Project: Sabine Lake North Disposal Area No. 11
Near Port Arthur , Texas
Contract No. DACW64-93-D-0005 Delivery Order No. 0014

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 94-45

S #	Depth (ft)	P P (tsf)	SPT Blows per Foot	Visual Classification	U S C	Mc (%)	Dry Unit Wt (pcf)	Wet Unit Wt (pcf)	L L (%)	PL (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	1.00		Dark gray,Clay,Stiff,w/sand seams and sand pockets	C H	33.4											
2	2 - 4	1.25		Olive gray,Clay,Stiff,w/sand seams	C H	34.0											
3	4 - 6	1.75		Olive gray,Clay,Stiff,w/sand seams	C H	33.9	86.4	115.7	69	27	100.0	99.9	99.4	99.0	98.1		1.53
4	6 - 8	1.75		Olive gray,Clay,Stiff,w/sand seams	C H	34.4											
5	8 - 10	1.25		Olive gray,Clay,Stiff,w/sand seams	C H	34.9											
6	10 - 12	1.25		Olive gray,Clay,Stiff,w/sand seams	C H	33.4	88.3	117.8	72	28	100.0	100.0	99.6	98.7	97.7		1.19
7	12 - 14	1.25		Yellowish gray,Clay,Stiff,w/sand seams	C H	27.1											
8	14 - 16	0.75		Dark gray,Clay,Medium stiff,w/sand parting	C H	42.1											
9	16 - 18	0.25		Dark gray,Clay,Soft,w/sand parting seams	C H	36.2	83.4	113.6	53	20	100.0	100.0	99.8	98.7	97.5		0.39
10	18 - 20	0.25		Dark gray,Clay,Soft,w/sand parting	C H	44.7											
11	20-21.5		12	Gray,Sand,Medium dense,Silty	S M												
12	22 - 24	0.75		Yellowish gray,Clay,Medium stiff,w/sand pockets	C H	41.4											
13	24 - 26	1.25		Yellowish gray,Clay,Stiff,Sandy,w/sand pockets	C L	30.1											
14	26 - 28	2.25		Yellowish gray,Clay,Very stiff,Sandy,w/ sand pockets	C L	22.7	103.1	126.5	48	21	100.0	99.8	99.4	98.4	77.1		
15	28 - 30	3.00		Yellowish gray,Clay,Very stiff,Sandy,w/ sand pockets	C L	20.9											

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classifcation, M c : Moisture Content
q u : Uncogined Compressive Strength, W O H : Weight of hammer, W O P : Weight of Pipe

JOB NO. 14G727-14 DATE 5/4/94

PROJECT Sabine Lake North Disposal Area
No. 11

AREA Near Port Arthur, Texas

BORING NO. 94-45 SAMPLE NO. 3 DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION
Olive gray,Clay,Stiff,w/sand seams

Tare No.	GE-1	Height	5.595 in.
Tare plus Wet Specimen	468.05 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	360.25 gm	Initial Area	6.290 sq in.
Water Weight	107.80 gm	Volume	35.194 cu in.
Tare Weight	42.35 gm	Volume of Solids	cu in.
Wet Specimen	1069.10 gm	Void Ratio	
Dry Specimen	798.37 gm	Saturation	%
Water Content	33.91 %	Dry Density	86.4 lb/cu ft
Specific Gravity of Solids			

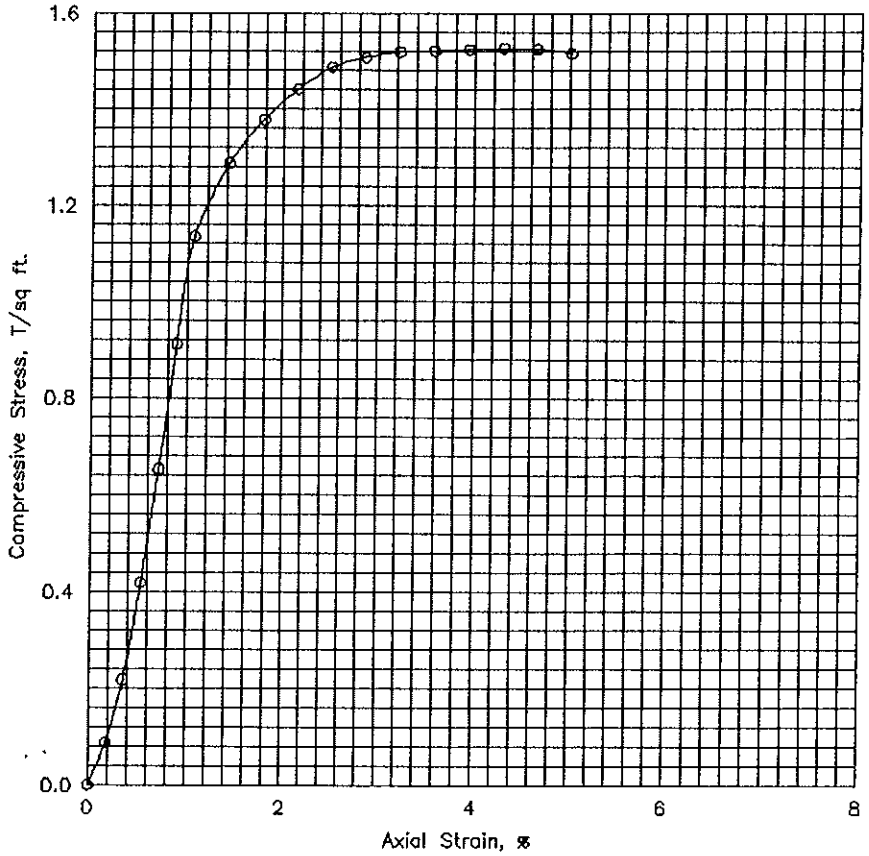
LL = 69 PL = 27 PI = 42

Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	10.0	7.7	.002	6.30	.088
.3	20.	.020	25.0	19.1	.004	6.31	.218
.5	30.	.030	48.0	36.8	.005	6.32	.419
.7	40.	.040	75.0	57.4	.007	6.34	.653
.9	50.	.050	105.0	80.4	.009	6.35	.912
1.0	60.	.060	131.0	100.3	.011	6.36	1.136
1.4	80.	.080	149.0	114.1	.014	6.38	1.288
1.7	100.	.100	160.0	122.6	.018	6.40	1.378
2.0	120.	.120	168.0	128.7	.021	6.43	1.441
2.3	140.	.140	174.0	133.3	.025	6.45	1.487
2.7	160.	.160	177.0	135.6	.029	6.48	1.508
3.0	180.	.180	179.0	137.1	.032	6.50	1.519
3.3	200.	.200	180.0	137.9	.036	6.52	1.522
3.6	220.	.220	181.0	138.6	.039	6.55	1.525
3.9	240.	.240	182.0	139.4	.043	6.57	1.527
4.3	260.	.260	182.5	139.8	.046	6.60	1.526
4.4	280.	.280	182.0	139.4	.050	6.62	1.516

Job No. 14G727-14

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	33.9 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	86.4			
Time to failure, min		t_f	3.92			
Unconfined compressive strength, T/sq ft		q_u	1.53			
Undrained shear strength, T/sq ft		S_u	.76			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Olive gray,Clay,Stiff,w/sand seams

LL 69	PL 27	PI 42	G_s

Remarks

Project Sabine Lake North Disposal Area	
No. 11	
Area Near Port Arthur, Texas	
Boring No. 94-45	Sample No. 3
Depth El 4-6 ft	Date 5/4/94
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G727-14 DATE 5/4/94

PROJECT Sabine Lake North Disposal Area
No. 11

AREA Near Port Arthur, Texas

BORING NO. 94-45 SAMPLE NO. 6 DEPTH 10-12 ft

SPECIMEN NO. 1

CLASSIFICATION
Olive gray,Clay,Stiff,w/sand seams

Tare No.	W-14	Height	5.595 in.
Tare plus Wet Specimen	430.17 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	333.01 gm	Initial Area	6.290 sq in.
Water Weight	97.16 gm	Volume	35.194 cu in.
Tare Weight	42.39 gm	Volume of Solids	cu in.
Wet Specimen	1087.96 gm	Void Ratio	
Dry Specimen	815.37 gm	Saturation	%
Water Content	33.43 %	Dry Density	88.3 lb/cu ft
Specific Gravity of Solids			

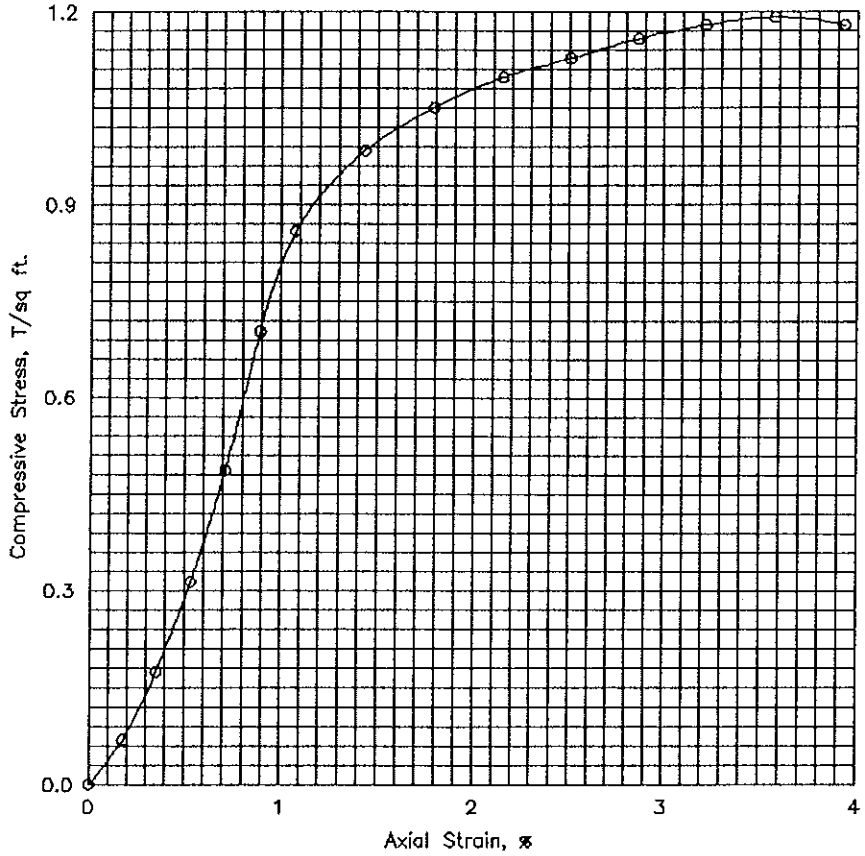
LL = 72 PL = 28 PI = 44

Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	8.0	6.1	.002	6.30	.070
.3	20.	.020	20.0	15.3	.004	6.31	.175
.5	30.	.030	36.0	27.6	.005	6.32	.314
.7	40.	.040	56.0	42.9	.007	6.34	.487
.9	50.	.050	81.0	62.0	.009	6.35	.704
1.1	60.	.060	99.0	75.8	.011	6.36	.859
1.4	80.	.080	114.0	87.3	.014	6.38	.985
1.7	100.	.100	122.0	93.5	.018	6.40	1.051
2.0	120.	.120	128.0	98.0	.021	6.43	1.098
2.3	140.	.140	132.0	101.1	.025	6.45	1.128
2.7	160.	.160	136.0	104.2	.029	6.48	1.158
3.0	180.	.180	139.0	106.5	.032	6.50	1.180
3.3	200.	.200	141.0	108.0	.036	6.52	1.192
3.6	220.	.220	140.0	107.2	.039	6.55	1.179

Job No. 14G727-14

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	33.4 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	88.3			
Time to failure, min		t_f	3.32			
Unconfined compressive strength, T/sq ft		q_u	1.19			
Undrained shear strength, T/sq ft		S_u	.60			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Olive gray,Clay,Stiff,w/sand seams

LL	72	PL	28	PI	44	G_s	

Remarks

Project Sabine Lake North Disposal Area	
No. 11	
Area Near Port Arthur, Texas	
Boring No. 94-45	Sample No. 6
Depth El 10-12 ft	Date 5/4/94
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G727-14 DATE 5/4/94

PROJECT Sabine Lake North Disposal Area
No. 11

AREA Near Port Arthur, Texas

BORING NO. 94-45 SAMPLE NO. 9 DEPTH 16-18 ft

SPECIMEN NO. 1

CLASSIFICATION
Dark gray,Clay,Soft,w/sand seams

Tare No.	P-207	Height	5.595 in.
Tare plus Wet Specimen	390.22 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	297.83 gm	Initial Area	6.290 sq in.
Water Weight	92.39 gm	Volume	35.194 cu in.
Tare Weight	42.83 gm	Volume of Solids	cu in.
Wet Specimen	1049.23 gm	Void Ratio	
Dry Specimen	770.18 gm	Saturation	%
Water Content	36.23 %	Dry Density	83.4 lb/cu ft
Specific Gravity of Solids			

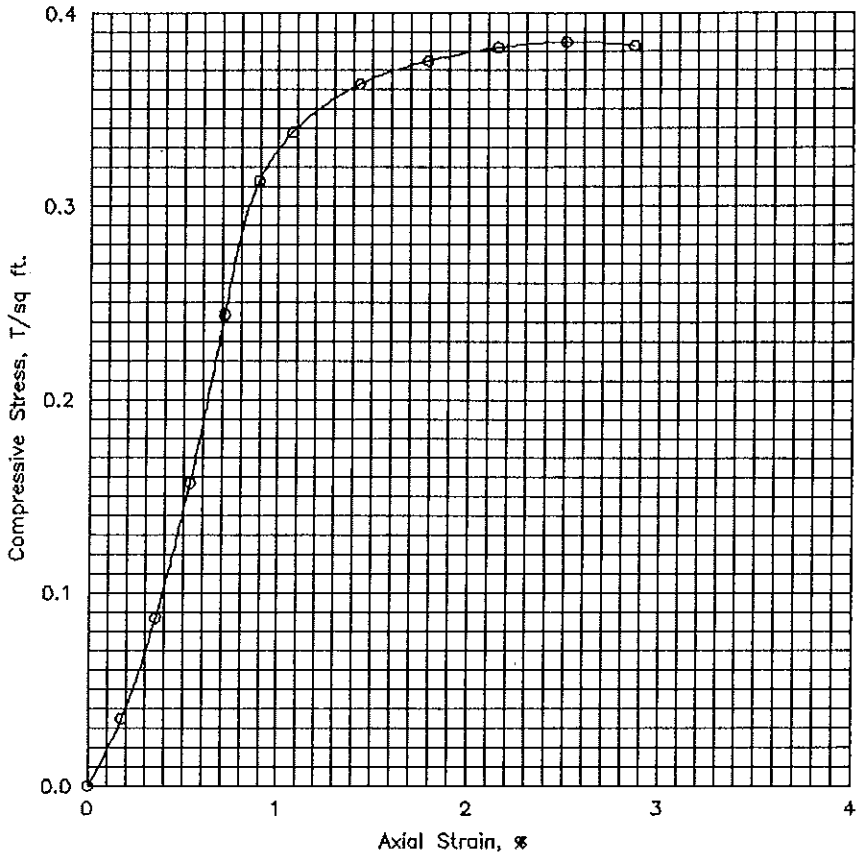
LL = 53 PL = 20 PI = 33

Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	4.0	3.1	.002	6.30	.035
.4	20.	.020	10.0	7.7	.004	6.31	.087
.6	30.	.030	18.0	13.8	.005	6.32	.157
.7	40.	.040	28.0	21.4	.007	6.34	.244
.9	50.	.050	36.0	27.6	.009	6.35	.313
1.1	60.	.060	39.0	29.9	.011	6.36	.338
1.4	80.	.080	42.0	32.2	.014	6.38	.363
1.7	100.	.100	43.5	33.3	.018	6.40	.375
2.1	120.	.120	44.5	34.1	.021	6.43	.382
2.4	140.	.140	45.0	34.5	.025	6.45	.385
2.7	160.	.160	45.0	34.5	.029	6.48	.383

Job No. 14G727-14

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	36.2 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	83.4			
Time to failure, min		t_f	2.38			
Unconfined compressive strength, T/sq ft		q_u	.38			
Undrained shear strength, T/sq ft		S_u	.19			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Dark gray,Clay,Soft,w/sand seams

LL	53	PL	20	PI	33	G_s

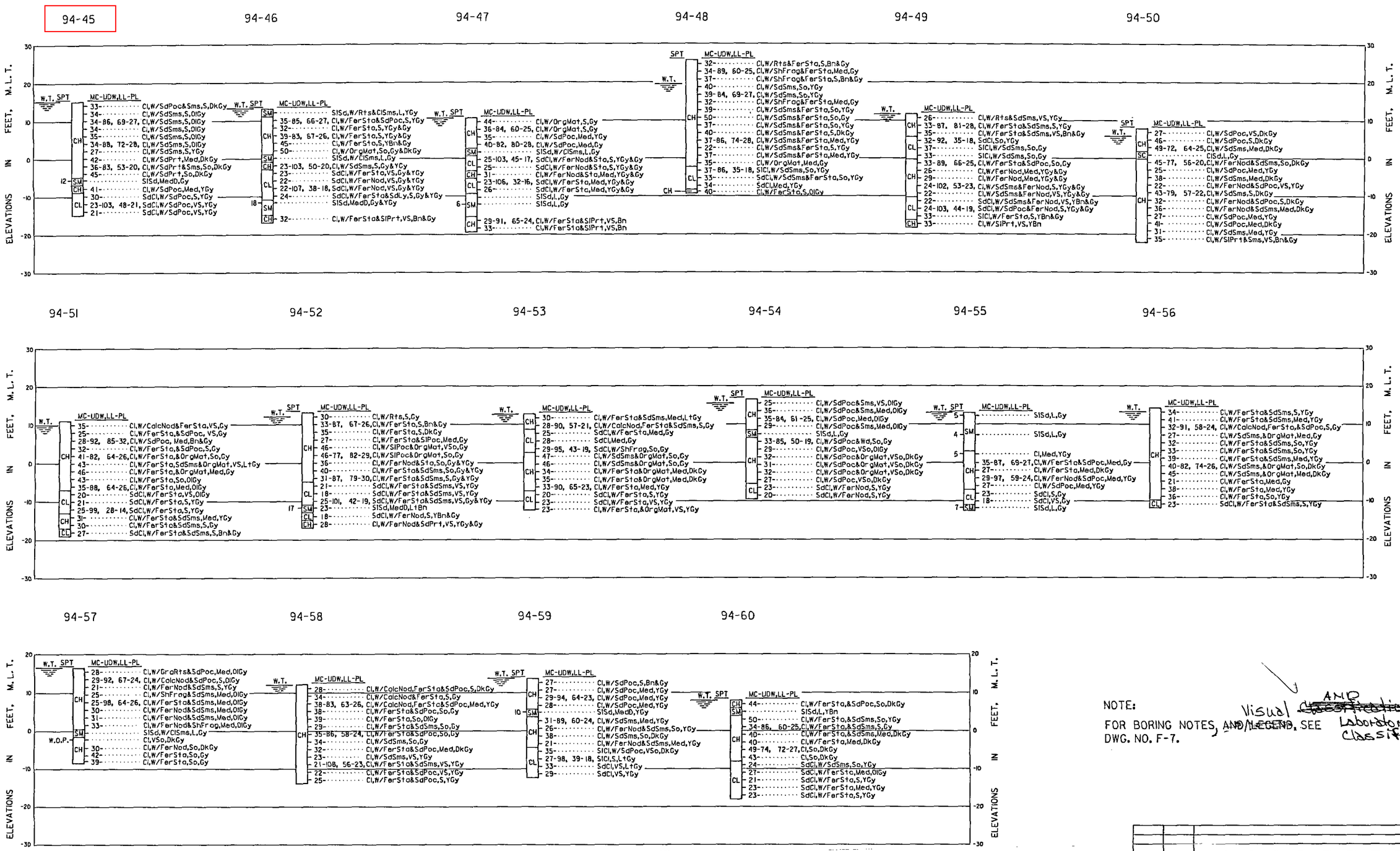
Remarks

Project Sabine Lake North Disposal Area
No. 11
Area Near Port Arthur, Texas
Boring No. 94-45 | Sample No. 9
Depth El 16-18 ft | Date 5/4/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

Geotest Engineering, Inc.



NOTE:

FOR BORING NOTES, ~~AND LEGEND~~, SEE DWG. NO. F-7.

Visual AND ~~CLASSIFICATIONS~~ Laboratory Classifications

REVISION	DATE	DESCRIPTION	BY

OFFICE OF THE DISTRICT ENGINEER
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

DRAWN BY: P.N.
DESIGNED BY: G.M.
CHECKED BY: G.M./L.A.A.
SUBMITTED BY:
CHIEF, GEOTECH & SURVEYS SECTION
APPROVED:
CHIEF, DESIGN BRANCH
APPROVED:
CHIEF, ENGINEERING DIVISION
DATE: JULY 1995
1 = AS REQUIRED BY ENGINEER CIRCULAR NO. 80-1-952 1
SCALE: AS SHOWN
SPEC. DATED

SABINE - NECHES WATERWAY, TEXAS
SABINE - NECHES CANAL
REHABILITATION OF PLACEMENT AREA NO. 11

BORING LOGS

BORROW AREA NO. 1

Prepared under the direction of
Robert B. Gatlin, Col., C.E.,
District Engineer

DRAWING NUMBER
F-4
SHEET 26 OF 32 FILE NO. SN 103-336