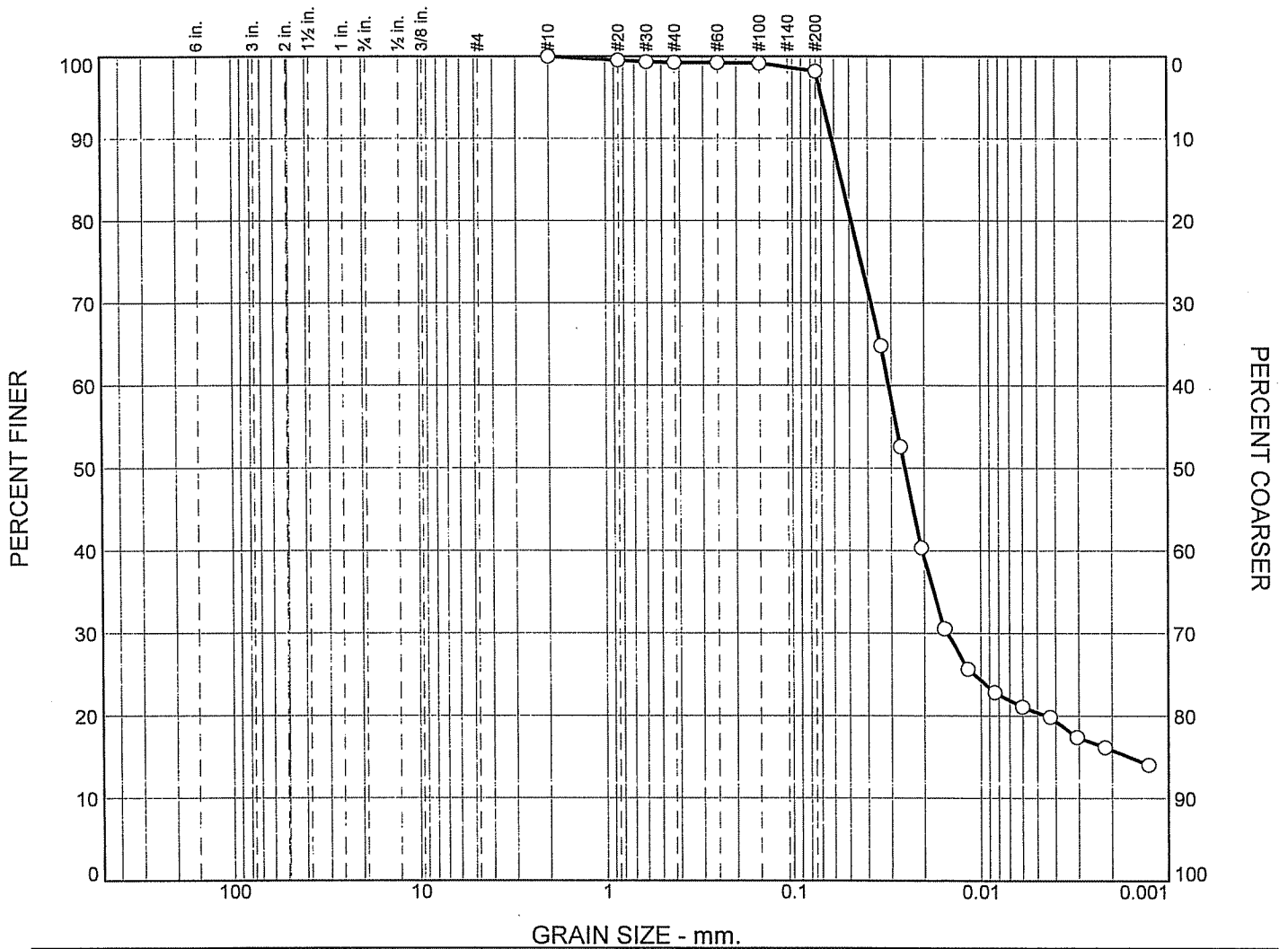


BORING LOG	DISTRICT	INSTALLATION	SHEET OF 1 SHEETS
1. PROJECT Galveston Channel and Pelican Island PA		7. ELEVATION OF HOLE	
2. LOCATION (Coordinates or Station) N=13684323 E=3301544		8. DATUM FOR ELEVATION	
3. DRILLING AGENCY Dempsey (Geotest Engineering, Inc.)		9. ELEVATION OF GROUNDWATER ▽ TOD: ▼ 24-HR:	
4. LABORATORY TESTING AGENCY Tolunay-Wong Engineers, Inc.		10. DRILLING DATE and TIME STARTED: COMPLETED:	
5. DEPTH OF WATER ▽ TOD: ▼ 24-HR:		11. CLASSIFICATION REFERENCE	
6. DEPTH OF HOLE 30 ft		12. ENGINEER	

[illegible]

Particle Size Analysis - ASTM D 422

[illegible]

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	07-240	3	4-6	Tan and brown LEAN CLAY	CL

**Tolunay-Wong
Engineers, Inc.
Houston, Texas**

Client: United States Army Corps of Engineers

Project: Galveston Channel and Pelican Island PA

Contract No. DACW64-03-D-0008, Task Order No. 0077

Project No.: 08.18.918

GRAIN SIZE DISTRIBUTION TEST DATA

7/27/2008

Client: United States Army Corps of Engineers

Project: Galveston Channel and Pelican Island PA

Contract No. DACW64-03-D-0008, Task Order No. 0077

Project Number: 08.18.918

Location: 07-240

Depth: 4-6

Sample Number: 3

Material Description: Tan and brown LEAN CLAY

USCS: CL

Material specification: (no specification envelope)

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer	Lower Spec. Limit, %	Upper Spec. Limit, %	Deviation From Spec., %
297.90	217.10	217.10	3"					
			3/4"					
			#4					
			#10	217.10	100.0			
			#20	217.48	99.5			
			#30	217.63	99.3			
			#40	217.71	99.2			
			#60	217.74	99.2			
			#100	217.77	99.2			
			#200	218.58	98.2			

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 93.2

Hygroscopic moisture correction:

Moist weight and tare = 123.15

Dry weight and tare = 107.77

Tare weight = 6.68

Hygroscopic moisture = 15.2%

Table of composite correction values:

Temp., deg. C: 22.0 21.0

Comp. corr.: -5.0 -6.5

Meniscus correction only = 0.5

Specific gravity of solids = 2.70

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

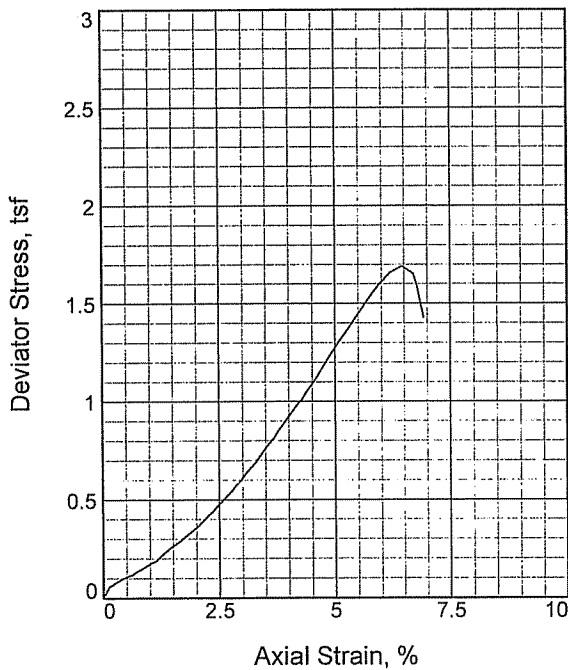
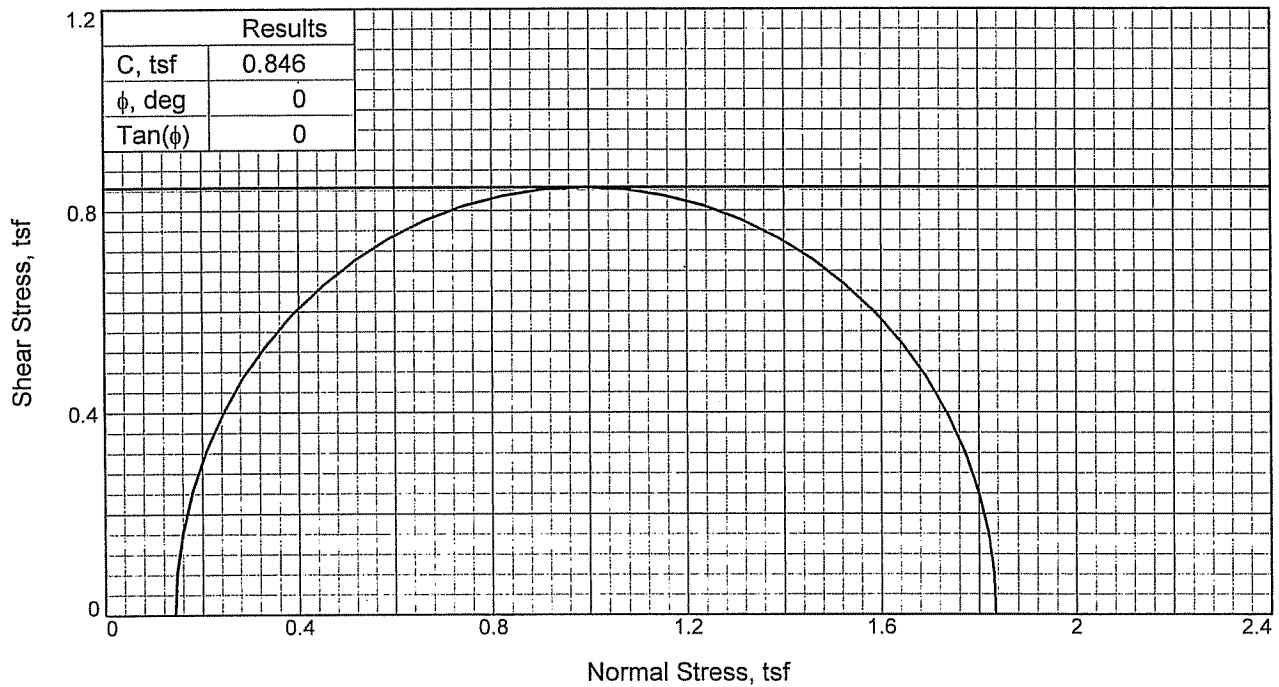
Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	22.0	58.0	53.0	0.0131	58.5	6.7	0.0340	64.8
2.00	22.0	48.0	43.0	0.0131	48.5	8.3	0.0268	52.6
4.00	22.0	38.0	33.0	0.0131	38.5	10.0	0.0207	40.3
8.00	22.0	30.0	25.0	0.0131	30.5	11.3	0.0156	30.6
15.00	22.0	26.0	21.0	0.0131	26.5	11.9	0.0117	25.7
30.00	21.8	24.0	18.7	0.0131	24.5	12.3	0.0084	22.9
60.00	21.5	23.0	17.3	0.0132	23.5	12.4	0.0060	21.1
120.00	21.5	22.0	16.3	0.0132	22.5	12.6	0.0043	19.9
240.00	21.5	20.0	14.3	0.0132	20.5	12.9	0.0031	17.4
480.00	21.5	19.0	13.3	0.0132	19.5	13.1	0.0022	16.2
1440.00	21.0	18.0	11.5	0.0133	18.5	13.3	0.0013	14.1

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.8	1.0	1.8	82.3	15.9	98.2

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0016	0.0044	0.0151	0.0254	0.0309	0.0487	0.0549	0.0618	0.0696

Fineness Modulus
0.03



Sample No.		1
Initial	Water Content, %	23.1
	Dry Density, pcf	104.2
	Saturation, %	98.2
	Void Ratio	0.6476
	Diameter, in.	2.75
	Height, in.	5.38
At Test	Water Content, %	20.5
	Dry Density, pcf	104.2
	Saturation, %	86.9
	Void Ratio	0.6476
	Diameter, in.	2.75
	Height, in.	5.38
Strain rate, %/min.		1.00
Back Pressure, tsf		0.00
Cell Pressure, tsf		0.14
Fail. Stress, tsf		1.69
Ult. Stress, tsf		
σ_1 Failure, tsf		1.84
σ_3 Failure, tsf		0.14

Type of Test:

Unconsolidated Undrained

Sample Type: Undisturbed

Description: Tan and brown LEAN CLAY

LL= 31 PL= 16 PI= 15

Assumed Specific Gravity= 2.75

Remarks:

Test method: ASTM D 2850

Pocket pen; tsf: 1.00

Failure type: Vertical shear

Client: United States Army Corps of Engineers

Project: Galveston Channel and Pelican Island PA

Contract No. DACW64-03-D-0008, Task Order No. 0077

Source of Sample: 07-240

Depth: 4-6

Sample Number: 3

Proj. No.: 08.18.918

Date Sampled: 7/18/08

TRIAXIAL SHEAR TEST REPORT

Tolunay-Wong Engineers, Inc.

TRIAXIAL COMPRESSION TEST

Unconsolidated Undrained

7/27/2008

3:32 PM

Date: 7/18/08
Client: United States Army Corps of Engineers
Project: Galveston Channel and Pelican Island PA
Contract No. DACW64-03-D-0008, Task Order No. 0077

Project No.: 08.18.918

Location: 07-240

Depth: 4-6

Sample Number: 3

Description: Tan and brown LEAN CLAY

Remarks:

Test method: ASTM D 2850

Pocket pen; tsf: 1.00

Failure type: Vertical shear

Type of Sample: Undisturbed

Assumed Specific Gravity=2.75

LL=31

PL=16

PI=15

Test Method: ASTM D 2850

Parameters for Specimen No. 1

Specimen Parameter	Initial	Final
Moisture content: Moist soil+tare, gms.	102.870	117.040
Moisture content: Dry soil+tare, gms.	89.480	102.600
Moisture content: Tare, gms.	31.600	32.020
Moisture, %	23.1	20.5
Moist specimen weight, gms.	1075.2	
Diameter, in.	2.75	
Area, in. ²	5.94	
Height, in.	5.38	
Wet Density, pcf	128.3	
Dry density, pcf	104.2	
Void ratio	0.6476	
Saturation, %	98.2	

Test Readings for Specimen No. 1

Membrane modulus = .130 kN/cm²

Membrane thickness = .031 cm

Cell pressure = 2.00 psi (0.144 tsf)

Back pressure = 0.00 psi (0.000 tsf)

Strain rate, %/min. = 1.00

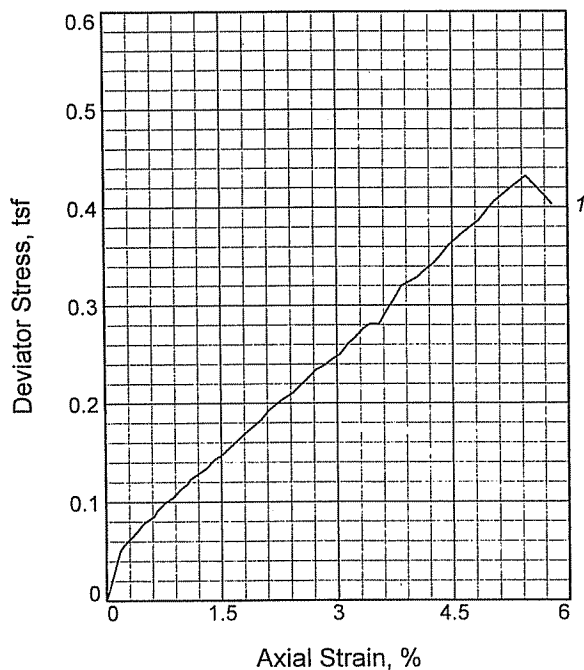
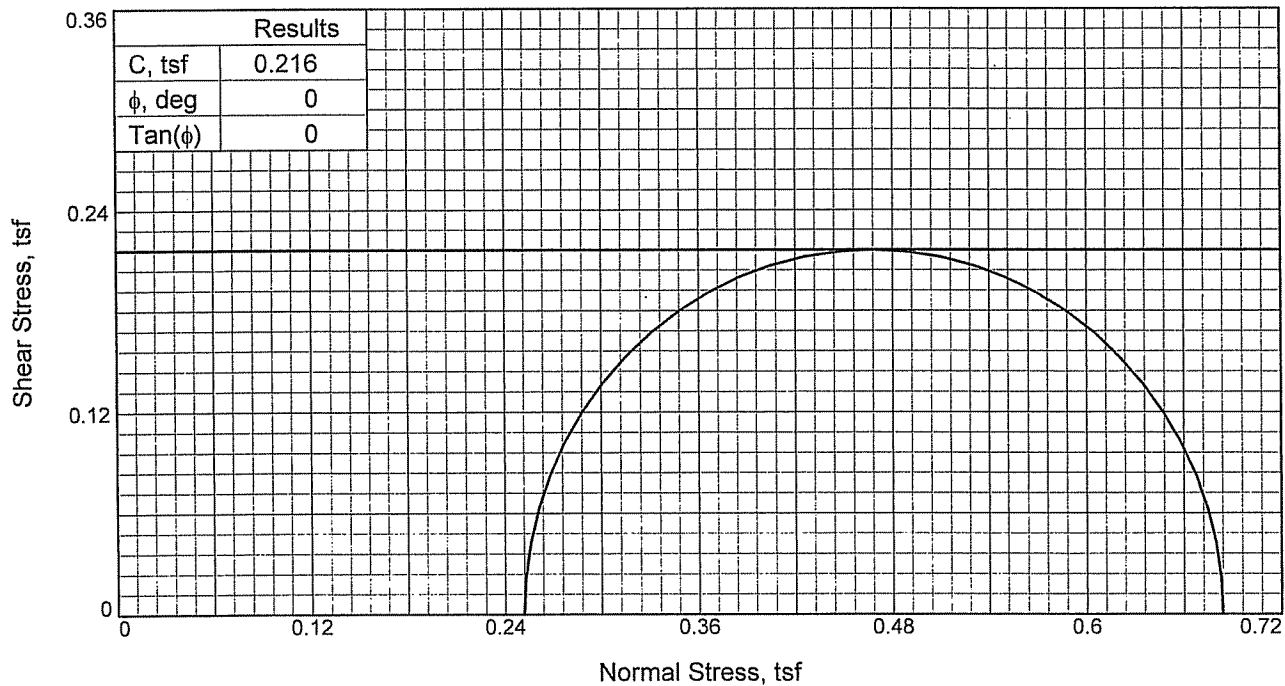
Fail. Stress = 1.691 tsf at reading no. 49

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
0	0.0396	0.000	0.0	0.0	0.000	0.144	0.144	1.00	0.144	0.000
1	0.0461	4.546	4.5	0.1	0.055	0.144	0.199	1.38	0.172	0.028
2	0.0544	6.458	6.5	0.3	0.078	0.144	0.222	1.54	0.183	0.039
3	0.0625	8.177	8.2	0.4	0.099	0.144	0.243	1.69	0.193	0.049
4	0.0726	9.652	9.7	0.6	0.116	0.144	0.260	1.81	0.202	0.058
5	0.0790	11.188	11.2	0.7	0.135	0.144	0.279	1.93	0.211	0.067
6	0.0861	12.705	12.7	0.9	0.153	0.144	0.297	2.06	0.220	0.076
7	0.0932	14.351	14.4	1.0	0.172	0.144	0.316	2.20	0.230	0.086
8	0.1014	15.904	15.9	1.1	0.191	0.144	0.335	2.32	0.239	0.095
9	0.1066	17.882	17.9	1.2	0.214	0.144	0.358	2.49	0.251	0.107
10	0.1175	21.132	21.1	1.4	0.252	0.144	0.396	2.75	0.270	0.126
11	0.1284	24.112	24.1	1.7	0.287	0.144	0.431	3.00	0.288	0.144
12	0.1341	25.918	25.9	1.8	0.309	0.144	0.453	3.14	0.298	0.154
13	0.1450	29.274	29.3	2.0	0.348	0.144	0.492	3.42	0.318	0.174
14	0.1502	30.942	30.9	2.1	0.367	0.144	0.511	3.55	0.328	0.184
15	0.1559	33.301	33.3	2.2	0.395	0.144	0.539	3.74	0.341	0.197
16	0.1611	35.259	35.3	2.3	0.418	0.144	0.562	3.90	0.353	0.209
17	0.1668	37.115	37.1	2.4	0.439	0.144	0.583	4.05	0.364	0.220
18	0.1720	39.439	39.4	2.5	0.466	0.144	0.610	4.24	0.377	0.233
19	0.1771	41.436	41.4	2.6	0.489	0.144	0.633	4.40	0.389	0.245
20	0.1830	44.007	44.0	2.7	0.519	0.144	0.663	4.61	0.404	0.260
21	0.1882	45.997	46.0	2.8	0.542	0.144	0.686	4.77	0.415	0.271
22	0.1939	48.779	48.8	2.9	0.574	0.144	0.718	4.99	0.431	0.287
23	0.1991	50.872	50.9	3.0	0.598	0.144	0.742	5.16	0.443	0.299
24	0.2048	53.942	53.9	3.1	0.634	0.144	0.778	5.40	0.461	0.317
25	0.2099	56.070	56.1	3.2	0.658	0.144	0.802	5.57	0.473	0.329
26	0.2157	58.610	58.6	3.3	0.687	0.144	0.831	5.77	0.488	0.344
27	0.2209	61.440	61.4	3.4	0.720	0.144	0.864	6.00	0.504	0.360
28	0.2266	64.415	64.4	3.5	0.754	0.144	0.898	6.23	0.521	0.377
29	0.2318	67.074	67.1	3.6	0.784	0.144	0.928	6.44	0.536	0.392
30	0.2375	69.532	69.5	3.7	0.812	0.144	0.956	6.64	0.550	0.406
31	0.2427	72.828	72.8	3.8	0.849	0.144	0.993	6.90	0.569	0.425
32	0.2479	75.491	75.5	3.9	0.880	0.144	1.024	7.11	0.584	0.440
33	0.2537	78.702	78.7	4.0	0.916	0.144	1.060	7.36	0.602	0.458
34	0.2640	84.288	84.3	4.2	0.979	0.144	1.123	7.80	0.634	0.490
35	0.2699	87.004	87.0	4.3	1.009	0.144	1.153	8.01	0.649	0.505
36	0.2751	90.548	90.5	4.4	1.050	0.144	1.194	8.29	0.669	0.525
37	0.2808	93.834	93.8	4.5	1.086	0.144	1.230	8.54	0.687	0.543
38	0.2860	96.654	96.7	4.6	1.118	0.144	1.262	8.76	0.703	0.559
39	0.2918	100.076	100.1	4.7	1.156	0.144	1.300	9.03	0.722	0.578
40	0.2969	103.156	103.2	4.8	1.191	0.144	1.335	9.27	0.739	0.595
41	0.3027	106.905	106.9	4.9	1.232	0.144	1.376	9.56	0.760	0.616
42	0.3078	110.075	110.1	5.0	1.268	0.144	1.412	9.80	0.778	0.634
43	0.3136	113.883	113.9	5.1	1.310	0.144	1.454	10.10	0.799	0.655
44	0.3188	116.746	116.7	5.2	1.342	0.144	1.486	10.32	0.815	0.671
45	0.3326	124.802	124.8	5.5	1.430	0.144	1.574	10.93	0.859	0.715
46	0.3458	132.589	132.6	5.7	1.516	0.144	1.660	11.53	0.902	0.758

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
47	0.3595	140.073	140.1	6.0	1.597	0.144	1.741	12.09	0.942	0.798
48	0.3727	145.719	145.7	6.2	1.657	0.144	1.801	12.51	0.972	0.828
49	0.3865	149.128	149.1	6.5	1.691	0.144	1.835	12.74	0.990	0.846
50	0.3997	146.031	146.0	6.7	1.652	0.144	1.796	12.47	0.970	0.826
51	0.4032	141.863	141.9	6.8	1.603	0.144	1.747	12.13	0.946	0.802
52	0.4119	126.565	126.6	6.9	1.428	0.144	1.572	10.92	0.858	0.714



Sample No.		1
Initial	Water Content, %	25.3
	Dry Density, pcf	92.1
	Saturation, %	82.3
	Void Ratio	0.8311
	Diameter, in.	2.83
	Height, in.	4.96
At Test	Water Content, %	25.5
	Dry Density, pcf	92.1
	Saturation, %	83.0
	Void Ratio	0.8311
	Diameter, in.	2.83
	Height, in.	4.96
Strain rate, %/min.		1.00
Back Pressure, tsf		0.00
Cell Pressure, tsf		0.25
Fail. Stress, tsf		0.43
Ult. Stress, tsf		
σ_1 Failure, tsf		0.68
σ_3 Failure, tsf		0.25

Type of Test:

Unconsolidated Undrained

Sample Type: Undisturbed

Description: Tan and gray SANDY SILTY CLAY;
ferrous nodules

Assumed Specific Gravity= 2.70

Remarks: Test method: ASTM D 2850

Pocket pen; tsf: 0.25

Failure type: Vertical shear

Client: United States Army Corps of Engineers

Project: Galveston Channel and Pelican Island PA

Contract No. DACW64-03-D-0008, Task Order No. 0077

Source of Sample: 07-240

Depth: 8-10

Sample Number: 5

Proj. No.: 08.18.918

Date Sampled: 7/18/08

TRIAXIAL SHEAR TEST REPORT

Tolunay-Wong Engineers, Inc.

TRIAxIAL COMPRESSION TEST

Unconsolidated Undrained

7/24/2008

2:01 PM

Date: 7/18/08
Client: United States Army Corps of Engineers
Project: Galveston Channel and Pelican Island PA
Contract No. DACW64-03-D-0008, Task Order No. 0077
Project No.: 08.18.918
Location: 07-240
Depth: 8-10 **Sample Number:** 5
Description: Tan and gray SANDY SILTY CLAY; ferrous nodules
Remarks: Test method: ASTM D 2850
Pocket pen; tsf: 0.25
Failure type: Vertical shear
Type of Sample: Undisturbed
Assumed Specific Gravity=2.70 **LL**= **PL**= **PI**=
Test Method: ASTM D 2850

Parameters for Specimen No. 1

Specimen Parameter	Initial	Final
Moisture content: Moist soil+tare, gms.	138.900	102.820
Moisture content: Dry soil+tare, gms.	117.210	88.360
Moisture content: Tare, gms.	31.600	31.730
Moisture, %	25.3	25.5
Moist specimen weight, gms.	942.1	
Diameter, in.	2.83	
Area, in. ²	6.27	
Height, in.	4.96	
Wet Density, pcf	115.4	
Dry density, pcf	92.1	
Void ratio	0.8311	
Saturation, %	82.3	

Test Readings for Specimen No. 1

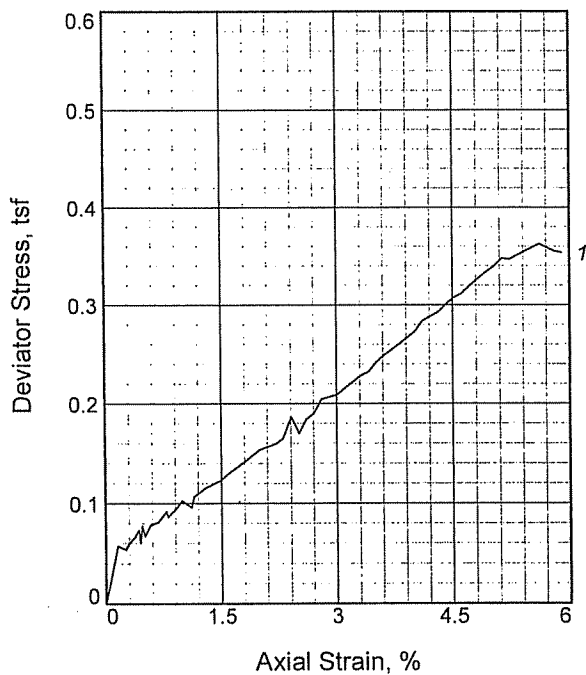
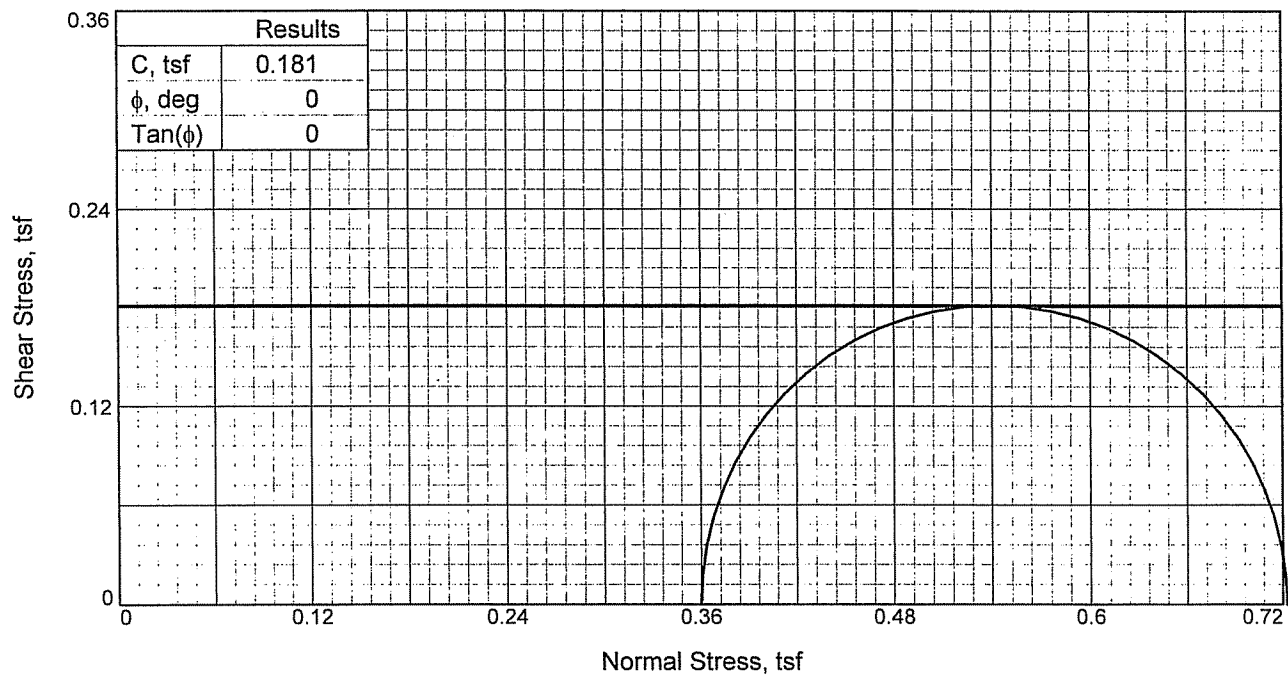
Membrane modulus = .130 kN/cm²
Membrane thickness = .031 cm
Cell pressure = 3.50 psi (0.252 tsf)
Back pressure = 0.00 psi (0.000 tsf)
Strain rate, %/min. = 1.00
Fail. Stress = 0.432 tsf at reading no. 45

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
0	0.0457	0.000	0.0	0.0	0.000	0.252	0.252	1.00	0.252	0.000
1	0.0547	4.340	4.3	0.2	0.050	0.252	0.302	1.20	0.277	0.025
2	0.0570	4.836	4.8	0.2	0.055	0.252	0.307	1.22	0.280	0.028
3	0.0625	5.635	5.6	0.3	0.065	0.252	0.317	1.26	0.284	0.032
4	0.0651	6.034	6.0	0.4	0.069	0.252	0.321	1.27	0.287	0.035
5	0.0700	6.838	6.8	0.5	0.078	0.252	0.330	1.31	0.291	0.039
6	0.0765	7.460	7.5	0.6	0.085	0.252	0.337	1.34	0.295	0.043
7	0.0786	7.935	7.9	0.7	0.091	0.252	0.343	1.36	0.297	0.045
8	0.0841	8.692	8.7	0.8	0.099	0.252	0.351	1.39	0.302	0.050
9	0.0890	9.145	9.1	0.9	0.104	0.252	0.356	1.41	0.304	0.052
10	0.0944	9.930	9.9	1.0	0.113	0.252	0.365	1.45	0.308	0.056
11	0.0982	10.351	10.4	1.1	0.118	0.252	0.370	1.47	0.311	0.059
12	0.1003	10.781	10.8	1.1	0.122	0.252	0.374	1.49	0.313	0.061
13	0.1106	11.790	11.8	1.3	0.134	0.252	0.386	1.53	0.319	0.067
14	0.1159	12.589	12.6	1.4	0.143	0.252	0.395	1.57	0.323	0.071
15	0.1206	13.018	13.0	1.5	0.147	0.252	0.399	1.58	0.326	0.074
16	0.1307	14.352	14.4	1.7	0.162	0.252	0.414	1.64	0.333	0.081
17	0.1360	15.068	15.1	1.8	0.170	0.252	0.422	1.67	0.337	0.085
18	0.1461	16.292	16.3	2.0	0.183	0.252	0.435	1.73	0.344	0.092
19	0.1508	17.124	17.1	2.1	0.193	0.252	0.445	1.76	0.348	0.096
20	0.1609	18.287	18.3	2.3	0.205	0.252	0.457	1.81	0.355	0.103
21	0.1662	18.753	18.8	2.4	0.210	0.252	0.462	1.83	0.357	0.105
22	0.1710	19.471	19.5	2.5	0.218	0.252	0.470	1.87	0.361	0.109
23	0.1810	20.931	20.9	2.7	0.234	0.252	0.486	1.93	0.369	0.117
24	0.1863	21.363	21.4	2.8	0.238	0.252	0.490	1.95	0.371	0.119
25	0.1911	21.907	21.9	2.9	0.244	0.252	0.496	1.97	0.374	0.122
26	0.1964	22.406	22.4	3.0	0.250	0.252	0.502	1.99	0.377	0.125
27	0.2011	23.377	23.4	3.1	0.260	0.252	0.512	2.03	0.382	0.130
28	0.2064	24.043	24.0	3.2	0.267	0.252	0.519	2.06	0.386	0.134
29	0.2112	24.859	24.9	3.3	0.276	0.252	0.528	2.10	0.390	0.138
30	0.2160	25.377	25.4	3.4	0.282	0.252	0.534	2.12	0.393	0.141
31	0.2214	25.328	25.3	3.5	0.281	0.252	0.533	2.11	0.392	0.140
32	0.2261	26.522	26.5	3.6	0.294	0.252	0.546	2.17	0.399	0.147
33	0.2314	27.720	27.7	3.7	0.307	0.252	0.559	2.22	0.405	0.153
34	0.2362	28.952	29.0	3.8	0.320	0.252	0.572	2.27	0.412	0.160
35	0.2464	29.830	29.8	4.0	0.329	0.252	0.581	2.30	0.416	0.164
36	0.2511	30.487	30.5	4.1	0.336	0.252	0.588	2.33	0.420	0.168
37	0.2564	31.118	31.1	4.2	0.342	0.252	0.594	2.36	0.423	0.171
38	0.2612	31.843	31.8	4.3	0.350	0.252	0.602	2.39	0.427	0.175
39	0.2665	32.870	32.9	4.4	0.361	0.252	0.613	2.43	0.432	0.180
40	0.2760	34.158	34.2	4.6	0.374	0.252	0.626	2.48	0.439	0.187
41	0.2862	35.353	35.4	4.8	0.386	0.252	0.638	2.53	0.445	0.193
42	0.2915	36.402	36.4	5.0	0.397	0.252	0.649	2.58	0.451	0.199
43	0.2962	37.230	37.2	5.0	0.406	0.252	0.658	2.61	0.455	0.203
44	0.3063	38.494	38.5	5.3	0.419	0.252	0.671	2.66	0.461	0.209
45	0.3164	39.771	39.8	5.5	0.432	0.252	0.684	2.71	0.468	0.216
46	0.3270	38.247	38.2	5.7	0.414	0.252	0.666	2.64	0.459	0.207

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
47	0.3334	37.267	37.3	5.8	0.403	0.252	0.655	2.60	0.454	0.202



Sample No.		1
Initial	Water Content, %	27.6
	Dry Density, pcf	92.6
	Saturation, %	90.6
	Void Ratio	0.8212
	Diameter, in.	2.75
	Height, in.	4.89
At Test	Water Content, %	27.7
	Dry Density, pcf	92.6
	Saturation, %	91.2
	Void Ratio	0.8212
	Diameter, in.	2.75
	Height, in.	4.89
Strain rate, %/min.		1.00
Back Pressure, tsf		0.00
Cell Pressure, tsf		0.36
Fail. Stress, tsf		0.36
Ult. Stress, tsf		
σ_1 Failure, tsf		0.72
σ_3 Failure, tsf		0.36

Type of Test:

Unconsolidated Undrained

Sample Type: Undisturbed

Description: Tan and brown LEAN CLAY

LL= 32 PL= 16 PI= 16

Assumed Specific Gravity= 2.70

Remarks:

Test method: ASTM D 2850

Torvane; tsf: 0.075

Failure type: Vertical shear

Client: United States Army Corps of Engineers

Project: Galveston Channel and Pelican Island PA

Contract No. DACW64-03-D-0008, Task Order No. 0077

Source of Sample: 07-240

Depth: 12-14

Sample Number: 7

Proj. No.: 08.18.918

Date Sampled: 7/18/08

TRIAXIAL SHEAR TEST REPORT

Tolunay-Wong Engineers, Inc.

TRIAxIAL COMPRESSION TEST

Unconsolidated Undrained

7/25/2008

11:08 AM

Date: 7/18/08
Client: United States Army Corps of Engineers
Project: Galveston Channel and Pelican Island PA
Contract No. DACW64-03-D-0008, Task Order No. 0077
Project No.: 08.18.918
Location: 07-240
Depth: 12-14 **Sample Number:** 7
Description: Tan and brown LEAN CLAY
Remarks:
Test method: ASTM D 2850
Torvane; tsf: 0.075
Failure type: Vertical shear
Type of Sample: Undisturbed
Assumed Specific Gravity=2.70 **LL**=32 **PL**=16 **PI**=16
Test Method: ASTM D 2850

Parameters for Specimen No. 1

Specimen Parameter	Initial	Final
Moisture content: Moist soil+tare, gms.	136.210	109.650
Moisture content: Dry soil+tare, gms.	113.350	92.670
Moisture content: Tare, gms.	30.380	31.450
Moisture, %	27.6	27.7
Moist specimen weight, gms.	899.7	
Diameter, in.	2.75	
Area, in. ²	5.94	
Height, in.	4.89	
Wet Density, pcf	118.0	
Dry density, pcf	92.6	
Void ratio	0.8212	
Saturation, %	90.6	

Test Readings for Specimen No. 1

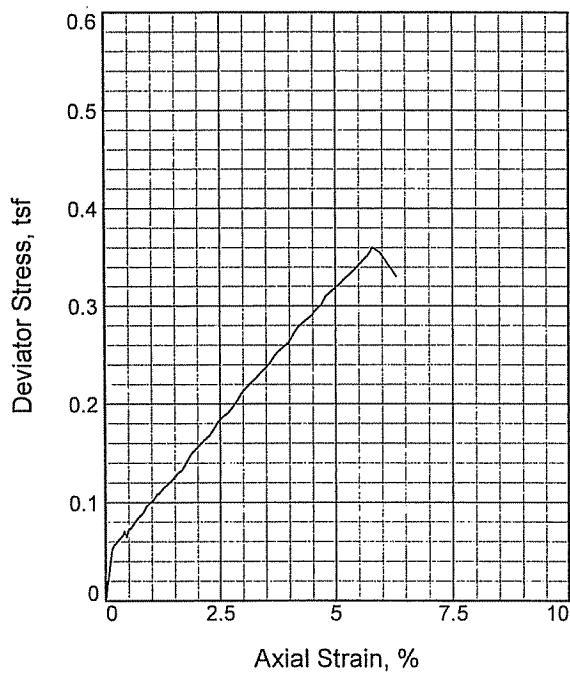
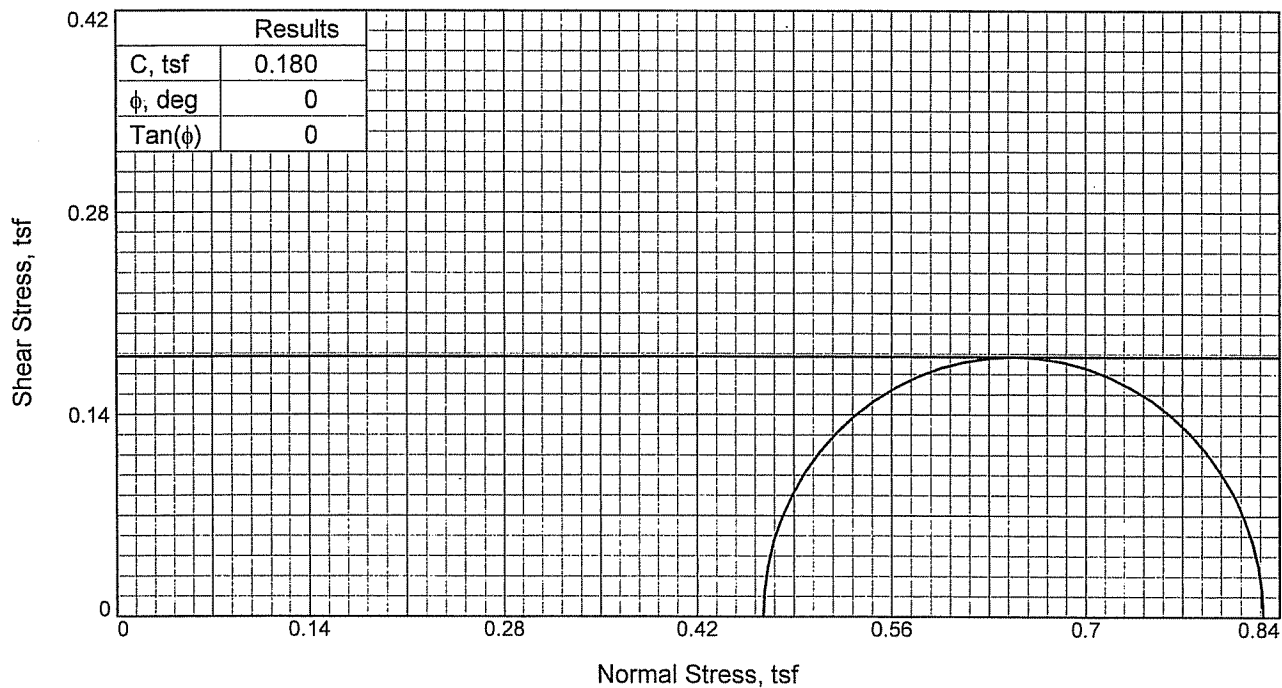
Membrane modulus = .130 kN/cm²
Membrane thickness = .031 cm
Cell pressure = 5.00 psi (0.360 tsf)
Back pressure = 0.00 psi (0.000 tsf)
Strain rate, %/min. = 1.00
Fail. Stress = 0.362 tsf at reading no. 52

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
0	0.0460	0.000	0.0	0.0	0.000	0.360	0.360	1.00	0.360	0.000
1	0.0534	4.722	4.7	0.2	0.057	0.360	0.417	1.16	0.389	0.029
2	0.0588	4.472	4.5	0.3	0.054	0.360	0.414	1.15	0.387	0.027
3	0.0603	4.911	4.9	0.3	0.059	0.360	0.419	1.16	0.390	0.030
4	0.0640	5.407	5.4	0.4	0.065	0.360	0.425	1.18	0.393	0.033
5	0.0667	6.056	6.1	0.4	0.073	0.360	0.433	1.20	0.397	0.037
6	0.0678	5.035	5.0	0.4	0.061	0.360	0.421	1.17	0.390	0.030
7	0.0689	6.399	6.4	0.5	0.077	0.360	0.437	1.21	0.399	0.039
8	0.0705	5.522	5.5	0.5	0.067	0.360	0.427	1.18	0.393	0.033
9	0.0741	6.429	6.4	0.6	0.077	0.360	0.437	1.22	0.399	0.039
10	0.0795	6.759	6.8	0.7	0.081	0.360	0.441	1.23	0.401	0.041
11	0.0842	7.623	7.6	0.8	0.092	0.360	0.452	1.25	0.406	0.046
12	0.0853	7.171	7.2	0.8	0.086	0.360	0.446	1.24	0.403	0.043
13	0.0907	7.894	7.9	0.9	0.095	0.360	0.455	1.26	0.407	0.047
14	0.0944	8.530	8.5	1.0	0.102	0.360	0.462	1.28	0.411	0.051
15	0.1003	7.970	8.0	1.1	0.096	0.360	0.456	1.27	0.408	0.048
16	0.1019	8.873	8.9	1.1	0.106	0.360	0.466	1.30	0.413	0.053
17	0.1093	9.605	9.6	1.3	0.115	0.360	0.475	1.32	0.417	0.057
18	0.1140	9.957	10.0	1.4	0.119	0.360	0.479	1.33	0.420	0.060
19	0.1193	10.277	10.3	1.5	0.123	0.360	0.483	1.34	0.421	0.061
20	0.1239	10.883	10.9	1.6	0.130	0.360	0.490	1.36	0.425	0.065
21	0.1339	11.848	11.8	1.8	0.141	0.360	0.501	1.39	0.431	0.071
22	0.1438	12.904	12.9	2.0	0.153	0.360	0.513	1.43	0.437	0.077
23	0.1538	13.429	13.4	2.2	0.159	0.360	0.519	1.44	0.440	0.080
24	0.1585	13.932	13.9	2.3	0.165	0.360	0.525	1.46	0.442	0.082
25	0.1637	15.726	15.7	2.4	0.186	0.360	0.546	1.52	0.453	0.093
26	0.1684	14.368	14.4	2.5	0.170	0.360	0.530	1.47	0.445	0.085
27	0.1731	15.532	15.5	2.6	0.183	0.360	0.543	1.51	0.452	0.092
28	0.1784	16.134	16.1	2.7	0.190	0.360	0.550	1.53	0.455	0.095
29	0.1831	17.325	17.3	2.8	0.204	0.360	0.564	1.57	0.462	0.102
30	0.1932	17.756	17.8	3.0	0.209	0.360	0.569	1.58	0.464	0.104
31	0.1979	18.301	18.3	3.1	0.215	0.360	0.575	1.60	0.467	0.107
32	0.2031	18.915	18.9	3.2	0.222	0.360	0.582	1.62	0.471	0.111
33	0.2078	19.433	19.4	3.3	0.228	0.360	0.588	1.63	0.474	0.114
34	0.2130	19.828	19.8	3.4	0.232	0.360	0.592	1.64	0.476	0.116
35	0.2177	20.631	20.6	3.5	0.241	0.360	0.601	1.67	0.481	0.121
36	0.2224	21.252	21.3	3.6	0.248	0.360	0.608	1.69	0.484	0.124
37	0.2324	22.340	22.3	3.8	0.260	0.360	0.620	1.72	0.490	0.130
38	0.2371	22.899	22.9	3.9	0.267	0.360	0.627	1.74	0.493	0.133
39	0.2425	23.490	23.5	4.0	0.273	0.360	0.633	1.76	0.497	0.137
40	0.2472	24.407	24.4	4.1	0.284	0.360	0.644	1.79	0.502	0.142
41	0.2524	24.850	24.8	4.2	0.289	0.360	0.649	1.80	0.504	0.144
42	0.2571	25.246	25.2	4.3	0.293	0.360	0.653	1.81	0.506	0.146
43	0.2623	26.009	26.0	4.4	0.301	0.360	0.661	1.84	0.511	0.151
44	0.2670	26.574	26.6	4.5	0.308	0.360	0.668	1.85	0.514	0.154
45	0.2717	26.939	26.9	4.6	0.311	0.360	0.671	1.87	0.516	0.156
46	0.2770	27.723	27.7	4.7	0.320	0.360	0.680	1.89	0.520	0.160

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
47	0.2817	28.321	28.3	4.8	0.327	0.360	0.687	1.91	0.523	0.163
48	0.2869	28.957	29.0	4.9	0.334	0.360	0.694	1.93	0.527	0.167
49	0.2917	29.456	29.5	5.0	0.339	0.360	0.699	1.94	0.530	0.170
50	0.2969	30.224	30.2	5.1	0.348	0.360	0.708	1.97	0.534	0.174
51	0.3016	30.179	30.2	5.2	0.347	0.360	0.707	1.96	0.533	0.173
52	0.3205	31.680	31.7	5.6	0.362	0.360	0.722	2.01	0.541	0.181
53	0.3295	31.111	31.1	5.8	0.355	0.360	0.715	1.99	0.538	0.178
54	0.3345	31.009	31.0	5.9	0.354	0.360	0.714	1.98	0.537	0.177



Sample No.		1
Initial	Water Content, %	27.3
	Dry Density, pcf	93.3
	Saturation, %	91.3
	Void Ratio	0.8066
	Diameter, in.	2.83
	Height, in.	5.52
At Test	Water Content, %	26.9
	Dry Density, pcf	93.3
	Saturation, %	90.2
	Void Ratio	0.8066
	Diameter, in.	2.83
	Height, in.	5.52
Strain rate, %/min.		1.00
Back Pressure, tsf		0.00
Cell Pressure, tsf		0.47
Fail. Stress, tsf		0.36
Ult. Stress, tsf		
σ_1 Failure, tsf		0.83
σ_3 Failure, tsf		0.47

Type of Test:

Unconsolidated Undrained

Sample Type: Undisturbed

Description: Brown SILTY CLAY with SAND

Assumed Specific Gravity= 2.70

Remarks:

Test method: ASTM D 2850

Torvane; tsf: 0.075

Failure type: Bulge

Client: United States Army Corps of Engineers

Project: Galveston Channel and Pelican Island PA

Contract No. DACW64-03-D-0008, Task Order No. 0077

Source of Sample: 07-240

Depth: 16-18

Sample Number: 9

Proj. No.: 08.18.918

Date Sampled: 7/18/08

TRIAXIAL SHEAR TEST REPORT

Tolunay-Wong Engineers, Inc.

TRIAXIAL COMPRESSION TEST

Unconsolidated Undrained

7/24/2008

2:48 PM

Date: 7/18/08
Client: United States Army Corps of Engineers
Project: Galveston Channel and Pelican Island PA
Contract No. DACW64-03-D-0008, Task Order No. 0077
Project No.: 08.18.918
Location: 07-240
Depth: 16-18 Sample Number: 9
Description: Brown SILTY CLAY with SAND
Remarks:

Test method: ASTM D 2850

Torvane; tsf: 0.075

Failure type: Bulge

Type of Sample: Undisturbed

Assumed Specific Gravity=2.70

LL=

PL=

PI=

Test Method: ASTM D 2850

Parameters for Specimen No. 1		
Specimen Parameter	Initial	Final
Moisture content: Moist soil+tare, gms.	133.320	104.660
Moisture content: Dry soil+tare, gms.	111.390	89.170
Moisture content: Tare, gms.	30.990	31.660
Moisture, %	27.3	26.9
Moist specimen weight, gms.	1086.2	
Diameter, in.	2.83	
Area, in. ²	6.31	
Height, in.	5.52	
Wet Density, pcf	118.7	
Dry density, pcf	93.3	
Void ratio	0.8066	
Saturation, %	91.3	

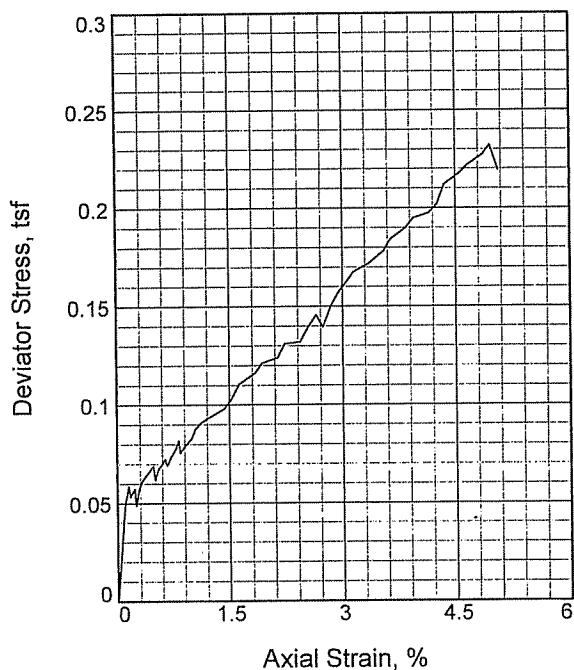
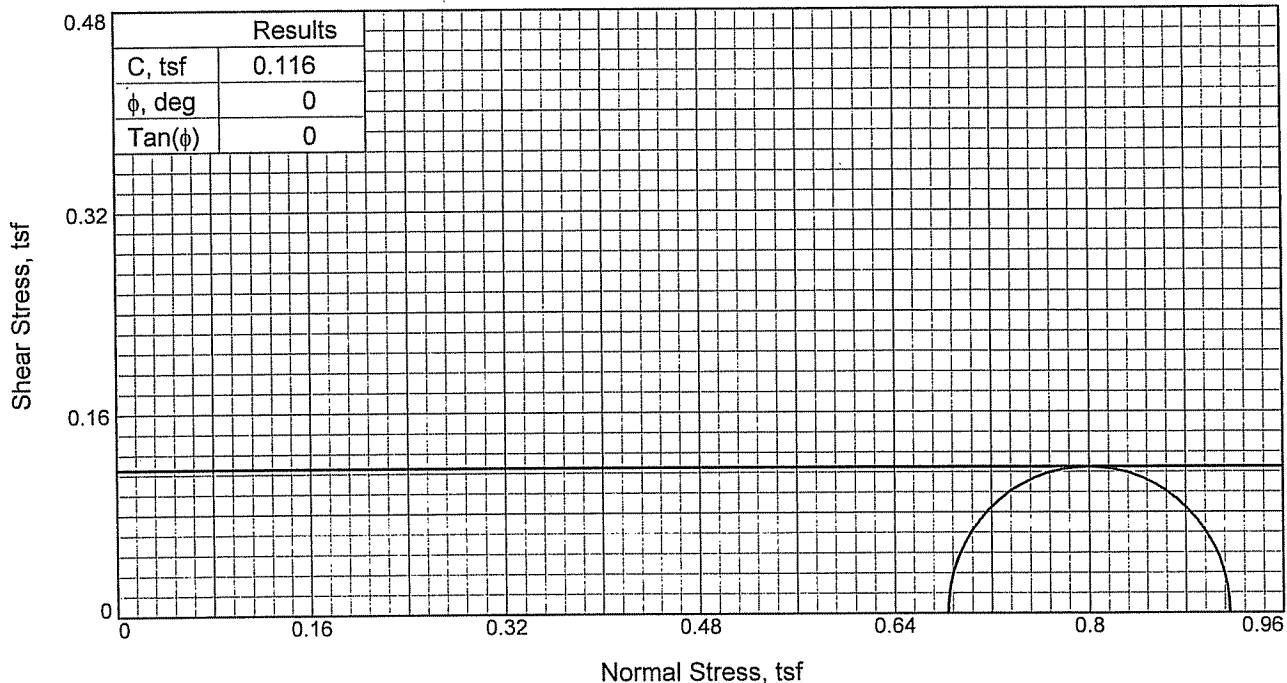
Test Readings for Specimen No. 1	
Membrane modulus = .130 kN/cm ²	
Membrane thickness = .031 cm	
Cell pressure = 6.50 psi (0.468 tsf)	
Back pressure = 0.00 psi (0.000 tsf)	
Strain rate, %/min. = 1.00	
Fail. Stress = 0.360 tsf at reading no. 52	

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
0	0.1844	0.000	0.0	0.0	0.000	0.468	0.468	1.00	0.468	0.000
1	0.1917	4.504	4.5	0.1	0.051	0.468	0.519	1.11	0.494	0.026
2	0.1943	4.925	4.9	0.2	0.056	0.468	0.524	1.12	0.496	0.028
3	0.2016	5.518	5.5	0.3	0.063	0.468	0.531	1.13	0.499	0.031
4	0.2058	5.866	5.9	0.4	0.067	0.468	0.535	1.14	0.501	0.033
5	0.2070	6.205	6.2	0.4	0.070	0.468	0.538	1.15	0.503	0.035
6	0.2100	5.701	5.7	0.5	0.065	0.468	0.533	1.14	0.500	0.032
7	0.2112	6.233	6.2	0.5	0.071	0.468	0.539	1.15	0.503	0.035
8	0.2154	6.588	6.6	0.6	0.075	0.468	0.543	1.16	0.505	0.037
9	0.2197	7.034	7.0	0.6	0.080	0.468	0.548	1.17	0.508	0.040
10	0.2239	7.452	7.5	0.7	0.084	0.468	0.552	1.18	0.510	0.042
11	0.2294	7.869	7.9	0.8	0.089	0.468	0.557	1.19	0.513	0.045
12	0.2338	8.509	8.5	0.9	0.096	0.468	0.564	1.21	0.516	0.048
13	0.2410	9.005	9.0	1.0	0.102	0.468	0.570	1.22	0.519	0.051
14	0.2464	9.601	9.6	1.1	0.108	0.468	0.576	1.23	0.522	0.054
15	0.2476	9.584	9.6	1.1	0.108	0.468	0.576	1.23	0.522	0.054
16	0.2536	10.123	10.1	1.3	0.114	0.468	0.582	1.24	0.525	0.057
17	0.2648	10.944	10.9	1.5	0.123	0.468	0.591	1.26	0.530	0.062
18	0.2701	11.438	11.4	1.6	0.128	0.468	0.596	1.27	0.532	0.064
19	0.2760	11.850	11.9	1.7	0.133	0.468	0.601	1.28	0.534	0.066
20	0.2813	12.519	12.5	1.8	0.140	0.468	0.608	1.30	0.538	0.070
21	0.2867	13.286	13.3	1.9	0.149	0.468	0.617	1.32	0.542	0.074
22	0.2926	13.742	13.7	2.0	0.154	0.468	0.622	1.33	0.545	0.077
23	0.3033	14.598	14.6	2.2	0.163	0.468	0.631	1.35	0.549	0.081
24	0.3093	15.020	15.0	2.3	0.167	0.468	0.635	1.36	0.552	0.084
25	0.3146	15.643	15.6	2.4	0.174	0.468	0.642	1.37	0.555	0.087
26	0.3205	16.373	16.4	2.5	0.182	0.468	0.650	1.39	0.559	0.091
27	0.3258	16.805	16.8	2.6	0.187	0.468	0.655	1.40	0.561	0.093
28	0.3317	17.169	17.2	2.7	0.191	0.468	0.659	1.41	0.563	0.095
29	0.3370	17.686	17.7	2.8	0.196	0.468	0.664	1.42	0.566	0.098
30	0.3429	18.331	18.3	2.9	0.203	0.468	0.671	1.43	0.570	0.102
31	0.3482	19.027	19.0	3.0	0.211	0.468	0.679	1.45	0.573	0.105
32	0.3541	19.587	19.6	3.1	0.217	0.468	0.685	1.46	0.576	0.108
33	0.3653	20.489	20.5	3.3	0.226	0.468	0.694	1.48	0.581	0.113
34	0.3706	20.986	21.0	3.4	0.231	0.468	0.699	1.49	0.584	0.116
35	0.3765	21.499	21.5	3.5	0.237	0.468	0.705	1.51	0.586	0.118
36	0.3818	21.972	22.0	3.6	0.242	0.468	0.710	1.52	0.589	0.121
37	0.3878	22.701	22.7	3.7	0.249	0.468	0.717	1.53	0.593	0.125
38	0.3931	23.187	23.2	3.8	0.254	0.468	0.722	1.54	0.595	0.127
39	0.4044	23.974	24.0	4.0	0.263	0.468	0.731	1.56	0.599	0.131
40	0.4097	24.753	24.8	4.1	0.271	0.468	0.739	1.58	0.603	0.135
41	0.4151	25.420	25.4	4.2	0.278	0.468	0.746	1.59	0.607	0.139
42	0.4211	25.929	25.9	4.3	0.283	0.468	0.751	1.60	0.610	0.142
43	0.4323	26.723	26.7	4.5	0.291	0.468	0.759	1.62	0.614	0.146
44	0.4376	27.272	27.3	4.6	0.297	0.468	0.765	1.63	0.616	0.148
45	0.4435	27.627	27.6	4.7	0.300	0.468	0.768	1.64	0.618	0.150
46	0.4488	28.488	28.5	4.8	0.309	0.468	0.777	1.66	0.623	0.155

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
47	0.4541	28.905	28.9	4.9	0.314	0.468	0.782	1.67	0.625	0.157
48	0.4654	29.803	29.8	5.1	0.323	0.468	0.791	1.69	0.629	0.161
49	0.4713	30.334	30.3	5.2	0.328	0.468	0.796	1.70	0.632	0.164
50	0.4848	31.453	31.5	5.4	0.339	0.468	0.807	1.72	0.638	0.170
51	0.4990	32.751	32.8	5.7	0.352	0.468	0.820	1.75	0.644	0.176
52	0.5043	33.514	33.5	5.8	0.360	0.468	0.828	1.77	0.648	0.180
53	0.5132	33.111	33.1	6.0	0.355	0.468	0.823	1.76	0.646	0.178
54	0.5323	30.919	30.9	6.3	0.330	0.468	0.798	1.71	0.633	0.165



Sample No.		1
Initial	Water Content, %	30.6
	Dry Density, pcf	90.7
	Saturation, %	96.3
	Void Ratio	0.8586
	Diameter, in.	2.85
	Height, in.	5.87
At Test	Water Content, %	36.2
	Dry Density, pcf	90.7
	Saturation, %	113.9
	Void Ratio	0.8586
	Diameter, in.	2.85
	Height, in.	5.87
Strain rate, %/min.		1.00
Back Pressure, tsf		0.00
Cell Pressure, tsf		0.68
Fail. Stress, tsf		0.23
Ult. Stress, tsf		
σ_1 Failure, tsf		0.92
σ_3 Failure, tsf		0.68

Type of Test:

Unconsolidated Undrained

Sample Type: Undisturbed

Description: Gray and brown FAT CLAY

LL= 53

PL= 20

PI= 33

Assumed Specific Gravity= 2.70

Remarks:

Test method: ASTM D 2850

Torvane; tsf: 0.15

Failure type: Bulge

Client: United States Army Corps of Engineers

Project: Galveston Channel and Pelican Island PA

Contract No. DACW64-03-D-0008, Task Order No. 0077

Source of Sample: 07-240

Depth: 24-26

Sample Number: 13

Proj. No.: 08.18.918

Date Sampled: 7/18/08

TRIAXIAL SHEAR TEST REPORT

Tolunay-Wong Engineers, Inc.

TRIAXIAL COMPRESSION TEST

Unconsolidated Undrained

7/25/2008

7:46 AM

Date: 7/18/08
Client: United States Army Corps of Engineers
Project: Galveston Channel and Pelican Island PA
Contract No. DACW64-03-D-0008, Task Order No. 0077
Project No.: 08.18.918
Location: 07-240
Depth: 24-26 **Sample Number:** 13
Description: Gray and brown FAT CLAY
Remarks:
Test method: ASTM D 2850
Torvane; tsf: 0.15
Failure type: Bulge
Type of Sample: Undisturbed
Assumed Specific Gravity=2.70 **LL**=53 **PL**=20 **PI**=33
Test Method: ASTM D 2850

Parameters for Specimen No. 1		
Specimen Parameter	Initial	Final
Moisture content: Moist soil+tare, gms.	130.860	106.610
Moisture content: Dry soil+tare, gms.	107.520	86.670
Moisture content: Tare, gms.	31.320	31.600
Moisture, %	30.6	36.2
Moist specimen weight, gms.	1163.9	
Diameter, in.	2.85	
Area, in. ²	6.38	
Height, in.	5.87	
Wet Density, pcf	118.5	
Dry density, pcf	90.7	
Void ratio	0.8586	
Saturation, %	96.3	

Test Readings for Specimen No. 1	
Membrane modulus = .130 kN/cm ²	
Membrane thickness = .031 cm	
Cell pressure = 9.50 psi (0.684 tsf)	
Back pressure = 0.00 psi (0.000 tsf)	
Strain rate, %/min. = 1.00	
Fail. Stress = 0.232 tsf at reading no. 48	

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
0	0.0588	0.000	0.0	0.0	0.000	0.684	0.684	1.00	0.684	0.000
1	0.0648	4.337	4.3	0.1	0.049	0.684	0.733	1.07	0.708	0.024
2	0.0677	5.184	5.2	0.2	0.058	0.684	0.742	1.09	0.713	0.029
3	0.0689	4.737	4.7	0.2	0.053	0.684	0.737	1.08	0.711	0.027
4	0.0721	5.075	5.1	0.2	0.057	0.684	0.741	1.08	0.713	0.029
5	0.0734	4.334	4.3	0.2	0.049	0.684	0.733	1.07	0.708	0.024
6	0.0754	5.052	5.1	0.3	0.057	0.684	0.741	1.08	0.712	0.028
7	0.0779	5.438	5.4	0.3	0.061	0.684	0.745	1.09	0.715	0.031
8	0.0811	5.683	5.7	0.4	0.064	0.684	0.748	1.09	0.716	0.032
9	0.0869	6.144	6.1	0.5	0.069	0.684	0.753	1.10	0.719	0.035
10	0.0884	5.517	5.5	0.5	0.062	0.684	0.746	1.09	0.715	0.031
11	0.0903	5.929	5.9	0.5	0.067	0.684	0.751	1.10	0.717	0.033
12	0.0961	6.439	6.4	0.6	0.072	0.684	0.756	1.11	0.720	0.036
13	0.0980	6.176	6.2	0.7	0.069	0.684	0.753	1.10	0.719	0.035
14	0.1005	6.490	6.5	0.7	0.073	0.684	0.757	1.11	0.720	0.036
15	0.1049	6.970	7.0	0.8	0.078	0.684	0.762	1.11	0.723	0.039
16	0.1069	7.299	7.3	0.8	0.082	0.684	0.766	1.12	0.725	0.041
17	0.1082	6.754	6.8	0.8	0.076	0.684	0.760	1.11	0.722	0.038
18	0.1127	7.118	7.1	0.9	0.080	0.684	0.764	1.12	0.724	0.040
19	0.1172	7.400	7.4	1.0	0.083	0.684	0.767	1.12	0.725	0.041
20	0.1203	7.851	7.9	1.0	0.088	0.684	0.772	1.13	0.728	0.044
21	0.1248	8.137	8.1	1.1	0.091	0.684	0.775	1.13	0.729	0.045
22	0.1305	8.379	8.4	1.2	0.093	0.684	0.777	1.14	0.731	0.047
23	0.1425	8.790	8.8	1.4	0.098	0.684	0.782	1.14	0.733	0.049
24	0.1482	9.228	9.2	1.5	0.103	0.684	0.787	1.15	0.735	0.051
25	0.1545	9.945	9.9	1.6	0.110	0.684	0.794	1.16	0.739	0.055
26	0.1664	10.467	10.5	1.8	0.116	0.684	0.800	1.17	0.742	0.058
27	0.1721	10.944	10.9	1.9	0.121	0.684	0.805	1.18	0.745	0.061
28	0.1841	11.213	11.2	2.1	0.124	0.684	0.808	1.18	0.746	0.062
29	0.1897	11.866	11.9	2.2	0.131	0.684	0.815	1.19	0.749	0.065
30	0.2016	11.989	12.0	2.4	0.132	0.684	0.816	1.19	0.750	0.066
31	0.2073	12.659	12.7	2.5	0.139	0.684	0.823	1.20	0.754	0.070
32	0.2137	13.248	13.2	2.6	0.146	0.684	0.830	1.21	0.757	0.073
33	0.2194	12.691	12.7	2.7	0.139	0.684	0.823	1.20	0.754	0.070
34	0.2256	13.681	13.7	2.8	0.150	0.684	0.834	1.22	0.759	0.075
35	0.2313	14.297	14.3	2.9	0.157	0.684	0.841	1.23	0.762	0.078
36	0.2432	15.310	15.3	3.1	0.167	0.684	0.851	1.24	0.768	0.084
37	0.2551	15.736	15.7	3.3	0.172	0.684	0.856	1.25	0.770	0.086
38	0.2671	16.365	16.4	3.6	0.178	0.684	0.862	1.26	0.773	0.089
39	0.2727	16.920	16.9	3.6	0.184	0.684	0.868	1.27	0.776	0.092
40	0.2846	17.502	17.5	3.8	0.190	0.684	0.874	1.28	0.779	0.095
41	0.2903	17.964	18.0	3.9	0.195	0.684	0.879	1.28	0.781	0.097
42	0.3023	18.240	18.2	4.1	0.197	0.684	0.881	1.29	0.783	0.099
43	0.3085	18.675	18.7	4.3	0.202	0.684	0.886	1.30	0.785	0.101
44	0.3142	19.631	19.6	4.4	0.212	0.684	0.896	1.31	0.790	0.106
45	0.3261	20.212	20.2	4.6	0.218	0.684	0.902	1.32	0.793	0.109
46	0.3324	20.622	20.6	4.7	0.222	0.684	0.906	1.32	0.795	0.111

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress tsf	Minor Princ. Stress tsf	Major Princ. Stress tsf	1:3 Ratio	P tsf	Q tsf
47	0.3443	21.158	21.2	4.9	0.227	0.684	0.911	1.33	0.798	0.114
48	0.3499	21.640	21.6	5.0	0.232	0.684	0.916	1.34	0.800	0.116
49	0.3562	21.557	21.6	5.1	0.219	0.684	0.903	1.32	0.794	0.110

SUMMARY OF LABORATORY TESTS

Project No. 08.18.918

Client: United States Army Corps of Engineers

Project: Galveston Channel and Pelican Island PA

Contract No. DACW64-03-D-0008, Task Order No. 0077

Boring No.	Sample No.	Depth (ft)	Soil Description	USCS	Water Content (%)	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plast. Index	Finer than #200 Sieve (%)	Lab Vane (tsf)	Uc/UU. Compr. (tsf)	Failure Strain (%)	Conf. Pres. (psi)	Failure Type
07-239															
	2	2.5-4	Reddish-brown and gray FAT CLAY	CH	35.6		67	21	46	98.4					
	3	4-6	Reddish-brown and gray FAT CLAY; sand seams	CH	31.0	90.2									
	4	6-8	Tan and brown LEAN CLAY	CL	29.4	94.4	35	16	19	99.7		1.21	7.2	2.5	Vertical shear
	5	8-10	Brown SILTY CLAY	CL-ML	28.3	95.1						0.86	5.7	3.5	Bulge
	6	10-12	Gray LEAN CLAY	CL	24.9	101.1	36	16	20	99.5					
	7	12-14	Light gray and tan FAT CLAY with SAND	CH	31.2	91.8						0.32	4.0		
	8	14-16	Gray LEAN CLAY	CL	54.1										
	9	16-18	Gray LEAN CLAY with SAND	CL	28.4	93.5									
	10	18-20	Gray LEAN CLAY	CL	29.2	96.1	33	16	17	99.8					
	11	20-22	Gray LEAN CLAY; sand seams	CL	33.2	88.9									
	12	22-24	Gray LEAN CLAY with SAND	CL	29.8	91.5									
	13	24-26	Brown and gray FAT CLAY	CH	31.2	91.7	50	20	30	99.9		0.77	6.4	9.5	60 degree
	14	26-28	Gray FAT CLAY	CH	39.1	82.1									
	15	28-30	Gray FAT CLAY	CH	35.7	81.9						1.26	7.2		60 degree
07-240															
	2	2.5-4	Tan and gray SANDY SILTY CLAY	CL-ML	22.2										
	3	4-6	Tan and brown LEAN CLAY	CL	23.1	104.2	31	16	15	98.2		1.69	6.5	2.0	Vertical shear
	4	6-8	Tan and brown LEAN CLAY	CL	61.6										
	5	8-10	Tan and gray SANDY SILTY CLAY; ferrous nodules	CL-ML	25.3	92.1						0.43	5.5	3.5	Vertical shear
	6	10-12	Tan and gray SANDY SILTY CLAY	CL-ML	27.3	92.4									
	7	12-14	Tan and brown LEAN CLAY	CL	27.6	92.5	32	16	16	99.4		0.36	5.6	5.0	Vertical shear
	8	14-16	Tan and gray SANDY LEAN CLAY; calcareous nodules	CL	27.3	94.7									
	9	16-18	Brown SILTY CLAY with SAND	CL-ML	27.3	93.3						0.36	5.8	6.5	Bulge
	10	18-20	Tan and brown SILTY CLAY	CL-ML	29.3	94.0						0.75	5.2		Vertical shear
	11	20-22	Gray and tan SILTY CLAY with SAND	CL-ML	30.3	90.7									
	12	22-24	Tan and brown SANDY SILTY CLAY	CL-ML	33.6	91.7									
	13	24-26	Gray and brown FAT CLAY	CH	30.6	90.7	53	20	33	99.8		0.23	5.0	9.5	Bulge
	14	26-28	Gray LEAN CLAY with SAND	CL	32.3	87.2									
	15	28-30	Gray FAT CLAY	CH	47.3	77.5									
07-241															
	1	0-2	Gray FAT CLAY	CH	172.6										
	2	2-4	Gray FAT CLAY	CH	158.9		126	30	96	95.6					
	3	4-6	Reddish-brown and gray FAT CLAY	CH	30.6	87.0									
	4	6-8	Tan and gray FAT CLAY	CH	31.4	88.7	70	22	48	99.9					
	5	8-10	Tan and gray SANDY SILTY CLAY; shell fragments	CL-ML	24.7	100.6									
	6	10-12	Tan and brown LEAN CLAY	CL	27.8	93.9	42	17	25	99.3		0.83	7.2		60 degree

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