Reconnaissance Level Geotechnical Investigation Report

DJT – Advanced Energy and Intelligence Campus

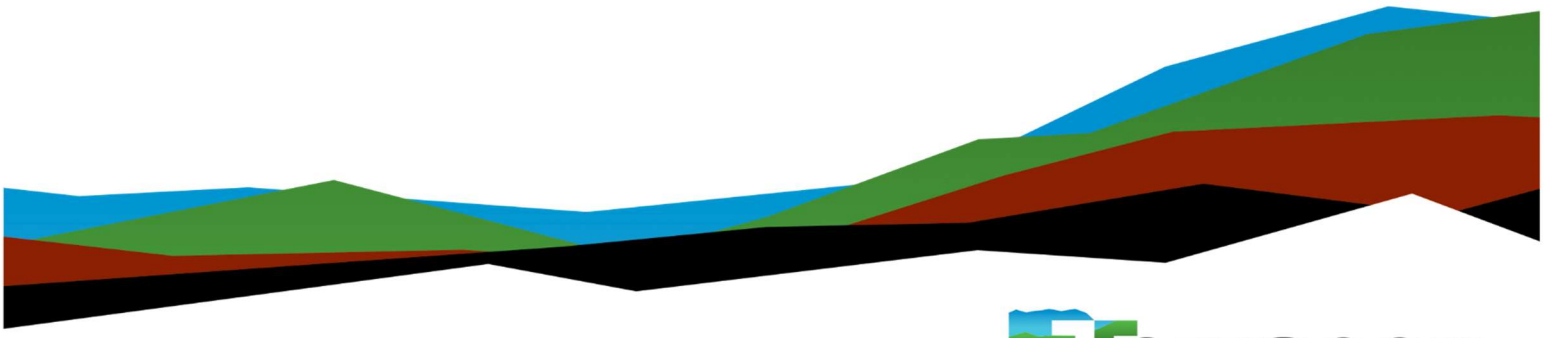
Amarillo, Texas

Terracon Project No. AR255174

May 16, 2025

Prepared for:

Parkhill
4222 85th St
Lubbock, Texas 79423



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May 16, 2025

Parkhill
4222 85th St
Lubbock, Texas 79423

Attn: Alan Holly
P: 720-450-4864
E: aholly@team-psc.com

Re: Reconnaissance Level Geotechnical Investigation Report
Nuclear Power Facility
DJT – Advanced Energy and Intelligence Campus
FM 683, Amarillo, Texas
Terracon Project No. AR255174

Dear Mr. Holly:

We have completed the scope of reconnaissance level geotechnical engineering services for the above referenced project in general accordance with Terracon Proposal No. PAR255174 dated May 15, 2025. This document presents a preliminary opinion of geotechnical conditions at the proposed site and should not be used for design or construction purposes.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc
(Texas Firm Registration No.: F-3272)

Joshua Sanchez, E.I.T
Staff Engineer

Junghwoon Lee

Junghwoon Lee, Ph.D.
Group Manager

Jerry Sayson, P.E.
Department Manager

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Chief Engineer | Senior Principal

Table of Contents

Exhibits

Exhibit No.

Appendices

Appendix

1. INTRODUCTION

This report presents the results of our subsurface exploration and preliminary geotechnical considerations for the nuclear power facility as part of the proposed DJT – Advanced Energy and Intelligence Campus in Amarillo, Texas. The project was authorized by Mr. Alan Holly with Parkhill and the project was performed under master services agreement dated October 23rd, 2024, between Parkhill and Terracon.

The purpose of our study was to perform reconnaissance level geotechnical and geological exploration to provide preliminary geotechnical considerations for the proposed nuclear power facility development. We achieved the purposes and scope of work by:

- Performing three (3) soil borings for a total footage of 300 feet below the existing grade.
- Evaluating the properties of soil by performing field tests on soil samples collected from the soil borings.
- Determining the geotechnical considerations for the site by reviewing publicly available data and historical Terracon Data.
- Preparing this report with the results of field testing and geotechnical considerations.

Drawings showing the site and boring locations are shown on **Exhibit 1** and **Exhibit 2**, respectively. Additional details regarding the field exploration are provided in **Section 3. Field exploration**. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs in **Appendix A**.

2. PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Table 1: Project Description and Site Conditions

Item	Description
Project Description	The overall project will include a data center, gas power plant, and a substation. A small nuclear power facility is being planned within the gas plant site. This preliminary study is for a nuclear power facility located within the proposed gas power plant site (**Exhibit 2**).
Finished Grade/ Floor Elevation	The proposed FFEs were not provided at the time of this report. We have assumed the FFEs will generally match existing site grades and that maximum site grading will be +/- 10 feet from existing site grades.
Maximum Loads	The following anticipated structural loads were provided by Parkhill: Gas power plant: ▪ NGE Frame 6581B, 450 kips, 80 feet height ▪ TM2500: 50 feet height ▪ TM 2500 Mobile Turbine: 50 feet height ▪ Siemens SGT800: 706 kips, 80 feet height Data Center Buildings: ▪ Columns: 100 kips ▪ Linear load: 5 to 10 kips per linear foot (klf) ▪ We understand that the limit for maximum settlement is 1-inch and the limit for maximum differential settlement is ½ -inch. The differential settlement will be calculated over 50-foot spans. Nuclear Power Facility: ▪ Loading conditions for nuclear power facility are not available at this time.
Anticipated Foundation Type	A proposed site grading plan is not provided at this time, and we request that this be provided to us prior to our investigation. Up to 10 feet of cut/fill may be required to develop final grade, excluding remedial grading requirements. ▪ Final slopes are planned with a maximum inclination of 4H:1V (Horizontal: Vertical) or flatter.
Parcel Information	The approximately 5,800-acre overall project site is located at FM 683 in Amarillo, Texas. The proposed nuclear power facility is located within 210 acre site. Latitude / Longitude (approximate): 35.28499°, -101.60204° (See **Exhibit 1**)

Item	Description
Existing Improvements	The site includes undeveloped land with an existing facility northeast and a playa lake southwest of the project site.
Current Ground Cover	The site is covered by some vegetation.
Existing Topography	Elevation (EL) of the site ranges from approximately EL. +3,500 feet to EL. +3,550 feet.

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially the grading limits, as modifications to our recommendations may be necessary. The above description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

3. FIELD EXPLORATION

3.1. Soil Borings

The scope of the field program for this project included drilling three (3) soil borings and the field exploration locations are presented on **Exhibit 2**. Summary of soil borings are listed in the following table.

Table 2: Soil Borings Summary

Boring IDs	Coordinates		Approximate Boring Depth (feet) [1]	Planned Structure
	Latitude	Longitude		
NR1	35.2991°	-101.6112°	100	Nuclear Facility (N1)
NR2	35.3047°	-101.6113°	100	
NR3	35.3020°	-101.6089°	100	

Note 1: Below grade at the time of our field program.

3.2. Subsurface Exploration Procedures

Terracon personnel provided the boring layout using handheld GPS equipment (estimated horizontal accuracy of about ±15 feet) and referencing existing site features. If elevations and a more precise boring layout are desired, we recommend borings be surveyed.

Soil borings were advanced with a CME 45-truck mounted drill rig using solid stem continuous flight augers. Samples were obtained at 2-foot intervals in the upper 10 feet of each boring and at intervals of 5 feet thereafter by using split barrel sampling procedure. The split-barrel samplers were driven in accordance with ASTM D1586 to collect both cohesive and cohesionless samples. In the split barrel sampling procedure, a standard 2-inch outer diameter split barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. Hand penetrometer tests were performed on samples obtained in the field to serve as a general measure of consistency. After the completion of soil borings, the borings with backfilled with auger cutting or bentonite grout. The samples were placed in appropriate containers, taken to our soil laboratory for testing, and classified by a geotechnical engineer.

Our exploration team prepared field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials observed during drilling, and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent an interpretation of the field log by a geotechnical engineer and include modifications based on laboratory observation and tests on select samples.

The detailed description of the soils encountered in the boring are presented on the boring logs in **Appendix A**.

4. PRELIMINARY GEOTECHNICAL CONSIDERATIONS

4.1. Site Geology

The site for the proposed construction is located on the Dockum Group (undivided), a Late Triassic-aged geologic unit predominantly composed of interbedded mudstones, siltstones, sandstones, and occasional conglomerates. These rocks were deposited in fluvial, lacustrine, and deltaic environments, and the lithology reflects this variation. The strata typically exhibit reddish to purplish coloration due to oxidized iron minerals, with localized gray or greenish hues in reducing environments. The Dockum Group consists of shale, sandstone, siltstone, limestone, and gravel all displaying variegation and thin-bedded continental red bed sequences, with localized conglomerates. These materials are fine sedimentary and mixed clastic by nature with thicknesses up to 400 feet.

4.2. Subsurface Conditions

Conditions observed at the boring location are indicated on the boring log in **Appendix A**. Stratification boundaries on the boring log represent the approximate location of changes in native soil types; in situ, the transition between material may be gradual.

NR1 and NR3: Based on our exploration, medium stiff to hard fat clay and lean clay were encountered from the surface to 60 to 70 feet below the existing grade. Beneath the fat clay and lean clay layers, very dense clayey sand was encountered to the termination depth of boring at 100 feet.

NR2: Based on our exploration, medium stiff to hard fat clay and lean clay were encountered at a depth of 0 to the termination depth of boring (100 feet). A thin very dense clayey sand layer was observed between 60 and 70 feet from the existing grade.

4.3. Geotechnical Considerations

See **Section 4.4 Information Sources** for a more detailed list of sources reviewed in determining the geotechnical considerations for the site. Potential constraints are addressed in this section.

Table 3: Geotechnical considerations

Topic	Comments
Anticipated foundation systems	Shallow foundations are expected to be generally suitable; however, due to the presence of expansive soils, some undercutting and replacement with select fill will likely be required prior to the construction of shallow foundations. For

Topic	Comments
	heavy column loads, deep foundations may be necessary to achieve adequate bearing capacity and settlement control.
Anticipated excavation equipment	It is anticipated that excavations for the proposed construction can be accomplished with conventional earthwork moving equipment.
Pavement	Typical pavement sections will likely be acceptable with regular maintenance.
Reuse of on-site soils	Excavated on-site soils are anticipated to be unsuitable for reuse as engineered fill due to the expansive nature of the soils. Laboratory testing, including gradation analysis, plasticity index determination, and solubility evaluation, should be conducted to assess material properties. However, these soils may be acceptable for use as general fill, provided they are free of organic matter and deleterious materials.
Anticipated seismic site class	D
Anticipated frost depth	Not anticipated.
Bedrock	NRCS mapping indicates shallow bedrock is not mapped on-site. Our experience indicates that bedrock will not be encountered at this site.
Blasting anticipated	Not anticipated.
Corrosion of Concrete	Moderate.
Corrosion of Steel	High.
Soil pH	Moderately alkaline.
Shrink Swell Potential	NRCS mapping indicates that the project site has Moderate (3-6%, 0 to 6.5 feet) shrink swell potential.
Saturated Hydraulic Conductivity	Moderately High (10^{-4} to 10^{-8} cm/s)
Flood Zone / Flood Frequency	Not anticipated.
National Storm Surge Model (SLOSH Category 1 to 5)	Not anticipated.
Groundwater	Based on NRCS mapping and preliminary borings, groundwater is anticipated to be encountered at depths greater than 30 feet below the existing ground surface.

Topic	Comments
Dewatering anticipated	Excavations that extend into or through layers of clayey sand may require some form of advance dewatering, depending on the groundwater conditions at the time of construction.
Karst constraints	USGS indicates evaporite basins were mapped at the site. Sedimentary rocks known to locally contain piping or other pseudokarst features.
Sinkholes	Not anticipated.
Seismic liquefaction	Not anticipated.
Settlement monitoring likely required	Settlement monitoring will likely be required.
Fill anticipated on-site	Not anticipated.
Potential Archeological Liability	Not anticipated.
Site usage	Historical imagery indicates that the site has remained largely undeveloped. However, portions of the site appear to have been previously developed with roads and buildings. Based on our experience, areas with prior development present an increased risk of encountering deleterious or unsuitable materials during construction.

4.4. Next Steps

Below are our recommended next steps that will likely be needed to proceed with site development. To complete any of the Next Steps described below, please contact Joshua Sanchez at **jcsanchez@terracon.com**.

Topic	Comments
Geologic and Geotechnical Characterization	Terracon recommends characterizing the geologic and geotechnical conditions in accordance with U.S. Nuclear Regulatory Commission (NRC), Regulatory Guide 1.132, Revision 3, dated December 2021.

4.5. Information Sources

Data	Sources
Publicly Available GIS Data	Natural Resources Conservation Services (NRCS) Soil Survey Geographic Database (SSURGO), United States Geological Survey (USGS), Geologic Database of Texas
Aerial Imagery	Terracon reviewed the following readily available historical aerial images and street view images available on May 15, 2025, to develop a limited history of previous site usage: **Aerial Images** Google Earth Pro™ **Street View Images** Google Maps, Google Earth Pro™ The use of available aerial imagery resources is intended to help understand previous site usage. These images are widely spaced in time. They should not be considered appropriate for identifying all site activities which may have impacted subsurface conditions. A more comprehensive review of aerial imagery and/or site interviews would be required to further evaluate previous site usage.
Other Sources	Historical Terracon Data

4.6. Limitations

This report provides very preliminary opinions of siting and construction challenges that may be associated with the stated project plans for the stated property. Confirmation of opinions stated in this document is essential. Absence of a mapped resource does not mean that it is not present. Confirmation should include performing a site-specific evaluation consistent with the guidelines set forth in Next Steps.

All parties are advised that any decisions or actions taken by any party based on the information contained herein, including decisions with financial implications are done solely at the risk of that party. By providing this information in this preliminary form, Terracon expressly disclaims any duties or obligations associated with the usage of this information for decision-making or design purposes.

In the event that changes to the nature, design, or location of the project, as outlined in this report, are planned, the preliminary conclusions and recommendations contained in this report shall not be used unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing. As the project moves into the design

phase, Terracon should be retained to develop and complete a scope of work that includes site-specific explorations as noted in Next Steps.

Terracon does not represent the imagery reviewed to be a complete historical record of previous site usage, nor does Terracon validate the accuracy and sufficiency of the public domain sources that have been utilized.

EXHIBITS

Exhibit 1A: Site Location

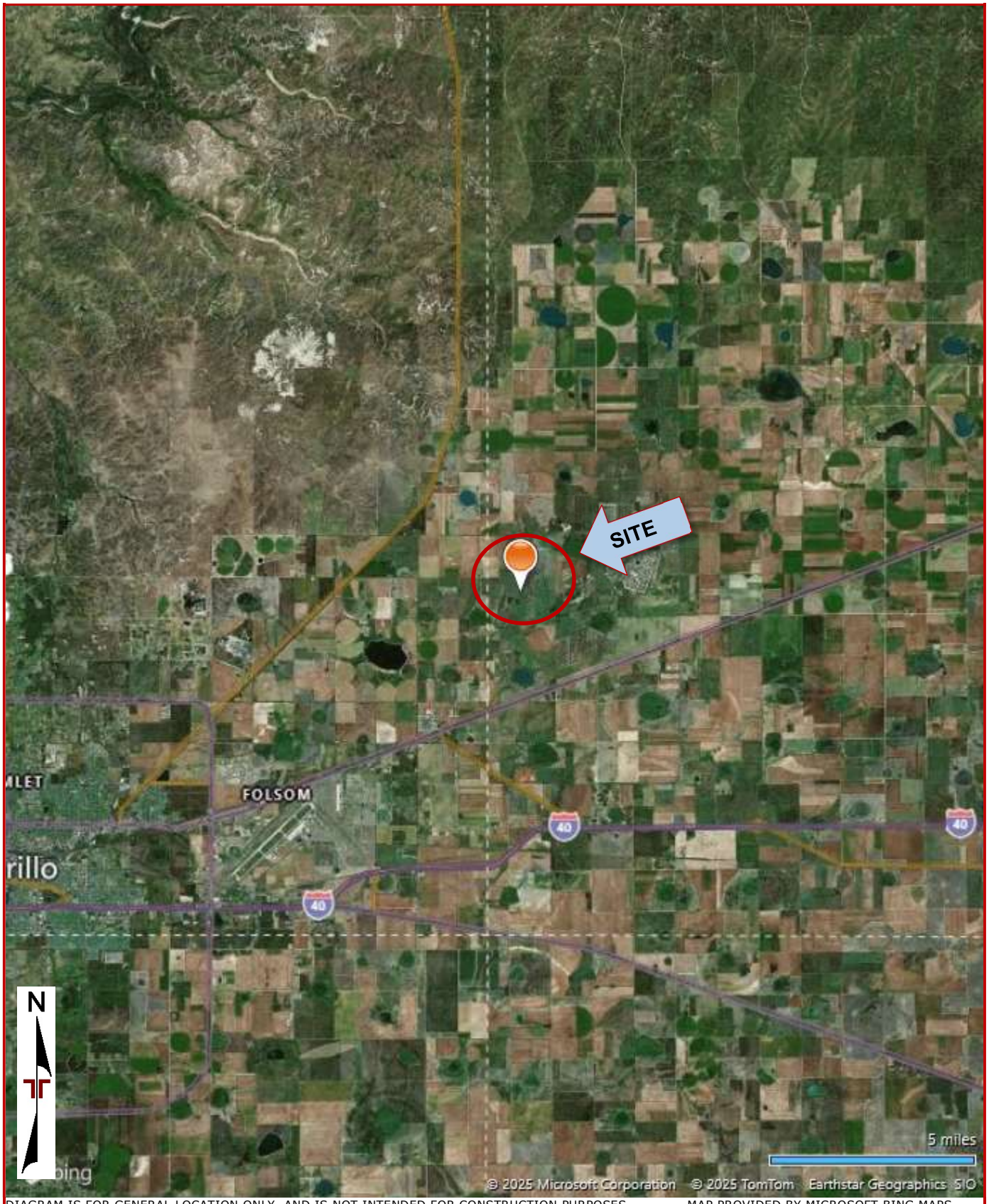
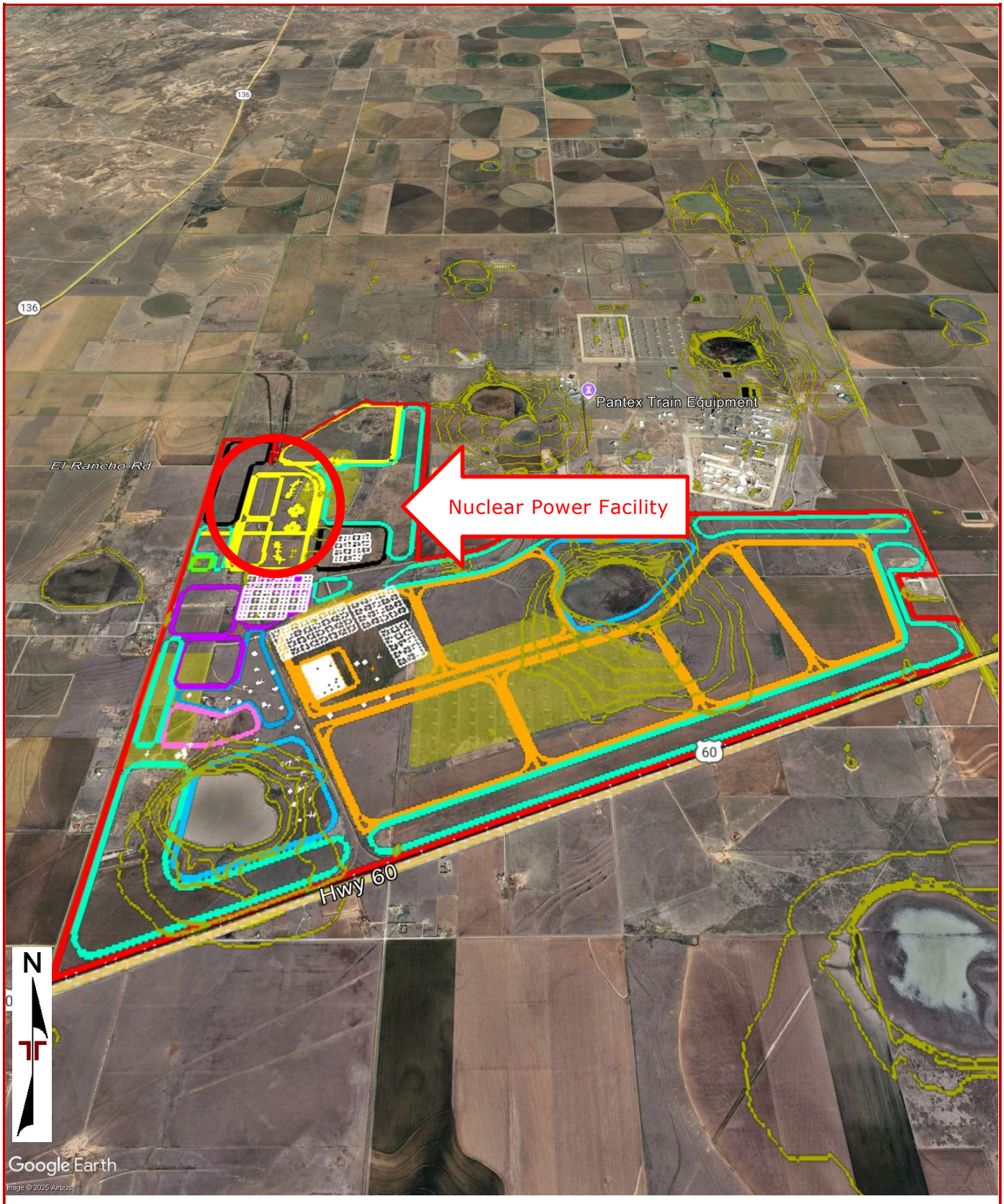


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exhibit 1B: Nuclear Power Facility Location



DIAGRAMS IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES MAP PROVIDED BY MICROSOFT BING MAPS

Exhibit 1C: Exploration Plan

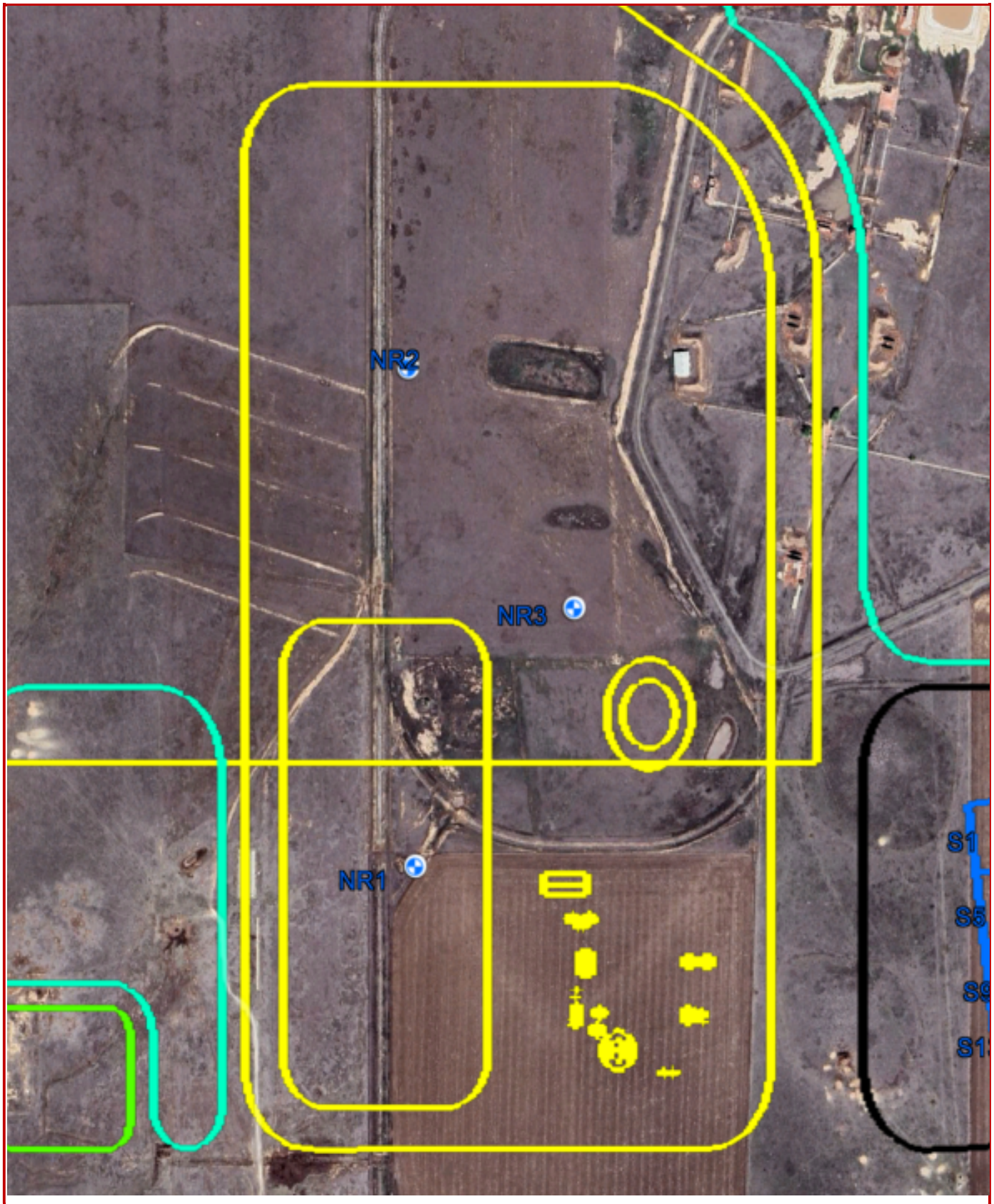


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES MAP PROVIDED BY GOOGLE EARTH PRO

Appendix A1 – Boring Logs (NR1-NR3)

DJT - Advanced Energy and Intelligence Campus
FM 683 | Amarillo, TX
Terracon Project No. AR255174

Terracon
5847 50th St
Lubbock, TX

Boring Log No. NR1

Location: See Exploration Plan

Latitude: 35.2991° Longitude: -101.6112°

Depth (Ft.)	Graphic Log	Water Level Observations	Sample Type	Field Test Results
	FAT CLAY (CH), dark grey to light brown, medium stiff to very stiff			2-3-3 N=6
				3-7-20 N=27
8.0				5-14-15 N=29
	LEAN CLAY (CL), light brown, very stiff to hard			15-14-12 N=26
10				11-10-12 N=22
				7-14-17 N=31
20				12-13-19 N=32
				15-16-12 N=28
30				11-13-17 N=30
				16-14-17 N=31
40				12-16-18 N=34
				14-18-21 N=39
50				25-22-25 N=47
				10-15-24 N=39
60.0				8-15-19 N=34
	CLAYEY SAND (SC), light brown, very dense			13-19-24 N=43
70				9-12-15 N=27
				10-26-33 N=59
80				24-28-48 N=76
				20-22-33 N=55
90				33-43-48 N=91
				25-26-22 N=48
100.0				20-21-30 N=51
100	***Boring Terminated at 100 Feet***			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No free water observed

Drill Rig
1414

Hammer Type
Automatic

Driller
RMS

Notes
bgs - below ground surface

Advancement Method
continuous flight auger

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Logged by
DP

Boring Started
05-14-2025

Boring Completed
05-14-2025

DJT - Advanced Energy and Intelligence Campus
FM 683 | Amarillo, TX
Terracon Project No. AR255174

Terracon
5847 50th St
Lubbock, TX

Boring Log No. NR2

Location: See Exploration Plan

Latitude: 35.3047° Longitude: -101.6113°

Depth (Ft.)	Graphic Log	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results
0		**FAT CLAY (CH)**, dark brown to light brown, medium stiff to hard				2-3-3 N=6
						2-3-4 N=7
						28-46-47 N=93
			10			50/1"
						8-7-10 N=17
16.0						11-10-11 N=21
		LEAN CLAY (CL), light brown with white, hard	20			45-30-30 N=60
						50/3"
			30			43-36-45 N=81
						23-21-5 N=26
			40			19-27-28 N=55
		-stiff at 43 ½ feet below existing grade				28-8-3 N=11
		-caliche located at depths between 48 ½ feet and 90 feet bgs	50			50/4"
						36-32-32 N=64
60.0			60			50/4"
		CLAYEY SAND (SC), light brown, very dense				50/2"
70.0			70			50/2"
		CL - LEAN CLAY (CL), light brown, hard				50/1"
			80			50/3"
						50/5"
			90			32-35-50/5"
						30-40-40 N=80
100.0			100			29-36-38 N=74
		Boring Terminated at 100 Feet				

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No free water observed

Drill Rig
1414

Hammer Type
Automatic

Driller
RMS

Notes
bgs - below ground surface

Advancement Method
continuous flight auger

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Logged by
DP

Boring Started
05-13-2025

Boring Completed
05-13-2025

DJT - Advanced Energy and Intelligence Campus
FM 683 | Amarillo, TX
Terracon Project No. AR255174

Terracon
5847 50th St
Lubbock, TX

Boring Log No. NR3

Location: See Exploration Plan

Latitude: 35.3020° Longitude: -101.6089°

Depth (Ft.)	Graphic Log	Material Description	Water Level Observations	Sample Type	Field Test Results
0		**FAT CLAY (CH)**, dark grey to light brown, medium stiff to very stiff			2-3-5 N=8
5					5-14-16 N=30
					5-10-12 N=22
10					8-9-9 N=18
12.0		**LEAN CLAY (CL)**, light brown, very stiff to hard			8-10-9 N=19
15					6-8-10 N=18
20					12-16-17 N=33
					7-15-20 N=35
30					15-19-21 N=40
					10-12-15 N=27
40					8-15-24 N=39
					8-16-29 N=45
50					8-16-39 N=55
					38-37-39 N=76
60					18-24-36 N=60
60.0		**SANDY LEAN CLAY (CL)**, light brown, hard			21-33-33 N=66
		-caliche located at depths between 64 feet and 76 feet bgs			
70					34-50/-3"
70.0		**CLAYEY SAND (SC)**, light brown, very dense			50/4"
80					19-22-21 N=43
					28-40-46 N=86
90					20-22-24 N=46
					24-30-44 N=74
100					30-30-30 N=60
100.0		***Boring Terminated at 100 Feet***			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No free water observed

Drill Rig
1414

Hammer Type
Automatic

Driller
RMS

Notes
bgs - below ground surface

Advancement Method
continuous flight auger

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Logged by
DP

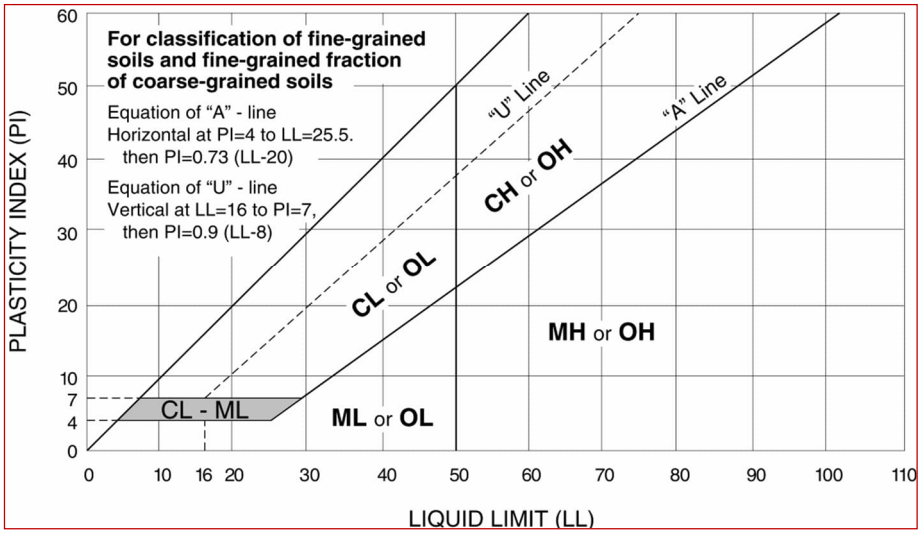
Boring Started
05-13-2025

Boring Completed
05-14-2025

Appendix A2 - Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 4 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay [K, L, M, N]
					Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay [K, L, M, P]
					Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.



Terracon
5847 50th St
Lubbock, TX

Appendix A3 - General Notes

Sampling	Water Level	Field Tests
Shelby Tube Standard Penetration Test	Water Initially Encountered Water Level After a Specified Period of Time Water Level After a Specified Period of Time Cave In Encountered Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	N Standard Penetration Test Resistance (Blows/Ft.) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils
(More than 50% retained on No. 200 sieve.)
Density determined by Standard Penetration Resistance

Relative Density	Standard Penetration or N-Value (Blows/Ft.)
Very Loose	0 - 3
Loose	4 - 9
Medium Dense	10 - 29
Dense	30 - 50
Very Dense	> 50

Consistency of Fine-Grained Soils
(50% or more passing the No. 200 sieve.)
Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance

Consistency	Unconfined Compressive Strength Qu (tsf)	Standard Penetration or N-Value (Blows/Ft.)
Very Soft	less than 0.25	0 - 1
Soft	0.25 to 0.50	2 - 4
Medium Stiff	0.50 to 1.00	5 - 8
Stiff	1.00 to 2.00	9 - 15
Very Stiff	2.00 to 4.00	16 - 30
Hard	> 4.00	> 30

Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.