13K11

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 91-45 DATE: BEGIN 03-11-91 PAGE 1 / 1
JOB NO. 14G 446 COMPLETE 03-11-91 Thin Walled Tube
PROJECT CHANNEL TO VICTORIA ☑ 3" ☐ 6"
LOCATION VICTORIA CHANNEL
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG F-36
GROUNDWATER: DEPTH 3 ft., ELEV. ft., at end of Drilling
WEATHER PARTLY CLOUDY
DRILLER Robert Tarkersley LOGGER John A. Henley

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0		1	3.0	GRAY	CLAY	VERY STIFF		-W/ ROOTS 0'-2'
		2	2.25	"	"	"		
5		3	1.0	" *	"	STIFF		* TAN
		4	1.0	"	"	"		
		5	1.5	"	"	"		-W/SAND SEAMS 8'-12'
10		6	1.25	"	"	"		
		7	0.25	GRAY	"	SOFT	VERY SANDY	-
15		8	0.5	"	"	Medium STIFF	"	-W/SHELL FRAGMENTS 14'-18'
		9	0.5	"	"	"	"	
20	X	10	1/1	GRAY	SAND	very LOOSE		+SILTY FINE -W/SHELL FRAGMENTS
25	X	11	1/1	"	"	"		
30		12	0.25	GRAY	CLAY	SOFT		W/ SAND LAYERS BELOW 28'
		13	0.25	"	"	"		
		14	0.5	"	"	MEDIUM STIFF		
35		15	0.5	"	"	"		BOTTOM OF 9145

WASH TO 28'

GEOTEST ENGINEERING, INC.

Project : Channel enlargement channel to Victoria, Victoria, Texas

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 91-45 El. 5.5' NGVD

Contract No. DACW64-91-D-0001 Delivery Order No.0009

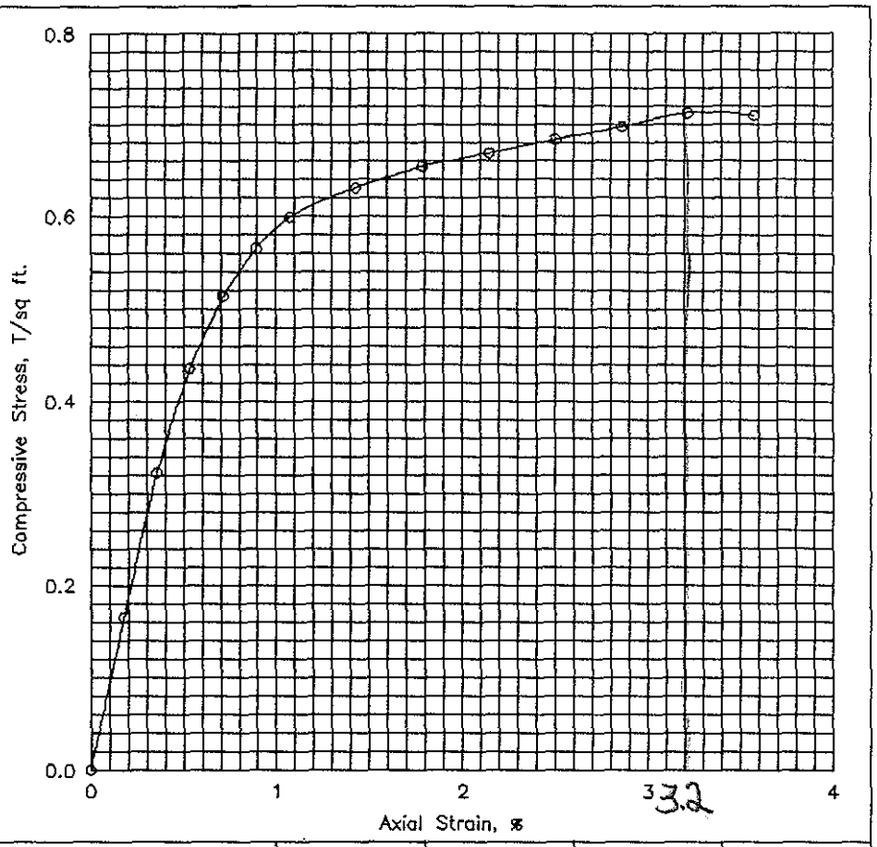
S #	Depth (ft)	P P (tsf)	SPT Blows per Foot	Visual Classification	U S C	M c (%)	Dry Unit Wt (pcf)	Wet Unit Wt (pcf)	L L (%)	P L (%)	Mechanical Analysis % Passing #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
1	0-2	2.00		Dark gray,Clay,Very stiff,w/roots	CH	35.9											
2	2-4	2.25		Yellowish brown,Clay,Very stiff	CH	33.0											
3	4-6	1.25		Dark gray,Clay,Stiff	CH	32.0	91.0	120.1	62	22	100.0	100.0	99.7		99.2		.72
4	6-8	1.00		Gray&yellowish brown,Clay,Stiff	CH	28.4											
5	8-10	0.25		Gray&yellowish brown,Clay,Soft,w/sand parting	CH	40.0											
6	10-12	0.25		Gray&yellwish brown,Clay,Soft	CH	37.1											
7	12-14	0.50		Dark gray,Clay,Medium stiff,Sandy,w/shell fragments	CL	35.1											
8	14-16	0.50		Dark gray,Clay,Medium stiff,Sandy,w/shell fragments	CL	18.0											
9	16-18	0.75		Dark gray,Sand,Medium dense,Clayey,w/shell fragments	ML-CL	19.6	112.2	134.1	15	10	97.3	97.3	92.8		30.4		.38
10	18.5-20		2	Gray,Sand,Very loose,Silty	S M												
11	23.5-25		2	Gray,Sand,Very loose,Silty	S M						98.2	97.6	92.0		20.7		
12	28-30	0.50		Gray,Clay,Medium stiff,w/shell fragments and sand pockets	CH	37.8										0.35 .70	
13	30-32	1.00		Gray&dark gray,Clay,Stiff,Sandy,w/sand pockets and calcareous nodules	CL	22.2	105.7	129.2	24	13	97.1	97.1	95.2		45.6	0.10 .20	
14	32-34	0.50		Gray&dark gray,Clay,Medium stiff,w/calcareous-nodules	CH	49.0										0.20 .40	
15	34-36	0.25		Dark gray,Clay,Soft,w/organic material	CH	55.6	67.5	105.1	68	27	100.0	100.0	100.0		100.0	0.20 .40	.18

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

Job No. 14G459

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	31.9 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	91.0			
Time to failure, min		t_f	4.07			
Unconfined compressive strength, T/sq ft		q_u	.71			
Undrained shear strength, T/sq ft		S_u	.36			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Dark gray, Clay, Stiff

LL	PL	PI	G_s
62	22	40	

Remarks

Project CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA

Area Victoria, Texas

Boring No. 91-45 | Sample No. 3

Depth 4-6 ft | Date 4/28/91

El

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G459 DATE 4/28/91

PROJECT CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA, TEXAS

BORING NO. 91-45 SAMPLE NO. 9 DEPTH 16-18 ft

SPECIMEN NO. 1

CLASSIFICATION
Dark gray, Sand, Medium dense, Clayey, w/ shell fragments

Tare No.	P-20	Height	5.595 in.
Tare plus Wet Specimen	774.77 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	655.01 gm	Initial Area	6.290 sq in.
Water Weight	119.76 gm	Volume	35.194 cu in.
Tare Weight	42.59 gm	Volume of Solids	cu in.
Wet Specimen	1239.09 gm	Void Ratio	
Dry Specimen	1036.42 gm	Saturation	%
Water Content	19.56 %	Dry Density	112.2 lb/cu ft

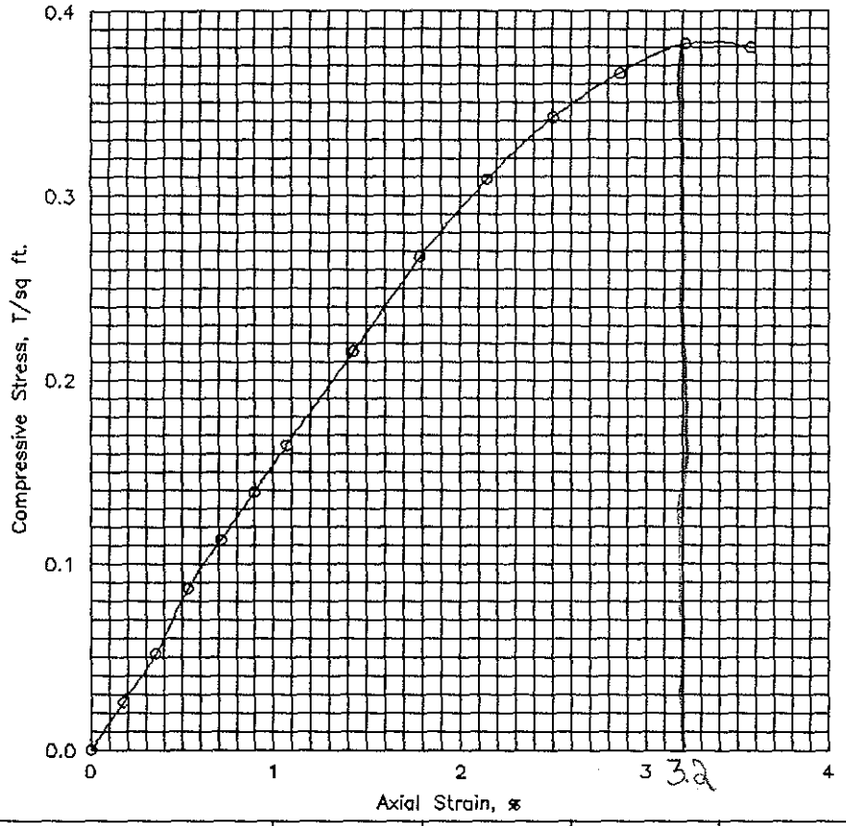
Specific Gravity of Solids
LL = 15 PL = 10 PI = 5

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	3.0	2.3	.002	6.30	.026
.5	20.	.020	6.0	4.6	.004	6.31	.052
.8	30.	.030	10.0	7.7	.005	6.32	.087
1.0	40.	.040	13.0	10.0	.007	6.34	.113
1.2	50.	.050	16.0	12.3	.009	6.35	.139
1.4	60.	.060	19.0	14.6	.011	6.36	.165
1.8	80.	.080	25.0	19.1	.014	6.38	.216
2.3	100.	.100	31.0	23.7	.018	6.40	.267
2.7	120.	.120	36.0	27.6	.021	6.43	.309
3.2	140.	.140	40.0	30.6	.025	6.45	.342
3.5	160.	.160	43.0	32.9	.029	6.48	.366
4.0	180.	.180	45.0	34.5	.032	6.50	.382
4.4	200.	.200	45.0	34.5	.036	6.52	.380

Job No. 14G459

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	19.6 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	112.2			
Time to failure, min		t_f	4.03			
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, Sand, Medium dense, Clayey, w/ shell fragments

LL	15	PL	10	PI	5	G_s	

Remarks

Project CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA

Area Victoria, Texas

Boring No. 91-45 | Sample No. 9

Depth El 16-18 ft | Date 4/28/91

UNCONFINED COMPRESSION TEST REPORT

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PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G459 DATE 4/28/91

PROJECT CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA, TEXAS

BORING NO. 91-45 SAMPLE NO. 15 DEPTH 34-36 ft

SPECIMEN NO. 1

CLASSIFICATION
Dark gray, Clay, Soft, w/ organic material

Tare No.	P-9	Height	5.595 in.
Tare plus Wet Specimen	477.92 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	322.32 gm	Initial Area	6.290 sq in.
Water Weight	155.60 gm	Volume	35.194 cu in.
Tare Weight	42.54 gm	Volume of Solids	cu in.
Wet Specimen	970.92 gm	Void Ratio	
Dry Specimen	623.92 gm	Saturation	%
Water Content	55.62 %	Dry Density	67.5 lb/cu ft

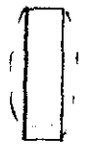
Specific Gravity of Solids
LL = 68 PL = 27 PI = 41

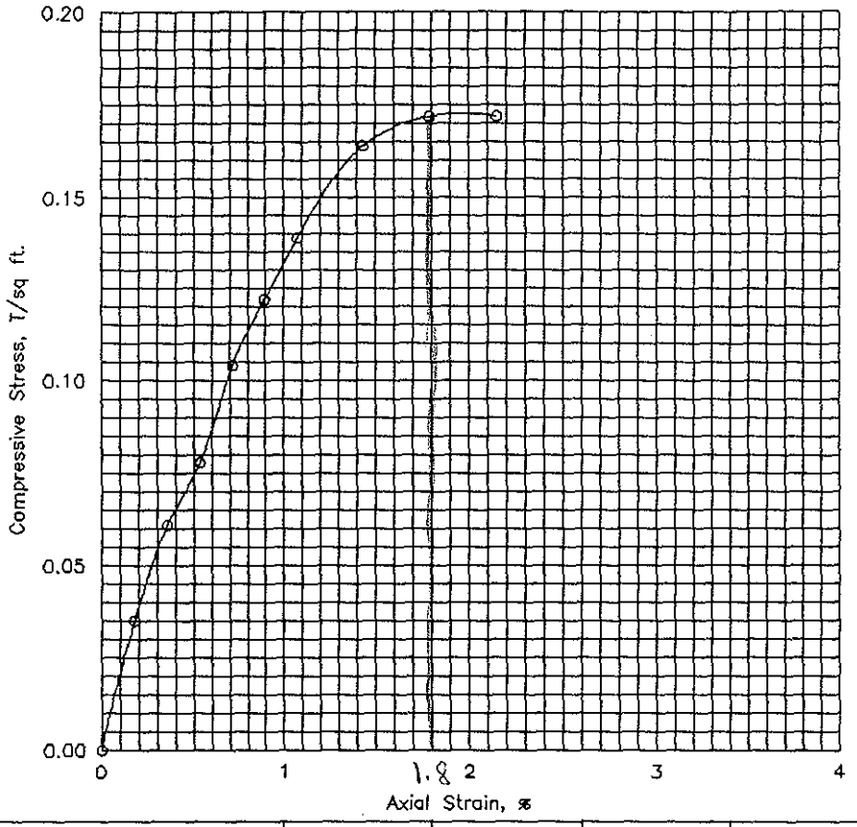
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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
.3	10.	.010	4.0	3.1	.002	6.30	.035
.5	20.	.020	7.0	5.4	.004	6.31	.061
.7	30.	.030	9.0	6.9	.005	6.32	.078
.9	40.	.040	12.0	9.2	.007	6.34	.104
1.2	50.	.050	14.0	10.7	.009	6.35	.122
1.4	60.	.060	16.0	12.3	.011	6.36	.139
1.8	80.	.080	19.0	14.6	.014	6.38	.164
2.2	100.	.100	20.0	15.3	.018	6.40	.172
2.7	120.	.120	20.0	15.3	.021	6.43	.172

Job No. 14G459

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	55.6 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	67.5			
Time to failure, min		t_f	2.17			
Unconfined compressive strength, T/sq ft		q_u	.17			
Undrained shear strength, T/sq ft		S_u	.09			
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/ organic material

LL	68	PL	27	PI	41	G_s	

Remarks

Project CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA

Area Victoria, Texas

Boring No. 91-45 | Sample No. 15

Depth El 34-36 ft | Date 4/28/91

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