

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET	SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	BORING NO. <u>99-4</u> DATE: BEGIN <u>4-29-99</u> PAGE <u>1/2</u>				
				JOB NO. <u>1140114808</u> COMPLETE <u>4-30-99</u> Thin Walled Tube				
PROJECT <u>Neches River Saltwater Barrier</u>				LOCATION <u>N = 876228.64, E = 3543268.72</u>				
ELEVATION OF HOLE <u>0.5</u>				MANUFACTURER'S DESIGNATION OF DRILL RIG <u>DNR 75W/Barge & Track Buggy</u>				
GROUNDWATER: DEPTH <u>4</u> ft., ELEV. <u> </u> ft., at end of Drilling				WEATHER <u>Sunny</u>				
DRILLER <u>Dempsey Coenen</u>				LOGGER <u>Traj Mostamand</u>				
				COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0	J 1	0.00		Gray	Clay	V. soft		* 3' of water - w/decayed wood & roots Sample B. logs on extrusion
	2	0.00		Gray	Clay	V. soft		- w/decayed wood & roots
5	3	0.00		Gray	Clay	V. soft		- w/decayed wood & roots
	4	0.00		Gray	Clay	U. soft		- w/decayed wood & roots Set 10' of casing total casing below mudline 6'
	5	0.00		Gray	Clay	U. soft		- w/decayed wood & roots
10	6	0.00		Gray	Clay	U. soft		- w/decayed wood
	J 7			Gray	Sand	loose	silt	- w/roots
15	X 8	2	23	Gray	Sand	loose	silt	- w/roots
				Gray	Sand	M. Dense	silt	- w/decayed wood @ 20'
20	X 9	5	68	olive gray, Brown & gray	Clay	V. stiff		- w/calc nod & fer stains, SLKS
	10	3.00		Gray	Clay	V. stiff		- w/calc nod & fer stains, SLKS
	11	1.00		Gray	Clay	stiff	silt	- w/calc nod & fer stains
25	12	0.50		Gray	Clay	M. stiff	silt	- w/silt & Sand sms
	13	3.00		Brown & Gray	Clay	V. stiff	silt	- w/fer stains & silt sms
	14	4.50		Yellowish Brown & gray	Clay	Hard	silt	- w/fer nod & Sa sms
30	15	4.50		Yellowish Brown & gray	Clay	Hard	silt	- w/fer nod & fer stains
	16	3.25		Reddish Brown & gray	Clay	V. stiff		- w/fer stains & silt sms, SLKS
35	17	4.25		Yellowish Brown & gray	Clay	Hard	silt	- w/fer stains & Sa sms

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DEPTH, FEET	SAMPLE NO.	SAMPLE NO.	PEN. / TORVANE	SPT. - BLOW COUNT	BORING NO. <u>99-4</u> DATE: BEGIN <u>4-29-99</u> PAGE <u>2</u> / <u>2</u>				
					JOB NO. <u>1140114808</u> COMPLETE <u>4-30-99</u> Thin Walled Tube				
PROJECT <u>Neches River Saltwater Barrier</u>					LOCATION <u>N = 876228.64, E = 3543268.72</u>				
ELEVATION OF HOLE					MANUFACTURER'S DESIGNATION OF DRILL RIG <u>DNR75 w/ Barge Track Buggy</u>				
GROUNDWATER: DEPTH <u>4</u> ft., ELEV. <u></u> ft., at end of Drilling					WEATHER <u>Sunny</u>				
DRILLER <u>Dempsey Covert</u>					LOGGER <u>Iraj Mostafaei</u>				
					COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
35									
	18	1.50			Yellowish Brown & Gray	Clay	stiff	silt	- w/fer stains
	19	1.75			Yellowish Brown & Gray	Clay	stiff	silt	- w/fer stains & silt sm
40	20	2.50			Red & Gray	Clay	v. stiff	silt	- w/fer stains, silt sm, clay PK#2
	21	3.50			Red & Gray	Clay	v. stiff		- w/fer stains, SLKS
45	22	3.50			Reddish Brown & Gray	Clay	v. stiff		- w/fer stains, SLKS
	23	3.50			Reddish Brown & Gray	Clay	v. stiff		- w/fer stains, SLKS
	24	3.75			Reddish Brown & Gray	Clay	v. stiff		- w/fer stains, SLKS
50	25	3.75			Red & Gray	Clay	v. stiff		- w/calc nod & fer stains, SLKS
	26	3.25			Red & Gray	Clay	v. stiff		- w/calc nod & fer stains, SLKS
55	27	3.50			Red & Gray	Clay	v. stiff		- w/calc nod & fer stains, SLKS
	28	3.50			Red & Gray	Clay	v. stiff		- w/calc nod & fer stains, SLKS
	29	3.50			Red & Gray	Clay	v. stiff		- w/calc nod & fer stains, SLKS
60									J: Jar sample
65									
70									

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-98-D-0002 Delivery Order No. 0010

Boring No. 99-4

S #	Depth (ft)	P P (tsf)	SPT Blows per Foot	Visual Classification	U S C	M c (%)	Dry Unit Wt (pcf)	Wet Unit Wt (pcf)	L L (%)	P L (%)	Mechanical Analysis % Passing					Specific Gravity	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	99.8											
2	2 - 4	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	98.4											
3	4 - 6	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	86.5			98.0	42.0	100.0	100.0	100.0	100.0	100.0	2.447	
4	6 - 8	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	75.2											
5	8 - 10	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	72.3											
6	10 - 12	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	58.4											
7	12 - 14			Silty Sand,w/roots,Loose,Gray	S M												
8	14-15.5		5	Silty Sand,w/roots,Loose,Gray	S M						100.0	100.0	89.7	33.0	23.7		
9	19-20.5		14	Silty Sand,w,decayed wood,Medium dense,Gray	S M	24.0											
10	20.5-22	3.00		Clay,w/calc nod & fer stains,slks,Very stiff, Brown & gray	C H	28.6											
11	22-24	1.00		Silty Clay,w/calc nod & fer stains,Stiff,Gray	C L	19.4	107.4	128.2									1.40
12	24-26	0.50		Silty Clay,w/silt & sand seams,Medium stiff,Gray	C L	19.6	108.8	130.1	27.0	16.0							0.50
13	26-28	3.00		Silty Clay,w/fer stains & silt seams,Very stiff,Brown & gray	C L	17.0											
14	28-30	4.50+		Silty Clay,w/fer nod & sand seams,Hard, Yellowish brown & gray	C L	18.7											
15	30-32	4.50+		Silty Clay,w/fer nod & sand seams,Hard, Yellowish brown & gray	C L	20.2											
16	32-34	3.25		Clay,w/fer stains & silt seams,slks,Very stiff,Reddish brown & gray	C H	23.3											
17	34-36	4.25		Silty Clay,w/fer stains & sand seams,hard, Yellowish brown & gray	C L	17.4											
18	36-38	1.50		Silty Clay,w/fer stains,Stiff,Yellowish brown & gray	C L	19.2	106.1	126.5	35.0	18.0							1.18
19	38-40	1.75		Silty Clay,w/fer stains & sand seams,Stiff, Yellowish brown & gray	C L	18.1											
20	40-42	2.50		Silty Clay,w/fer stains & silt seams & clay pockets,Very stiff,Red & gray	C L	19.6											

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

Project: Neches River Saltwater Barrier

SUMMARY OF LABORATORY TEST RESULTS

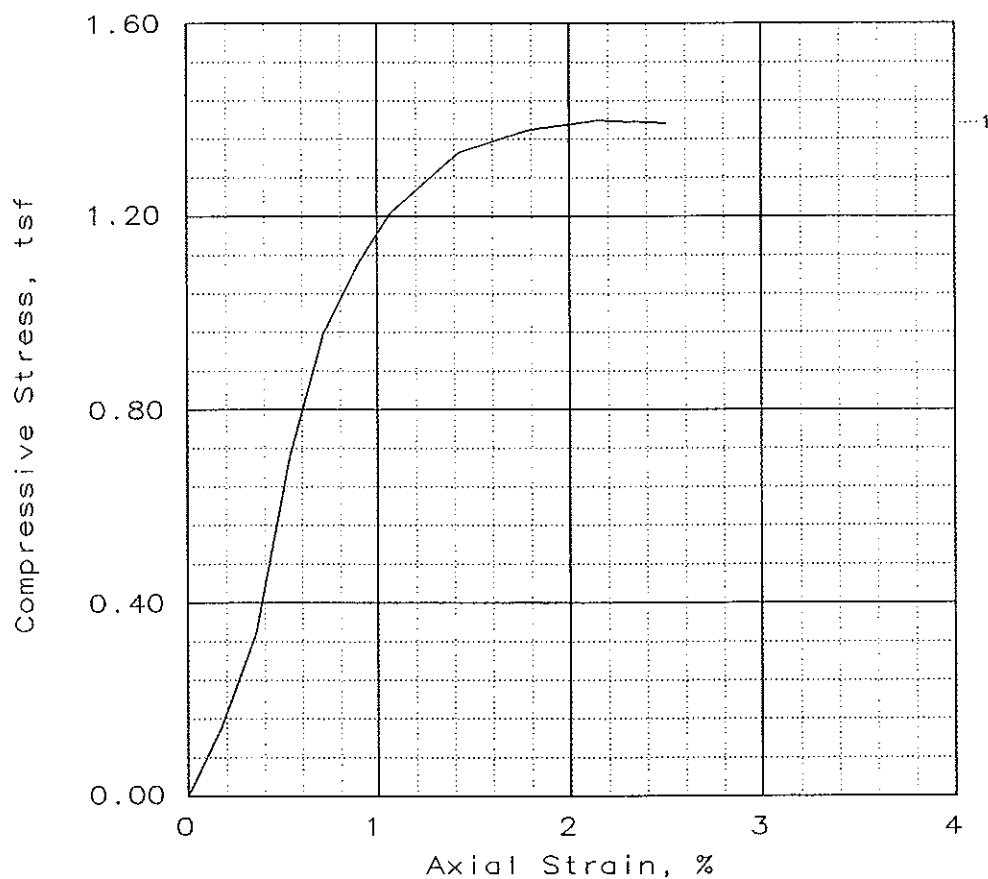
Contract No. DACW64-98-D-0002 Delivery Order No. 0010

Boring No. 99-4

[illegible]

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

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	1.40			
Undrained shear strength, tsf	0.70			
Failure strain, %	2.1			
Strain rate, %/min	1.07			
Water content, %	19.4			
Wet density, pcf	128.2			
Dry density, pcf	107.4			
Saturation, %	95.2			
Void ratio	0.5404			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay, w/calc nod&fer stains, Stiff, Gray

ASS. GS= 2.65 Type: Undisturbed

Project No.: 1140114813

Date: 7-12-99

Remarks:

Client: U.S Army Corps of Engineers

Galveston District Office

Project: Neches River Saltwater Barrier

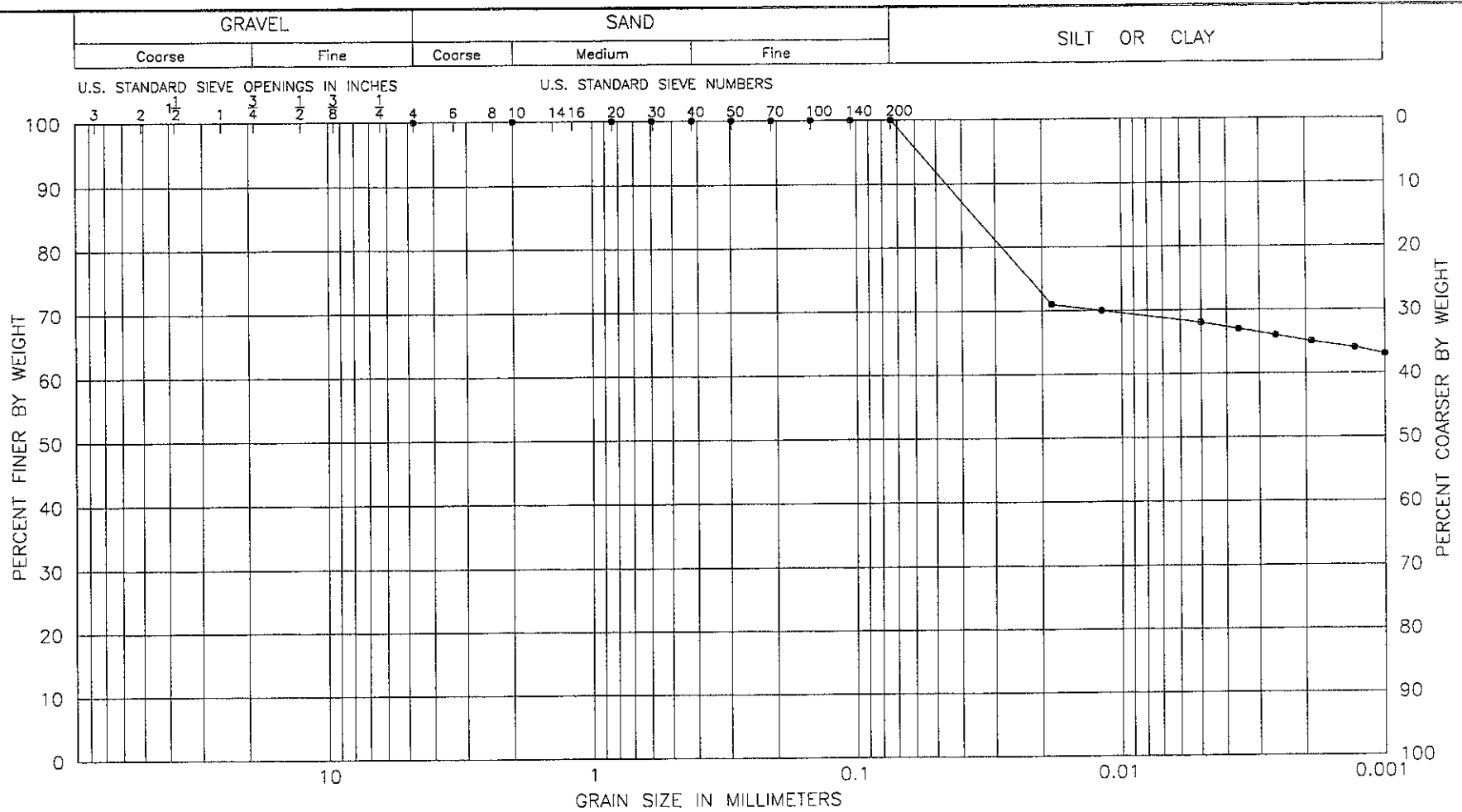
Location: Boring No. 99-4

Sample No. 11 Depth: 22-24 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: ———



LEGEND

BORING
NO.

SAMPLE
NO.

DEPTH
FT.

SAMPLE DESCRIPTION

99-4

3

4-6

Clay,w/decayed wood & roots,gray

GRAIN SIZE DISTRIBUTION CURVES

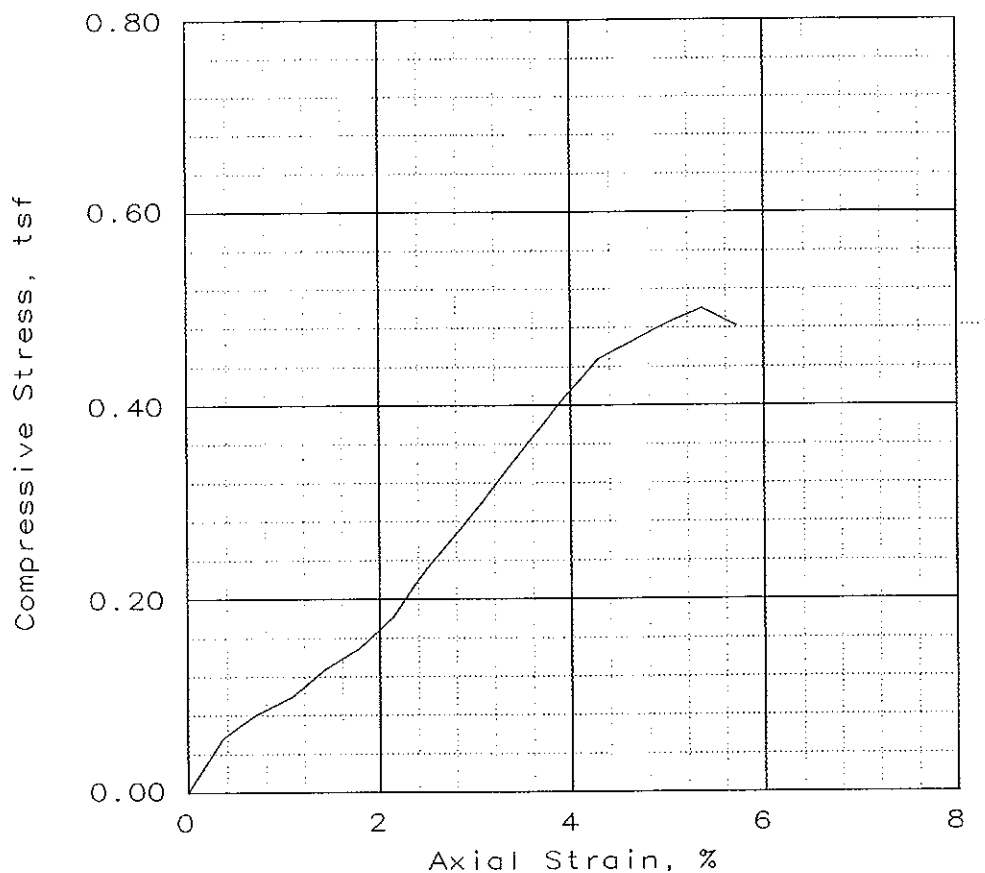
SUMMARY OF LABORATORY TEST RESULTS

Project: Neches river Saltwater barrier
Contract No. DACW64-98-D-0002

Boring No.	S#	Visual Classification	U S C	Mechanical Analysis																	
				% Passing																	
				#2	#1 1/2	#1	#1/2	#3/4	#3/8	#4	#8	#10	#16	#20	#30	#40	#50	#70	#100	#140	#200
99-1	5	Sandy Silt,w/decayed wood & sand,very loose,gray	ML	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.8	99.6	98.2	87.4	68.3	50.3
99-1	8	Sand,w/decayed wood & silt,loose, gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	95.6	82.3	54.9	27.1	14.4	10.4	9.1	8.3	7.6
99-2	9	Sand,w/decayed wood,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.6	98.2	94.7	80.1	38.6	7.6	4.3	3.7	3.3
99-3	8	Sand,w/pea gravel,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.8	98.9	96.6	90.3	74.7	43.5	5.5	1.7	1.3	1.2
99-4	8	Silty Sand,w/roots,loose,gray	SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.3	97.4	89.7	69.7	46.7	33.0	27.8	23.7	
99-5	7	Sand,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.5	97.3	88.3	63.6	28.4	6.7	4.5	4.0	3.7	
99-5	8	Sand,w/pea gravel,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	99.6	98.9	98.4	98.1	95.7	87.7	66.6	37.6	16.1	5.6	3.7	3.3	3.1
99-6	11	Sand,w/decayed wood & pea gravel,medium dense gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	99.5	98.0	97.1	91.3	83.2	69.8	53.8	31.6	10.3	6.4	5.1	3.9
99-7	5	Sand,w/silt,loose,gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	99.8	98.6	98.1	95.4	87.4	69.6	46.5	28.1	13.8	7.8	6.3	5.7
99-7	7	Sand,w/silt & pea gravel, medium dense, gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.7	92.3	73.1	44.9	23.0	9.9	6.3	5.6	5.2
99-8	5	Sand,w/pea gravel, loose, gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	99.7	98.8	98.1	93.0	79.7	53.1	28.1	18.1	10.6	6.3	5.4	4.9
99-8	7	Sand, w/decayed wood & gravel,medium dense, gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	98.5	91.2	77.4	54.4	32.2	17.8	10.2	8.1	7.1	6.5
99-8	15	Clayey Silt,w/sand,medium dense,yellowish gray	ML	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.8	99.5	93.3	82.2	64.6
99-10	6	Sand,loose,gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.2	92.6	78.6	50.2	27.4	14.1	8.4	6.5	5.4
99-10	8	Sand,w/silt,clay pockets,medium dense,gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.1	91.3	71.5	42.1	20.2	10.9	9.0	8.0	7.2
99-10	13	Silt,medium dense,yelllowish brown & gray	ML	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.9	99.9	99.9	99.8	98.7
99-11	6	Sity Sand,medium dense,gray	SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.3	96.4	76.6	32.5	18.7	14.3

S#: Sample Number, U S C: Unified Soil Classification

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	0.50			
Undrained shear strength, tsf	0.25			
Failure strain, %	5.4			
Strain rate, %/min	1.07			
Water content, %	19.6			
Wet density, pcf	130.1			
Dry density, pcf	108.8			
Saturation, %	97.5			
Void ratio	0.5373			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay, w/silt & sand sms, Medium stiff, Gray

LL = 27	PL = 16	PI = 11	ASS. GS= 2.68	Type: Undisturbed
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Project No.: 1140114810

Date: 6-5-99

Remarks:

Assumed Specific gravity

Client: U.S Army Corps of Engineers

Galveston office District

Project: Neches River Saltwater Barrier

Location: Boring No. 99-4

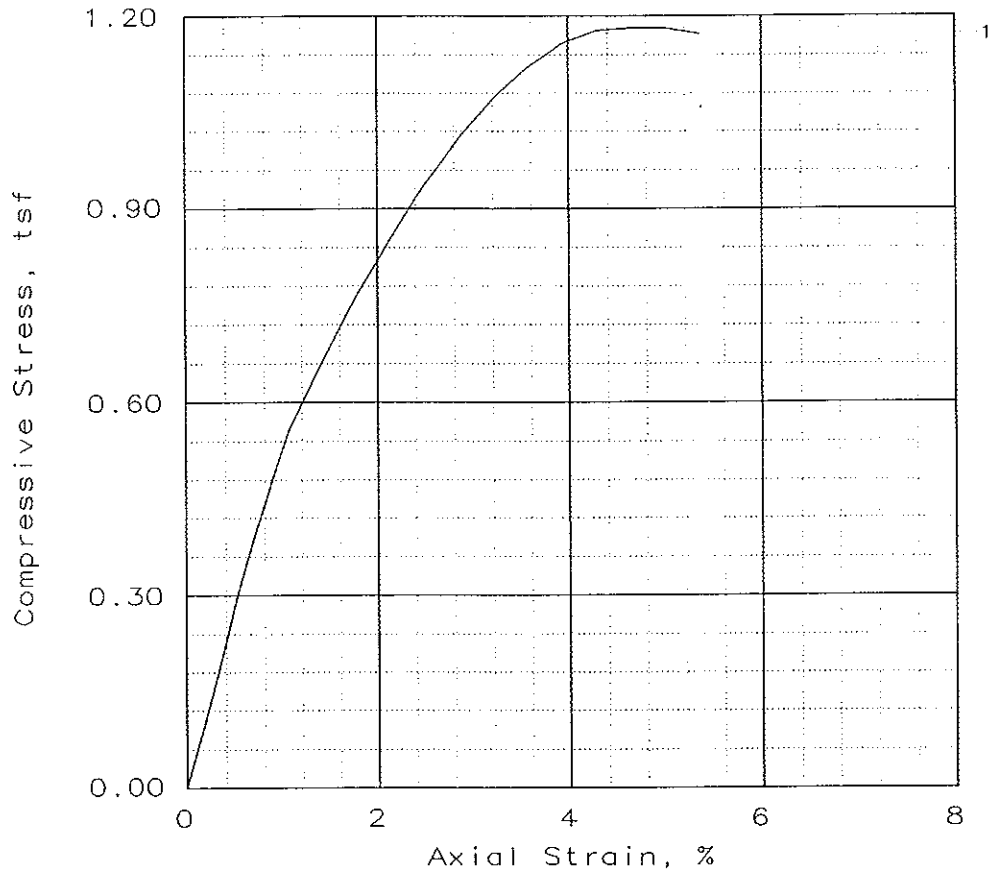
Sample No. 12 Depth: 24-26 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: _____

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	1.18			
Undrained shear strength, tsf	0.59			
Failure strain, %	4.6			
Strain rate, %/min	1.07			
Water content, %	19.2			
Wet density, pcf	126.5			
Dry density, pcf	106.1			
Saturation, %	89.2			
Void ratio	0.5770			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay, w/fer stains, Stiff, Yellowish Bn&Gy

LL = 35	PL = 18	PI = 17	ASS. GS= 2.68	Type: Undisturbed
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Project No.: 1140114810

Date: 6-5-99

Remarks:

Assumed Specific gravity

Client: U.S Army Corps of Engineers

Galveston office District

Project: Neches River Saltwater Barrier

Location: Boring No. 99-4

Sample No. 18 Depth: 36-38 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: _____

