REVIEWED BY LAA DATE 2/14/95
REVIEWED BY [illegible] DATE 2/14/95

3/13/95

SUMMARY OF QUESTIONABLE ERRONEOUS OR MISSING DATA FOR CONTRACT NO. DACW64-94-C-0040

PROJECT: SOILS TESTING, HOUSTON-GALVESTON NAVIGATION CHANNEL

BORING NO.	SAMPLE NO.	COMMENTS ON DRILLING RESULTS
~~93-82~~	5,7	Torvane results given, samples sent to SWD → TORVANES WERE DONE IN THE FIELD
93-83	~~7,11,13~~	Torvane results given, samples sent to SWD
	23	Unconfined results recorded on lab summary sheet as .97 on test report sheet as .98
93-85	27	MC ordered, not performed
93-88	6	PP results not given, Unconfined results lab summary sheet as .12 on test report as .11
93-89	2	Blow counts indicate loose instead of very loose ✓
93-93	4	PP (.25) indicates soft instead of medium ✓
93-96	4	Unconfined results recorded on lab summary as .15 on test report .36 ✓
	18	Blow counts given, not recorded on field logs

Corrected on my copy LB

JOB NO. 14G783-4 DATE 8/29/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-96 SAMPLE NO. 4 DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Very soft,w/ shell fragments

Tare No.	W-15	Height	5.595 in.
Tare plus Wet Specimen	394.40 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	289.35 gm	Initial Area	6.290 sq in.
Water Weight	105.05 gm	Volume	35.194 cu in.
Tare Weight	42.67 gm	Volume of Solids	cu in.
Wet Specimen	994.20 gm	Void Ratio	
Dry Specimen	697.27 gm	Saturation	%
Water Content	42.59 %	Dry Density	75.5 lb/cu ft

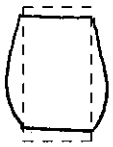
Specific Gravity of Solids
LL = 81 PL = 28 PI = 53

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

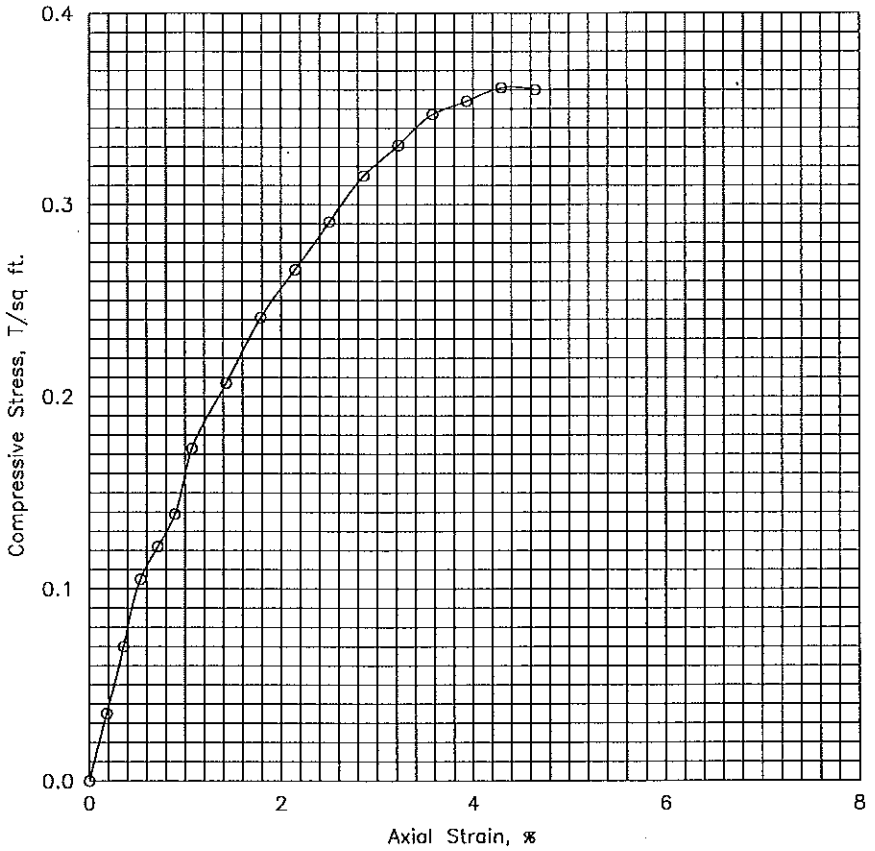
Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	4.0	3.1	.002	6.30	.035
.3	20.	.020	8.0	6.1	.004	6.31	.070
.5	30.	.030	12.0	9.2	.005	6.32	.105
.7	40.	.040	14.0	10.7	.007	6.34	.122
.9	50.	.050	16.0	12.3	.009	6.35	.139
1.0	60.	.060	20.0	15.3	.011	6.36	.173
1.4	80.	.080	24.0	18.4	.014	6.38	.207
1.8	100.	.100	28.0	21.4	.018	6.40	.241
2.1	120.	.120	31.0	23.7	.021	6.43	.266
2.4	140.	.140	34.0	26.0	.025	6.45	.291
2.7	160.	.160	37.0	28.3	.029	6.48	.315
3.1	180.	.180	39.0	29.9	.032	6.50	.331
3.4	200.	.200	41.0	31.4	.036	6.52	.347
3.7	220.	.220	42.0	32.2	.039	6.55	.354
4.0	240.	.240	43.0	32.9	.043	6.57	.361
4.4	260.	.260	43.0	32.9	.046	6.60	.360

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain



Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	42.6 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	75.5			
Time to failure, min		t_f	4.03			
Unconfined compressive strength, T/sq ft		q_u	.36			
Undrained shear strength, T/sq ft		S_u	.18			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Gray,Clay,Very soft,w/ shell fragments

LL	PL	PI	G_s
81	28	53	

Remarks

Project Houston-Galvaston Navigation Channel

Area Houston, Texas

Boring No. 93-96 | Sample No. 4

Depth El 6-8 ft | Date 8/29/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

PLATE XI-2

JOB NO. 14G783-4 DATE 8/29/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-96 SAMPLE NO. 8 DEPTH 14-16 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Soft,w/ shell fragments

Tare No.	Ge-7	Height	5.595 in.
Tare plus Wet Specimen	374.49 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	253.04 gm	Initial Area	6.290 sq in.
Water Weight	121.45 gm	Volume	35.194 cu in.
Tare Weight	42.43 gm	Volume of Solids	cu in.
Wet Specimen	948.53 gm	Void Ratio	
Dry Specimen	601.61 gm	Saturation	%
Water Content	57.67 %	Dry Density	65.1 lb/cu ft

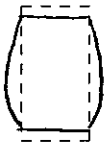
Specific Gravity of Solids
LL = 80 PL = 26 PI = 54

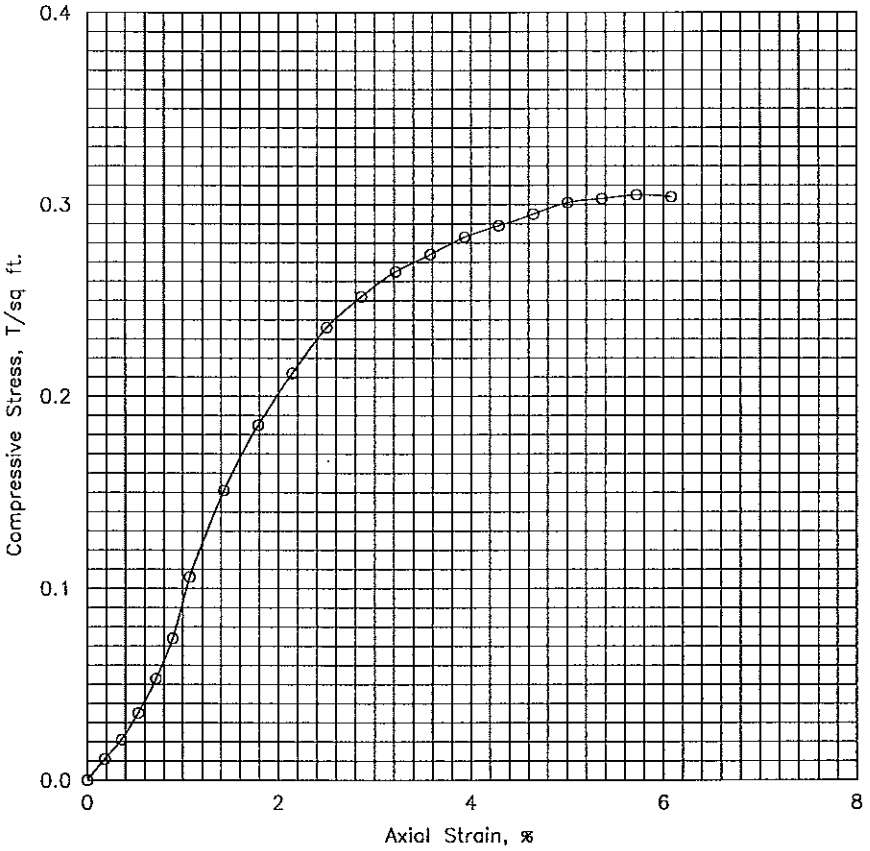
Proving Ring No. 17015
Proving Ring Constant, K = .311 lbs/div.

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	3.0	.9	.002	6.30	.011
.3	20.	.020	6.0	1.9	.004	6.31	.021
.5	30.	.030	10.0	3.1	.005	6.32	.035
.7	40.	.040	15.0	4.7	.007	6.34	.053
.8	50.	.050	21.0	6.5	.009	6.35	.074
1.0	60.	.060	30.0	9.3	.011	6.36	.106
1.4	80.	.080	43.0	13.4	.014	6.38	.151
1.7	100.	.100	53.0	16.5	.018	6.40	.185
2.0	120.	.120	61.0	18.9	.021	6.43	.212
2.4	140.	.140	68.0	21.1	.025	6.45	.236
2.7	160.	.160	73.0	22.7	.029	6.48	.252
3.0	180.	.180	77.0	23.9	.032	6.50	.265
3.3	200.	.200	80.0	24.8	.036	6.52	.274
3.7	220.	.220	83.0	25.8	.039	6.55	.283
4.0	240.	.240	85.0	26.4	.043	6.57	.289
4.3	260.	.260	87.0	27.0	.046	6.60	.295
4.6	280.	.280	89.0	27.6	.050	6.62	.301
5.0	300.	.300	90.0	28.0	.054	6.65	.303
5.3	320.	.320	91.0	28.3	.057	6.67	.305
5.6	340.	.340	91.0	28.3	.061	6.70	.304

Job No. 14G783-4

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	57.7 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	65.1			
Time to failure, min		t_f	5.28			
Unconfined compressive strength, T/sq ft		q_u	.31			
Undrained shear strength, T/sq ft		S_u	.15			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Gray,Clay,Soft,w/ shell fragments

LL	80	PL	26	PI	54	G_s	

Remarks

Project Houston-Galvaston Navigation Channel

Area Houston, Texas

Boring No. 93-96 | Sample No. 8

Depth El 14-16 ft | Date 8/29/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G783-4 DATE 8/29/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-96 SAMPLE NO. 14 DEPTH 38-40 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Very soft,Sandy,w/ shell fragments

Tare No.	KL-6	Height	5.595 in.
Tare plus Wet Specimen	379.82 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	310.87 gm	Initial Area	6.290 sq in.
Water Weight	68.95 gm	Volume	35.194 cu in.
Tare Weight	42.49 gm	Volume of Solids	cu in.
Wet Specimen	1097.56 gm	Void Ratio	
Dry Specimen	873.22 gm	Saturation	%
Water Content	25.69 %	Dry Density	94.5 lb/cu ft

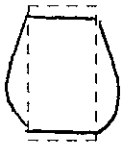
Specific Gravity of Solids
LL = 34 PL = 18 PI = 16

Proving Ring No. 17015
Proving Ring Constant, K = .311 lbs/div.

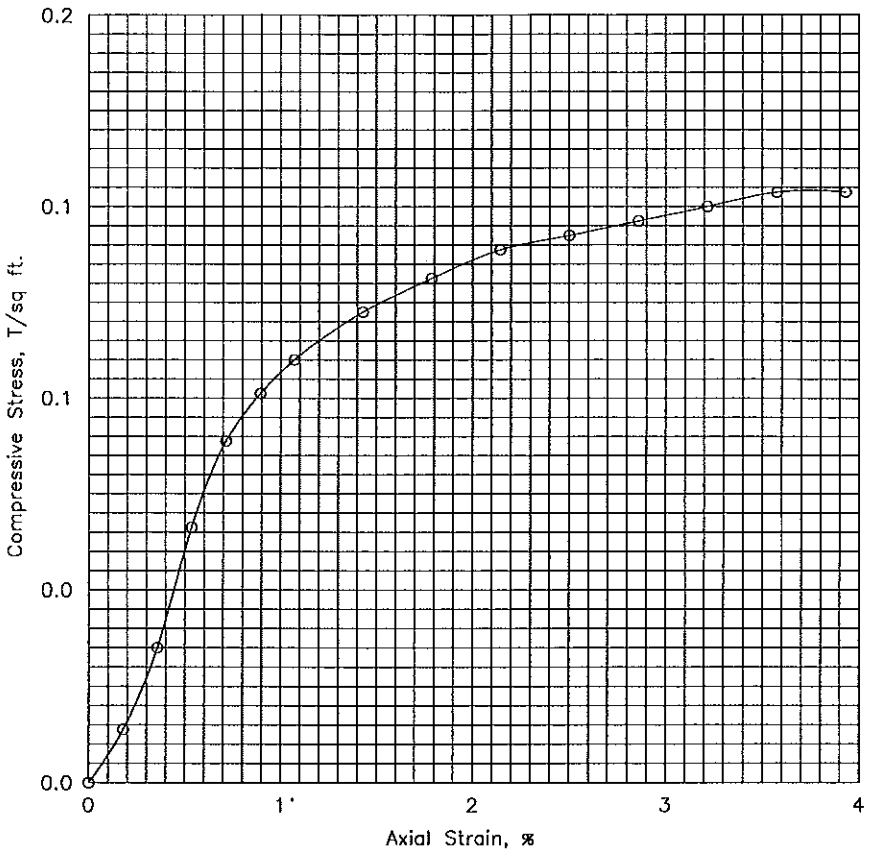
Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	3.0	.9	.002	6.30	.011
.3	20.	.020	8.0	2.5	.004	6.31	.028
.5	30.	.030	15.0	4.7	.005	6.32	.053
.7	40.	.040	20.0	6.2	.007	6.34	.071
.8	50.	.050	23.0	7.1	.009	6.35	.081
1.0	60.	.060	25.0	7.8	.011	6.36	.088
1.4	80.	.080	28.0	8.7	.014	6.38	.098
1.7	100.	.100	30.0	9.3	.018	6.40	.105
2.0	120.	.120	32.0	9.9	.021	6.43	.111
2.4	140.	.140	33.0	10.2	.025	6.45	.114
2.7	160.	.160	34.0	10.6	.029	6.48	.117
3.0	180.	.180	35.0	10.9	.032	6.50	.120
3.3	200.	.200	36.0	11.2	.036	6.52	.123
3.7	220.	.220	36.0	11.2	.039	6.55	.123

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain



Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	25.7 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	94.5			
Time to failure, min		t_f	3.35			
Unconfined compressive strength, T/sq ft		q_u	.12			
Undrained shear strength, T/sq ft		S_u	.06			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Gray,Clay,Very soft,Sandy,w/ shell fragments

LL	PL	PI	G_s
34	18	16	

Remarks

Project Houston-Galvaston Navigation Channel

Area Houston, Texas

Boring No. 93-96 | Sample No. 14

Depth El 38-40 ft | Date 8/29/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

PLATE XI-2

Geotest Engineering, Inc.

PLATE

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-96 DATE: BEGIN 7-28-94 PAGE 1 / 2
JOB NO. 946783-1 COMPLETE 7-28-94 Thin Walled Tube
PROJECT HOUSTON-GALVESTON Navigation channel ■ 3" □ 6"
LOCATION Disposal Area # 15
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Arco K4x4, C-1000 Marsh Buggy
GROUNDWATER: DEPTH 0 ft., ELEV. ____ ft., at end of Drilling
WEATHER Sunny and Hot 95°
DRILLER David Dragenk LOGGER Willie Barnes

Torvane Reading	DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT. BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
	0		1	2.25	Brown	Clay	V stiff		W/sand pockets
			2	.75	Gray	Clay	M. stiff		Calcarous Nodules W-Ferrous Nodules
0.1	5		3	0.40/0.52	Gray	Clay	V. Soft		
0.1			4	0.02/0.02	Gray	Clay	V. Soft		
0.03			5	0.06/0.06	Gray	Clay	V. Soft		W/wood
0.03	10		6	0.06/0.06	Gray	Clay	V. Soft		
0.03			7	0.00/0.06	Gray	Clay	V. Soft		
0.1	15		8	0.00/0.02	Gray	Clay	V. Soft	Sandy	
			9	M.H	Gray	Sand	V. Loose	Silty	W/Shell fragments
	20		10	1/1/1	Gray	Sand	V. Loose	Silty	
	25		11	3/3/3	Gray	Sand	Loose	Silty	
	30		12	2/2/2	Gray	Sand	Loose		
0.55	35		13	0.00/0.11	Gray	Clay	V. Soft	Sandy	

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-96 DATE: BEGIN 7-23-94 PAGE 2 / 2
JOB NO. 946783.1 COMPLETE 7-23-94 Thin Walled Tube
PROJECT Houston-Galveston Navigation channel ■ 3" □ 6"
LOCATION Disposal Area #15
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Ardco K4x4, C-1000 Marsh Buggy
GROUNDWATER: DEPTH 0 ft., ELEV. ____ ft., at end of Drilling
WEATHER Sunny and Hot 95°
DRILLER David DeGroot LOGGER Willie Barnes

Torvane Reading	DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
	35								
0.40			13	0.00 / 0.02	Gray	Clay	V.Soft	Sandy	W/Shell fragments
0.55		U	14	0.00 / 0.11	Gray	Clay	V.Soft	Sandy	
	40								
0.55			15	0.00 / 0.11	Gray	Clay	V.Soft	Sandy	
0.50			16	0.00 / 0.10	Gray	Clay	V.Soft	Sandy	
0.50	45		17	0.00 / 0.10	Gray	Clay	V.Soft	Sandy	
		X	18		Gray	Sand	Loose	Silty	
	50								Clay @ 51'
			19	.75	Gray	Clay	M.Stiff		
			20	.75	Gray	Clay	M.Stiff		
	55								
			21	1.0	Gray	Clay	M.Stiff		
			22	1.0	Gray	Clay	Stiff		
	60	X	23	2/2/3	Gray	Sand	Loose	Clayey	
									Torvane Multiplier 0.2
									W.O.H: Weight of Hammer
	65								
	70								

GEOTEST ENGINEERING, INC.

Project: [illegible]on-Galveston Navigation Channel

SUMM[illegible] OF LABORATORY TEST RESULTS

Contract No. DACW64-94-C-0040

Boring No. 93-96

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	1.75		Brown & gray,Clay,Stiff,w/sand pockts and gravel	C H	28.6											
2	2 - 4	0.75		Gray,Clay,Medium stiff,w/ferrous stains	C H	31.6											
3	4 - 6	0.00		Gray,Clay,Very soft,w/shell fragments	C H	32.3											
4	6 - 8	0.00		Gray,Clay,Very soft,w/shell fragments	C H	42.6	75.5	107.7	81	28	100.0	99.9	99.8	99.4	98.4		~~0.15~~ .36
5	8 - 10	0.00		Gray,Clay,Very soft,w/shell fragments	C H	30.7											
6	10 - 12	0.00		Gray,Clay,Very soft CONSOL See SWD report 16162	C H	55.1	70		92	26							
7	12 - 14	0.00		Gray,Clay,Very soft DS See SWD report 16162	C H	48.1	73		75	22							
8	14 - 16	0.25		Gray,Clay,Soft,w/shell fragments	CH	57.7	65.1	102.7	80	26	100.0	100.0	99.9	99.7	98.4		0.31
9	16-17.5		W.O.H	Gray,Sand,Very loose,Silty,w/shell fragments	S M												
10	21-22.5		3	Gray,Sand,Very loose,Silty,w/shell fragments	S M						98.8*	98.1*	94.9*	64.6	13.1		
11	26-27.5		6	Gray,Sand,Loose,Silty,w/shell fragments	S M												
12	31-32.5		4	Gray,Sand,Loose,Silty,w/shell fragments	S M												
13	34-36	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	26.6											
13A	36-38	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	22.2											
14	38-40	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	25.7	94.5	118.8	34	18	96.4*	96.0*	92.8*	70.2	68.1		0.12
15	40-42	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	23.4											
16	42-44	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	25.0											
17	44-46	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	26.9											
18	46-47.5		9	Gray,Sand,Loose,Silty,w/shell fragments	S M												
19	51-53	0.75		Gray,Clay,Medium stiff	C H	19.7											

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
*: Material retained are shell fragments

Project: ...on-Galveston Navigation Channel

SUM... OF LABORATORY TEST RESULTS

Contract No. DACW64-94-C-0040

Boring No. 93-96

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		
20	53-55	0.75		Gray,Clay,Medium stiff,Sandy	CL	25.4	100.8	126.3	48	19	100.0	100.0	99.9	96.2	72.9		
21	55-57	1.25		Gray,Clay,Stiff,Sandy	CL	20.9											
22	57-59	1.25		Gray,Clay,Stiff,Sandy	CL	16.9											
23	59-60.5		5	Gray,Sand,Loose,Silty	S M												

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