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Woodward-Clyde Consultants

17 September 1981
81C217-4

ENCLOSURE 1

Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

Attention: Dr. T.R. Thiruvengadam
Section Head - Civil Engineering
Mail Code P-14-400

Subject: Additional Test Results
Foundation Sand - Baffle Dike
Soil Boring and Testing Program
Midland Plant-Units 1 and 2

Gentlemen:

On 1 July 1981, we issued a report presenting test results for fill and foundation materials from the Perimeter and Baffle Dike Areas. No engineering property testing of the foundation sand, however, had been authorized, performed, or reported. Dr. A.J. Hendron, Jr. subsequently requested that a series of isotropically consolidated-undrained triaxial compression tests with pore water pressure measurements (CTU) be performed on samples of foundation sand from the Baffle Dike. Authorization to perform this additional testing was obtained verbally from Isham, Lincoln and Beale and was verbally confirmed by Mr. Ramanujam.

Strength testing of foundation sand from Baffle Dike boring COE-7 consisted of performing a series of four CTU triaxial tests at confining pressures of 0.5, 1, 2, and 3 ksf. Preliminary test results were transmitted to CPCo and Dr. Hendron at the ASLB hearings in Midland. The test results presented herein are complete, have been checked, and supersede the preliminary test results previously issued.

Consulting Engineers, Geologists
and Environmental Scientists

Offices in Other Principal Cities

8205130239 820503
PDR ADDCK 05000329
A PDR



Test results are presented in both tabular and graphical formats in the same manner that similar data were included in our previously referenced report of 1 July 1981. To aid in correlating these additional test results with those previously presented, the tables and figures are numbered so as to coincide (insofar as practicable) with those previously used.

Index property test results and other pertinent data are listed for foundation sand samples S-19 through S-23 from boring COE-7 in Table B-7 (6/6). The tube densities reported in the table were calculated assuming the sample diameter was equal to that of the inside diameter of the sampling tube. Where two densities are reported, the larger value was calculated assuming the sample diameter was equal to that of the inside diameter of the cutting edge of the tube.

Particle-size distribution data for selected sieve sizes are summarized in Table B-7 (6/6); complete particle-size distribution curves and descriptions for 8 specimens of foundation sand are presented on Fig. C-7 (7, 8, 9/9).

Results of the CTU triaxial test series on foundation sand are summarized in Table E-6. CTU test results are presented graphically in a series of three plots (a, b, c) on Fig. E-6. Stress-strain characteristics are presented on the first figure (a), and include deviator stress, obliquity (principal stress ratio), and A-factor plotted vs axial strain. A sketch of the specimen at test completion is also included. Stress paths are presented in p-q diagrams on the second figure (b). On the third figure (c), Mohr circles are plotted on a Mohr-Coulomb diagram of shear stress vs effective normal stress.

As shown in Table E-6, failure characteristics have been summarized for the condition when cavitation occurred within the sample and for the condition of peak obliquity. These conditions are noted by small arrows on the

stress-strain characteristics plot ("a" figure). The condition of peak obliquity is noted by a solid (filled in) symbol on the p-q diagram ("b" figure). Mohr circles are plotted on the "c" figure only for the condition of peak obliquity.

The strength envelope plotted on the p-q diagram ("b" figure) is that determined as an average of the strength envelopes for all tests. The envelope for each test was determined as a straight line between the data point for the condition of peak obliquity (i.e., solid symbol) and the origin (i.e., assumes cohesion to be zero). The slope ($\bar{\alpha}$) of the average strength envelope on the p-q diagram was then mathematically converted to the slope ($\bar{\phi}$) of the strength envelope of the Mohr-Coulomb diagram ("c" figure).

Detailed supporting data for the CTU triaxial tests are presented in boring/sample-number order in Appendix H. These supporting data include copies of the original laboratory data sheet used for set up and take down of triaxial tests (front of form WCC L-202) and the summary calculation sheet for triaxial tests (back of form WCC L-202). Copies of the computer listing of the recorded test data (piston displacement, piston load, and pore water pressure) are also presented, followed by the printout of computed test results.

- If you have any questions regarding these additional test results, please call.

Very truly yours,

Larry M. Campbell
Larry M. Campbell
Project Manager

LMC:pf
Enclosure

cc: Mr. N. Ramanujam (2 copied)
Mr. T.C. Cooke/D.E. Sibbald
Dr. S.S. Afifi, Bechtel
Mr. A.J. Boos, Bechtel
Dr. R.B. Peck
Dr. A.J. Hendron, Jr.
Dr. H.M. Horn, WCC
Mr. D.M. Hendron, WCC
Mr. R.S. Ladd, WCC

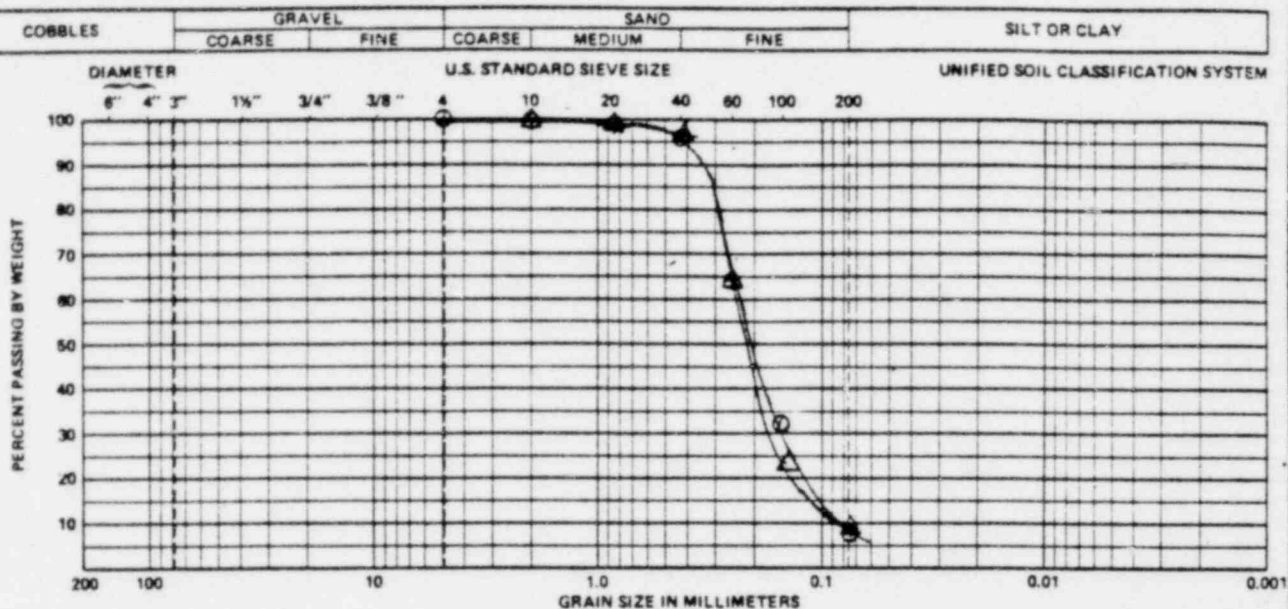
Woodward-Clyde Consultants

BIC4055T3 (BIC217) Prepared by PER reviewed by _____ checked by _____ 11-20-81
 BORING NO. 10E-7 GROUND SURFACE ELEV. (FL) 631.5 Sheet 1 of 1

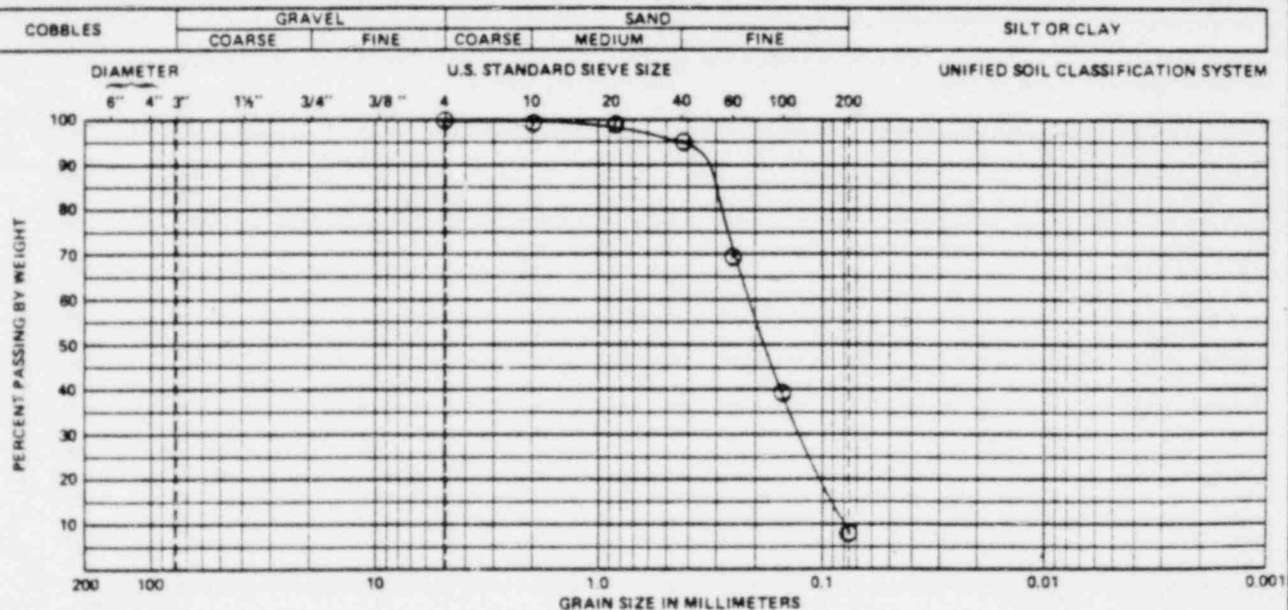
Sample No.	Section No.	Depth ft.	Tube			Section				Ave. PP t/ft ²	W %	W _L %	PI %	% Passing Sieve				G _s	Type Eng. Prop. Test
			Type	Rec. ft	δ _e lb/ft ³	USCS Symbol	W %	δ _e lb/ft ³	δ _e lb/ft ³					# 4	# 10	# 40	# 200		
S-19		35.9-38.4	PS	1.40	130.2														
	A	36.0				SP-SM	11.2							100	100	97	10		
	B	36.3																	
	C	36.6																	
	D	36.9				SP-SM	15.7	126.0	108.9			Non-plastic		100	100	95	8		CIV
	E	37.2																2.65	
S-20		38.4-40.9	PS	1.35	126.0 128.7														
	A	38.8					10.8												
	B	39.5				SP-SM	15.0	124.6	108.3			Non-plastic		100	100	95	9		CIV
	C	39.8																2.65	
S-21		40.9-43.4	PS	1.05	126.4 130.0														
	A	41.4				SP-SM	14.6	123.4	107.6					100	100	96	8		
	B	41.9					17.8												
S-22		43.4-45.9	PS	1.60	130.9 135.7														
	A	43.5					14.2												
		43.6				CL	20.2					45	27	100	100	95	56		
	B	43.9					13.2												
	C	44.5				SP-SM	17.5	126.9	108.0					100	100	91	11		CIV
	D	44.8																2.66	
S-23		45.9-48.4	PS	1.48	135.4														
	A	46.1				SP-SM								99	99	89	5		
	B	46.3					13.2												
	C	47.1				SP-SM	14.8	120.6	105.0					100	100	99	6		CIV
	D	47.4																2.66	

MIDLAND PLANT UNITS 1 and 2 - CONSUMERS POWER CO.
 LAB TESTING SUMMARY: BAFFLE DIKE - FOUNDATION SAND
 Table B-7 (%)

PARTICLE-SIZE DISTRIBUTION



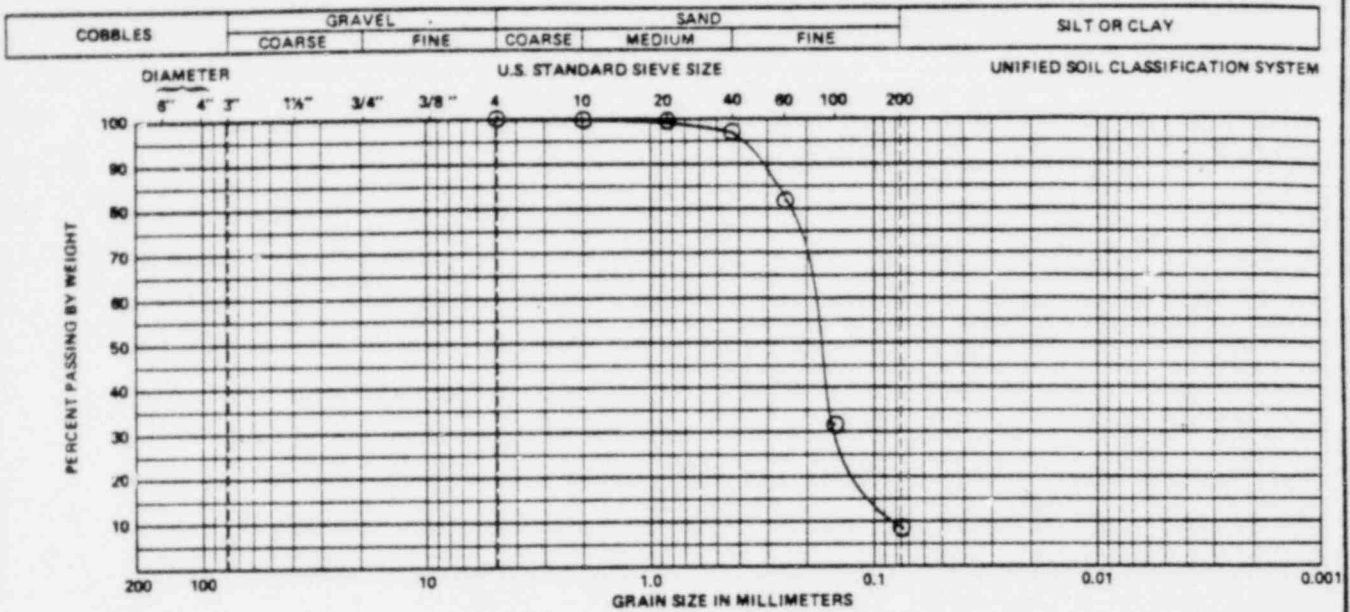
BORING	SAMPLE	DEPTH (ft)	SYMBOL	CLASSIFICATION	w (%)	w _L (%)	w _p (%)
COE-7	S-190	36.9	⊙	SP-SM, gray and brown, f. SAND, tr. c. to m. sand, tr. silt - CIU spec	15.7	Non-plastic	
COE-7	S-19A	36.0	Δ	SP-SM, gray and brown, f. SAND, tr. m. sand, tr. silt	11.2	Non-plastic	



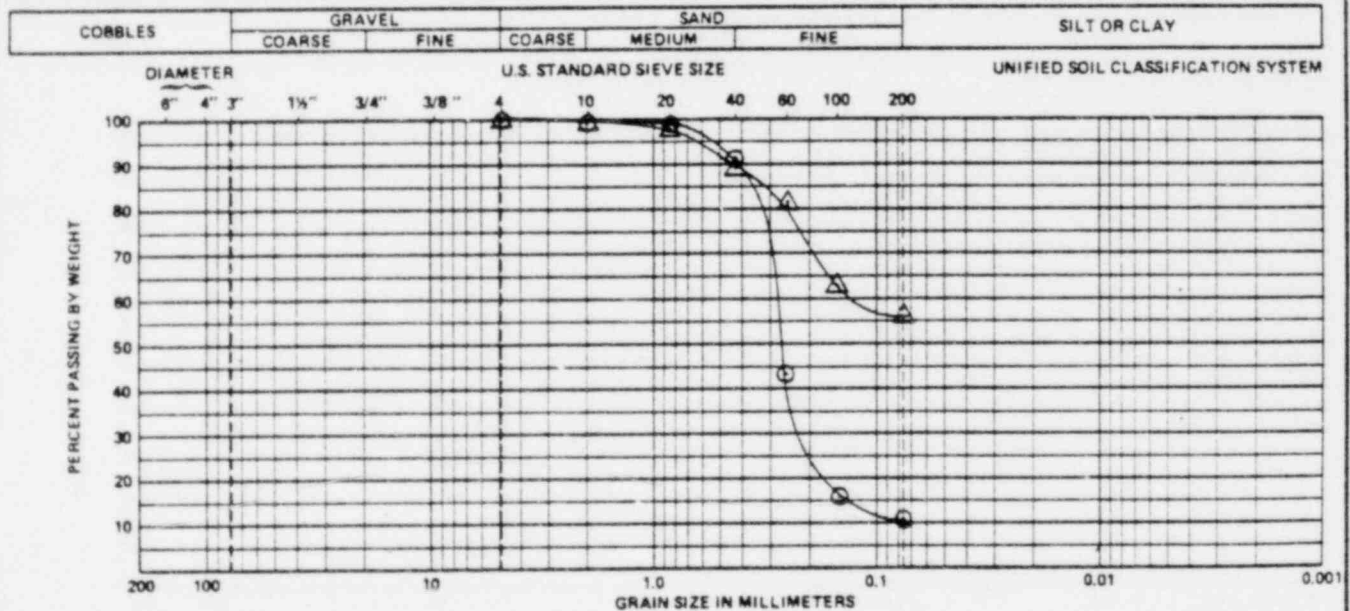
BORING	SAMPLE	DEPTH (ft)	SYMBOL	CLASSIFICATION	w (%)	w _L (%)	w _p (%)
COE 7	S-20B	39.5	⊙	SP-SM, brown and gray-brown f. SAND, tr. c to m. sand, tr. silt - CIU spec	15.2	Non-plastic	

Fig. C-7 (7/9)

PARTICLE-SIZE DISTRIBUTION



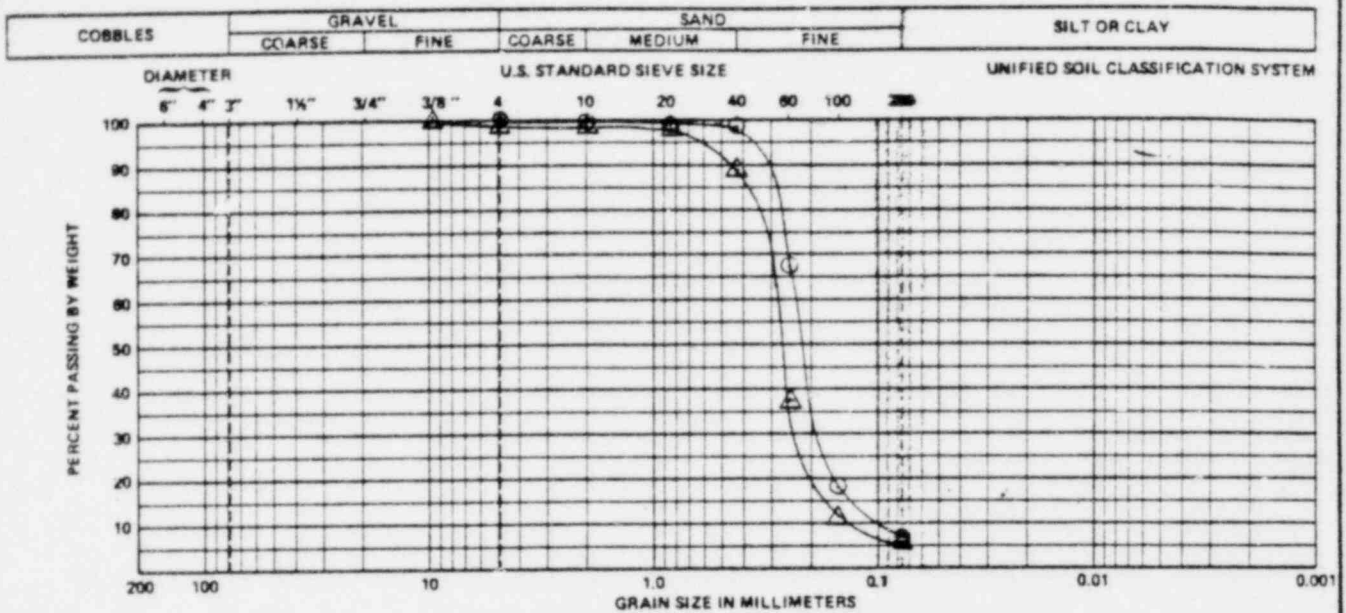
BORING	SAMPLE	DEPTH (ft)	SYMBOL	CLASSIFICATION	w (%)	w _L (%)	w _p (%)
COE-7	S-21A	41.4	○	SP-SM, gray, f. SAND, tr. c to m sand, tr. silt	14.6		Non-plastic



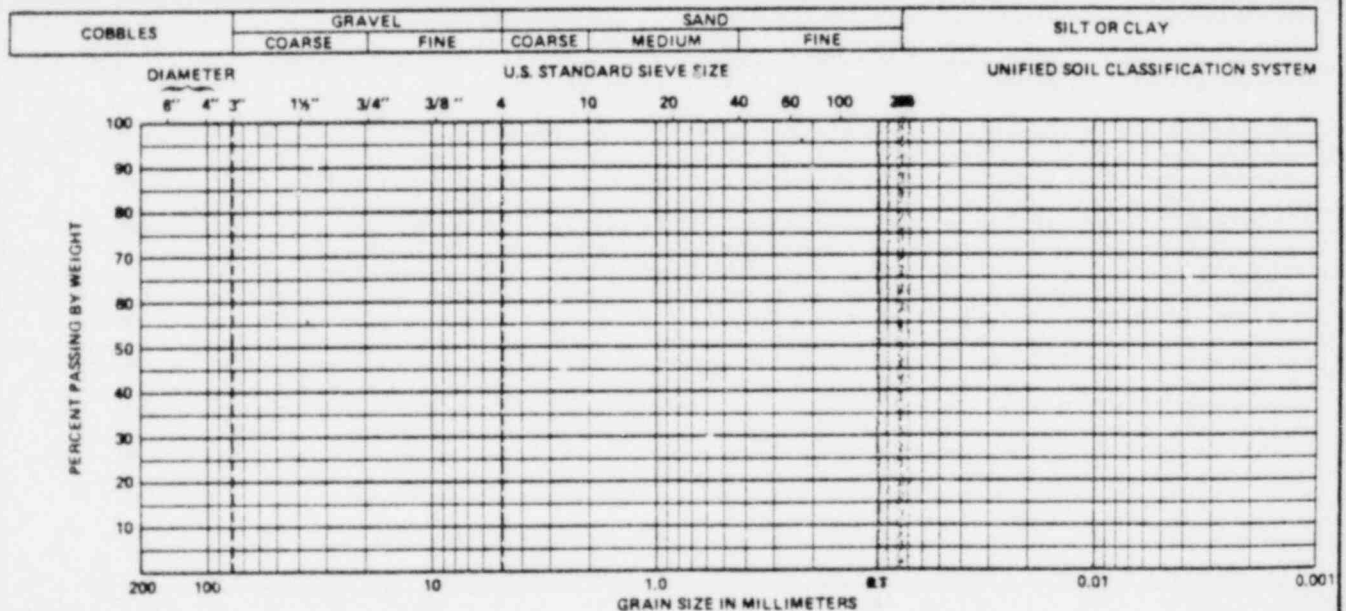
BORING	SAMPLE	DEPTH (ft)	SYMBOL	CLASSIFICATION	w (%)	w _L (%)	w _p (%)
COE 7	S-22C	44.5	○	SP-SM, tan and gray, f. SAND, tr. c. to m. sand, tr. silt - CIV spec	17.5		Non-plastic
COE 7	S-22A ₂	43.6	△	CL dk gray to black, f. sandy, plastic, silty CLAY, tr. c to m. sand	20.2	45	18

Fig. C-7 (8/9)

PARTICLE-SIZE DISTRIBUTION



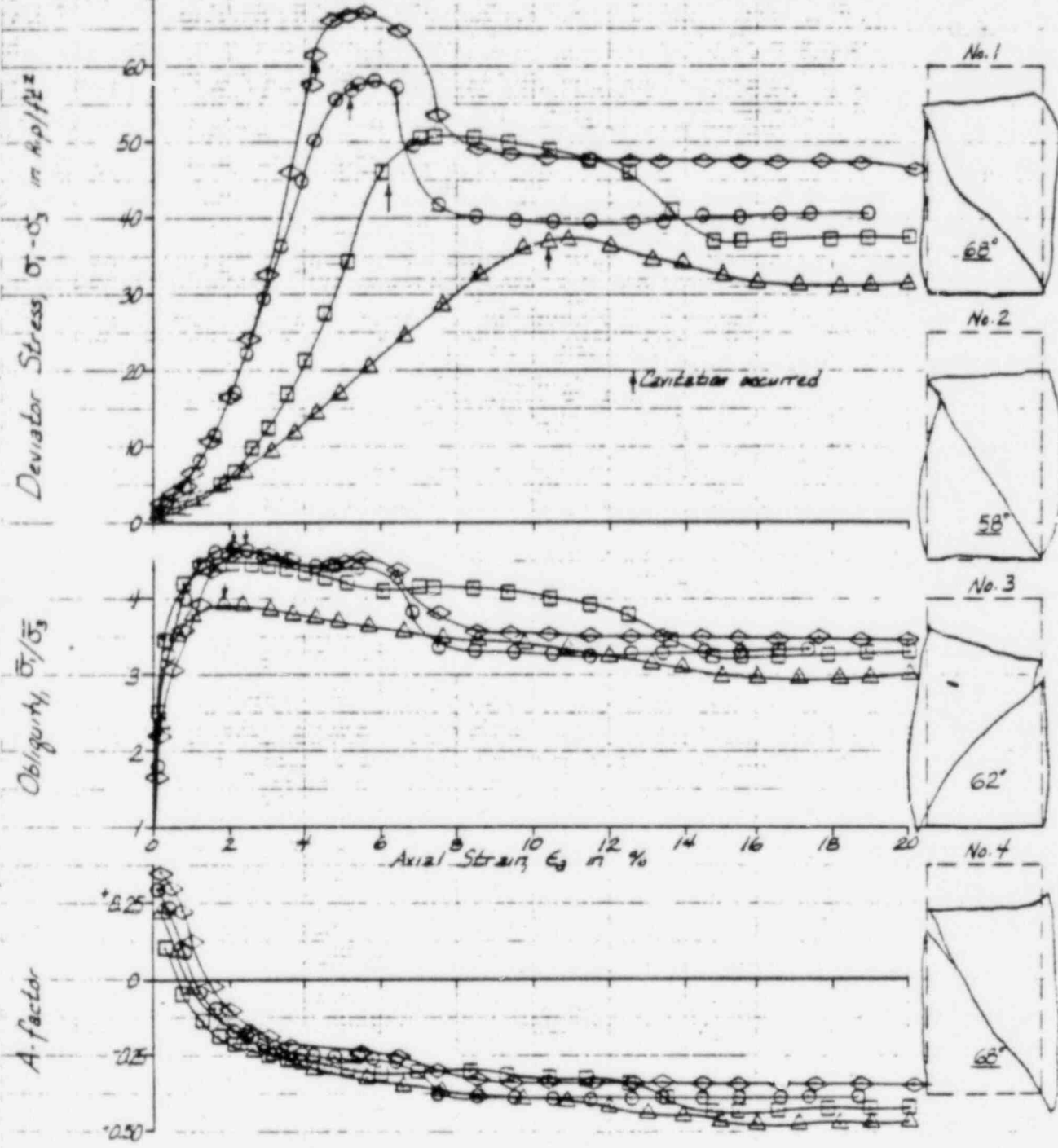
BORING	SAMPLE	DEPTH (ft)	SYMBOL	CLASSIFICATION	w (%)	w _L (%)	w _p (%)
COE 7	S-23C	47.1	○	SP-SM, gray and brown, f. SAND, tr. m. sand, tr. silt - CUD spec.	14.0	Non-plastic	
COE 7	S-23A	46.1	△	SP-SM, gray and brown, f. SAND, tr. f. gravel to m. sand, tr. silt.	—		



BORING	SAMPLE	DEPTH (ft)	SYMBOL	CLASSIFICATION	w (%)	w _L (%)	w _p (%)

BIC 4055 T3 Drawn by LEP
 Reviewed by RSL Checked by JVS
 8 Sept 81
 Specimens 2L in dia by 6.0 in. ht. with top, bottom and radial (filter strips) drainage boundaries

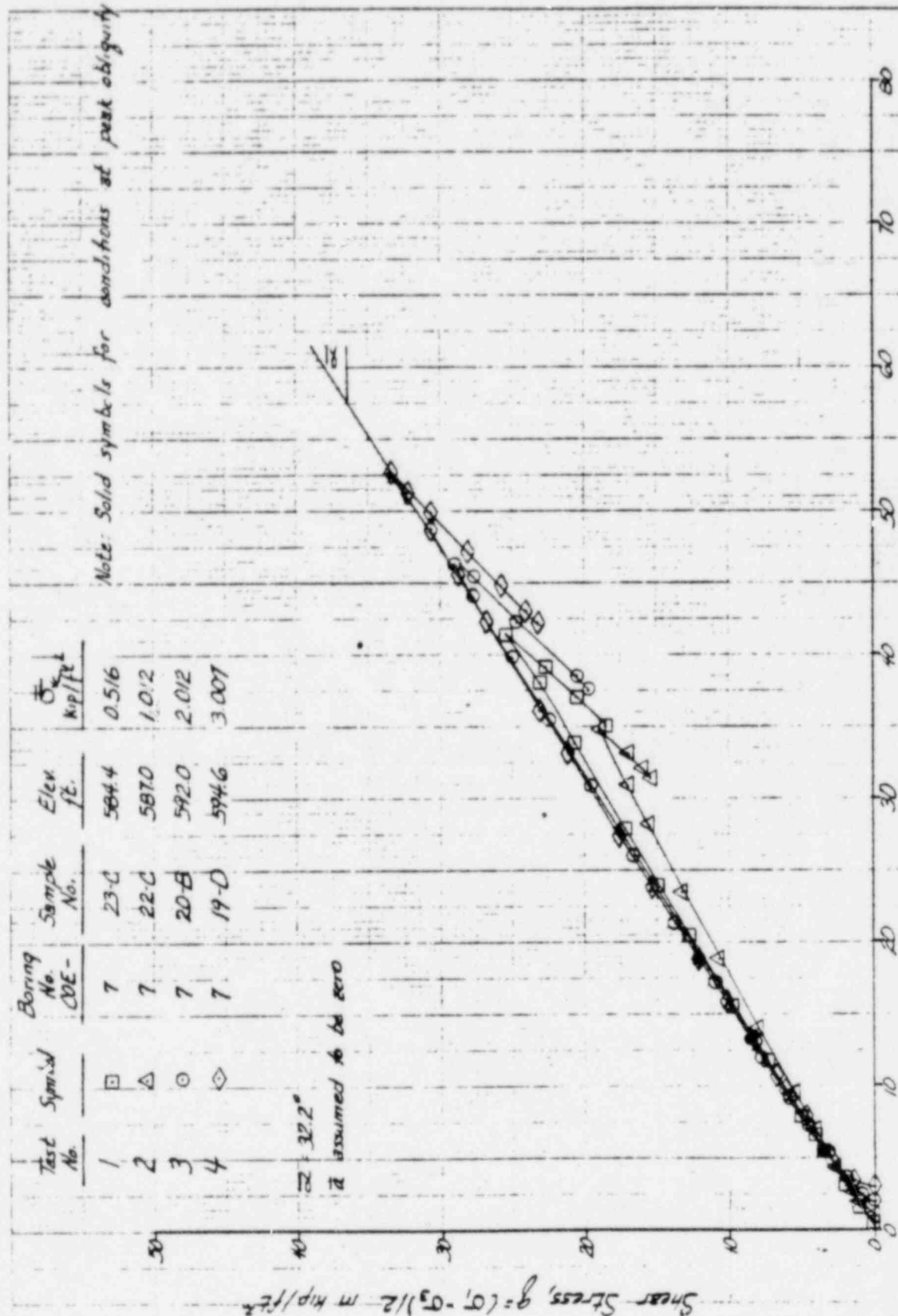
Test No.	Symbol	Drain No.	COE	Sample No.	Elev. ft.	USCS Symbol	a_0 %	w_L %	γ_{sat} lb/ft ³	γ_{sat} lb/ft ³	σ'_{vc} lb/ft ²	γ_c	B-factor	$\dot{\epsilon}$ %/hr	t_c days
1	□	7		23-C	584.4	SP-SM	14.8	21.1	105.0	106.2	0.516	1.021	99.5	4.01	1
2	△	7		22-C	587.0	SP-SM	17.5	19.9	108.0	108.5	1.012	1.015	95.4	3.96	1
3	○	7		20-B	592.0	SP-SM	15.0	19.5	106.3	108.9	2.012	1.007	96.4	3.93	1
4	◇	7		19-D	594.6	SP-SM	15.7	18.9	108.9	110.0	3.007	1.004	99.7	3.96	1



MIDLAND PLANT UNITS 1 and 2 - CONSUMERS POWER CO.
 CTU - TRIAXIAL TEST SERIES - STRESS/STRAIN CHARACTERISTICS
 AREA: BAFFLE DIKE - FOUNDATION SAND

BIC 405573 Drawn by ELC

Reviewed by KSL Checked by JWS
8 Sept 81

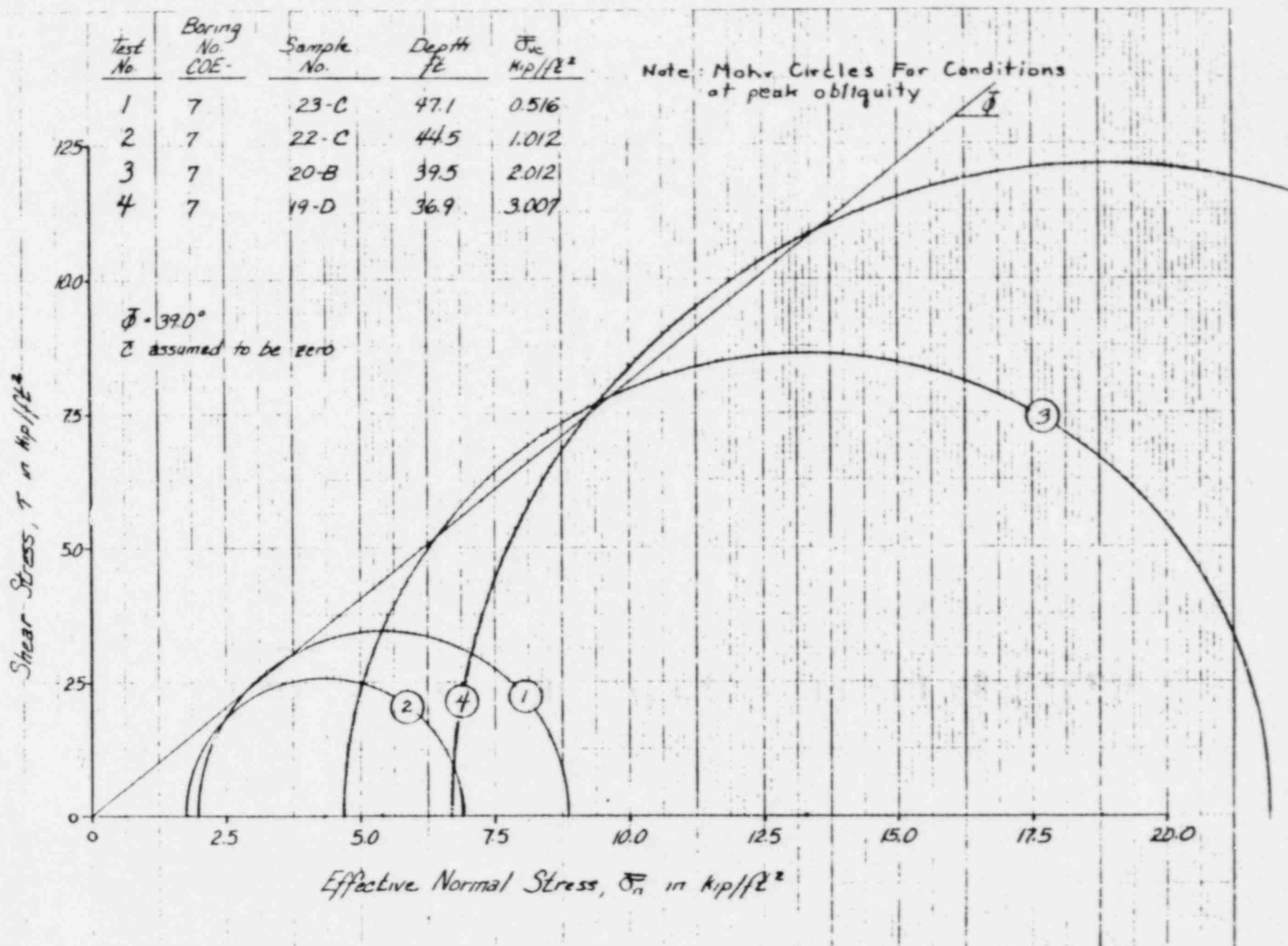


MIDLAND PLANT UNITS 1 and 2 - CONSUMERS POWER CO.
CIU - TRIAXIAL TEST SERIES - STRESS PATHS
AREA: BATTLE DIKE - FOUNDATION SAND

Fig. E-6 b

BIC4035-13

Drawn by TCE

REVIEWED BY KSC CHECKED BY VMS
8 Sept 81

MIDLAND PLANT UNITS 1 and 2 - CONSUMERS POWER CO.
CID-TRIAIAL TEST SERIES - STRENGTH ENVELOPE
AREA: BASTLE DIKE - FLOODATION SAND

Fig. E-6c

WCC
L-202
(1/180)

Loading Conditions: <input type="checkbox"/> Dynamic <input checked="" type="checkbox"/> Undrained <input checked="" type="checkbox"/> Compression <input checked="" type="checkbox"/> Constant Cell pressure	<input checked="" type="checkbox"/> Static <input type="checkbox"/> Drained <input type="checkbox"/> Extension <input type="checkbox"/> Variable cell pressure
Type ... <input checked="" type="checkbox"/> Isotropic <input type="checkbox"/> K_0 stress path	Piston Screwed in: <input type="checkbox"/> Yes; <input checked="" type="checkbox"/> No
Consolidation: <input type="checkbox"/> Anisotropic <input type="checkbox"/> 45° Stress path	

<input checked="" type="checkbox"/> Undisturbed	<input type="checkbox"/> Reconstituted	<input type="checkbox"/> Impact	<input type="checkbox"/> Constant Effort
Boring No. <u>COE-7</u>	Composite No. _____	<input type="checkbox"/> Static _____ layers; _____ 16 { Hammer Tamp	
Sample No. <u>S-19</u>	Specimen No. <u>D</u>	<input type="checkbox"/> Kneading _____ Blows-Tamps/layer	
Depth (ft) <u>36.9</u>	Remarks <u>#077</u>	<input type="checkbox"/> Tamping	<input type="checkbox"/> Undercompaction
<input type="checkbox"/> Ends capped with Castore; <input type="checkbox"/> Geomarine Sample		<input type="checkbox"/> Other _____ layers; _____ Uni (%)	

Water Content				Final
Location	Top	Bot		Ave
Container No	LA21C	LA21		BR
Wgt Container + Wet Soil (gm)	89.40	140.40		1840.0
Wgt Container + Dry Soil (gm)	84.31	123.62		1635.80
Wgt. Container (gm)	34.57	34.11		53.22
Wgt Dry Soil (gm)	49.74	89.51	71.2	1082.58
WATER CONTENT (%)	10.46	18.75	14.60	18.86
<input type="checkbox"/> See attached data sheets for additional water contents				

Specimen Weight

Wet + Stone (etc) :	<u>1.386.3</u>	gm
Stone (etc) :	<u>1.312.5</u>	gm
Wet Initial :	<u>12.55.05</u>	gm
Wet Final :	_____	gm
Excess Oven Dry - Dish No	<u>581</u>	
Wgt + Dish + Dry Soil	<u>150.45</u>	gm
Wgt. Dish	<u>147.38</u>	gm
Wgt. Excess Dry Soil	<u>2.47</u>	gm

Dimensions of Specimen		Specimen		Average = $(D_1 + 2D_m + D_2)/4$
Height (in)		Diameter (in)		
Initial (Lg)	Final (Lg)	Initial	Final	
1 5.945		1-T 2.838	2.925	
2 5.950		2-M 2.8515	3.384	
3 5.945		3-B 2.8675	3.324	
4 5.9407		1-T 2.832		
5 5.9416		2-M 2.852		
Ave 5.9444		3-B 2.865		
$\Delta L_e =$ _____ in		Ave 2.851	3.25475	
$\Delta L_t =$ _____ in		$A_0 = \pi D_0^2/4 = 6.3829 \text{ in}^2$		
$\Sigma \Delta L =$ _____ in		$V_0 = \text{in}^3 \cdot 16.3877 = 621.865 \text{ cm}^3$		
$L_0 - L_g =$ _____ in		$A_{\text{ave}} = 5.95 + 2(0.1)^2 = 57.7609 \cdot 10^{-3}$		

Membrane { Thickness = 0.25 in
 Circumference (C_m) = 8.8725 in
 Diam = C_m/π = 2.8264 in

Filter Paper: Top + bottom: ☐ Yes ☒ No
 Filter Strips: ☐ Yes ☒ No

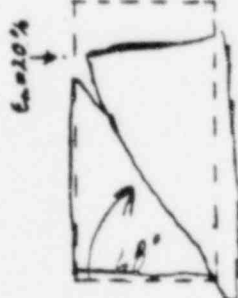
_____ Vertical at $\frac{1}{4}$ " - Whatman #54 or _____
 _____ Spiral at $\frac{1}{4}$ " - Whatman #1 or _____

Wgt top cap = _____ gm, _____ 10^{-3} lbs
 Wgt (cap, dial + piston) = _____ gm, _____ 10^{-3} lbs

Preliminary
 $Y_{Co} = \underline{125.00}$ 14/51 $Y_{do} = \underline{109.94}$ 16/51

Failure Sketch

Final Visual Classification: ☒ See more detailed sketch on attached sheet; ☐ Photo Taken



Other Remarks: $\overline{F}_e = 3 \text{ Ksf}$

Preliminary Cal. by [Signature] Reviewed by [Signature]

☐ Trimmed by _____ Setup by WY Taken down by WY
☐ Reconstituted Date _____ Date 8/3/81 Date 8/7/81
 — See back for Summary Calculations —

A. TRIAX

THIS IS A CIU TEST. IT HAS BEEN

CALCULATED BY COMPUTER PROGRAM NO. C-T-1R.6

USING FILE NO.

T-274

PROJ. NO. 81C4055T3¹ REVIEWED BY: *J. H. H.*
 BORING NO. COE-7² DATE: 1/6/61
 SAMPLE NO. S-19⁴ INPUT DATA CHECKED BY: *U*
 SPECIMEN NO. D^U
 DEPTH(FT.) 36.9^U TEST NO. 1D-077⁺

ISOTROPIC¹ TYPE OF CONSOLIDATION
 UNDRAINED DRAINAGE CONDITIONS DURING LOADING
 COMPRESSION^U MODE OF LOADING
 CONSTANT CELL PRESSURE DURING LOADING

5.9444¹ INITIAL HEIGHT OF SPECIMEN IN INCHES
 2.8510¹ INITIAL DIAMETER OF SPECIMEN IN INCHES
 621.86¹ INITIAL VOLUME OF SPECIMEN IN CU. CM.
 .5000¹ PISTON DIAMETER IN INCHES
 .5100¹ WEIGHT OF TOP CAP ONLY IN TONS*10**⁻³
 1.2700^U WEIGHT OF TOP CAP + PISTON + DIAL IN TONS*10**⁻³
 1.5950¹ WEIGHT OF TOP CAP + PISTON + DIAL + LVDT IN TONS*10**⁻³
 NO¹ WAS PISTON IN CONTACT WITH SPECIMEN DURING CONSOLIDATION?

.0250¹ MEMBRANE THICKNESS IN INCHES
 2.8264¹ MEMBRANE DIAMETER IN INCHES
 0.0000¹ FILTER STRIP CORRECTION CONSTANT AT
 2% AXIAL STRAIN IN TONS ** 10-3
 1.2620¹ RIGHT CYLINDER DISTORTION FACTOR

PRE-SHEAR CONDITIONS:

8.6998^U CELL PRESSURE IN TSF
 7.2000¹ BACK PRESSURE IN TSF
 .0400¹ AXIAL DEFORMATION DURING CONSOL. IN INCHES
 6.20¹ VOLUME CHANGE DURING CONSOL. IN CU. CM.
 12.3675^U MEASURED AXIAL LOAD PRIOR TO STATIC LOADING
 FROM FIRST LINE OF LOADING DATA IN TONS*10**⁻³

EFFECTIVE STRESSES CORRECTED FOR MEMBRANE AND FILTER STRIPS, ETC:

AXIAL = 3.0136 KSF
 LATERAL = 3.0005 KSF
 MEAN = 3.0049 KSF
 PBAR = 3.0071 KSF
 LATERAL/AXIAL = .9957
 AXIAL/LATERAL = 1.0044
 OCR = 1.000

12.3675^U PISTON DRAG CORRECTION IN TONS *10**⁻³
 2000 FILE NUMBER FOR LOAD CELL OR PROVING RING
 1000 FILE NUMBER FOR PORE PRESSURE CONVERSION CONSTANT
 2000 FILE NUMBER FOR CELL PRESSURE CONVERSION CONSTANT
 NONE FILE NUMBER FOR PISTON FRICTION CORRECTION CONSTANT
 YES IS DATA NORMALIZATION REQUIRED?
 CORRECTED TO PRE-SHEAR STRESSES

12.3675
2000
1000
2000
NONE
YES

PISTON DRAG CORRECTION IN TONS *10**3
FILE NUMBER FOR LOAD CELL OR PROVING RING
FILE NUMBER FOR PORE PRESSURE CONVERSION CONSTANT
FILE NUMBER FOR CELL PRESSURE CONVERSION CONSTANT
FILE NUMBER FOR PISTON FRICTION CORRECTION CONSTANT
IS DATA NORMALIZATION REQUIRED?
DATA NORMALIZED TO PRESHEAR STRESSES
WITH NORM = P-BAR OF 3.0071 KSF

AXIAL STRAIN Z	DEVIATOR STRESS KSF	OBLIQUITY	DELTA-U KSF	A-FACTOR	Q KSF	P-BAR KSF	SECANT MODULUS KSF	TANGENT MODULUS KSF	DEVIATOR NORM	DELTA-U NORM	Q NORM	P-BAR NORM	SECANT NORM
0.0000	-0.031	1.0044	0.0000	0.0000	0.0046	3.0071	0.000	0.000	.0044	0.0000	.0022	1.0000	0.0000
.0076	.2141	1.0722	.0360	.1791	1.070	3.0716	2637.078	2871.994	.0712	.0120	.0356	1.0214	876.9581
.0159	.4719	1.1617	.0820	.1787	.2360	3.1545	2881.990	2538.191	.1569	.0273	.0785	1.0490	958.4036
.0242	.6254	1.2203	.1160	.1864	.3177	3.2022	2569.309	1928.695	.2113	.0366	.1056	1.0649	854.4218
.0332	.8049	1.2642	.1680	.2122	.4024	3.2350	2385.164	1750.945	.2677	.0559	.1338	1.0758	793.1843
.0437	1.0539	1.2930	.2240	.2330	.4872	3.2637	2199.742	1454.274	.3240	.0745	.1620	1.0853	731.5226
.0544	1.1125	1.4089	.2800	.2547	.5562	3.2769	2022.172	1257.715	.3700	.0931	.1850	1.0897	672.4716
.0693	1.2944	1.4902	.3600	.2810	.6472	3.2877	1849.675	1273.044	.4304	.1197	.2152	1.0933	615.1079
.0830	1.4762	1.5747	.4320	.2953	.7381	3.3046	1763.054	1107.427	.4909	.1437	.2455	1.0996	586.3024
.1055	1.6765	1.6775	.5260	.3162	.8383	3.3128	1576.497	944.266	.5575	.1749	.2788	1.1017	524.2628
.1243	1.8644	1.7786	.6060	.3273	.9322	3.3267	1489.218	913.696	.6200	.2015	.3100	1.1043	495.2381
.1440	2.0271	1.8728	.6780	.3366	1.0135	3.3361	1398.586	804.160	.6741	.2255	.3371	1.1094	465.2318
.1704	2.2332	1.9976	.7620	.3432	1.1166	3.3552	1303.044	702.880	.7427	.2534	.3713	1.1158	433.3261
.2232	2.5574	2.2187	.9020	.3545	1.2787	3.3772	1145.014	573.779	.8505	.3000	.4252	1.1231	380.7737
.2532	2.7192	2.3365	.9640	.3570	1.3596	3.3941	1068.762	481.574	.9043	.3212	.4521	1.1267	355.4159
.2855	2.8619	2.4450	1.0200	.3580	1.4309	3.4115	997.653	430.866	.9517	.3392	.4759	1.1345	331.7688
.3194	3.0044	2.5514	1.0640	.3557	1.5022	3.4387	936.466	402.185	.9991	.3538	.4996	1.1435	311.4212
.3533	3.1344	2.6509	1.1020	.3531	1.5672	3.4657	883.470	426.557	1.0423	.3665	.5212	1.1525	293.7971
.3850	3.2630	2.7532	1.1280	.3450	1.6415	3.5141	849.404	411.193	1.0918	.3751	.5459	1.1686	282.4688
.4182	3.4002	2.8354	1.1480	.3389	1.7001	3.5526	809.996	391.834	1.1307	.3818	.5654	1.1814	269.3636
.4483	3.5300	2.9200	1.1620	.3304	1.7650	3.6036	784.489	415.665	1.1739	.3864	.5870	1.1984	260.8813
.4837	3.6719	3.0059	1.1700	.3198	1.8359	3.6665	756.400	420.371	1.2211	.3891	.6105	1.2193	251.5401
.5143	3.8075	3.0845	1.1740	.3094	1.9038	3.7303	737.451	433.483	1.2642	.3904	.6331	1.2405	245.2386
.5477	3.9492	3.1621	1.1740	.2983	1.9746	3.8012	718.627	413.250	1.3133	.3904	.6567	1.2641	238.9790
.5801	4.0785	3.2231	1.1660	.2868	2.0392	3.8788	700.838	427.132	1.3543	.3878	.6782	1.2882	233.0632
.6139	4.2325	3.2996	1.1600	.2749	2.1162	3.9548	687.254	435.639	1.4075	.3858	.7038	1.3158	228.5459
.6449	4.3616	3.3544	1.1480	.2640	2.1808	4.0334	674.250	459.857	1.4505	.3818	.7252	1.3413	224.2213
.6780	4.5278	3.4205	1.1300	.2503	2.2639	4.1345	665.911	509.676	1.5037	.3758	.7529	1.3749	221.4482
.7435	4.8662	3.5470	1.0900	.2246	2.4331	4.3437	652.721	504.078	1.6182	.3625	.8091	1.4445	217.0618
.8084	5.1852	3.6394	1.0360	.2003	2.5926	4.5572	639.814	533.329	1.7243	.3445	.8622	1.5155	212.7695
.8746	5.5859	3.7437	.9720	.1750	2.7629	4.8115	634.890	605.810	1.8509	.3232	.9255	1.6001	211.1322
.9373	5.9649	3.8396	.9000	.1512	2.9825	5.0831	635.020	642.281	1.9836	.2993	.9918	1.6904	211.1754
1.0035	6.3239	3.9241	.8140	.1276	3.1969	5.3835	635.859	668.309	2.1263	.2707	1.0631	1.7903	211.4543
1.0684	6.8407	3.9995	.7200	.1054	3.4204	5.7010	639.078	708.458	2.2749	.2394	1.1374	1.8959	212.5251
1.1346	7.3228	4.0735	.6180	.0845	3.6614	6.0440	644.270	767.598	2.4352	.2055	1.2176	2.0099	214.2515
1.2626	8.3563	4.1936	.3840	.0460	4.1782	6.7948	660.790	856.186	2.7789	.1277	1.3894	2.2596	219.7451
1.3907	9.5154	4.3009	.1180	.0124	4.7577	7.6403	683.293	940.461	3.1643	.0392	1.5822	2.5408	227.2285
1.5211	10.7678	4.3853	.1640	.0173	5.3939	8.5806	708.365	1031.116	3.5875	.0419	1.7937	2.8535	235.5661
1.6430	12.1127	4.4503	.5100	.0422	6.0564	9.5670	736.430	1123.764	4.0281	.1696	2.0140	3.1815	244.8993
1.7446	13.8444	4.5094	.18540	.0438	6.7741	10.6388	766.145	1224.428	4.5054	.2873	2.2527	3.5379	254.7808
1.8657	15.0815	4.5480	.12800	.0630	7.5408	11.7918	799.084	1380.901	5.0184	.4187	2.5079	3.9419	264.7319
2.0070	16.6828	4.5742	.16680	.1000	8.3434	13.0121	830.786	1584.902	5.5452	.5547	2.7746	4.3212	276.2714
2.1274	18.4281	4.6001	.21180	.1150	9.2141	14.3328	865.612	1476.275	6.1283	.7043	3.0641	4.7664	287.8587
2.2480	20.2496	4.6129	.26040	.1287	10.1248	15.7296	900.206	1545.995	6.7340	.8660	3.3670	5.2309	299.3629
2.3716	22.2049	4.6183	.31360	.1415	11.1024	17.2392	935.722	1659.922	7.3842	.10429	3.6921	5.7329	311.1737
2.4888	24.2059	4.6223	.36820	.1522	12.1035	18.7863	972.894	1759.447	8.0500	.12244	4.0250	6.2474	323.5352
2.6028	26.2726	4.6204	.42560	.1621	13.1363	20.3931	1008.893	1785.312	8.7369	.14153	4.3685	6.7817	335.5066
2.7249	28.4585	4.6166	.48660	.1711	14.2293	22.0981	1043.901	1828.947	9.4639	.16188	4.7319	7.3487	347.1485
2.8401	30.6097	4.6033	.54940	.1796	15.3048	23.7997	1077.311	1863.967	10.1792	.18270	5.0896	7.9146	358.2589
2.9637	32.9095	4.5916	.61620	.1873	16.4547	25.6176	1109.968	1915.613	10.9440	.20492	5.4720	8.5191	369.1190
3.0813	35.2263	4.5810	.68360	.1941	17.6131	27.4501	1142.817	1963.526	11.7145	.22733	5.8572	9.1285	380.0428
3.2613	38.7477	4.5545	.76940	.2038	19.3738	30.2680	1187.705	1984.661	12.6655	.24251	6.4428	10.0659	394.9704
3.4413	42.3732	4.5336	.86906	.2123	21.1866	33.1782	1230.923	2049.424	14.0912	.26988	7.0456	11.0334	409.3424
3.6160	47.0776	4.5051	.101450	.2202	23.0388	36.1848	1272.854	2131.557	15.3231	.30737	7.6615	12.0332	423.2865
									16.4587	.34604	8.2841	13.0518	436.9372

[illegible]

8.5607	49.1801	3.5853	-16.0204	-3259	24.5901	43.6132	574.320	-112.837	16.3548	-5.3276	8.1774	14.5035	190.9897
8.7608	48.8921	3.5704	-16.0180	-3278	24.4460	43.4669	557.931	-102.178	16.2590	-5.3268	8.1295	14.4549	185.5396
9.0951	48.6901	3.5608	-16.0108	-3290	24.3450	43.3589	535.141	-41.772	16.1918	-5.3244	8.0959	14.4190	177.9608
9.3671	48.6269	3.5571	-16.0132	-3295	24.3135	43.3299	518.986	-45.865	16.1708	-5.3252	8.0854	14.4093	172.5893
9.6381	48.4415	3.5477	-16.0108	-3307	24.2208	43.2349	502.470	-60.275	16.1092	-5.3244	8.0546	14.3777	167.0961
9.9057	48.3020	3.5406	-16.0084	-3316	24.1510	43.1629	487.488	-28.821	16.0628	-5.3236	8.0314	14.3538	162.1137
10.1750	48.2872	3.5402	-16.0058	-3316	24.1436	43.1530	474.440	-16.528	16.0579	-5.3227	8.0289	14.3505	157.7747
10.4375	48.2149	3.5360	-16.0084	-3322	24.1074	43.1196	461.815	-42.595	16.0338	-5.3236	8.0169	14.3394	153.5761
10.7135	48.0557	3.5279	-16.0058	-3332	24.0279	43.0376	448.429	-28.942	15.9809	-5.3227	7.9904	14.3121	149.1248
10.9828	48.0551	3.5279	-16.0058	-3332	24.0275	43.0375	437.428	-11.747	15.9807	-5.3227	7.9903	14.3121	145.4664
11.2487	47.9932	3.5246	-16.0058	-3337	23.9966	43.0067	426.538	-10.846	15.9601	-5.3227	7.9801	14.3019	141.8450
11.5129	47.9974	3.5251	-16.0034	-3336	23.9987	43.0066	416.786	-5.649	15.9615	-5.3219	7.9807	14.3018	138.6017
11.7771	47.9634	3.5233	-16.0034	-3338	23.9817	42.9698	407.147	-37.491	15.9502	-5.3219	7.9751	14.2962	135.3964
12.0447	47.7972	3.5145	-16.0034	-3350	23.8966	42.9068	396.721	-24.837	15.8949	-5.3219	7.9475	14.2686	131.9293
12.3090	47.8300	3.5163	-16.0034	-3348	23.9150	42.9235	388.473	16.797	15.9058	-5.3219	7.9529	14.2742	129.1863
12.5732	47.8859	3.5192	-16.0034	-3344	23.9430	42.9516	380.754	17.982	15.9244	-5.3219	7.9622	14.2835	126.6194
12.8391	47.9253	3.5212	-16.0034	-3341	23.9627	42.9715	373.175	-18.766	15.9375	-5.3219	7.9688	14.2901	124.0991
13.1101	47.7835	3.5134	-16.0058	-3352	23.8917	42.9031	364.380	-3.600	15.8904	-5.3227	7.9452	14.2674	121.1741
13.3878	47.9089	3.5203	-16.0034	-3342	23.9544	42.9637	357.756	19.547	15.9321	-5.3219	7.9660	14.2875	118.9716
13.6503	47.8930	3.5194	-16.0034	-3344	23.9465	42.9559	350.760	-25.884	15.9268	-5.3219	7.9634	14.2850	116.6449
13.9196	47.7699	3.5126	-16.0058	-3353	23.8849	42.8970	343.090	-34.791	15.8858	-5.3227	7.9429	14.2654	114.0942
14.1889	47.7056	3.5092	-16.0058	-3357	23.8528	42.8651	336.125	5.119	15.8645	-5.3227	7.9322	14.2547	111.7781
14.4531	47.7957	3.5139	-16.0058	-3351	23.8979	42.9104	330.604	-14.419	15.8944	-5.3227	7.9472	14.2698	109.9421
14.7156	47.6305	3.5052	-16.0058	-3363	23.8152	42.8280	323.583	-35.080	15.8395	-5.3227	7.9197	14.2424	107.6074
14.9866	47.6109	3.5041	-16.0058	-3364	23.8055	42.8184	317.602	-20.293	15.8330	-5.3227	7.9165	14.2392	105.6183
15.2661	47.5177	3.4988	-16.0084	-3371	23.7588	42.7747	311.177	3.866	15.8020	-5.3236	7.9010	14.2247	103.4818
15.5269	47.6249	3.5045	-16.0084	-3364	23.8124	42.8285	306.641	23.955	15.8376	-5.3236	7.9188	14.2426	101.9731
15.7877	47.6426	3.5054	-16.0084	-3363	23.8213	42.8376	301.687	-14.008	15.8435	-5.3236	7.9218	14.2456	100.3258
16.0536	47.5500	3.5005	-16.0084	-3369	23.7750	42.7916	296.113	-46.604	15.8127	-5.3236	7.9064	14.2303	98.4723
16.3331	47.3869	3.4912	-16.0132	-3382	23.6934	42.7151	290.048	-45.189	15.7585	-5.3252	7.8792	14.2049	96.4552
16.5905	47.3045	3.4868	-16.0132	-3388	23.6523	42.6741	285.051	22.532	15.7311	-5.3252	7.8655	14.1913	94.7935
16.8513	47.5055	3.4977	-16.0108	-3373	23.7527	42.7725	281.832	49.649	15.7979	-5.3244	7.8990	14.2240	93.7229
17.1240	47.5661	3.5005	-16.0132	-3369	23.7831	42.8055	277.698	1.818	15.8181	-5.3252	7.9090	14.2349	92.3483
17.3899	47.5167	3.4979	-16.0132	-3373	23.7583	42.7810	273.167	3.75	15.8016	-5.3252	7.9008	14.2268	90.8416
17.6609	47.5691	3.5003	-16.0156	-3370	23.7846	42.8100	269.273	-25.088	15.8191	-5.3260	7.9095	14.2364	89.5465
17.9370	47.3772	3.4899	-16.0180	-3384	23.6886	42.7167	264.058	-43.054	15.7552	-5.3268	7.8776	14.2054	87.8124
18.2046	47.3328	3.4872	-16.0204	-3388	23.6664	42.6972	259.933	-5.684	15.7405	-5.3276	7.8702	14.1989	86.4406
18.4857	47.3474	3.4882	-16.0180	-3386	23.6737	42.7024	256.059	-21.017	15.7454	-5.3268	7.8727	14.2007	85.1523
18.7567	47.2194	3.4814	-16.0180	-3395	23.6097	42.6388	251.677	-43.190	15.7028	-5.3268	7.8514	14.1795	83.6951
19.0395	47.1087	3.4753	-16.0204	-3404	23.5544	42.5861	247.357	-53.604	15.6660	-5.3276	7.8330	14.1620	82.2584
19.2953	46.9346	3.4661	-16.0204	-3417	23.4673	42.4994	243.176	-71.893	15.6081	-5.3276	7.8040	14.1331	80.8681
19.5663	46.7295	3.4549	-16.0228	-3432	23.3647	42.3995	238.760	-56.416	15.5398	-5.3284	7.7699	14.0999	79.3994
19.8423	46.6270	3.4495	-16.0228	-3440	23.3135	42.3486	234.922	-26.997	15.5058	-5.3284	7.7529	14.0830	78.1230
20.1150	46.5701	3.4465	-16.0228	-3444	23.2850	42.3205	231.454	1387.950	15.4868	-5.3284	7.7434	14.0737	76.9698 STOP

A.BASIC RESPT

CDOS 16K BASIC, VERSION 5.4

1 DATA FILE IDENT. NO.
 2 PROJECT NO.
 3 BORING NO.
 4 SAMPLE NO.
 5 SPECIMEN NO.
 6 DEPTH
 7 TEST NO.
 8 FILE # FOR LOAD CELL OR PROVING RING
 9 FILE # FOR PORE PRESSURE CONST.
 10 FILE # FOR CELL PRESSURE CONST
 11 FILE # FOR PISTON FRICTION CORRECTION
 12 TYPE OF CONSOLIDATION
 13 DRAINAGE CONDITIONS DURING LOADING
 14 MODE OF LOADING
 15 CELL PRESSURE DURING LOADING
 16 INITIAL HEIGHT OF SPECIMEN IN INCHES
 17 INITIAL DIAMETER OF SPECIMEN IN INCHES
 18 INITIAL VOLUME OF SPECIMEN IN CU. CM.
 19 PISTON DIAMETER IN INCHES
 20 WEIGHT OF TOP CAP ONLY IN TONS*10**-3
 21 WEIGHT OF TOP CAP + PISTON + DIAL IN TONS*10**-3
 22 WEIGHT OF TOP CAP + PISTON + DIAL + LVDT IN TONS*10**-3
 23 WAS PISTON INTACT DURING CONSOL
 24 MEMBRANE THICKNESS IN INCHES
 25 MEMBRANE DIAMETER IN INCHES
 26 FILTER STRIP CORRECTION CONSTANT
 27 RIGHT CYLINDER DISTORTION FACTOR
 28 DOES SPECIMEN HAVE AN INDUCED OCR
 29 CELL PRESSURE IN TSF
 30 BACK PRESSURE IN TSF
 31 AXIAL DEFORMATION DURING CONSOL. IN INCHES
 32 VOLUME CHANGE DURING CONSOL. IN CU. CM.
 33 APPLIED AXIAL LOAD IN TONS*10**-3
 34 PRE SHEAR CONDITION - CELL PRESSURE IN TSF
 35 BACK PRESSURE IN TSF
 36 AXIAL DEFORMATION IN INCHES
 37 VOLUME CHANGE IN CU. CM.
 38 PISTON DRAG CORRECTION IN TONS*10**-3
 39 SPECIMEN CYCLICLY LOADED BEFORE SHEARING
 40 SPECIMEN RECONSOLIDATED DURING CYCLIC LOADING
 41 SUM OF VOLUME CHANGES DURING RECONSOLIDATION IN CU. CM.
 42 PORE PRESSURE IN TSF
 43 TOTAL CHANGE IN HT DURING CYCLIC LOADING IN INCHES
 44 OUTPUT UNITS REQUIRED
 45 DATA NORMALIZATION SELECTION
 46 RESULT FILE DESIRED

T-274
 BIC405ST3
 COE-7
 S-19
 D
 36.9
 ID-077
 2000
 1000
 2000
 NONE
 1
 U
 C
 C
 5.9444
 2.851
 621.865
 .5
 0.51
 1.27
 1.595
 NO
 .025
 2.8264
 0.0
 1.262
 NO
 0.0
 0.0
 0.0
 0.0
 0.0
 8.6998
 7.200
 .040
 6.199
 12.3675
 NO
 NO
 0.0
 0.0
 0.0
 KSF
 2.0
 0.0

DIS (in.)	LOAD (lbs)	PORE PRESSURE (tsf)
.00533	24.735	7.233
.00578	33.62	7.251
.00627	45.02	7.274
.00676	52.25	7.291
.00729	59.75	7.317
.00791	67.25	7.345
.00854	73.37	7.373
.00942	81.43	7.413
.01023	89.49	7.449
.01156	98.38	7.496
.01267	106.72	7.536
.01383	113.95	7.572
.01539	123.12	7.614

.0	3	7
.00627	45.02	7.274
.00676	52.25	7.291
.00729	59.75	7.317
.00791	67.25	7.345
.00854	73.37	7.373
.00942	81.43	7.413
.01023	89.49	7.449
.01156	98.38	7.496
.01267	106.72	7.536
.01383	113.95	7.572
.01539	123.12	7.614
.01845	137.57	7.684
.02028	144.86	7.716
.02219	151.19	7.743
.02419	157.58	7.765
.02619	163.42	7.784
.02806	170.09	7.797
.03002	175.37	7.807
.03180	181.21	7.814
.03389	187.60	7.818
.03571	193.71	7.820
.03767	200.10	7.820
.03958	205.94	7.816
.04158	212.89	7.813
.04341	218.73	7.807
.04536	226.23	7.798
.04923	241.52	7.778
.05306	255.97	7.751
.05697	273.20	7.719
.06067	291.27	7.683
.06458	310.72	7.640
.06841	331.0	7.593
.07232	352.9	7.542
.07988	399.9	7.425
.08744	452.7	7.292
.09514	510.8	7.140
.10234	571.4	6.978
.10964	637.2	6.801
.11667	707.6	6.608
.12383	781.5	6.399
.13094	861.8	6.174
.13806	946.0	5.931
.14536	1036.6	5.665
.15216	1129.5	5.392
.15901	1225.6	5.105
.16622	1327.6	4.799
.17302	1428.2	4.486
.18032	1536.1	4.152
.18726	1645.0	3.815
.19789	1811.2	3.286
.20852	1983.0	2.7377
.21901	2159.2	2.1605
.22916	2337.9	1.5652
.23948	2519.4	0.9555
.25015	2707.0	.31691
.26028	2890.7	.20125
.27163	3047.7	-.0.7891
.28298	3127.5	-.0.8519
.29494	3165.3	-.0.8326
.30655	3188.6	-.0.8073
.31816	3203.4	-.0.7716
.33003	3214.8	-.0.7832
.34113	3220.6	-.0.7796
.35327	3218.1	-.0.7796
.36551	3211.2	-.0.7832
.37777	3190.9	-.0.7868
.38966	3132.5	-.0.7916

31	3101	0.00
0.31816	3203.4	-0.7910
0.3303	3214.8	-0.7832
0.3418	3220.6	-0.7796
0.3537	3218.1	-0.7796
0.3655	3211.2	-0.7832
0.3777	3190.9	-0.7868
0.3896	3132.5	-0.7916
0.4022	3003.0	-0.7928
0.4148	2848.7	-0.7928
0.4265	2757.8	-0.7928
0.4386	2695.6	-0.7904
0.4509	2631.4	-0.7880
0.4630	2555.0	-0.7868
0.4752	2500.2	-0.7832
0.4872	2477.4	-0.7808
0.4988	2465.5	-0.7796
0.5108	2464.4	-0.7772
0.5226	2457.1	-0.7760
0.5424	2458.8	-0.7724
0.5584	2465.2	-0.7736
0.5744	2465.5	-0.7724
0.5902	2468.0	-0.7712
0.6061	2476.9	-0.7699
0.6216	2482.7	-0.7712
0.6379	2484.6	-0.7699
0.6538	2494.4	-0.7699
0.6695	2501.0	-0.7699
0.6851	2511.0	-0.7687
0.7007	2519.1	-0.7687
0.7165	2520.5	-0.7687
0.7321	2532.2	-0.7687
0.7477	2545.2	-0.7687
0.7634	2557.5	-0.7687
0.7794	2560.5	-0.7699
0.7958	2578.0	-0.7687
0.8113	2587.5	-0.7687
0.8272	2591.6	-0.7699
0.8431	2598.9	-0.7699
0.8587	2614.4	-0.7699
0.8742	2616.1	-0.7699
0.8898	2644.1	-0.7687
0.9067	2652.5	-0.7712
0.9221	2649.2	-0.7712
0.9375	2661.1	-0.7712
0.9532	2667.2	-0.7712
0.9697	2670.0	-0.7736
0.9849	2676.4	-0.7736
1.0003	2698.9	-0.7724
1.0164	2714.2	-0.7736
1.0321	2723.1	-0.7736
1.0481	2738.1	-0.7748
1.0644	2739.5	-0.7760
1.0802	2749.0	-0.7772
1.0968	2762.6	-0.7760
1.1128	2767.6	-0.7760
1.1295	2774.2	-0.7772
1.1446	2775.9	-0.7772
1.1606	2776.5	-0.7784
1.1769	2783.4	-0.7784
1.1930	2792.9	-0.7784
-999.	0.0.0.0	

TRIAxIAL TEST (Set Up / Take Down)

Proj. No. 81C405513 Proj. Eng. AM Cell No. H-8 Piston dia. ☐ 3/8" ☒ 1/2" WCC 4-202 (1/80)

Type Test CISL-C File No. T-275

Loading Conditions: <input type="checkbox"/> Dynamic <input checked="" type="checkbox"/> Undrained <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Constant Cell pressure	<input type="checkbox"/> Static <input checked="" type="checkbox"/> Drained <input type="checkbox"/> Extension <input type="checkbox"/> Variable cell pressure	
Type: <input type="checkbox"/> Isotropic <input type="checkbox"/> K ₀ Stress path		Piston Screwed in: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Consolidation: <input type="checkbox"/> Anisotropic <input type="checkbox"/> 45° Stress path		
<input checked="" type="checkbox"/> Undisturbed <input type="checkbox"/> Reconstituted <input type="checkbox"/> Impact <input type="checkbox"/> Constant ESSort Boring No. <u>CAL-7</u> Composite No. _____ <input type="checkbox"/> Static _____ layers; _____ 16 ^{Hammer} Taps Sample No. <u>S-20</u> Specimen No. <u>B</u> <input type="checkbox"/> Kneading _____ Blows-Taps / layer Depth (ft) <u>39.5</u> Remarks <u>ID# 078</u> <input type="checkbox"/> Tamping <input type="checkbox"/> Under compaction <input type="checkbox"/> Ends capped with Castor; <input type="checkbox"/> Geomarine Sample <input type="checkbox"/> Other _____ layers; _____ Uni (%)		

Water Content				Final
Location	<u>Top</u>	<u>SW. 1</u>		<u>Ave</u>
Container No	<u>CAL06</u>	<u>32.77</u>		
Wgt. Container + Wet Soil (gm)	<u>113.25</u>	<u>116.31</u>		<u>2209.6</u>
Wgt. Container + Dry Soil (gm)	<u>106.61</u>	<u>103.82</u>		<u>1997.4</u>
Wgt. Container (gm)	<u>40.14</u>	<u>32.77</u>		<u>711.11</u>
Wgt. Dry Soil (gm)	<u>66.47</u>	<u>71.06</u>	<u>ave</u>	<u>1086.29</u>
WATER CONTENT (%)	<u>9.99</u>	<u>17.62</u>	<u>13.80</u>	<u>19.53</u>
<input type="checkbox"/> See attached data sheet(s) for additional water contents				

Specimen Weight	
Wet + Stone (etc):	<u>1386.9</u> gm
Stone (etc):	<u>132.19</u> gm
Wet Initial:	<u>1254.71</u> gm
Wet Final:	_____ gm
Excess Owendry Dish No.	<u>214</u>
Wet Dish + Dry Soil	<u>205.80</u> gm
Wgt. Dish	<u>221.49</u> gm
Wgt. Excess Dry Soil	<u>4.31</u> gm

Dimensions of Specimen		Diameter (in) or		$D_p = (D + 2D_p + D_p)/4$
Height (in)	Initial (Lg)	Initial	Final	
1	<u>5.9535</u>	<u>BT</u>	<u>2.8722</u>	<u>2.930</u>
2	<u>5.9535</u>	<u>BT</u>	<u>2.870</u>	<u>3.355</u>
3	<u>5.9585</u>	<u>BT</u>	<u>2.869</u>	<u>3.275</u>
4	<u>5.9522</u>	<u>BT</u>	<u>2.8554</u>	
5	<u>5.948</u>	<u>BT</u>	<u>2.855</u>	
Ave	<u>5.9537</u>	<u>BT</u>	<u>2.865</u>	
ave		<u>2.8644</u>	<u>3.22875</u>	
$A_0 = \pi D^2/4 = 6.44491 \text{ in}^2$ $V_0 = 1/3 \cdot 16.8871 = 628.721 \text{ cm}^3$ $A_m = 5.4542(D^2)^2 = 56.8591 \text{ in}^2$				

Membrane Thickness = 0.0275 in

Circumference (cm) = 8.2025 in

Diam = $C_u/\pi = 2.6328$ in

Filter Paper: Top + bottom: ☐ Yes ☒ No

Filter Strips: ☐ Yes ☒ No

Vertical at 1/4" - Whatman #54 or _____

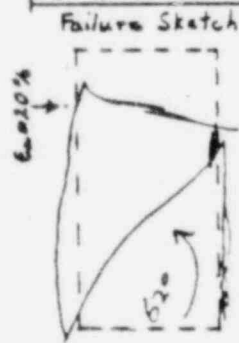
Spiral at 1/4" - Whatman #1 or _____

Wt top cap = _____ gm, _____ 10⁻³ lbs

Wt (cap, dial) = _____ gm, _____ 10⁻³ lbs

Preliminary

$Y_{c0} = 194.53 \text{ lb/sq ft}$ $Y_{d0} = 102.48 \text{ lb/sq ft}$



Final Visual Classification: ☐ See more detailed sketch on attached sheet; ☐ Photo Taken

Other Remarks: $\bar{\sigma}_c = 2 \text{ KSF}$

Preliminary Cal. by [Signature] Reviewed by [Signature]

☐ Trimmed by _____ Setup by _____ Taken down by _____

☐ Reconstituted Date _____ Date 8/3/81 Date 8/5/81

See back for Summary Calculations

TRIAXIAL TEST SUMMARY CALCULATIONS

T-275

Type Test: CU-C ☒ Undisturbed; ☐ Reconstituted-Specimen
☐ Dynamic e/H_0 or sinusoidal or Static e 3.93 %/hr.

Consolidation History	Max Induced Past Pressure	<input checked="" type="checkbox"/> Preshear/pure	Preshear after Cy-loading
Units: <u>ksi</u> or <u>kse</u>	Uncorr. Corr. #	Uncorr. Corr. #	Uncorr. Corr. #
$\bar{\sigma}_{cell}$		16.4016	
$\bar{\sigma}_h$		14.400	
$\bar{\sigma}_v$		2.0190	
$\bar{\sigma}_h$		2.0016	2.0051
$\bar{\sigma}_p = (\bar{\sigma}_v + \bar{\sigma}_h)/2$		—	2.0120
$K_c = \bar{\sigma}_v / \bar{\sigma}_h$		1.00	1.0069
OCR		1.00	1.00
Consol. Time	<input type="checkbox"/> Overnight	<input type="checkbox"/> Overnight	<input type="checkbox"/> Overnight
	days hours	days hours	days hours

$H_0 = 5.9537$ in
 $A_0 = 6.4442$ in²
 $V_0 = 628.721$ cm³
 $D_{50}/D_{10} = 1.0108$
 $G_s = 2.653$ ☒ Assumed ☐ Measured
 $B_g = 96.4$ %
 Area Corr. Factors: C
 Undrained = 1.242
 $C = \frac{1}{G_s} (1 - A_v/A_{vm})$
 Drained = —
 $C = \frac{1}{G_s} [1 - \frac{A_v}{A_{vm}} (1 + e_v)]$

* Corrected for effects of membrane, S.H. strips, etc.

Calculate Wt. of Dry Soil	By Initial Water Content	By Final Water Content	By Total Overdried Specimen	Variations in Height and Volume During Consolidation	During Initial Consol. with out back-Pressure	During Back-Pressuring	After Backpressuring
					ΔV_b vol in	ΔV_b vol in	$\bar{\sigma}_h$ (psf) From 2.6 To 3.5
W_1 (%)							
W_2 (%)							
W_{ave} (%)	13.80	19.53					
Wgt. Wt. Soil, Wt (gm)	1254.71	1303.59					
Initial Wt. Dry Soil (gm)	ΔV_t (cm ³) during test		1086.29				
Wt. Excess Overdried Soil	Korr. Wt. Wt. $e = W_t + \Delta V_t$		4.31				
Wt. Wt. Dry Soil, Wt (gm)	1102.56	1090.60	1090.60				
W_s used:		$F_{in} = 1090.60$ gm					

Calculation of ΔV_c During Consolidation by Difference Procedure	ΔV_c by Wt. Change $= W_0 - W_g - (\Delta V_b + \Delta V_t)$	ΔV_c by recorded/calculated volume changes $= \sum \text{selected } \Delta V$	ΔV_c assuming $S = 100\%$ $V_F = (4G_s + W_g) W_s / r_u$
	$\Delta W_t = -48.88$ gm $\Sigma (\Delta V_b + \Delta V_t) =$ <u>—</u> cm ³ $\therefore \Delta V_c =$ <u>—</u> cm ³	$\Delta V_1 = \Delta V_2 = \Delta V_3$ $\Delta V_c = 4.602 + 5.063 + 4.36$ $= 14.031$ cm ³	$\Delta V_c = V_0 - V_F$ $W_0 = 19.53$ % $V_F = 625.201$ cm ³ $V_F + \Delta V_t =$ <u>—</u> cm ³ $\therefore \Delta V_c = 3.520$ cm ³

ΔV_c used (ave. value) = 3.520 cm³; $V_c = 625.201$ cm³; $\Delta L_c = 0.022$ in; $L_c = 5.9317$ in
 $A_c = V_c / L_c$ (cm²/in) $= 6.4319$ in²; $A_0 = 6.4442$ in²; $A_c/A_0 = 0.998$
 $e_{av} = 0.37$ %; $e_v = 0.56$ %; $r_{ev} =$ — %; $e_g = 0.1727$; $e_{ve} =$ — % not in percent.
 At max. induced past pressure: $\Delta V_{max} = \Delta V_c - \Delta V_{rebound} =$ — cm³; $\Delta L_{max} =$ — in

Summary	Height (in)	Area (in ² or cm ² $\times 10^{-3}$)	Volume (cm ³)	Water Content (%)	Total/Dry Density (lb/ft ³)	Saturation (%)
Initial	5.9537	44.7514	628.721	15.05	124.53 108.29	75.8
After Consol.	5.9317	44.6653	625.201	19.53	130.17 108.90	100.0

$S = W G_s \cdot Y_d / (G_s \cdot Y_w - Y_d) = W \cdot e_s \cdot Y_d / (G_s \cdot Y_w (1 + W) - Y_d)$

Calculated by PR Reviewed by PR

$P_{ci} \times 0.072 = 6.65$
 $W \text{ for } S = 100\% = G_s \cdot Y_w - Y_d / G_s \cdot Y_d = G_s \cdot Y_w - Y_d / (G_s \cdot Y_w - Y_d) = G_s \cdot Y_w - Y_d / (G_s \cdot Y_w - Y_d)$

A. TRIAX

THIS IS A CIU TEST. IT HAS BEEN

CALCULATED BY COMPUTER PROGRAM NO. C-T-1R.6

USING FILE NO. T-275

PROJ. NO.	81C4055T3	REVIEWED BY: <i>42</i>
BORING NO.	COE-7	DATE: <i>3/6/87</i>
SAMPLE NO.	S-20	INPUT DATA CHECKED BY: <i>EL</i>
SPECIMEN NO.	B	
DEPTH(FT.)	39.5	TEST NO. ID-078

ISOTROPIC	TYPE OF CONSOLIDATION
UNDRAINED	DRAINAGE CONDITIONS DURING LOADING
COMPRESSION	MODE OF LOADING
CONSTANT	CELL PRESSURE DURING LOADING
5.9537	INITIAL HEIGHT OF SPECIMEN IN INCHES
2.8644	INITIAL DIAMETER OF SPECIMEN IN INCHES
628.72	INITIAL VOLUME OF SPECIMEN IN CU. CM.
.5000	PISTON DIAMETER IN INCHES
.5100	WEIGHT OF TOP CAP ONLY IN TONS*10**-3
1.2700	WEIGHT OF TOP CAP + PISTON + DIAL IN TONS*10**-3
1.5950	WEIGHT OF TOP CAP + PISTON + DIAL + LVDT IN TONS*10**-3
NO	WAS PISTON IN CONTACT WITH SPECIMEN DURING CONSOLIDATION?
.0275	MEMBRANE THICKNESS IN INCHES
2.8338	MEMBRANE DIAMETER IN INCHES
0.0000	FILTER STRIP CORRECTION CONSTANT AT
	2% AXIAL STRAIN IN TONS ** 10-3
1.2420	RIGHT CYLINDER DISTORTION FACTOR

PRE-SHEAR CONDITIONS:

8.2008	CELL PRESSURE IN TSF
7.2000	BACK PRESSURE IN TSF
.0220	AXIAL DEFORMATION DURING CONSOL. IN INCHES
3.52	VOLUME CHANGE DURING CONSOL. IN CU. CM.
11.9505	MEASURED AXIAL LOAD PRIOR TO STATIC LOADING
	FROM FIRST LINE OF LOADING DATA IN TONS*10**-3

EFFECTIVE STRESSES CORRECTED FOR MEMBRANE AND FILTER STRIPS, ETC:

AXIAL	=	2.0190	KSF
LATERAL	=	2.0051	KSF
MEAN	=	2.0097	KSF
PBAR	=	2.0120	KSF
LATERAL/AXIAL	=	.9931	
AXIAL/LATERAL	=	1.0069	
OCR	=	1.000	

11.9505	PISTON DRAG CORRECTION IN TONS *10**-3
2000	FILE NUMBER FOR LOAD CELL OR PROVING RING
1000	FILE NUMBER FOR PORE PRESSURE CONVERSION CONSTANT
2000	FILE NUMBER FOR CELL PRESSURE CONVERSION CONSTANT
NONE	FILE NUMBER FOR PISTON FRICTION CORRECTION CONSTANT
YES	IS DATA NORMALIZATION REQUIRED?
	DATA NORMALIZED TO PRESHEAR STRESSES
	WITH NORM = P-BAR OF 2.0120 KSF

PISTON DRAG CORRECTION IN TONS *10**-3
FILE NUMBER FOR LOAD CELL OR PROVING RING
FILE NUMBER FOR PURE PRESSURE CONVERSION CONSTANT
FILE NUMBER FOR CELL PRESSURE CONVERSION CONSTANT
FILE NUMBER FOR PISTON FRICTION CORRECTION CONSTANT
IS DATA NORMALIZATION REQUIRED?
DATA NORMALIZED TO PRESHEAR STRESSES
WITH NORM = P-BAR OF 2.0120 KSF

AXIAL STRAIN %	DEVIATOR STRESS KSF	OBLIQUITY	DELTA-U KSF	A-FACTOR	Q KSF	P-BAR KSF	SECANT MODULUS KSF	TANGENT MODULUS KSF	DEVIATOR NORM	DELTA-U NORM	Q NORM	P-BAR NORM	SECANT NORM
0.0000	0.0000	1.0069	0.0000	0.0000	0.0070	2.0120	0.000	0.000	0.0069	0.0000	0.0035	1.0000	0.0000
0.0126	0.0056	1.0794	0.0260	1.958	0.0784	2.0855	1115.929	1829.619	0.780	-0.139	-0.0390	1.0216	554.6289
0.0226	0.1059	1.0569	0.0760	1.958	0.208	2.1319	1733.750	2108.619	0.780	-0.139	-0.0390	1.0216	554.6289
0.0337	0.3150	1.3150	0.1240	2.180	0.2959	2.1750	1714.010	1470.016	0.2941	0.626	0.1471	1.0810	851.8812
0.0450	0.7348	1.4018	0.1760	2.441	0.3674	2.1965	1601.613	1286.332	0.3652	0.875	0.2335	1.0917	796.0189
0.0607	0.9397	1.5330	0.2614	2.614	0.4698	2.2329	1525.392	1183.969	0.4670	1.203	0.3352	1.1098	758.1362
0.0855	1.1878	1.7100	0.3520	2.828	0.5939	2.2670	1373.458	932.476	0.5904	1.650	0.2952	1.1267	682.6233
0.0998	1.3116	1.8061	0.3780	2.913	0.6558	2.2829	1300.249	790.254	0.6519	1.879	0.3259	1.1346	646.2375
0.1275	1.5098	1.9692	0.4480	3.295	0.7549	2.3120	1173.708	696.808	0.7504	2.187	0.3752	1.1491	583.3458
0.1448	1.6273	2.0698	0.4840	3.000	0.8137	2.3347	1114.112	651.161	0.8088	2.406	0.4044	1.1604	553.7257
0.1725	1.8003	2.2255	0.5360	3.000	0.9001	2.3692	1035.803	548.974	0.8948	2.664	0.4474	1.1775	514.8055
0.2025	1.9420	2.3647	0.5820	3.018	0.9710	2.3941	952.288	508.710	0.9552	2.893	0.4826	1.1899	473.2977
0.2355	2.1208	2.5356	0.6240	2.962	1.0604	2.4415	894.599	504.792	1.0541	3.101	0.5270	1.2135	444.6255
0.2670	2.2685	2.6716	0.6480	2.962	1.1342	2.4913	844.293	439.953	1.1275	3.321	0.5637	1.2382	419.6227
0.2999	2.4038	2.7951	0.6640	2.787	1.2019	2.5410	796.846	414.995	1.1947	3.510	0.5973	1.2629	396.0410
0.3336	2.5449	2.9176	0.6780	2.679	1.2724	2.5995	758.616	458.231	1.2648	3.370	0.6324	1.2920	377.0403
0.3645	2.6965	3.0426	0.6840	2.548	1.3492	2.6703	736.548	452.743	1.3412	3.401	0.6706	1.3272	366.0723
0.3975	2.8332	3.1446	0.6840	2.426	1.4166	2.7377	709.204	451.539	1.4081	3.400	0.7041	1.3607	352.4821
0.4297	2.9927	3.2551	0.6780	2.276	1.4964	2.8235	693.190	434.374	1.4874	3.370	0.7437	1.4033	344.5231
0.4641	3.1211	3.3377	0.6700	2.156	1.5605	2.8957	669.483	455.554	1.5512	3.330	0.7756	1.4392	332.7403
0.4972	3.2988	3.4488	0.6580	2.003	1.6494	2.9665	660.734	533.936	1.6395	3.270	0.8198	1.4893	328.3921
0.5272	3.4579	3.5330	0.6400	1.858	1.7289	3.0940	653.294	518.853	1.7186	3.181	0.8593	1.5378	324.6940
0.5609	3.6290	3.6200	0.6200	1.715	1.8145	3.1996	644.541	475.377	1.8037	3.081	0.9018	1.5903	320.3436
0.5939	3.7754	3.6869	0.6000	1.595	1.8877	3.2928	633.332	496.570	1.8764	2.982	0.9382	1.6366	314.7727
0.6261	4.1176	3.8220	0.5640	1.430	2.0588	3.5179	625.438	560.181	2.0465	2.714	1.0233	1.7485	310.8494
0.7214	4.8675	3.9477	0.4820	1.077	2.2449	3.7680	620.450	584.757	2.2314	2.396	1.1157	1.8727	308.3705
0.7844	4.0400	4.0400	0.4040	0.832	2.4338	4.0349	618.744	602.832	2.4192	2.008	1.2096	2.0054	307.5225
0.8497	5.2632	4.1270	0.3220	0.613	2.6316	4.3147	617.799	652.915	2.6159	1.600	1.3079	2.1445	307.0530
0.9141	5.7136	4.2150	0.2280	0.400	2.9568	4.6339	623.548	705.114	2.8397	1.133	1.4199	2.3031	309.9099
0.9748	6.1450	4.2876	0.1360	0.222	3.0725	4.9417	628.983	725.991	3.0581	0.676	1.5271	2.4561	312.6111
1.0387	6.6185	4.3475	0.0280	0.042	3.3093	5.2864	635.882	725.687	3.2895	0.139	1.6447	2.6274	316.0404
1.1076	7.1083	4.3895	-0.920	-0.130	3.554	5.6513	640.511	751.003	3.5329	-0.457	1.7664	2.8088	318.3408
1.2314	8.0880	4.4645	-3.280	-0.406	4.0440	6.3772	655.712	829.805	4.0198	-1.630	2.0099	3.1695	325.8958
1.3568	9.1941	4.5318	-5.980	-0.652	4.5970	7.2002	675.608	897.357	4.5696	-2.972	2.2848	3.5786	335.7845
1.4856	10.3641	4.5864	-8.86	-0.856	5.1846	8.0758	697.051	946.987	5.1536	-4.404	2.5768	4.0138	346.4420
1.6130	11.6017	4.6174	-1.2026	-1.037	5.8009	9.0081	718.388	1007.744	5.7662	-5.974	2.8831	4.4771	357.0466
1.7359	12.8902	4.6400	-1.5360	-1.193	6.4451	9.9863	741.752	1089.916	6.4066	-7.634	3.2033	4.9633	368.6586
1.8566	14.2559	4.6579	-1.8920	-1.329	7.1260	11.0252	767.087	1147.456	7.0853	-9.403	3.5427	5.4797	381.2503
1.9767	15.6525	4.6577	-2.2740	-1.454	7.8262	12.1055	791.157	1212.533	7.7794	-1.1302	3.8897	6.0166	393.2137
2.0967	17.1668	4.6640	-2.6800	-1.563	8.5834	13.2487	818.088	1272.233	8.5321	-1.3320	4.2660	6.5947	406.5990
2.2181	18.7240	4.6589	-3.1120	-1.663	9.3670	14.4793	848.524	1339.205	9.3060	-1.5467	4.6530	7.1944	419.2404
2.3359	20.3685	4.6533	-3.5700	-1.754	10.1842	15.7596	871.371	1395.956	10.1234	-1.7743	5.0617	7.8327	433.0809
2.4588	22.0846	4.6399	-4.0620	-1.841	11.0423	17.1097	897.613	1452.990	10.9763	-2.0189	5.4881	8.5037	446.1231
2.5743	23.8279	4.6293	-4.5600	-1.915	11.9140	18.4794	925.066	1510.591	11.8427	-2.2664	5.9214	9.1844	459.7677
2.6943	25.6423	4.6149	-5.0680	-1.985	12.8212	19.9146	951.195	1531.839	12.7485	-2.5288	6.3723	9.8978	472.7544
2.8129	27.4818	4.5964	-5.6360	-2.052	13.7409	21.3823	976.514	1580.889	13.6588	-2.8012	6.8294	10.6273	485.3377
2.9312	29.3668	4.5822	-6.1980	-2.110	14.6934	22.8969	1002.078	1590.475	14.6056	-3.0805	7.3028	11.4190	498.0434
3.0543	31.3205	4.5650	-6.7800	-2.166	15.6603	24.4568	1025.012	1599.605	15.5666	-3.3697	7.7833	12.1498	509.4422
3.1741	33.2623	4.5455	-7.3760	-2.219	16.6311	26.0127	1047.479	1628.719	16.5317	-3.6660	8.2659	12.9286	520.6082
3.2957	35.2354	4.5218	-8.2832	-2.287	18.1177	28.4065	1079.403	1641.028	18.0094	-4.1168	9.0047	14.1183	536.4748
3.5349	39.1826	4.4933	-9.2110	-2.352	19.5913	30.8079	1108.054	1624.058	19.7472	-4.5780	9.7571	15.3119	550.7148
3.7156	42.0806	4.4657	-10.1364	-2.410	21.0403	33.1823	1132.155	1613.397	20.9145	-5.0379	10.4373	16.4920	562.6932
3.8926	44.9540	4.4439	-11.0474	-2.458	22.4770	35.5301	1154.486	1563.315	22.3426	-5.4907	11.1713	17.6588	573.7922
4.0734	47.7760	4.4264	-11.9102	-2.499	23.8355	37.7514	1169.966	1452.076	23.6930	-5.915	11.8465	18.7629	581.4858
					37.7514	1169.966	1452.076	1452.076	24.0493	-6.3411	12.4719	19.7807	594.7372

[illegible]

10. 3390	39. 6441	3. 4708	-15. 4072	-3869	19. 8113	37. 2222	383. 262	1	31	74	96	953	3514
10. 5251	39. 4531	3. 2785	-15. 3948	-3885	19. 8268	37. 2301	376. 614	4. 825	19. 4929	-7. 4551	9. 8465	18. 4998	190. 4855
10. 7274	39. 4819	3. 2689	-15. 3924	-3901	19. 7409	37. 1422	347. 916	-34. 339	19. 7080	-7. 4514	9. 8540	18. 5038	187. 1814
10. 9314	39. 4280	3. 2664	-15. 3876	-3905	19. 7140	37. 1106	360. 557	-53. 530	19. 6229	-7. 4502	9. 8115	18. 4601	182. 8581
11. 1118	39. 5071	3. 2716	-15. 3828	-3896	19. 7535	37. 1455	355. 416	8. 712	19. 5961	-7. 4478	9. 7981	18. 4444	179. 2008
11. 2501	39. 5501	3. 2740	-15. 3828	-3892	19. 7750	37. 1671	351. 431	37. 468	19. 6354	-7. 4454	9. 8177	18. 4617	176. 6454
11. 5131	39. 4448	3. 2686	-15. 3760	-3901	19. 7254	37. 1099	344. 489	-4. 453	19. 6586	-7. 4454	9. 8284	18. 4724	174. 6647
12. 0525	39. 4242	3. 2680	-15. 3732	-3902	19. 7121	37. 0949	334. 425	-23. 812	19. 6045	-7. 4406	9. 8023	18. 4440	170. 2206
12. 3189	39. 4338	3. 2736	-15. 3708	-3892	19. 7584	37. 1390	325. 755	13. 453	19. 5942	-7. 4395	9. 7971	18. 4366	166. 2129
12. 5835	39. 5138	3. 2743	-15. 3660	-3899	19. 7169	37. 0930	319. 996	1. 704	19. 6402	-7. 4395	9. 8201	18. 4585	162. 8979
12. 8449	39. 7088	3. 2855	-15. 3636	-3891	19. 7569	37. 1308	313. 900	-446	19. 5990	-7. 4371	9. 7995	18. 4356	159. 0412
13. 1146	39. 8491	3. 2939	-15. 3612	-3872	19. 8544	37. 2284	309. 032	52. 412	19. 6388	-7. 4359	9. 8194	18. 4544	156. 0119
13. 3827	39. 7808	3. 2902	-15. 3588	-3858	19. 9245	37. 2964	303. 746	63. 307	19. 7357	-7. 4359	9. 8678	18. 5029	153. 5924
13. 6507	39. 8456	3. 2936	-15. 3564	-3864	19. 8904	37. 2601	297. 152	13. 266	19. 6054	-7. 4347	9. 9027	18. 5367	150. 9651
13. 9154	39. 9847	3. 3022	-15. 3564	-3643	19. 9924	37. 3601	291. 792	-847	19. 7715	-7. 4335	9. 8857	18. 5187	147. 6876
14. 1851	40. 1423	3. 3113	-15. 3564	-3828	20. 0712	37. 4392	287. 242	36. 377	19. 8037	-7. 4347	9. 9018	18. 5361	145. 0236
14. 4532	40. 1606	3. 3119	-15. 3564	-3827	20. 0803	37. 4486	277. 770	55. 502	19. 8728	-7. 4323	9. 9344	18. 5684	142. 7621
14. 7179	40. 1539	3. 3119	-15. 3564	-3827	20. 0769	37. 4454	272. 729	32. 623	19. 9512	-7. 4323	9. 9756	18. 6077	140. 5997
14. 9792	40. 1170	3. 3097	-15. 3564	-3831	20. 0585	37. 4273	267. 725	2. 134	19. 9603	-7. 4323	9. 9801	18. 6123	138. 0549
15. 2422	40. 0490	3. 3058	-15. 3564	-3838	20. 0245	37. 3935	262. 660	-8. 330	19. 9386	-7. 4323	9. 9785	18. 6108	135. 5494
15. 5052	40. 0761	3. 3073	-15. 3564	-3835	20. 0380	37. 4073	258. 379	-19. 980	19. 9048	-7. 4323	9. 9693	18. 6018	133. 0624
15. 7783	40. 1294	3. 3103	-15. 3564	-3830	20. 0647	37. 4343	254. 245	14. 905	19. 9182	-7. 4323	9. 9524	18. 5850	130. 5449
16. 0396	40. 3676	3. 3240	-15. 3564	-3808	20. 1838	37. 5536	251. 588	55. 341	19. 9447	-7. 4323	9. 9591	18. 5918	128. 4173
16. 3161	40. 3892	3. 3249	-15. 3588	-3806	20. 1946	37. 5672	247. 458	49. 495	20. 0631	-7. 4323	9. 9724	18. 6052	126. 3625
16. 5555	40. 3993	3. 3254	-15. 3588	-3805	20. 1996	37. 5724	243. 940	6. 015	20. 0739	-7. 4323	10. 0316	18. 6646	125. 0420
16. 8151	40. 4836	3. 3299	-15. 3612	-3798	20. 2418	37. 6173	240. 675	18. 337	20. 0789	-7. 4335	10. 0369	18. 6713	122. 9891
17. 0882	40. 4918	3. 3304	-15. 3612	-3798	20. 2378	37. 6139	233. 057	17. 742	20. 1208	-7. 4335	10. 0394	18. 6739	121. 2408
17. 3613	40. 4756	3. 3294	-15. 3612	-3799	20. 2459	37. 6217	236. 877	-1. 463	20. 1249	-7. 4347	10. 0604	18. 6962	119. 6181
17. 6344	40. 4912	3. 3299	-15. 3636	-3798	20. 2456	37. 6244	229. 536	-110	20. 1168	-7. 4347	10. 0584	18. 6984	117. 7302
17. 9008	40. 5061	3. 3307	-15. 3636	-3797	20. 2531	37. 6322	226. 204	5. 655	20. 1246	-7. 4359	10. 0845	18. 6945	115. 8318
18. 1840	40. 3418	3. 3212	-15. 3636	-3812	20. 1709	37. 5504	221. 777	-26. 206	20. 1320	-7. 4359	10. 0660	18. 6998	114. 0819
18. 4453	40. 3662	3. 3223	-15. 3660	-3811	20. 1831	37. 5653	216. 767	-24. 350	20. 0503	-7. 4359	10. 0660	18. 7036	112. 4257
18. 7032	40. 4495	3. 3270	-15. 3660	-3803	20. 2247	37. 6073	216. 196	20. 806	20. 0624	-7. 4371	10. 0312	18. 6704	110. 2256
								1179. 950	20. 1038	-7. 4371	10. 0519	18. 6912	107. 4515 STOP

A. BASIC RESPT

1 DATA FILE IDENT. NO. T-275
2 PROJECT NO. 81C4055T3
3 BORING NO. COE-7
4 SAMPLE NO. S-20
5 SPECIMEN NO. B
6 DEPTH 39.5
7 TEST NO. 1D-078
8 FILE # FOR LOAD CELL OR PROVING RING 2000
9 FILE # FOR PORE PRESSURE CONST. 1000
10 FILE # FOR CELL PRESSURE CONST 2000
11 FILE # FOR PISTON FRICTION CORRECTION NONE
12 TYPE OF CONSOLIDATION 1
13 DRAINAGE CONDITIONS DURING LOADING U
14 MODE OF LOADING C
15 CELL PRESSURE DURING LOADING C
16 INITIAL HEIGHT OF SPECIMEN IN INCHES 5.9537
17 INITIAL DIAMETER OF SPECIMEN IN INCHES 2.8644
18 INITIAL VOLUME OF SPECIMEN IN CU. CM. 628.721
19 PISTON DIAMETER IN INCHES 0.5
20 WEIGHT OF TOP CAP ONLY IN TONS*10**-3 0.51
21 WEIGHT OF TOP CAP + PISTON + DIAL IN TONS*10**-3 1.27
22 WEIGHT OF TOP CAP + PISTON + DIAL + LVDT IN TONS*10**-3 1.595
23 WAS PISTON INTACT DURING CONSOL. NO
24 MEMBRANE THICKNESS IN INCHES .0275
25 MEMBRANE DIAMETER IN INCHES 2.8338
26 FILTER STRIP CORRECTION CONSTANT 0.0
27 RIGHT CYLINDER DISTORTION FACTOR 1.242
28 DOES SPECIMEN HAVE AN INDUCED OCR NO
29 CELL PRESSURE IN TSF 0.0
30 BACK PRESSURE IN TSF 0.0
31 AXIAL DEFORMATION DURING CONSOL. IN INCHES 0.0
32 VOLUME CHANGE DURING CONSOL. IN CU. CM. 0.0
33 APPLIED AXIAL LOAD IN TONS*10**-3 0.0
34 PRE SHEAR CONDITION - CELL PRESSURE IN TSF 8.2008
35 BACK PRESSURE IN TSF 7.200
36 AXIAL DEFORMATION IN INCHES .022
37 VOLUME CHANGE IN CU. CM. 3.52
38 PISTON DRAG CORRECTION IN TONS*10**-3 11.9505
39 SPECIMEN CYCLICLY LOADED BEFORE SHEARING NO
40 SPECIMEN RECONSOLIDATED DURING CYCLIC LOADING NO
41 SUM OF VOLUME CHANGES DURING RECONSOLIDATION IN CU. CM. 0.0
42 PORE PRESSURE IN TSF 0.0
43 TOTAL CHANGE IN HT DURING CYCLIC LOADING IN INCHES 0.0
44 OUTPUT UNITS REQUIRED KSF
45 DATA NORMALIZATION SELECTION 2.0
46 RESULT FILE DESIRED 0.0

19 6/4/81

DIS (in.)	LOAD (lbs)	PORE PRESSURE (tsf)
.00978	23.901	7.242
.01054	30.294	7.256
.01112	41.41	7.280
.01178	49.74	7.305
.01245	56.14	7.330
.01338	65.31	7.363
.01485	76.43	7.408
.01570	81.98	7.431
.01734	90.89	7.466
.01837	96.16	7.484
.02001	103.94	7.510

12	111	112
.00978,	23.901,	7.242
.01054,	30.294,	7.256
.01112,	41.41,	7.280
.01178,	49.74,	7.305
.01245,	56.14,	7.330
.01338,	65.31,	7.363
.01485,	76.43,	7.408
.01570,	81.98,	7.431
.01734,	90.88,	7.466
.01837,	96.16,	7.484
.02001,	103.94,	7.510
.02179,	110.33,	7.533
.02375,	118.39,	7.554
.02562,	125.06,	7.566
.02757,	131.18,	7.575
.02957,	137.57,	7.581
.03140,	144.52,	7.584
.03336,	150.63,	7.584
.03527,	157.86,	7.581
.03731,	163.70,	7.577
.03927,	171.76,	7.571
.04105,	178.98,	7.562
.04305,	186.76,	7.552
.04501,	193.43,	7.542
.04870,	209.00,	7.515
.05257,	225.95,	7.483
.05631,	243.18,	7.444
.06018,	261.25,	7.403
.06400,	281.82,	7.356
.06760,	301.55,	7.310
.07139,	323.23,	7.256
.07548,	345.7,	7.196
.08282,	390.7,	7.078
.09038,	441.6,	6.943
.09790,	495.8,	6.799
.10546,	552.8,	6.641
.11275,	612.5,	6.474
.11991,	675.9,	6.296
.12703,	740.9,	6.105
.13415,	811.5,	5.902
.14135,	884.3,	5.686
.14834,	961.3,	5.457
.15543,	1041.9,	5.211
.16248,	1123.9,	4.943
.16960,	1209.0,	4.698
.17683,	1296.5,	4.424
.18365,	1386.0,	4.143
.19095,	1478.8,	3.852
.19806,	1571.4,	3.554
.20883,	1713.7,	3.1004
.21946,	1855.4,	2.6365
.23018,	1995.5,	2.1738
.24068,	2135.0,	1.7183
.25140,	2267.9,	1.2869
.26207,	2392.1,	0.8929
.27292,	2499.1,	0.5591
.28418,	2588.9,	.29763
.29548,	2659.2,	.10001
.30708,	2713.7,	-.04217
.31892,	2750.9,	-.15303
.3306,	2783.1,	-.24220
.3428,	2804.8,	-.31209
.3543,	2818.4,	-.3675
.3785,	2817.9,	-.4518
.3902,	2802.0,	-.4844
.4027,	2739.8,	-.5073
.4164,	2443.0,	-.5269
.4293,	2223.2,	-.5331

0.3 2817 1.451
0.3902, 2802.0, -0.4844
0.4027, 2739.8, -0.5073
0.4164, 2443.0, -0.5289
0.4299, 2227.3, -0.5326
0.4427, 2130.6, -0.5265
0.4551, 2081.9, -0.5193
0.4672, 2058.0, -0.5133
0.4792, 2041.9, -0.5048
0.4909, 2039.4, -0.5000
0.5028, 2035.0, -0.4940
0.5147, 2031.9, -0.4892
0.5266, 2029.7, -0.4832
0.5387, 2038.3, -0.4783
0.5509, 2027.2, -0.4759
0.5627, 2038.0, -0.4723
0.5748, 2042.7, -0.4687
0.5866, 2045.5, -0.4663
0.5986, 2051.1, -0.4639
0.6108, 2053.6, -0.4615
0.6228, 2058.9, -0.4591
0.6341, 2066.1, -0.4554
0.6461, 2063.3, -0.4542
0.6582, 2066.6, -0.4518
0.6689, 2076.1, -0.4494
0.6771, 2082.5, -0.4494
0.6927, 2085.0, -0.4470
0.7088, 2092.2, -0.4446
0.7247, 2105.3, -0.4434
0.7405, 2109.2, -0.4410
0.7562, 2121.7, -0.4398
0.7717, 2140.3, -0.4398
0.7877, 2156.4, -0.4386
0.8036, 2161.4, -0.4374
0.8195, 2173.6, -0.4366
0.8352, 2189.8, -0.4362
0.8512, 2207.3, -0.4362
0.8671, 2217.3, -0.4362
0.8828, 2225.9, -0.4362
0.8983, 2232.8, -0.4362
0.9139, 2238.1, -0.4362
0.9295, 2248.7, -0.4362
0.9457, 2261.2, -0.4362
0.9612, 2283.7, -0.4362
0.9776, 2294.8, -0.4374
0.9918, 2304.0, -0.4374
1.0072, 2318.2, -0.4386
1.0234, 2328.7, -0.4386
1.0396, 2337.9, -0.4386
1.0558, 2349.0, -0.4398
1.0716, 2359.9, -0.4398
1.0884, 2361.2, -0.4398
1.1039, 2372.6, -0.4410
1.1192, 2387.4, -0.4410
-999., 0.0, 0.0

TRIAXIAL TEST (Set Up / Take Down)

Proj. No. SL4055-3 Proj. ENR Cell No. H-7 Piston diam. ☐ 3/8" ☒ 1/2" WCC L-202 (1.180)

Type Test CU-C File No T-276

Loading Conditions: ☐ Dynamic ☒ Undrained ☒ Compression ☒ Constant Cell pressure
☒ Static ☐ Drained ☐ Extension ☐ Variable cell pressure

Type ☐ Isotropic ☐ K₀ Stress path
 Consolidation ☐ Anisotropic ☐ 45° Stress path
 Piston Screwed in: ☐ Yes ☒ No

☒ Undisturbed ☐ Reconstituted ☐ Impact ☐ Constant Effort
 Boring No. CAC 7 Composite No. _____ ☐ Static _____ layers; _____ 16 {Hammer
 Sample No. S-22 Specimen No. C ☐ Kneading _____ Blows-Tamps / layer
 Depth (ft) 44.5 Remarks ID # 080 ☐ Tamping ☐ Undercompaction
☐ Ends capped with Castorac; ☐ Geomarine Sample ☐ Other _____ layers; _____ Uni (%)

Water Content				Final
Location	<u>Top</u>	<u>Butt</u>		<u>Ave</u>
Container No	<u>WA 28</u>	<u>18-22</u>		<u>SA</u>
Wgt. Container + Wet Soil (gm)	<u>147.5</u>	<u>89.15</u>		<u>2194.8</u>
Wgt. Container + Dry Soil (gm)	<u>131.91</u>	<u>82.59</u>		<u>1980.55</u>
Wgt. Container (gm)	<u>34.11</u>	<u>34.06</u>		<u>904.95</u>
Wgt. Dry Soil (gm)	<u>97.80</u>	<u>48.53</u>	<u>ave</u>	<u>1075.8</u>
WATER CONTENT (%)	<u>15.94</u>	<u>13.52</u>	<u>14.73</u>	<u>13.88</u>

☐ See attached data sheet(s) for additional water contents

Specimen Weight	
Wet + Stone (etc.)	<u>1399.5</u> gm
Stone (etc.)	<u>13030</u> gm
Wet Initial	<u>1263.2</u> gm
Wet Final	_____ gm
Excess Overdry. Dish	<u>24</u>
Wgt. Dish + Dry Soil	<u>211.18</u> gm
Wgt. Dish	<u>26.26</u> gm
Wgt. Excess Dry Soil	<u>4.32</u> gm

Dimensions of Specimen		Height (in)		Diameter (in)	
Initial (L ₀)	Final (L _g)	Initial	Final	Initial	Final
1	<u>5.944</u>	1-T	<u>2.863</u>		
2	<u>5.957</u>	2-M	<u>2.847</u>		
3	<u>5.945</u>	3-B	<u>2.840</u>		
4	<u>5.943</u>	1-T	<u>2.865</u>		
5	<u>5.947</u>	2-M	<u>2.857</u>		
Ave	<u>5.9487</u>	3-B	<u>2.861</u>		
Ave <u>3.8555</u>					
ΔL _c = _____ in		A ₀ = πD ² /4 = <u>6.4040</u> in ²			
ΔL _e = _____ in		V ₀ = 1h ² · 16.8871 = <u>624.274</u> cm ³			
ΔL ₀ = _____ in		A _{0m} = 5.45 + 2(D ₀) ² = _____ in ²			
L ₀ - L _g = _____ in					

Thickness = 0.0277 in
 Membrane Circumference (cm) = 8.8735 in
 Diam = Cm/π = 2.8264 in
 Filter Paper: Top + bottom: ☐ Yes ☒ No
 Filter Strips: ☐ Yes ☒ No
 Vertical at 1/4" - Whatman #54 or _____
 Spiral at 1/4" - Whatman #1 or _____
 Wgt top cap = _____ gm, _____ 10⁻³ gm
 Wgt (Cap, dial) = _____ gm, _____ 10⁻³ gm
 Preliminary
 V_{co} = 126.93 10⁻³ cm³ V_d = 110.63 10⁻³ cm³

Failure Sketch



Final Visual Classification. ☐ See more detailed sketch on attached sheet; ☐ Photo taken.

Other Remarks: OC MSF

Preliminary Cal. by EG Reviewed by EG

☐ Trimmed by _____ Setup by EG Taken down by EG
☐ Reconstituted Date _____ Date 8/4/71 Date 9/6/71

See back for Summary Calculations

TRIAXIAL TEST SUMMARY CALCULATIONS T-276

Type Test: CIV - C ☒ Undisturbed; ☐ Recconstituted-Specimen
☐ Dynamic e / H₂ or FSinusoidal or Static 3.36 %/hr

Consolidation History	Max Induced Past Pressure	Pre-shear/perm	Pre-shear after
Units: <u>ksi</u> or <u>KSF</u>	Uncorr. Corr. #	Uncorr. Corr. #	Uncorr. Corr. #
σ_{cell}		15.4098	
u		14.400	
σ_v		1.0045	
σ_h		1.0008	1.0135
$\sigma_p = (\sigma_v + \sigma_h)/2$		1.0120	
$K_c = \sigma_v / \sigma_h$		1.00	1.0150
OCR		1.00	1.000
Consol. Time	<input type="checkbox"/> Overnight	<input type="checkbox"/> Overnight	<input type="checkbox"/> Overnight
	days hours	days hours	days hours

$H_o = 5.3487$ in
$A_o = 6.4040$ in ²
$V_o = 624.274$ cm ³
$D_o/D_{om} = 1.0103$
$G_s = 2.1662$ <input checked="" type="checkbox"/> Assumed <input type="checkbox"/> Measured
$B_g = 35.4$ %
Area Corr. Factors: C
Undrained = <u>1.95</u> axis
$C = \frac{1}{E_s} (1 - A_u/A_{sm})$
Drained =
$C = \frac{1}{E_s} [1 - \frac{A_u(1+e_{vt})}{A_{sm}}]$

Calculate	By Initial Water Content	By Final Water Content	By Total Overdried Specimen
Wt. of Dry Soil			
W_1 (%)			
W_2 (%)			
W_{ave} (%)	14.73	13.88	
Wgt. Wet Soil, Wt (gm)	1269.2	(1294.85)	
Partial Wgt Dry Soil (gm)	ΔV_T (cm ³) during test		1075.8
Wgt Excess Overdried Soil	Korr. Wgt Wt. σ_p Wt ΔV_T		4.32
Total Wgt Dry Soil, Wt (gm)	1106.25	(1080.12)	1080.12
W_s used:		Final = 1080.12 gm	

Variations in Height and Volume During	During Initial Consol. with out back Pressure	During Back-Pressuring	After Backpressuring
	ΔV_o vol in	ΔV_o vol in	σ_h (psi) From <u>2.5</u> To <u>6.95</u>
Consolidation	Sign Convention: (-) ΔV in, (+) ΔV out, (-) ΔL up, (+) ΔL down		
ΔL (in)	0.0083	0.0051	0.003
ΔV_m (cm ³)	(-2.176)	-	(-2.088) (-2.14)
ΔV_a	2.802	1.606	0.944
$R = \Delta V_m / \Delta V_a$	Used = 3.267	2.267	
Corrected $\Delta V_a = R \cdot \Delta V_a$	(6.352)	(3.641)	
Circle Selected Volume	ΔV_1	ΔV_2	ΔV_3 ΔV_4 ΔV_5
$\Delta L_{cy} = \Delta V_{rebound} = \sigma_{max} \text{ to } \sigma_{rest} =$ cm ³			
in ΔV_T (during drained loading) =			

Calculation of ΔV_c During Consolidation by Different Procedures	ΔV_c by Wgt Change $= W_o - W_s - (\Delta V_b + \Delta V_T)$	ΔV_c by recorded/calculated volume changes $= \Sigma \text{ selected } \Delta V$	ΔV_c assuming $S = 100\%$ $V_F = (V_o + W_s) W_s / G_s$
	$\Delta W_s = -25.65$ gm	ΔV_1 ΔV_2 ΔV_3	Undrained Drained
	$\Sigma (\Delta V_b + \Delta V_T) =$	$\Delta V_c = 6.352 + 3.641 + 2.14$	$\Delta V_c = V_o - V_F$ $\Delta V_c = V_o - (V_F + \Delta V_T)$
	$\Delta V_c =$ cm ³	$= 12.133$ cm ³	$W_s = 13.88$ % $V_F = 621.602$ cm ³
			$V_o + \Delta V_T =$ cm ³
			$\Delta V_c = 3.672$ cm ³

ΔV_c used (ave values) = <u>9.672</u> cm ³ $V_c = 621.602$ cm ³ $\Delta L_c = 0.017$ in; $\sigma_c = 5.9317$ in
$A_c = V_c / L_c (cm^2) / 16.3871 = 6.3949$ in ² $\sigma_c = 44.4088 \times 10^{-3}$ psi
$e_{av} = 0.29$ %; $e_v = 0.43$ %; $e_{ev} =$ $E_s = 0.1828$; $e_{ev} =$ * not in percent.
At max. induced past pressure: $\Delta V_{max} = \Delta V_c - \Delta V_{rebound} =$ cm ³ ; $\Delta L_{max} =$ in

Summary	Height (in)	Area (cm ² $\times 10^{-2}$)	Volume (cm ³)	Water Content (%)	Total/Dry Density (lb/ft ³)	Saturation (%)
Initial	5.3487	44.4722	624.274	17.51	126.93 108.01	87.0
After Consol.	5.9317	44.4088	621.602	19.88	130.05 108.48	100.0

$$S = W G_s Y_d / (G_s Y_w - Y_d) = W \cdot G_s \cdot Y_e / (G_s Y_w (1+W) - Y_e)$$

Calculated by ES Reviewed by ES

$P_{ci} \times 0.072 = \text{dot}$
 $W \text{ for } S = 100\% = G_s Y_w - Y_d / G_s Y_d = G_s Y_w - Y_e / (G_s Y_w - Y_e)$

from
 ES-19
 (S-70)

A.TRIAX

THIS IS A CIU TEST. IT HAS BEEN

CALCULATED BY COMPUTER PROGRAM NO. C-T-1R.6

USING FILE NO.

T-276

PROJ. NO. 81C4055T3
BORING NO. COE-7
SAMPLE NO. S-22
SPECIMEN NO. C
DEPTH(FT.) 44.5

REVIEWED BY:

DATE: 8/7/81

INPUT DATA CHECKED BY: PO

TEST NO. ID-080

ISOTROPIC TYPE OF CONSOLIDATION
UNDRAINED DRAINAGE CONDITIONS DURING LOADING
COMPRESSION MODE OF LOADING
CONSTANT CELL PRESSURE DURING LOADING

5.9487 INITIAL HEIGHT OF SPECIMEN IN INCHES
2.8555 INITIAL DIAMETER OF SPECIMEN IN INCHES
624.27 INITIAL VOLUME OF SPECIMEN IN CU. CM.
.5000 PISTON DIAMETER IN INCHES
.5100 WEIGHT OF TOP CAP ONLY IN TONS*10**-3
1.2700 WEIGHT OF TOP CAP + PISTON + DIAL IN TONS*10**-3
1.5950 WEIGHT OF TOP CAP + PISTON + DIAL + LVDT IN TONS*10**-3
NO WAS PISTON IN CONTACT WITH SPECIMEN DURING CONSOLIDATION?

.0277 MEMBRANE THICKNESS IN INCHES
2.8264 MEMBRANE DIAMETER IN INCHES
0.0000 FILTER STRIP CORRECTION CONSTANT AT
2% AXIAL STRAIN IN TONS ** 10-3
1.2500 RIGHT CYLINDER DISTORTION FACTOR

PRE-SHEAR CONDITIONS:

7.7004 CELL PRESSURE IN TSF
7.2000 BACK PRESSURE IN TSF
.0170 AXIAL DEFORMATION DURING CONSOL. IN INCHES
2.67 VOLUME CHANGE DURING CONSOL. IN CU. CM.
11.1170 MEASURED AXIAL LOAD PRIOR TO STATIC LOADING
FROM FIRST LINE OF LOADING DATA IN TONS*10**-3

EFFECTIVE STRESSES CORRECTED FOR MEMBRANE AND FILTER STRIPS, ETC:

AXIAL = 1.0195 KSF
LATERAL = 1.0045 KSF
MEAN = 1.0095 KSF
PBAR = 1.0120 KSF
LATERAL/AXIAL = .9853
AXIAL/LATERAL = 1.0150
OCR = 1.000

11.1170 PISTON DRAG CORRECTION IN TONS *10**-3
2000 FILE NUMBER FOR LOAD CELL OR PROVING RING
1000 FILE NUMBER FOR PORE PRESSURE CONVERSION CONSTANT
2000 FILE NUMBER FOR CELL PRESSURE CONVERSION CONSTANT
NONE FILE NUMBER FOR PISTON FRICTION CORRECTION CONSTANT
YES IS DATA NORMALIZATION REQUIRED?
DATA NORMALIZED TO PRESHEAR STRESSES

11.1170
2000
1000
2000
NONE
YES

PISTON DRAG CORRECTION IN TONS *10**3
FILE NUMBER FOR LOAD CELL OR PROVING RING
FILE NUMBER FOR PORE PRESSURE CONVERSION CONSTANT
FILE NUMBER FOR CELL PRESSURE CONVERSION CONSTANT
FILE NUMBER FOR PISTON FRICTION CORRECTION CONSTANT

IS DATA NORMALIZATION REQUIRED?
DATA NORMALIZED TO PRESHEAR STRESSES
WITH NORM = P-BAR OF 1.0120 KSF

AXIAL STRAIN Z	DEVIATOR STRESS KSF	OBLIQUITY	DELTA-U KSF	A-FACTOR	Q KSF	P-BAR KSF	SECANT MODULUS KSF	TANGENT MODULUS KSF	DEVIATOR NORM	DELTA-U NORM	Q NORM	P-BAR NORM	SECANT NORM
0.0000	-0.150	1.0150	0.0000	0.0000	0.0075	1.0120	0.0000	0.0000	-0.149	0.0000	-0.0074	1.0000	0.0000
0.0096	-1.151	1.1159	0.1200	0.1200	0.0575	1.0500	1040.941	1352.353	-1.137	-0.119	-0.0528	1.0376	1028.5861
0.0179	-2.325	1.2591	0.3000	0.3000	0.1263	1.1007	1328.850	1441.043	-1.076	-0.296	-0.0528	1.0877	1313.0782
0.0292	-3.901	1.4122	0.5800	0.5800	0.1951	1.1416	1286.044	1008.245	-0.985	-0.573	-0.1927	1.1280	1270.7605
0.0464	-5.274	1.5767	0.9000	0.9000	0.2637	1.1782	1105.087	752.171	-0.869	-0.869	-0.2606	1.1642	1091.9707
0.0614	-6.333	1.7144	1.1180	1.1180	0.3167	1.2032	1007.550	629.667	-0.758	-1.166	-0.3129	1.1889	995.5916
0.0794	-7.331	1.8520	1.4400	1.4400	0.3666	1.2270	904.324	548.326	-0.624	-1.423	-0.3622	1.2125	893.5906
0.0966	-8.266	1.9905	1.7600	1.7600	0.4133	1.2478	840.091	491.303	-0.518	-1.680	-0.4084	1.2330	830.1208
0.1207	-9.324	2.1590	2.0800	2.0800	0.4662	1.2707	760.008	402.850	-0.421	-1.976	-0.4607	1.2556	750.9880
0.1597	-1.0752	2.3954	2.3400	2.3400	0.5376	1.3081	664.041	336.493	-0.342	-2.312	-0.5312	1.2926	656.1599
0.1799	-1.3722	2.4992	2.4600	2.4600	0.5886	1.3271	623.819	290.671	-0.287	-2.431	-0.5618	1.3113	616.4154
0.2249	-1.2609	2.7074	2.6600	2.6600	0.6305	1.3690	553.991	237.503	-0.240	-2.628	-0.6230	1.3527	547.4161
0.2556	-1.3223	2.8101	2.7400	2.7400	0.6612	1.3917	511.501	254.603	-0.207	-2.707	-0.6533	1.3751	505.4306
0.2856	-1.4151	2.9478	2.7800	1.9866	0.7075	1.4341	490.238	251.050	-0.183	-2.747	-0.6591	1.4170	484.4195
0.3239	-1.4889	3.0438	2.7600	1.872	0.7445	1.4730	455.109	164.448	-0.171	-2.727	-0.7356	1.4555	449.7079
0.3508	-1.5256	3.0884	2.7400	1.814	0.7628	1.4933	430.569	154.918	-0.167	-2.707	-0.7537	1.4756	425.4591
0.3861	-1.5859	3.1663	2.7200	1.730	0.7934	1.5259	407.144	206.348	-0.160	-2.688	-0.7840	1.5078	402.3118
0.4169	-1.6605	3.2424	2.6400	1.604	0.8303	1.5708	394.886	204.777	-0.160	-2.609	-0.8204	1.5521	390.0020
0.4491	-1.7155	3.2980	2.5800	1.517	0.8578	1.6043	378.632	196.923	-0.152	-2.549	-0.8476	1.5852	374.1377
0.4822	-1.7892	3.3465	2.4200	1.364	0.8946	1.6571	367.972	202.152	-0.140	-2.391	-0.8840	1.6375	363.6046
0.5159	-1.8503	3.4014	2.3400	1.275	0.9252	1.6971	355.766	197.123	-0.128	-2.312	-0.9142	1.6756	351.5432
0.5474	-1.9175	3.4379	2.1800	1.146	0.9587	1.7403	347.545	215.531	-0.117	-2.154	-0.9474	1.7246	343.4203
0.5811	-1.9910	3.4933	2.0600	1.042	0.9955	1.7940	340.031	215.711	-0.107	-2.036	-0.9837	1.7727	335.9949
0.6126	-2.0583	3.5342	1.9200	0.939	1.0291	1.8417	333.514	201.569	-0.100	-1.897	-1.0169	1.8198	329.5556
0.6479	-2.1251	3.5649	1.7600	0.834	1.0626	1.8911	325.695	204.367	-0.093	-1.739	-1.0500	1.8687	321.8297
0.6786	-2.1923	3.5897	1.5800	0.725	1.0962	1.9427	320.870	220.405	-0.083	-1.561	-1.0832	1.9196	317.0619
0.7116	-2.2656	3.6206	1.4000	0.622	1.1328	1.9974	316.271	224.336	-0.073	-1.383	-1.1194	1.9737	312.5173
0.7438	-2.3387	3.6499	1.2200	0.525	1.1693	2.0519	312.400	201.131	-0.063	-1.206	-1.1555	2.0275	308.6920
0.7784	-2.3993	3.6642	1.0400	0.436	1.1996	2.1002	306.317	203.148	-0.053	-1.028	-1.1854	2.0753	302.4619
0.8043	-2.5513	3.7127	0.6400	0.252	1.2757	2.2163	300.428	231.901	-0.042	-0.632	-1.2606	2.1900	296.8621
0.9095	-2.7034	3.7514	0.2200	0.082	1.3517	2.3343	295.885	222.063	-0.031	-0.217	-1.3357	2.3066	292.0771
0.9754	-2.8427	3.7691	-0.0200	-0.078	1.4213	2.4479	289.883	219.532	-0.021	-0.021	-1.4045	2.4189	286.4426
1.0446	-3.0002	3.7919	-0.7000	-0.235	1.5001	2.5747	285.779	237.852	-0.012	-0.692	-1.4823	2.5441	282.3871
1.1105	-3.1635	3.8231	-1.1600	-0.349	1.5818	2.7024	283.527	261.770	-0.006	-1.146	-1.5630	2.6703	280.1621
1.1744	-3.3453	3.8577	-1.6600	-0.499	1.6726	2.8432	283.088	255.094	-0.002	-1.640	-1.6528	2.8095	279.7285
1.2432	-3.5018	3.8842	-2.1800	-0.626	1.7509	2.9735	280.479	229.235	-0.001	-2.154	-1.7301	2.9382	277.1498
1.3129	-3.6581	3.8700	-2.7000	-0.741	1.8291	3.1037	277.475	243.422	-0.001	-2.668	-1.8074	3.0668	274.1819
1.4480	-4.0131	3.8900	-3.8400	-0.961	2.0046	3.3952	276.113	257.807	-0.001	-3.794	-1.9827	3.3549	272.8358
1.5807	-4.3484	3.8623	-5.0400	-1.163	2.1742	3.6829	274.131	271.073	-0.001	-4.960	-2.1684	3.6392	270.8977
1.7090	-4.7197	3.8979	-6.2400	-1.327	2.3599	3.9885	275.296	297.339	-0.001	-6.166	-2.3319	3.9412	272.0288
1.8401	-5.1201	3.9113	-7.5400	-1.477	2.5601	4.3187	277.433	310.745	-0.001	-7.451	-2.5297	4.2675	274.1404
1.9721	-5.5375	3.9103	-8.9800	-1.626	2.7688	4.6715	280.029	310.489	-0.001	-8.873	-2.7359	4.6160	276.7053
2.1026	-5.9352	3.9064	-1.0360	-1.750	2.9676	5.0083	281.564	315.036	-0.001	-1.0237	-2.9324	4.9489	278.2222
2.2338	-6.3619	3.8960	-1.1920	-1.879	3.1809	5.3777	284.132	335.032	-0.001	-1.1779	-3.1432	5.3139	280.7602
2.3621	-6.8042	3.9043	-1.3580	-1.971	3.4021	5.7449	287.425	346.369	-0.001	-1.3221	-3.3617	5.6767	284.0139
2.4895	-7.2477	3.8958	-1.4980	-2.072	3.6238	6.1266	290.525	349.102	-0.001	-1.4802	-3.5808	6.0539	287.0772
2.6170	-7.6940	3.8851	-1.6620	-2.165	3.8470	6.5138	293.433	366.479	-0.001	-1.6423	-3.8014	6.4365	289.9502
2.7429	-8.1760	3.8821	-1.8320	-2.245	4.0380	6.9249	297.533	368.488	-0.001	-1.8103	-4.0395	6.9427	294.0016
2.8727	-8.6364	3.8645	-2.0060	-2.330	4.3182	7.3311	300.114	369.057	-0.001	-1.9642	-4.2469	7.2441	296.5516
2.9964	-9.0683	3.8740	-2.0940	-2.356	4.4531	7.5520	302.791	393.624	-0.001	-2.0691	-4.4003	7.4624	299.1969
3.1313	-9.6152	3.8456	-2.3740	-2.473	4.8076	8.1865	306.566	379.033	-0.001	-2.3458	-4.7505	8.0894	302.9474
3.255	-10.3810	3.8309	-2.6420	-2.568	5.1905	8.8575	311.708	390.212	-0.001	-2.6304	-5.1289	8.7523	308.0086
3.379	-11.154	3.8194	-2.8650	-2.657	5.5742	9.5372	315.906	400.029	-0.001	-2.9229	-5.5081	9.4240	312.1563
3.503	-11.927	3.8104	-3.0880	-2.747	5.9574	10.2229	321.114	411.014	-0.001	-3.2163	-5.8914	10.1039	317.0480

2.4895	7.2471	3.6958	-1.4980	-2.072	3.6250	6.1266	250.223	347.102	7.1017	-1.4802	3.5008	6.0039	101.0772
2.6170	7.6940	3.6851	-1.6620	-2.165	3.6470	6.5138	293.433	364.479	7.6027	-1.6423	3.6014	6.4365	289.9502
2.7429	8.1760	3.6821	-1.8320	-2.245	4.0860	6.9249	297.533	348.688	8.0790	-1.8103	4.0395	6.8427	294.0016
2.8727	8.6364	3.6845	-2.0080	-2.330	4.3182	7.3311	300.114	388.057	8.5359	-1.9842	4.2649	7.2441	296.5516
2.9643	8.9063	3.6740	-2.0940	-2.356	4.4531	7.5520	302.791	393.624	8.8006	-2.0691	4.4003	7.4624	299.1549
3.1313	9.6152	3.6456	-2.3740	-2.478	4.8076	8.1865	306.586	379.033	9.5011	-2.3458	4.7505	8.0694	302.7474
3.3255	10.3810	3.6309	-2.6420	-2.568	5.1905	8.8575	311.708	390.212	10.2578	-2.6304	5.1289	8.7523	308.0086
3.5243	11.1465	3.6131	-2.9580	-2.657	5.5742	9.5372	315.906	400.029	11.0161	-2.9229	5.5081	9.4240	312.1563
3.7118	11.9244	3.7971	-3.2560	-2.736	5.9622	10.2553	320.856	421.814	11.7829	-3.2184	5.8914	10.1039	317.0480
3.9023	12.7430	3.7829	-3.5740	-2.808	6.3715	10.9506	326.170	428.267	12.5918	-3.5316	6.2959	10.8027	322.2988
4.0949	13.5655	3.7656	-3.9000	-2.879	6.7827	11.6879	330.907	433.036	13.4045	-3.8537	6.7022	11.5492	326.9792
4.2861	14.4052	3.7516	-4.2300	-2.940	7.2026	12.4378	335.739	437.794	14.2343	-4.1798	7.1171	12.2902	331.7542
4.4803	15.2526	3.7358	-4.5700	-3.000	7.6263	13.2016	340.100	439.612	15.0716	-4.5158	7.5358	13.0449	336.0633
4.6708	16.0963	3.7193	-4.9140	-3.056	8.0482	13.9675	344.292	448.872	15.9257	-4.8557	7.9527	13.8017	340.2056
4.8605	16.9590	3.7042	-5.2640	-3.108	8.4795	14.7509	348.606	439.185	16.7878	-5.2035	8.3789	14.5758	344.4489
5.0638	17.8201	3.6905	-5.6180	-3.156	8.9100	15.5345	351.614	437.347	17.6086	-5.5513	8.8043	15.3491	348.4805
5.2565	18.6895	3.6747	-5.9820	-3.204	9.3447	16.3323	355.264	435.074	18.4277	-5.9110	9.2338	16.1384	351.0473
5.4578	19.5576	3.6574	-6.3540	-3.252	9.7788	17.1384	357.934	430.298	19.3254	-6.2786	9.6227	16.9250	353.6856
5.6503	20.4298	3.6463	-6.7200	-3.287	10.2299	17.9556	361.835	462.073	20.2170	-6.6402	10.1085	17.7425	357.5401
5.8442	21.3333	3.6351	-7.0900	-3.326	10.6616	18.7624	364.776	446.428	21.0801	-7.0059	10.5400	18.5397	360.4470
6.0381	22.1831	3.6185	-7.4640	-3.369	11.0916	19.5634	367.139	436.904	21.9198	-7.3774	10.9599	19.3312	362.7811
6.2370	23.0494	3.6039	-7.8460	-3.407	11.5247	20.3766	369.318	441.316	22.7758	-7.7529	11.3879	20.1347	364.9345
6.4292	23.9088	3.5907	-8.2226	-3.442	11.9544	21.1829	371.645	443.828	23.6250	-8.1250	11.8125	20.9315	367.2340
6.6231	24.7628	3.5789	-8.5962	-3.474	12.3814	21.9836	373.660	445.557	24.4699	-8.4942	12.2344	21.7227	369.2253
6.8058	25.5908	3.5659	-8.9672	-3.507	12.7954	22.7897	375.738	447.332	25.2871	-8.8608	12.6436	22.4985	371.2784
7.0041	26.4114	3.5520	-9.3432	-3.540	13.2057	23.5851	377.873	427.203	26.0980	-9.2323	13.0490	23.2756	372.9959
7.1979	27.2613	3.5412	-9.7216	-3.569	13.6307	24.3866	378.529	419.429	26.9378	-9.6062	13.4689	24.0695	374.0365
7.3986	28.0648	3.5285	-10.0928	-3.599	14.0324	25.1316	379.125	413.610	27.7317	-9.9730	13.8658	24.8333	374.6250
7.5981	28.8777	3.5187	-10.4590	-3.624	14.4389	25.9043	380.320	404.379	28.5350	-10.3349	14.2675	25.5969	375.8058
7.7980	29.6377	3.5054	-10.8230	-3.654	14.8188	26.6484	380.363	397.025	29.2859	-10.6945	14.6430	26.3321	375.8489
7.9768	30.4156	3.4954	-11.1820	-3.679	15.2078	27.3965	381.113	398.051	30.0846	-11.0493	15.0273	27.0713	376.5893
8.1748	31.1732	3.4843	-11.5412	-3.705	15.5866	28.1746	381.184	375.522	30.8032	-11.4042	15.4016	27.8007	376.6602
8.3730	31.9032	3.4741	-11.8882	-3.729	15.9516	28.8464	380.846	349.313	31.5246	-11.7471	15.7623	28.5043	376.3263
8.5694	32.5687	3.4623	-12.2280	-3.755	16.2944	29.5293	380.604	347.381	32.2020	-12.0829	16.1010	29.1789	376.0868
8.7590	33.2410	3.4504	-12.5582	-3.780	16.6205	30.1857	379.333	347.072	32.8464	-12.4092	16.4232	29.8275	374.8306
8.9462	33.9315	3.4432	-12.8812	-3.799	16.9658	30.8541	379.118	340.176	33.5268	-12.7283	16.7644	30.4880	374.6180
9.1367	34.6426	3.4331	-13.1824	-3.821	17.2623	31.4520	377.704	289.463	34.1148	-13.0259	17.0574	31.0787	373.2209
9.3440	35.3795	3.4212	-13.4812	-3.846	17.5398	32.0284	375.261	275.632	34.6332	-13.3212	17.3316	31.6482	370.8059
9.5413	35.6398	3.4140	-13.7840	-3.862	17.8199	32.5834	373.375	262.802	35.2168	-13.5927	17.6084	32.1967	368.9436
9.7492	36.1203	3.4050	-14.0113	-3.882	18.0602	33.0792	370.683	215.353	35.6916	-13.8450	17.8458	32.6865	364.2833
9.9481	36.6729	3.3961	-14.4451	-3.920	18.4364	33.8895	363.559	172.272	36.4352	-14.2737	18.2176	33.4873	359.2437
10.1401	37.2816	3.3795	-14.6596	-3.935	18.6408	34.3085	358.295	125.520	36.8391	-14.4856	18.4195	33.9013	354.0427
10.6007	37.5299	3.3660	-14.8404	-3.957	18.7649	34.6135	351.899	69.819	37.0844	-14.6642	18.5422	34.2027	347.7222
10.9271	37.6471	3.3552	-14.9753	-3.980	18.8235	34.8072	344.393	21.264	37.2002	-14.7976	18.6001	34.3941	340.3056
11.1951	37.6431	3.3413	-15.0693	-4.006	18.8216	34.8995	336.112	-52.119	37.1963	-14.8905	18.5962	34.4853	333.1227
11.4665	37.3642	3.3146	-15.1342	-4.053	18.6821	34.8251	325.723	-145.415	36.9207	-14.9546	18.4604	34.4118	321.8572
11.7360	36.8537	3.2785	-15.1656	-4.118	18.4269	34.6015	313.843	-184.881	36.4163	-14.9856	18.2082	34.1908	310.1178
12.0026	36.2728	3.2477	-15.1728	-4.174	18.1864	34.3684	302.915	-174.721	35.9411	-14.9927	17.9706	33.9605	299.3199
12.2741	35.6118	3.2198	-15.1688	-4.230	17.9598	34.1242	292.907	-165.138	35.4912	-14.9880	17.7456	33.7310	289.0356
12.5370	35.4901	3.1951	-15.1684	-4.284	17.7451	33.9131	282.962	-155.185	35.0469	-14.9785	17.5345	33.5106	278.4037
12.8034	35.1842	3.1764	-15.1416	-4.307	17.5921	33.7435	274.686	-144.420	34.7665	-14.9619	17.3833	33.3430	271.4257
13.0713	34.8787	3.1617	-15.1246	-4.340	17.4393	33.5740	266.716	-80.930	34.4647	-14.9451	17.2324	33.1755	263.5500
13.3479	34.7463	3.1548	-15.1151	-4.354	17.3731	33.4285	260.199	-54.409	34.3339	-14.9357	17.1670	33.1010	257.1111
13.6177	34.5819	3.1455	-15.1079	-4.372	17.2910	33.4094	253.836	-92.053	34.1715	-14.9286	17.0857	33.0128	250.8254
13.8840	34.2539	3.1264	-15.0982	-4.412	17.1249	33.2359	246.605	-132.843	33.8473	-14.9190	16.9237	32.8415	243.6786
14.1536	33.8526	3.1027	-15.0886	-4.461	16.9263	33.0259	238.872	-162.142	33.4508	-14.9095	16.7254	32.6339	236.0365
14.4268	33.3746	3.0736	-15.0838	-4.524	16.6873	32.7823	231.205	-184.303	32.9785	-14.9048	16.4892	32.3933	229.4605
14.6933	32.8800	3.0441	-15.0741	-4.589	16.4400	32.5257	223.674	-173.856	32.4698	-14.8952	16.2449	32.1396	221.0192
14.9647	32.4435	3.0193	-15.0549	-4.645	16.2218	32.2684	216.700	-157.144	32.0585	-14.8762	16.0292	31.9052	214.1281
15.2395	32.1317	3.0029	-15.0308	-4.682	16.0659	32.1087	210.747	-93.893	31.7504	-14.8524	15.8752	31.7276	208.2453
15.4991	31.7598	2.9939	-15.0067	-4.703	15.9699	31.9889	205.978	-39.926	31.5607	-14.8286	15.7804	31.6092	203.5335
15.7632	31.3239	2.9962	-14.9801	-4.697	15.9620	31.9547	202.398	-33.784	31.5451	-14.8023	15.7725	31.5754	199.9954
16.0352	31.7577	2.9867	-14.9560	-4.714	15.8769	31.8478	197.956	-50.870	31.3808	-14.7785	15.6904	31.4698	195.6049
16.3016	31.5509	2.9850	-14.9319	-4.723	15.8254	31.7705	194.066	-46.197	31.2752	-14.7547	15.6376	31.3935	191.7629
16.5696	31.3108	2.9792	-14.9078	-4.736	15.7554	31.6787	190.081	-42.045	31.1368	-14.7309	15.5884	31.3007	187.8952
16.8343	31.5324	2.9829	-14.8886	-4.727	15.7642	31.6485	187.221	-5.082	31.1582	-14.7119	15.5791	31.2926	184.9991
17.1040	31.5378	2.9859	-14.8669	-4.719	15.7489	31.6498	184.300	-25.686	31.1635	-14.6904	15.5817	31.2742	182.1126
17.3755	31.3929	2.9797	-14.8428	-4.733	15.7433	31.5536	180.598	-43.152	31.0204	-14.6666	15.5102	31.1791	179.4444
17.6488	31.1122	2.9739	-14.8157	-4.739	15.6526	31.4859	177.363	-37.707	30.9336	-14.6428	15.4668	31.1122	175.2594

9	10	11	12	13	14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
3.3821	3.3795	3.3680	3.3553	3.3413	3.3265	3.3116	3.2967	3.2817	3.2667	3.2517	3.2367	3.2217	3.2067	3.1917	3.1767	3.1617	3.1467	3.1317	3.1167	3.1017	3.0867	3.0717	3.0567	3.0417	3.0267	3.0117	3.0000	2.9883	2.9766	2.9649	2.9532	2.9415	2.9298	2.9181	2.9064	2.8947	2.8830	2.8713	2.8596	2.8479	2.8362	2.8245	2.8128	2.8011	2.7894	2.7777	2.7660	2.7543	2.7426	2.7309	2.7192	2.7075	2.6958	2.6841	2.6724	2.6607	2.6490	2.6373	2.6256	2.6139	2.6022	2.5905	2.5788	2.5671	2.5554	2.5437	2.5320	2.5203	2.5086	2.4969	2.4852	2.4735	2.4618	2.4501	2.4384	2.4267	2.4150	2.4033	2.3916	2.3799	2.3682	2.3565	2.3448	2.3331	2.3214	2.3097	2.2980	2.2863	2.2746	2.2629	2.2512	2.2395	2.2278	2.2161	2.2044	2.1927	2.1810	2.1693	2.1576	2.1459	2.1342	2.1225	2.1108	2.0991	2.0874	2.0757	2.0640	2.0523	2.0406	2.0289	2.0172	2.0055	1.9938	1.9821	1.9704	1.9587	1.9470	1.9353	1.9236	1.9119	1.9002	1.8885	1.8768	1.8651	1.8534	1.8417	1.8300	1.8183	1.8066	1.7949	1.7832	1.7715	1.7598	1.7481	1.7364	1.7247	1.7130	1.7013	1.6896	1.6779	1.6662	1.6545	1.6428	1.6311	1.6194	1.6077	1.5960	1.5843	1.5726	1.5609	1.5492	1.5375	1.5258	1.5141	1.5024	1.4907	1.4790	1.4673	1.4556	1.4439	1.4322	1.4205	1.4088	1.3971	1.3854	1.3737	1.3620	1.3503	1.3386	1.3269	1.3152	1.3035	1.2918	1.2801	1.2684	1.2567	1.2450	1.2333	1.2216	1.2099	1.1982	1.1865	1.1748	1.1631	1.1514	1.1397	1.1280	1.1163	1.1046	1.0929	1.0812	1.0695	1.0578	1.0461	1.0344	1.0227	1.0110	0.9993	0.9876	0.9759	0.9642	0.9525	0.9408	0.9291	0.9174	0.9057	0.8940	0.8823	0.8706	0.8589	0.8472	0.8355	0.8238	0.8121	0.8004	0.7887	0.7770	0.7653	0.7536	0.7419	0.7302	0.7185	0.7068	0.6951	0.6834	0.6717	0.6600	0.6483	0.6366	0.6249	0.6132	0.6015	0.5898	0.5781	0.5664	0.5547	0.5430	0.5313	0.5196	0.5079	0.4962	0.4845	0.4728	0.4611	0.4494	0.4377	0.4260	0.4143	0.4026	0.3909	0.3792	0.3675	0.3558	0.3441	0.3324	0.3207	0.3090	0.2973	0.2856	0.2739	0.2622	0.2505	0.2388	0.2271	0.2154	0.2037	0.1920	0.1803	0.1686	0.1569	0.1452	0.1335	0.1218	0.1101	0.0984	0.0867	0.0750	0.0633	0.0516	0.0399	0.0282	0.0165	0.0048	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

A. BASIC RESPT

STOP

1 DATA FILE IDENT. NO.
 2 PROJECT NO.
 3 BORING NO.
 4 SAMPLE NO.
 5 SPECIMEN NO.
 6 DEPTH
 7 TEST NO.
 8 FILE # FOR LOAD CELL OR PROVING RING
 9 FILE # FOR PORE PRESSURE CONST.
 10 FILE # FOR CELL PRESSURE CONST
 11 FILE # FOR PISTON FRICTION CORRECTION
 12 TYPE OF CONSOLIDATION
 13 DRAINAGE CONDITIONS DURING LOADING
 14 MODE OF LOADING
 15 CELL PRESSURE DURING LOADING
 16 INITIAL HEIGHT OF SPECIMEN IN INCHES
 17 INITIAL DIAMETER OF SPECIMEN IN INCHES
 18 INITIAL VOLUME OF SPECIMEN IN CU. CM.
 19 PISTON DIAMETER IN INCHES
 20 WEIGHT OF TOP CAP ONLY IN TONS*10**-3
 21 WEIGHT OF TOP CAP + PISTON + DIAL IN TONS*10**-3
 22 WEIGHT OF TOP CAP + PISTON + DIAL + LVDT IN TONS*10**-3
 23 WAS PISTON INTACT DURING CONSOL
 24 MEMBRANE THICKNESS IN INCHES
 25 MEMBRANE DIAMETER IN INCHES
 26 FILTER STRIP CORRECTION CONSTANT
 27 RIGHT CYLINDER DISTORTION FACTOR
 28 DOES SPECIMEN HAVE AN INDUCED OCR
 29 CELL PRESSURE IN TSF
 30 BACK PRESSURE IN TSF
 31 AXIAL DEFORMATION DURING CONSOL. IN INCHES
 32 VOLUME CHANGE DURING CONSOL. IN CU. CM.
 33 APPLIED AXIAL LOAD %, TONS*10**-3
 34 PRE SHEAR CONDITION - CELL PRESSURE IN TSF
 35 BACK PRESSURE IN TSF
 36 AXIAL DEFORMATION IN INCHES
 37 VOLUME CHANGE IN CU. CM.
 38 PISTON DRAG CORRECTION IN TONS*10**-3
 39 SPECIMEN CYCLICLY LOADED BEFORE SHEARING
 40 SPECIMEN RECONSOLIDATED DURING CYCLIC LOADING
 41 SUM OF VOLUME CHANGES DURING RECONSOLIDATION IN CU. CM.
 42 PORE PRESSURE IN TSF
 43 TOTAL CHANGE IN HT DURING CYCLIC LOADING IN INCHES
 44 OUTPUT UNITS REQUIRED
 45 DATA NORMALIZATION SELECTION
 46 RESULT FILE DESIRED

8/7/81 16
 8/7/81
 T-276
 81C405ST3
 COE-71
 S-22
 C
 44.5
 ID-080
 2000
 1000
 2000
 NONE
 I
 U
 C
 C
 5.9487
 2.8555
 624.274
 0.5
 0.51
 1.27
 1.595
 NO
 0.0277
 2.8264
 0.0
 1.25
 NO
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 7.7004
 7.200
 0.017
 2.672
 11.117
 NO
 NO
 0.0
 0.0
 0.0
 KSF
 2.0
 0.0

DIS (in.)	LOAD (lbs)	PORE PRESSURE (tsf)
.00854	22.234	7.231
.00911	26.681	7.237
.00960	32.79	7.246
.01027	38.91	7.260
.01129	45.02	7.276
.01218	49.74	7.290
.01325	54.19	7.303
.01427	58.36	7.316
.01570	62.00	7.331

14.46

.00911,	22.	7.2
.00960,	26.601,	7.237
.00960,	32.79,	7.246
.01027,	38.91,	7.260
.01129,	45.02,	7.276
.01218,	49.74,	7.290
.01325,	54.19,	7.303
.01427,	58.36,	7.316
.01570,	63.09,	7.331
.01801,	69.48,	7.348
.01921,	72.26,	7.354
.02188,	77.82,	7.364
.02370,	80.59,	7.368
.02548,	84.76,	7.370
.02775,	88.10,	7.369
.02935,	89.77,	7.368
.03144,	92.55,	7.367
.03327,	95.88,	7.363
.03518,	98.38,	7.360
.03714,	101.72,	7.352
.03914,	104.50,	7.348
.04101,	107.55,	7.340
.04301,	110.89,	7.334
.04488,	113.95,	7.327
.04697,	117.00,	7.319
.04879,	120.06,	7.310
.05075,	123.40,	7.301
.05266,	126.73,	7.292
.05471,	129.51,	7.283
.05862,	136.46,	7.263
.06249,	143.41,	7.242
.06640,	149.80,	7.220
.07050,	157.03,	7.196
.07441,	164.53,	7.173
.07832,	172.87,	7.148
.08228,	180.09,	7.122
.08642,	187.32,	7.096
.09443,	203.72,	7.039
.10230,	219.28,	6.979
.10991,	236.51,	6.919
.11769,	255.13,	6.854
.12552,	274.59,	6.782
.13326,	293.21,	6.713
.14104,	313.22,	6.635
.14865,	334.0,	6.562
.15621,	354.9,	6.482
.16377,	376.0,	6.400
.17124,	398.8,	6.315
.17894,	420.7,	6.227
.18272,	433.5,	6.184
.19428,	467.4,	6.054
.20580,	504.1,	5.900
.21759,	541.1,	5.752
.22871,	578.6,	5.602
.24001,	618.3,	5.444
.25144,	658.4,	5.281
.26278,	699.5,	5.116
.27430,	741.2,	4.946
.28560,	782.9,	4.774
.29685,	825.7,	4.598
.30891,	868.8,	4.422
.32034,	912.4,	4.240
0.3324,	956.3,	4.054
0.3437,	1001.9,	3.871
0.3552,	1046.4,	3.686
0.3667,	1090.0,	3.498
0.3785,	1134.7,	3.308
0.3899,	1179.2,	3.1197
0.4014,	1233.7,	2.9350

752. 4. 170
-29. 625. 4. 59
30891. 848.8. 4. 422
32034. 912.4. 4. 240
0.3324. 956.3. 4. 054
0.3437. 1001.9. 3. 871
0.3552. 1046.4. 3. 486
0.3667. 1090.0. 3. 498
0.3785. 1134.7. 3. 308
0.3899. 1179.2. 3. 1197
0.4014. 1223.7. 2. 9329
0.4123. 1267.0. 2. 7474
0.4240. 1310.4. 2. 5594
0.4355. 1355.4. 2. 3702
0.4474. 1398.5. 2. 1846
0.4587. 1442.1. 2. 0015
0.4705. 1483.5. 1. 8195
0.4817. 1525.8. 1. 6400
0.4934. 1567.5. 1. 4604
0.5052. 1608.1. 1. 2869
0.5162. 1646.4. 1. 1170
0.5281. 1683.6. 0. 9519
0.5392. 1722.6. 0. 7904
0.5505. 1757.0. 0. 6398
0.5628. 1790.1. 0. 4904
0.5745. 1823.4. 0. 3530
0.5863. 1852.9. 22533
0.6099. 1901.8. 00843
0.6255. 1929.9. 09881
0.6409. 1949.9. 18918
0.6567. 1963.5. 25666
0.6726. 1971.0. 30366
0.6887. 1964.4. 0. 3361
0.7048. 1945.7. 0. 3518
0.7205. 1928.2. 0. 3554
0.7366. 1912.1. 0. 3530
0.7522. 1897.1. 0. 3482
0.7680. 1888.5. 0. 3398
0.7839. 1879.9. 0. 3313
0.8003. 1880.7. 32655
0.8163. 1879.6. 32294
0.8321. 1869.6. 31812
0.8488. 1856.0. 31330
0.8644. 1837.6. 31089
0.8801. 1818.2. 30667
0.8962. 1802.0. 29643
0.9125. 1792.6. 28438
0.9279. 1789.3. 27233
0.9437. 1795.9. 25907
0.9597. 1794.3. 24702
0.9755. 1795.9. 23497
0.9914. 1795.7. 22292
1.0071. 1804.5. 21328
1.0231. 1812.6. 20244
1.0392. 1812.3. 19039
1.0550. 1815.1. 17834
1.0711. 1816.5. 16629
1.0880. 1822.9. 15303
1.1034. 1833.7. 14098
1.1196. 1845.4. 13014
1.1352. 1860.1. 12170
1.1514. 1866.8. 11206
1.1665. 1876.8. 10604
1.1837. 1884.6. 09881
1.1988. 1892.1. 09037
1.2150. 1909.6. 08555
-999. 0.0.0.0

0.6 1963 2564
0.6726, 1971.0, -0.30366
0.6887, 1964.4, -0.3361
0.7048, 1945.7, -0.3518
0.7205, 1926.2, -0.3554
0.7366, 1912.1, -0.3530
0.7522, 1897.1, -0.3482
0.7686, 1888.5, -0.3398
0.7839, 1879.9, -0.3313
0.8003, 1880.7, -0.3255
0.8163, 1879.6, -0.32294
0.8321, 1869.6, -0.31812
0.8488, 1856.0, -0.31330
0.8644, 1837.6, -0.31089
0.8801, 1818.2, -0.30607
0.8962, 1802.0, -0.29643
0.9125, 1792.6, -0.28438
0.9279, 1789.3, -0.27233
0.9437, 1795.9, -0.25907
0.9597, 1794.3, -0.24702
0.9755, 1795.9, -0.23497
0.9914, 1795.7, -0.22292
1.0071, 1804.5, -0.21328
1.0231, 1812.6, -0.20244
1.0392, 1812.3, -0.19039
1.0550, 1815.1, -0.17834
1.0711, 1816.5, -0.16629
1.0880, 1822.9, -0.15303
1.1034, 1833.7, -0.14098
1.1196, 1845.4, -0.13014
1.1352, 1860.1, -0.12170
1.1514, 1866.8, -0.11206
1.1665, 1876.8, -0.10604
1.1837, 1884.6, -0.09881
1.1988, 1892.1, -0.09037
1.2150, 1909.6, -0.08555
-999.0, 0.0, 0

TRIAXIAL TEST (Set Up/ Take Down)

WCC
L-202
(1.180)

Proj. No. 81C405573 Proj. Eng. RV Cell No. 7 Piston dia: ☐ 3/8" ☒ 1/2"

Type Test CW-C File No. T-277

Loading: ☐ Dynamic ☒ Undrained ☒ Compression ☒ Constant cell pressure
Conditions: ☒ Static ☐ Drained ☐ Extension ☐ Variable cell pressure

Type: ☒ Isotropic ☐ Ko stress path
Consolidation: ☐ Anisotropic ☐ 45° Stress path
Piston Screwed in: ☐ Yes; ☒ No

☒ Undisturbed ☐ Reconstituted ☐ Impact ☐ Constant ESSort
Boring No. CVE-7 Composite No. ☐ Static layers; 16 Hammer
Sample No. 5-23 Specimen No. C ☐ Kneading Blows-Tamps/layer
Depth (ft) 42.1 Remarks ☐ Tamping ☐ Under compaction
☐ Ends capped with Cartrite; ☐ Geomarine Sample ☐ Other layers; Uni (%)

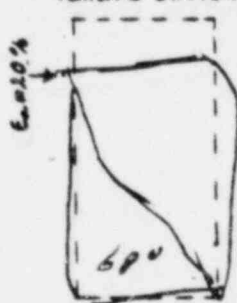
Water Content				Final
Location	<u>T</u>	<u>B</u>		<u>Ave</u>
Container No	<u>48-15</u>	<u>40124</u>		<u>P</u>
Wgt. Container + Wet Soil (gm)	<u>86.35</u>	<u>161.09</u>		<u>2180.6</u>
Wgt. Container + Dry Soil (gm)	<u>78.97</u>	<u>141.44</u>		<u>1959.20</u>
Wgt. Container (gm)	<u>33.06</u>	<u>24.10</u>		<u>910.85</u>
Wgt. Dry Soil (gm)	<u>45.81</u>	<u>107.34</u>	<u>ave</u>	<u>1048.35</u>
WATER CONTENT (%)	<u>16.32</u>	<u>18.31</u>	<u>17.32</u>	<u>21.12</u>
<input type="checkbox"/> See attached data sheet(s) for additional water contents				

Specimen Weight	
Wet + Stone (wt)	<u>1346.0</u> gm
Stone (wt)	<u>132.7</u> gm
Wet Initial	<u>1208.3</u> gm
Wet Final	<u> </u> gm
Excess Overdry Dish No	<u>42</u>
Wgt. Dish + Dry Soil	<u>210.69</u> gm
Wgt. Dish	<u>207.00</u> gm
Wgt. Excess Dry Soil	<u>3.69</u> gm

Dimensions of Specimen		Specimen	
Height (in)		Diameter (in)	
Initial (Ls)	Final (Ls)	Initial	Final
1 <u>5.9375</u>		1-T <u>2.853</u>	
2 <u>5.941</u>		2-M <u>2.847</u>	
3 <u>5.938</u>		3-B <u>2.867</u>	
4 <u>5.937</u>		4-T <u>2.870</u>	
5 <u>5.941</u>		5-M <u>2.863</u>	
Ave <u>5.9389</u>		3-B <u>2.865</u>	
Ave <u> </u>		Ave <u>2.8608</u>	
$\Delta L_c =$ <u> </u> in		$A_0 = \pi D^2/4 =$ <u>6.4278</u> in ²	
$\Delta L_c =$ <u> </u> in		$V_0 = 1h \cdot 16.8871 =$ <u>625.562</u> cm ³	
$\Delta L_c =$ <u> </u> in		$V_0 = 1h \cdot 16.8871 =$ <u>625.562</u> cm ³	
$L_0 - L_0 =$ <u> </u> in		$A_{0m} = 54542(D^2)^2 =$ <u> </u> 10 ⁻³ in ²	

Membrane Thickness = 0.0225 in
Circumference (cm) = 8.7655 in
Diam = $Cm/\pi =$ 2.7901 in
Filter Paper: Top + bottom: ☐ Yes; ☒ No
Filter Strips: ☐ Yes; ☒ No
Vertical at 1/4" - Whatman #54 or
Spiral at 1/4" - Whatman #1 or
Wgt top cap = gm, 10⁻³ gm
Wgt (cap, dial) = gm, 10⁻³ gm
Preliminary
 $Y_{co} =$ 10.59 10/51 $Y_{d0} =$ 102.78 10/51

Failure Sketch



Final Visual Classification: ☐ See more detailed sketch on attached sheet; ☐ Photo Taken

Other Remarks: 4.164

Preliminary Cal. by RV Reviewed by RV

☐ Trimmed by Setup by Taken down by
☐ Reconstituted Date Date 8/4/51 Date 8/7/51
See back for Summary Calculations

T-277

☐ Dynamic 1 Hz or F sinusoidal or ☒ Static 4.01 %/hr

☐ Dynamic e / H₂ or _____ F sinusoidal / or _____ ☒ Static e 4.01 %/hr

$$\begin{aligned}
 H_0 &= \frac{5.9389}{\text{in}} \\
 A_0 &= \frac{6.4278}{\text{in}^2} \\
 V_0 &= \frac{625.562}{\text{cm}^3} \\
 \text{Dow/Dom} &= \frac{1.0253}{\text{}} \\
 G_s &= \frac{2.661}{\text{}} \quad \begin{matrix} \text{Assumed} \\ \text{Measured} \end{matrix} \\
 R_g &= \frac{99.5}{\text{}} \% \\
 \text{Area Corr. Factors: } C & \\
 \text{Undrained} &= \frac{1.25 \text{ air}}{\text{}} \\
 C &= \frac{1}{56} \left(1 - \frac{A_c}{A_{0m}} \right) \\
 \text{Drained} &= \frac{1}{C_g} \left[1 - \frac{A_c (1 + \text{ert})}{A_{0m}} \right]
 \end{aligned}$$

* Corrected for effects of membrane, 5. Hour strips, etc.

Calculation of ΔV_c During Consolidation by Different Procedures	ΔV_c by W_g Change $= W_0 - W_g - (\Delta V_b + \Delta V_T)$ $\Delta W_{gt} = \text{--- gm}$ $E(\Delta V_b + \Delta V_T) = \text{--- cm}^3$ $\therefore \Delta V_c = \text{--- cm}^3$	ΔV_c by recorded/calculated volume changes + Σ selected ΔV $\Delta V_1 \quad \Delta V_2 \quad \Delta V$ $\Delta V_c = 1.422 + 3.634 + 0.49$ $= 5.546 \text{ cm}^3$	ΔV_c assuming $S = 100\%$ $V_F = (V_{g2} + w_2) W_0 / G_u$ Undrained Drained $\Delta V_c = V_0 - V_F$ $\Delta V_c = V_0 - (V_F + \Delta V_T)$ $w_2 = 21.12\%$ $V_F = 618.660 \text{ cm}^3$ $V_0 + \Delta V_T = \text{--- cm}^3$ $\therefore \Delta V_c = 6.302 \text{ cm}^3$
--	---	--	--

Summary	Height (in)	Area (the πr^2 $\pi \times 10^{-2}$)	Volume (cm ³)	Water Content (%)	Total/Dry Density (lb/ft ³)	Saturation (%)
Initial	5.9389	44.6375	625.562	14.85	120.59 104.99	68.2
Aster Cement	5.9324	44.2680	618.660	21.12	128.58 106.16	100.0

$$S = \omega G_3 \cdot Y_d / (G_3 \cdot Y_w - Y_d) = \omega \cdot G_3 \cdot Y_d / (G_3 \cdot Y_w (1 + \omega) - Y_d)$$

Calculated by SL Reviewed by RL

$$P_{\text{air}} \times A_{0.72} = G_{\text{air}} \dot{V}$$

A.TRIAX

THIS IS A CIU TEST. IT HAS BEEN

CALCULATED BY COMPUTER PROGRAM NO. C-T-1R.6

USING FILE NO.

T-277

PROJ. NO. 81C4055T3⁴ REVIEWED BY: *ROL*
BORING NO. COE-7¹ DATE: 8/8/81
SAMPLE NO. S-23⁴ INPUT DATA CHECKED BY: *TD*
SPECIMEN NO. C⁴
DEPTH(FT.) 47.1 TEST NO. 1D-081⁴

ISOTROPIC⁴ TYPE OF CONSOLIDATION
UNDRAINED⁴ DRAINAGE CONDITIONS DURING LOADING
COMPRESSION⁴ MODE OF LOADING
CONSTANT⁴ CELL PRESSURE DURING LOADING

5.9389⁴ INITIAL HEIGHT OF SPECIMEN IN INCHES
2.8608⁴ INITIAL DIAMETER OF SPECIMEN IN INCHES
625.56⁴ INITIAL VOLUME OF SPECIMEN IN CU. CM.
.5000⁴ PISTON DIAMETER IN INCHES
.5100⁴ WEIGHT OF TOP CAP ONLY IN TONS*10**3
1.2700⁴ WEIGHT OF TOP CAP + PISTON + DIAL IN TONS*10**3
1.5950⁴ WEIGHT OF TOP CAP + PISTON + DIAL + LVDT IN TONS*10**3
NO WAS PISTON IN CONTACT WITH SPECIMEN DURING CONSOLIDATION?

.0225⁴ MEMBRANE THICKNESS IN INCHES
2.7901⁴ MEMBRANE DIAMETER IN INCHES
0.0000⁴ FILTER STRIP CORRECTION CONSTANT AT
2% AXIAL STRAIN IN TONS ** 10-3
1.2500⁴ RIGHT CYLINDER DISTORTION FACTOR

PRE-SHEAR CONDITIONS:

7.4520⁴ CELL PRESSURE IN TSF
7.2000⁴ BACK PRESSURE IN TSF
.0165⁴ AXIAL DEFORMATION DURING CONSOL. IN INCHES
6.90⁴ VOLUME CHANGE DURING CONSOL. IN CU. CM.
10.2830⁴ MEASURED AXIAL LOAD PRIOR TO STATIC LOADING
FROM FIRST LINE OF LOADING DATA IN TONS*10**3

EFFECTIVE STRESSES CORRECTED FOR MEMBRANE AND FILTER STRIPS, ETC:

AXIAL = .5218 KSF
LATERAL = .5112 KSF
MEAN = .5147 KSF
PBAR = .5165 KSF
LATERAL/AXIAL = .9796
AXIAL/LATERAL = 1.0208
OCR = 1.000

10.2830⁴ PISTON DRAG CORRECTION IN TONS *10**3
2000 FILE NUMBER FOR LOAD CELL OR PROVING RING
1000 FILE NUMBER FOR PORE PRESSURE CONVERSION CONSTANT
2000 FILE NUMBER FOR CELL PRESSURE CONVERSION CONSTANT
NONE FILE NUMBER FOR PISTON FRICTION CORRECTION CONSTANT
YES IS DATA NORMALIZATION REQUIRED?
DATA NORMALIZED TO PRESHEAR STRESSES
NORMALIZED TO PRESHEAR STRESSES .5165 KSF

10.2630

PISTON DRAG CORRECTION IN TONS *10**-3

FILE NUMBER FOR LOAD CELL OR PROVING RING

FILE NUMBER FOR POPE PRESSURE CONVERSION CONSTANT

FILE NUMBER FOR CELL PRESSURE CONVERSION CONSTANT

FILE NUMBER FOR PISTON FRICTION CORRECTION CONSTANT

IS DATA NORMALIZED TO PRESHEAR STRESSES

WITH NORM = P-BAR OF .5165 KSF

AXIAL STRAIN %	DEVIATOR STRESS KSF	OBLIQUITY	DELTA-U A-FACTOR KSF	Q KSF	P-BAR KSF	SECANT MODULUS KSF	TANGENT MODULUS KSF	DEVIATOR NORM	DELTA-U NORM	Q NORM	P-BAR NORM	SECANT NORM
0.0000	0.0106	1.0208	0.0000	0.0053	.5165	0.0000	1112.367	.0206	0.0000	-.0103	1.0000	0.0000
.0089	.1236	1.2496	.0160	.0418	.5570	1261.911	1112.367	.2393	.0310	-.1196	1.0783	2443.2041
.0181	.2114	1.4338	.0240	.1196	.5929	1110.969	900.035	.4092	.0465	-.2046	1.1478	2150.9634
.0338	.3428	1.7338	.0440	.1324	.6366	983.688	766.475	.6638	.0852	-.3319	1.2364	1904.5331
.0473	.4368	1.9639	.0580	.1361	.6716	901.407	544.849	.8457	.1123	-.4229	1.3003	1745.2271
.0632	.4993	2.1267	.0680	.1391	.7047	829.773	377.653	.9668	.1317	-.4834	1.3414	1498.3108
.0856	.5805	2.3589	.0840	.1474	.7406	652.460	252.020	1.1239	.1626	-.5619	1.3890	1288.7722
.1067	.6429	2.5336	.0920	.1455	.7545	529.472	224.267	1.2447	.1761	-.6223	1.4339	1147.0699
.1277	.6865	2.6696	.1000	.1479	.7753	476.602	218.026	1.3292	.1936	-.6646	1.4607	1025.1177
.1562	.7550	2.8542	.1040	.1397	.7847	429.407	175.700	1.4618	.2014	-.7309	1.5193	922.7567
.1878	.8169	3.0362	.1100	.1364	.8096	370.136	173.787	1.5816	.2130	-.7908	1.5676	831.3810
.2396	.8975	3.2149	.1060	.1195	.8539	349.018	175.899	1.7376	.2052	-.8688	1.6533	716.6251
.2718	.9594	3.3447	.1020	.1075	.8889	329.693	180.547	1.8576	.1975	-.9288	1.7211	675.7387
.3027	1.0088	3.4532	.1000	.1002	.9044	317.872	197.122	1.9531	.1936	-.9768	1.7727	638.3223
.3335	1.0707	3.5419	.0900	.0849	.9566	305.905	153.133	2.2047	.1742	1.0365	1.8520	615.4371
.3688	1.1387	3.6230	.0820	.0727	.9986	290.427	164.446	2.2755	.1394	1.1024	1.9334	592.2676
.4010	1.1753	3.6759	.0720	.0618	1.0269	284.955	187.637	2.4073	.1162	1.1378	1.9882	562.3007
.4326	1.2433	3.7555	.0600	.0486	1.0729	275.684	180.232	2.5144	.0929	1.2572	2.1540	533.7560
.4672	1.2987	3.8035	.0480	.0372	1.1126	271.053	185.781	2.6337	.0697	1.3169	2.2370	524.7889
.4979	1.3603	3.8625	.0360	.0266	1.1554	263.763	214.681	2.7528	.0387	1.3764	2.3275	511.7300
.5339	1.4218	3.8943	.0200	.0141	1.2021	252.536	238.354	2.9084	.0116	1.4542	2.4324	510.6750
.5655	1.5022	3.9732	.0060	.0040	1.2563	251.128	251.023	3.0152	-.0116	1.5076	2.5091	501.5674
.5971	1.5574	4.0109	.0000	.0039	1.2959	251.718	261.059	3.2887	-.0813	1.6444	2.7155	491.1207
.6654	1.6986	4.0702	.0420	.0449	1.4366	253.380	268.684	3.8948	-.1771	1.7931	2.9301	488.9382
.7293	1.8213	4.1541	.0760	.0413	1.5134	249.684	269.330	4.2032	-.2246	1.9474	3.1618	486.2122
.7969	1.9116	4.2070	.1160	.0580	1.6341	241.161	291.377	4.5950	-.3950	2.1016	3.3974	483.8046
.8645	2.1709	4.2437	.1560	.0732	1.7547	237.893	350.297	5.2449	-.4802	2.4390	3.9091	486.6860
.9312	2.3733	4.3180	.2040	.0732	1.8655	231.373	362.898	5.5630	-.6699	2.6225	4.1894	490.5717
.9981	2.5195	4.3183	.2480	.0989	1.8655	251.373	362.898	6.0121	-.7822	2.7815	4.4413	490.6438
1.0649	2.7090	4.3473	.2980	.1105	1.9019	253.380	362.898	6.4008	-.8906	3.0060	4.7782	500.4777
1.1296	2.8733	4.3515	.3460	.1209	1.9526	253.417	326.975	6.7449	-.10107	3.2004	5.0810	505.6383
1.1971	3.1052	4.3925	.4040	.1306	2.0191	251.718	251.023	7.2602	1.1229	3.3824	5.3831	506.7525
1.2618	3.3060	4.4036	.4600	.1396	2.1638	261.737	346.565	8.1875	1.2546	3.6301	5.7431	520.2107
1.3309	3.4940	4.3813	.5220	.1499	2.2939	346.565	362.898	8.6480	1.3940	3.8652	6.1098	528.3529
1.3917	3.7499	4.4360	.5800	.1552	2.4679	350.297	362.898	9.7342	1.5257	4.0937	6.4778	534.3297
1.4592	3.9927	4.4439	.6480	.1628	2.6804	362.898	362.898	10.8320	1.8122	4.8671	7.6894	542.8567
1.5284	4.2288	4.4342	.7200	.1707	2.8655	362.898	362.898	17.4411	2.1259	5.4160	8.5321	583.7774
1.5929	4.4770	4.4455	.7880	.1866	3.0379	362.898	362.898	19.2221	2.4666	6.0163	9.4732	605.3426
1.7230	5.0277	4.4736	.9360	.21539	3.9613	362.898	362.898	20.9266	2.8345	6.6602	10.4849	629.0743
1.8521	5.5947	4.4762	1.0980	.2197	4.4068	362.898	362.898	22.7260	3.2217	7.3178	11.5299	652.1235
1.9843	6.2149	4.4808	1.2740	.2054	4.8929	362.898	362.898	24.6151	3.6159	8.0580	12.6921	679.0348
2.1142	6.8799	4.4827	1.4640	.2132	5.4154	362.898	362.898	26.5601	4.0968	8.8206	13.9079	704.1126
2.2412	7.5593	4.4747	1.6640	.2205	5.9552	362.898	362.898	28.5601	4.5615	9.6110	15.1630	730.4657
2.3703	8.2339	4.4777	1.8820	.2264	6.5055	362.898	362.898	30.5601	5.0610	10.4883	16.5198	758.8395
2.5025	9.1117	4.4677	2.1160	.2325	7.0658	362.898	362.898	32.5601	5.5610	11.3640	17.9577	785.9419
2.6287	9.9282	4.4622	2.3560	.2376	7.6334	362.898	362.898	34.5601	6.0610	12.3076	19.4705	814.5998
2.7563	10.8137	4.4597	2.6140	.2428	8.2325	362.898	362.898	36.5601	6.5610	13.2801	21.0201	845.7710
2.8892	11.7390	4.4597	2.8940	.2468	8.8695	362.898	362.898	38.5601	7.0610	14.3061	22.6695	874.1439
3.0192	12.7137	4.4364	3.1880	.2510	9.5368	362.898	362.898	40.5601	7.5610	15.3702	24.3920	904.1141
3.1453	13.7183	4.4315	3.4860	.2543	10.2565	362.898	362.898	42.5601	8.0610	16.4705	26.1777	934.0207
3.2708	14.7781	4.4211	3.8080	.2579	11.0268	362.898	362.898	44.5601	8.5610	17.6164	28.9817	977.9276
3.3978	15.8774	4.4073	4.1480	.2615	11.8688	362.898	362.898	46.5601	9.0610	18.8183	31.8183	
3.5246	17.0140	4.3934	4.5020	.2648	12.7987	362.898	362.898	48.5601	9.5610			
3.7594	19.4393	4.3715	5.0640	.2705	13.8208	362.898	362.898	50.5601				

2	2.7562	10.8137	4.4597	-2.6140	5.8049	8.5325	391.939	495.008	20.9366	7.0610	10.4630	150.4657
3	2.8692	11.7390	4.4469	-2.8940	5.8695	9.2751	405.936	722.978	22.7280	8.2031	16.5198	758.8395
4	3.0192	12.7137	4.4364	-3.1680	6.3568	10.0565	420.740	773.064	24.6151	-6.1723	12.3076	795.9419
5	3.1453	13.7183	4.4315	-3.4860	6.8591	10.8868	435.806	820.633	26.5601	-6.7492	13.2601	814.5998
6	3.2708	14.7781	4.4211	-3.8060	7.3591	11.7058	451.494	855.260	28.6121	-7.3727	14.3061	843.7710
7	3.3978	15.8774	4.4073	-4.1480	7.9367	12.5984	466.974	881.016	30.7404	-8.0310	15.3702	874.1439
8	3.5246	17.0140	4.3934	-4.5020	8.5076	13.5208	482.420	908.361	32.9410	-8.7164	16.4705	904.1141
9	3.6524	18.1893	4.3715	-4.8740	9.1796	14.4855	515.428	1008.361	37.6367	-10.1723	18.6183	997.9276
10	3.7812	19.4020	4.3510	-5.2620	10.6795	17.0534	539.576	1047.414	41.3535	-11.3495	20.6767	1044.6815
11	3.9108	20.6520	4.3269	-5.6120	12.6909	18.7149	563.735	1097.833	45.2700	-12.6050	22.6350	1091.4547
12	4.0412	21.9389	4.3111	-7.1760	12.7280	20.4160	587.675	1141.055	49.2857	-13.8936	24.6429	1137.8066
13	4.1723	23.2620	4.2918	-7.8800	13.8125	22.2045	611.261	1156.805	53.4851	-15.2566	26.7425	1183.4716
14	4.3038	24.6250	4.2683	-8.5950	14.8824	23.9895	632.757	1184.268	57.6282	-16.6409	28.8141	1225.0894
15	4.4353	26.0280	4.2485	-9.3638	16.0409	25.9169	655.345	1203.544	62.1142	-18.1294	31.0571	1268.8234
16	4.5678	27.4710	4.2238	-10.1446	17.1778	27.8347	675.585	1220.549	66.5165	-19.6411	33.2583	1308.0093
17	4.7012	28.9540	4.1804	-11.7594	19.5148	31.7866	714.707	1234.380	70.5658	-22.7675	37.7829	1383.7534
18	4.8356	30.4770	4.1555	-12.6100	20.7038	33.8263	732.222	1273.165	80.1700	-24.4144	40.0850	1417.6647
19	4.9709	32.0400	4.1310	-13.4752	21.8978	35.8854	750.475	1272.830	84.7931	-26.0895	42.3966	1453.0049
20	5.1072	33.6430	4.1055	-14.3620	23.0965	37.9710	765.856	1253.305	89.4348	-27.8065	44.7174	1482.7836
21	5.2445	35.2860	4.0866	-15.2006	24.2459	39.9792	781.024	1070.046	93.9632	-29.4301	46.9816	1512.1514
22	5.3828	36.9690	4.0677	-15.9922	25.0912	41.2961	783.322	530.834	97.1589	-30.3819	48.5795	1516.6002
23	5.5211	38.6920	4.0444	-16.7450	25.2695	41.4776	766.281	130.783	97.9266	-30.3494	48.9633	1516.6002
24	5.6594	40.4550	4.0211	-17.4580	25.3398	41.4581	747.906	40.453	98.1216	-30.2138	49.0608	1483.6073
25	5.7977	42.2580	4.0000	-18.1210	25.3637	41.4386	726.870	19.785	98.2139	-30.1298	49.1070	1448.0311
26	5.9360	44.1010	3.9800	-18.7340	25.3795	41.4329	707.299	16.329	98.2753	-30.0880	49.1377	1407.3040
27	6.0743	45.9840	3.9600	-19.2970	25.3947	41.4311	688.791	7.715	98.3389	-30.0694	49.1694	1369.4106
28	6.2126	47.9070	3.9400	-19.8100	25.3982	41.4375	652.936	-4.883	98.3342	-30.0740	49.1671	1297.8456
29	6.3509	49.8700	3.9200	-20.2730	25.3728	41.4362	636.420	-11.058	98.3011	-30.0833	49.1506	1264.1583
30	6.4892	51.8730	3.9000	-20.6880	25.3358	41.4163	620.124	-25.501	98.2493	-30.1046	49.1247	1232.1814
31	6.6275	53.9160	3.8800	-21.0530	25.2845	41.4218	605.334	-29.935	98.0622	-30.1395	49.0530	1200.6306
32	6.7658	55.9990	3.8600	-21.3680	25.2744	41.3930	590.128	-54.488	97.8758	-30.2092	48.9379	1171.9954
33	6.9041	58.1220	3.8400	-21.6330	25.2154	41.3516	575.251	-63.195	97.6399	-30.2467	48.8199	1142.5542
34	7.0424	60.2850	3.8200	-21.8480	25.1272	41.2923	556.162	-61.477	97.2982	-30.3025	48.6491	1076.7931
35	7.1807	62.4880	3.8000	-22.0130	25.0484	41.2403	538.027	-63.760	96.9933	-30.3540	48.4966	1008.6680
36	7.3190	64.7310	3.7800	-22.1280	24.9541	41.1700	520.976	-80.267	96.6279	-30.4005	48.3139	976.4015
37	7.4573	67.0140	3.7600	-22.1930	24.8329	41.0757	504.310	-96.404	96.1588	-30.4521	48.0794	945.2508
38	7.5956	69.3370	3.7400	-22.2080	24.6962	40.9631	488.221	-101.004	95.6294	-30.4984	47.8147	915.7958
39	7.7339	71.7000	3.7200	-22.1730	24.5618	40.8530	473.007	-105.276	95.1088	-30.5453	47.5544	887.5007
40	7.8722	74.1030	3.7000	-22.0880	24.4145	40.7251	458.393	-112.46	94.5385	-30.5925	47.2693	860.7385
41	8.0105	76.5460	3.6800	-21.9530	24.2640	40.5965	444.570	-123.830	93.9557	-30.6247	46.9778	833.5433
42	8.1488	79.0290	3.6600	-21.7680	24.1087	40.4346	430.524	-132.257	93.2538	-30.6619	46.6269	808.2097
43	8.2871	81.5520	3.6400	-21.5330	23.9431	40.2967	417.439	-139.971	92.5763	-30.6851	46.2882	777.9709
44	8.4254	84.1150	3.6200	-21.2480	23.7713	40.1406	404.788	-140.487	91.8224	-30.7226	45.9112	77.6318
45	8.5637	86.7180	3.6000	-20.9130	23.5952	39.97281	392.535	-142.564	91.1223	-30.7459	45.5612	77.3054
46	8.7020	89.3610	3.5800	-20.5280	23.3308	39.7413	380.806	-154.760	90.3423	-30.7738	45.1712	76.9436
47	8.8403	92.0440	3.5600	-20.0930	23.0793	39.5421	369.211	-159.451	89.5234	-30.7974	44.7617	76.5581
48	8.9786	94.7670	3.5400	-19.6080	22.8504	39.3313	357.915	-176.026	88.6690	-30.8160	44.3345	76.1499
49	9.1169	97.5300	3.5200	-19.0730	22.6504	39.0952	346.936	-273.777	87.7076	-30.8392	43.8538	75.6928
50	9.2552	100.3330	3.5000	-18.4880	22.4800	38.8406	332.210	-278.451	85.7775	-30.8578	42.8687	74.7467
51	9.3935	103.1760	3.4800	-17.8530	22.2553	38.6173	301.799	-281.859	83.8469	-30.8717	39.7974	71.6697
52	9.5318	106.0590	3.4600	-17.1680	22.0553	38.4136	278.854	-289.850	81.9948	-30.8817	37.5245	69.3972
53	9.6701	108.9820	3.4400	-16.4330	21.8319	38.2319	267.254	-281.859	73.3085	-30.8671	36.6542	68.5227
54	9.8084	111.9450	3.4200	-15.6480	21.6275	38.0653	258.065	-146.061	72.1298	-30.8624	36.0649	67.9292
55	9.9467	114.9480	3.4000	-14.8130	21.4399	37.9133	252.158	-40.289	71.7900	-30.8578	35.6950	67.7551
56	10.0850	117.9910	3.3800	-13.9280	21.2650	37.7713	247.303	-7.915	71.7100	-30.8485	35.8550	67.7042
57	10.2233	121.0740	3.3600	-12.9930	21.1033	37.6406	243.098	27.253	71.7069	-30.8392	35.8534	67.6958
58	10.3616	124.1970	3.3400	-12.0180	20.9522	37.5206	239.842	27.653	71.9934	-30.8346	35.9972	67.8349
59	10.5000	127.3600	3.3200	-11.0030	20.8147	37.4133	235.812	6.082	71.9944	-30.8299	36.9972	67.8311
60	10.6383	130.5630	3.3000	-10.0000	20.6880	37.3169	232.041	10.316	72.0570	-30.8253	36.0285	67.8583
61	10.7766	133.8060	3.2800	-9.0000	20.5725	37.2313	228.408	18.794	72.1014	-30.8206	36.0507	67.8763
62	10.9149	137.0890	3.2600	-8.0000	20.4675	37.1563	225.235	33.708	72.2490	-30.8160	36.1245	67.9460
63	11.0532	140.4120	3.2400	-7.0000	20.3733	37.0913	222.257	51.890	72.4490	-30.8160	36.2245	68.0425
64	11.1915	143.7750	3.2200	-6.0000	20.2909	37.0363	219.459	74.159	72.4133	-30.8067	36.2066	68.0198
65	11.3298	147.1780	3.2000	-5.0000	20.2187	36.9913	216.815	94.806	72.7262	-30.8027	36.3631	68.1769
66	11.4681	150.6210	3.1800	-4.0000	20.1563	36.9563	214.270	117.673	72.8671	-30.8007	36.4335	68.2431
67	11.6064	154.1040	3.1600	-3.0000	20.1033	36.9313	209.916	-15.355	72.8127	-30.7974	36.4064	68.2118
68	11.7447	157.6270	3.1400	-2.0000	20.0595	36.9163	206.496	-12.719	72.7068	-30.7974	36.3534	68.1594

1 DATA FILE IDENT. NO. T-277
2 PROJECT NO. BIC4055T3
3 BORING NO. COE-7
4 SAMPLE NO. S-23
5 SPECIMEN NO. C
6 DEPTH 47.1
7 TEST NO. ID-08
8 FILE # FOR LOAD CELL OR PROVING RING 2000
9 FILE # FOR PORE PRESSURE CONST. 1000
10 FILE # FOR CELL PRESSURE CONST. 2000
11 FILE # FOR PISTON FRICTION CORRECTION NONE
12 TYPE OF CONSOLIDATION I
13 DRAINAGE CONDITIONS DURING LOADING U
14 MODE OF LOADING C
15 CELL PRESSURE DURING LOADING C
16 INITIAL HEIGHT OF SPECIMEN IN INCHES 5.9389
17 INITIAL DIAMETER OF SPECIMEN IN INCHES 2.8608
18 INITIAL VOLUME OF SPECIMEN IN CU. CM. 625.562
19 PISTON DIAMETER IN INCHES 0.5
20 WEIGHT OF TOP CAP ONLY IN TONS*10**-3 0.51
21 WEIGHT OF TOP CAP + PISTON + DIAL IN TONS*10**-3 1.27
22 WEIGHT OF TOP CAP + PISTON + DIAL + LVDT IN TONS*10**-3 1.595
23 WAS PISTON INTACT DURING CONSOL. NO
24 MEMBRANE THICKNESS IN INCHES 0.0225
25 MEMBRANE DIAMETER IN INCHES 2.7901
26 FILTER STRIP CORRECTION CONSTANT 0.0
27 RIGHT CYLINDER DISTORTION FACTOR 1.25
28 DOES SPECIMEN HAVE AN INDUCED OCR NO
29 CELL PRESSURE IN TSF 0.0
30 BACK PRESSURE IN TSF 0.0
31 AXIAL DEFORMATION DURING CONSOL. IN INCHES 0.0
32 VOLUME CHANGE DURING CONSOL. IN CU. CM. 0.0
33 APPLIED AXIAL LOAD IN TONS*10**-3 0.0
34 PRE SHEAR CONDITION - CELL PRESSURE IN TSF 7.452
35 BACK PRESSURE IN TSF 7.200
36 AXIAL DEFORMATION IN INCHES 0.0165
37 VOLUME CHANGE IN CU. CM. 6.902
38 PISTON DRAG CORRECTION IN TONS*10**-3 10.283
39 SPECIMEN CYCLICLY LOADED BEFORE SHEARING NO
40 SPECIMEN RECONSOLIDATED DURING CYCLIC LOADING NO
41 SUM OF VOLUME CHANGES DURING RECONSOLIDATION IN CU. CM. 0.0
42 PORE PRESSURE IN TSF 0.0
43 TOTAL CHANGE IN HT DURING CYCLIC LOADING IN INCHES 0.0
44 OUTPUT UNITS REQUIRED KSF
45 DATA NORMALIZATION SELECTION 2.0
46 RESULT FILE DESIRED 0.0

8/8/81

DIG (in.)	LOAD (lbs)	PORE PRESSURE (tsf)
.00987	20.566	7.228
.01040	25.569	7.236
.01094	29.460	7.240
.01187	35.29	7.250
.01267	39.46	7.257
.01361	42.24	7.262
.01494	45.85	7.270
.01619	48.63	7.274
.01743	50.58	7.278
.01912	53.64	7.280

(in.)	LO	ORE	(lbs)	(tst)
.00987	20.566	7.228		
.01040	25.569	7.236		
.01094	29.460	7.240		
.01187	35.29	7.250		
.01267	39.46	7.257		
.01361	42.24	7.262		
.01494	45.85	7.270		
.01619	48.63	7.274		
.01743	50.58	7.278		
.01912	53.64	7.280		
.02099	56.41	7.283		
.02406	60.03	7.281		
.02597	62.81	7.279		
.02780	65.03	7.278		
.02962	67.81	7.273		
.03171	70.87	7.269		
.03362	72.53	7.264		
.03549	75.59	7.253		
.03754	78.09	7.252		
.03936	80.87	7.246		
.04149	83.65	7.238		
.04336	87.27	7.231		
.04523	89.77	7.225		
.04928	96.16	7.207		
.05306	103.11	7.190		
.05706	110.33	7.170		
.06107	117.56	7.149		
.06502	126.73	7.126		
.06898	133.40	7.104		
.07294	142.02	7.079		
.07677	149.52	7.055		
.08077	160.08	7.026		
.08460	169.25	6.998		
.08869	177.87	6.967		
.09229	189.54	6.938		
.09629	200.66	6.904		
.10039	211.50	6.868		
.10421	222.89	6.834		
.11191	248.19	6.760		
.11956	274.31	6.679		
.12739	302.94	6.591		
.13508	333.7	6.496		
.14260	365.2	6.396		
.15025	400.7	6.287		
.15808	437.4	6.170		
.16555	475.5	6.050		
.17311	516.9	5.921		
.18098	560.3	5.781		
.18868	606.1	5.634		
.19615	653.4	5.485		
.20358	703.4	5.324		
.21110	755.4	5.154		
.21861	809.3	4.977		
.23311	924.6	4.601		
.24419	1016.3	4.297		
.25540	1113.3	3.972		
.26630	1213.1	3.640		
.27742	1317.9	3.288		
.28836	1421.8	2.9305		
.29970	1534.7	2.5461		
.31095	1646.1	2.1557		
.3332	1676.5	1.3483		
.3447	1994.7	0.9230		
.3554	2113.6	0.4904		
.3670	2234.0	.04699		

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