U.S. ARMY CORPS OF ENGINEERS

BORING NO. 98-77 DATE: BEGIN 7-15-98 PAGE 1 / 1
JOB NO. 1140086157 COMPLETE 7-15-98 Thin Walled Tube
PROJECT Greens Bayou ■ 3" □ 6"
LOCATION along Greens Bayou
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG MAYHEW 200
GROUNDWATER: DEPTH Dry ft., ELEV. ____ ft., at end of Drilling
WEATHER PARTLY CLOUDY
DRILLER DEMPSEY GEARER LOGGER JOHN A. GENTRY

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0	J	1	4.25	GRAY	CLAY	HARD	SANDY	-w/ROOTS 0'-2'
		2	4.5+	GRAY	CLAY	HARD	SANDY	-w/Calcareous Nodules 2'-6' -w/Ferrous Nodules 2'-6'
5		3	2.75	GRAY	CLAY	VERY STIFF	SANDY	
		4	2.0	GRAY	CLAY	VERY STIFF	SANDY	
		5	3.0	GRAY & YELLOW	CLAY	VERY STIFF	SANDY	-w/Ferrous Nodules 5'-10'
10		6	2.5	GRAY RED & YELLOW	CLAY	VERY STIFF		-w/Ferrous STAINS 10'-14'
		7	3.75	RED & GRAY	CLAY	VERY STIFF		-w/Calcareous Nodules 12'
15		8	3.75	RED & GRAY	CLAY	VERY STIFF		-w/SLICKENSIDES 12'-20'
		9	4.5+	RED & GRAY	CLAY	HARD		-w/Ferrous Nodules 16'-20'
		10	4.5+	RED & GRAY	CLAY	HARD		
20								
25								
30								
35								* J = JAR SAMPLE

GEOTEST ENGINEERING, INC.

roject: Greens Bayou

SU OF LABORATORY TEST RESULTS

Contract No. DACW64-95-D-0007 Delivery Order No. 0047

Boring No. 97-77

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 #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)	
1	0 - 2	2.00		Sandy Clay,w/roots,Very stiff,Gray & Brown **(Fill Material 0-12')**	C L	14.0												
2	2 - 4	2.00		Sandy Clay,Very stiff,Gray	C L	14.6												
3	4 - 6	3.50		Sandy Clay,Very stiff,Gray	C L	15.4												
4	6 - 8	2.25		Sandy Clay,Very stiff,Gray	C L	15.5	106.7	123.2	25.0	17.0	99.6	96.7	95.1	86.0	69.8		2.18	18
5	8 - 10	3.75		Sandy Clay,Very stiff,Gray	C L	13.8												
6	10 - 12	3.25		Sandy Clay,Very stiff,Gray	C L	13.4												
7	12 - 14	3.75		Sandy Clay,Very stiff,Gray	C L	20.7												
8	14 - 16	2.50		Clay,w/calc & fer nod,Very stiff,Red & Gray	C H	25.2												
9	16 - 18	4.00		Clay,w/silt & sand seams,Very stiff,Red & Gray	C H	23.1	98.1	120.8	53.0	20.0	98.7	98.2	97.7	93.7	90.4		2.43	19
10	18 - 20	3.50		Clay,w/silt & sand seams,Very stiff,Red & Gray	C H	27.2												
11	20 - 22	4.5+		Clay,Hard,Red & Gray	C H	23.7												
12	22 - 24	4.5+		Clay,w/calc nod,slks,Hard,Red & Gray	C H	25.9												
13	24 - 26	4.50		Clay,w/calc nod,slks,Hard,Red & Gray	C H	27.7	94.8	121.1	62.0	26.0								
14	26 - 28	4.5+		Clay,w/calc nod,slks,Hard,Red & Gray	C H	26.8												
15	28 - 30	4.5+		Clay,w/calc nod,slks,Hard,Red & Gray	C H	27.8												

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. 114008614 DATE 3/2/98

PROJECT Greens Bayou

AREA Houston, Texas

BORING NO. 97-77 SAMPLE NO. 4 DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION
Sandy Clay,Very stiff,Gray

Tare No.	HP26	Height	5.595 in.
Tare plus Wet Specimen	417.24 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	367.05 gm	Initial Area	6.290 sq in.
Water Weight	50.19 gm	Volume	35.194 cu in.
Tare Weight	43.17 gm	Volume of Solids	cu in.
Wet Specimen	1138.11 gm	Void Ratio	
Dry Specimen	985.41 gm	Saturation	%
Water Content	15.50 %	Dry Density	106.7 lb/cu ft

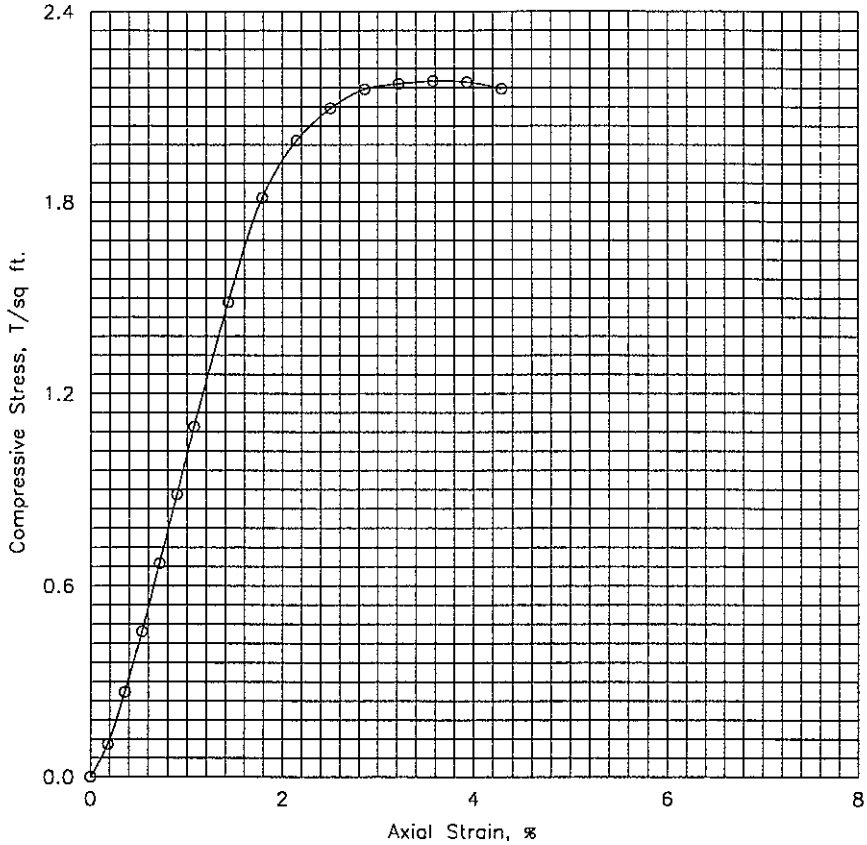
Specific Gravity of Solids
LL = 25 PL = 17 PI = 8

Proving Ring No. 10170
Proving Ring Constant, K = .757 lbs/div.

Lapsed 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	12.0	9.1	.002	6.30	.104
.3	20.	.020	31.0	23.5	.004	6.31	.268
.5	30.	.030	53.0	40.1	.005	6.32	.457
.7	40.	.040	78.0	59.0	.007	6.34	.671
.9	50.	.050	103.0	78.0	.009	6.35	.885
1.0	60.	.060	128.0	96.9	.011	6.36	1.097
1.4	80.	.080	174.0	131.7	.014	6.38	1.486
1.7	100.	.100	213.0	161.2	.018	6.40	1.813
2.0	120.	.120	235.0	177.9	.021	6.43	1.993
2.3	140.	.140	248.0	187.7	.025	6.45	2.095
2.6	160.	.160	256.0	193.8	.029	6.48	2.155
4.0	180.	.180	259.0	196.1	.032	6.50	2.172
3.3	200.	.200	261.0	197.6	.036	6.52	2.181
3.7	220.	.220	261.5	198.0	.039	6.55	2.177
4.0	240.	.240	260.0	196.8	.043	6.57	2.156

Job No. 114008614

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	15.5 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	106.7			
Time to failure, min		t_f	3.32			
Unconfined compressive strength, T/sq ft		q_u	2.18			
Undrained shear strength, T/sq ft		S_u	1.09			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Sandy Clay,Very stiff,Gray

LL	25	PL	17	PI	8	G_s

Remarks

Project Greens Bayou

Area Houston, Texas

Boring No. 97-77 | Sample No. 4

Depth El 6-8 ft | Date 3/2/98

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 114008614 DATE 3/2/98

PROJECT Greens Bayou

AREA Houston, Texas

BORING NO. 97-77 SAMPLE NO. 9 DEPTH 16-18 ft

SPECIMEN NO. 1

CLASSIFICATION
Clay,w/silt & sand seams,Very stiff,Red & Gray

Tare No.	RR	Height	5.595 in.
Tare plus Wet Specimen	439.50 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	365.08 gm	Initial Area	6.290 sq in.
Water Weight	74.42 gm	Volume	35.194 cu in.
Tare Weight	43.45 gm	Volume of Solids	cu in.
Wet Specimen	1115.98 gm	Void Ratio	
Dry Specimen	906.28 gm	Saturation	%
Water Content	23.14 %	Dry Density	98.1 lb/cu ft

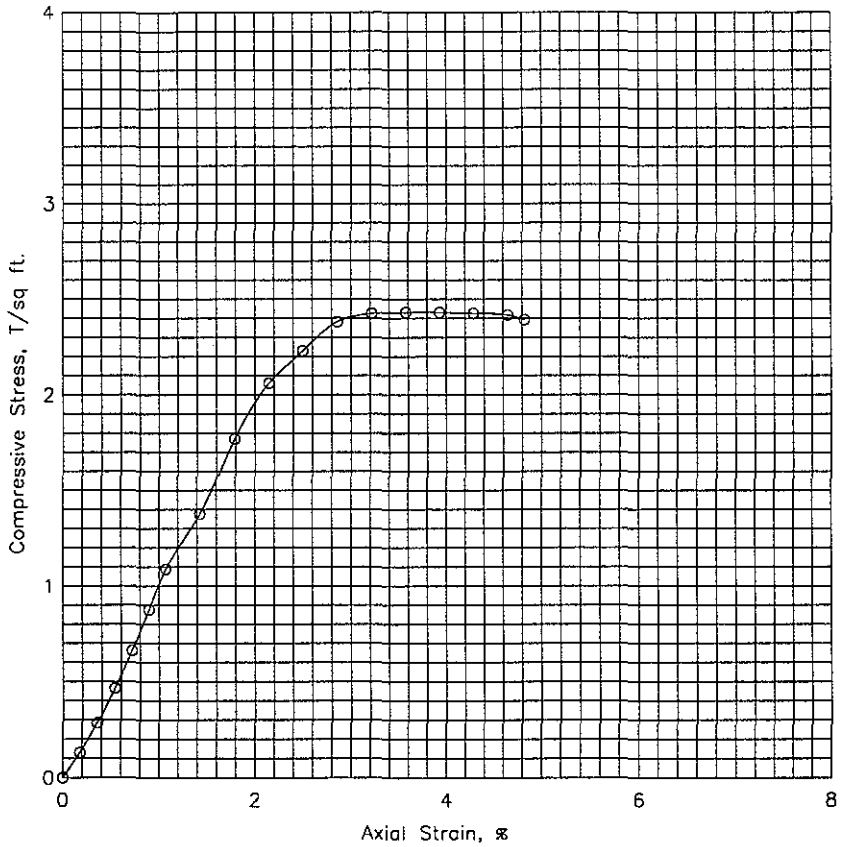
Specific Gravity of Solids
LL = 53 PL = 20 PI = 33

Proving Ring No. 10170
Proving Ring Constant, K = .757 lbs/div.

Lapsed 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	15.0	11.4	.002	6.30	.130
.3	20.	.020	33.0	25.0	.004	6.31	.285
.5	30.	.030	54.0	40.9	.005	6.32	.465
.7	40.	.040	77.0	58.3	.007	6.34	.662
.9	50.	.050	102.0	77.2	.009	6.35	.876
1.0	60.	.060	127.0	96.1	.011	6.36	1.089
1.4	80.	.080	161.0	121.9	.014	6.38	1.375
1.7	100.	.100	208.0	157.5	.018	6.40	1.770
2.0	120.	.120	243.0	184.0	.021	6.43	2.060
2.3	140.	.140	264.0	199.8	.025	6.45	2.230
2.7	160.	.160	283.0	214.2	.029	6.48	2.382
3.0	180.	.180	289.0	218.8	.032	6.50	2.424
3.3	200.	.200	291.0	220.3	.036	6.52	2.431
3.7	220.	.220	292.0	221.0	.039	6.55	2.431
4.0	240.	.240	292.5	221.4	.043	6.57	2.426
4.3	260.	.260	292.5	221.4	.046	6.60	2.417
4.5	270.	.270	290.0	219.5	.048	6.61	2.392

Job No. 114008614

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	23.1 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	98.1			
Time to failure, min		t_f	3.33			
Unconfined compressive strength, T/sq ft		q_u	2.43			
Undrained shear strength, T/sq ft		S_u	1.22			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Clay,w/silt & sand seams,Very stiff,Red & Gray

LL	53	PL	20	PI	33	G_s	

Remarks

Project Greens Bayou

Area Houston, Texas

Boring No. 97-77 | Sample No. 9

Depth El 16-18 ft | Date 3/2/98

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE