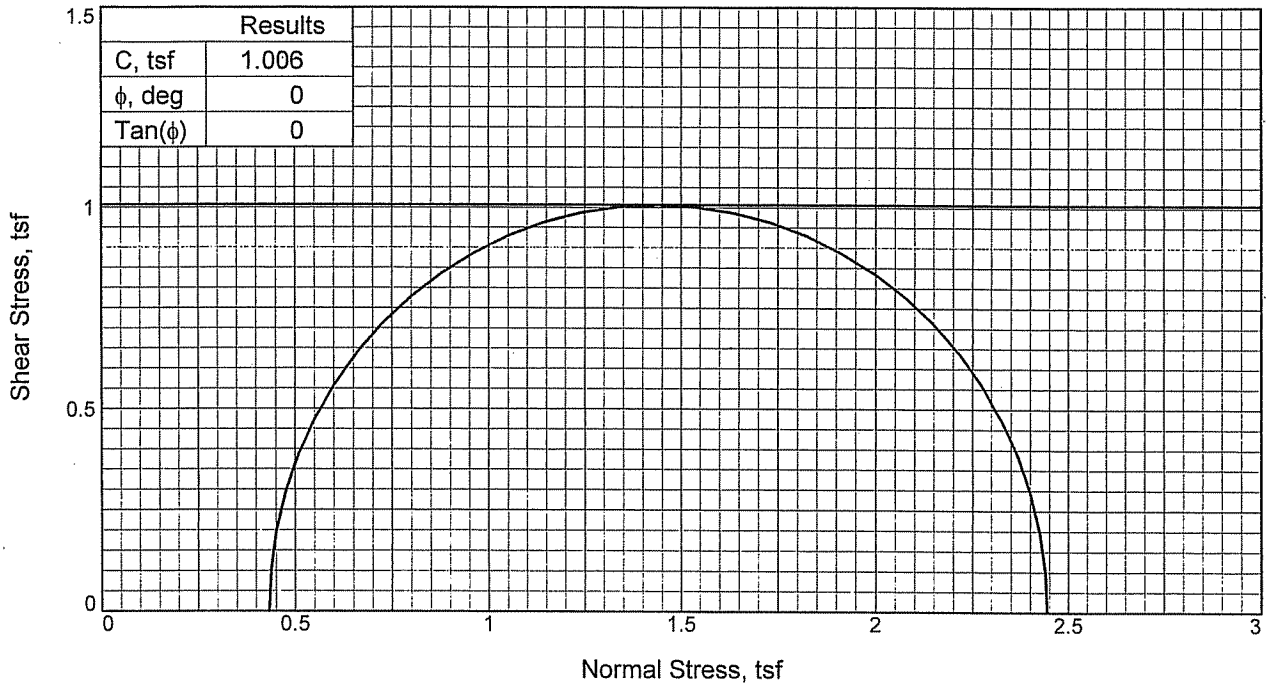
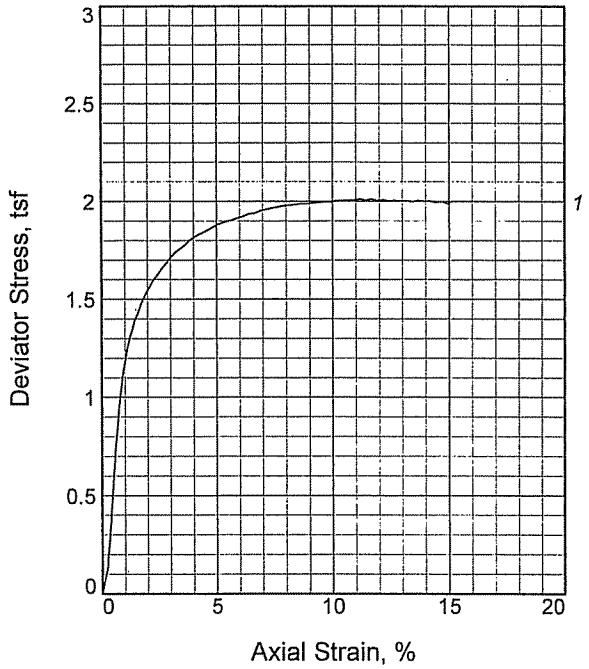
	5	8-10	Reddish-brown LEAN CLAY	CL	31.9	95.8	45	18	27	99.8	1.01	12	9	Bulge
	6	10-12	Reddish-brown SANDY SILTY CLAY	CL-ML	25.4	97.5								
	7	12-14	Reddish-brown and gray FAT CLAY	CH	27.8	97.9								
	8	14-16	Reddish-brown and gray FAT CLAY	CH	21.0	105.9								
	9	16-18	Reddish-brown and gray LEAN CLAY with SAND	CL	15.8	113.2								
	10	18-20	Reddish-brown and gray LEAN CLAY with SAND	CL	26.5	97.4								
08-94			**El. 9.25, E=3185568 N=13646170**											
	1	0-2	Gray and tan SANDY LEAN CLAY	CL	11.3	106.3								
	2	2-4	Gray and tan FAT CLAY	CH	24.9	100.1								
	3	4-6	Tan and gray FAT CLAY	CH	24.5	99.7	60	21	39	90.7	1.20	11.4	6	60 degree
	4	6-8	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	29.6	96.0								
	5	8-10	Reddish-brown and gray FAT CLAY	CH	28.9	95.4								
	6	10-12	Reddish-brown and gray FAT CLAY	CH	22.0	107.1	50	20	30	97.8	1.13	11.2	11	60 degree
	7	12-14	Reddish-brown and gray SANDY SILTY CLAY	CL-ML	23.8	99.5					0.84	3.4		Vertical shear
	8	14-16	Reddish-brown gray FAT CLAY; calcareous nodules	CH	27.5	97.5								
	9	16-18	Reddish-brown and gray FAT CLAY	CH	25.4	98.4	67	21	46	98.0	2.28	6.7	15	Slickensided
	10	18-20	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	27.0	98.0								
08-95			**El. 11.00, E=3184767 N=13646549**											
	1	0-2	Gray and tan SANDY LEAN CLAY	CL	9.9	108.8								
	2	2-4	Tan and gray SANDY LEAN CLAY	CL	20.9	105.1								
	3	4-6	Tan and gray FAT CLAY; ferrous nodules	CH	23.5	103.0	61	21	40		2.01	11.2	6	Bulge
	4	6-8	Reddish-brown and gray FAT CLAY; calcareous	CH	24.2	101.6					1.72	11.2		60 degree
	5	8-10	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	28.1	95.9								
	6	10-12	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	27.5	94.7								
	7	12-14	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	30.1	95.6								
	8	14-16	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	27.6	97.3								
	9	16-18	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	26.2	99.2								
	10	18-20	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	24.1	100.5								
08-96			**El. 11.50, E=3184441 N=13647279**											
	1	0-2	Gray SANDY LEAN CLAY	CL	17.8	106.6								
	2	2-4	Gray and tan FAT CLAY	CH	20.1	103.5								
	3	4-6	Reddish-brown and gray FAT CLAY	CH	32.9	89.8	64	21	43	93.1	0.85	6.2	6	60 degree
	4	6-8	Reddish-brown and gray FAT CLAY	CH	27.6	94.3								
	5	8-10	Reddish-brown and gray FAT CLAY	CH	30.6	90.8								
	6	10-12	Reddish-brown and gray FAT CLAY	CH	25.7	95.8	66	21	45	98.8	1.54	2.6		Slickensided
	7	12-14	Reddish-brown and gray FAT CLAY	CH	24.9	102.6								
	8	14-16	Reddish-brown LEAN CLAY with SAND	CL	24.1	97.7								
	9	16-18	Reddish-brown and gray FAT CLAY	CH	26.0	97.9								
	10	18-20	Reddish-brown and gray FAT CLAY	CH	26.3	98.0								
08-97			**El. 11.25, E=3185190 N=13647332**											
	1	0-2	Gray SANDY LEAN CLAY	CL	15.8	109.4								
	2	2-4	Gray FAT CLAY with SAND	CH	21.1	105.3								
	3	4-6	Tan and gray FAT CLAY; ferrous and calcareous nodules	CH	21.2	108.2								
	4	6-8	Reddish-brown and gray FAT CLAY; ferrous nodules	CH	30.4	89.6								
	5	8-10	Reddish-brown and gray FAT CLAY	CH	40.9	86.4	66	21	45	98.0	0.44	9.5	9	60 degree
	6	10-12	Reddish-brown and gray SILTY CLAY with SAND	CL-ML	35.6									
	7	12-14	Reddish-brown and gray SILTY CLAY with SAND	CL-ML	27.0	95.8					0.58	5.8		Vertical shear
	8	14-16	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	25.4	99.0								
	9	16-18	Reddish-brown and gray FAT CLAY	CH	25.1	98.8								
	10	18-20	Reddish-brown and gray FAT CLAY	CH	28.9	98.7								
08-98			**El. 11.00, E=3184452 N=13647824**											
	1	0-2	Gray SANDY LEAN CLAY	CL	13.2	105.9								
	2	2-4	Tan and gray FAT CLAY	CH	19.8	98.9								
	3	4-6	Tan and gray FAT CLAY	CH	17.1	109.6								
	4	6-8	Reddish-brown and gray FAT CLAY	CH	29.1	93.3	67	21	46	98.3	1.22	6.1		Slickensided
	5	8-10	Reddish-brown and gray FAT CLAY	CH	32.4	88.6								
	6	10-12	Reddish-brown and gray FAT CLAY	CH	24.5	99.6	62	20	42	95.2	1.75	5.1	11	Slickensided
	7	12-14	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	37.8	87.0								
	8	14-16	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	26.0	98.0								
	9	16-18	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	24.4	102.5								
	10	18-20	Reddish-brown and gray FAT CLAY	CH	27.6	96.5								
08-99														





Sample No.		1
Initial	Water Content, %	23.5
	Dry Density, pcf	103.0
	Saturation, %	99.7
	Void Ratio	0.6364
	Diameter, in.	2.83
	Height, in.	6.00
At Test	Water Content, %	22.3
	Dry Density, pcf	103.0
	Saturation, %	94.6
	Void Ratio	0.6364
	Diameter, in.	2.83
	Height, in.	6.00
Strain rate, %/min.		1.00
Back Pressure, tsf		0.00
Cell Pressure, tsf		0.43
Fail. Stress, tsf		2.01
Ult. Stress, tsf		
σ_1 Failure, tsf		2.44
σ_3 Failure, tsf		0.43

Type of Test:
Unconsolidated Undrained

Sample Type: Undisturbed

Description: Tan and gray FAT CLAY; ferrous

LL= 61 **PL=** 21 **PI=** 40

Assumed Specific Gravity= 2.70

Remarks:
Test method: ASTM D 2850
Pocket pen; tsf: 1.75
Failure type: Bulge

Client: United States Army Corps of Engineers

Project: Chocolate Bayou Placement Area
Contract DACW64-03-D-0008; Task Order 0079

Source of Sample: 08-95 **Depth:** 4-6

Sample Number: 3

Proj. No.: 08.18.921 **Date Sampled:** 8/16/08

TRIAXIAL SHEAR TEST REPORT

Tolunay-Wong Engineers, Inc.

TRIAXIAL COMPRESSION TEST

Unconsolidated Undrained

8/19/2008
2:06 PM

Date:	8/16/08
Client:	United States Army Corps of Engineers
Project:	Chocolate Bayou Placement Area
	Contract DACW64-03-D-0008; Task Order 0079
Project No.:	08.18.921
Location:	08-95
Depth:	4-6 **Sample Number:** 3
Description:	Tan and gray FAT CLAY; ferrous
Remarks:	
	Test method: ASTM D 2850
	Pocket pen; tsf: 1.75
	Failure type: Bulge
Type of Sample:	Undisturbed

Assumed Specific Gravity=2.70 **LL=**61 **PL=**21 **PI=**40

Test Method: ASTM D 2850

Parameters for Specimen No. 1

Specimen Parameter	Initial	Final
Moisture content: Moist soil+tare, gms.	153.970	114.710
Moisture content: Dry soil+tare, gms.	130.710	99.590
Moisture content: Tare, gms.	31.750	31.800
Moisture, %	23.5	22.3
Moist specimen weight, gms.	1263.7	
Diameter, in.	2.83	
Area, in.²	6.31	
Height, in.	6.00	
Wet Density, pcf	127.2	
Dry density, pcf	103.0	
Void ratio	0.6364	
Saturation, %	99.7	

Test Readings for Specimen No. 1

Membrane modulus = .130 kN/cm²

Membrane thickness = .031 cm

Cell pressure = 6.00 psi (0.432 tsf)

Back pressure = 0.00 psi (0.000 tsf)

Strain rate, %/min. = 1.00

Fail. Stress = 2.012 tsf **at reading no.** 81

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	0.0598	0.000	0.0	0.0	0.000	0.432	0.432	1.00	0.432	0.000
1	0.0658	4.674	4.7	0.1	0.053	0.432	0.485	1.12	0.459	0.027
2	0.0668	6.770	6.8	0.1	0.077	0.432	0.509	1.18	0.471	0.039
3	0.0714	9.144	9.1	0.2	0.104	0.432	0.536	1.24	0.484	0.052
4	0.0735	12.197	12.2	0.2	0.139	0.432	0.571	1.32	0.501	0.069
5	0.0747	15.522	15.5	0.2	0.177	0.432	0.609	1.41	0.520	0.088
6	0.0760	18.281	18.3	0.3	0.208	0.432	0.640	1.48	0.536	0.104
7	0.0781	21.279	21.3	0.3	0.242	0.432	0.674	1.56	0.553	0.121
8	0.0794	24.396	24.4	0.3	0.277	0.432	0.709	1.64	0.571	0.139
9	0.0806	28.425	28.4	0.3	0.323	0.432	0.755	1.75	0.594	0.162
10	0.0827	32.627	32.6	0.4	0.371	0.432	0.803	1.86	0.617	0.185
11	0.0839	37.106	37.1	0.4	0.422	0.432	0.854	1.98	0.643	0.211
12	0.0852	41.128	41.1	0.4	0.467	0.432	0.899	2.08	0.666	0.234
13	0.0873	45.270	45.3	0.5	0.514	0.432	0.946	2.19	0.689	0.257
14	0.0886	49.285	49.3	0.5	0.559	0.432	0.991	2.30	0.712	0.280
15	0.0899	52.653	52.7	0.5	0.598	0.432	1.030	2.38	0.731	0.299
16	0.0919	56.961	57.0	0.5	0.646	0.432	1.078	2.50	0.755	0.323
17	0.0931	60.766	60.8	0.6	0.689	0.432	1.121	2.60	0.777	0.345
18	0.0944	65.013	65.0	0.6	0.737	0.432	1.169	2.71	0.801	0.369
19	0.0964	68.034	68.0	0.6	0.771	0.432	1.203	2.79	0.818	0.386
20	0.0977	71.097	71.1	0.6	0.806	0.432	1.238	2.87	0.835	0.403
21	0.0990	74.163	74.2	0.7	0.840	0.432	1.272	2.95	0.852	0.420
22	0.1010	77.611	77.6	0.7	0.879	0.432	1.311	3.04	0.872	0.440
23	0.1023	81.024	81.0	0.7	0.918	0.432	1.350	3.12	0.891	0.459
24	0.1036	83.731	83.7	0.7	0.948	0.432	1.380	3.19	0.906	0.474
25	0.1057	86.088	86.1	0.8	0.974	0.432	1.406	3.26	0.919	0.487
26	0.1069	88.285	88.3	0.8	0.999	0.432	1.431	3.31	0.932	0.500
27	0.1082	90.528	90.5	0.8	1.024	0.432	1.456	3.37	0.944	0.512
28	0.1103	92.690	92.7	0.8	1.048	0.432	1.480	3.43	0.956	0.524
29	0.1116	95.105	95.1	0.9	1.075	0.432	1.507	3.49	0.970	0.538
30	0.1148	99.208	99.2	0.9	1.121	0.432	1.553	3.60	0.993	0.561
31	0.1174	101.968	102.0	1.0	1.152	0.432	1.584	3.67	1.008	0.576
32	0.1207	105.153	105.2	1.0	1.187	0.432	1.619	3.75	1.026	0.594
33	0.1240	108.719	108.7	1.1	1.227	0.432	1.659	3.84	1.045	0.613
34	0.1266	110.922	110.9	1.1	1.251	0.432	1.683	3.90	1.058	0.626
35	0.1331	115.731	115.7	1.2	1.304	0.432	1.736	4.02	1.084	0.652
36	0.1389	119.200	119.2	1.3	1.342	0.432	1.774	4.11	1.103	0.671
37	0.1447	123.170	123.2	1.4	1.385	0.432	1.817	4.21	1.124	0.692
38	0.1512	125.969	126.0	1.5	1.415	0.432	1.847	4.28	1.139	0.707
39	0.1570	128.737	128.7	1.6	1.445	0.432	1.877	4.34	1.154	0.722
40	0.1634	131.853	131.9	1.7	1.478	0.432	1.910	4.42	1.171	0.739
41	0.1750	136.398	136.4	1.9	1.526	0.432	1.958	4.53	1.195	0.763
42	0.1814	138.539	138.5	2.0	1.548	0.432	1.980	4.58	1.206	0.774
43	0.1936	142.825	142.8	2.2	1.593	0.432	2.025	4.69	1.228	0.796
44	0.2058	145.909	145.9	2.4	1.624	0.432	2.056	4.76	1.244	0.812
45	0.2180	149.147	149.1	2.6	1.656	0.432	2.088	4.83	1.260	0.828
46	0.2302	151.998	152.0	2.8	1.684	0.432	2.116	4.90	1.274	0.842

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	0.2424	155.148	155.1	3.0	1.716	0.432	2.148	4.97	1.290	0.858
48	0.2539	157.669	157.7	3.2	1.740	0.432	2.172	5.03	1.302	0.870
49	0.2662	159.617	159.6	3.4	1.758	0.432	2.190	5.07	1.311	0.879
50	0.2785	161.653	161.7	3.6	1.777	0.432	2.209	5.11	1.320	0.888
51	0.2901	164.070	164.1	3.8	1.800	0.432	2.232	5.17	1.332	0.900
52	0.3024	166.059	166.1	4.0	1.817	0.432	2.249	5.21	1.341	0.909
53	0.3146	167.694	167.7	4.3	1.831	0.432	2.263	5.24	1.348	0.916
54	0.3268	169.029	169.0	4.5	1.842	0.432	2.274	5.26	1.353	0.921
55	0.3390	170.545	170.5	4.7	1.855	0.432	2.287	5.29	1.359	0.927
56	0.3512	172.192	172.2	4.9	1.869	0.432	2.301	5.33	1.366	0.934
57	0.3634	173.761	173.8	5.1	1.882	0.432	2.314	5.36	1.373	0.941
58	0.3846	175.840	175.8	5.4	1.897	0.432	2.329	5.39	1.380	0.948
59	0.3993	176.822	176.8	5.7	1.903	0.432	2.335	5.40	1.383	0.951
60	0.4147	178.499	178.5	5.9	1.915	0.432	2.347	5.43	1.390	0.958
61	0.4295	179.613	179.6	6.2	1.922	0.432	2.354	5.45	1.393	0.961
62	0.4442	181.346	181.3	6.4	1.936	0.432	2.368	5.48	1.400	0.968
63	0.4598	182.251	182.3	6.7	1.940	0.432	2.372	5.49	1.402	0.970
64	0.4745	183.962	184.0	6.9	1.953	0.432	2.385	5.52	1.409	0.977
65	0.4900	184.974	185.0	7.2	1.958	0.432	2.390	5.53	1.411	0.979
66	0.5047	186.147	186.1	7.4	1.966	0.432	2.398	5.55	1.415	0.983
67	0.5201	187.251	187.3	7.7	1.972	0.432	2.404	5.56	1.418	0.986
68	0.5348	188.291	188.3	7.9	1.977	0.432	2.409	5.58	1.421	0.989
69	0.5496	189.029	189.0	8.2	1.980	0.432	2.412	5.58	1.422	0.990
70	0.5651	189.867	189.9	8.4	1.983	0.432	2.415	5.59	1.424	0.992
71	0.5798	190.834	190.8	8.7	1.988	0.432	2.420	5.60	1.426	0.994
72	0.5952	191.508	191.5	8.9	1.989	0.432	2.421	5.60	1.427	0.995
73	0.6100	192.336	192.3	9.2	1.992	0.432	2.424	5.61	1.428	0.996
74	0.6247	192.964	193.0	9.4	1.994	0.432	2.426	5.61	1.429	0.997
75	0.6402	193.855	193.9	9.7	1.997	0.432	2.429	5.62	1.431	0.999
76	0.6550	194.384	194.4	9.9	1.997	0.432	2.429	5.62	1.431	0.999
77	0.6704	195.500	195.5	10.2	2.003	0.432	2.435	5.64	1.433	1.001
78	0.6852	196.091	196.1	10.4	2.003	0.432	2.435	5.64	1.434	1.002
79	0.7005	197.056	197.1	10.7	2.007	0.432	2.439	5.65	1.436	1.004
80	0.7153	197.525	197.5	10.9	2.007	0.432	2.439	5.65	1.435	1.003
81	0.7307	198.662	198.7	11.2	2.012	0.432	2.444	5.66	1.438	1.006
82	0.7454	198.540	198.5	11.4	2.006	0.432	2.438	5.64	1.435	1.003
83	0.7608	199.644	199.6	11.7	2.011	0.432	2.443	5.65	1.437	1.005
84	0.7756	199.466	199.5	11.9	2.003	0.432	2.435	5.64	1.434	1.002
85	0.7903	200.522	200.5	12.2	2.008	0.432	2.440	5.65	1.436	1.004
86	0.8058	200.421	200.4	12.4	2.002	0.432	2.434	5.63	1.433	1.001
87	0.8206	201.311	201.3	12.7	2.005	0.432	2.437	5.64	1.434	1.002
88	0.8353	201.536	201.5	12.9	2.001	0.432	2.433	5.63	1.433	1.001
89	0.8508	202.413	202.4	13.2	2.004	0.432	2.436	5.64	1.434	1.002
90	0.8656	202.363	202.4	13.4	1.998	0.432	2.430	5.62	1.431	0.999
91	0.8810	203.699	203.7	13.7	2.005	0.432	2.437	5.64	1.435	1.003
92	0.8958	203.756	203.8	13.9	2.000	0.432	2.432	5.63	1.432	1.000
93	0.9106	204.584	204.6	14.2	2.002	0.432	2.434	5.64	1.433	1.001

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
94	0.9260	204.475	204.5	14.4	1.995	0.432	2.427	5.62	1.430	0.998
95	0.9408	205.467	205.5	14.7	1.999	0.432	2.431	5.63	1.432	1.000
96	0.9562	205.077	205.1	15.0	1.989	0.432	2.421	5.61	1.427	0.995
97	0.9652	206.435	206.4	15.1	1.999	0.432	2.431	5.63	1.432	1.000