED OFF–SITE AND REMOVE IMMEDIATELY.

20. CONTAIN ALL RUNOFF FROM MATERIALS USED IN THE SUBGRADE STABILIZATION PROCESS.

21. EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGEWAYS OR BORROW DITCHES AT RISK OF CONTRACTOR. CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGE CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGEWAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES.

Texas 811
CALL 811 FOR UTILITY LOCATES PRIOR TO CONSTRUCTION

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF MESQUITE, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADRQUACY OR ACCURACY OF DESIGN.

CASE #: SP1124–0465

REVISIONS:	
12–20–24	CITY COMMENTS

STATE OF TEXAS
JAMES DEWEY, JR.
61484
LICENSED PROFESSIONAL ENGINEER
12/20/2024

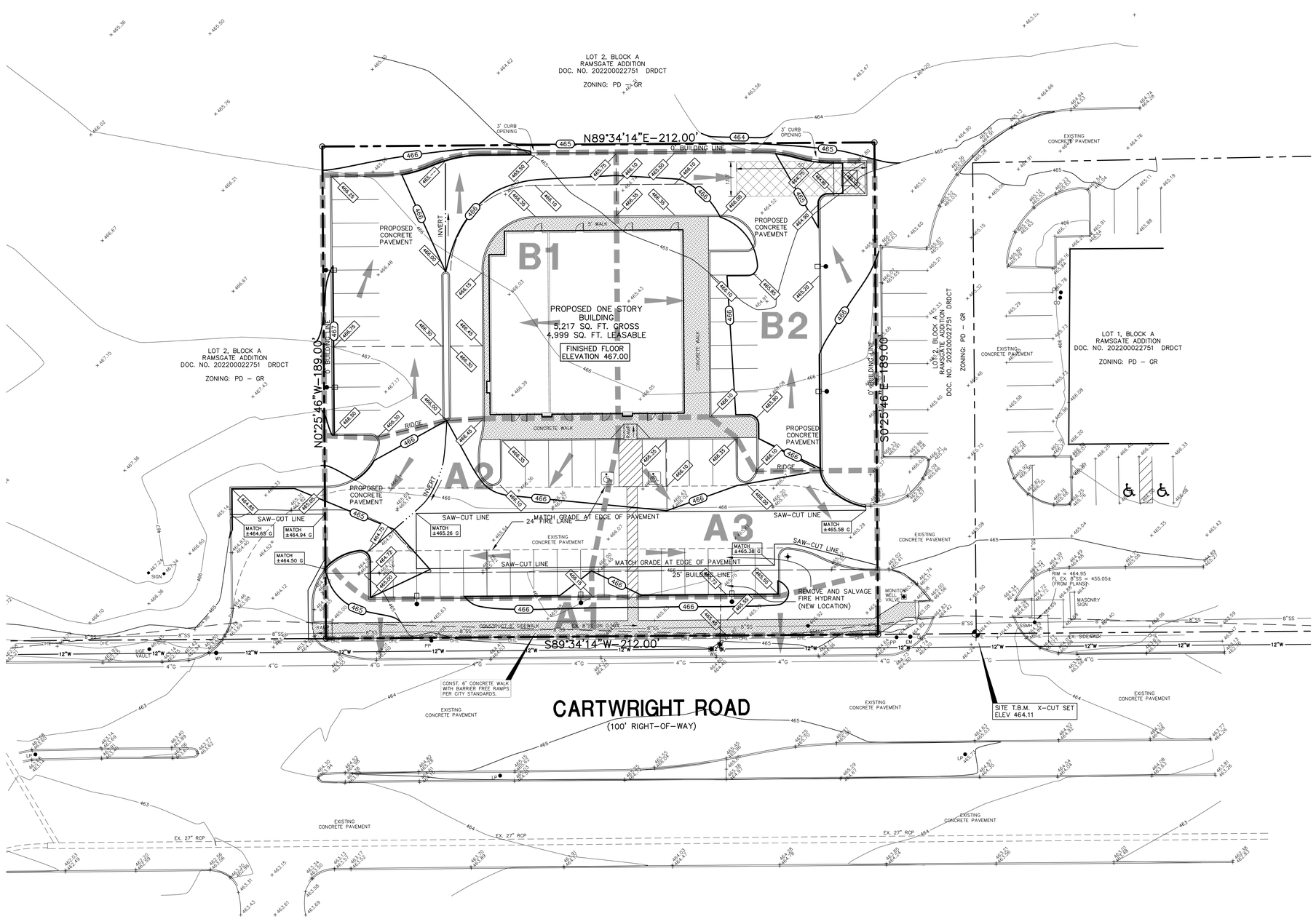
SHEET TITLE:

EROSION CONTROL NOTES & DETAILS

PROPOSED MULTI TENANT BUILDING
40,068 SQ. FT. OR 0.920 ACRES
975 W CARTWRIGHT ROAD
MESQUITE, TEXAS

JDJR
PREPARED BY:
ENGINEERS & CONSULTANTS, INC.
TSBPE REGISTRATION NUMBER F-8527
ENGINEERS • SURVEYORS • LAND PLANNERS
2500 Texas Drive Suite 100 Irving, Texas 75062
Tel 972-252-5357 Fax 972-252-8958

DATE: 11–20–24	DRAWN BY: JDJR	SHEET NO.
SCALE: 1" = 20'	CHECKED BY: JDJR	C8 OF 9



GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE DONE IN STRICT CONFORMANCE TO THESE PLANS AND ALL APPLICABLE MUNICIPAL CODES AND STANDARDS.

2. ALL WALKWAYS TO HAVE A MAXIMUM OF 1/4" PER FOOT CROSSFALL SLOPE AWAY FROM THE BUILDING.

3. ALL SITE PAVING TO BE DONE IN ACCORDANCE TO THE RECOMMENDATIONS AS OUTLINED IN THE SOILS REPORT FOR THIS SITE.

4. ALL SITE GRADING AND SUBGRADE PREPARATION SHALL BE DONE IN ACCORDANCE TO THE RECOMMENDATIONS AS OUTLINED IN THE SOILS REPORT FOR THIS SITE.

5. ALL LANDSCAPED AREAS TO BE UNIFORMLY GRADED AS SHOWN.

ACCESSIBLITY NOTES:

1. ALL ACCESSIBLE PARKING AREAS, ROUTES, RAMPS, ETC. SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS).

2. ALL SIDEWALK RAMPS AND/OR CURB RAMPS SHOWN SHALL HAVE A MAXIMUM VERTICAL RISE OF 6" WITH A MAXIMUM RUNNING SLOPE OF 1:12 (8.33%) AND BE CONSTRUCTED IN ACCORDANCE WITH TAS SECTIONS 4.7 AND 4.8.

3. ALL ACCESSIBLE ROUTES (EXCEPT FOR THE SIDEWALK AND CURB RAMPS) SHALL HAVE A MAXIMUM RUNNING SLOPE OF 1:20 (5%) AND A MAXIMUM CROSS SLOPE OF 1:50 (2%).

4. ALL ACCESSIBLE PARKING SPACES AND ISLES SHALL HAVE A MAXIMUM SLOPE IN ANY DIRECTION OF 1:50 (2%). REFER TO ARCHITECTURAL PLANS FOR DETAILS OF MARKINGS, SIGNS, ETC.

EXISTING UTILITIES NOTES:

1. THE LOCATION OF ALL UNDERGROUND FACILITIES AS INDICATED ON THE PLANS ARE TAKEN FROM PUBLIC RECORDS. JDJR ENGINEERS & CONSULTANTS ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF SUCH RECORDS AND DOES NOT GUARANTEE THAT ALL UNDERGROUND UTILITIES ARE SHOWN OR ARE LOCATED PRECISELY AS INDICATED.

2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ARRANGEMENTS WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES PRIOR TO WORKING IN THE AREA TO CONFIRM THEIR EXACT LOCATION AND TO DETERMINE WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT.

3. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND FACILITIES FOUND.

4. NOTIFY JDJR ENGINEERS & CONSULTANTS IF ANY UNDERGROUND UTILITIES ARE NOT IN THE LOCATIONS INDICATED ON THESE PLANS (HORIZONTALLY AND VERTICALLY) OR CONFLICT WITH ANY PROPOSED IMPROVEMENTS ASSOCIATED WITH THESE PLANS.

5. ANY EXISTING UTILITY APPERTUNANCES (MH, VALVES, METER BOXES, ETC.) TO BE ADJUSTED TO MATCH THE PROPOSED FINISHED GRADES AS INDICATED ON THESE PLANS. NOTIFY JDJR ENGINEERS & CONSULTANTS, INC. IF THERE IS A PROBLEM MAKING SAID ADJUSTMENTS.

LEGEND

- 142 — EXISTING CONTOUR LINE
- + 141.31 — EXISTING SPOT ELEVATION
- 154.60 — PROPOSED SPOT ELEVATION AT GUTTER (TOP OF CURB IS 6" OR 0.5' HIGHER UNLESS SHOWN OTHERWISE)
- 142 — PROPOSED CONTOUR LINE
- INVERT OR FLOWLINE
- DRAINAGE DIVIDE LINE
- DIRECTION OF SURFACE FLOW
- PROPOSED ON-SITE CONCRETE PAVEMENT (6" 3,600 PSI)
- PROPOSED ON-SITE CONCRETE PAVEMENT FOR (7" 3,600 PSI) SEE SHT. C6 FOR CITY DETAIL SW-1A FOR DETAILS
- PROPOSED CONCRETE WALK

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF MESQUITE, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CASE #: SP1124-0465

PROPOSED DRAINAGE DATA								
AREA	ACRES	CC_f*	T_c MIN	I_{25} IN/HR	Q_{25} CFS	I_{100} IN/HR	Q_{100} CFS	OUTFALL COMMENTS
A1	0.08	1.00	10	7.58	0.61	9.27	0.83	TO CARTWRIGHT ROAD
A2	0.21	1.00	10	7.58	1.59	9.27	2.19	TO CARTWRIGHT ROAD
A3	0.14	1.00	10	7.58	1.06	9.27	1.46	TO CARTWRIGHT ROAD
B1	0.22	1.00	10	7.58	1.67	9.27	2.29	TO NORTH PROPERTY
B2	0.26	1.00	10	7.58	1.97	9.27	2.71	TO NORTH PROPERTY
				TOTAL	6.90		9.48	

* C=0.90 C_f = 1.10 (25 YEAR)
C_f =1.25 (100 YEAR)

Texas 811
CALL 811 FOR UTILITY LOCATES PRIOR TO CONSTRUCTION

SITE T.B.M.: X-CUT SET ON CONCRETE PAVEMENT LOCATED ON NORTH SIDE OF CARTWRIGHT ROAD AT CENTER OF DRIVE ENTRANCE ON THE EAST SIDE OF THIS PROPERTY AS SHOWN ON PLAN.
ELEVATION 464.11

REVISIONS:	
12-20-24	CITY COMMENTS

STATE OF TEXAS
JAMES DEWEY, JR.
61484
LICENSED PROFESSIONAL ENGINEER
12/20/2024

SHEET TITLE:

GRADING, PAVING AND DRAINAGE PLAN

PROPOSED MULTI TENANT BUILDING
40,068 SQ. FT. OR 0.920 ACRES
975 W CARTWRIGHT ROAD
MESQUITE, TEXAS

JDJR
PREPARED BY:
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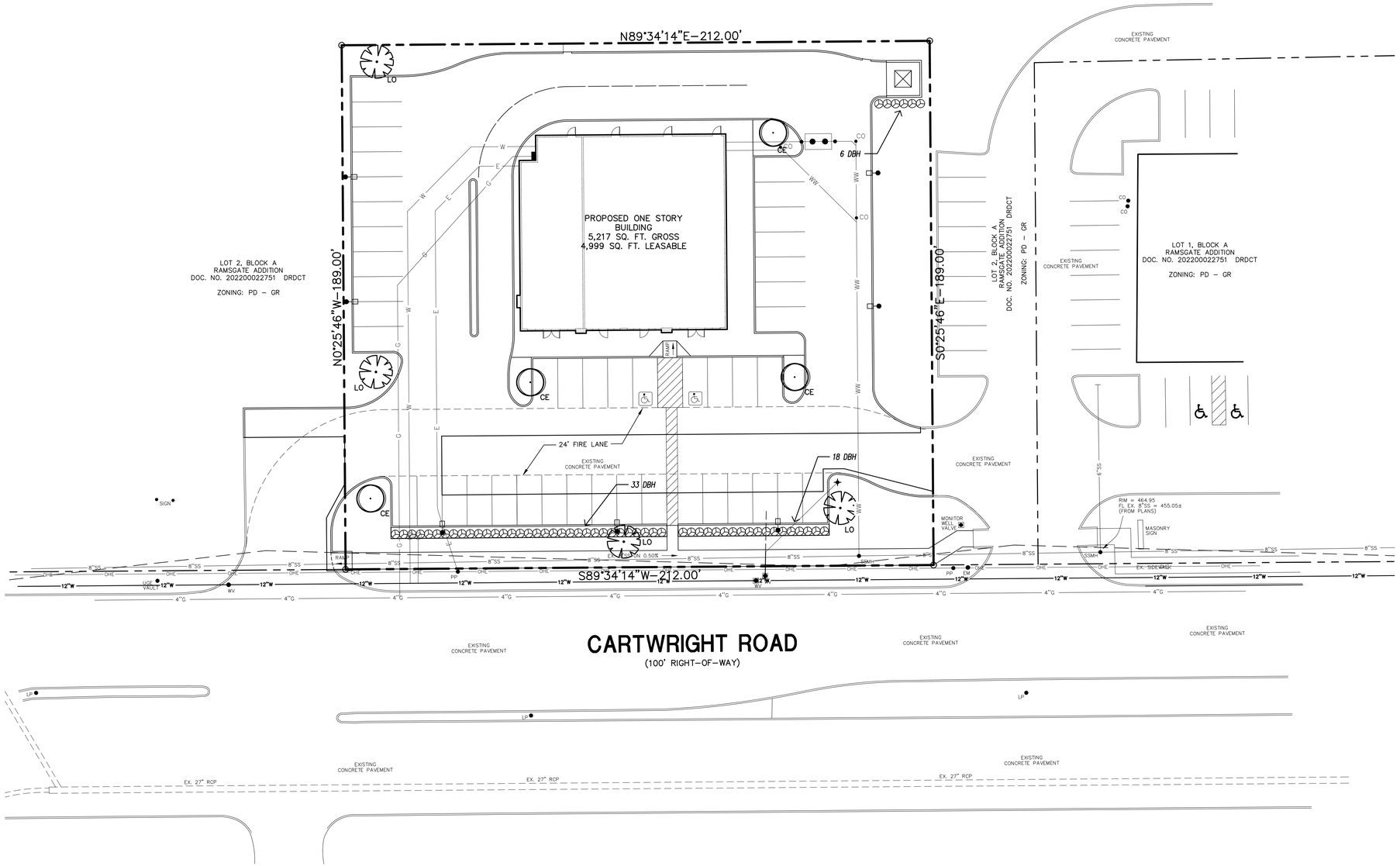

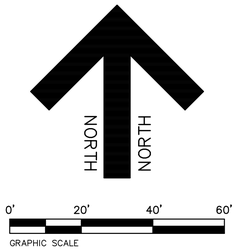

LANDSCAPE TABULATION

TOTAL LOT AREA _____ 40,068 SF
LANDSCAPE AREA REQUIRED _____ 10% = 4,007 SF
LANDSCAPE AREA PROVIDED _____ 7,293 SF = 18.2%

SITE TREES REQUIRED:
= 1 SHADE EVERGREEN TREE OR 3 SMALL TREES PER 500 SF OF REQUIRED LANDSCAPE AREA
= 8 TREES
SITE TREES PROVIDED: 8 TREES

TREES REQUIRED IN FRONT YARD: 50% = 4 TREES
TREES PROVIDED IN FRONT YARD: 6 TREES

PARKING LOT LANDSCAPING REQUIRED:
1 TREE PER 15 PARKING SPACES = 3 TREES
PARKING LOT LANDSCAPING PROVIDED: 4 TREES

PARKING SCREENING: SHRUBS PROVIDED

LANDSCAPE LEGEND

LO — PROPOSED LIVE OAK TREE
HIGH RISE LIVE OAK

CE — PROPOSED CEDAR ELM TREE

DBH — DWARF BURFORD HOLLY
OR APPROVED EQUAL

BERMUDA TURF

NOTES:

1. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR IN ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES AND LINE RUNS.

2. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL QUANTITIES PER DRAWING AND SPECIFICATIONS BY LANDSCAPE DESIGNER. PLANT QUANTITIES HAVE BEEN PROVIDED AS A CONVENIENCE ONLY TO THE CONTRACTOR AND SHALL NOT BE CONSIDERED ABSOLUTE.

3. ALL BED AREAS SHALL BE ROTOTILLED TO A DEPTH OF 6" ADDING PLANTING SOIL MIXTURE DURING PROCESS. THE LEVEL OF THE BED AREAS SHOULD BE LEFT 3" ABOVE THE PROPOSED FINISHED GRADE TO ALLOW FOR COMPACTION AND SETTLEMENT.

4. AFTER SETTLEMENT AND COMPACTION ALL PLANTING BEDS SHALL RECEIVE A 2" (MIN) LAYER OF SHREDED CYPRESS MULCH.

5. PLANTING SOIL MIXTURE FOR BED AREAS SHALL BE 50% EXISTING SOIL, 10% SHARP SAND 40% SOIL CONDITIONER (BACK TO EARTH OR EQUAL).

6. ALL TREES ARE TO BE STAKED AND GUYED THROUGH THE ONE YEAR WARRANTY AT WHICH TIME THE OWNER SHALL DETERMINE IF REMOVAL IS NECESSARY.

7. ALL BED AREAS SHALL BE SEPARATED FROM TURF AREAS USING RYERSON STEEL EDGING.

PLANT SCHEDULE

COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE	SPACING	REMARKS
LIVE OAK	QUERCUS VIRGINIANA	4	3" CAL.	AS SHOWN	BALLED/BURLAP
CEDAR ELM	ULMUS CRASSIFOLIA	4	3" CAL.	AS SHOWN	BALLED/BURLAP
DWARF BURFORD HOLLY	ILEX CORNUTA BURFORDI NANA	57	3 GAL.	36" O.C.	CONTAINER
BERMUDA TURF	CYNADON DACTYLON	6,635 S.F.	–	–	HYDROMULCH OR SOLID SOD

CASE #: SP1124–0465

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LANDSCAPE PLAN

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