4589 Valnorth Drive
Valdosta, GA 31602
229.244.8619
www.TTLUSA.com

June 19, 2024

CDM Smith
Attn.: Mr. Yanni Polematidis
4651 Salisbury Road, Suite 420
Jacksonville, Florida 32256

T: 904.731.7109
E: PolematidisIM@cdmsmith.com

RE: **Borrow Pit Evaluation – Proposed Structural Fill**
Valdosta Water Treatment Plant
Valdosta, Lowndes County, Georgia
TTL Project No. 000230702183.00

Dear Mr. Polematidis:

TTL, Inc. (TTL) is pleased to submit this report presenting the results of the borrow pit evaluation for the above referenced project. The purpose of our work was to explore and evaluate the suitability of the soils within potential borrow areas across the site for use as structural fill during construction. TTL's scope of work did not include evaluation of potential environmental hazards. The following report discusses the project information, exploration procedures, and soil conditions. Recommendations are presented regarding utilization of the site soils as structural fill for the above referenced project.

Project Information

We are familiar with the project in that we have previously completed a geotechnical exploration, which was reported to CDM Smith on June 5, 2024. This project is located in an open agricultural field west of GA State Highway 31 and north of Race Track Road SE in Lowndes County, Georgia. The water treatment plant is proposed to be just west of the Valdosta Regional Airport southern fence. Based on preliminary site grading plans provided, we understand 2 to 5 feet of fill will be required in structural areas (i.e. buildings, tanks, pavement). The purpose of this evaluation was to collect additional data regarding the soil properties across the site within proposed borrow areas and perform laboratory testing to determine the suitability of the soils for use as structural fill during construction.

Exploration Procedures

Field Testing

TTL visited the site on May 15 and May 16, 2024, to observe test pit excavations and take samples from the proposed borrow pit areas. Prior to our visit, CDM provided a Test Pit Location Plan indicating the desired locations for the test pits. A total of 12 test pits were excavated at the site to depths ranging from 7 to 10 feet below ground surface (bgs). Test pits were excavated with equipment and an operator provided from the City of Valdosta. Samples representing each strata within the test pits were collected. The approximate test pit locations are shown on the Test Pit Location Plan in the Appendix.

Laboratory Testing

Selected soil samples recovered from the test pits were subjected to laboratory classification tests to aid in evaluation of the site soils. Atterberg limits, moisture content and grain size testing were performed to evaluate the general characteristics of the subsurface strata. The results of the laboratory tests are presented in the Appendix on the Sieve Analysis Results reports.

Test Pit Logs

Details of the subsurface conditions encountered within the test pits are shown on the test pit logs contained in the Appendix. These records represent our interpretation of the subsurface conditions based on visual examination of the bag samples and test pit excavations. The Unified Soil Classification System (USCS) was used as a guide in describing the soils encountered. Stratification lines on the test pit logs represent approximate boundaries between soil types. The actual transition may be gradual. Subsurface conditions away from and between test pit locations are likely to vary.

Subsurface Conditions

The test pits initially encountered approximately 6 to 8 inches of topsoil. Beneath the topsoil, the test pits generally encountered native Coastal Plain silty sands (SM), silty clayey sands (SC-SM), poorly graded sands with silt (SP-SM), sandy silts (ML) and clayey sands (SC) to depths of 3 to 8 feet bgs. Beneath the sands, sandy lean clays (CL) and sandy fat clays (CH) were encountered to the test pit termination depths in most of the test pits.

Groundwater was encountered in the test pits at depths ranging from 2 to 5 feet bgs at the time of excavation. Soil samples collected from the test pits were noted as being moist to wet. It appears the groundwater encountered may represent a “perched” condition where surface water infiltrates through the upper sands and rests on a more confining (less permeable) layer.

Conclusions and Recommendations

The following conclusions and recommendations are based upon our understanding of the proposed construction and information gathered during this exploration. Our interpretation of the test pit and

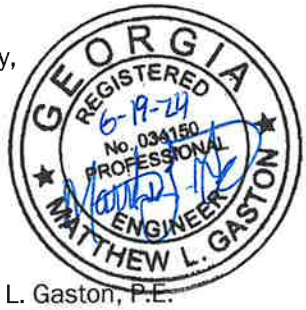
laboratory data has been based on generally accepted geotechnical engineering practices common to the local area and on our experience with similar site and subsurface conditions.

Based on our laboratory test results and visual observation of the soil samples recovered from the test pits, we estimate that the upper 4 feet of soils should be suitable for use as structural fill as defined in Section 4.2 of TTL's Geotechnical Report (TTL Project No. 23-07-02183.00R1) dated June 5, 2024. Below these depths, the test pits generally encountered low to high-plasticity clays (CL and CH) that are either marginal or not suitable for use as structural fill.

It should be noted that most of the samples collected were visually estimated to be wet of optimum (i.e. moist to wet). Extensive drying of the borrow soils should be anticipated to achieve adequate compaction. The majority of the soils are clayey in nature and, therefore, are sensitive to changes in moisture content and are difficult to work when wet. If grading of the site occurs during wet, cool weather, when drying soils is more difficult and time-consuming, the grading contractor may have difficulty achieving suitable moisture conditions for proper compaction of fill materials. The contractor should be prepared to provide the means and methods to dry soils to provide the required compaction. Adequate equipment will be required for blending, moisture conditioning (i.e. drying) and compaction.

If you have questions, please do not hesitate to contact us at 229.244.8619. We appreciate the opportunity to provide geotechnical engineering services for your project, and hope we can be of help when you need geotechnical or environmental engineering services in the future.

Sincerely,
TTL, Inc.



Mathew L. Gaston, P.E.
Principal Engineer

Richard D. Heckel, P.E., D.GE
Chief Geotechnical Engineer

Attachments:

- *Test Pit Location Plan*
- *Legend Sheets - Soils*
- *Test Pit Logs*
- *Subsurface Cross Section*
- *Laboratory Testing Data*
- *Information from GBA*

APPENDIX A

TEST PIT LOCATION MAP

LEGEND SHEETS – SOIL

TEST PIT LOGS (12 TEST PITS)

SUBSURFACE CROSS SECTION

LABORATORY TEST DATA

INFORMATION FROM GBA

SOIL LEGEND

FINE- AND COARSE-GRAINED SOIL INFORMATION

FINE-GRAINED SOILS (SILTS AND CLAYS)

SPT N-Value	Consistency	Estimated Q_u (TSF)
0 - 1	Very Soft	0 - 0.25
2 - 4	Soft	0.25 - 0.5
5 - 8	Firm	0.5 - 1.0
9 - 15	Stiff	1.0 - 2.0
16 - 30	Very Stiff	2.0 - 4.0
31+	Hard	4.0+

Q_u = Unconfined Compression Strength

COARSE-GRAINED SOILS (SANDS AND GRAVELS)

SPT N-Value	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
51+	Very Dense

PARTICLE SIZE

Name	Size (US Std. Sieve)
Boulders	>300 mm (>12 in.)
Cobbles	75 mm to 300 mm (3 - 12 in.)
Coarse Gravel	19 mm to 75 mm (3/4 - 3 in.)
Fine Gravel	4.75 mm to 19 mm (#4 - 3/4 in.)
Coarse Sand	2 mm to 4.75 mm (#10 - #4)
Medium Sand	0.425 mm to 2 mm (#40 - #10)
Fine Sand	0.075 mm to 0.425 mm (#200 - #40)
Silts and Clays	< 0.075 mm (< #200)

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Terms	Percent of Dry Weight
"Trace"	< 15
"With"	15 - 30
Modifier	> 30

RELATIVE PROPORTIONS OF CLAYS AND SILTS

Descriptive Terms	Percent of Dry Weight
"Trace"	< 5
"With"	5 - 12
Modifier	> 12

CRITERIA FOR DESCRIBING MOISTURE CONDITION

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soil is below water table

CRITERIA FOR DESCRIBING CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

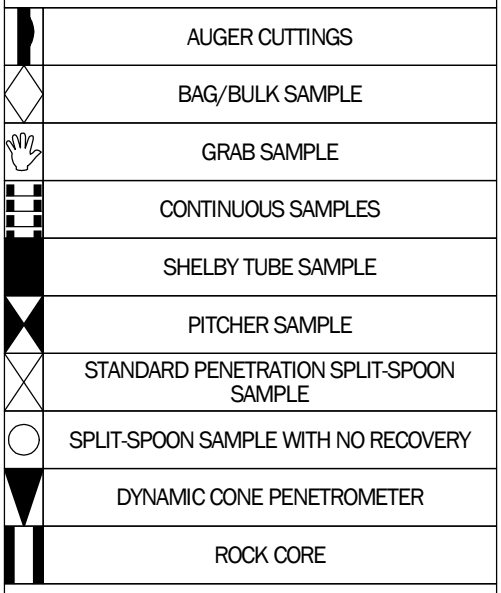
CRITERIA FOR DESCRIBING STRUCTURE

Description	Criteria
Stratified	Alternating layers of varying material or color with layers at least 6 mm thick; note the thickness
Laminated	Alternating layers of varying material or color with the layers less than 6 mm thick; note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

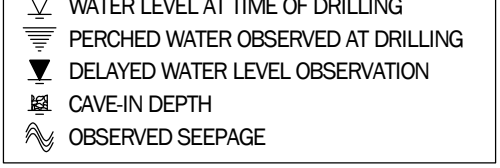
ABBREVIATIONS AND ACRONYMS

WOH	Weight of Hammer	N-Value	Sum of the blows for last two 6-in increments of SPT
WOR	Weight of Rod		
Ref.	Refusal	NA	Not Applicable or Not Available
ATD	At Time of Drilling	OD	Outside Diameter
DCP	Dynamic Cone Penetrometer	PPV	Pocket Penetrometer Value
Elev.	Elevation	SFA	Solid Flight Auger
ft.	feet	SH	Shelby Tube Sampler
HSA	Hollow Stem Auger	SS	Split-Spoon Sampler
ID	Inside Diameter	SPT	Standard Penetration Test
in.	inches	USCS	Unified Soil Classification System
lbs	pounds		

SAMPLERS AND DRILLING METHODS



WATER LEVEL SYMBOLS



TTL

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

COARSE GRAINED SOILS (>50% of the material is larger than the #200 sieve)	GRAVELS (>50% of coarse fraction is larger than the #4 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu > 4 Cc = 1-3	GW	Well-graded gravels, gravel-sand mixtures with trace or no fines
			Cu < 4 and/or Cc < 1 Cc > 3	GP	Poorly-graded gravels, gravel-sand mixtures with trace or no fines
		GRAVEL WITH 5% TO 12% FINES	Cu > 4 Cc = 1-3	GW-GM	Well-graded gravels, gravel-sand mixtures with silt fines
				GW-GC	Well-graded gravels, gravel-sand mixtures with clay fines
			Cu < 4 and/or Cc < 1 Cc > 3	GP-GM	Poorly-graded gravels, gravel-sand mixtures with silt fines
				GP-GC	Poorly-graded gravels, gravel-sand mixtures with clay fines
		GRAVEL WITH MORE THAN 12% FINES		GM	Silty gravels, gravel-silt-sand mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
				GC-GM	Clayey gravels, gravel-sand-clay-silt mixtures
	SANDS (>50% of coarse fraction is smaller than the #4 sieve)	CLEAN SAND WITH <5% FINES	Cu > 6 Cc = 1-3	SW	Well-graded sands, sand-gravel mixtures with trace or no fines
			Cu < 6 and/or Cc < 1 Cc > 3	SP	Poorly-graded sands, sand-gravel mixtures with trace or no fines
		SAND WITH 5% TO 12% FINES	Cu > 6 Cc = 1-3	SW-SM	Well-graded sands, sand-gravel mixtures with silt fines
				SW-SC	Well-graded sands, sand-gravel mixtures with clay fines
			Cu < 6 and/or Cc < 1 Cc > 3	SP-SM	Poorly-graded sands, sand-gravel mixtures with silt fines
				SP-SC	Poorly-graded sands, sand-gravel mixtures with clay fines
		SAND WITH MORE THAN 12% FINES		SM	Silty sands, sand-gravel-silt mixtures
				SC	Clayey sands, sand-gravel-clay mixtures
				SC-SM	Clayey sands, sand-gravel-clay-silt mixtures
FINE GRAINED SOILS (>50% of material is smaller than the #200 sieve)		SILTS & CLAYS (Liquid Limit less than 50)		ML	Inorganic silts with low plasticity
				CL	Inorganic clays of low plasticity, gravelly or sandy clays, silty clays, lean clays
				CL-ML	Inorganic clay-silts of low plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
		SILTS & CLAYS (Liquid Limit more than 50)		MH	Inorganic silts of high plasticity, elastic silts
				CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays and organic silts of high plasticity

USCS - HIGHLY ORGANIC SOILS

Primarily organic matter, dark in color, organic odor

PT	Peat, humus, swamp soils with high organic contents

OTHER MATERIALS

- BITUMINOUS CONCRETE (ASPHALT)
- CONCRETE
- CRUSHED STONE/AGGREGATE BASE
- TOPSOIL
- FILL
- UNDIFFERENTIATED ALLUVIUM
- UNDIFFERENTIATED OVERBURDEN
- BOULDERS AND COBBLES

UNIFORMITY COEFFICIENT

$$C_u = D_{60}/D_{10}$$

COEFFICIENT OF CURVATURE

$$C_C = (D_{30})^2/(D_{60} \times D_{10})$$

Where:

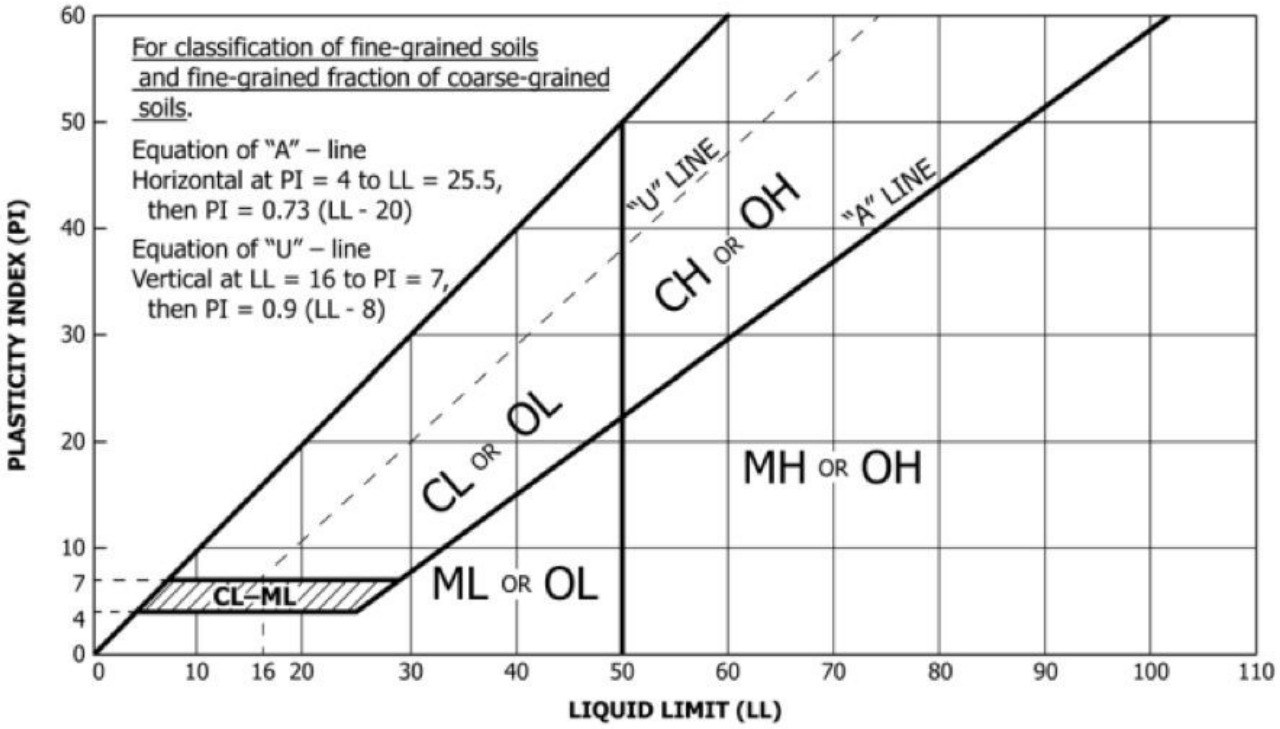
D_{60} = grain diameter at 60% passing

D_{30} = grain diameter at 30% passing

D_{10} = grain diameter at 10% passing

TTL

PLASTICITY CHART FOR USCS CLASSIFICATION OF FINE-GRAINED SOILS



IMPORTANT NOTES ON TEST BORING RECORDS

1) The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.

2) Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown. Solid lines are used to indicate a change in the material type, particularly a change in the USCS classification. Dashed lines are used to separate two materials that have the same material type, but that differ with respect to two or more other characteristics (e.g. color, consistency).

3) No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.

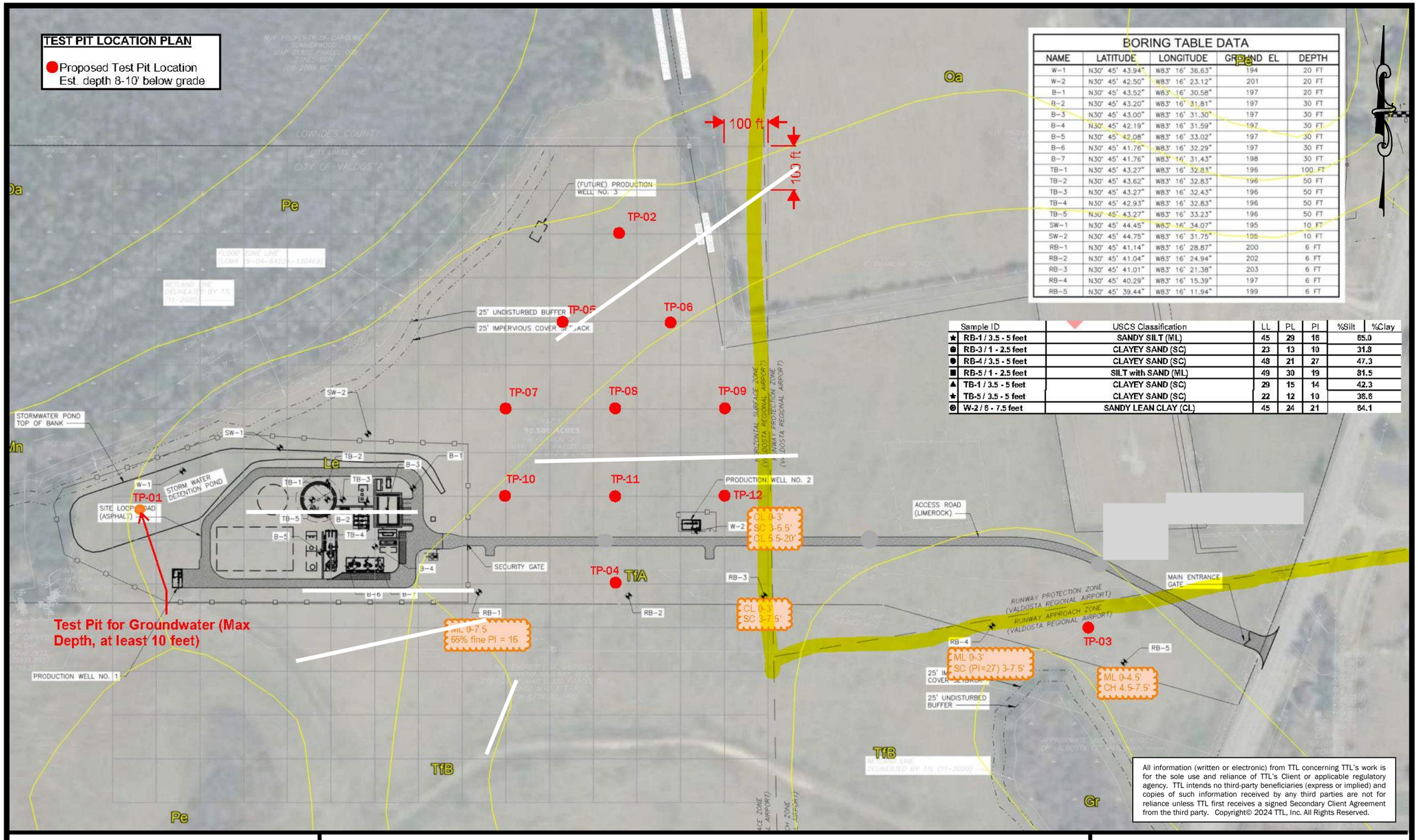
4) Logs represent general soil and rock conditions observed at the point of exploration on the date indicated.

5) In general, Unified Soil Classification System (USCS) designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.

6) Fine-grained soils that plot within the hatched area on the Plasticity Chart, and coarse-grained soils with between 5% and 12% passing the #200 sieve require dual USCS symbols as presented on the previous page.

7) If the sampler is not able to be driven at least 6 inches, then 50/X" indicates that the sampler advanced X inches when struck 50 times with a 140-pound hammer falling 30 inches.

8) If the sampler is driven at least 6 inches, but cannot be driven either of the subsequent two 6-inch increments, then either 50/X" or the sum of the second 6-inch increment plus 50/X" for the third 6-inch increment will be indicated.
Example 1: Recorded SPT blow counts are 16 - 50/4", the SPT N-value will be shown as N = 50/4"
Example 2: Recorded SPT blow counts are 18 - 25 - 50/2", the SPT N-value will be shown as N = 75/8"



BORING TABLE DATA

NAME	LATITUDE	LONGITUDE	GROUND EL	DEPTH
W-1	N30° 45' 43.94"	W83° 16' 36.63"	194	20 FT
W-2	N30° 45' 42.50"	W83° 16' 23.12"	201	20 FT
B-1	N30° 45' 43.52"	W83° 16' 30.58"	197	20 FT
B-2	N30° 45' 43.20"	W83° 16' 31.81"	197	30 FT
B-3	N30° 45' 43.00"	W83° 16' 31.30"	197	30 FT
B-4	N30° 45' 42.19"	W83° 16' 31.59"	197	30 FT
B-5	N30° 45' 42.08"	W83° 16' 33.02"	197	30 FT
B-6	N30° 45' 41.76"	W83° 16' 32.29"	197	30 FT
B-7	N30° 45' 41.76"	W83° 16' 31.43"	198	30 FT
TB-1	N30° 45' 43.27"	W83° 16' 32.83"	196	100 FT
TB-2	N30° 45' 43.62"	W83° 16' 32.83"	196	50 FT
TB-3	N30° 45' 43.27"	W83° 16' 32.43"	196	50 FT
TB-4	N30° 45' 42.93"	W83° 16' 32.83"	196	50 FT
TB-5	N30° 45' 43.27"	W83° 16' 33.23"	196	50 FT
SW-1	N30° 45' 44.45"	W83° 16' 34.07"	195	10 FT
SW-2	N30° 45' 44.75"	W83° 16' 31.75"	195	10 FT
RB-1	N30° 45' 41.14"	W83° 16' 28.87"	200	6 FT
RB-2	N30° 45' 41.04"	W83° 16' 24.94"	202	6 FT
RB-3	N30° 45' 41.01"	W83° 16' 21.38"	203	6 FT
RB-4	N30° 45' 40.29"	W83° 16' 15.39"	197	6 FT
RB-5	N30° 45' 39.44"	W83° 16' 11.94"	199	6 FT

Sample ID	USCS Classification	LL	PL	PI	%Silt	%Clay
★ RB-1 / 3.5 - 5 feet	SANDY SILT (ML)	45	29	16	65.0	
● RB-3 / 1 - 2.5 feet	CLAYEY SAND (SC)	23	13	10	31.8	
● RB-4 / 3.5 - 5 feet	CLAYEY SAND (SC)	48	21	27	47.3	
■ RB-5 / 1 - 2.5 feet	SILT with SAND (ML)	49	30	19	81.5	
▲ TB-1 / 3.5 - 5 feet	CLAYEY SAND (SC)	29	15	14	42.3	
★ TB-5 / 3.5 - 5 feet	CLAYEY SAND (SC)	22	12	10	36.6	
⊖ W-2 / 6 - 7.5 feet	SANDY LEAN CLAY (CL)	45	24	21	64.1	

TTL

FIGURE 1
Test Pit Location Plan

CDM SMITH
VALDOSTA WATER TREATMENT PLANT
Valdosta, Lowndes County, Georgia
TTL Project No.: 23-07-02183.00

LEGEND

● = Test Pit Location

*Map provided by CDM Smith.

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-01

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/15/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *7 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 4 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
				TOPSOIL (8 inches)			
1			SP-SM	**COASTAL PLAIN:** POORLY GRADED SAND with SILT, medium to fine grained, gray and tan, wet (SP-SM)			- a grab sample was taken below 8 inches
3			SC	CLAYEY SAND, medium to fine grained, orange and gray, moist (SC)			- a grab sample was taken below 3 feet
4					▽		- a grab sample was taken below 4 feet
7				EXCAVATION TERMINATED AT 7 FEET.			

X:\2023\07\23-07-02183.00 CDM SMITH- VALDOSTA WATER TREATMENT PLANT - VALDOSTA, GEORGIA\GEOTECHNICAL\REPORT\REVISIONS - 5-28-24\CDM TEST PIT - LAB LOG.GPJ 6/19/24 Report:TEST PIT LOG - LAT/LONG

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-02

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/15/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *7 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 3 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
0				TOPSOIL (6 Inches)			
1			SP-SM	**COASTAL PLAIN:** POORLY GRADED SAND with SILT, medium to fine grained, gray and tan, moist (SP-SM)			- a grab sample was taken below 6 inches
2			SC	CLAYEY SAND, medium to fine grained, gray, moist (SC)			- a grab sample was taken below 2 feet
3					▽		- a grab sample was taken below 3 feet
4							
5							
6							
7				EXCAVATION TERMINATED AT 7 FEET.			
8							
9							
10							
11							
12							
13							

X:\2023\07\23-07-02183.00 CDM SMITH- VALDOSTA WATER TREATMENT PLANT - VALDOSTA, GEORGIA\GEOTECHNICAL\REPORT\REVISIONS - 5-28-24\CDM TEST PIT - LAB LOG.GPJ 6/19/24 Report:TEST PIT LOG - LAT/LONG

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-03

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/16/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *8 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 2 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
				TOPSOIL (6 inches)			- a grab sample was taken below 6 inches
1			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, brown, moist (SM)			- a grab sample was taken below 1 foot
			SC	CLAYEY SAND, medium to fine grained, tan/brown, moist (SC)			
2					▽		- a grab sample was taken below 2 feet
3			ML	SANDY SILT, red-brown and gray, moist (ML)			- a grab sample was taken below 3 feet
4			CH	SANDY FAT CLAY, red-brown and gray, moist (CH)			- a grab sample was taken below 4 feet
5							
6							
7							
8				EXCAVATION TERMINATED AT 8 FEET.			
9							
10							
11							
12							
13							

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-04

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/16/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *7 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 2 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
0				TOPSOIL (6 inches)			- a grab sample was taken below 6 inches
			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, brown and gray, moist (SM)			
1			SC	CLAYEY SAND, medium to fine grained, tan and brown, wet (SC)			- a grab sample was taken below 1 foot
2					▽		- a grab sample was taken below 2 feet
3							
4			CL	SANDY LEAN CLAY, red/white and brown, wet (CL)			- a grab sample was taken below 4 feet
5							
6							
7				EXCAVATION TERMINATED AT 7 FEET.			
8							
9							
10							
11							
12							
13							

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-05

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/15/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *7 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 2 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
0				TOPSOIL (6 Inches)			
1			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, gray and tan, moist (SM)			- a grab sample was taken below 6 inches
			SC-SM	SILTY CLAYEY SAND, medium to fine grained, tan and orange, wet (SC-SM)			- a grab sample was taken below 1 foot
2			SC	CLAYEY SAND, medium to fine grained, orange and gray, wet (SC)	▽		- a grab sample was taken below 2 feet
3							
4							- a grab sample was taken below 4 feet
5							
6							
7				EXCAVATION TERMINATED AT 7 FEET.			
8							
9							
10							
11							
12							
13							

X:\2023\07\23-07-02183.00 CDM SMITH- VALDOSTA WATER TREATMENT PLANT - VALDOSTA, GEORGIA\GEOTECHNICAL\REPORT\REVISIONS - 5-28-24\CDM TEST PIT - LAB LOG.GPJ 6/19/24 Report:TEST PIT LOG - LAT/LONG

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit
TP-06

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/16/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *8 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 2 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
0				TOPSOIL (6 Inches)			
			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, gray and tan, moist (SM)			- a grab sample was taken below 6 inches
1			SC	CLAYEY SAND, medium to fine grained, gray and tan, wet (SC)			- a grab sample was taken below 1 foot
2					▽		
3							
4				- becomes orange and gray below 4 feet			- a grab sample was taken below 4 feet
5							
6							
7							
8				EXCAVATION TERMINATED AT 8 FEET.			
9							
10							
11							
12							
13							

X:\2023\07\23-07-02183.00 CDM SMITH- VALDOSTA WATER TREATMENT PLANT - VALDOSTA, GEORGIA\GEOTECHNICAL\REPORT\REVISIONS - 5-28-24\CDM TEST PIT - LAB LOG.GPJ 6/19/24 Report:TEST PIT LOG - LAT/LONG

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-07

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/15/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *9 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 4 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
				TOPSOIL (6 Inches)			
1			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, tan and gray, moist (SM)			- a grab sample was taken below 6 inches
2			SC	CLAYEY SAND, medium to fine grained, orange-gray and tan, wet (SC)			- a grab sample was taken below 2 feet
3							
4				- become red and white below 4 feet	▽		- a grab sample was taken below 4 feet
5							
6							
7							
8							
9				EXCAVATION TERMINATED AT 9 FEET.			
10							
11							
12							
13							

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-08

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/15/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *8 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 3 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
0				TOPSOIL (6 Inches)			
1			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, gray and brown, moist (SM)			- a grab sample was taken below 6 inches
2			SC	CLAYEY SAND, medium to fine grained, brown and gray, wet (SC)			- a grab sample was taken below 2 feet
3					▽		
4			CL	SANDY LEAN CLAY, red and gray, moist (CL)			- a grab sample was taken below 4 feet
5							
6							
7							
8				EXCAVATION TERMINATED AT 8 FEET.			
9							
10							
11							
12							
13							

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-09

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/15/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *8 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 5 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
0				TOPSOIL (6 Inches)			
1			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, brown and tan, moist (SM)			- a grab sample was taken below 6 inches
2			SC	CLAYEY SAND, medium to fine grained, orange and gray, wet (SC)			- a grab sample was taken below 2 feet
3							
4			CH	SANDY FAT CLAY, red and gray, wet (CH)			- a grab sample was taken below 4 feet
5					▽		
6							
7							
8				EXCAVATION TERMINATED AT 8 FEET.			
9							
10							
11							
12							
13							

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-10

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/15/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *8 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 4 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
0				TOPSOIL (8 inches)			
1			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, brown and gray, moist (SM)			- a grab sample was taken below 6 inches
2			SC	CLAYEY SAND, medium to fine grained, brown, moist (SC)			- a grab sample was taken below 2 feet
3			CL	SANDY LEAN CLAY, red-gray and brown, moist (CL)			- a grab sample was taken below 3 feet
4					▽		
5							
6							
7							
8				EXCAVATION TERMINATED AT 8 FEET.			
9							
10							
11							
12							
13							

X:\2023\07\23-07-02183.00 CDM SMITH- VALDOSTA WATER TREATMENT PLANT - VALDOSTA, GEORGIA\GEOTECHNICAL\REPORT\REVISIONS - 5-28-24\CDM TEST PIT - LAB LOG.GPJ 6/19/24 Report:TEST PIT LOG - LAT/LONG

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-11

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/16/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *8 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

Remarks:

Water encountered at an approximate depth of 2 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. A desired depth of 10 feet was attempted; however, test pit would cave in with depth. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
				TOPSOIL (6 Inches)			
1			SC-SM	**COASTAL PLAIN:** SILTY CLAYEY SAND, medium to fine grained, tan and brown, moist (SM)			- a grab sample was taken below 6 inches
2					▽		
3			SC	CLAYEY SAND, medium to fine grained, tan and orange, wet (SC)			- a grab sample was taken below 3 feet
4			CL	SANDY LEAN CLAY, red-white and orange, wet (CL)			- a grab sample was taken below 4 feet
5							
6							
7							
8				EXCAVATION TERMINATED AT 8 FEET.			
9							
10							
11							
12							
13							

X:\2023\07\23-07-02183.00 CDM SMITH- VALDOSTA WATER TREATMENT PLANT - VALDOSTA, GEORGIA\GEOTECHNICAL\REPORT\REVISIONS - 5-28-24\CDM TEST PIT - LAB LOG.GPJ 6/19/24 Report:TEST PIT LOG - LAT/LONG

CDM Smith
Valdosta Water Treatment Plant

Valdosta, Lowndes County, Georgia

Log of Test Pit TP-12

Excavating Co.: *City of Valdosta*	**TTL** Project No.: *23-07-02183.00*
	Date Excavated: *5/16/2024*
Logged by: *A. Tchoua*	Test Pit Depth: *10 feet*
Equipment: *John Deere 310 SJ Backhoe Loader*	Ground Elevation: *Not Available*
	Coordinates: *Not Available*
No. of Samples: *0*	

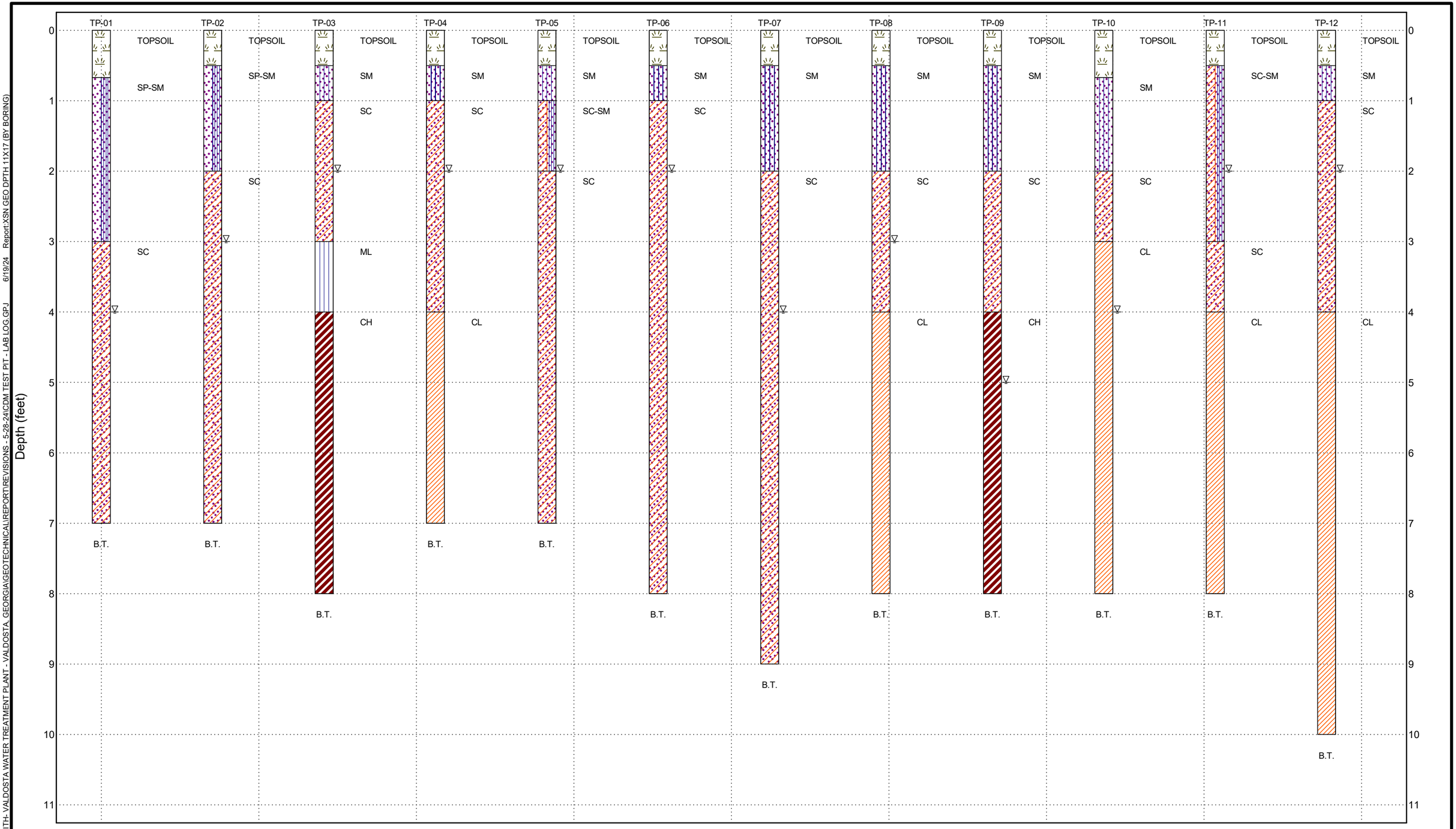
Remarks:

Water encountered at an approximate depth of 2 feet during excavation.

The test pit was excavated by the City of Valdosta using a 2.5 foot bucket. The test pit was backfilled with soil cuttings upon completion.

▽ Water level at time of excavation.

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS CLASSIFICATION	MATERIALS DESCRIPTION	MOISTURE (%)	PPV (tsf)	REMARKS
				TOPSOIL (6 Inches)			
1			SM	**COASTAL PLAIN:** SILTY SAND, medium to fine grained, brown-red and gray, with clay, moist (SM)			- a grab sample was taken below 6 inches
			SC	CLAYEY SAND, medium to fine grained, brown and red, wet (SC)			- a grab sample was taken below 1 foot
2					▽		- a grab sample was taken below 2 feet
3							- a grab sample was taken below 3 feet
4			CL	SANDY LEAN CLAY, red-gray and white, wet (CL)			- a grab sample was taken below 4 feet
5							
6							
7							
8							
9							
10				EXCAVATION TERMINATED AT 10 FEET.			
11							
12							
13							



SUBSURFACE CROSS-SECTION

Client: CDM Smith
Project: Valdosta Water Treatment Plant
Location: Valdosta, Lowndes County, Georgia
Project Number: 23-07-02183.00

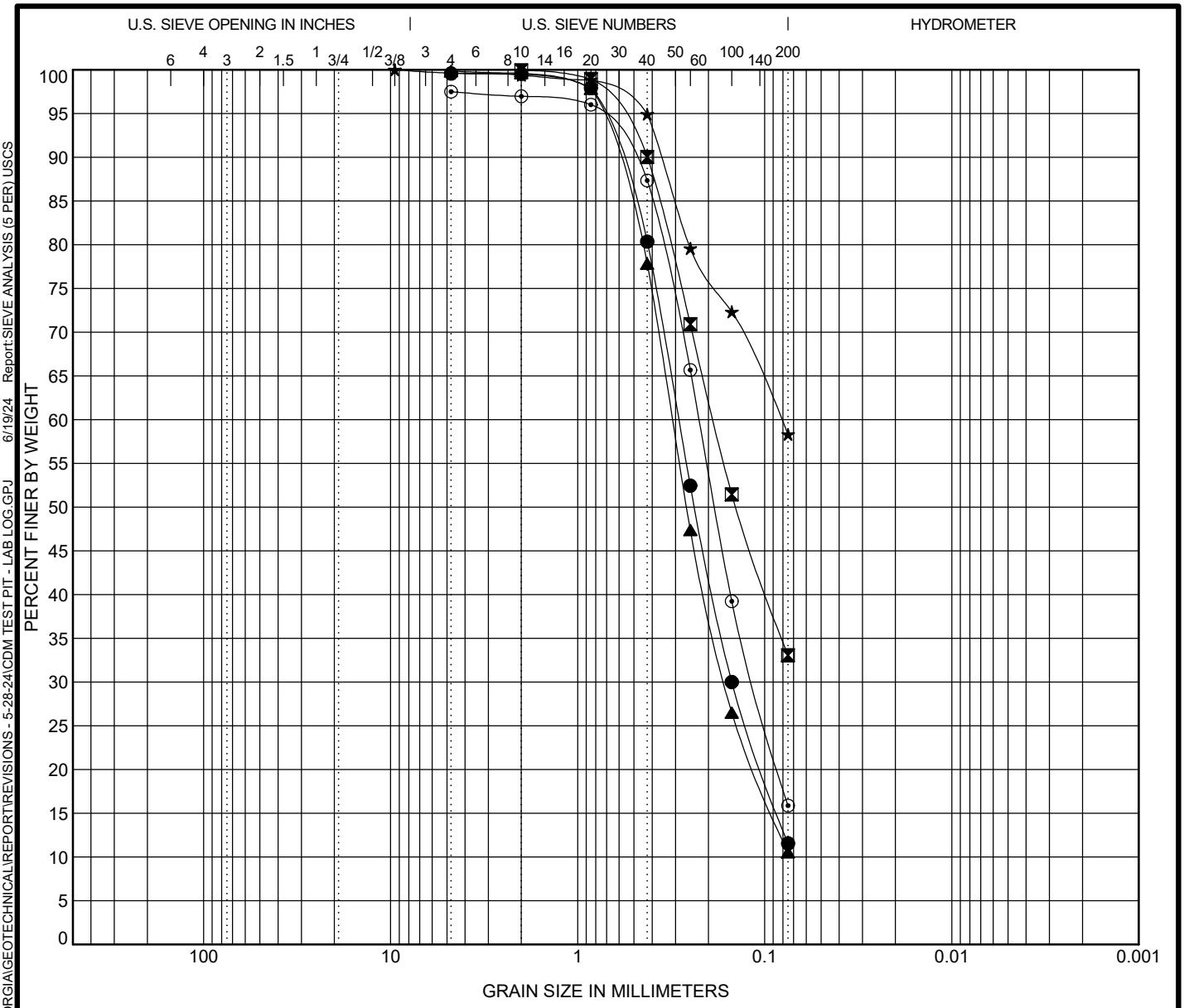
LEGEND: See Legend Key Sheet for explanation of symbols

N (bpf) | % Moisture
Recovery% Core Size RQD% | Material Symbol | Classification

B.T. = Boring Terminated A.R. = Auger Refusal

- Water level at time of boring
- Delayed water level
- Cave-in depth
- Perched water level.

Notes:
Vertical scale as shown. No horizontal scale.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

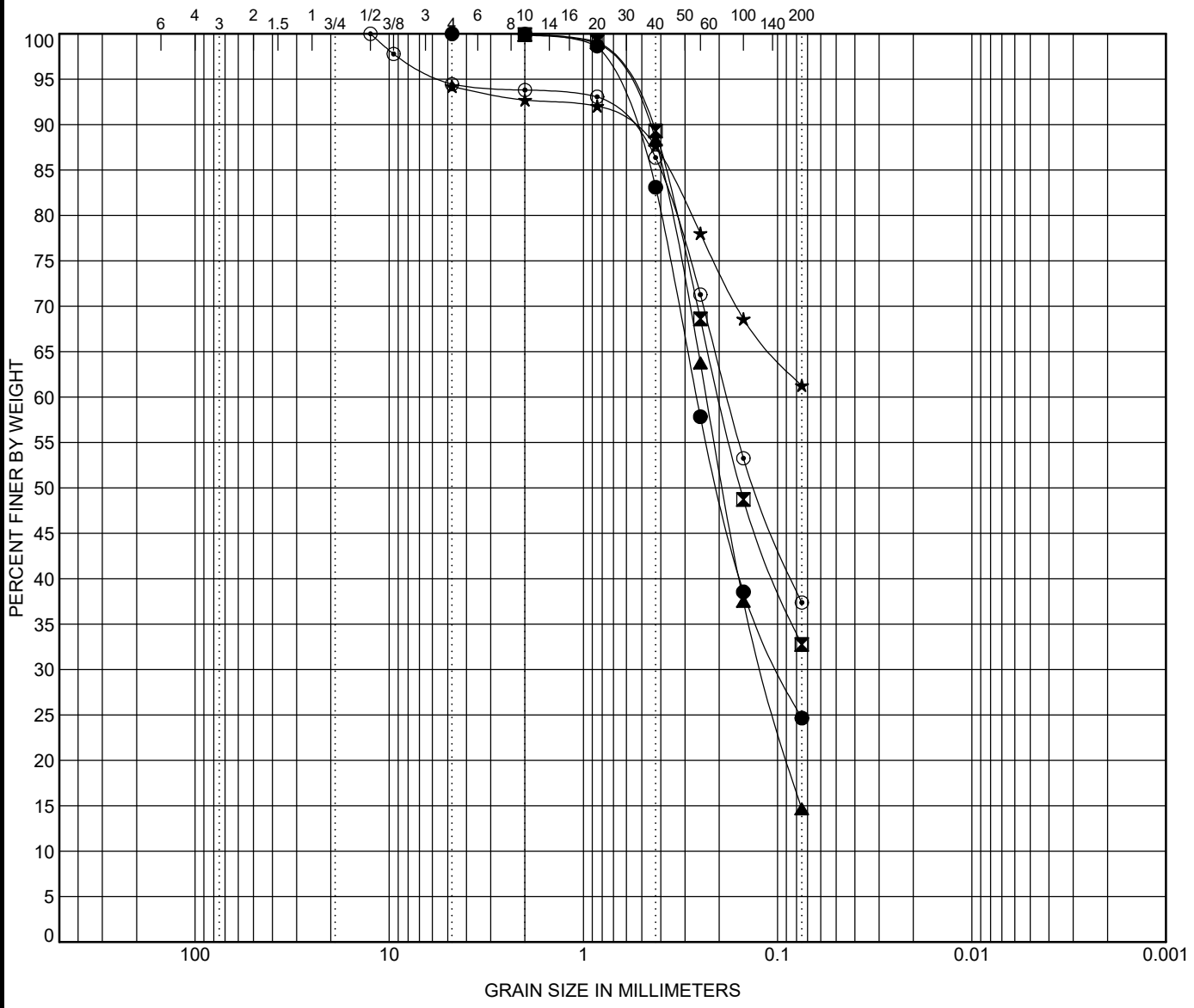
	Sample ID	USCS Classification	LL	PL	PI	Cc	Cu
●	TP-01 / 0.67 - 3 feet	POORLY GRADED SAND with SILT (SP-SM)	NP	NP	NP	1.10	4.08
⊠	TP-01 / 3 - 4 feet	CLAYEY SAND (SC)	29	16	13		
▲	TP-02 / 0.5 - 2 feet	POORLY GRADED SAND with SILT (SP-SM)	NP	NP	NP	1.17	4.25
★	TP-03 / 3 - 4 feet	SANDY SILT (ML)	47	32	15		
⊙	TP-04 / 0.5 - 1 feet	SILTY SAND (SM)	NP	NP	NP		

	Sample ID	D100	D50	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	TP-01 / 0.67 - 3 feet	4.75	0.236	0.15		0.0	88.0	11.6	
⊠	TP-01 / 3 - 4 feet	2	0.142			0.0	66.9	33.1	
▲	TP-02 / 0.5 - 2 feet	4.75	0.262	0.163		0.0	89.3	10.5	
★	TP-03 / 3 - 4 feet	9.5				0.4	41.3	58.3	
⊙	TP-04 / 0.5 - 1 feet	4.75	0.185	0.114		0.0	81.6	15.9	

TTL

SIEVE ANALYSIS RESULTS

Client: CDM Smith
Project: Valdosta Water Treatment Plant
Location: Valdosta, Lowndes County, Georgia
Project Number: 23-07-02183.00



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample ID	USCS Classification	LL	PL	PI	Cc	Cu
●	**TP-05 / 2 - 4 feet**	**CLAYEY SAND (SC)**	**25**	**17**	**8**		
⊠	**TP-07 / 4 - 9 feet**	**CLAYEY SAND (SC)**	**32**	**17**	**15**		
▲	**TP-09 / 0.5 - 2 feet**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**		
★	**TP-09 / 4 - 8 feet**	**SANDY FAT CLAY (CH)**	**51**	**28**	**23**		
⊙	**TP-12 / 1 - 2 feet**	**CLAYEY SAND (SC)**	**32**	**19**	**13**		

	Sample ID	D100	D50	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**TP-05 / 2 - 4 feet**	**4.75**	**0.203**	**0.098**		**0.0**	**75.3**	**24.7**	
⊠	**TP-07 / 4 - 9 feet**	**2**	**0.155**			**0.0**	**67.2**	**32.8**	
▲	**TP-09 / 0.5 - 2 feet**	**2**	**0.191**	**0.119**		**0.0**	**85.2**	**14.7**	
★	**TP-09 / 4 - 8 feet**	**4.75**				**0.0**	**32.9**	**61.3**	
⊙	**TP-12 / 1 - 2 feet**	**12.5**	**0.13**			**5.6**	**57.1**	**37.4**	

TTL

SIEVE ANALYSIS RESULTS

Client: CDM Smith
Project: Valdosta Water Treatment Plant
Location: Valdosta, Lowndes County, Georgia
Project Number: 23-07-02183.00

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org