

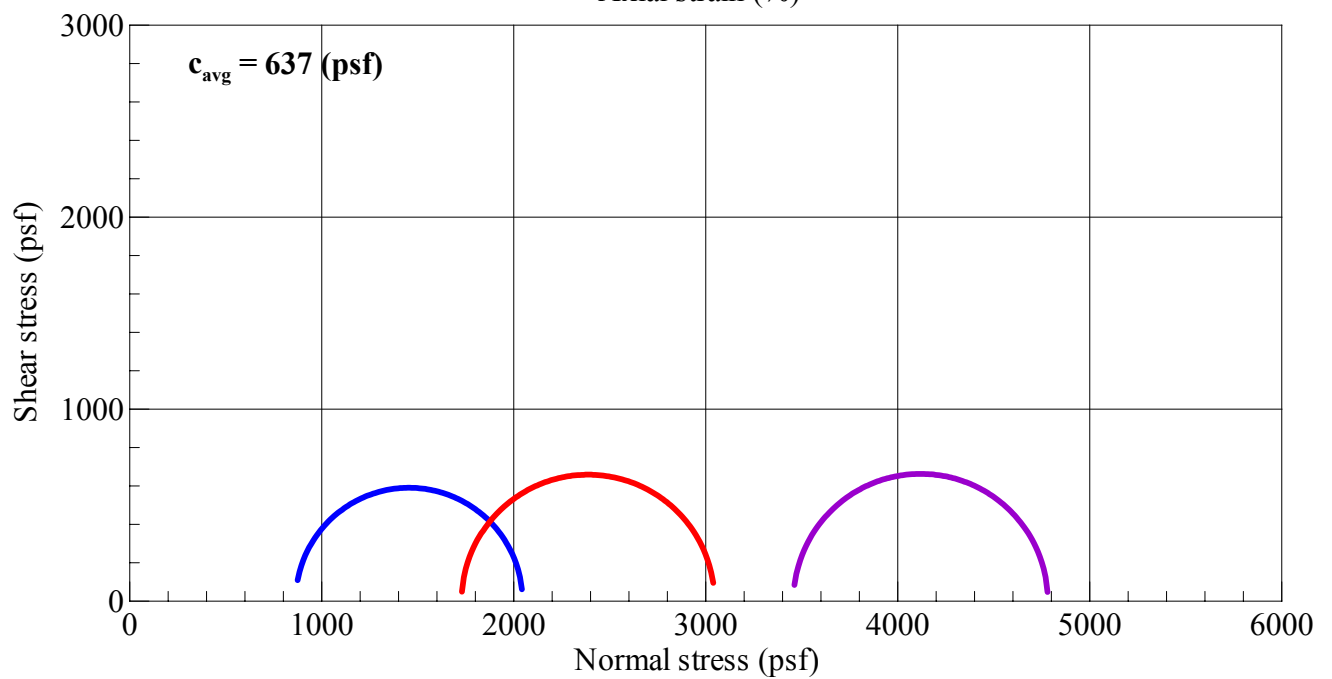
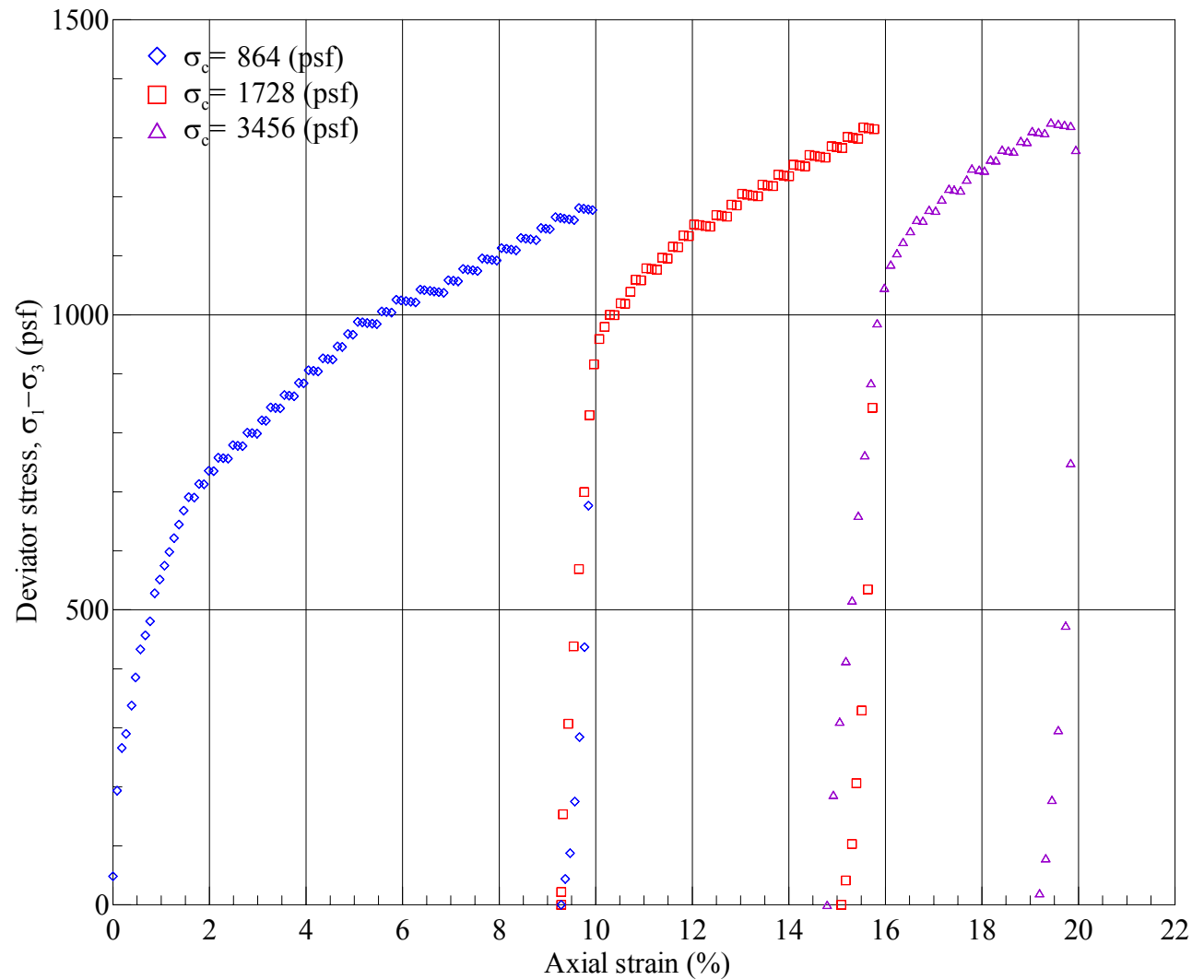
Unconsolidated Undrained (UU)**Project Name: BYU (Dr. Youd)****Project Number: M00399-003****Sample: WLA D2****Depth: 22.0-24.5**

Phase			1		2		3	
Initial		w (%)	26.3		Multi-Staged Test			
		γ_m (pcf)	125.0					
		γ_d (pcf)	98.9					
		B	0.62					
Final		w (%)					26.8	
		γ_m (pcf)					127.6	
		γ_d (pcf)					100.6	
		B					0.97	
Back pressure (psi)			39.5		39.5		39.5	
Strain rate (in/min)			0.0180		0.0180		0.0180	
Stress conditions			Peak $\sigma^1\text{-}\sigma^3$	Max σ^1/σ^3	Peak $\sigma^1\text{-}\sigma^3$	Max σ^1/σ^3	Peak $\sigma^1\text{-}\sigma^3$	Max σ^1/σ^3
Total Stress at Failure	Time to Fail (min)		32.7		20.0		12.3	
	ε (%)		9.65		15.55		19.43	
	σ_3 (psf)		864		1728		3456	
	$\sigma_1\text{-}\sigma_3$ (psf)		1181		1318		1326	
	σ_1 (psf)		2045		3046		4782	
	$P = (\sigma_1\text{+}\sigma_3)/2$ (psf)		1455		2387		4119	
	$Q = (\sigma_1\text{-}\sigma_3)/2$ (psf)		591		659		663	
	Shear stress at failure, τ_f (psf)		591		659		663	

Average shear stress at failure, τ_f (psf)	637
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Tested by: _____

Reviewed: _____



Multi-Staged Triaxial Test
Unconsolidated Undrained (UU)



Project: **BYU (Dr. Yound)**

Phase 1

Number: **M00399-003**

Confining Stress = 864 (psf)

Sample: **WLA D2**

Depth: **22.0-24.5**

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Axial strain, ϵ (%)	σ_d ($\sigma_1 - \sigma_3$) (psf)	Total σ_3 (psf)	Total σ_1 (psf)	Q = s_u ($\sigma_1 - \sigma_3$)/2 (psf)	P ($\sigma_1 + \sigma_3$)/2 (psf)	σ_1/σ_3
0.00	48	864	912	24	888	1.06
0.08	194	864	1058	97	961	1.22
0.18	266	864	1130	133	997	1.31
0.27	290	864	1154	145	1009	1.34
0.38	338	864	1202	169	1033	1.39
0.47	386	864	1250	193	1057	1.45
0.57	433	864	1297	217	1081	1.50
0.67	457	864	1321	228	1092	1.53
0.77	481	864	1345	240	1104	1.56
0.87	528	864	1392	264	1128	1.61
0.97	551	864	1415	276	1140	1.64
1.07	575	864	1439	287	1151	1.67
1.17	598	864	1462	299	1163	1.69
1.27	622	864	1486	311	1175	1.72
1.37	645	864	1509	322	1186	1.75
1.47	668	864	1532	334	1198	1.77
1.57	691	864	1555	346	1210	1.80
1.68	690	864	1554	345	1209	1.80
1.78	713	864	1577	357	1221	1.83
1.88	713	864	1577	356	1220	1.82
1.98	736	864	1600	368	1232	1.85
2.08	735	864	1599	367	1231	1.85
2.18	758	864	1622	379	1243	1.88
2.28	757	864	1621	379	1243	1.88
2.38	756	864	1620	378	1242	1.88
2.48	779	864	1643	390	1254	1.90
2.58	778	864	1642	389	1253	1.90
2.68	778	864	1642	389	1253	1.90
2.78	800	864	1664	400	1264	1.93
2.88	799	864	1663	400	1264	1.93
2.98	799	864	1663	399	1263	1.92
3.08	821	864	1685	411	1275	1.95
3.17	821	864	1685	410	1274	1.95
3.27	843	864	1707	422	1286	1.98
3.37	842	864	1706	421	1285	1.97
3.47	841	864	1705	421	1285	1.97
3.55	864	864	1728	432	1296	2.00
3.65	863	864	1727	432	1296	2.00
3.75	862	864	1726	431	1295	2.00
3.85	885	864	1749	442	1306	2.02
3.95	884	864	1748	442	1306	2.02
4.05	906	864	1770	453	1317	2.05
4.15	905	864	1769	453	1317	2.05
4.25	904	864	1768	452	1316	2.05
4.35	926	864	1790	463	1327	2.07
4.45	925	864	1789	463	1327	2.07
4.55	924	864	1788	462	1326	2.07
4.65	946	864	1810	473	1337	2.10
4.75	946	864	1810	473	1337	2.09
4.87	967	864	1831	484	1348	2.12
4.97	966	864	1830	483	1347	2.12
5.07	988	864	1852	494	1358	2.14
5.17	987	864	1851	494	1358	2.14
5.27	986	864	1850	493	1357	2.14
5.37	985	864	1849	493	1357	2.14
5.47	984	864	1848	492	1356	2.14
5.57	1006	864	1870	503	1367	2.16
5.67	1005	864	1869	502	1366	2.16
5.77	1004	864	1868	502	1366	2.16
5.87	1026	864	1890	513	1377	2.19
5.97	1024	864	1888	512	1376	2.19
6.07	1023	864	1887	512	1376	2.18
6.17	1022	864	1886	511	1375	2.18
6.27	1021	864	1885	511	1375	2.18
6.37	1043	864	1907	521	1385	2.21
6.45	1042	864	1906	521	1385	2.21
6.57	1041	864	1905	520	1384	2.20

Project: **BYU (Dr. Youd)**

Phase 1

Number: **M00399-003**

Confining Stress = 864 (psf)

Sample: **WLA D2**Depth: **22.0-24.5**

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Axial strain, ϵ (%)	σ_d ($\sigma_1 - \sigma_3$) (psf)	Total σ_3 (psf)	Total σ_1 (psf)	$Q = s_u$ ($\sigma_1 - \sigma_3$)/2 (psf)	P ($\sigma_1 + \sigma_3$)/2 (psf)	σ_1/σ_3
6.65	1040	864	1904	520	1384	2.20
6.75	1039	864	1903	519	1383	2.20
6.85	1037	864	1901	519	1383	2.20
6.95	1059	864	1923	529	1393	2.23
7.05	1058	864	1922	529	1393	2.22
7.15	1057	864	1921	528	1392	2.22
7.25	1078	864	1942	539	1403	2.25
7.35	1077	864	1941	538	1402	2.25
7.45	1076	864	1940	538	1402	2.24
7.55	1074	864	1938	537	1401	2.24
7.65	1096	864	1960	548	1412	2.27
7.75	1094	864	1958	547	1411	2.27
7.85	1093	864	1957	547	1411	2.27
7.95	1092	864	1956	546	1410	2.26
8.05	1113	864	1977	557	1421	2.29
8.15	1112	864	1976	556	1420	2.29
8.25	1111	864	1975	555	1419	2.29
8.35	1109	864	1973	555	1419	2.28
8.45	1130	864	1994	565	1429	2.31
8.55	1129	864	1993	565	1429	2.31
8.65	1128	864	1992	564	1428	2.31
8.77	1127	864	1991	563	1427	2.30
8.87	1147	864	2011	574	1438	2.33
8.97	1146	864	2010	573	1437	2.33
9.05	1145	864	2009	573	1437	2.33
9.17	1166	864	2030	583	1447	2.35
9.27	1164	864	2028	582	1446	2.35
9.35	1163	864	2027	582	1446	2.35
9.45	1162	864	2026	581	1445	2.34
9.55	1161	864	2025	580	1444	2.34
9.65	1181	864	2045	591	1455	2.37
9.75	1180	864	2044	590	1454	2.37
9.85	1179	864	2043	589	1453	2.36
9.93	1178	864	2042	589	1453	2.36
9.85	677	864	1541	338	1202	1.78
9.77	437	864	1301	218	1082	1.51
9.67	284	864	1148	142	1006	1.33
9.57	175	864	1039	88	952	1.20
9.47	88	864	952	44	908	1.10
9.37	44	864	908	22	886	1.05
9.28	0	864	864	0	864	1.00

Multi-Staged Triaxial Test
Unconsolidated Undrained (UU)



Project: **BYU (Dr. Youd)**
 Number: **M00399-003**
 Sample: **WLA D2**
 Depth: **22.0-24.5**

Phase 2
 Confining Stress = 1728 (psf)

F:\PROJECTS_2004\M-00399_BYU\003_youd_WLA\UU_3pts_humbolt_WLAD2at22-24.5.xls|P2

Axial strain, ϵ (%)	σ_d ($\sigma_1 - \sigma_3$) (psf)	Total σ_3 (psf)	Total σ_1 (psf)	Q = s_u ($(\sigma_1 - \sigma_3)/2$) (psf)	P ($(\sigma_1 + \sigma_3)/2$) (psf)	σ_1/σ_3
9.28	0	1728	1728	0	1728	1.00
9.28	22	1728	1750	11	1739	1.01
9.32	154	1728	1882	77	1805	1.09
9.43	307	1728	2035	154	1882	1.18
9.54	438	1728	2166	219	1947	1.25
9.65	569	1728	2297	284	2012	1.33
9.76	699	1728	2427	350	2078	1.40
9.87	830	1728	2558	415	2143	1.48
9.96	916	1728	2644	458	2186	1.53
10.07	959	1728	2687	479	2207	1.55
10.18	979	1728	2707	490	2218	1.57
10.29	1000	1728	2728	500	2228	1.58
10.39	999	1728	2727	500	2228	1.58
10.51	1020	1728	2748	510	2238	1.59
10.61	1019	1728	2747	509	2237	1.59
10.72	1039	1728	2767	520	2248	1.60
10.83	1060	1728	2788	530	2258	1.61
10.94	1058	1728	2786	529	2257	1.61
11.05	1079	1728	2807	539	2267	1.62
11.16	1078	1728	2806	539	2267	1.62
11.27	1076	1728	2804	538	2266	1.62
11.38	1097	1728	2825	548	2276	1.63
11.49	1095	1728	2823	548	2276	1.63
11.60	1116	1728	2844	558	2286	1.65
11.71	1114	1728	2842	557	2285	1.64
11.82	1135	1728	2863	567	2295	1.66
11.93	1133	1728	2861	567	2295	1.66
12.04	1153	1728	2881	577	2305	1.67
12.15	1152	1728	2880	576	2304	1.67
12.28	1151	1728	2879	575	2303	1.67
12.37	1149	1728	2877	575	2303	1.67
12.50	1169	1728	2897	585	2313	1.68
12.61	1168	1728	2896	584	2312	1.68
12.72	1166	1728	2894	583	2311	1.68
12.81	1187	1728	2915	593	2321	1.69
12.92	1185	1728	2913	593	2321	1.69
13.03	1205	1728	2933	602	2330	1.70
13.14	1204	1728	2932	602	2330	1.70
13.25	1202	1728	2930	601	2329	1.70
13.36	1201	1728	2929	600	2328	1.69
13.45	1221	1728	2949	610	2338	1.71
13.56	1219	1728	2947	610	2338	1.71
13.67	1218	1728	2946	609	2337	1.70
13.78	1238	1728	2966	619	2347	1.72
13.89	1236	1728	2964	618	2346	1.72
14.00	1235	1728	2963	617	2345	1.71
14.10	1254	1728	2982	627	2355	1.73
14.23	1253	1728	2981	626	2354	1.72
14.34	1251	1728	2979	626	2354	1.72
14.43	1271	1728	2999	635	2363	1.74
14.54	1269	1728	2997	635	2363	1.73
14.65	1268	1728	2996	634	2362	1.73
14.76	1266	1728	2994	633	2361	1.73
14.89	1285	1728	3013	643	2371	1.74
15.00	1284	1728	3012	642	2370	1.74
15.11	1282	1728	3010	641	2369	1.74
15.22	1302	1728	3030	651	2379	1.75
15.33	1300	1728	3028	650	2378	1.75
15.44	1299	1728	3027	649	2377	1.75
15.55	1318	1728	3046	659	2387	1.76
15.66	1316	1728	3044	658	2386	1.76
15.77	1314	1728	3042	657	2385	1.76
15.73	842	1728	2570	421	2149	1.49
15.64	535	1728	2263	267	1995	1.31
15.51	330	1728	2058	165	1893	1.19
15.40	206	1728	1934	103	1831	1.12
15.31	103	1728	1831	52	1780	1.06

Project: **BYU (Dr. Youd)**

[Phase 2](#)

Number: **M00399-003**

Confining Stress = 1728 (psf)

Sample: **WLA D2**

Depth: **22.0-24.5**

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Axial strain, ϵ (%)	σ_d ($\sigma_1 - \sigma_3$) (psf)	Total σ_3 (psf)	Total σ_1 (psf)	$Q = s_u$ ($\sigma_1 - \sigma_3$)/2 (psf)	P ($\sigma_1 + \sigma_3$)/2 (psf)	σ_1/σ_3
15.18	41	1728	1769	21	1749	1.02
15.09	0	1728	1728	0	1728	1.00
14.96	-41	1728	1687	-21	1707	0.98
14.85	-83	1728	1645	-41	1687	0.95
14.79	-62	1728	1666	-31	1697	0.96

Multi-Staged Triaxial Test
Unconsolidated Undrained (UU)



Project: **BYU (Dr. Youd)**
 Number: **M00399-003**
 Sample: **WLA D2**
 Depth: **22.0-24.5**

Phase 3
 Confining Stress = 3456 (psf)

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Axial strain, ϵ (%)	σ_d ($\sigma_1 - \sigma_3$) (psf)	Total σ_3 (psf)	Total σ_1 (psf)	Q = su ($(\sigma_1 - \sigma_3)/2$) (psf)	P ($(\sigma_1 + \sigma_3)/2$) (psf)	σ_1/σ_3
14.79	0	3456	3456	0	3456	1.00
14.92	187	3456	3643	93	3549	1.05
15.05	310	3456	3766	155	3611	1.09
15.18	413	3456	3869	207	3663	1.12
15.31	516	3456	3972	258	3714	1.15
15.44	660	3456	4116	330	3786	1.19
15.57	762	3456	4218	381	3837	1.22
15.70	884	3456	4340	442	3898	1.26
15.83	986	3456	4442	493	3949	1.29
15.98	1046	3456	4502	523	3979	1.30
16.11	1085	3456	4541	543	3999	1.31
16.24	1104	3456	4560	552	4008	1.32
16.37	1123	3456	4579	562	4018	1.33
16.52	1142	3456	4598	571	4027	1.33
16.65	1161	3456	4617	580	4036	1.34
16.78	1159	3456	4615	580	4036	1.34
16.91	1178	3456	4634	589	4045	1.34
17.04	1177	3456	4633	588	4044	1.34
17.17	1195	3456	4651	598	4054	1.35
17.32	1214	3456	4670	607	4063	1.35
17.43	1212	3456	4668	606	4062	1.35
17.55	1211	3456	4667	605	4061	1.35
17.68	1229	3456	4685	615	4071	1.36
17.79	1248	3456	4704	624	4080	1.36
17.94	1246	3456	4702	623	4079	1.36
18.05	1245	3456	4701	622	4078	1.36
18.18	1263	3456	4719	632	4088	1.37
18.29	1262	3456	4718	631	4087	1.37
18.42	1280	3456	4736	640	4096	1.37
18.55	1278	3456	4734	639	4095	1.37
18.65	1277	3456	4733	638	4094	1.37
18.81	1295	3456	4751	647	4103	1.37
18.93	1293	3456	4749	647	4103	1.37
19.04	1312	3456	4768	656	4112	1.38
19.17	1310	3456	4766	655	4111	1.38
19.30	1308	3456	4764	654	4110	1.38
19.43	1326	3456	4782	663	4119	1.38
19.58	1324	3456	4780	662	4118	1.38
19.71	1322	3456	4778	661	4117	1.38
19.84	1320	3456	4776	660	4116	1.38
19.95	1279	3456	4735	640	4096	1.37
19.84	749	3456	4205	374	3830	1.22
19.73	473	3456	3929	237	3693	1.14
19.58	296	3456	3752	148	3604	1.09
19.45	178	3456	3634	89	3545	1.05
19.32	79	3456	3535	40	3496	1.02
19.19	20	3456	3476	10	3466	1.01