

Project : Channel enlargement channel to Victoria, Victoria, Texas

SUMMARY OF LABORATORY TEST RESULTS

EL. 24.1 NGVD

Boring No. 91-8

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)	LL (%)	PL (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0-2	3.00		Dark gray, Clay, Very stiff, w/root	CH	19.2											
2	2-4	2.25		Dark gray, Clay, Very stiff, w/roots	CH	26.7	93.9	119.0	75	28	100.0	99.9	99.8		97.7		1.70
3	4-6	4.5+		Dark gray, Clay, Hard, w/roots	CH	22.8											
4	6-8	4.5+		Dark gray, Clay, Hard, w/roots	CH	22.8											
5	8-10	4.5+		Grayish brown, clay, Hard, Silty, w/calcareous nodules	CL	13.3											
6	10-12	4.5+		Grayish brown, Clay, Hard, Silty, w/silt pockets	CL	9.2											
7	12-14	4.5+		Grayish borwn, Clay, Hard, Silty, w/silt pockets and parting	CL	14.9	103.3	118.7	35	18	100.0	99.6	98.0		95.6		
8	14-16	3.75		Grayish brown, Clay, Very stiff, w/silt pockets and ferrous stains	CH	22.1											
9	16-18	2.00		Grayish brown, Clay, Very stiff, w/calcareous nodules	CH	25.3											
10	18-20	2.75		Dark gray, Clay, Very stiff	CH	24.4											
11	20-22	2.00		Dark gray, Clay, Very stiff	CH	36.9											
12	22-24	1.50		Dark gray, Clay, Stiff, w/calcareous nodules	CH	41.5											
13	24-26	1.50		Dark gray, Clay, Stiff, w/calcareous nodules	CH	37.1	83.5	114.5	74	26	100.0	99.8	97.0		96.1		.86
14	26-28	1.50		Dark gray, Clay, Stiff, w/soft calcareous nodule	CH	31.0											
15	28-30	1.50		Light gray & yellowish brown, Clay, Stiff, Sandy w/soft calcareous nodule	CL	23.2											
16	30-32	2.50		Light gray & yellowish brown, Clay, Very stiff, Sandy, w/calcareous nodule	CL	17.5	114.4	134.4									
17	32.5-34		12	Gray & yellowish brown, Sand, Medium dense, Silty	SM						99.1	98.7	92.2		17.9		

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

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JOB NO. 14G459

DATE 4/15/91

PROJECT CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA, TEXAS

BOXING NO. 91-08

SAMPLE NO. 2

DEPTH 2-4 ft

SPECIMEN NO. 1

CLASSIFICATION

Dark gray, clay, very stiff, with roots

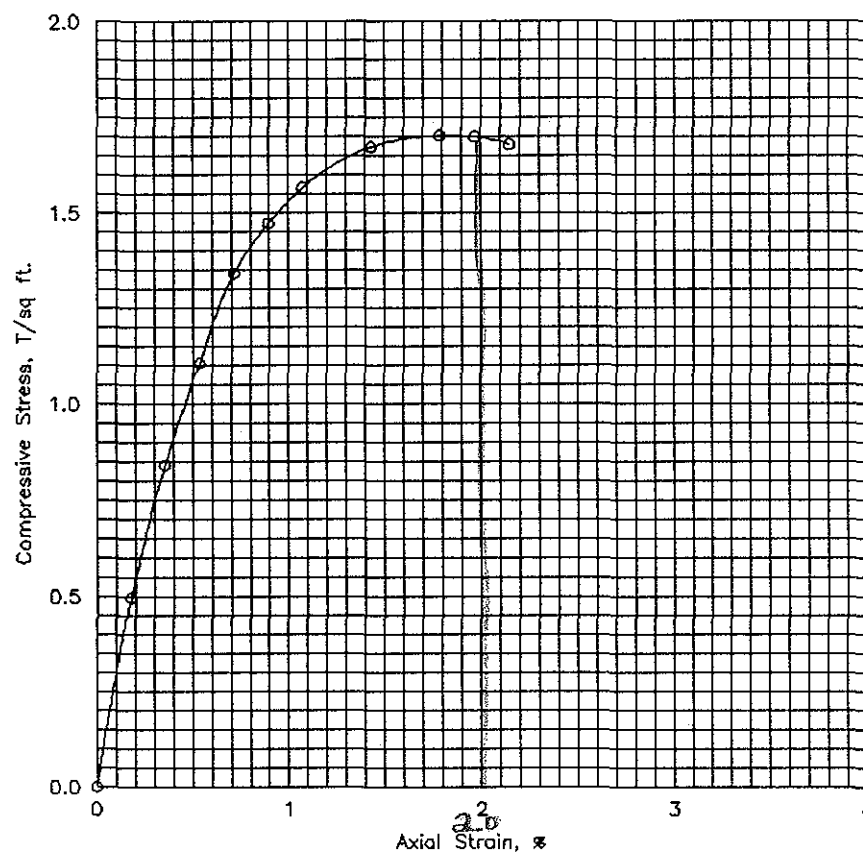
Tare No.	P-23	Height	5.595 in.
Tare plus Wet Specimen	862.32 gm	Average Diameter	2.810 in.
Tare plus Dry Specimen	689.68 gm	Initial Area	6.202 sq in.
Water Weight	172.64 gm	Volume	34.698 cu in.
Tare Weight	42.69 gm	Volume of Solids	cu in.
Wet Specimen	1083.54 gm	Void Ratio	
Dry Specimen	855.31 gm	Saturation	%
Water Content	26.68 %	Dry Density	93.9 lb/cu ft
Specific Gravity of Solids			
LL = 75	PL = 28	PI = 47	

Proving Ring No. 10170

Proving Ring Constant, K = .766 lbs/div.

Elapsed Time n.	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	6.20	.000
.2	10.	.010	56.0	42.9	.002	6.21	.497
.5	20.	.020	95.0	72.8	.004	6.22	.842
.7	30.	.030	125.0	95.8	.005	6.24	1.106
1.0	40.	.040	152.0	116.4	.007	6.25	1.342
1.1	50.	.050	167.0	127.9	.009	6.26	1.472
1.4	60.	.060	178.0	136.3	.011	6.27	1.566
1.6	80.	.080	191.0	146.3	.014	6.29	1.674
2.0	100.	.100	195.0	149.4	.018	6.31	1.703
2.2	110.	.110	195.0	149.4	.020	6.33	1.700
2.3	120.	.120	193.0	147.8	.021	6.34	1.680

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	26.7 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	93.9		
Time to failure, min		t_f	1.97		
Unconfined compressive strength, T/sq ft		q_u	1.70		
Undrained shear strength, T/sq ft		S_u	.85		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.810		
Initial specimen height, in.		H_0	5.595		
Classification Dark gray, clay, very stiff, with roots					
LL	75	PL	28	PI	47
		G_s			
Remarks		Project CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA			
		Area Victoria, Texas			
		Boring No. 91-08		Sample No. 2	
		Depth 2-4 ft		Date 4/15/91	
		UNCONFINED COMPRESSION TEST REPORT			

JOB NO. 14G459

DATE 4/15/91

PROJECT CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA, TEXAS

BORING NO. 91-08

SAMPLE NO. 13

DEPTH 24-26 ft

SPECIMEN NO. 1

CLASSIFICATION

Dark gray, clay, stiff, with calcareous nodules

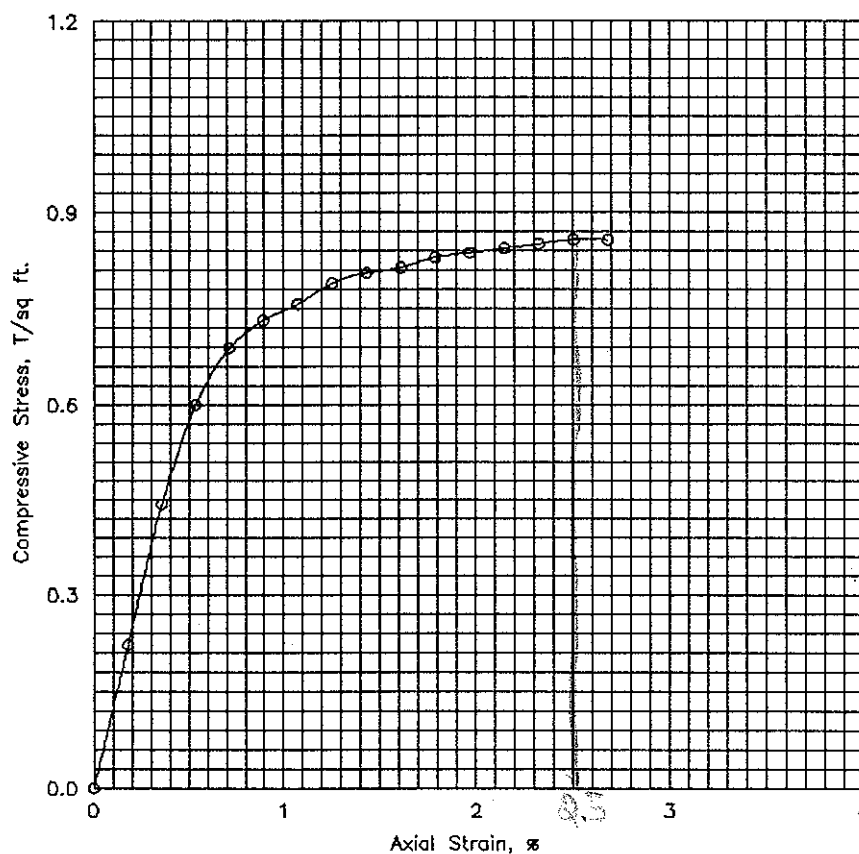
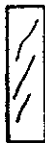
Tare No.	P-16	Height	5.595 in.
Tare plus Wet Specimen	732.11 gm	Average Diameter	2.810 in.
Tare plus Dry Specimen	545.52 gm	Initial Area	6.202 sq in.
Water Weight	186.59 gm	Volume	34.698 cu in.
Tare Weight	43.00 gm	Volume of Solids	cu in.
Wet Specimen	1042.56 gm	Void Ratio	
Dry Specimen	760.27 gm	Saturation	%
Water Content	37.13 %	Dry Density	83.5 lb/cu ft
Specific Gravity of Solids			
LL = 74	PL = 26	PI = 48	

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	6.20	.000
.2	10.	.010	25.0	19.1	.002	6.21	.222
.4	20.	.020	50.0	38.3	.004	6.22	.443
.6	30.	.030	68.0	52.1	.005	6.24	.601
.9	40.	.040	78.0	59.7	.007	6.25	.689
1.0	50.	.050	83.0	63.6	.009	6.26	.732
1.2	60.	.060	86.0	65.9	.011	6.27	.757
1.3	70.	.070	90.0	68.9	.013	6.28	.790
1.5	80.	.080	92.0	70.5	.014	6.29	.806
1.7	90.	.090	93.0	71.2	.016	6.30	.814
1.9	100.	.100	95.0	72.8	.018	6.31	.830
2.0	110.	.110	96.0	73.5	.020	6.33	.837
2.2	120.	.120	97.0	74.3	.021	6.34	.844
2.3	130.	.130	98.0	75.1	.023	6.35	.851
2.5	140.	.140	99.0	75.8	.025	6.36	.858
2.6	150.	.150	99.0	75.8	.027	6.37	.857

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	37.1 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	83.5		
Time to failure, min		t_f	2.52		
Unconfined compressive strength, T/sq ft		q_u	.86		
Undrained shear strength, T/sq ft		S_u	.43		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.810		
Initial specimen height, in.		H_0	5.595		
Classification Dark gray, clay, stiff, with calcareous nodules					
LL	74	PL	26	PI	48
				G_s	
Remarks		Project CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA			
		Area Victoria, Texas			
		Boring No. 91-08		Sample No. 13	
		Depth 24-26 ft		Date 4/15/91	
		UNCONFINED COMPRESSION TEST REPORT			

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET		SAMPLE NO.	SAMPLE NO.	PEN./TORVANE	SPT. - BLOW COUNT	BORING NO. <u>1-91-8</u> DATE: BEGIN <u>3-20-91</u> PAGE <u>1 / 1</u> JOB NO. <u>146446</u> COMPLETE <u>3-24-91</u> Thin Walled Tube PROJECT <u>Victoria Channel</u> ☒ 3" ☐ 6" LOCATION <u>Victoria Channel</u> ELEVATION OF HOLE _____ MANUFACTURER'S DESIGNATION OF DRILL RIG <u>Faling-36</u> GROUNDWATER: DEPTH <u>6'8"</u> ft., ELEV. _____ ft., at end of Drilling WEATHER <u>Windy, Warm, RAINY</u> DRILLER <u>W. De Moor</u> LOGGER <u>J. Berg</u>				
		COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS				
0		1	4.5+ GRAY	clay	hard		w/roots			
		2	3.0 GRAY	clay	very stiff					
5		3	4.5+ GRAY	clay	hard					
		4	4.5+ GRAY	"	"					
		5	4.5+ "	clay	"					
10		6	4.5+ GRAY	"	hard					
		7	4.5+ "	clay	"					
15		8	4.0 "	"	very stiff					
		9	3.0 "	"	very stiff					
20		10	3.5 GRAY	clay	"					
		11	2.0 "	"	stiff					
		12	1.5 "	"	stiff					
25		13	1.5 GRAY	clay	stiff					
		14	2.5 "	"	very stiff					
		15	2.0 "	"	stiff					
30		16	2.0 GRAY	clay	stiff	SAND				
		17	3.5/9 GRAY	Sand	Medium Dense		SAND AT 32'			
35										

ВКМ

GEOTEST ENGINEERING, INC.