Appendix G

Dewatered Sediment Geotechnical Characteristics

Foth

Foth Infrastructure & Environment, LLC

D1, A

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be comple ...ura

Page: 1 of 1

COC Number: COC-106002

Company:	Foth Infrastructure & Environment	Report To:	Janis Kesy	Requested Due Date:	See Sample Notes	Quote Reference:	
Address:	2737 South Ridge Rd	Copy To:		*TAT:		Project Manager:	
	Green Bay, WI 54307	Invoice To:				Project #:	
Phone: 920-497-2500	Fax: 920-496-6902	P.O.				Profile #:	
Email Address:	jkesy@foth.com	Project Name:	Lower Fox River OU1	Regulatory Agency:		Sampling Team Members:	
Site License No.:		Project Number:	07G007	State Location:	WI		NED,TAG,NRA

Valid Matrix Codes

Matrix	Code
Soil	S
Sediment	SE
Solid	SO
Surface Water	SW
Drinking Water	DW
Wastewater	WW
Groundwater	GW
Hazardous Liquid	H
Air	A
Oil	O
Other	X

ITEM NUMBER	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G = Grab C = Composite	DATE COLLECTED MM/DD/YYYY	TIME COLLECTED (Military time)	# Containers	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Gradation, Sive & Hydrometer, ASTM 0422 (N)	Atterburg limits (N)	Triaxial (N)	Direct Shear (N)	Unconfined Compressive Strength, ASTM D2166 (N)	Consolidation, Fin	Hyd. Cond.				REMARKS
1	1-RA-07-NWA1-DS-01-COMP	SE	C	06/07/2007	1215	1	X							X	X	X	X	X	X					
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS	ITEM #	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION
					Nic Dufek	6/7	1640	Kurt Hess

SAMPLE CONDITION:

Temp in C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Sample Intact	Y / N

SAMPLE NOTES:

Contents in 1 large double bagged bag.

Additional Comments:

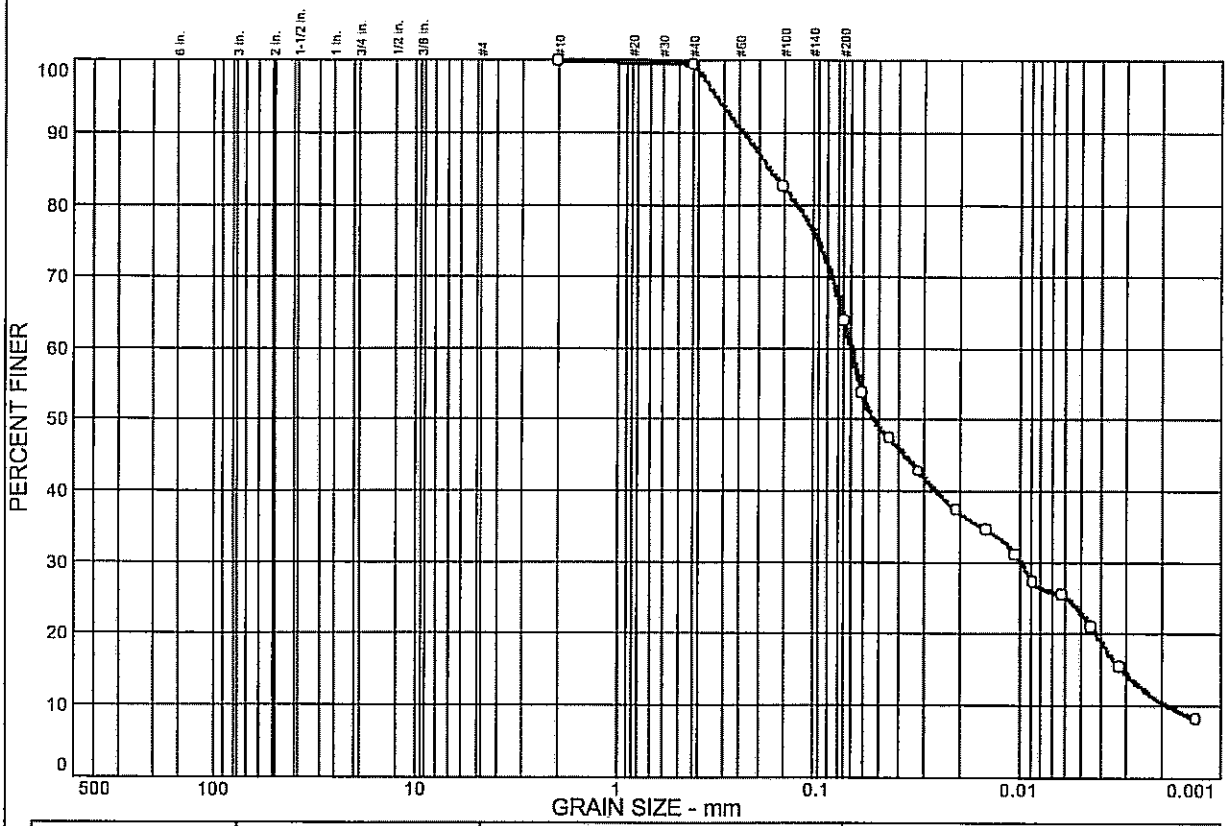
SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nic Dufek

SIGNATURE of SAMPLER: Nic Dufek

DATE Signed: 6-7-07

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.5	35.6	41.1	22.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#40	99.5		
#100	82.5		
#200	63.9		

* (no specification provided)

Soil Description

Sandy fat clay

Atterberg Limits

PL= 46 LL= 117 PI= 71

Coefficients

D_{85}= 0.175 D_{60}= 0.0695 D_{50}= 0.0534
D_{30}= 0.0101 D_{15}= 0.0031 D_{10}= 0.0019
C_u= 37.12 C_c= 0.78

Classification

USCS= CH AASHTO=

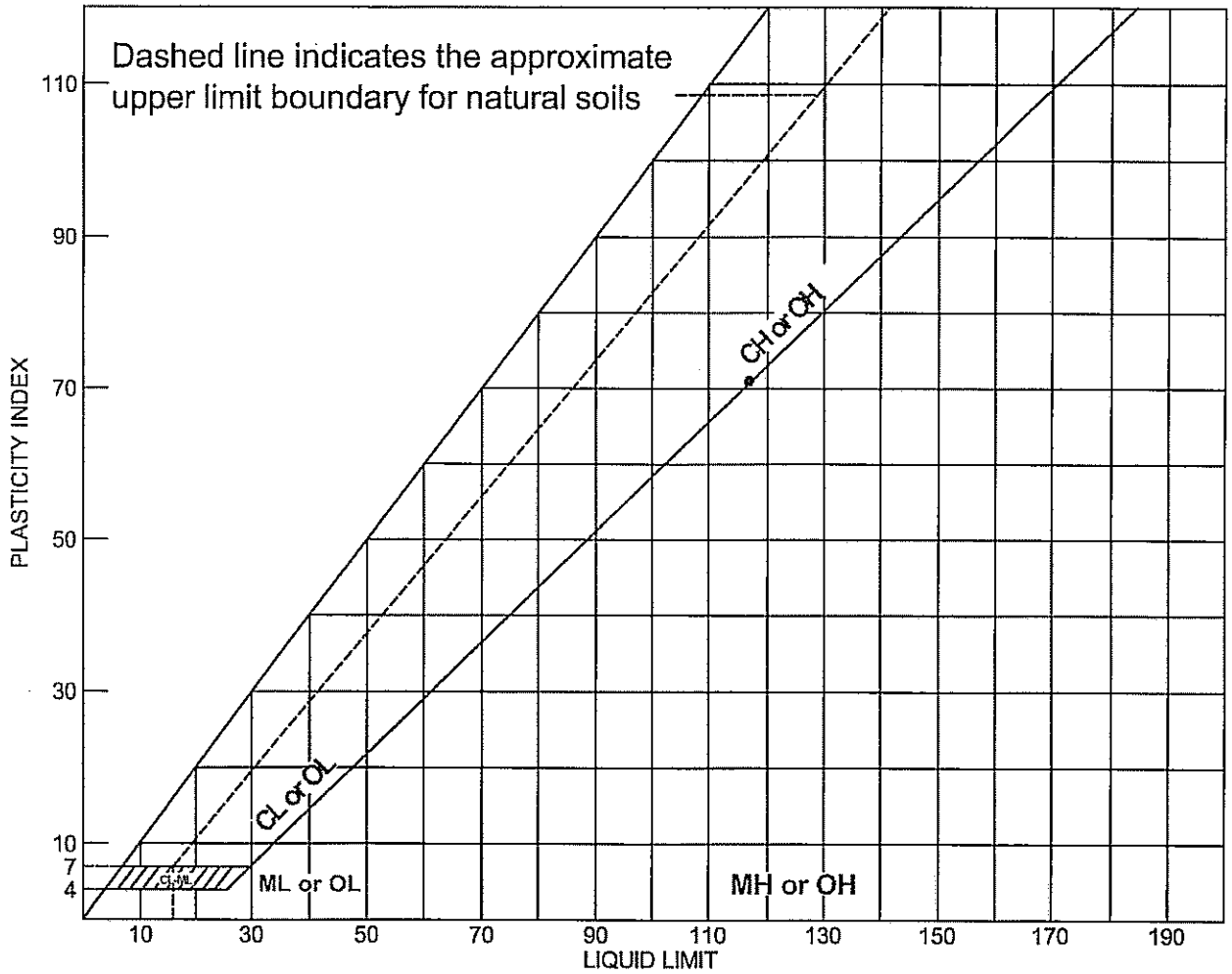
Remarks

Sample No.: DS-01 **Source of Sample:** On-site Material **Date:** 06/25/07
Location: 1-RA-07-NWA1-DS-01-COMP **Elev./Depth:** COMP

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA
Project No: 4-29316A **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	On-site	DS-01	COMP		46	117	71	CH

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA

Project No.: 4-29316A **Figure**

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATION
ASTM D 5084, METHOD C
RISING TAILWATER LEVEL

STS PROJECT NO.:	X429316A
PROJECT:	OU-1 FOX RIVER SEDIMENTS
DATE:	7/5/2007

SUMMARY OF TEST RESULTS

SAMPLE NO.	1 RA 07 NWA1-DS-01-COMP
LOCATION	0
CLASSIFICATION	RIVER SEDIMENTS

	INITIAL	FINAL
DRY UNIT WEIGHT (pcf)	40.3	48.8
WATER CONTENT (%)	123.4	89.2
DIAMETER (cm)	4.80	4.57
LENGTH (cm)	8.80	8.10
HYDRAULIC GRADIENT (MAXIMUM)		10.5
PERCENT SATURATION	105.18833	98.639396
HYDRAULIC CONDUCTIVITY k (cm/sec)		1.59E-07

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATIC
Rising tailwater method in a triaxial permeameter
ASTM D 5084, Method C (EM-1110-2-1906 7)

Project Name: OU-1 FOX RIVER SEDIMENTS
Project No.: X429316A
Project Location: LOWER FOX RIVER
Sample No.: 1 RA 07 NWA1-DS-01-COMP
Sample Location:

Sample Description: RIVER SEDIMENTS

Cell No.: 9

Date Sampled:
Date Received:

MOISTURE CONTENT	INITIAL	FINAL
Container No.	1	2
Wet Sample & Tare (g)	98.52	367.00
Dry Sample & Tare (g)	52.03	274.20
Wt. Water (g)	46.49	92.80
Wt. Tare (g)	14.37	170.20
Wt. Dry Soil (g)	37.66	104.00
Water Content, w (%)	123.4	89.2

SATURATION DATA

Initial Cell Pressure (psi)	Final Cell Pressure (psi)	Initial PWP (psi)	Final PWP (psi)	B Value
28.0	30.0	27.0	29.0	1.00
			Final B value =	1.00

SPECIMEN INFORMATION	INITIAL	FINAL
Avg. Diameter (cm)	4.80	4.57
Avg. Height, L (cm)	8.80	8.10
X-Section Area, A (cm^2)	18.096	16.403
Specimen wet wt. (g)	230.00	196.80
Specimen Dry wt., W_s (g)	102.93	104.00
Total Volume, V (cm^3)	159.24	132.86
Dry Unit Weight (lbs/ft^3)	40.3	48.8
G_s estimated (Y or N)?	Y	#NAME?
Specific Gravity, G_s	2.700	2.700
Volume Solids, V_s (cm^3)	38.20	38.60
Pore Volume (cm^3)	121.04	94.27
Void Ratio, e	3.169	2.442
Degree of Saturation	105.2	98.6

COMMENTS:
REMOLDED SAMPLE

$$\text{Volume Solids} = \frac{W_s}{(G_s)(\text{Water Density})}$$

$$\text{Void Ratio} = \frac{V - V_s}{V_s}$$

$$\text{Degree of Saturation} = \frac{(w)(G_s)}{e}$$

Proj Name: OU-1 FOX RIVER SEDIMENTS
Proj No.: X429316A
Sample: 1 RA 07 NWA1-DS-01-COMP

k (cm/sec)	Max i
10^{-3} to 10^{-4}	2
10^{-4} to 10^{-5}	5
10^{-5} to 10^{-6}	10
10^{-6} to 10^{-7}	20
less than 10^{-7}	30

Hydraulic Gradient, i, Guidlines as per ASTM D5084, section 8.5.1

TEST CONDITIONS

Influent Burette Area a_{in} (cm^2)	Effluent Burette Area a_{out} (cm^2)	# ascend as burette empties? (Y or N)
1.00	1.00	y

Cell Pressure (psi)	Headwater Pressure (psi)	Tailwater Pressure (psi)	Driving Head (psi)	Hydraulic Gradient Max	Hydraulic Gradient Min
30.0	29.0	28.0	1.0	10.5	7.9

TEST DATA

Date/Time (M/D/YY H:MM)	Temp. °C	Elapsed Time, t (sec)	Influent Reading (cm)	Effluent Reading (cm)	Total Change (cm)	Inflow to Outflow Ratio	Hydraulic Head, h (cm)	k, Hydraulic Conductivity (cm/sec)	k_{20} corrected for temperature (cm/sec)
6/27/2007 14:30	21.0	0	0.5	22.4	0.0	0.00	92.2	0	0
6/27/2007 15:40	21.0	4200	0.8	22.2	-0.1	1.50	91.7	3.15E-07	3.07E-07
6/28/2007 6:45	21.0	54300	2.6	20.5	-0.1	1.06	88.2	1.74E-07	1.70E-07
6/28/2007 12:10	21.0	19500	3.2	19.8	0.1	0.86	86.9	1.85E-07	1.81E-07
6/28/2007 15:00	21.0	10200	3.5	19.5	0.0	1.00	86.3	1.65E-07	1.61E-07
6/29/2007 7:00	21.0	57600	5.2	17.7	0.1	0.94	82.8	1.75E-07	1.71E-07
6/29/2007 14:35	21.0	27300	5.9	17.0	0.0	1.00	81.4	1.52E-07	1.48E-07
7/1/2007 15:30	21.0	176100	10.3	12.3	0.3	0.94	72.3	1.64E-07	1.60E-07
7/2/2007 7:00	21.0	55800	11.6	11.0	0.0	1.00	69.7	1.60E-07	1.56E-07

(0.75-1.25) Final Value = 1.59E-07

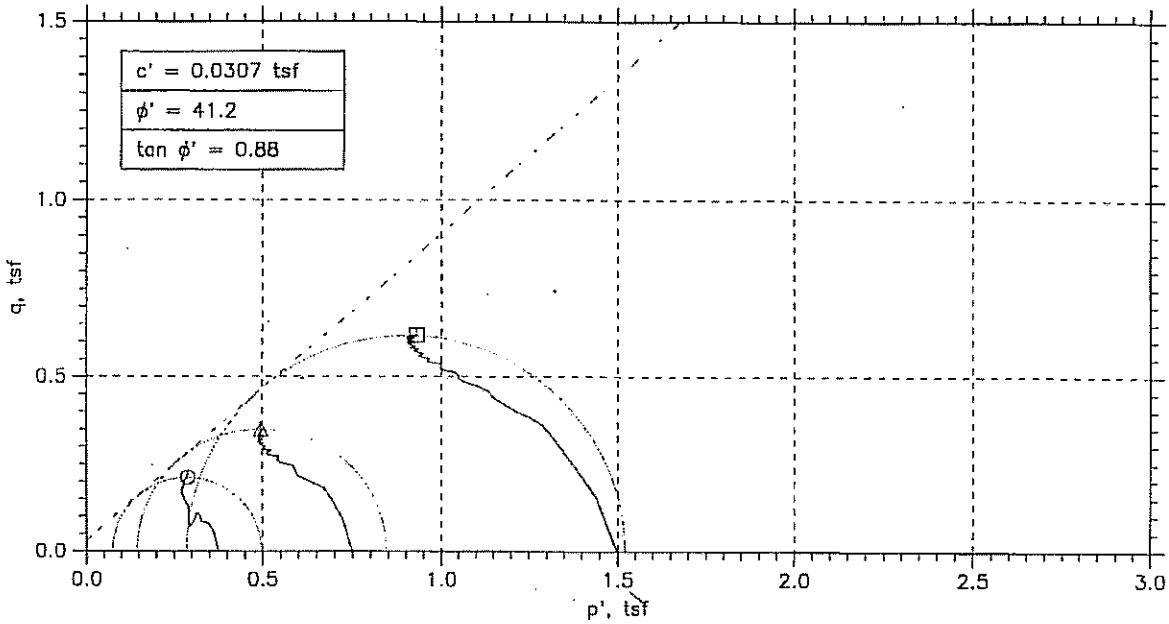
$$k_{20} = \frac{(a_{in})(a_{out})L[\ln(h_{n-1}/h_n)]*R_T}{At(a_{in} + a_{out})}$$

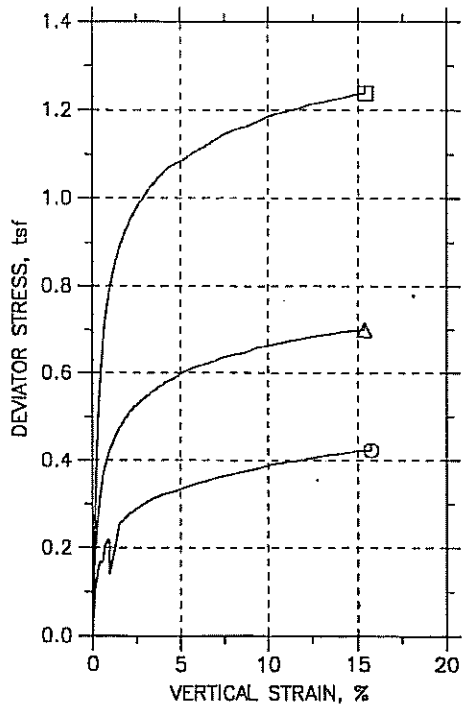
Total Change = $(Eff_{n-1} - Eff_n) - (Inf_n - Inf_{n-1})$

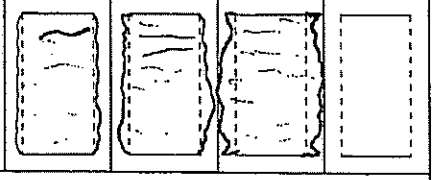
"Hydraulic Head" incorporates the difference in head as well as the added driving head pressure.
"Total Change" is the difference between the Effluent change from t_0 to t_1 and the Influent change from t_0 to t_1.

Notate temperature to the nearest half a degree. The correction calculation averages the two consecutive readings.
k is multiplied by the temperature correction, R_T, which is the ratio of the viscosity of water at test temperature to the viscosity of water at 20° C. Temperature range may be between 19° and 25° for formula calculation.
"Final Value" is the average of 4 consecutive readings of which none are less than or greater than 25% of their average. (50% of average if < 1 x 10^{-8})

TRIAXIAL COMPRESSION TEST REPORT





Symbol		⊙	△	⊡	
Test No.		RA07T1	RA07T2	RA07T3	
Initial	Diameter, in	2.8614	2.8358	2.7752	
	Height, in	5.2957	5.4941	5.4811	
	Water Content, %	113.31	120.56	124.40	
	Dry Density, pcf	40.19	39.12	39.96	
	Saturation, %	96.13	98.73	104.72	
	Void Ratio	3.1471	3.2605	3.1717	
Before Shear	Water Content, %	75.81	65.51	56.81	
	Dry Density, pcf	42.97	46.09	48.61	
	Saturation, %	70.30	66.86	62.46	
	Void Ratio	2.8789	2.6164	2.4286	
	Back Press., tsf	5.04	5.0401	5.0402	
Minor Prin. Stress, tsf		0.3744	0.74868	1.4974	
Max. Dev. Stress, tsf		0.42322	0.69964	1.2384	
Time to Failure, min		274	204	204	
Strain Rate, %/min		0.07909	0.0717	0.0718	
B-Value		---	---	---	
Estimated Specific Gravity		2.67	2.67	2.67	
Liquid Limit		0	0	0	
Plastic Limit		0	0	0	
Plasticity Index		0	0	0	
Failure Sketch					

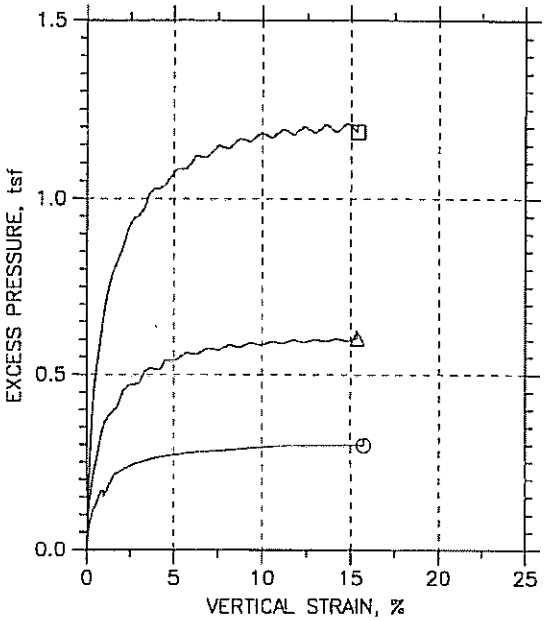
Project: FOX RIVER
Location:
Project No.: 29316-A
Boring No.: 1RA07NWA1DS
Sample Type: REMOLDED

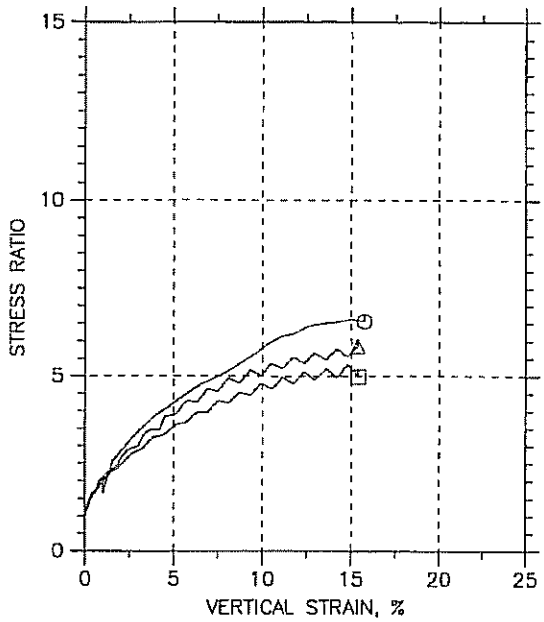
Description: SILT LITTLE CLAY LITTLE F-C SAND - BROWN (CL-ML) ORGANICS NOTED

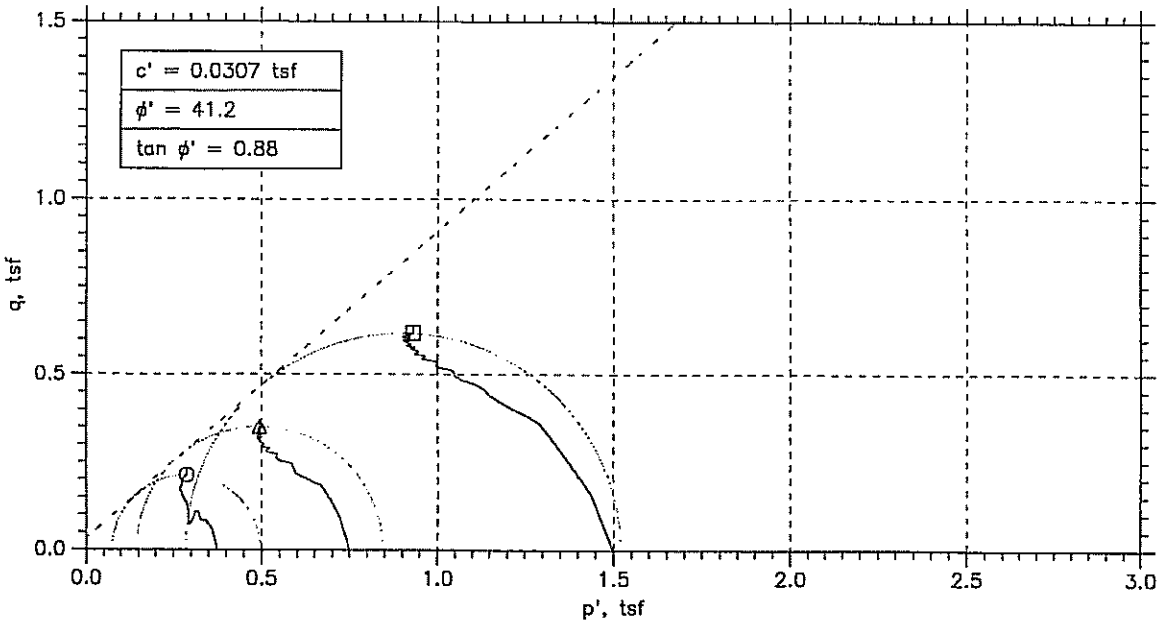
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Tue, 31-JUL-2007 16:25:26

TRIAXIAL COMPRESSION TEST REPORT







Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.: 1RA07NWA1DS	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/12/07	Depth:
Test No.: RA07T1	Sample Type: REMOLDED	Elevation:
Description: SILT LITTLE CLAY LITTLE F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767		

Tue, 31-JUL-2007 16:25:54

TRIAXIAL TEST

Project: FOX RIVER
Boring No.: 1RA07NWA1DS
Sample No.: 1RA07NWA1DS
Test No.: RA07T1

Location:
Tested By: MJS
Test Date: 7/12/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: SILT LITTLE CLAY LITTLE F-C SAND - BROWN (CL-ML) ORGANICS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.30 in
Specimen Area: 6.43 in^2
Specimen Volume: 34.05 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 psi
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.67

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress psi	Pore Pressure psi	Horizontal Stress psi	Vertical Stress psi
1	0	0	6.4306	0	0	70	75.2	75.2
2	2.0001	0.14302	6.4398	9.8079	1.523	70.935	75.2	76.723
3	4.004	0.29475	6.4496	13.506	2.0941	71.407	75.2	77.294
4	6.004	0.42033	6.4578	15.06	2.3321	71.651	75.2	77.532
5	8.004	0.50754	6.4634	14.846	2.2969	71.708	75.2	77.497
6	10.004	0.5494	6.4661	15.007	2.3208	71.773	75.2	77.521
7	12.004	0.59997	6.4694	15.596	2.4108	71.863	75.2	77.611
8	14.004	0.72729	6.4777	18.49	2.8545	72.148	75.2	78.054
9	16.004	0.88078	6.4878	19.777	3.0483	72.318	75.2	78.248
10	18.004	0.98717	6.4947	18.919	2.913	72.326	75.2	78.113
11	20.002	0.98717	6.4947	17.526	2.6984	72.237	75.2	77.898
12	24.002	0.98717	6.4947	16.347	2.5169	72.188	75.2	77.717
13	28.002	0.98717	6.4947	15.703	2.4179	72.164	75.2	77.618
14	32.002	0.98717	6.4947	15.221	2.3436	72.148	75.2	77.544
15	36.004	0.98717	6.4947	14.792	2.2776	72.139	75.2	77.478
16	40.004	0.98717	6.4947	14.524	2.2363	72.131	75.2	77.436
17	44.004	0.98891	6.4948	14.31	2.2033	72.131	75.2	77.403
18	48.004	0.98717	6.4947	14.042	2.1621	72.123	75.2	77.362
19	52.001	0.98717	6.4947	13.828	2.129	72.123	75.2	77.329
20	56.001	0.98717	6.4947	13.774	2.1208	72.115	75.2	77.321
21	60.001	0.98717	6.4947	13.613	2.096	72.115	75.2	77.296
22	68.004	0.98891	6.4948	13.292	2.0465	72.107	75.2	77.246
23	76.003	0.98717	6.4947	12.97	1.997	72.099	75.2	77.197
24	84.001	0.98717	6.4947	12.756	1.964	72.099	75.2	77.164
25	92	1.5383	6.5311	23.153	3.5451	72.937	75.2	78.745
26	100	2.1575	6.5724	25.404	3.8653	73.205	75.2	79.065
27	108	2.7801	6.6145	27.28	4.1243	73.408	75.2	79.324
28	116	3.4132	6.6579	28.888	4.3389	73.547	75.2	79.539
29	124	4.0394	6.7013	30.067	4.4867	73.652	75.2	79.687
30	132	4.6585	6.7448	30.817	4.569	73.726	75.2	79.769
31	140	5.2759	6.7888	31.889	4.6973	73.791	75.2	79.897
32	148	5.9056	6.8342	32.961	4.823	73.848	75.2	80.023
33	156	6.5422	6.8808	33.819	4.915	73.897	75.2	80.115
34	164	7.1613	6.9267	34.837	5.0294	73.913	75.2	80.229
35	172	7.7787	6.973	35.534	5.0959	73.945	75.2	80.296
36	180	8.4066	7.0208	36.391	5.1833	73.978	75.2	80.383
37	188	9.0415	7.0698	37.195	5.2611	74.019	75.2	80.461
38	196	9.6641	7.1186	37.999	5.338	74.051	75.2	80.538
39	204	10.283	7.1677	38.964	5.436	74.092	75.2	80.636
40	214	11.07	7.2311	39.875	5.5144	74.124	75.2	80.714
41	224	11.858	7.2958	40.625	5.5683	74.132	75.2	80.768
42	234	12.629	7.3601	41.59	5.6507	74.157	75.2	80.851
43	244	13.398	7.4255	42.555	5.7309	74.157	75.2	80.931
44	254	14.188	7.4939	43.251	5.7716	74.157	75.2	80.972
45	264	14.973	7.563	44.27	5.8534	74.157	75.2	81.053
46	274	15.737	7.6316	44.859	5.8781	74.141	75.2	81.078

TRIAXIAL TEST

Project: FOX RIVER
Boring No.: 1RA07NWA1DS
Sample No.: 1RA07NWA1DS
Test No.: RA07T1

Location:
Tested By: MJS
Test Date: 7/12/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: SILT LITTLE CLAY LITTLE F-C SAND - BROWN (CL-ML) ORGANICS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.30 in
Specimen Area: 6.43 in^2
Specimen Volume: 34.05 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 psi
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.67

	Vertical Strain %	Total Vertical Stress psi	Total Horizontal Stress psi	Excess Pore Pressure psi	A Parameter	Effective Vertical Stress psi	Effective Horizontal Stress psi	Stress Ratio	Effective p psi	q psi
1	0.00	75.2	75.2	0	0.000	5.2001	5.2001	1.000	5.2001	0
2	0.14	76.723	75.2	0.9355	0.614	5.7876	4.2646	1.357	5.0261	0.76151
3	0.29	77.294	75.2	1.4073	0.672	5.8868	3.7927	1.552	4.8398	1.047
4	0.42	77.532	75.2	1.6514	0.708	5.8808	3.5487	1.657	4.7148	1.1661
5	0.51	77.497	75.2	1.7083	0.744	5.7887	3.4918	1.658	4.6402	1.1485
6	0.55	77.521	75.2	1.7734	0.764	5.7475	3.4267	1.677	4.5871	1.1604
7	0.60	77.611	75.2	1.8629	0.773	5.748	3.3372	1.722	4.5426	1.2054
8	0.73	78.054	75.2	2.1476	0.752	5.9069	3.0525	1.935	4.4797	1.4272
9	0.88	78.248	75.2	2.3184	0.761	5.93	2.8817	2.058	4.4058	1.5242
10	0.99	78.113	75.2	2.3266	0.799	5.7865	2.8735	2.014	4.33	1.4565
11	0.99	77.898	75.2	2.2371	0.829	5.6614	2.963	1.911	4.3122	1.3492
12	0.99	77.717	75.2	2.1883	0.869	5.5287	3.0118	1.836	4.2703	1.2584
13	0.99	77.618	75.2	2.1639	0.895	5.4541	3.0362	1.796	4.2451	1.2089
14	0.99	77.544	75.2	2.1476	0.916	5.3961	3.0525	1.768	4.2243	1.1718
15	0.99	77.478	75.2	2.1395	0.939	5.3382	3.0606	1.744	4.1994	1.1388
16	0.99	77.436	75.2	2.1313	0.953	5.3051	3.0688	1.729	4.1869	1.1182
17	0.99	77.403	75.2	2.1313	0.967	5.272	3.0688	1.718	4.1704	1.1016
18	0.99	77.362	75.2	2.1232	0.982	5.2389	3.0769	1.703	4.1579	1.081
19	0.99	77.329	75.2	2.1232	0.997	5.2059	3.0769	1.692	4.1414	1.0645
20	0.99	77.321	75.2	2.115	0.997	5.2058	3.085	1.687	4.1454	1.0604
21	0.99	77.296	75.2	2.115	1.009	5.1811	3.085	1.679	4.133	1.048
22	0.99	77.246	75.2	2.1069	1.030	5.1396	3.0932	1.662	4.1164	1.0232
23	0.99	77.197	75.2	2.0988	1.051	5.0983	3.1013	1.644	4.0998	0.99851
24	0.99	77.164	75.2	2.0988	1.069	5.0653	3.1013	1.633	4.0833	0.982
25	1.54	78.745	75.2	2.9367	0.828	5.8085	2.2634	2.566	4.0359	1.7725
26	2.16	79.065	75.2	3.2051	0.829	5.8602	1.995	2.938	3.9276	1.9326
27	2.78	79.324	75.2	3.4085	0.826	5.9159	1.7916	3.302	3.8537	2.0621
28	3.41	79.539	75.2	3.5468	0.817	5.9922	1.6533	3.624	3.8228	2.1695
29	4.04	79.687	75.2	3.6525	0.814	6.0343	1.5475	3.899	3.7909	2.2434
30	4.66	79.769	75.2	3.7257	0.815	6.0434	1.4743	4.099	3.7588	2.2845
31	5.28	79.897	75.2	3.7908	0.807	6.1066	1.4093	4.333	3.7579	2.3487
32	5.91	80.023	75.2	3.8478	0.798	6.1753	1.3523	4.566	3.7638	2.4115
33	6.54	80.115	75.2	3.8966	0.793	6.2185	1.3035	4.771	3.761	2.4575
34	7.16	80.229	75.2	3.9128	0.778	6.3166	1.2872	4.907	3.8019	2.5147
35	7.78	80.296	75.2	3.9454	0.774	6.3506	1.2547	5.061	3.8026	2.5479
36	8.41	80.383	75.2	3.9779	0.767	6.4055	1.2222	5.241	3.8138	2.5917
37	9.04	80.461	75.2	4.0186	0.764	6.4426	1.1815	5.453	3.812	2.6306
38	9.66	80.538	75.2	4.0511	0.759	6.487	1.1489	5.646	3.818	2.669
39	10.28	80.636	75.2	4.0918	0.753	6.5443	1.1083	5.905	3.8263	2.718
40	11.07	80.714	75.2	4.1243	0.748	6.5901	1.0757	6.126	3.8329	2.7572
41	11.86	80.768	75.2	4.1325	0.742	6.6359	1.0676	6.216	3.8518	2.7842
42	12.63	80.851	75.2	4.1569	0.736	6.6939	1.0432	6.417	3.8685	2.8254
43	13.40	80.931	75.2	4.1569	0.725	6.7741	1.0432	6.494	3.9086	2.8654
44	14.19	80.972	75.2	4.1569	0.720	6.8148	1.0432	6.533	3.929	2.8858
45	14.97	81.053	75.2	4.1569	0.710	6.8966	1.0432	6.611	3.9699	2.9267
46	15.74	81.078	75.2	4.1406	0.704	6.9375	1.0595	6.548	3.9985	2.939

TRIAXIAL TEST

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07NWA1DS
Test No.: RA07T2

Location:
Tested By: MJS
Test Date: 7/13/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: SILT LITTLE CLAY LITTLE F-C SAND - BROWN (CL-ML) ORGANICS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.49 in
Specimen Area: 6.32 in^2
Specimen Volume: 34.70 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 psi
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.67

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress psi	Pore Pressure psi	Horizontal Stress psi	Vertical Stress psi
1	0	0	6.3161	0	0	70.002	80.4	80.4
2	2.004	0.13617	6.3247	16.239	2.5676	71.662	80.4	82.968
3	4.0009	0.28915	6.3344	23.957	3.7821	72.594	80.4	84.182
4	6.0009	0.44213	6.3442	28.673	4.5197	73.185	80.4	84.92
5	8.0009	0.59344	6.3538	32.05	5.0442	73.63	80.4	85.444
6	10.001	0.74642	6.3636	34.515	5.4239	74.23	80.4	85.824
7	12.001	0.89604	6.3732	36.606	5.7437	74.7	80.4	86.144
8	14.001	1.0473	6.383	38.16	5.9784	75.08	80.4	86.378
9	16.002	1.197	6.3926	39.553	6.1873	75.242	80.4	86.587
10	18.004	1.3466	6.4023	40.84	6.3789	75.372	80.4	86.779
11	20.001	1.4945	6.4119	41.858	6.5281	75.494	80.4	86.928
12	24.001	1.7904	6.4312	43.787	6.8085	75.696	80.4	87.209
13	28.001	2.0896	6.4509	45.502	7.0536	76.279	80.4	87.454
14	32.002	2.3906	6.4708	46.949	7.2556	76.522	80.4	87.656
15	36.001	2.6948	6.491	48.129	7.4146	76.563	80.4	87.815
16	40.001	2.9974	6.5113	49.147	7.548	76.611	80.4	87.948
17	44.001	3.3017	6.5318	50.219	7.6884	77.057	80.4	88.088
18	48.003	3.6043	6.5523	51.184	7.8116	77.203	80.4	88.212
19	52.003	3.9036	6.5727	52.148	7.9341	77.162	80.4	88.334
20	56.003	4.1994	6.593	53.059	8.0479	77.138	80.4	88.448
21	60.003	4.5004	6.6137	53.649	8.1117	77.527	80.4	88.512
22	68	5.1056	6.6559	55.471	8.3341	77.527	80.4	88.734
23	76	5.7141	6.6989	56.972	8.5047	77.81	80.4	88.905
24	84.003	6.3193	6.7422	57.99	8.6011	77.753	80.4	89.001
25	92.003	6.9111	6.785	59.116	8.7127	77.996	80.4	89.113
26	100	7.5062	6.8287	60.402	8.8453	77.915	80.4	89.245
27	108	8.1148	6.8739	61.42	8.9353	78.134	80.4	89.335
28	116	8.725	6.9199	62.224	8.9921	78.029	80.4	89.392
29	124	9.3285	6.9659	63.725	9.1481	78.207	80.4	89.548
30	132	9.9237	7.0119	64.422	9.1874	78.11	80.4	89.587
31	140	10.527	7.0592	65.386	9.2625	78.272	80.4	89.663
32	148	11.142	7.1081	66.405	9.3421	78.183	80.4	89.742
33	156	11.751	7.1571	67.369	9.4129	78.329	80.4	89.813
34	164	12.346	7.2057	68.334	9.4833	78.223	80.4	89.883
35	172	12.946	7.2554	69.245	9.5439	78.353	80.4	89.944
36	180	13.56	7.3069	70.049	9.5867	78.256	80.4	89.987
37	188	14.174	7.3592	71.067	9.657	78.377	80.4	90.057
38	196	14.77	7.4107	71.764	9.6839	78.272	80.4	90.084
39	204	15.362	7.4625	72.514	9.7172	78.393	80.4	90.117

TRIAXIAL TEST

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07NWA1DS
Test No.: RA07T2

Location:
Tested By: MJS
Test Date: 7/13/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: SILT LITTLE CLAY LITTLE F-C SAND - BROWN (CL-ML) ORGANICS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.49 in
Specimen Area: 6.32 in^2
Specimen Volume: 34.70 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 psi
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.67

	Vertical Strain %	Total Vertical Stress psi	Total Horizontal Stress psi	Excess Pore Pressure psi	A Parameter	Effective Vertical Stress psi	Effective Horizontal Stress psi	Stress Ratio	Effective p psi	q psi
1	0.00	80.4	80.4	0	0.000	10.398	10.398	1.000	10.398	0
2	0.14	82.968	80.4	1.6605	0.647	11.305	8.7379	1.294	10.022	1.2838
3	0.29	84.182	80.4	2.5921	0.685	11.588	7.8063	1.484	9.6974	1.891
4	0.44	84.92	80.4	3.1834	0.704	11.735	7.215	1.626	9.4749	2.2598
5	0.59	85.444	80.4	3.6289	0.719	11.814	6.7695	1.745	9.2916	2.5221
6	0.75	85.824	80.4	4.2283	0.780	11.594	6.1701	1.879	8.8821	2.7119
7	0.90	86.144	80.4	4.6981	0.818	11.444	5.7003	2.008	8.5721	2.8718
8	1.05	86.378	80.4	5.0788	0.850	11.298	5.3196	2.124	8.3088	2.9892
9	1.20	86.587	80.4	5.2408	0.847	11.345	5.1576	2.200	8.2513	3.0937
10	1.35	86.779	80.4	5.3704	0.842	11.407	5.028	2.269	8.2174	3.1894
11	1.49	86.928	80.4	5.4919	0.841	11.435	4.9065	2.331	8.1706	3.2641
12	1.79	87.209	80.4	5.6944	0.836	11.513	4.704	2.447	8.1083	3.4043
13	2.09	87.454	80.4	6.2776	0.890	11.174	4.1208	2.712	7.6476	3.5268
14	2.39	87.656	80.4	6.5206	0.899	11.133	3.8778	2.871	7.5056	3.6278
15	2.69	87.815	80.4	6.5611	0.885	11.252	3.8373	2.932	7.5446	3.7073
16	3.00	87.948	80.4	6.6097	0.876	11.337	3.7887	2.992	7.5627	3.774
17	3.30	88.088	80.4	7.0552	0.918	11.032	3.3432	3.300	7.1874	3.8442
18	3.60	88.212	80.4	7.201	0.922	11.009	3.1974	3.443	7.1031	3.9058
19	3.90	88.334	80.4	7.1605	0.903	11.172	3.2379	3.450	7.2049	3.967
20	4.20	88.448	80.4	7.1362	0.887	11.31	3.2622	3.467	7.2861	4.0239
21	4.50	88.512	80.4	7.5251	0.928	10.985	2.8734	3.823	6.9292	4.0559
22	5.11	88.734	80.4	7.5251	0.903	11.207	2.8734	3.900	7.0404	4.167
23	5.71	88.905	80.4	7.8086	0.918	11.095	2.5898	4.284	6.8422	4.2523
24	6.32	89.001	80.4	7.7519	0.901	11.248	2.6465	4.250	6.9471	4.3006
25	6.91	89.113	80.4	7.9949	0.918	11.116	2.4035	4.625	6.7599	4.3563
26	7.51	89.245	80.4	7.9139	0.895	11.33	2.4845	4.560	6.9072	4.4227
27	8.11	89.335	80.4	8.1326	0.910	11.201	2.2658	4.943	6.7335	4.4676
28	8.73	89.392	80.4	8.0273	0.893	11.363	2.3711	4.792	6.8672	4.4961
29	9.33	89.548	80.4	8.2055	0.897	11.341	2.1929	5.172	6.767	4.574
30	9.92	89.587	80.4	8.1083	0.883	11.478	2.2901	5.012	6.8838	4.5937
31	10.53	89.663	80.4	8.2703	0.893	11.391	2.1281	5.352	6.7594	4.6313
32	11.14	89.742	80.4	8.1812	0.876	11.559	2.2172	5.213	6.8883	4.671
33	11.75	89.813	80.4	8.327	0.885	11.484	2.0714	5.544	6.7779	4.7064
34	12.35	89.883	80.4	8.2217	0.867	11.66	2.1767	5.357	6.9184	4.7416
35	12.95	89.944	80.4	8.3513	0.875	11.591	2.0471	5.662	6.8191	4.772
36	13.56	89.987	80.4	8.2541	0.861	11.731	2.1443	5.471	6.9377	4.7933
37	14.17	90.057	80.4	8.3756	0.867	11.68	2.0228	5.774	6.8513	4.8285
38	14.77	90.084	80.4	8.2703	0.854	11.812	2.1281	5.550	6.9701	4.8419
39	15.36	90.117	80.4	8.3918	0.864	11.724	2.0066	5.843	6.8652	4.8586

TRIAXIAL TEST

Project: FOX-RIVER
Boring No.:
Sample No.: 1RA07NWA1DS
Test No.: RA07T3

Location:
Tested By: MS
Test Date: 7/18/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: SILT LITTLE CLAY LITTLE F-C SAND - BROWN (CL-ML) ORGANICS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.48 in
Specimen Area: 6.05 in^2
Specimen Volume: 33.15 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 psi
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.67

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress psi	Pore Pressure psi	Horizontal Stress psi	Vertical Stress psi
1	0	0	6.0489	0	0	70.003	90.8	90.8
2	2.0042	0.14832	6.0579	26.151	4.3169	72.971	90.8	95.117
3	4.0042	0.2933	6.0667	40.99	6.7565	75.027	90.8	97.556
4	6.0042	0.44162	6.0757	50.198	8.262	76.344	90.8	99.062
5	8.0039	0.58994	6.0848	56.617	9.3047	77.255	90.8	100.1
6	10.004	0.73659	6.0938	61.458	10.085	77.962	90.8	100.89
7	12.004	0.88324	6.1028	65.194	10.683	78.767	90.8	101.48
8	14.004	1.0299	6.1119	68.246	11.166	79.556	90.8	101.97
9	16.004	1.1765	6.1209	70.877	11.579	80.108	90.8	102.38
10	18.004	1.3282	6.1303	73.139	11.931	80.572	90.8	102.73
11	20.001	1.4765	6.1396	75.034	12.221	80.954	90.8	103.02
12	24.003	1.7781	6.1584	78.348	12.722	81.425	90.8	103.52
13	28.003	2.0781	6.1773	80.927	13.101	81.962	90.8	103.9
14	32.003	2.3864	6.1968	83.347	13.45	82.694	90.8	104.25
15	36.003	2.6914	6.2162	85.505	13.755	83.1	90.8	104.56
16	40.001	2.9964	6.2358	87.241	13.99	83.238	90.8	104.79
17	44.001	3.2947	6.255	89.135	14.25	83.506	90.8	105.05
18	48.001	3.5896	6.2741	90.451	14.416	84.059	90.8	105.22
19	52.004	3.8863	6.2935	91.977	14.615	84.287	90.8	105.41
20	56.004	4.1862	6.3132	93.292	14.777	84.295	90.8	105.58
21	60.004	4.4879	6.3331	94.397	14.905	84.425	90.8	105.71
22	68.002	5.1861	6.3798	96.291	15.093	85.051	90.8	105.89
23	76.002	5.7111	6.4153	98.238	15.313	85.043	90.8	106.11
24	84.002	6.306	6.456	99.975	15.485	85.563	90.8	106.29
25	92.004	6.9076	6.4978	101.97	15.694	85.49	90.8	106.49
26	100	7.5192	6.5407	104.13	15.92	85.953	90.8	106.72
27	108	8.1375	6.5847	105.71	16.054	85.84	90.8	106.85
28	116	8.7341	6.6278	107.03	16.148	86.23	90.8	106.95
29	124	9.329	6.6713	108.66	16.287	86.092	90.8	107.09
30	132	9.944	6.7168	110.5	16.451	86.457	90.8	107.25
31	140	10.554	6.7626	111.97	16.557	86.238	90.8	107.36
32	148	11.157	6.8086	113.29	16.639	86.604	90.8	107.44
33	156	11.75	6.8543	114.66	16.727	86.368	90.8	107.53
34	164	12.35	6.9012	116.29	16.85	86.709	90.8	107.65
35	172	12.969	6.9503	117.5	16.905	86.441	90.8	107.71
36	180	13.587	7	118.92	16.988	86.783	90.8	107.79
37	188	14.184	7.0487	120.23	17.057	86.474	90.8	107.86
38	196	14.783	7.0983	121.76	17.153	86.84	90.8	107.95
39	204	15.392	7.1493	122.97	17.2	86.474	90.8	108

TRIAXIAL TEST

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07NWA1DS
Test No.: RA07T3

Location:
Tested By: MS
Test Date: 7/18/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: SILT LITTLE CLAY LITTLE F-C SAND - BROWN (CL-ML) ORGANICS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.48 in
Specimen Area: 6.05 in^2
Specimen Volume: 33.15 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 psi
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

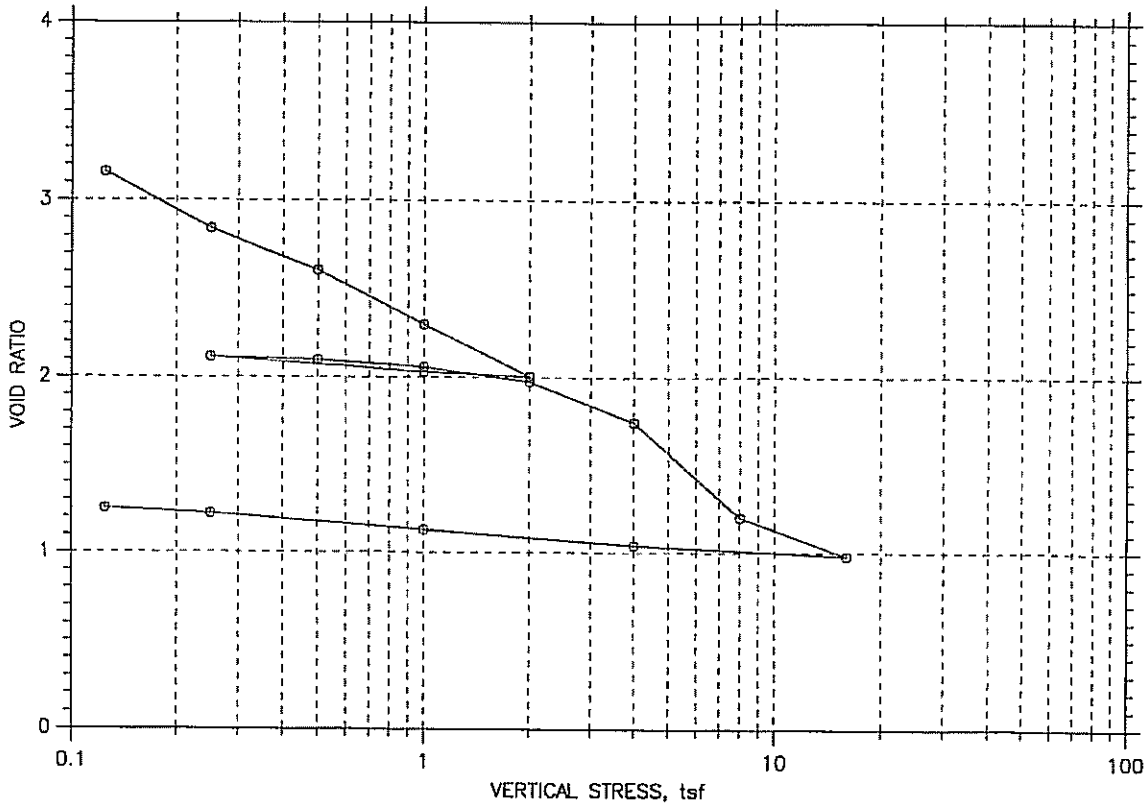
Plastic Limit: 0

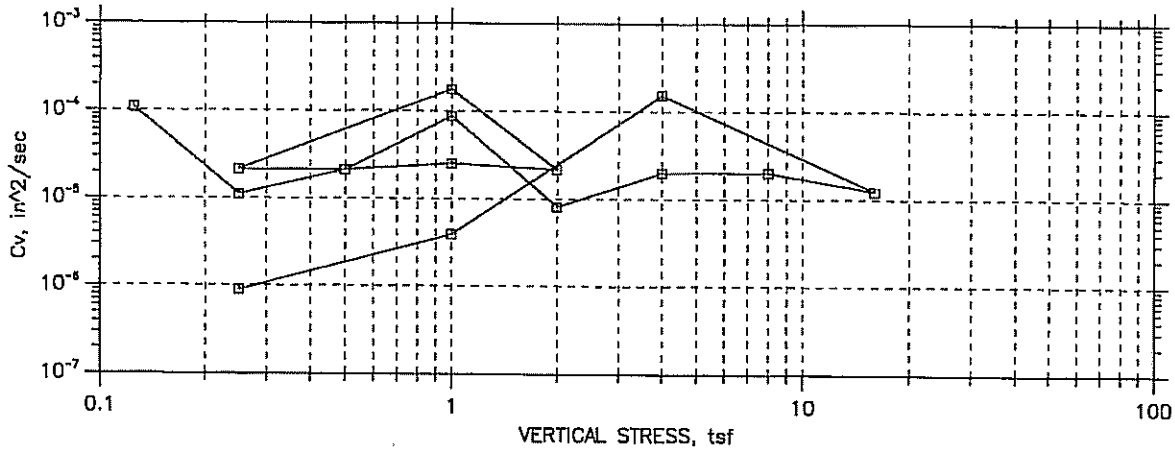
Estimated Specific Gravity: 2.67

	Vertical Strain %	Total Vertical Stress psi	Total Horizontal Stress psi	Excess Pore Pressure psi	A Parameter	Effective Vertical Stress psi	Effective Horizontal Stress psi	Stress Ratio	Effective p psi	q psi
1	0.00	90.8	90.8	0	0.000	20.797	20.797	1.000	20.797	0
2	0.15	95.117	90.8	2.9673	0.687	22.146	17.829	1.242	19.988	2.1584
3	0.29	97.556	90.8	5.024	0.744	22.529	15.773	1.428	19.151	3.3782
4	0.44	99.062	90.8	6.341	0.767	22.718	14.456	1.572	18.587	4.131
5	0.59	100.1	90.8	7.2515	0.779	22.85	13.545	1.687	18.197	4.6523
6	0.74	100.89	90.8	7.9588	0.789	22.923	12.838	1.786	17.881	5.0427
7	0.88	101.48	90.8	8.7636	0.820	22.716	12.033	1.888	17.374	5.3413
8	1.03	101.97	90.8	9.5522	0.855	22.411	11.244	1.993	16.828	5.5831
9	1.18	102.38	90.8	10.105	0.873	22.271	10.692	2.083	16.481	5.7897
10	1.33	102.73	90.8	10.568	0.886	22.159	10.228	2.166	16.194	5.9654
11	1.48	103.02	90.8	10.95	0.896	22.068	9.8462	2.241	15.957	6.1107
12	1.78	103.52	90.8	11.422	0.898	22.097	9.3747	2.357	15.736	6.3611
13	2.08	103.9	90.8	11.959	0.913	21.939	8.8382	2.482	15.389	6.5504
14	2.39	104.25	90.8	12.69	0.944	21.557	8.1065	2.659	14.832	6.725
15	2.69	104.56	90.8	13.097	0.952	21.455	7.7	2.786	14.578	6.8775
16	3.00	104.79	90.8	13.235	0.946	21.552	7.5618	2.850	14.557	6.9952
17	3.29	105.05	90.8	13.503	0.948	21.544	7.2935	2.954	14.419	7.1251
18	3.59	105.22	90.8	14.056	0.975	21.157	6.7407	3.139	13.949	7.2082
19	3.89	105.41	90.8	14.284	0.977	21.128	6.5131	3.244	13.82	7.3073
20	4.19	105.58	90.8	14.292	0.967	21.282	6.505	3.272	13.894	7.3887
21	4.49	105.71	90.8	14.422	0.968	21.28	6.3749	3.338	13.828	7.4526
22	5.19	105.89	90.8	15.048	0.997	20.842	5.7489	3.625	13.296	7.5466
23	5.71	106.11	90.8	15.04	0.982	21.07	5.7571	3.660	13.414	7.6566
24	6.31	106.29	90.8	15.56	1.005	20.722	5.2368	3.957	12.979	7.7427
25	6.91	106.49	90.8	15.487	0.987	21.004	5.3099	3.956	13.157	7.8469
26	7.52	106.72	90.8	15.95	1.002	20.767	4.8466	4.285	12.807	7.9602
27	8.14	106.85	90.8	15.836	0.986	21.014	4.9604	4.236	12.987	8.0269
28	8.73	106.95	90.8	16.227	1.005	20.718	4.5702	4.533	12.644	8.074
29	9.33	107.09	90.8	16.088	0.988	20.996	4.7084	4.459	12.852	8.1436
30	9.94	107.25	90.8	16.454	1.000	20.793	4.3425	4.788	12.568	8.2255
31	10.55	107.36	90.8	16.235	0.981	21.119	4.562	4.629	12.841	8.2787
32	11.16	107.44	90.8	16.6	0.998	20.835	4.1962	4.965	12.516	8.3195
33	11.75	107.53	90.8	16.365	0.978	21.159	4.432	4.774	12.796	8.3637
34	12.35	107.65	90.8	16.706	0.991	20.941	4.0905	5.119	12.516	8.425
35	12.97	107.71	90.8	16.438	0.972	21.264	4.3588	4.878	12.811	8.4527
36	13.59	107.79	90.8	16.779	0.988	21.006	4.0173	5.229	12.511	8.4941
37	14.18	107.86	90.8	16.47	0.966	21.384	4.3263	4.943	12.855	8.5287
38	14.78	107.95	90.8	16.836	0.982	21.114	3.9604	5.331	12.537	8.5766
39	15.39	108	90.8	16.47	0.958	21.526	4.3263	4.976	12.926	8.6

CONSOLIDATION TEST DATA

SUMMARY REPORT





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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CONSOLIDATION TEST DATA

Project: FOX RIVER PCB CLEANUP
Boring No.:
Sample No.: 1RA07NWA1DS
Test No.: 16NWA1

Location:
Tested By: MJS
Test Date: 7/5/07
Sample Type: REMOLDED

Project No.: X29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435

Estimated Specific Gravity: 2.65
Initial Void Ratio: 3.77
Final Void Ratio: 1.25

Liquid Limit: 0
Plastic Limit: 0
Plasticity Index: 0

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	122	RING	RING	RING
Wt. Container + Wet Soil, gm	101.95	155.03	121.21	121.21
Wt. Container + Dry Soil, gm	57.15	107.85	107.85	107.85
Wt. Container, gm	24.87	74.36	74.36	74.36
Wt. Dry Soil, gm	32.28	33.49	33.49	33.49
Water Content, %	138.79	140.88	39.89	39.89
Void Ratio	---	3.77	1.25	---
Degree of Saturation, %	---	98.93	84.63	---
Dry Unit Weight, pcf	---	34.655	73.556	---

CONSOLIDATION TEST DATA

Project: FOX RIVER PCB CLEANUP
Boring No.:
Sample No.: 1RA07NWA1DS
Test No.: 16NWA1

Location:
Tested By: MJS
Test Date: 7/5/07
Sample Type: REMOLDED

Project No.: X29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435

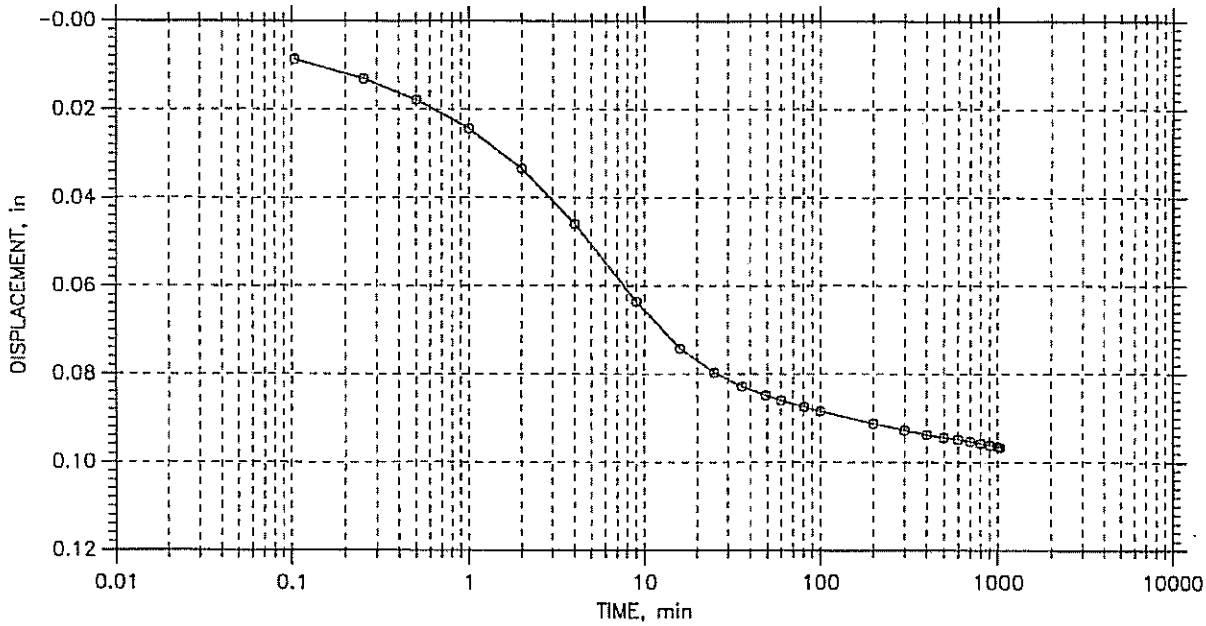
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.125	0.09671	3.158	12.89	3.5	3.9	1.14e-004	1.04e-004	1.09e-004
2	0.25	0.1464	2.842	19.52	48.6	10.2	6.68e-006	3.19e-005	1.10e-005
3	0.5	0.1838	2.604	24.50	19.1	7.5	1.47e-005	3.75e-005	2.11e-005
4	1	0.2316	2.299	30.89	13.5	5.7	1.79e-005	4.21e-005	2.51e-005
5	2	0.2778	2.006	37.04	13.5	5.3	1.49e-005	3.82e-005	2.15e-005
6	1	0.2741	2.029	36.54	1.8	0.3	1.02e-004	6.69e-004	1.77e-004
7	0.25	0.2609	2.113	34.79	13.5	4.4	1.42e-005	4.35e-005	2.14e-005
8	0.5	0.2636	2.096	35.15	9.3	0.0	2.11e-005	0.00e+000	2.11e-005
9	1	0.2697	2.057	35.96	3.4	1.0	5.71e-005	1.84e-004	8.71e-005
10	2	0.2827	1.974	37.70	22.7	0.0	8.13e-006	0.00e+000	8.13e-006
11	4	0.3192	1.742	42.56	11.7	4.9	1.42e-005	3.37e-005	2.00e-005
12	8	0.4045	1.199	53.93	7.7	4.7	1.62e-005	2.64e-005	2.01e-005
13	16	0.4388	0.981	58.51	11.4	3.0	7.78e-006	3.00e-005	1.24e-005
14	4	0.4294	1.041	57.25	0.9	0.2	9.21e-005	4.67e-004	1.54e-004
15	1	0.4159	1.127	55.45	22.7	0.0	3.89e-006	0.00e+000	3.89e-006
16	0.25	0.4012	1.220	53.50	107.6	0.0	8.90e-007	0.00e+000	8.90e-007
17	0.125	0.3966	1.249	52.89	0.0	0.0	0.00e+000	0.00e+000	0.00e+000

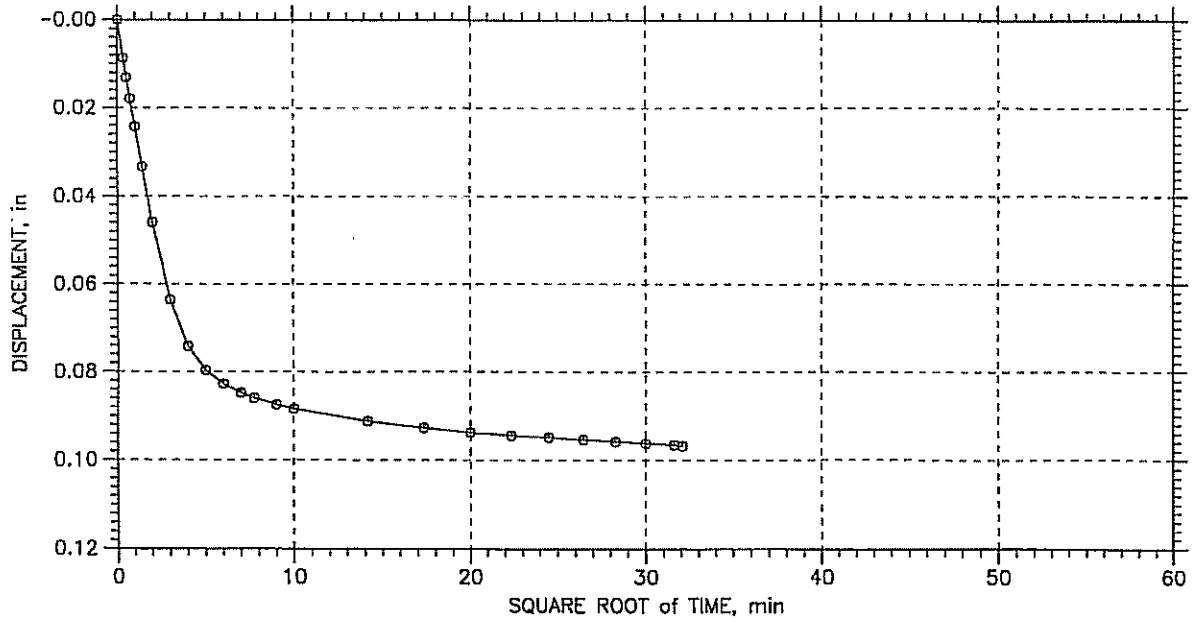
CONSOLIDATION TEST DATA

TIME CURVES

Step: 1 of 17

Stress: 0.125 tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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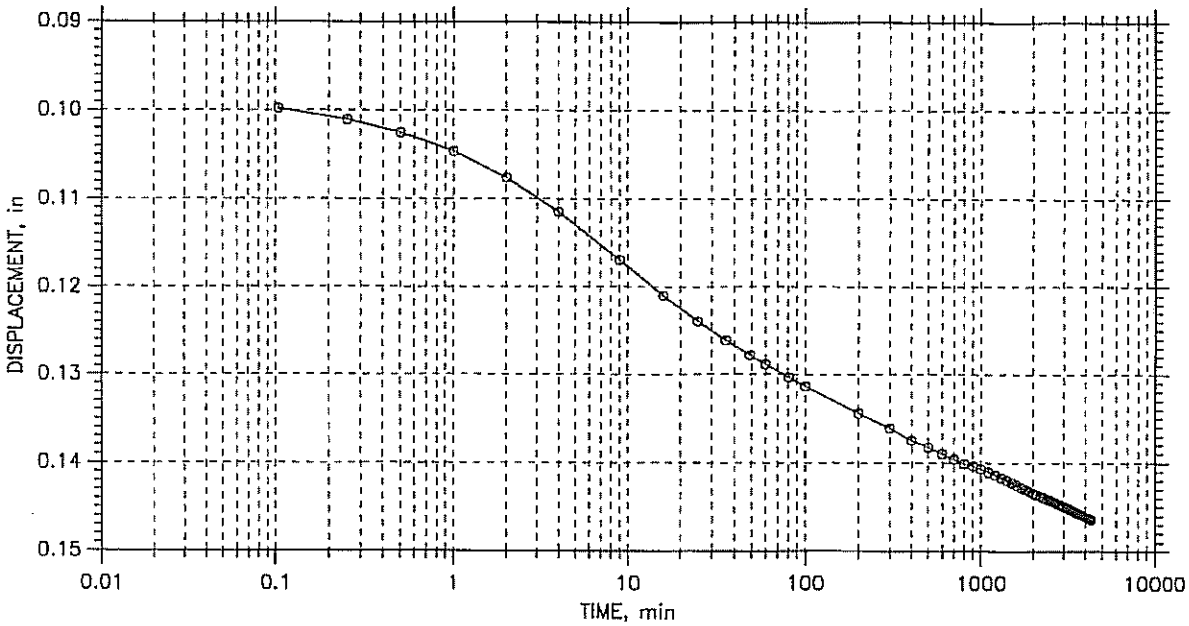
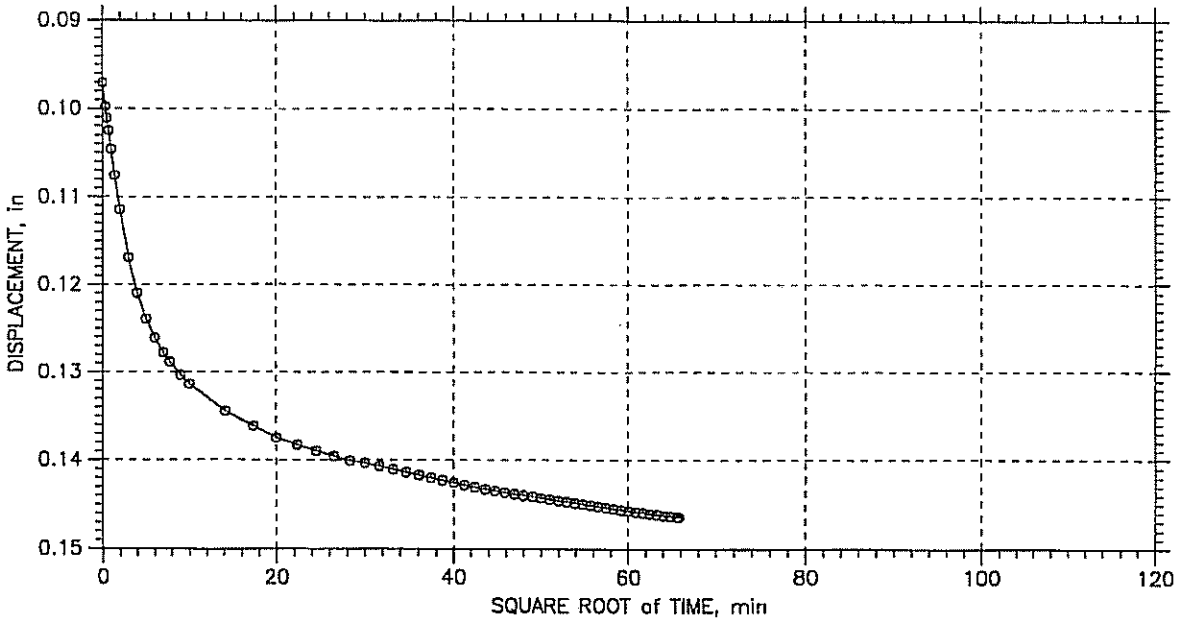
CONSOLIDATION TEST DATA

TIME CURVES

Step: 2 of 17

Stress: 0.25 tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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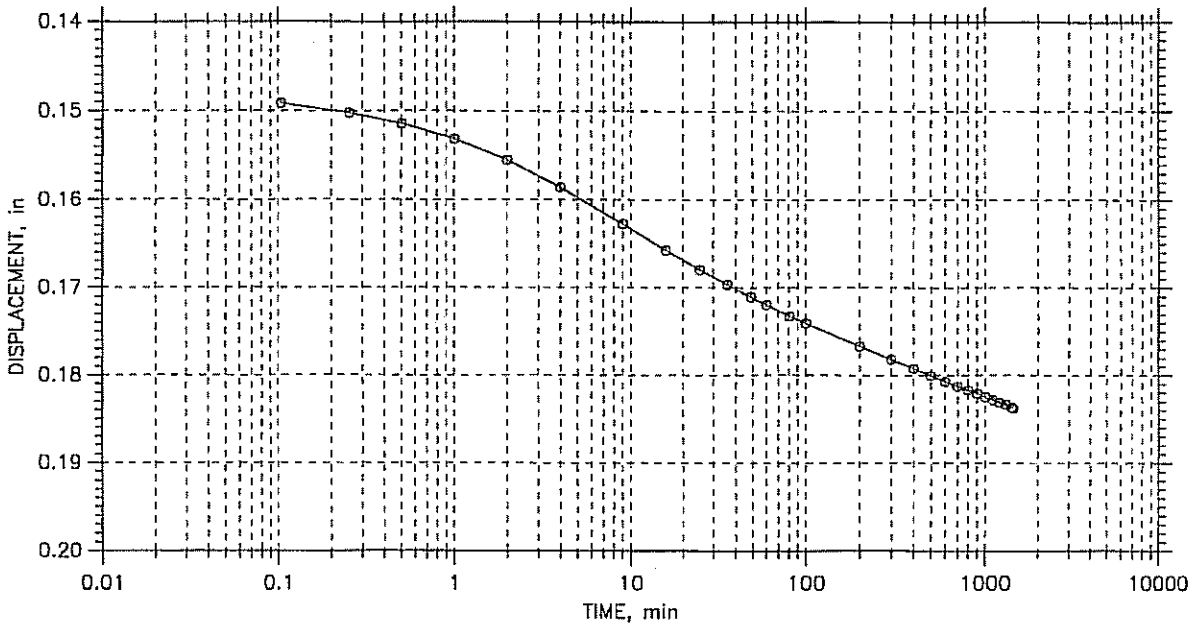
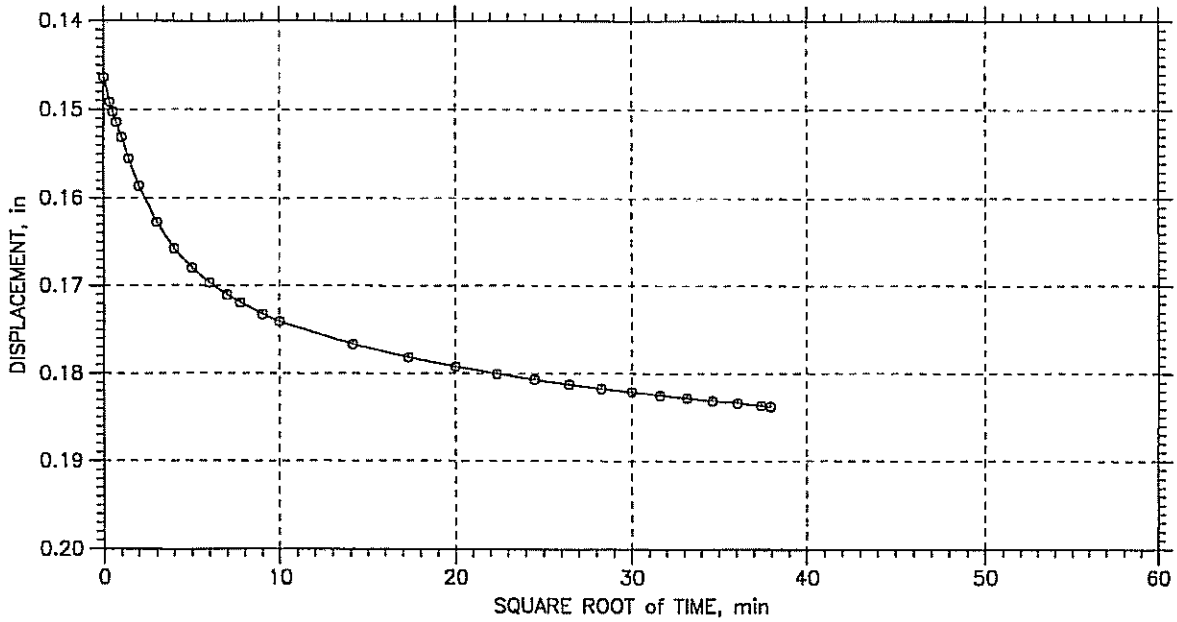
CONSOLIDATION TEST DATA

TIME CURVES

Step: 3 of 17

Stress: 0.5 tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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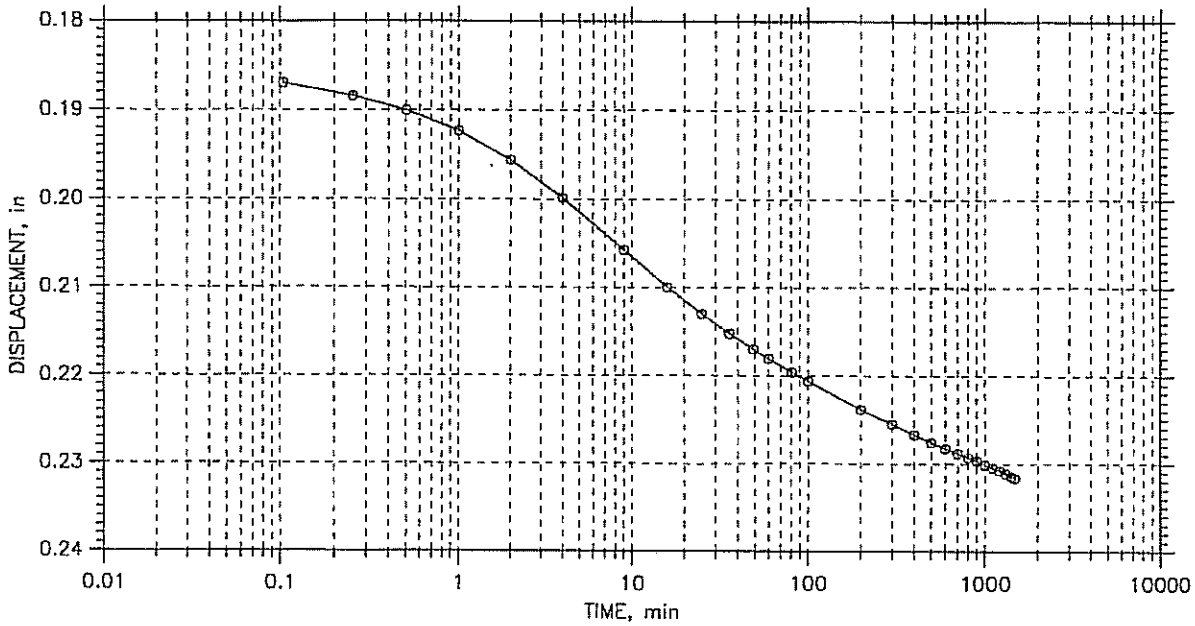
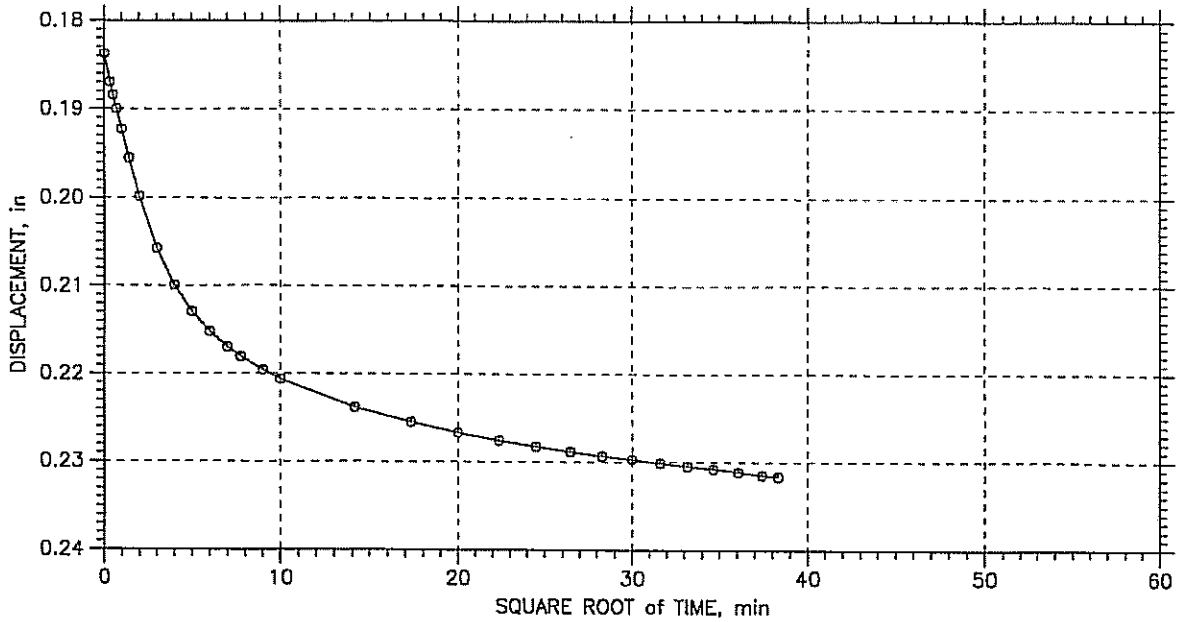
CONSOLIDATION TEST DATA

TIME CURVES

Step: 4 of 17

Stress: 1. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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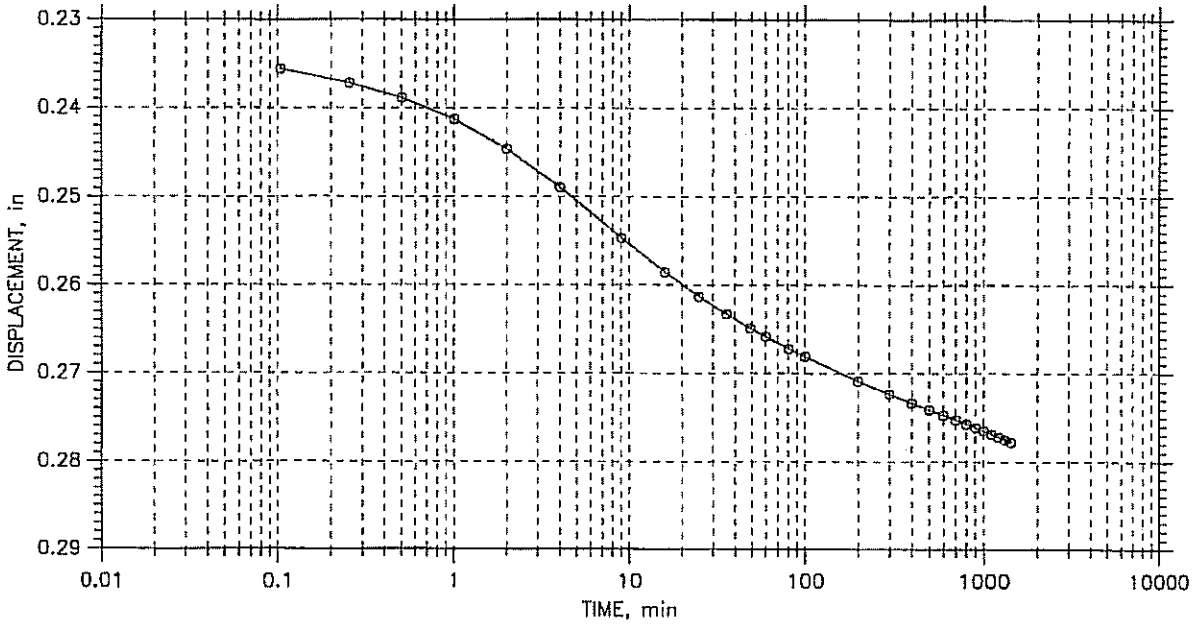
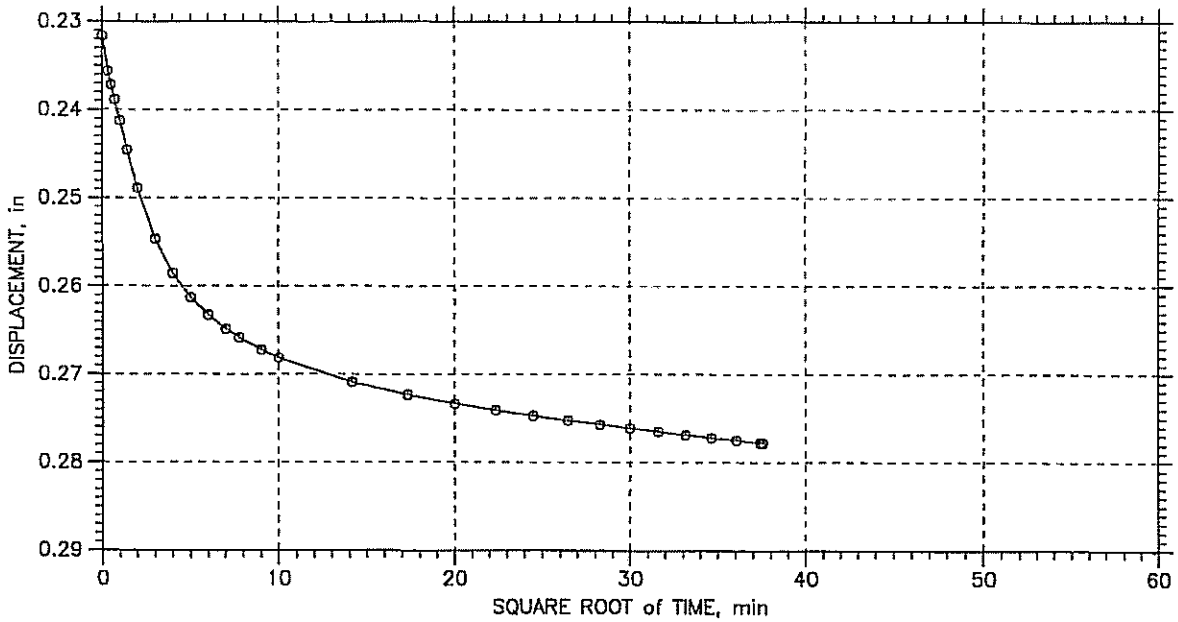
CONSOLIDATION TEST DATA

TIME CURVES

Step: 5 of 17

Stress: 2. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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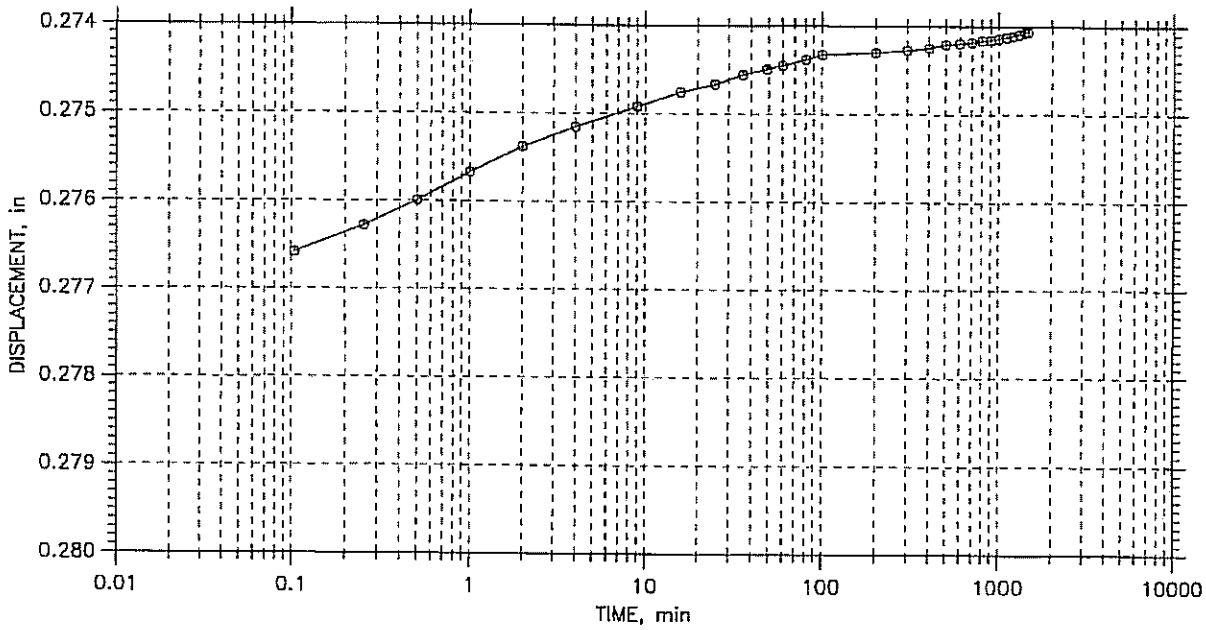
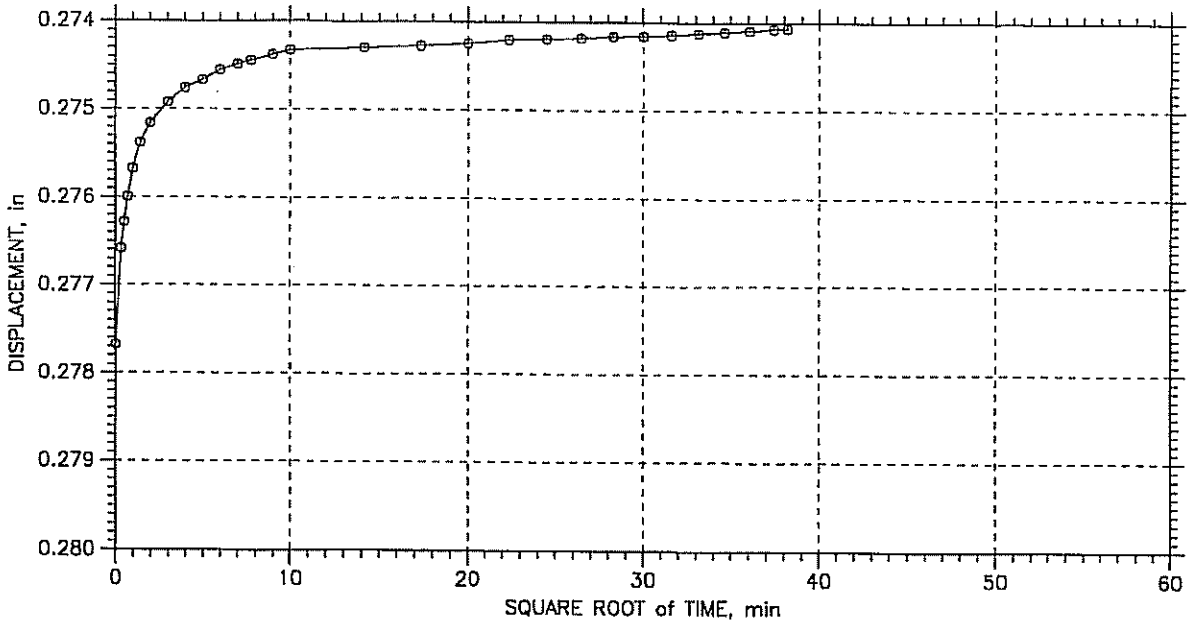
CONSOLIDATION TEST DATA

TIME CURVES

Step: 6 of 17

Stress: 1. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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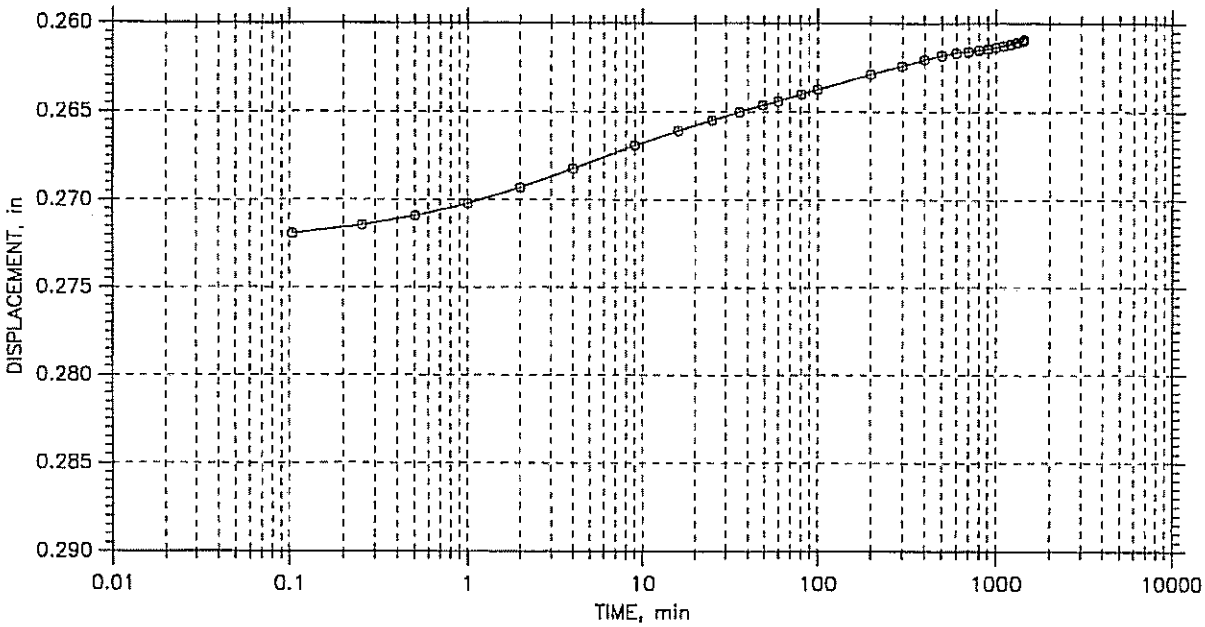
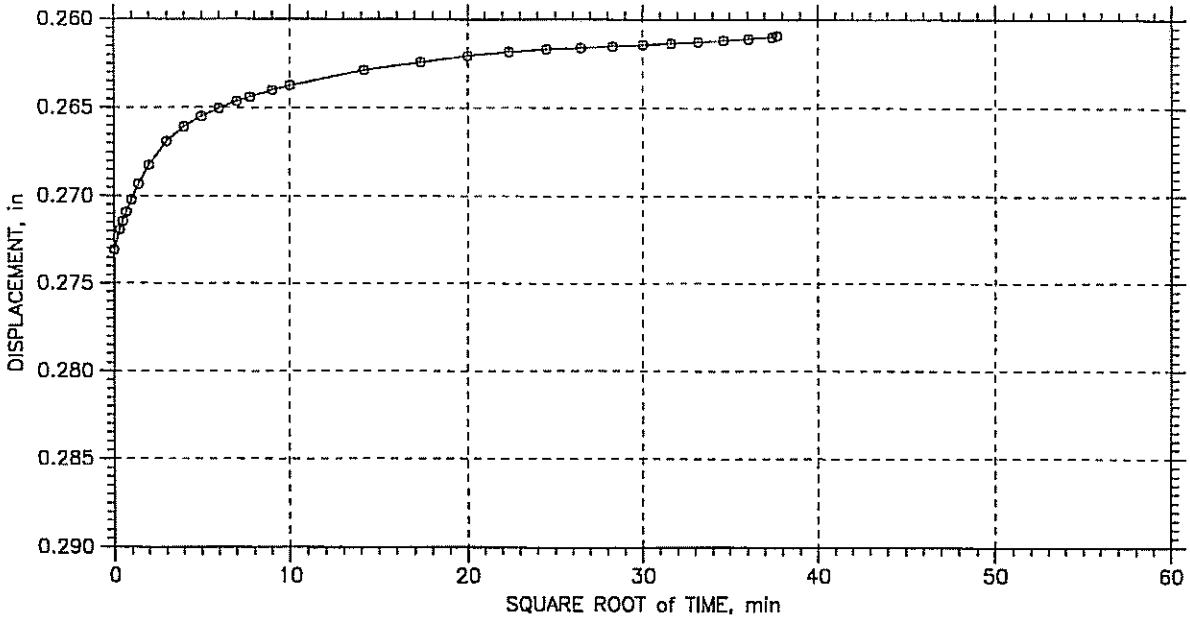
CONSOLIDATION TEST DATA

TIME CURVES

Step: 7 of 17

Stress: 0.25 tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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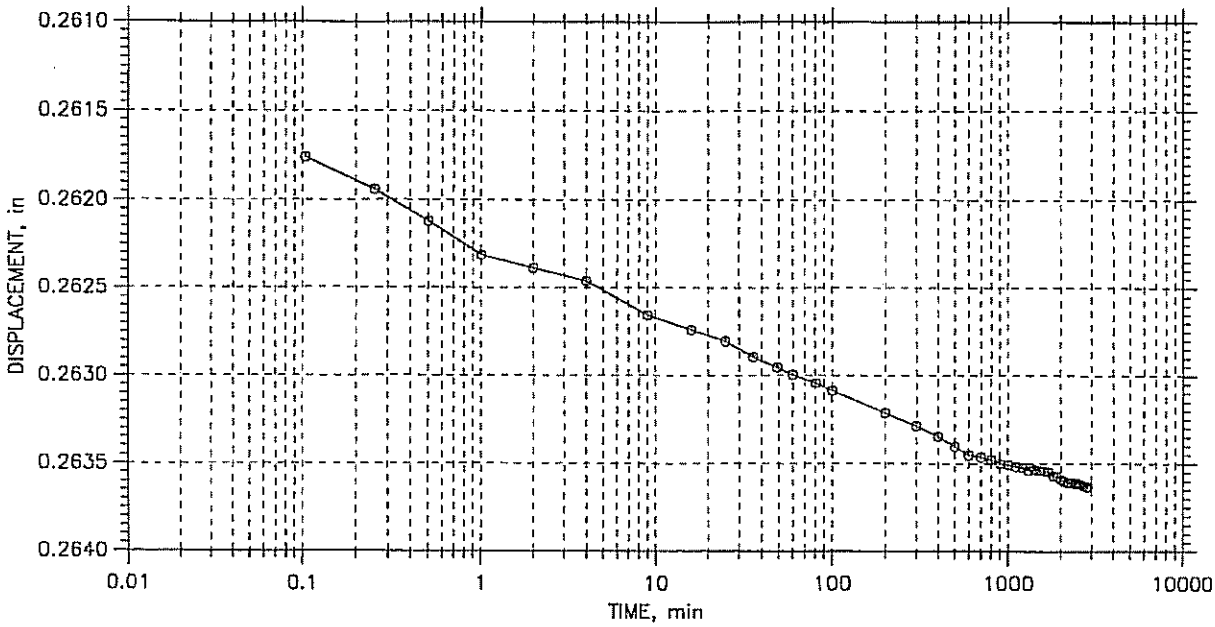
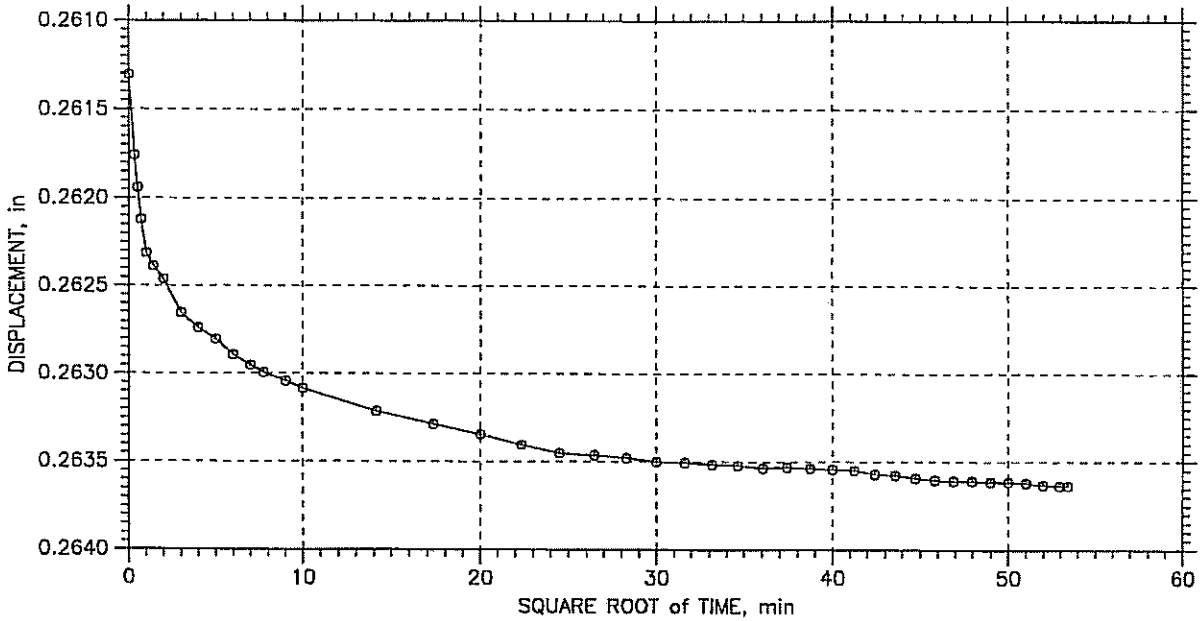
CONSOLIDATION TEST DATA

TIME CURVES

Step: 8 of 17

Stress: 0.5 tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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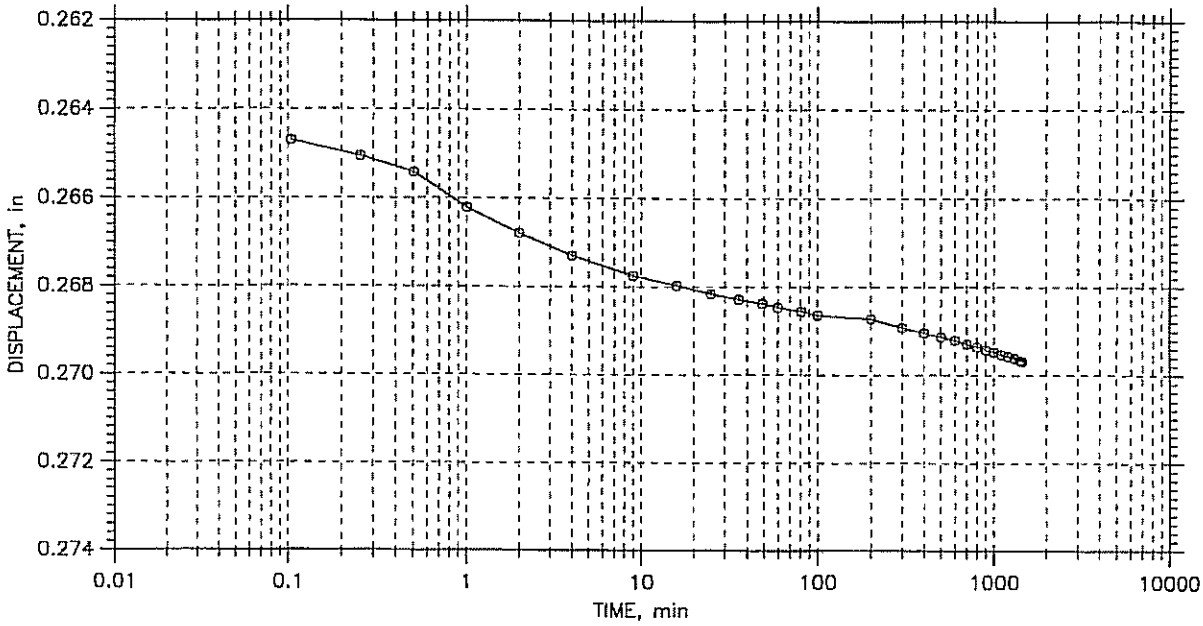
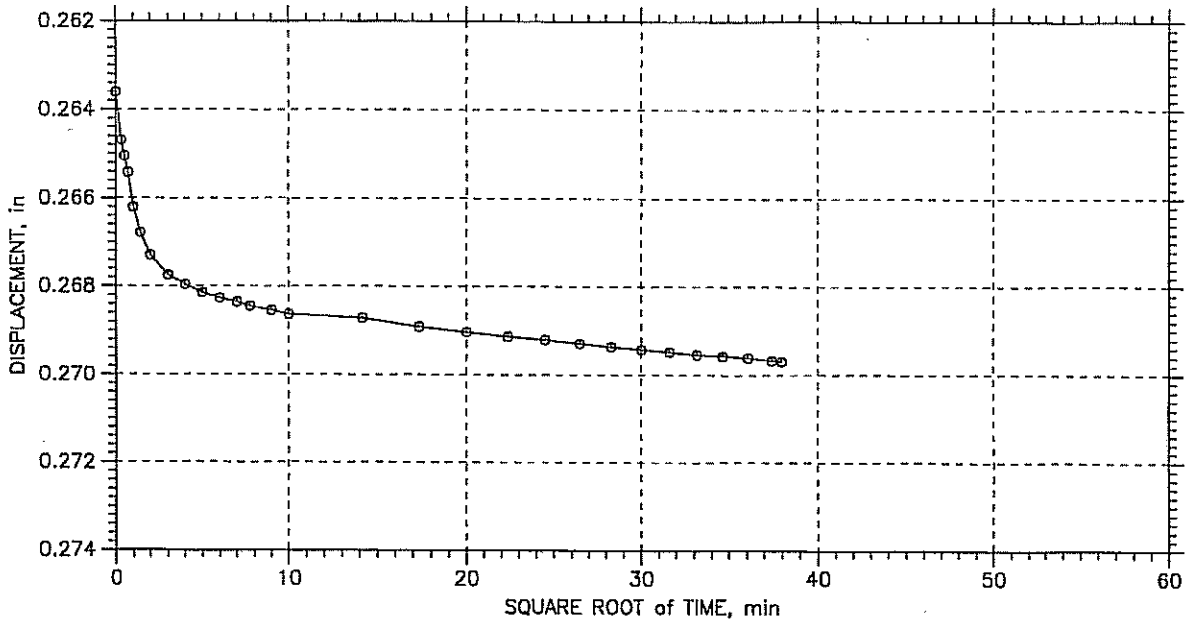
CONSOLIDATION TEST DATA

TIME CURVES

Step: 9 of 17

Stress: 1. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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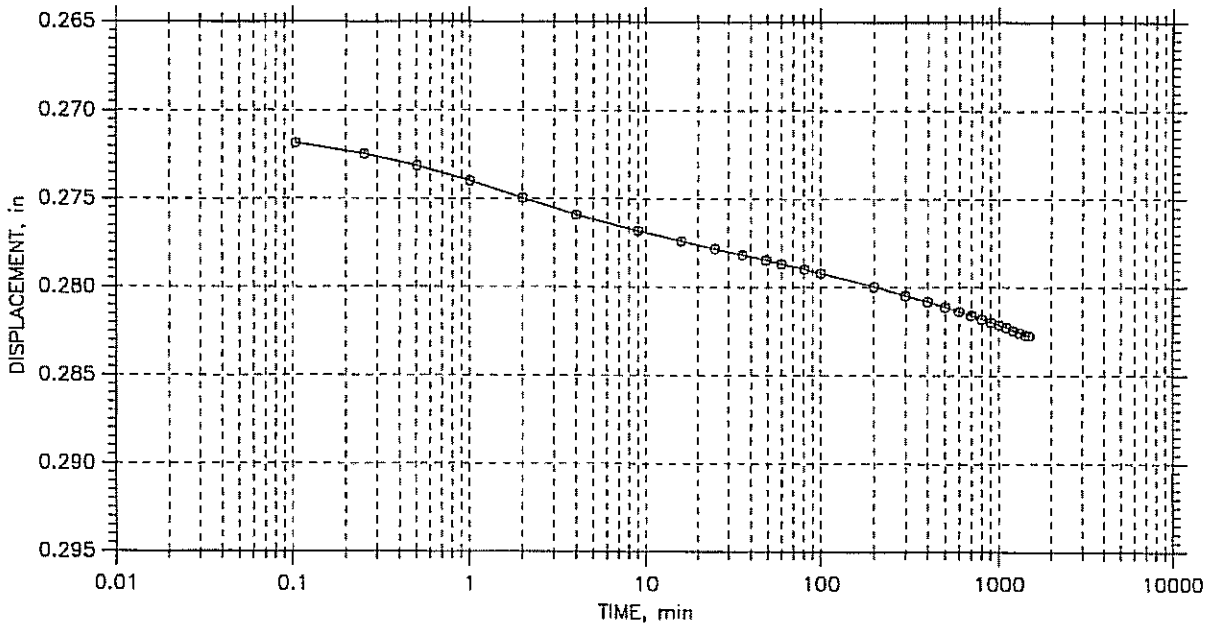
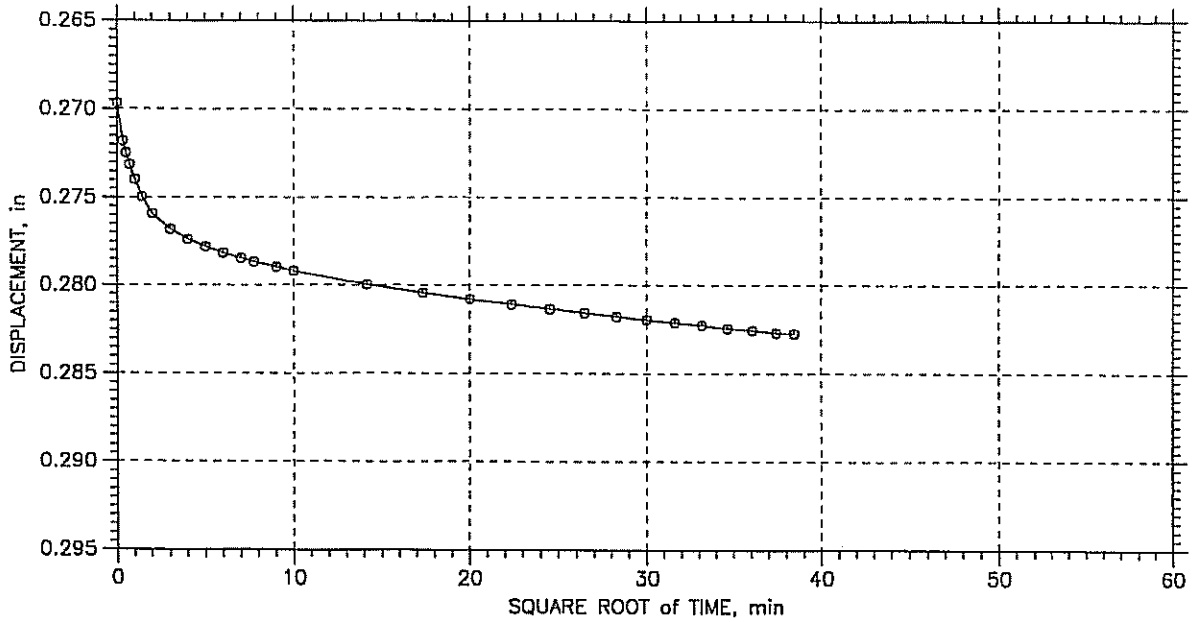
CONSOLIDATION TEST DATA

TIME CURVES

Step: 10 of 17

Stress: 2. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

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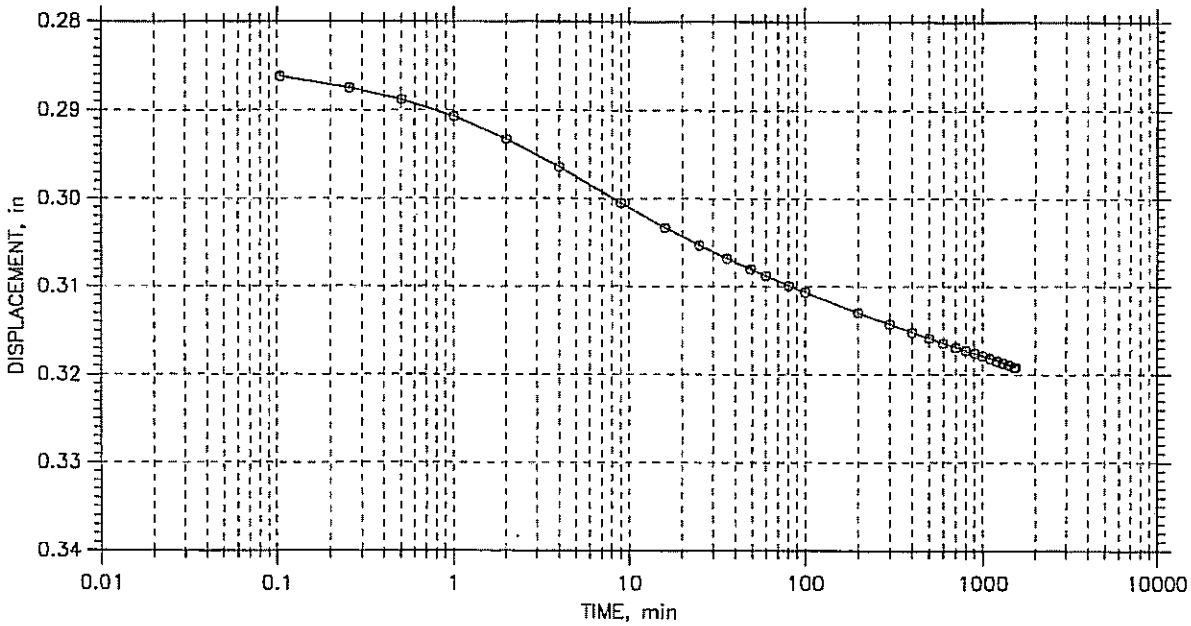
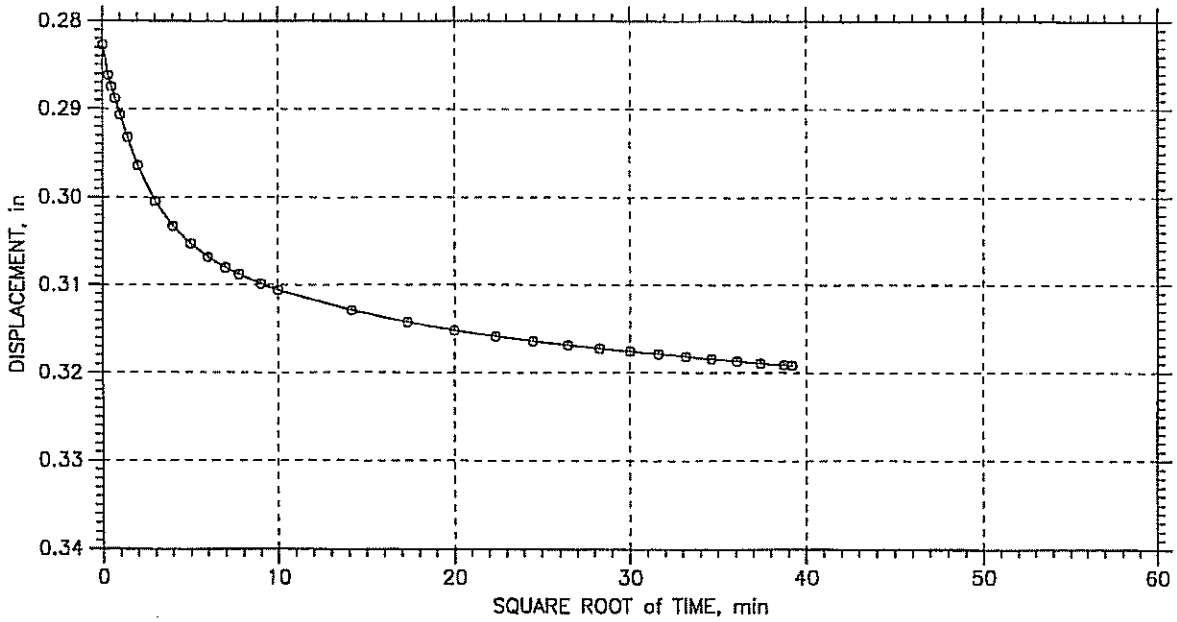
CONSOLIDATION TEST DATA

TIME CURVES

Step: 11 of 17

Stress: 4. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

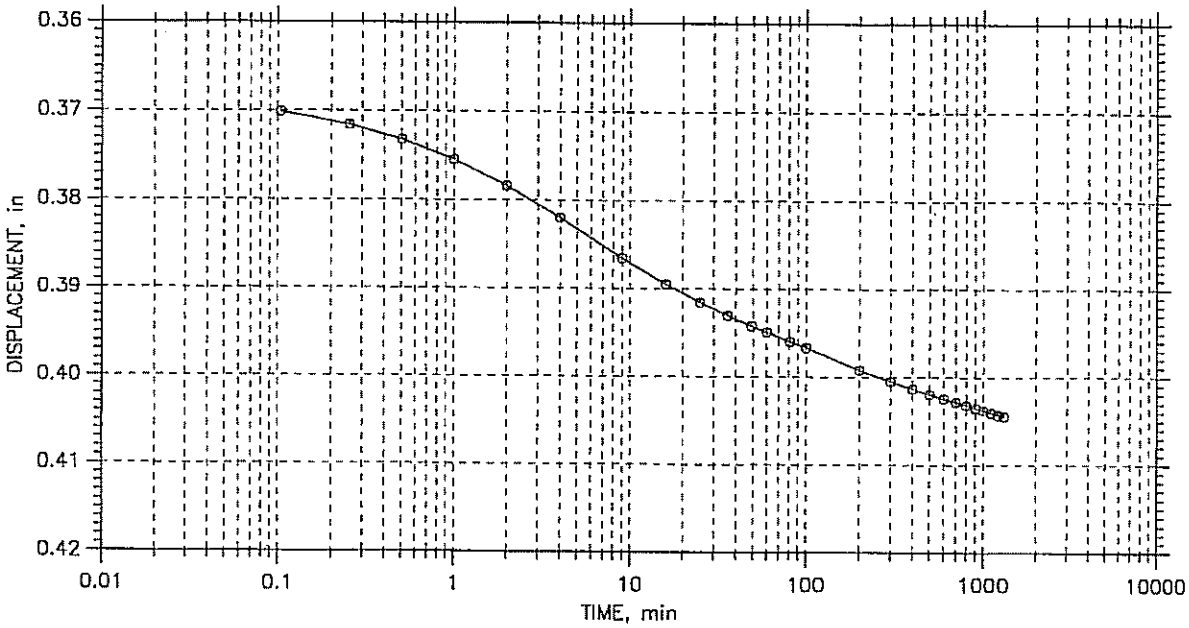
Wed, 15-AUG-2007 08:59:36

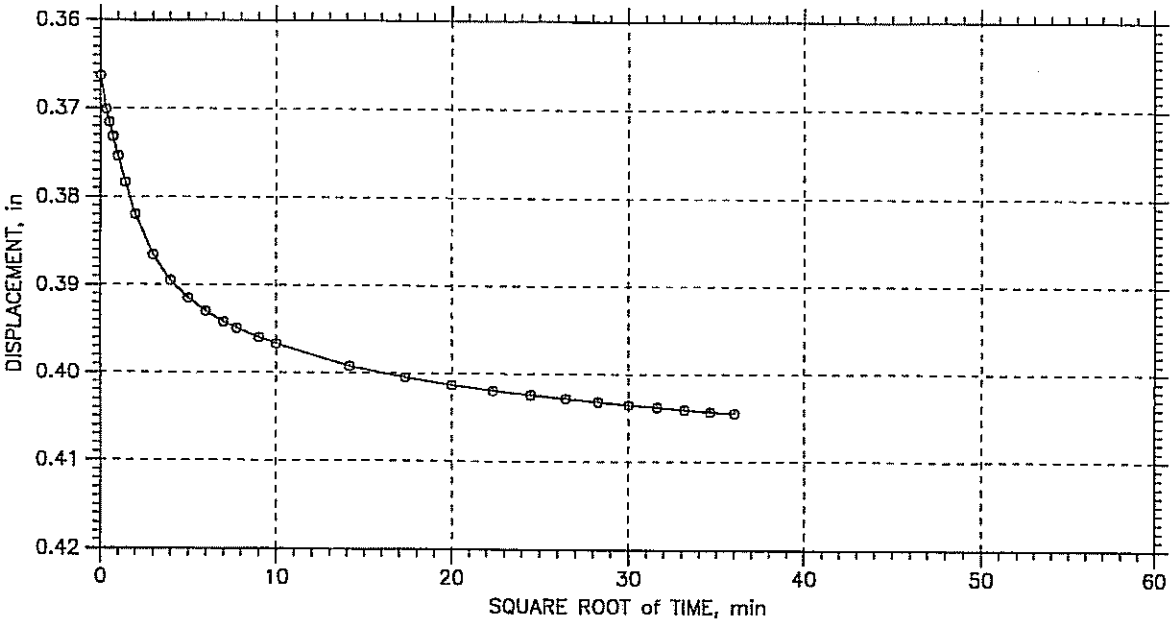
CONSOLIDATION TEST DATA

TIME CURVES

Step: 12 of 17

Stress: 8. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

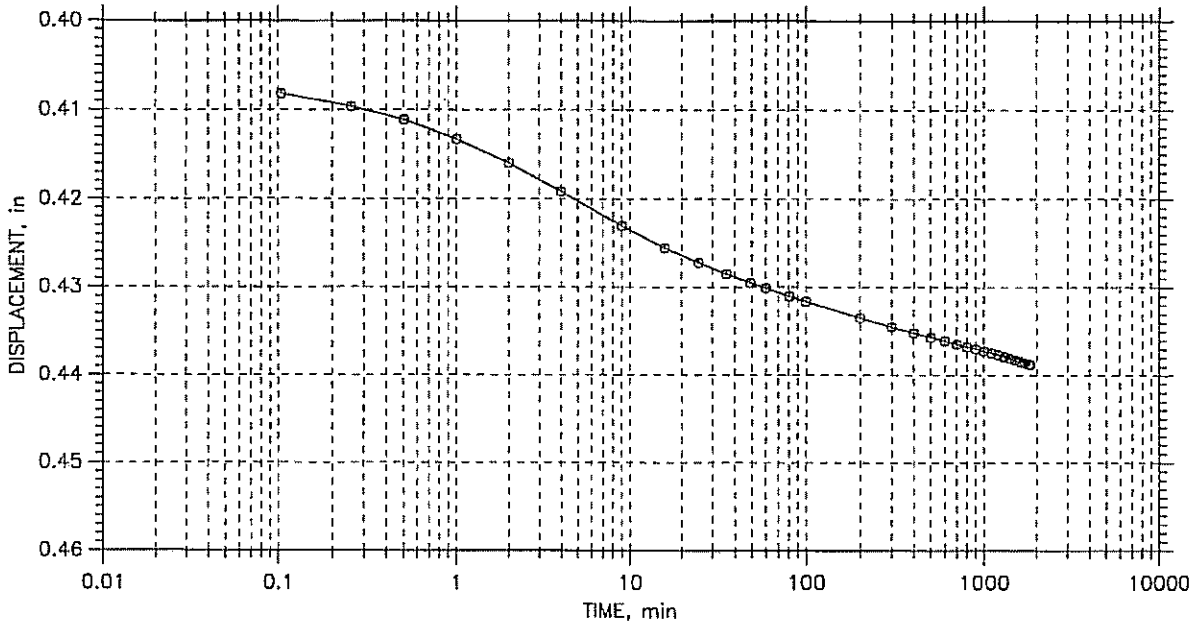
Wed, 15-AUG-2007 08:59:37

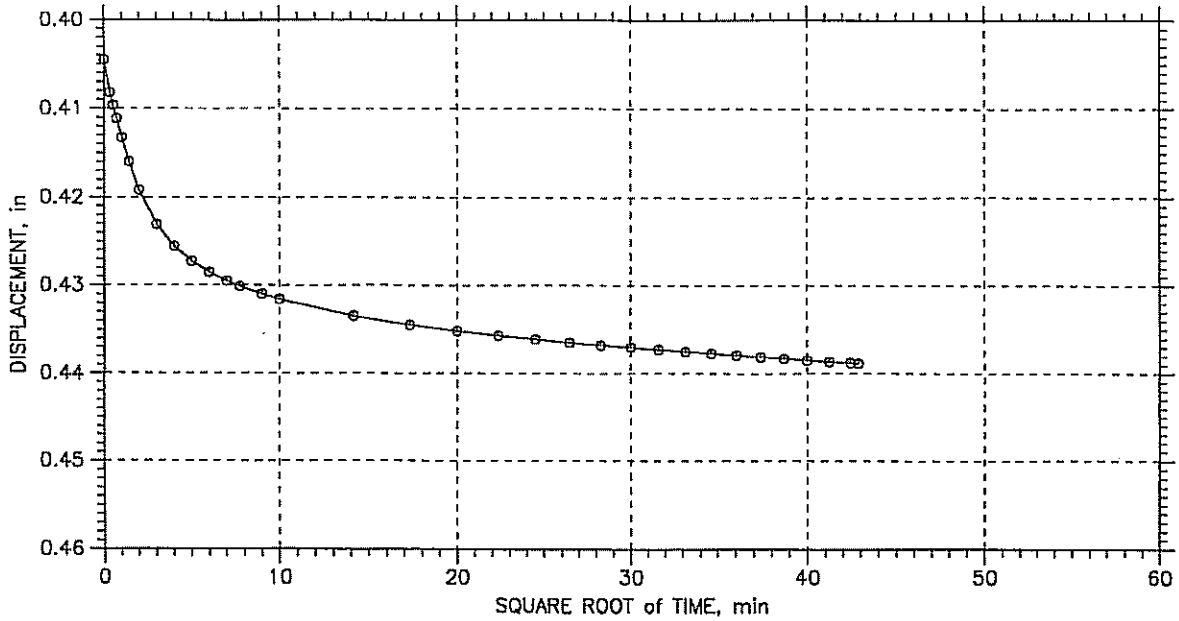
CONSOLIDATION TEST DATA

TIME CURVES

Step: 13 of 17

Stress: 16. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

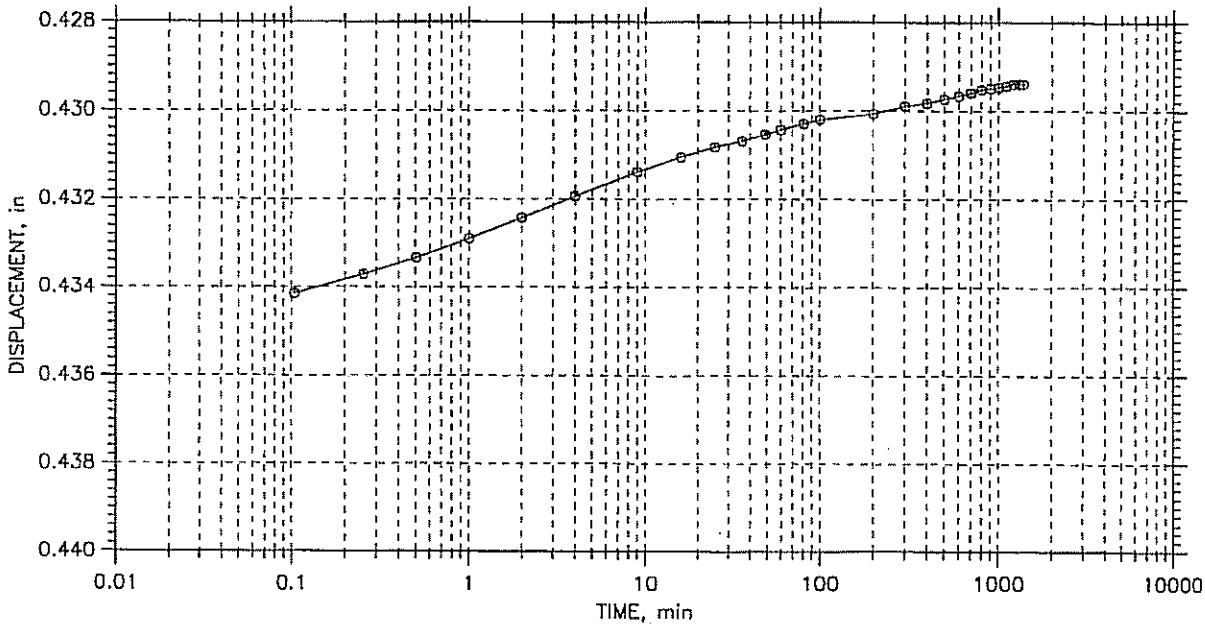
Wed, 15-AUG-2007 08:59:37

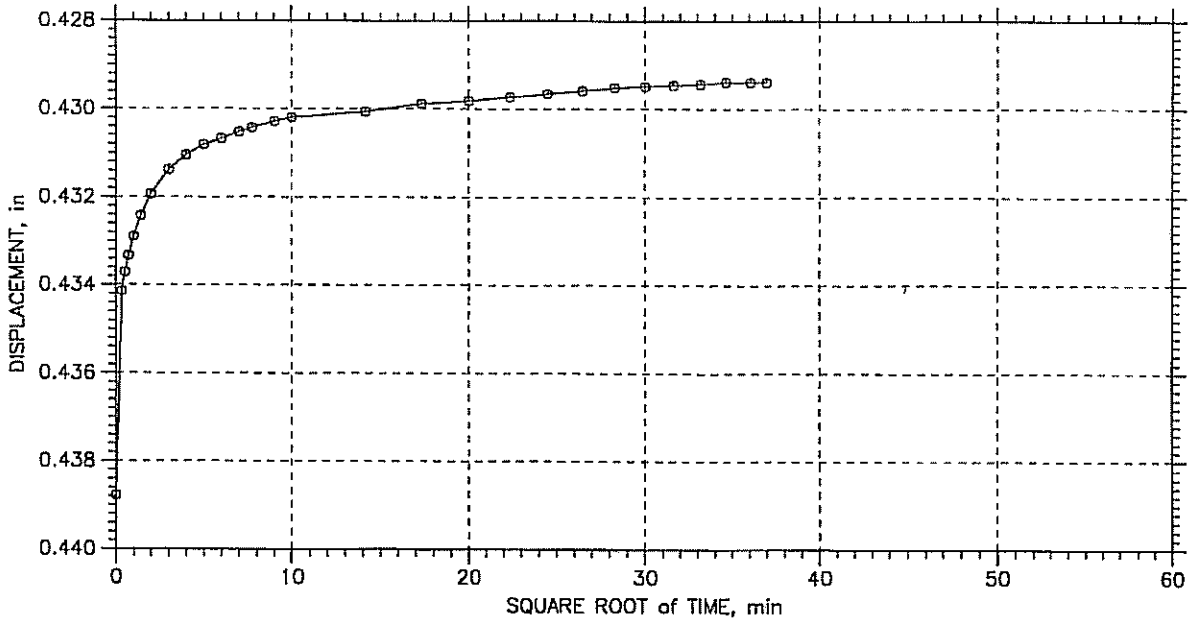
CONSOLIDATION TEST DATA

TIME CURVES

Step: 14 of 17

Stress: 4. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

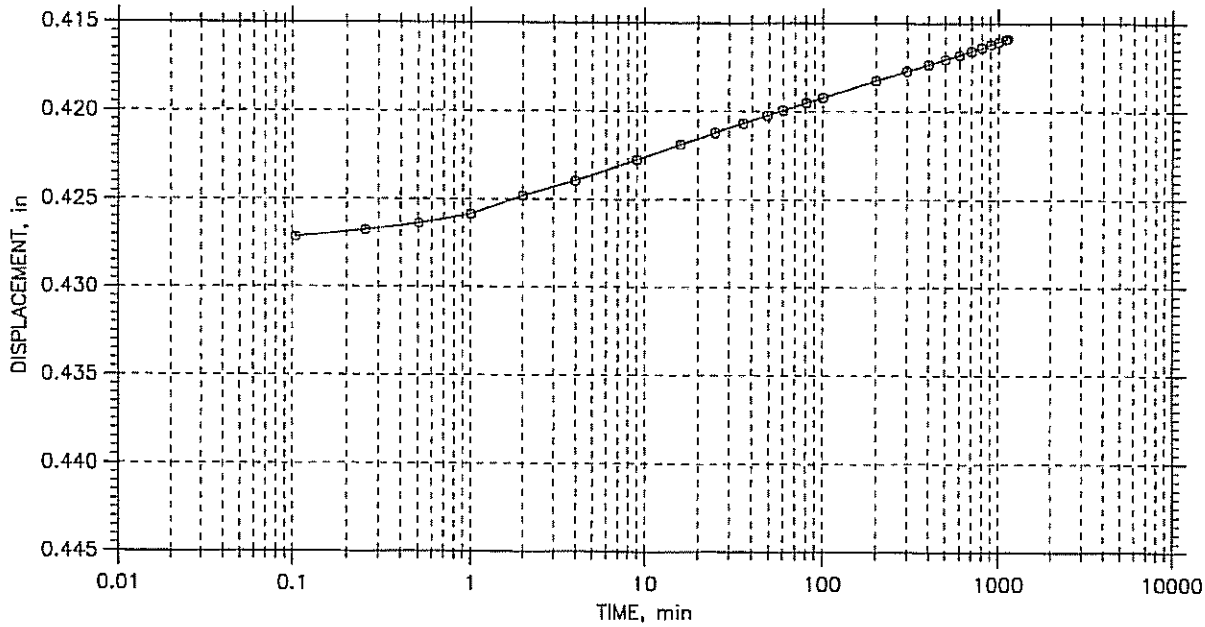
Wed, 15-AUG-2007 08:59:37

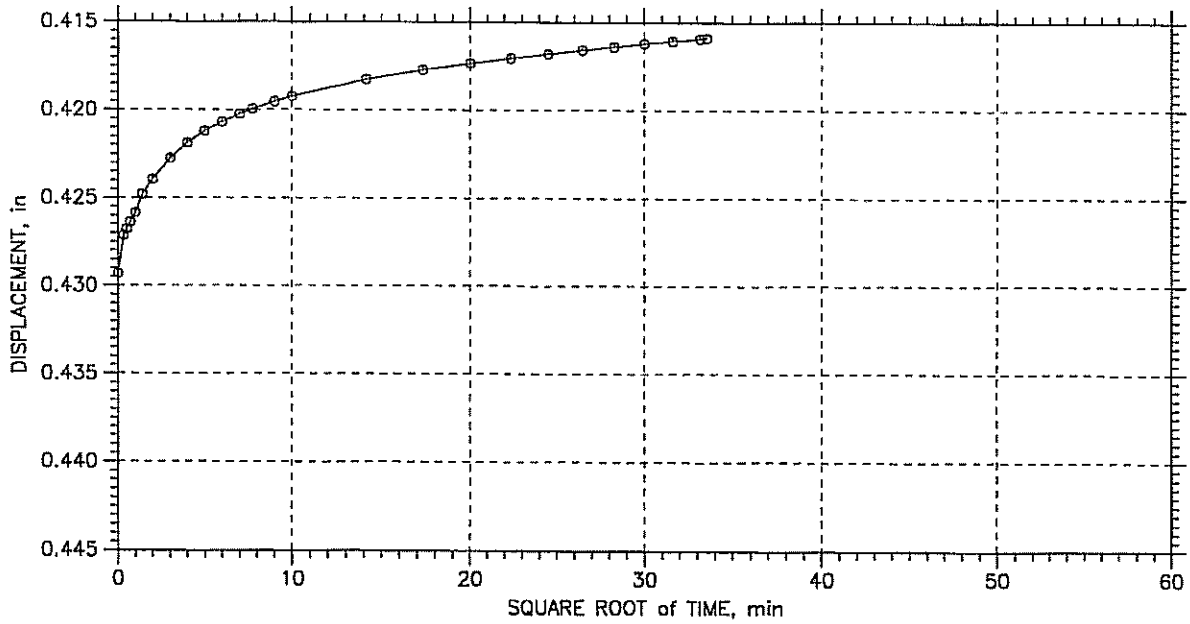
CONSOLIDATION TEST DATA

TIME CURVES

Step: 15 of 17

Stress: 1. tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

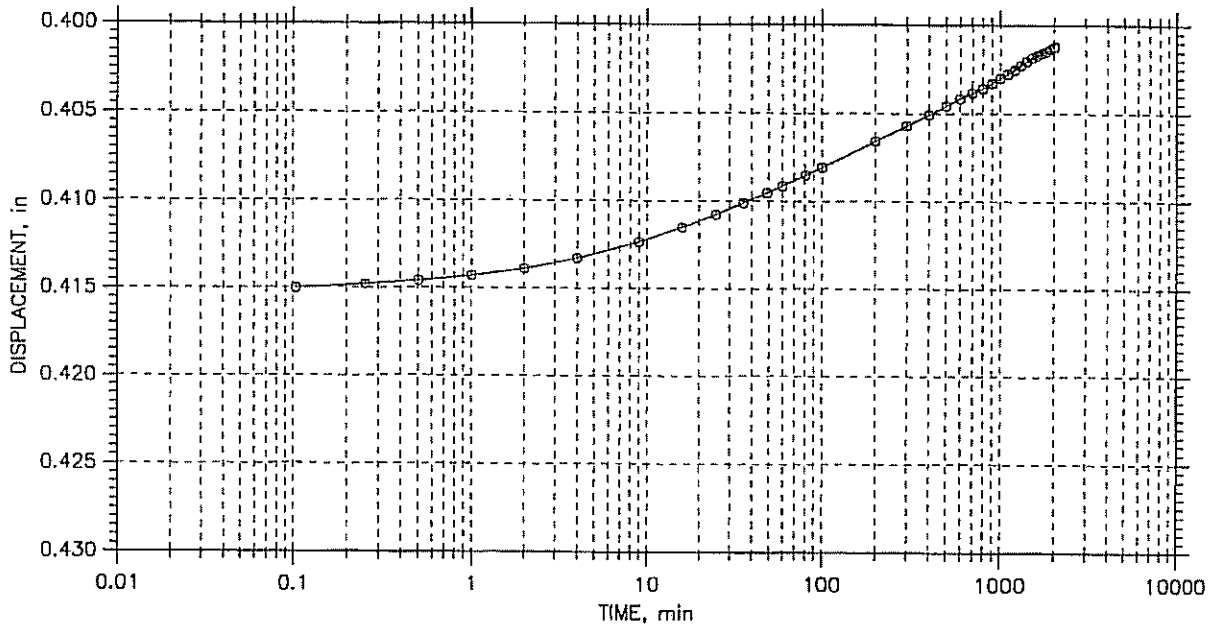
Wed, 15-AUG-2007 08:59:37

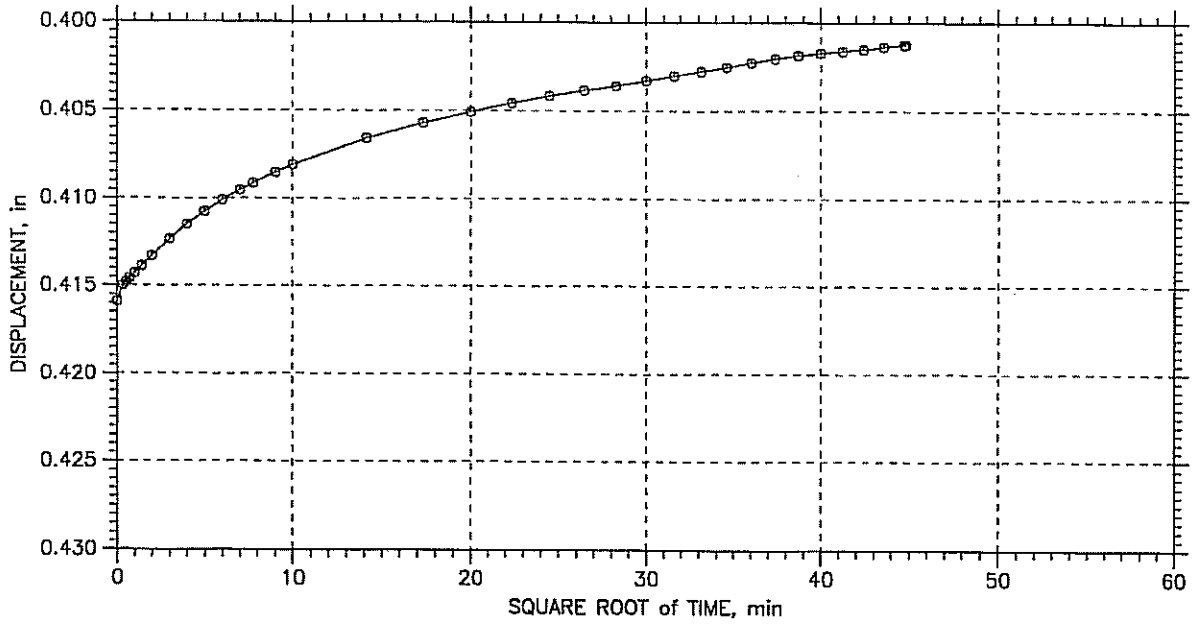
CONSOLIDATION TEST DATA

TIME CURVES

Step: 16 of 17

Stress: 0.25 tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

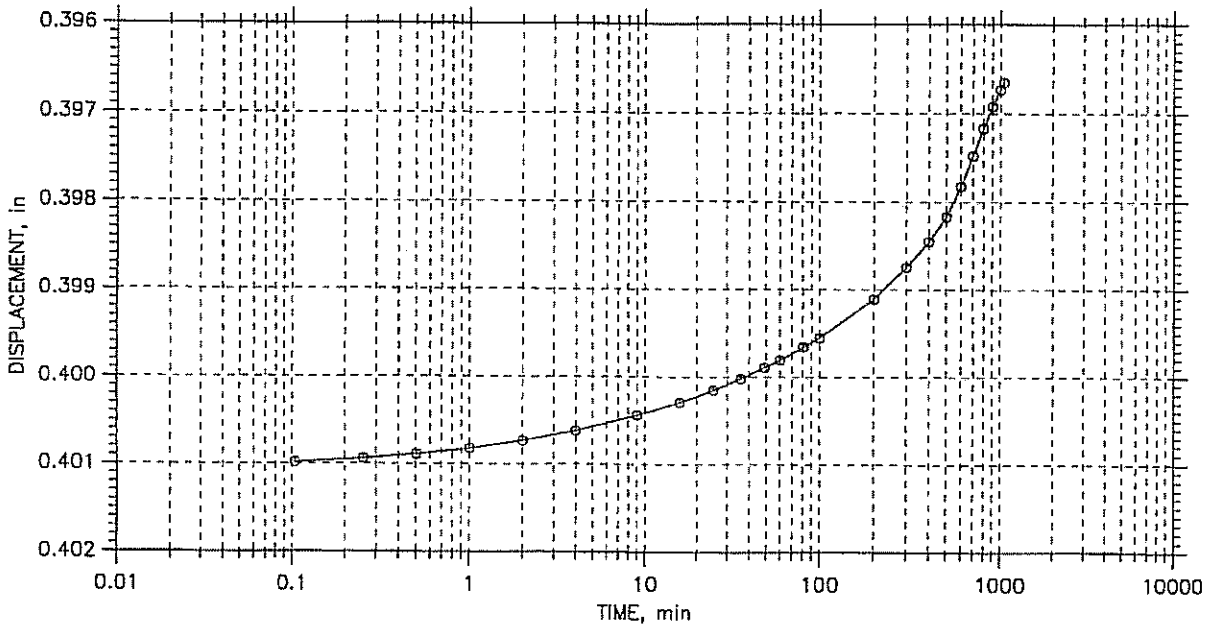
Wed, 15-AUG-2007 08:59:37

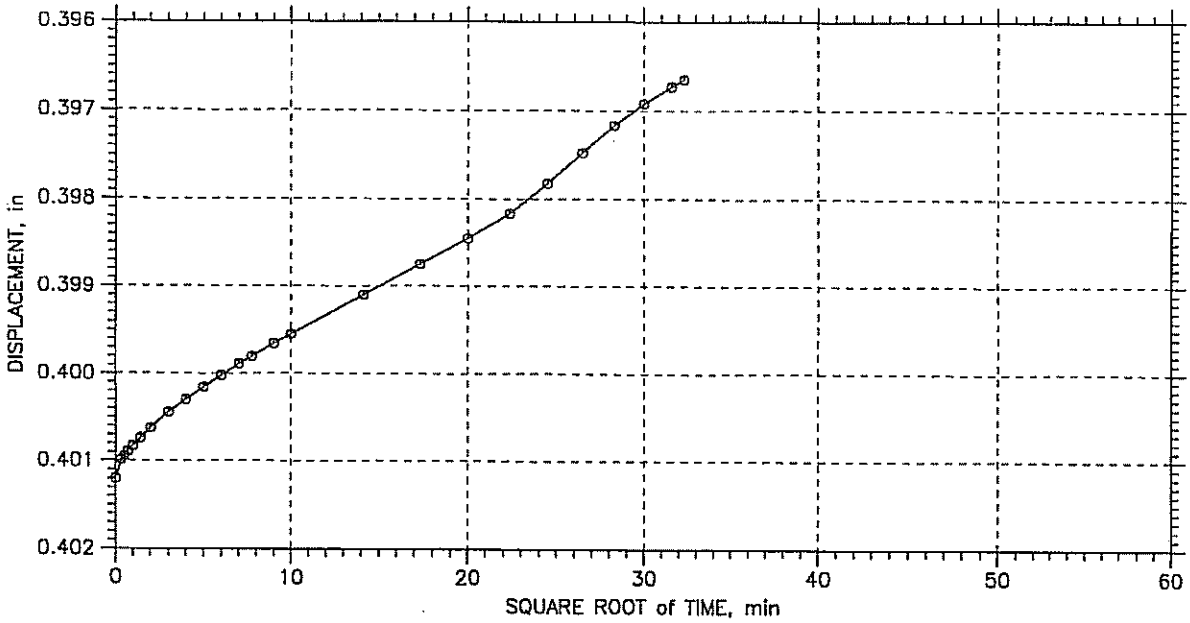
CONSOLIDATION TEST DATA

TIME CURVES

Step: 17 of 17

Stress: 0.125 tsf





Project: FOX RIVER PCB CLEANUP	Location:	Project No.: X29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07NWA1DS	Test Date: 7/5/07	Depth:
Test No.: 16NWA1	Sample Type: REMOLDED	Elevation:
Description: SILTY CLAY SOME F-C SAND - BROWN (CL-ML) ORGANICS NOTED		
Remarks: Cc = 1.12 Ccr = 0.13 TEST PERFORMED AS PER ASTM D 2435		

Wed, 15-AUG-2007 08:59:37

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATION
ASTM D 5084, METHOD C
RISING TAILWATER LEVEL

STS PROJECT NO.: X429316A

PROJECT: OU-1 FOX RIVER SEDIMENTS

DATE: 7/5/2007

SUMMARY OF TEST RESULTS

SAMPLE NO. 1 RA 07 NWA1-DS-01-COMP

LOCATION 0

CLASSIFICATION RIVER SEDIMENTS

	INITIAL	FINAL
DRY UNIT WEIGHT (pcf)	40.3	48.8
WATER CONTENT (%)	123.4	89.2
DIAMETER (cm)	4.80	4.57
LENGTH (cm)	8.80	8.10
HYDRAULIC GRADIENT (MAXIMUM)		10.5
PERCENT SATURATION	105.18833	98.639396
HYDRAULIC CONDUCTIVITY k (cm/sec)		1.59E-07

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATIC
Rising tailwater method in a triaxial permeameter
ASTM D 5084, Method C (EM-1110-2-1906 7)

Project Name: OU-1 FOX RIVER SEDIMENTS
Project No.: X429316A
Project Location: LOWER FOX RIVER
Sample No.: 1 RA 07 NWA1-DS-01-COMP
Sample Location:

Sample Description: RIVER SEDIMENTS

Cell No.: 9

Date Sampled:
Date Received:

MOISTURE CONTENT	INITIAL	FINAL
Container No.	1	2
Wet Sample & Tare (g)	98.52	367.00
Dry Sample & Tare (g)	52.03	274.20
Wt. Water (g)	46.49	92.80
Wt. Tare (g)	14.37	170.20
Wt. Dry Soil (g)	37.66	104.00
Water Content, w (%)	123.4	89.2

SATURATION DATA

Initial Cell Pressure (psi)	Final Cell Pressure (psi)	Initial PWP (psi)	Final PWP (psi)	B Value
28.0	30.0	27.0	29.0	1.00
			Final B value =	1.00

SPECIMEN INFORMATION	INITIAL	FINAL
Avg. Diameter (cm)	4.80	4.57
Avg. Height, L (cm)	8.80	8.10
X-Section Area, A (cm^2)	18.096	16.403
Specimen wet wt. (g)	230.00	196.80
Specimen Dry wt., W_s (g)	102.93	104.00
Total Volume, V (cm^3)	159.24	132.86
Dry Unit Weight (lbs/ft^3)	40.3	48.8
G_s estimated (Y or N)?	Y	#NAME?
Specific Gravity, G_s	2.700	2.700
Volume Solids, V_s (cm^3)	38.20	38.60
Pore Volume (cm^3)	121.04	94.27
Void Ratio, e	3.169	2.442
Degree of Saturation	105.2	98.6

COMMENTS:
REMOLDED SAMPLE

$$\text{Volume Solids} = \frac{W_s}{(G_s)(\text{Water Density})}$$

$$\text{Void Ratio} = \frac{V - V_s}{V_s}$$

$$\text{Degree of Saturation} = \frac{(w)(G_s)}{e}$$

Proj Name: OU-1 FOX RIVER SEDIMENTS
Proj No.: X429316A
Sample: 1 RA 07 NWA1-DS-01-COMP

k (cm/sec)	Max i
10^{-3} to 10^{-4}	2
10^{-4} to 10^{-5}	5
10^{-5} to 10^{-6}	10
10^{-6} to 10^{-7}	20
less than 10^{-7}	30

Hydraulic Gradient, i, Guidlines as per ASTM D5084, section 8.5.1

TEST CONDITIONS

Influent Burette Area a_{in} (cm^2)	Effluent Burette Area a_{out} (cm^2)	# ascend as burette empties? (Y or N)
1.00	1.00	y

Cell Pressure (psi)	Headwater Pressure (psi)	Tailwater Pressure (psi)	Driving Head (psi)	Hydraulic Gradient Max	Hydraulic Gradient Min
30.0	29.0	28.0	1.0	10.5	7.9

TEST DATA

Date/Time (M/D/YY H:MM)	Temp. °C	Elapsed Time, t (sec)	Influent Reading (cm)	Effluent Reading (cm)	Total Change (cm)	Inflow to Outflow Ratio	Hydraulic Head, h (cm)	k, Hydraulic Conductivity (cm/sec)	k_{20} corrected for temperature (cm/sec)
6/27/2007 14:30	21.0	0	0.5	22.4	0.0	0.00	92.2	0	0
6/27/2007 15:40	21.0	4200	0.8	22.2	-0.1	1.50	91.7	3.15E-07	3.07E-07
6/28/2007 6:45	21.0	54300	2.6	20.5	-0.1	1.06	88.2	1.74E-07	1.70E-07
6/28/2007 12:10	21.0	19500	3.2	19.8	0.1	0.86	86.9	1.85E-07	1.81E-07
6/28/2007 15:00	21.0	10200	3.5	19.5	0.0	1.00	86.3	1.65E-07	1.61E-07
6/29/2007 7:00	21.0	57600	5.2	17.7	0.1	0.94	82.8	1.75E-07	1.71E-07
6/29/2007 14:35	21.0	27300	5.9	17.0	0.0	1.00	81.4	1.52E-07	1.48E-07
7/1/2007 15:30	21.0	176100	10.3	12.3	0.3	0.94	72.3	1.64E-07	1.60E-07
7/2/2007 7:00	21.0	55800	11.6	11.0	0.0	1.00	69.7	1.60E-07	1.56E-07
						(0.75-1.25)		Final Value =	1.59E-07

$$k_{20} = \frac{(a_{in})(a_{out})L[\ln(h_{n-1}/h_n)]*R_T}{At(a_{in} + a_{out})}$$

Total Change = $(Eff_{n-1} - Eff_n) - (Inf_n - Inf_{n-1})$

"Hydraulic Head" incorporates the difference in head as well as the added driving head pressure.
"Total Change" is the difference between the Effluent change from t_0 to t_1 and the Influent change from t_0 to t_1.

Notate temperature to the nearest half a degree. The correction calculation averages the two consecutive readings.
k is multiplied by the temperature correction, R_T, which is the ratio of the viscosity of water at test temperature to the viscosity of water at 20° C. Temperature range may be between 19° and 25° for formula calculation.
"Final Value" is the average of 4 consecutive readings of which none are less than or greater than 25% of their average. (50% of average if < 1 x 10^{-8})

C, POG1, POG3, N+S
D1

Foth

Foth Infrastructure & Environment, LLC

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page: 1 of 1

COC Number: COC-106005

Company: Foth Infrastructure & Environment	Report To: Janis Kesy	Requested Due Date: See Sample Notes	Quote Reference:
Address: 2737 South Ridge Rd	Copy To:	*TAT:	Project Manager:
Green Bay, WI 54307	Invoice To:		Project #:
Phone: 920-497-2500 Fax: 920-496-6902	P.O.		Profile #:
Email Address: jkesy@foth.com	Project Name: Lower Fox River OU1	Regulatory Agency:	Sampling Team Members:
Site License No.:	Project Number: 07G007	State Location: WI	MCC2, TAG, NRA

Valid Matrix Codes

Matrix	Code
Soil	S
Sediment	SE
Solid	SO
Surface Water	SW
Drinking Water	DW
Wastewater	WW
Groundwater	GW
Hazardous Liquid	H
Air	A
Oil	O
Other	X

ITEM NUMBER	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G = Grab C = Composite	DATE COLLECTED MM/DD/YYYY	TIME COLLECTED (Military time)	# Containers	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Grain size distribution (N ✓)	Triaxial shear (N ✓)	Consolidation (N ✓)	Hydraulic conductivity (N ✓)	Atterberg limits (N ✓)	REMARKS
1	1-RA-07-SWA1-DS-02-Comp	SE	C	07/19/2007	1240	1	1							X	X	X	X	X	
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Preservatives

Requested Analysis

← Filte

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS	ITEM #	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION
					[signature] Foth	7/19/07	1500	
					[signature] STS	7/19/07	15:05	

SAMPLE CONDITION:

Temp in C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Sample Intact	Y / N

SAMPLE NOTES:

Contents in 1 large double bagged bag

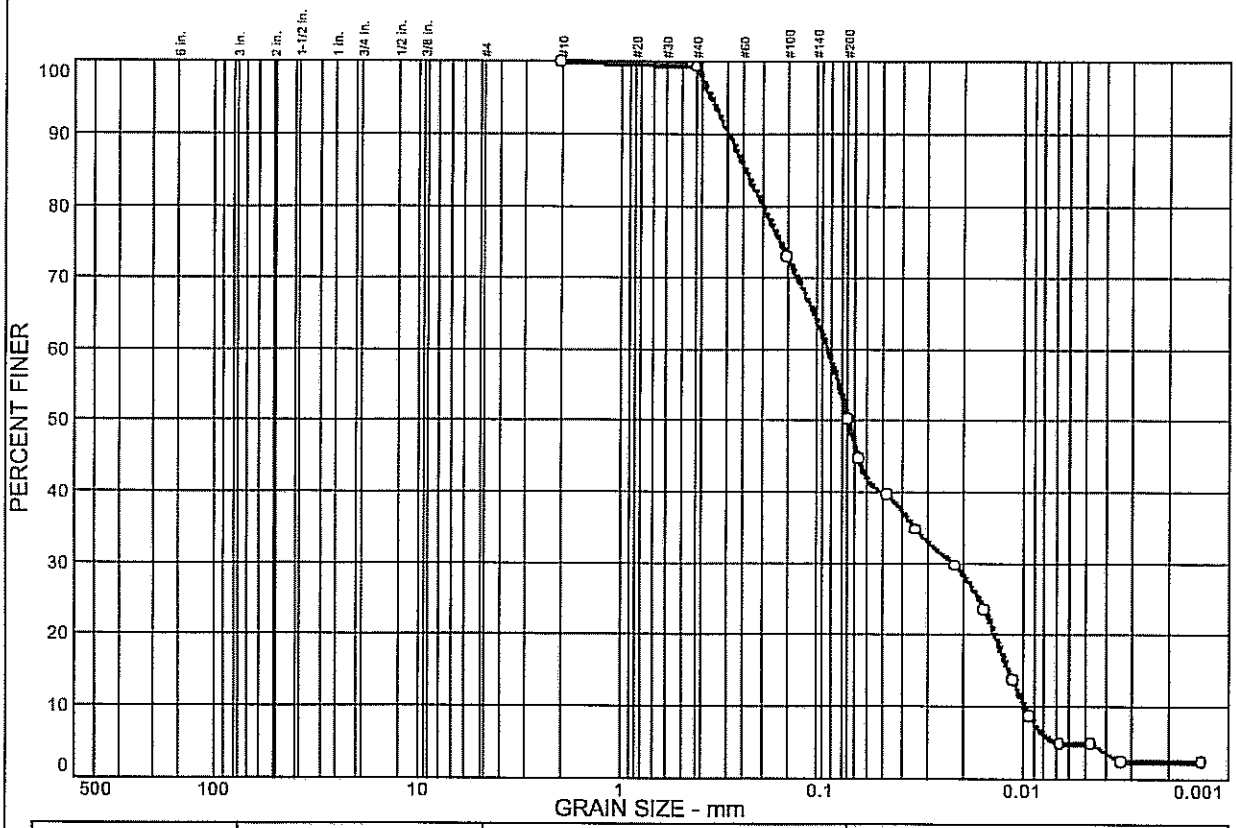
Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark Clardelli

SIGNATURE of SAMPLER [signature] DATE Signed 7/19/07

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.7	49.0	45.4	4.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#40	99.3		
#100	72.9		
#200	50.3		

* (no specification provided)

Soil Description

Sandy elastic silt (organic)

Atterberg Limits

PL= 78 LL= 169 PI= 91

Coefficients

D_{85}= 0.243 D_{60}= 0.0948 D_{50}= 0.0745
D_{30}= 0.0224 D_{15}= 0.0119 D_{10}= 0.0100
C_u= 9.51 C_c= 0.53

Classification

USCS= MH AASHTO=

Remarks

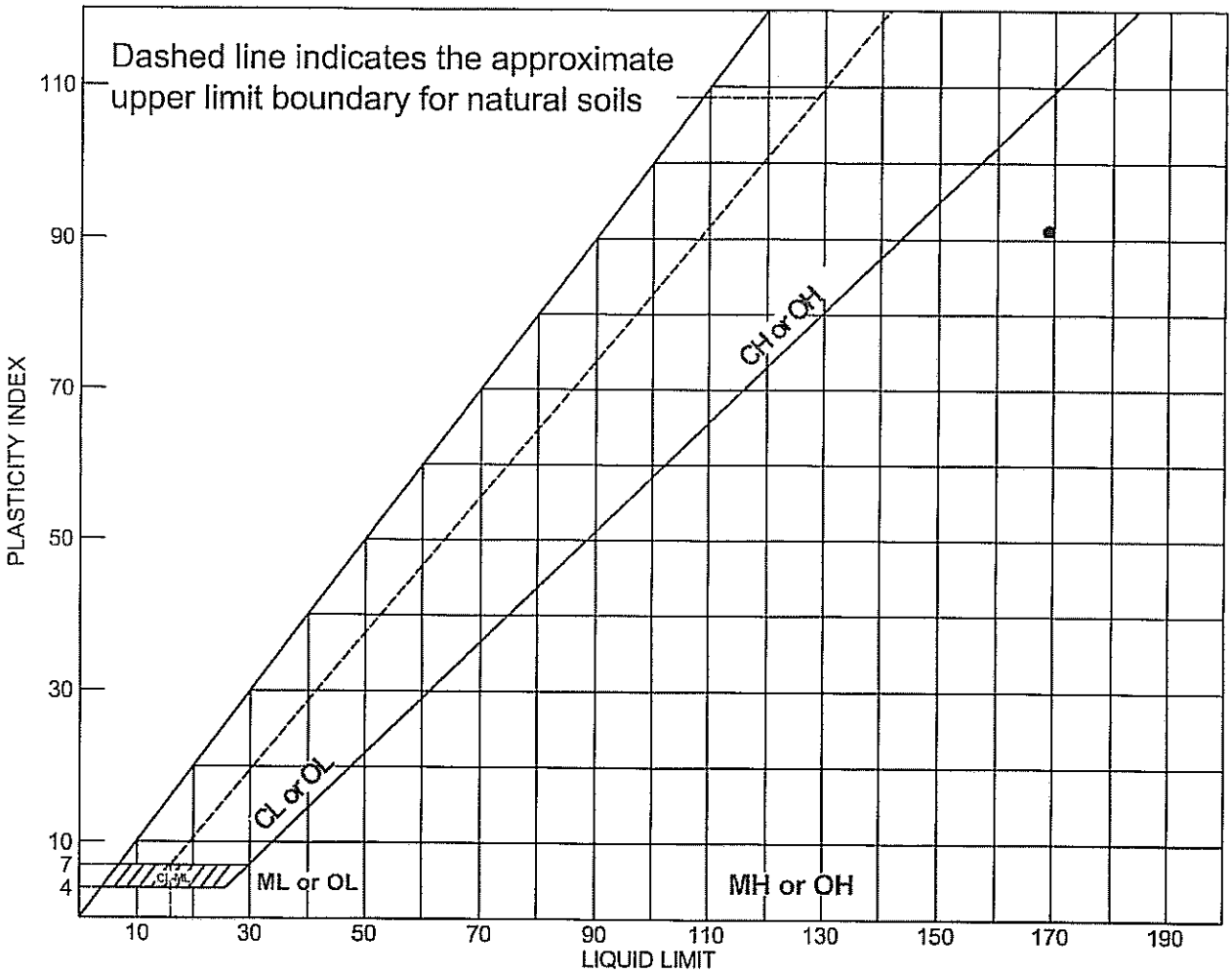
Water Content = 176.7%

Sample No.: DS-02 **Source of Sample:** On-site Material **Date:** 08/06/07
Location: 1-RA-07-SWA1-DS-02-COMP **Elev./Depth:** COMP

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA
Project No: 4-29316A **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	On-site	DS-02	COMP	176.7	78	169	91	MH

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA

Project No.: 4-29316A **Figure**

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATION
ASTM D 5084, METHOD C
RISING TAILWATER LEVEL

STS PROJECT NO.:	29316A
PROJECT:	FOX RIVER OU-I
DATE:	8/29/2007

SUMMARY OF TEST RESULTS

SAMPLE NO.	DS-02
LOCATION	1 RA 07 SWA1-DS-02-COMP
CLASSIFICATION	SANDY ELASTIC SILT (ORGANICS)

	INITIAL	FINAL
DRY UNIT WEIGHT (pcf)	28.4	28.9
WATER CONTENT (%)	176.8	126.7
DIAMETER (cm)	4.83	4.83
LENGTH (cm)	9.17	9.17
HYDRAULIC GRADIENT (MAXIMUM)		10.1
PERCENT SATURATION	96.915794	71.003374
HYDRAULIC CONDUCTIVITY k (cm/sec)		2.51E-07

Proj Name: FOX RIVER OU-I
Proj No.: 29316A
Sample: DS-02

k (cm/sec)	Max i
10^{-3} to 10^{-4}	2
10^{-4} to 10^{-5}	5
10^{-5} to 10^{-6}	10
10^{-6} to 10^{-7}	20
less than 10^{-7}	30

Hydraulic Gradient, i, Guidlines as per ASTM D5084, section 8.5.1

TEST CONDITIONS

Influent Burette Area a_{in} (cm^2)	Effluent Burette Area a_{out} (cm^2)	# ascend as burette empties? (Y or N)
1.00	1.00	y

Cell Pressure (psi)	Headwater Pressure (psi)	Tailwater Pressure (psi)	Driving Head (psi)	Hydraulic Gradient Max	Hydraulic Gradient Min
24.0	23.0	22.0	1.0	10.1	6.5

TEST DATA

Date/Time (M/D/YY H:MM)	Temp. °C	Elapsed Time, t (sec)	Influent Reading (cm)	Effluent Reading (cm)	Total Change (cm)	Inflow to Outflow Ratio	Hydraulic Head, h (cm)	k, Hydraulic Conductivity (cm/sec)	k_{20} corrected for temperature (cm/sec)
8/5/2007 10:45	21.0	0	0.5	22.5	0.0	0.00	92.3	0	0
8/6/2007 7:00	21.0	72900	4.5	19.5	-1.0	1.33	85.3	2.71E-07	2.64E-07
8/6/2007 16:30	21.0	34200	6.1	20.0	-2.1	-3.20	84.2	9.50E-08	9.27E-08
8/7/2007 7:00	21.0	52200	8.4	15.5	2.2	0.51	77.4	4.04E-07	3.94E-07
8/7/2007 16:30	21.0	34200	9.6	14.2	0.1	0.92	74.9	2.40E-07	2.34E-07
8/8/2007 6:15	21.0	49500	11.5	12.3	0.0	1.00	71.1	2.63E-07	2.57E-07
8/9/2007 6:45	21.0	88200	14.6	9.1	0.1	0.97	64.8	2.63E-07	2.57E-07
8/10/2007 6:35	21.0	85800	17.5	6.4	-0.2	1.07	59.2	2.64E-07	2.57E-07
						(0.75-1.25)		Final Value =	2.51E-07

$$k_{20} = \frac{(a_{in})(a_{out})L[\ln(h_{n-1}/h_n)]*R_T}{At(a_{in} + a_{out})}$$

Total Change = $(Eff_{n-1} - Eff_n) - (Inf_n - Inf_{n-1})$

"Hydraulic Head" incorporates the difference in head as well as the added driving head pressure.
"Total Change" is the difference between the Effluent change from t_0 to t_1 and the Influent change from t_0 to t_1.

Notate temperature to the nearest half a degree. The correction calculation averages the two consecutive readings.
k is multiplied by the temperature correction, R_T, which is the ratio of the viscosity of water at test temperature to the viscosity of water at 20° C. Temperature range may be between 19° and 25° for formula calculation.
"Final Value" is the average of 4 consecutive readings of which none are less than or greater than 25% of their average. (50% of average if < 1 x 10^{-8})

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATIC
Rising tailwater method in a triaxial permeameter
ASTM D 5084, Method C (EM-1110-2-1906 7)

Project Name: FOX RIVER OU-I
Project No.: 29316A
Project Location: WISCONSIN
Sample No.: DS-02
Sample Location: 1 RA 07 SWA1-DS-02-COMP

Sample Description: SANDY ELASTIC SILT (ORGANICS)

Cell No.: 7

Date Sampled:
Date Received:

MOISTURE CONTENT	INITIAL	FINAL
Container No.	65	80
Wet Sample & Tare (g)	42.98	277.70
Dry Sample & Tare (g)	15.53	179.10
Wt. Water (g)	27.45	98.60
Wt. Tare (g)	0.00	101.30
Wt. Dry Soil (g)	15.53	77.80
Water Content, w (%)	176.8	126.7

SATURATION DATA

Initial Cell Pressure (psi)	Final Cell Pressure (psi)	Initial PWP (psi)	Final PWP (psi)	B Value
22.0	24.0	21.0	22.9	0.95
			Final B value =	0.95

SPECIMEN INFORMATION	INITIAL	FINAL
Avg. Diameter (cm)	4.83	4.83
Avg. Height, L (cm)	9.17	9.17
X-Section Area, A (cm^2)	18.323	18.323
Specimen wet wt. (g)	211.50	176.40
Specimen Dry wt., W_s (g)	76.42	77.80
Total Volume, V (cm^3)	168.02	168.02
Dry Unit Weight (lbs/ft^3)	28.4	28.9
G_s estimated (Y or N)?	Y	#NAME?
Specific Gravity, G_s	2.700	2.700
Volume Solids, V_s (cm^3)	28.36	28.87
Pore Volume (cm^3)	139.66	139.14
Void Ratio, e	4.924	4.819
Degree of Saturation	96.9	71.0

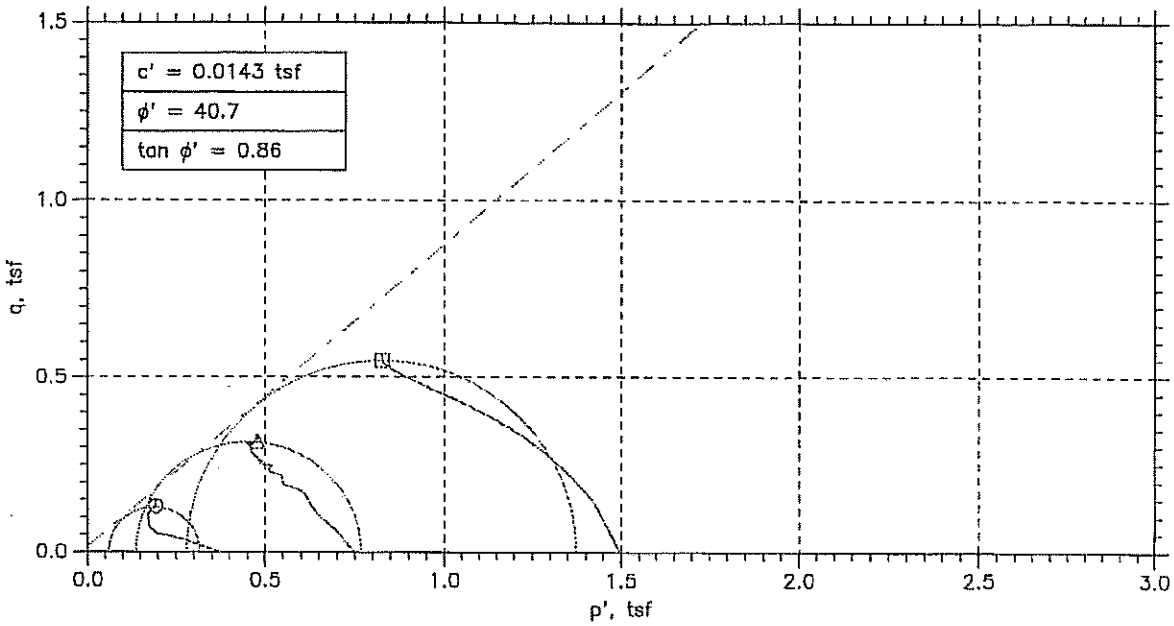
COMMENTS:

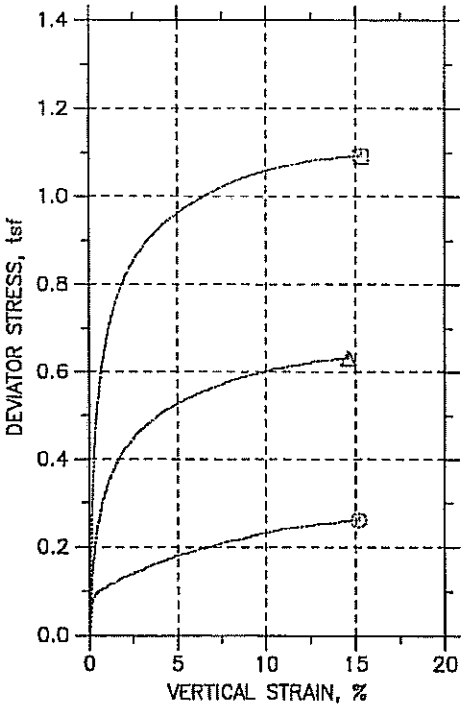
$$\text{Volume Solids} = \frac{W_s}{(G_s)(\text{Water Density})}$$

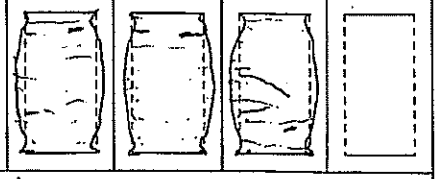
$$\text{Void Ratio} = \frac{V - V_s}{V_s}$$

$$\text{Degree of Saturation} = \frac{(w)(G_s)}{e}$$

TRIAXIAL COMPRESSION TEST REPORT





Symbol		⊙	△	⊡	
Test No.		SWA1T1	SWA1T2	SWAIT3	
Initial	Diameter, in	2.7866	2.7972	2.7921	
	Height, in	5.5815	5.5508	5.4965	
	Water Content, %	176.11	178.68	171.84	
	Dry Density, pcf	28.92	28.58	29.54	
	Saturation, %	99.27	99.28	99.39	
	Void Ratio	4.6124	4.6796	4.495	
Before Shear	Water Content, %	105.47	92.34	105.47	
	Dry Density, pcf	47.3	49.45	35.2	
	Saturation, %	112.79	105.20	75.95	
	Void Ratio	2.4313	2.2823	3.6108	
	Back Press., tsf	5.0402	5.04	5.0401	
Minor Prin. Stress, tsf		0.37416	0.7488	1.4975	
Max. Dev. Stress, tsf		0.26084	0.63112	1.0926	
Time to Failure, min		204	196	204	
Strain Rate, %/min		0.08	0.08	0.085	
B-Value		---	---	---	
Estimated Specific Gravity		2.60	2.60	2.60	
Liquid Limit		0	0	0	
Plastic Limit		0	0	0	
Plasticity Index		0	0	0	
Failure Sketch					

Project: FOX RIVER

Location:

Project No.: 29316-A

Boring No.: 1RA07SWA1DS

Sample Type: REMOLDED

Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)

Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

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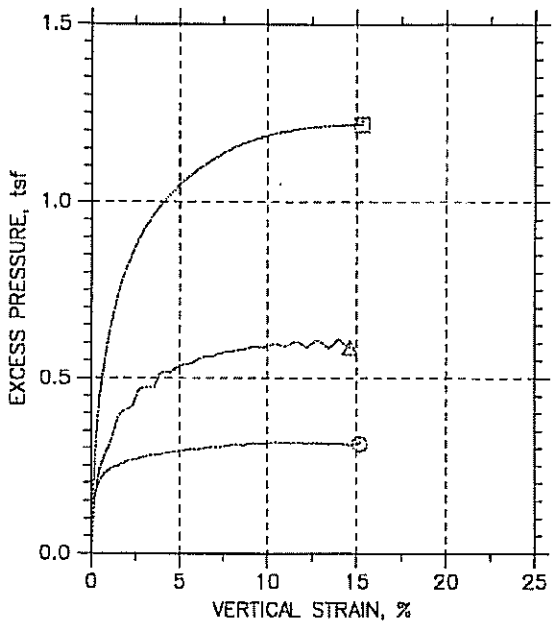
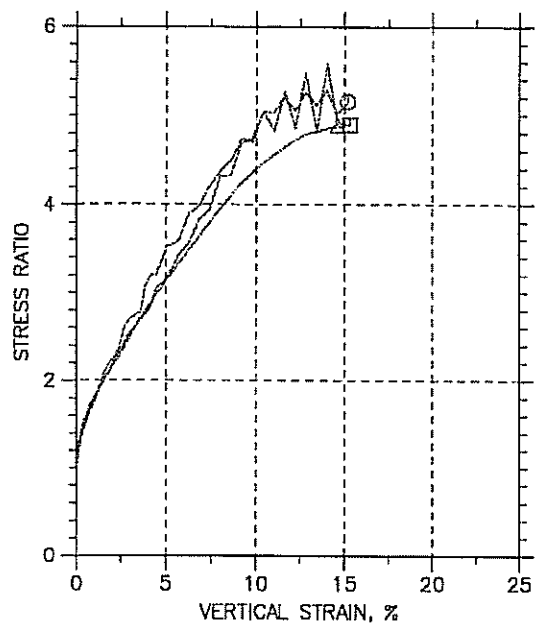
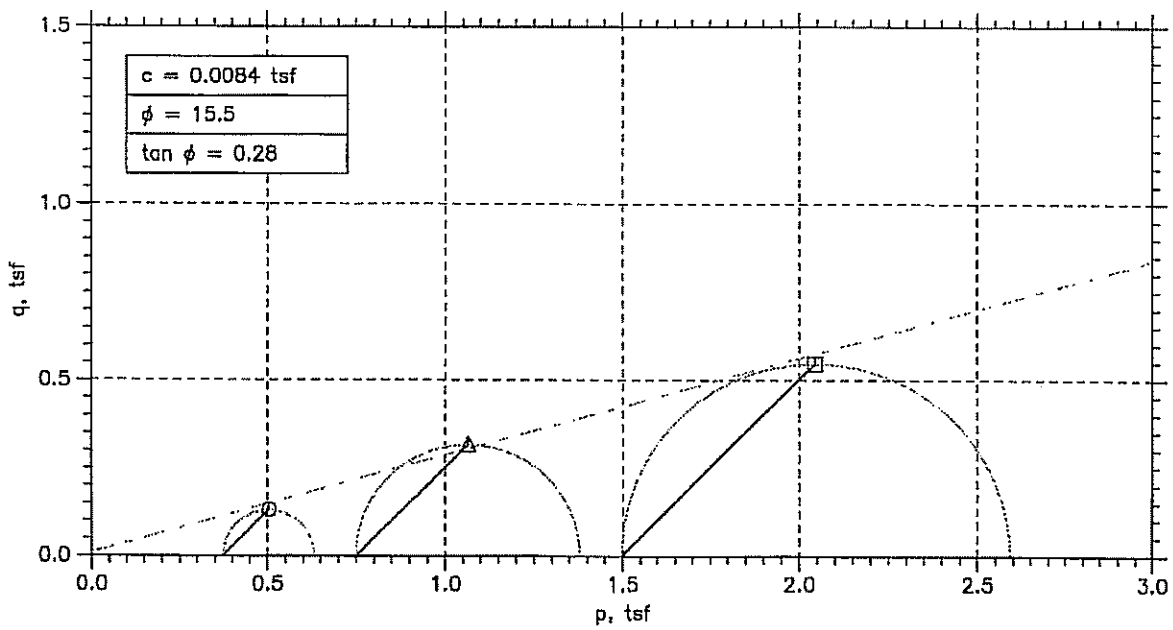
TRIAXIAL COMPRESSION TEST REPORT







Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/21/07	Depth:
Test No.: SWA1T1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767		

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TRIAXIAL TEST

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07SWA1DS
Test No.: SWA1T1

Location:
Tested By: MS
Test Date: 8/21/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.58 in
Specimen Area: 6.10 in^2
Specimen Volume: 34.04 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.0988	0	0	5.0402	5.4144	5.4144
2	2.0018	0.13747	6.1072	6.1037	0.071959	5.1819	5.4144	5.4864
3	4.0018	0.28639	6.1163	7.3665	0.086718	5.2193	5.4144	5.5011
4	6.0018	0.43368	6.1254	8.1032	0.095248	5.2398	5.4144	5.5096
5	8.0018	0.58096	6.1344	8.5768	0.10067	5.2545	5.4144	5.5151
6	10.002	0.72825	6.1435	8.8925	0.10422	5.2673	5.4144	5.5186
7	12.002	0.87717	6.1528	9.2608	0.10837	5.2744	5.4144	5.5228
8	14.002	1.0277	6.1621	9.6291	0.11251	5.2791	5.4144	5.5269
9	16.002	1.1783	6.1715	9.8922	0.11541	5.2826	5.4144	5.5298
10	18.004	1.3272	6.1808	10.103	0.11769	5.2861	5.4144	5.5321
11	20.004	1.4778	6.1903	10.471	0.12179	5.289	5.4144	5.5362
12	24.004	1.7756	6.209	11.05	0.12813	5.2954	5.4144	5.5425
13	28.004	2.0702	6.2277	11.471	0.13262	5.3025	5.4144	5.547
14	32.001	2.3631	6.2464	11.944	0.13768	5.306	5.4144	5.5521
15	36.001	2.6544	6.2651	12.471	0.14331	5.3089	5.4144	5.5577
16	40.001	2.949	6.2841	12.891	0.1477	5.3142	5.4144	5.5621
17	44.001	3.2452	6.3033	13.47	0.15386	5.3183	5.4144	5.5683
18	48.003	3.5463	6.323	13.944	0.15878	5.3194	5.4144	5.5732
19	52.003	3.8491	6.3429	14.365	0.16306	5.3206	5.4144	5.5775
20	56.003	4.1486	6.3628	14.786	0.16731	5.3241	5.4144	5.5817
21	60.002	4.4448	6.3825	15.312	0.17273	5.33	5.4144	5.5871
22	68.001	5.0323	6.422	16.154	0.18111	5.3306	5.4144	5.5955
23	76.001	5.6264	6.4624	16.785	0.18701	5.337	5.4144	5.6014
24	84.003	6.2351	6.5043	17.574	0.19454	5.3382	5.4144	5.6089
25	92.001	6.8292	6.5458	18.206	0.20025	5.344	5.4144	5.6147
26	100	7.4118	6.587	18.943	0.20705	5.344	5.4144	5.6215
27	108	7.9977	6.6289	19.679	0.21374	5.3499	5.4144	5.6281
28	116	8.5983	6.6725	20.258	0.21859	5.3487	5.4144	5.633
29	124	9.2038	6.717	20.995	0.22504	5.3534	5.4144	5.6394
30	132	9.8027	6.7616	21.679	0.23084	5.3528	5.4144	5.6452
31	140	10.392	6.8061	22.205	0.2349	5.3563	5.4144	5.6493
32	148	10.979	6.851	22.942	0.2411	5.3546	5.4144	5.6555
33	156	11.583	6.8978	23.415	0.24441	5.3563	5.4144	5.6588
34	164	12.194	6.9457	23.836	0.24709	5.3534	5.4144	5.6615
35	172	12.781	6.9925	24.31	0.25031	5.3557	5.4144	5.6647
36	180	13.367	7.0398	24.731	0.25293	5.3528	5.4144	5.6673
37	188	13.969	7.0891	25.257	0.25652	5.3546	5.4144	5.6709
38	196	14.576	7.1395	25.73	0.25948	5.3499	5.4144	5.6739
39	204	15.172	7.1896	26.046	0.26084	5.3516	5.4144	5.6752

TRIAXIAL TEST

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07SWA1DS
Test No.: SWA1T1

Location:
Tested By: MS
Test Date: 8/21/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.58 in
Specimen Area: 6.10 in^2
Specimen Volume: 34.04 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.4144	5.4144	0	0.000	0.37416	0.37416	1.000	0.37416	0
2	0.14	5.4864	5.4144	0.14165	1.968	0.30447	0.23251	1.309	0.26849	0.03598
3	0.29	5.5011	5.4144	0.17911	2.065	0.28177	0.19505	1.445	0.23841	0.043359
4	0.43	5.5096	5.4144	0.1996	2.096	0.26981	0.17456	1.546	0.22219	0.047624
5	0.58	5.5151	5.4144	0.21423	2.128	0.2606	0.15993	1.629	0.21026	0.050333
6	0.73	5.5186	5.4144	0.22711	2.179	0.25127	0.14705	1.709	0.19916	0.052108
7	0.88	5.5228	5.4144	0.23413	2.160	0.2484	0.14003	1.774	0.19422	0.054185
8	1.03	5.5269	5.4144	0.23881	2.123	0.24786	0.13535	1.831	0.1916	0.056255
9	1.18	5.5298	5.4144	0.24232	2.100	0.24724	0.13184	1.875	0.18954	0.057704
10	1.33	5.5321	5.4144	0.24584	2.089	0.24601	0.12832	1.917	0.18717	0.058843
11	1.48	5.5362	5.4144	0.24876	2.043	0.24719	0.1254	1.971	0.18629	0.060895
12	1.78	5.5425	5.4144	0.2552	1.992	0.24709	0.11896	2.077	0.18303	0.064067
13	2.07	5.547	5.4144	0.26223	1.977	0.24455	0.11194	2.185	0.17824	0.066308
14	2.36	5.5521	5.4144	0.26574	1.930	0.2461	0.10842	2.270	0.17726	0.068839
15	2.65	5.5577	5.4144	0.26866	1.875	0.24881	0.1055	2.358	0.17715	0.071657
16	2.95	5.5621	5.4144	0.27393	1.855	0.24793	0.10023	2.474	0.17408	0.073852
17	3.25	5.5683	5.4144	0.27803	1.807	0.25	0.096131	2.601	0.17306	0.076932
18	3.55	5.5732	5.4144	0.2792	1.758	0.25374	0.094961	2.672	0.17435	0.079389
19	3.85	5.5775	5.4144	0.28037	1.719	0.25685	0.09379	2.739	0.17532	0.081529
20	4.15	5.5817	5.4144	0.28388	1.697	0.25759	0.090278	2.853	0.17393	0.083657
21	4.44	5.5871	5.4144	0.28974	1.677	0.25716	0.084425	3.046	0.17079	0.086366
22	5.03	5.5955	5.4144	0.29032	1.603	0.26495	0.083839	3.160	0.17439	0.090554
23	5.63	5.6014	5.4144	0.29676	1.587	0.26441	0.077401	3.416	0.17091	0.093505
24	6.24	5.6089	5.4144	0.29793	1.531	0.27077	0.07623	3.552	0.1735	0.097271
25	6.83	5.6147	5.4144	0.30378	1.517	0.27063	0.070377	3.845	0.1705	0.10013
26	7.41	5.6215	5.4144	0.30378	1.467	0.27743	0.070377	3.942	0.1739	0.10353
27	8.00	5.6281	5.4144	0.30964	1.449	0.27827	0.064524	4.313	0.1714	0.10687
28	8.60	5.633	5.4144	0.30847	1.411	0.28429	0.065694	4.327	0.17499	0.1093
29	9.20	5.6394	5.4144	0.31315	1.392	0.28605	0.061012	4.689	0.17353	0.11252
30	9.80	5.6452	5.4144	0.31256	1.354	0.29244	0.061597	4.748	0.17702	0.11542
31	10.39	5.6493	5.4144	0.31608	1.346	0.29299	0.058085	5.044	0.17554	0.11745
32	10.98	5.6555	5.4144	0.31432	1.304	0.30094	0.059841	5.029	0.18039	0.12055
33	11.58	5.6588	5.4144	0.31608	1.293	0.3025	0.058085	5.208	0.18029	0.12221
34	12.19	5.6615	5.4144	0.31315	1.267	0.3081	0.061012	5.050	0.18455	0.12354
35	12.78	5.6647	5.4144	0.31549	1.260	0.30898	0.05867	5.266	0.18383	0.12515
36	13.37	5.6673	5.4144	0.31256	1.236	0.31453	0.061597	5.106	0.18806	0.12647
37	13.97	5.6709	5.4144	0.31432	1.225	0.31636	0.059841	5.287	0.1881	0.12826
38	14.58	5.6739	5.4144	0.30964	1.193	0.32401	0.064524	5.022	0.19427	0.12974
39	15.17	5.6752	5.4144	0.31139	1.194	0.3236	0.062768	5.156	0.19319	0.13042

TRIAXIAL TEST

Project: FOx-RIVER
Boring No.:
Sample No.: 1RA07SWA1DS
Test No.: SWA1T2

Location:
Tested By: MJS
Test Date: 8/23/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.55 in
Specimen Area: 6.15 in^2
Specimen Volume: 34.11 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.1454	0	0	5.04	5.7888	5.7888
2	2.004	0.1431	6.1542	11.416	0.13356	5.1648	5.7888	5.9224
3	4.004	0.29286	6.1635	16.775	0.19597	5.2315	5.7888	5.9848
4	6.004	0.44095	6.1726	20.527	0.23944	5.2713	5.7888	6.0282
5	8.0001	0.5907	6.1819	23.26	0.27091	5.2977	5.7888	6.0597
6	10	0.74046	6.1913	25.672	0.29855	5.3188	5.7888	6.0873
7	12	0.89021	6.2006	27.655	0.32113	5.3364	5.7888	6.1099
8	14	1.0383	6.2099	29.317	0.33991	5.351	5.7888	6.1287
9	16	1.1864	6.2192	30.817	0.35677	5.375	5.7888	6.1456
10	18.001	1.3362	6.2286	32.104	0.3711	5.402	5.7888	6.1599
11	20.004	1.4859	6.2381	33.175	0.38291	5.4248	5.7888	6.1717
12	24	1.7804	6.2568	35.266	0.40582	5.4435	5.7888	6.1946
13	28.004	2.0749	6.2756	37.088	0.42551	5.4517	5.7888	6.2143
14	32.004	2.3711	6.2947	38.428	0.43955	5.464	5.7888	6.2283
15	36.004	2.6706	6.314	39.928	0.45531	5.5027	5.7888	6.2441
16	40.004	2.9702	6.3335	41.054	0.46671	5.5144	5.7888	6.2555
17	44.004	3.2663	6.3529	42.18	0.47804	5.5138	5.7888	6.2668
18	48.004	3.5642	6.3725	43.251	0.48868	5.5144	5.7888	6.2775
19	52.004	3.8604	6.3922	44.377	0.49985	5.5484	5.7888	6.2887
20	56.001	4.1582	6.412	45.127	0.50673	5.5589	5.7888	6.2955
21	60.001	4.4511	6.4317	46.038	0.51538	5.5542	5.7888	6.3042
22	68.001	5.0484	6.4721	47.485	0.52826	5.5783	5.7888	6.3171
23	76	5.6491	6.5134	48.825	0.53973	5.5806	5.7888	6.3285
24	84.004	6.2531	6.5553	50.165	0.55099	5.5988	5.7888	6.3398
25	92.002	6.8438	6.5969	51.398	0.56097	5.6017	5.7888	6.3498
26	100	7.4362	6.6391	52.577	0.57019	5.6116	5.7888	6.359
27	108	8.0319	6.6821	53.81	0.5798	5.6169	5.7888	6.3686
28	116	8.6326	6.726	54.882	0.58749	5.621	5.7888	6.3763
29	124	9.2283	6.7702	55.846	0.59392	5.6298	5.7888	6.3827
30	132	9.8206	6.8146	56.704	0.5991	5.6269	5.7888	6.3879
31	140	10.416	6.86	57.829	0.60696	5.6386	5.7888	6.3958
32	148	11.014	6.906	58.58	0.61073	5.6292	5.7888	6.3995
33	156	11.613	6.9528	59.33	0.61439	5.645	5.7888	6.4032
34	164	12.208	7	60.08	0.61797	5.6286	5.7888	6.4068
35	172	12.806	7.048	61.152	0.62472	5.6491	5.7888	6.4135
36	180	13.406	7.0968	61.742	0.62639	5.6251	5.7888	6.4152
37	188	14.01	7.1467	62.439	0.62904	5.6515	5.7888	6.4178
38	196	14.606	7.1965	63.082	0.63112	5.6263	5.7888	6.4199

TRIAXIAL TEST

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07SWA1DS
Test No.: SWA1T2

Location:
Tested By: MJS
Test Date: 8/23/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.55 in
Specimen Area: 6.15 in^2
Specimen Volume: 34.11 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.7888	5.7888	0	0.000	0.7488	0.7488	1.000	0.7488	0
2	0.14	5.9224	5.7888	0.12476	0.934	0.75761	0.62405	1.214	0.69083	0.066778
3	0.29	5.9848	5.7888	0.19153	0.977	0.75324	0.55728	1.352	0.65526	0.097983
4	0.44	6.0282	5.7888	0.23135	0.966	0.75689	0.51745	1.463	0.63717	0.11972
5	0.59	6.0597	5.7888	0.25771	0.951	0.762	0.49109	1.552	0.62655	0.13546
6	0.74	6.0873	5.7888	0.2788	0.934	0.76856	0.47001	1.635	0.61928	0.14927
7	0.89	6.1099	5.7888	0.29637	0.923	0.77356	0.45244	1.710	0.613	0.16056
8	1.04	6.1287	5.7888	0.31101	0.915	0.7777	0.4378	1.776	0.60775	0.16995
9	1.19	6.1456	5.7888	0.33502	0.939	0.77056	0.41378	1.862	0.59217	0.17839
10	1.34	6.1599	5.7888	0.36197	0.975	0.75794	0.38684	1.959	0.57239	0.18555
11	1.49	6.1717	5.7888	0.38481	1.005	0.74691	0.364	2.052	0.55545	0.19146
12	1.78	6.1946	5.7888	0.40355	0.994	0.75107	0.34525	2.175	0.54816	0.20291
13	2.07	6.2143	5.7888	0.41175	0.968	0.76256	0.33705	2.262	0.54981	0.21275
14	2.37	6.2283	5.7888	0.42405	0.965	0.7643	0.32475	2.353	0.54453	0.21977
15	2.67	6.2441	5.7888	0.46271	1.016	0.74141	0.2861	2.591	0.51375	0.22766
16	2.97	6.2555	5.7888	0.47442	1.017	0.74109	0.27438	2.701	0.50774	0.23335
17	3.27	6.2668	5.7888	0.47384	0.991	0.75301	0.27497	2.739	0.51399	0.23902
18	3.56	6.2775	5.7888	0.47442	0.971	0.76306	0.27438	2.781	0.51872	0.24434
19	3.86	6.2887	5.7888	0.50839	1.017	0.74026	0.24041	3.079	0.49034	0.24993
20	4.16	6.2955	5.7888	0.51894	1.024	0.7366	0.22987	3.204	0.48323	0.25336
21	4.45	6.3042	5.7888	0.51425	0.998	0.74994	0.23456	3.197	0.49225	0.25769
22	5.05	6.3171	5.7888	0.53826	1.019	0.7388	0.21054	3.509	0.47467	0.26413
23	5.65	6.3285	5.7888	0.54061	1.002	0.74792	0.2082	3.592	0.47806	0.26986
24	6.25	6.3398	5.7888	0.55876	1.014	0.74103	0.19004	3.899	0.46554	0.27549
25	6.84	6.3498	5.7888	0.56169	1.001	0.74808	0.18711	3.998	0.4676	0.28048
26	7.44	6.359	5.7888	0.57165	1.003	0.74735	0.17716	4.219	0.46225	0.28509
27	8.03	6.3686	5.7888	0.57692	0.995	0.75169	0.17189	4.373	0.46179	0.2899
28	8.63	6.3763	5.7888	0.58102	0.989	0.75527	0.16779	4.501	0.46153	0.29374
29	9.23	6.3827	5.7888	0.58981	0.993	0.75292	0.159	4.735	0.45596	0.29696
30	9.82	6.3879	5.7888	0.58688	0.980	0.76103	0.16193	4.700	0.46148	0.29955
31	10.42	6.3958	5.7888	0.59859	0.986	0.75717	0.15021	5.041	0.45369	0.30348
32	11.01	6.3995	5.7888	0.58922	0.965	0.77032	0.15959	4.827	0.46495	0.30537
33	11.61	6.4032	5.7888	0.60503	0.985	0.75816	0.14377	5.273	0.45097	0.3072
34	12.21	6.4068	5.7888	0.58863	0.953	0.77814	0.16017	4.858	0.46916	0.30898
35	12.81	6.4135	5.7888	0.60913	0.975	0.76439	0.13967	5.473	0.45203	0.31236
36	13.41	6.4152	5.7888	0.58512	0.934	0.79008	0.16369	4.827	0.47688	0.3132
37	14.01	6.4178	5.7888	0.61148	0.972	0.76637	0.13733	5.581	0.45185	0.31452
38	14.61	6.4199	5.7888	0.58629	0.929	0.79363	0.16251	4.883	0.47807	0.31556

TRIAXIAL TEST

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07SWA1DS
Test No.: SWAIT3

Location:
Tested By: MJS
Test Date: 8/24/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.50 in
Specimen Area: 6.12 in^2
Specimen Volume: 33.65 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.1229	0	0	5.0401	6.5376	6.5376
2	2.0041	0.12763	6.1308	23.223	0.27273	5.2468	6.5376	6.8103
3	4.0041	0.27183	6.1396	34.49	0.40447	5.3682	6.5376	6.9421
4	6.0041	0.41603	6.1485	42.057	0.4925	5.4565	6.5376	7.0301
5	8.0041	0.56189	6.1575	47.513	0.55557	5.5238	6.5376	7.0932
6	10.004	0.70941	6.1667	51.854	0.60543	5.579	6.5376	7.143
7	12.004	0.85858	6.176	55.436	0.64628	5.6278	6.5376	7.1839
8	14.004	1.0061	6.1852	58.425	0.68011	5.6684	6.5376	7.2177
9	16.004	1.1569	6.1946	60.963	0.70857	5.7044	6.5376	7.2462
10	18.004	1.3061	6.204	63.169	0.7331	5.737	6.5376	7.2707
11	20.004	1.4586	6.2136	65.09	0.75423	5.7666	6.5376	7.2918
12	24.004	1.7603	6.2326	68.364	0.78974	5.82	6.5376	7.3273
13	28.001	2.0603	6.2517	71.092	0.81875	5.8601	6.5376	7.3563
14	32.001	2.3586	6.2708	73.44	0.84322	5.8967	6.5376	7.3808
15	36.001	2.6619	6.2904	75.385	0.86286	5.9292	6.5376	7.4005
16	40.001	2.9636	6.3099	77.235	0.8813	5.9588	6.5376	7.4189
17	44.003	3.2636	6.3295	78.848	0.89692	5.982	6.5376	7.4345
18	48.003	3.5669	6.3494	80.272	0.91025	6.0047	6.5376	7.4478
19	52.003	3.8653	6.3691	81.552	0.92191	6.025	6.5376	7.4595
20	56.004	4.1636	6.389	82.81	0.93322	6.043	6.5376	7.4708
21	60.004	4.462	6.4089	84.019	0.94391	6.0593	6.5376	7.4815
22	68.004	5.062	6.4494	86.273	0.96314	6.0895	6.5376	7.5007
23	76.001	5.6603	6.4903	88.432	0.98101	6.1156	6.5376	7.5186
24	84.002	6.2587	6.5317	90.211	0.9944	6.1377	6.5376	7.532
25	92.003	6.862	6.5741	92.061	1.0083	6.1574	6.5376	7.5459
26	100	7.4654	6.6169	93.792	1.0206	6.1748	6.5376	7.5582
27	108	8.0703	6.6605	95.453	1.0319	6.1905	6.5376	7.5695
28	116	8.672	6.7043	97.018	1.0419	6.2033	6.5376	7.5795
29	124	9.2737	6.7488	98.418	1.05	6.2143	6.5376	7.5876
30	132	9.877	6.794	99.818	1.0578	6.2236	6.5376	7.5954
31	140	10.484	6.84	101.1	1.0642	6.2317	6.5376	7.6018
32	148	11.08	6.8859	102.36	1.0702	6.2375	6.5376	7.6078
33	156	11.68	6.9327	103.42	1.0741	6.2439	6.5376	7.6117
34	164	12.287	6.9807	104.7	1.0799	6.248	6.5376	7.6175
35	172	12.895	7.0294	105.77	1.0834	6.2521	6.5376	7.621
36	180	13.505	7.079	106.77	1.0859	6.2532	6.5376	7.6235
37	188	14.105	7.1284	107.81	1.0889	6.2556	6.5376	7.6265
38	196	14.709	7.1788	108.83	1.0915	6.2561	6.5376	7.6291
39	204	15.305	7.2294	109.71	1.0926	6.2573	6.5376	7.6302

TRIAXIAL TEST

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07SWA1DS
Test No.: SWAIT3

Location:
Tested By: MJS
Test Date: 8/24/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.50 in
Specimen Area: 6.12 in^2
Specimen Volume: 33.65 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

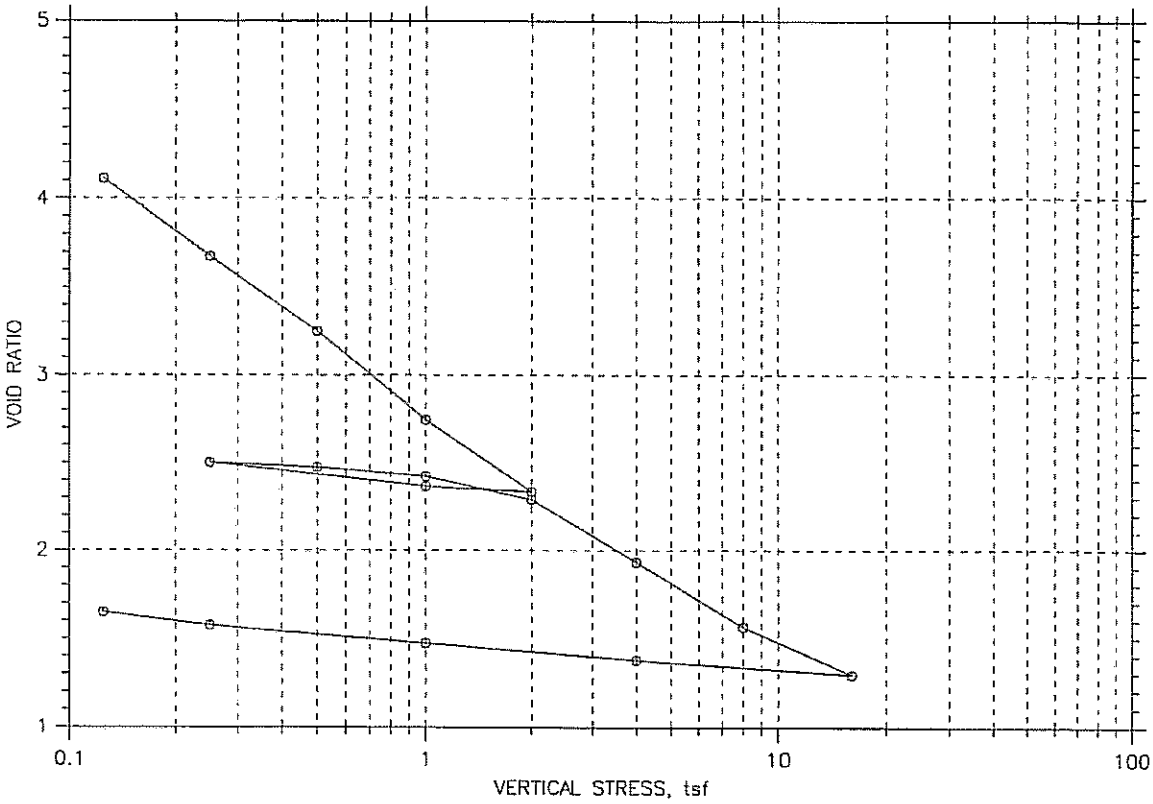
Plastic Limit: 0

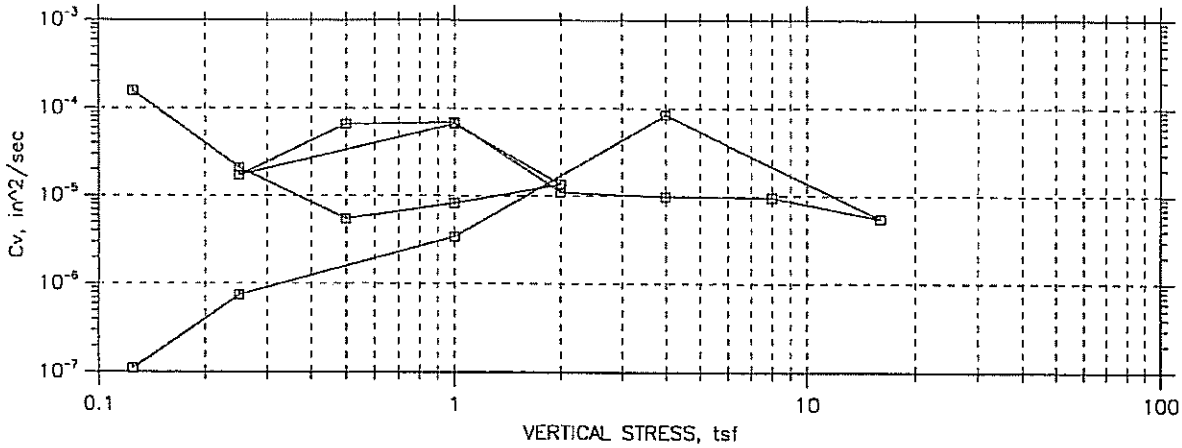
Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	6.5376	6.5376	0	0.000	1.4975	1.4975	1.000	1.4975	0
2	0.13	6.8103	6.5376	0.20674	0.758	1.5635	1.2908	1.211	1.4271	0.13636
3	0.27	6.9421	6.5376	0.32811	0.811	1.5739	1.1694	1.346	1.3716	0.20223
4	0.42	7.0301	6.5376	0.41638	0.845	1.5736	1.0811	1.456	1.3274	0.24625
5	0.56	7.0932	6.5376	0.48374	0.871	1.5693	1.0138	1.548	1.2915	0.27778
6	0.71	7.143	6.5376	0.53891	0.890	1.564	0.95859	1.632	1.2613	0.30271
7	0.86	7.1839	6.5376	0.58769	0.909	1.5561	0.90981	1.710	1.2329	0.32314
8	1.01	7.2177	6.5376	0.62834	0.924	1.5493	0.86916	1.782	1.2092	0.34005
9	1.16	7.2462	6.5376	0.66435	0.938	1.5417	0.83316	1.850	1.1874	0.35429
10	1.31	7.2707	6.5376	0.69687	0.951	1.5337	0.80064	1.916	1.1672	0.36655
11	1.46	7.2918	6.5376	0.72648	0.963	1.5253	0.77102	1.978	1.1481	0.37712
12	1.76	7.3273	6.5376	0.77991	0.988	1.5073	0.71759	2.101	1.1125	0.39487
13	2.06	7.3563	6.5376	0.81998	1.002	1.4963	0.67752	2.208	1.0869	0.40937
14	2.36	7.3808	6.5376	0.85657	1.016	1.4842	0.64094	2.316	1.0625	0.42161
15	2.66	7.4005	6.5376	0.88909	1.030	1.4713	0.60842	2.418	1.0398	0.43143
16	2.96	7.4189	6.5376	0.9187	1.042	1.4601	0.5788	2.523	1.0194	0.44065
17	3.26	7.4345	6.5376	0.94193	1.050	1.4525	0.55557	2.614	1.004	0.44846
18	3.57	7.4478	6.5376	0.96458	1.060	1.4432	0.53292	2.708	0.98805	0.45512
19	3.87	7.4595	6.5376	0.98491	1.068	1.4345	0.5126	2.799	0.97355	0.46096
20	4.16	7.4708	6.5376	1.0029	1.075	1.4278	0.49459	2.887	0.9612	0.46661
21	4.46	7.4815	6.5376	1.0192	1.080	1.4222	0.47833	2.973	0.95029	0.47195
22	5.06	7.5007	6.5376	1.0494	1.090	1.4113	0.44814	3.149	0.9297	0.48157
23	5.66	7.5186	6.5376	1.0755	1.096	1.403	0.422	3.325	0.91251	0.49051
24	6.26	7.532	6.5376	1.0976	1.104	1.3943	0.39994	3.486	0.89714	0.4972
25	6.86	7.5459	6.5376	1.1173	1.108	1.3885	0.38019	3.652	0.88432	0.50413
26	7.47	7.5582	6.5376	1.1347	1.112	1.3833	0.36277	3.813	0.87306	0.51029
27	8.07	7.5695	6.5376	1.1504	1.115	1.3789	0.34709	3.973	0.86302	0.51593
28	8.67	7.5795	6.5376	1.1632	1.116	1.3762	0.33431	4.117	0.85527	0.52096
29	9.27	7.5876	6.5376	1.1742	1.118	1.3733	0.32328	4.248	0.84827	0.52499
30	9.88	7.5954	6.5376	1.1835	1.119	1.3718	0.31399	4.369	0.8429	0.52891
31	10.48	7.6018	6.5376	1.1916	1.120	1.3701	0.30586	4.479	0.83795	0.5321
32	11.08	7.6078	6.5376	1.1975	1.119	1.3703	0.30005	4.567	0.83517	0.53512
33	11.68	7.6117	6.5376	1.2038	1.121	1.3678	0.29366	4.658	0.83072	0.53705
34	12.29	7.6175	6.5376	1.2079	1.118	1.3695	0.2896	4.729	0.82957	0.53997
35	12.90	7.621	6.5376	1.212	1.119	1.3689	0.28553	4.794	0.82723	0.54169
36	13.51	7.6235	6.5376	1.2131	1.117	1.3703	0.28437	4.819	0.82734	0.54297
37	14.11	7.6265	6.5376	1.2155	1.116	1.371	0.28205	4.861	0.82652	0.54447
38	14.71	7.6291	6.5376	1.216	1.114	1.373	0.28147	4.878	0.82723	0.54576
39	15.31	7.6302	6.5376	1.2172	1.114	1.3729	0.28031	4.898	0.82662	0.54631

CONSOLIDATION TEST DATA

SUMMARY REPORT





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07SWA1DS
Test No.: 16SWA1

Location:
Tested By: MJS
Test Date: 8/15/07
Sample Type: REMOLDED

Project No.: X429316A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435

Estimated Specific Gravity: 2.60
Initial Void Ratio: 4.89
Final Void Ratio: 1.65

Liquid Limit: 0
Plastic Limit: 0
Plasticity Index: 0

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	X-14	RING	RING	RING
Wt. Container + Wet Soil, gm	126.7	149.99	114.97	114.97
Wt. Container + Dry Soil, gm	73.25	100.97	100.97	100.97
Wt. Container, gm	44.56	74.36	74.36	74.36
Wt. Dry Soil, gm	28.69	26.61	26.61	26.61
Water Content, %	186.30	184.22	52.61	52.61
Void Ratio	---	4.89	1.65	---
Degree of Saturation, %	---	97.85	82.99	---
Dry Unit Weight, pcf	---	27.535	61.288	---

CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: 1RA07SWA1DS
Test No.: 16SWA1

Location:
Tested By: MJS
Test Date: 8/15/07
Sample Type: REMOLDED

Project No.: X429316A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435

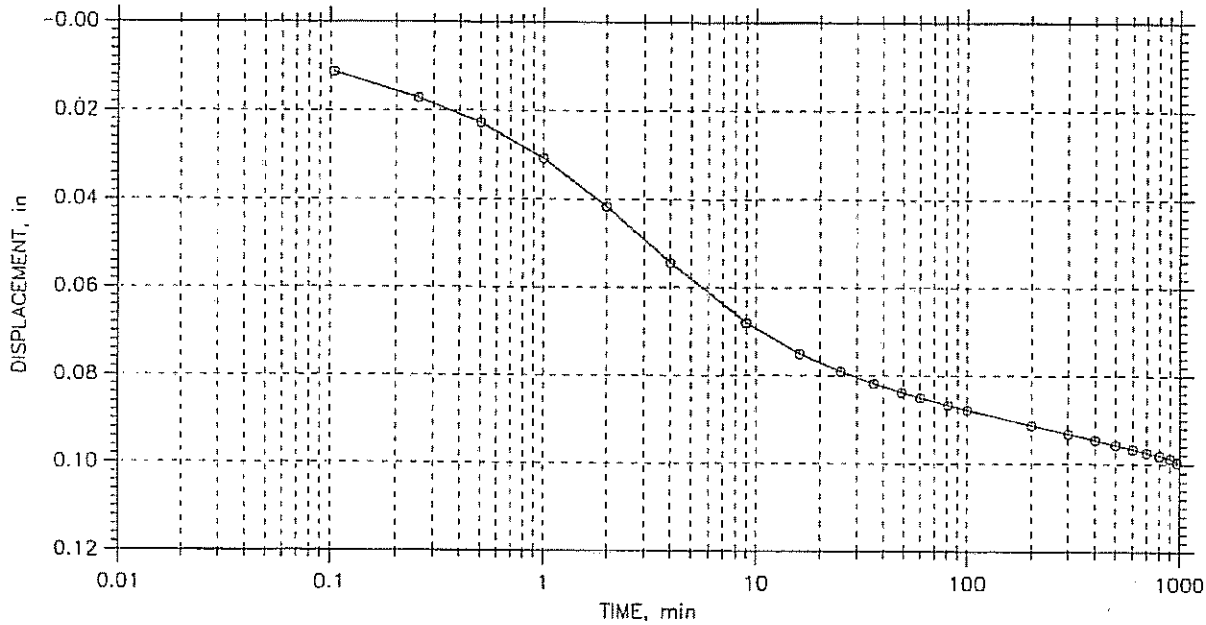
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.125	0.09965	4.111	13.29	3.4	1.7	1.17e-004	2.41e-004	1.57e-004
2	0.25	0.1553	3.674	20.70	23.1	7.4	1.38e-005	4.28e-005	2.09e-005
3	0.5	0.2092	3.250	27.89	48.0	0.0	5.52e-006	0.00e+000	5.52e-006
4	1	0.2736	2.745	36.47	40.7	10.6	5.22e-006	2.00e-005	8.28e-006
5	2	0.3258	2.334	43.44	17.2	7.4	9.69e-006	2.24e-005	1.35e-005
6	1	0.3219	2.365	42.92	3.9	0.6	3.86e-005	2.32e-004	6.62e-005
7	0.25	0.3045	2.502	40.60	13.5	4.7	1.16e-005	3.34e-005	1.72e-005
8	0.5	0.3082	2.472	41.10	3.9	1.1	4.18e-005	1.51e-004	6.55e-005
9	1	0.3146	2.422	41.95	3.9	0.7	4.10e-005	2.19e-004	6.90e-005
10	2	0.3316	2.288	44.22	13.6	0.0	1.10e-005	0.00e+000	1.10e-005
11	4	0.3767	1.934	50.22	19.1	7.1	6.73e-006	1.82e-005	9.83e-006
12	8	0.4237	1.565	56.49	14.6	6.5	6.91e-006	1.55e-005	9.57e-006
13	16	0.4582	1.293	61.10	22.7	6.1	3.46e-006	1.29e-005	5.46e-006
14	4	0.4475	1.378	59.66	0.9	0.0	8.49e-005	0.00e+000	8.49e-005
15	1	0.4354	1.473	58.05	22.8	0.0	3.43e-006	0.00e+000	3.43e-006
16	0.25	0.4226	1.573	56.35	114.2	0.0	7.42e-007	0.00e+000	7.42e-007
17	0.125	0.413	1.648	55.07	819.1	0.0	1.11e-007	0.00e+000	1.11e-007

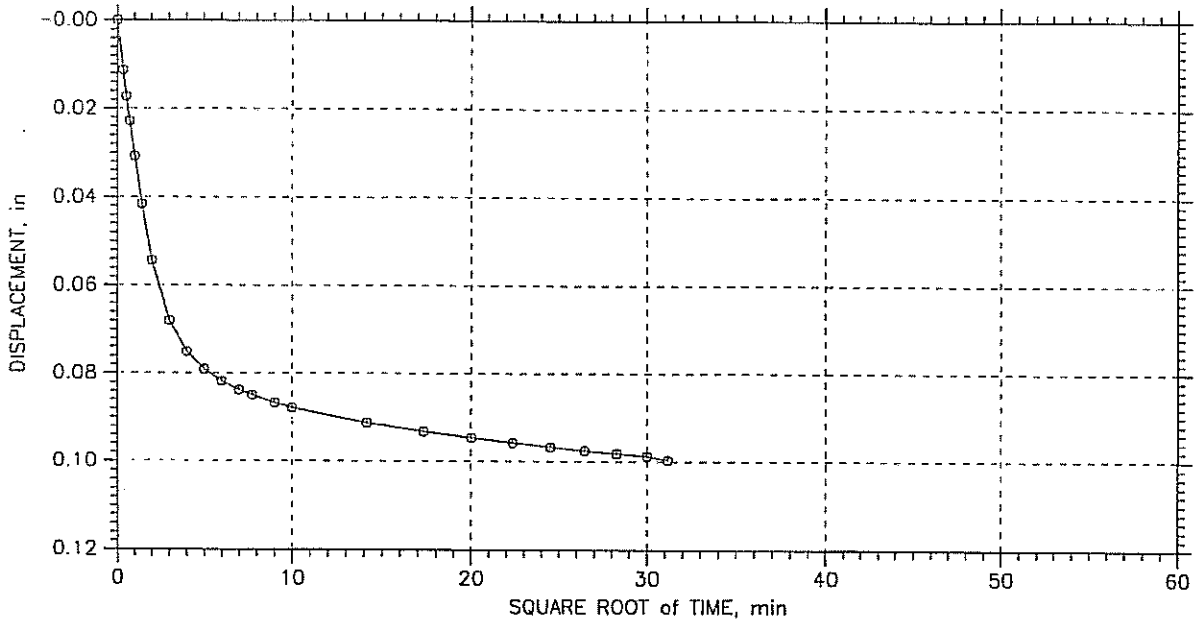
CONSOLIDATION TEST DATA

TIME CURVES

Step: 1 of 17

Stress: 0.125 tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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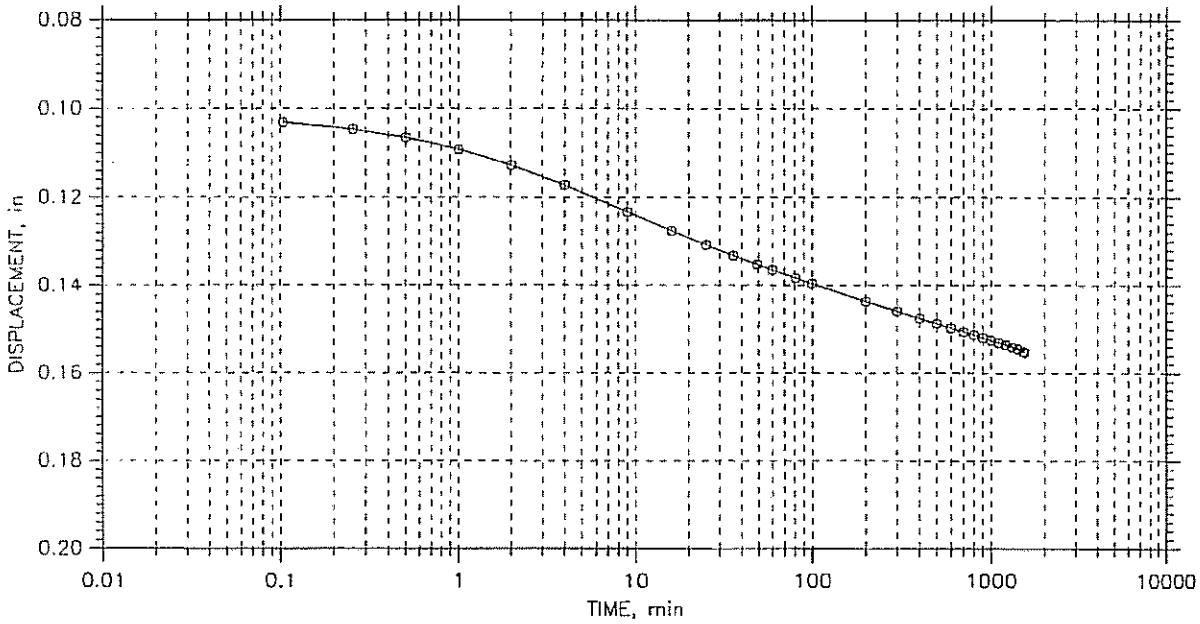
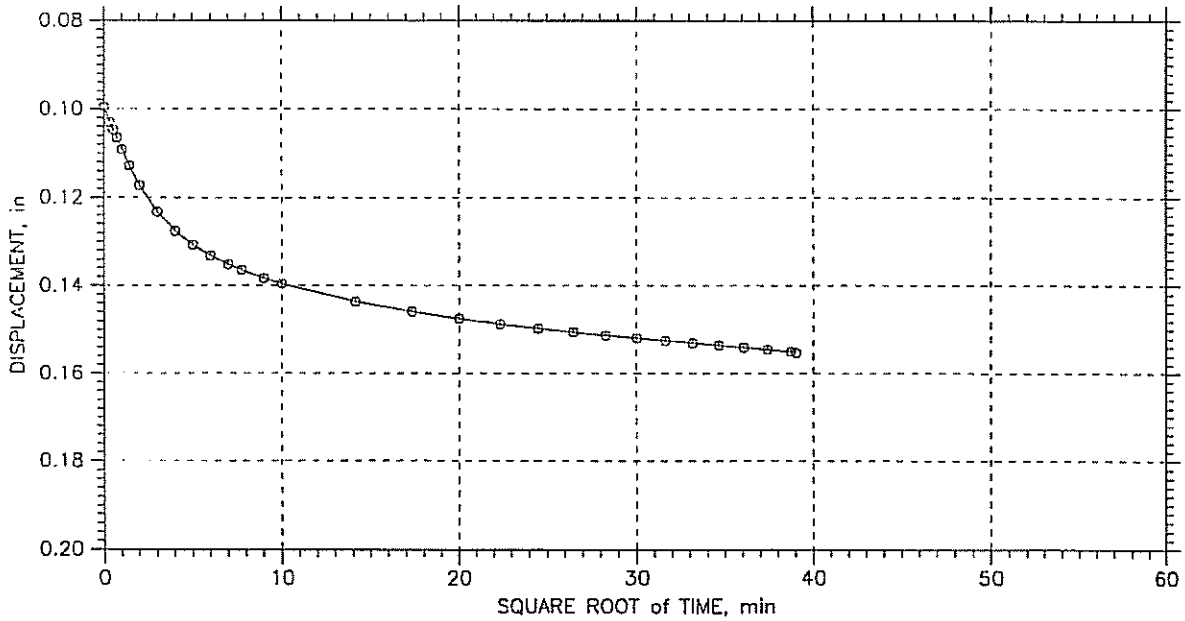
CONSOLIDATION TEST DATA

TIME CURVES

Step: 2 of 17

Stress: 0.25 tsf





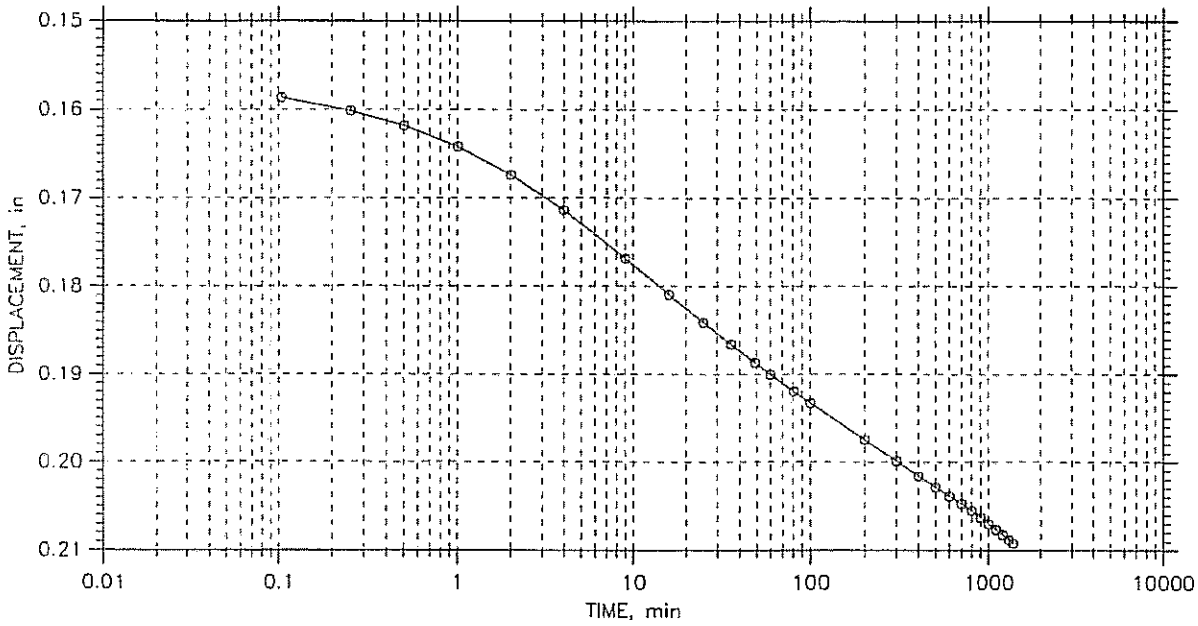
Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

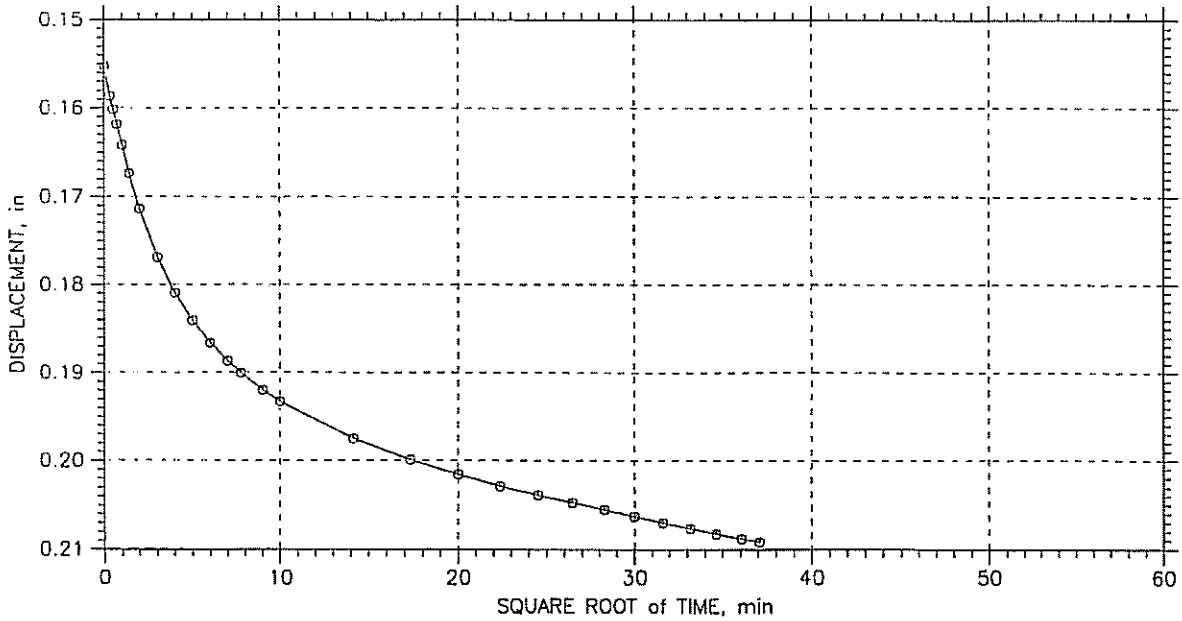
CONSOLIDATION TEST DATA

TIME CURVES

Step: 3 of 17

Stress: 0.5 tsf





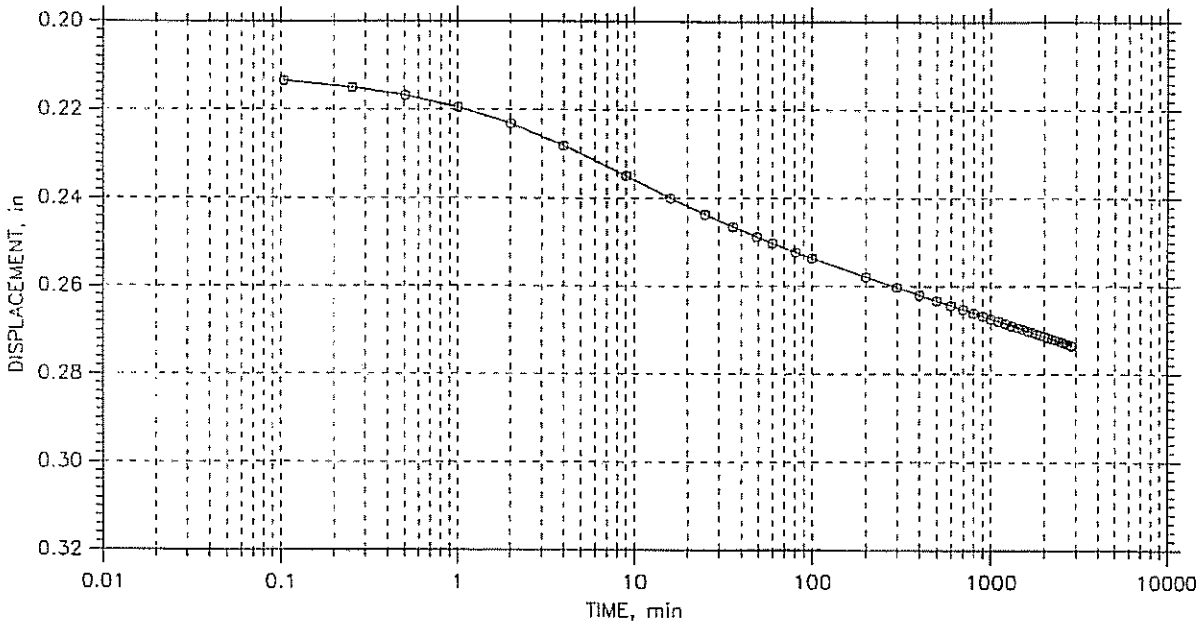
Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

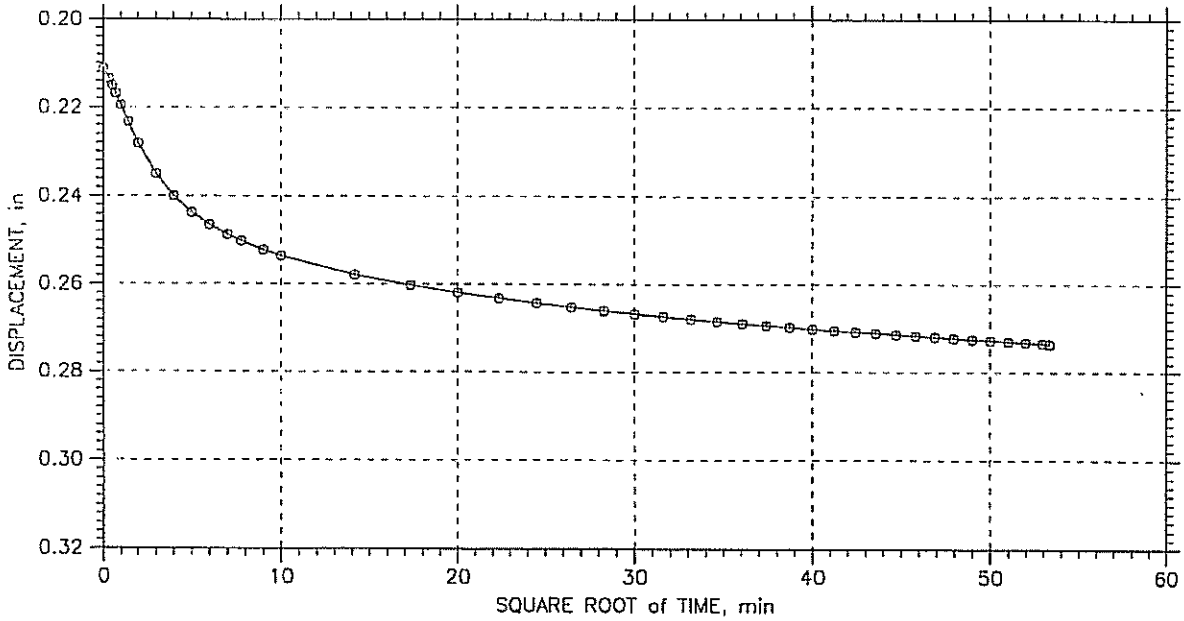
CONSOLIDATION TEST DATA

TIME CURVES

Step: 4 of 17

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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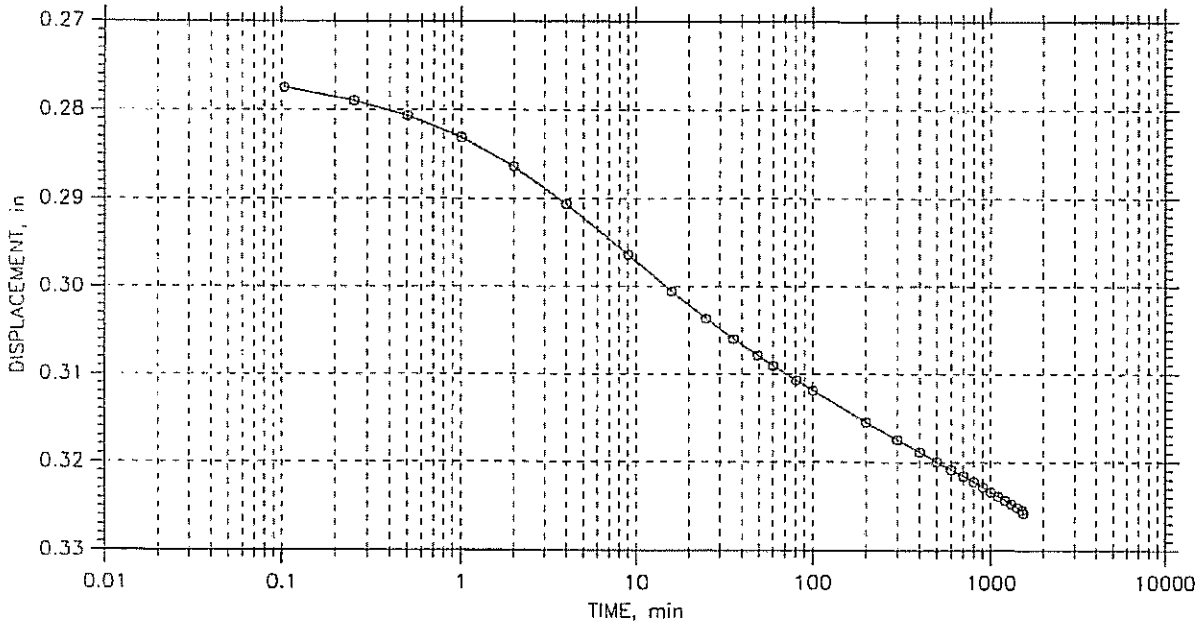
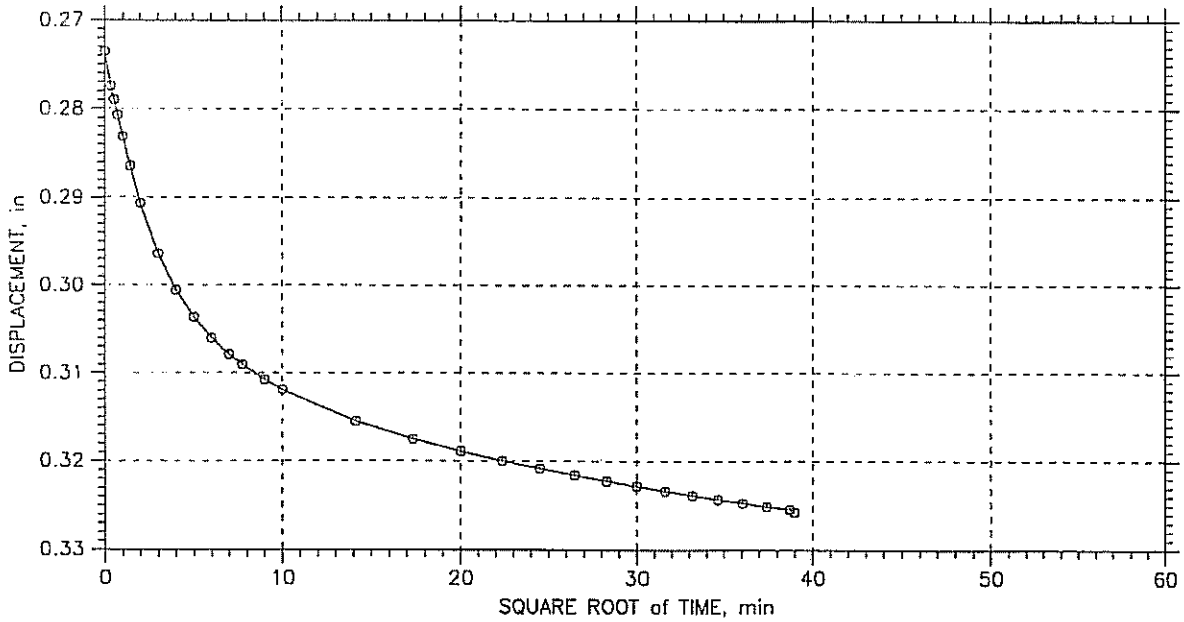
CONSOLIDATION TEST DATA

TIME CURVES

Step: 5 of 17

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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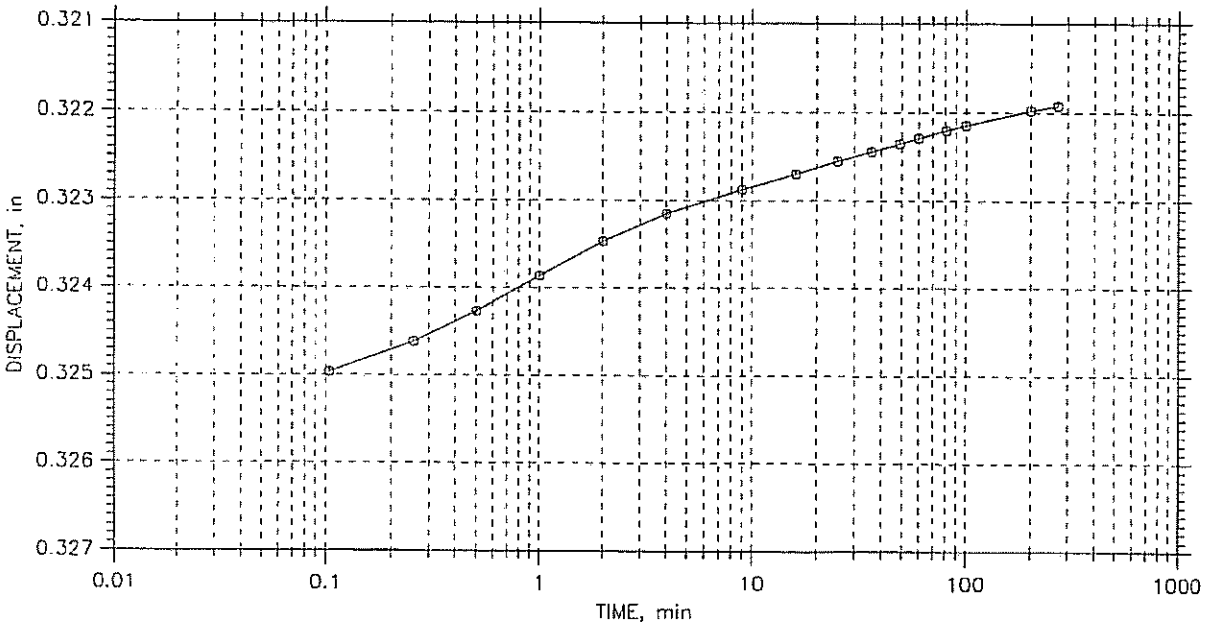
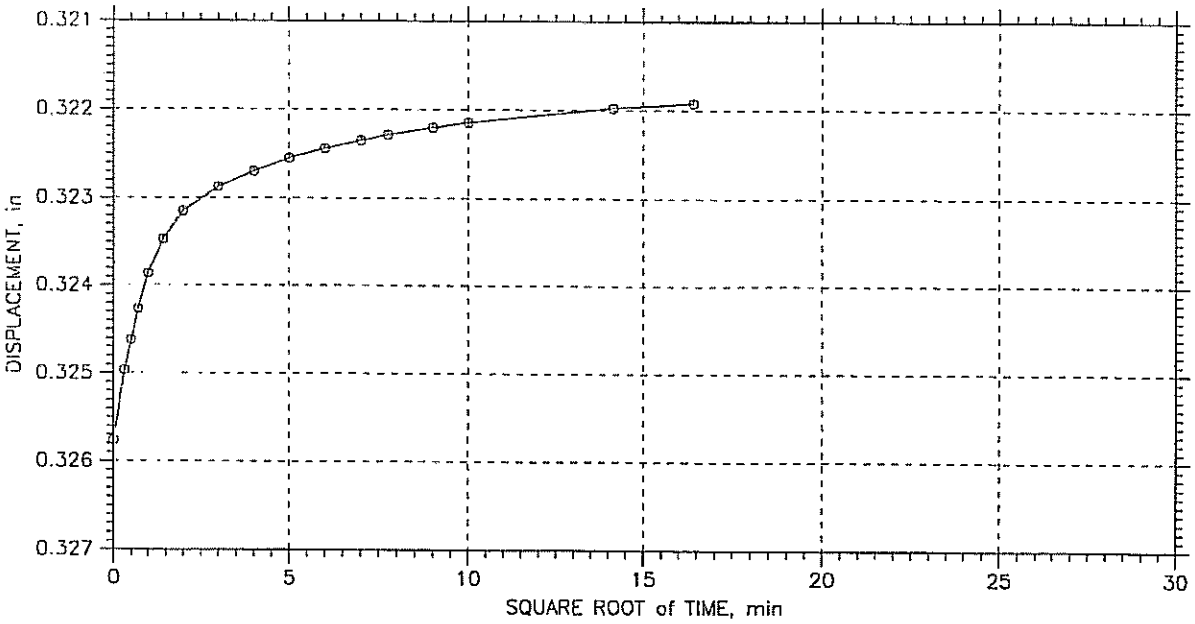
CONSOLIDATION TEST DATA

TIME CURVES

Step: 6 of 17

Stress: 1. tsf





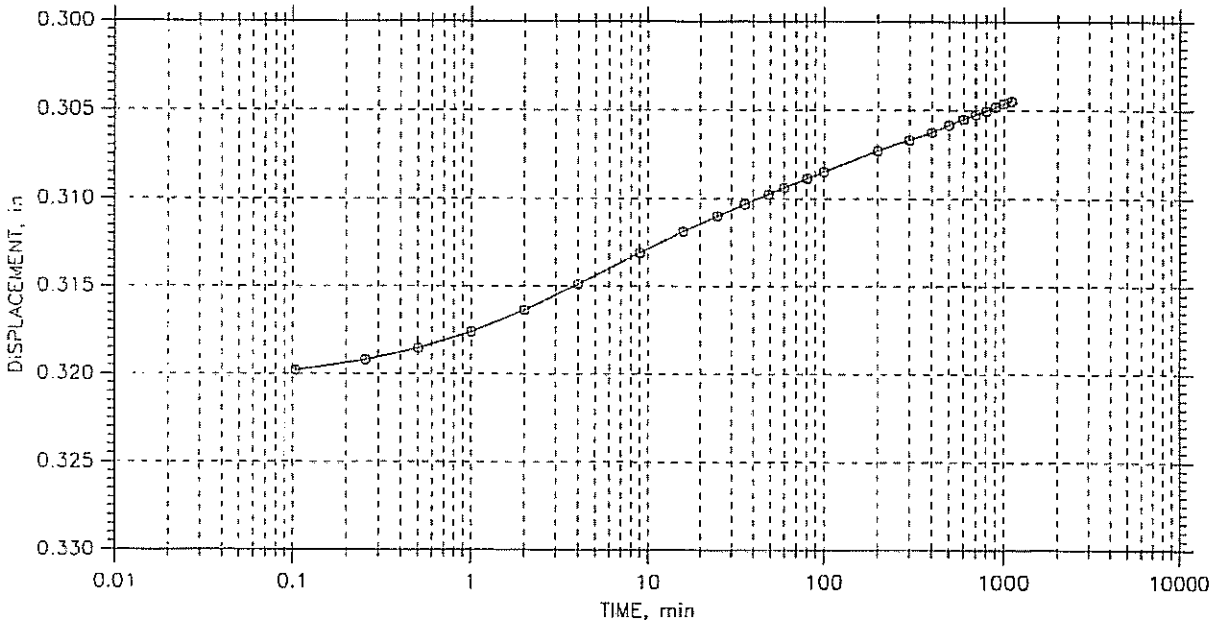
Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

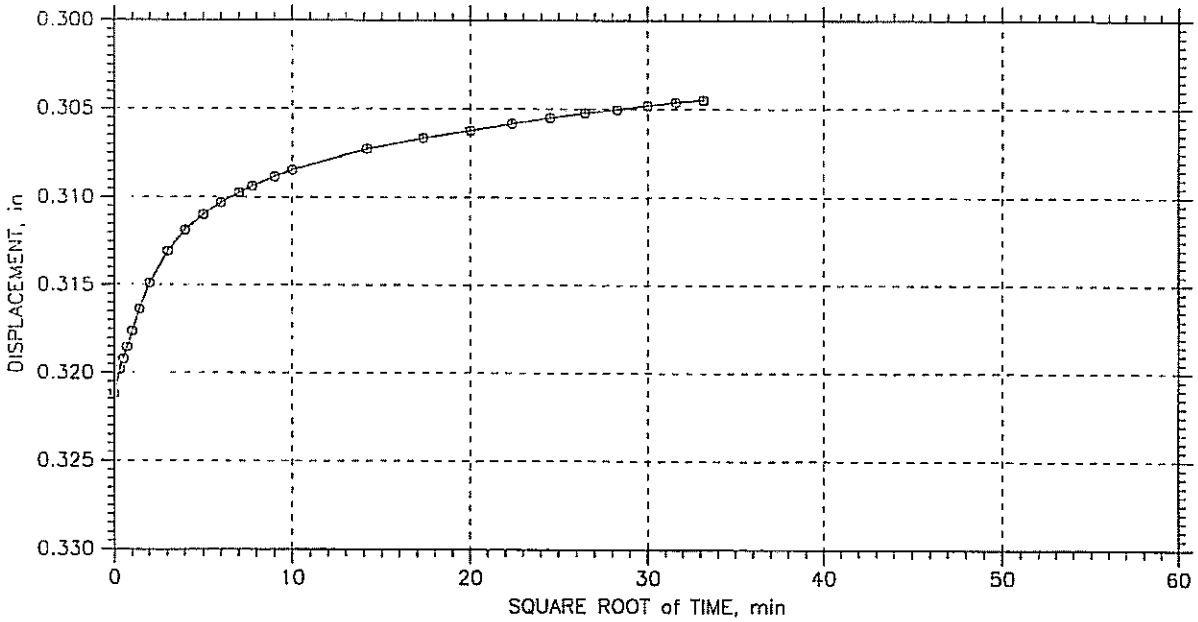
CONSOLIDATION TEST DATA

TIME CURVES

Step: 7 of 17

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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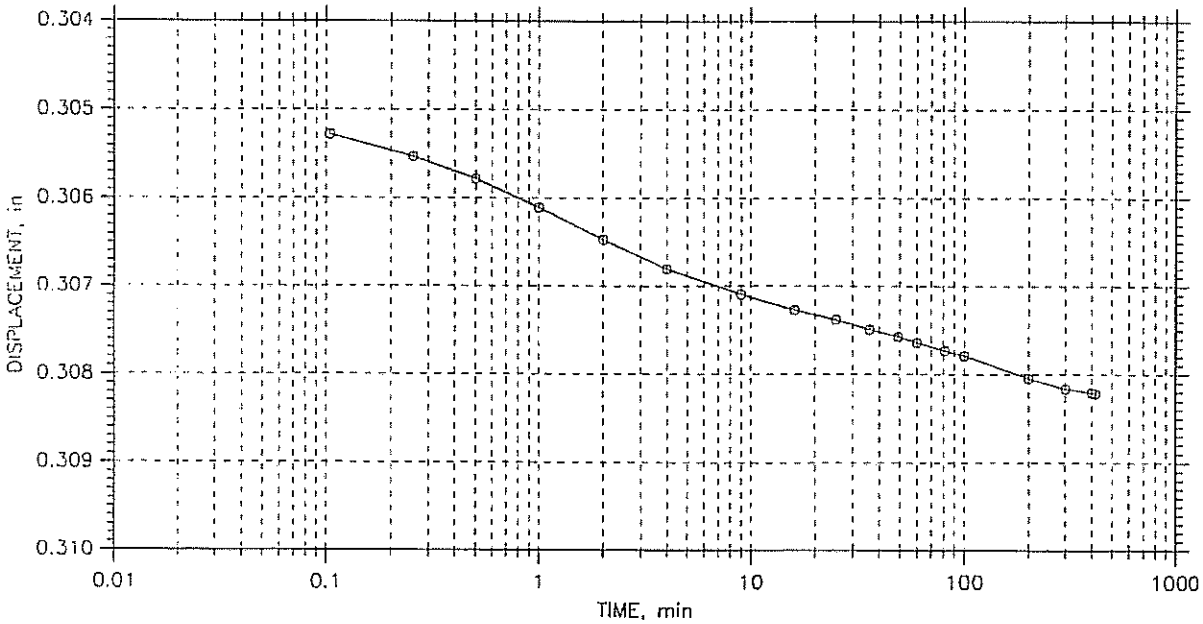
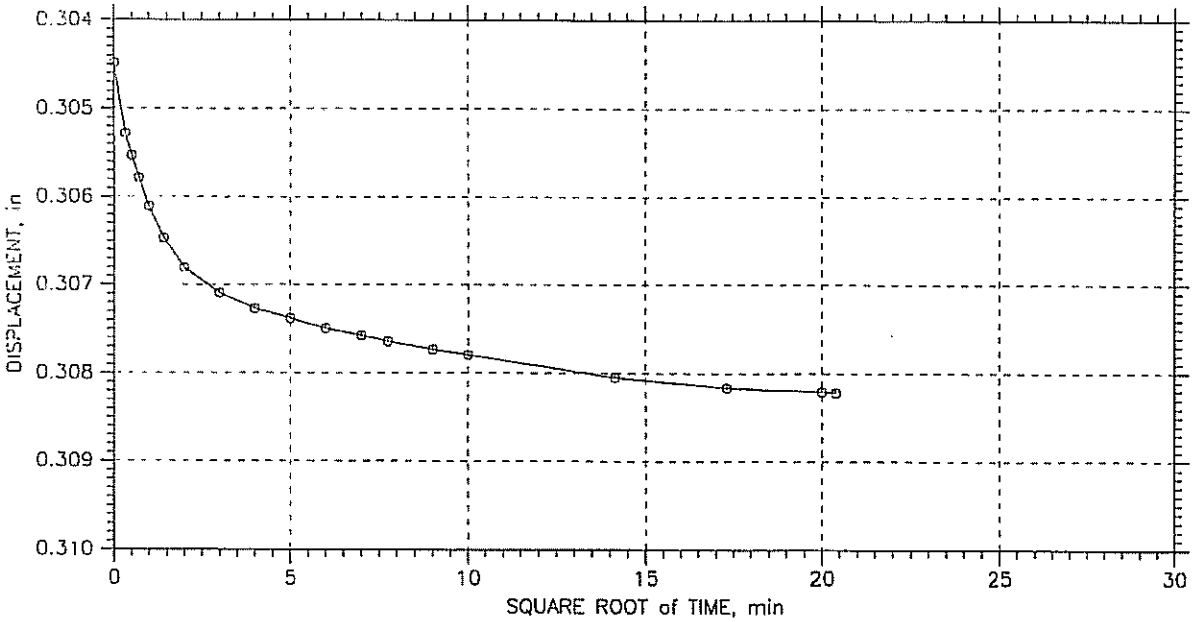
CONSOLIDATION TEST DATA

TIME CURVES

Step: 8 of 17

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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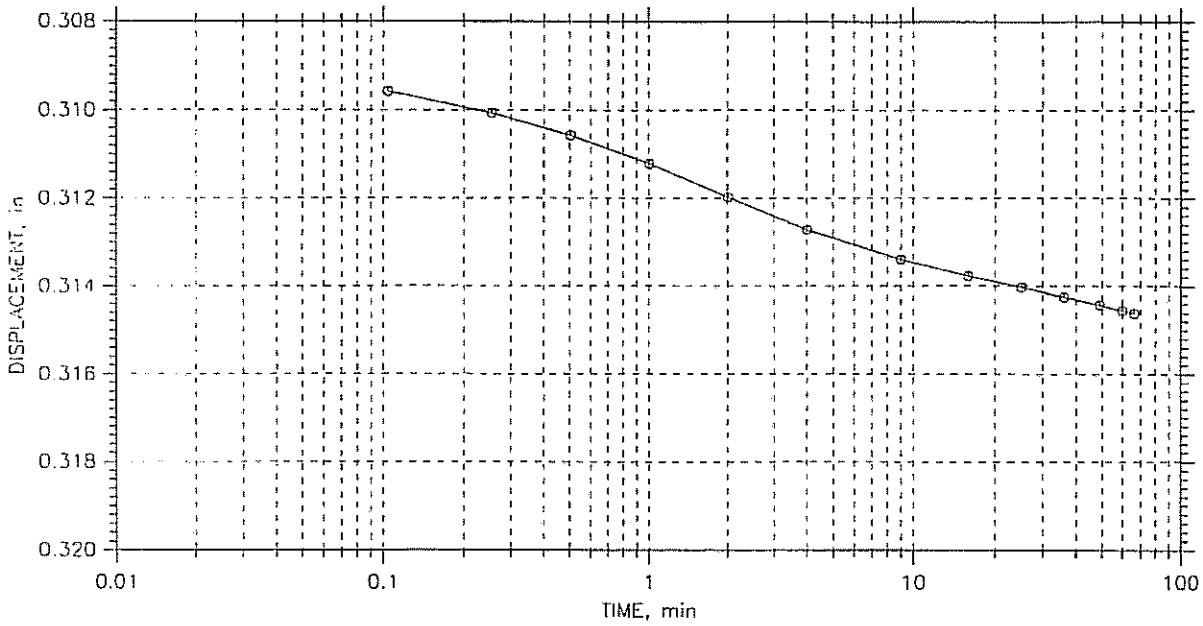
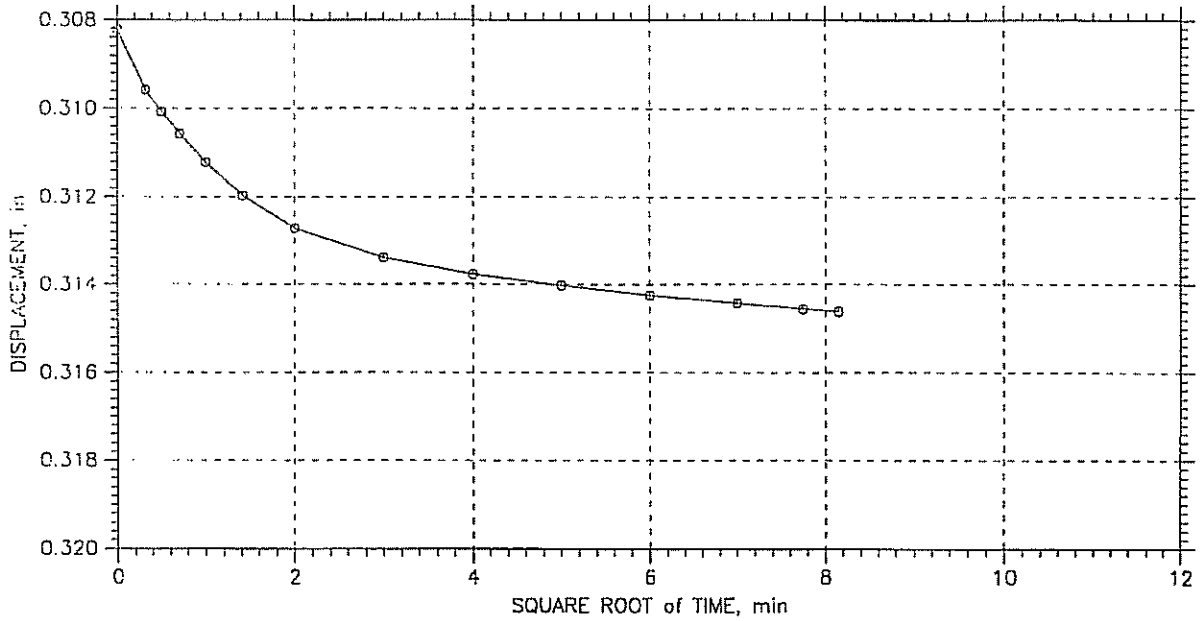
CONSOLIDATION TEST DATA

TIME CURVES

Step: 9 of 17

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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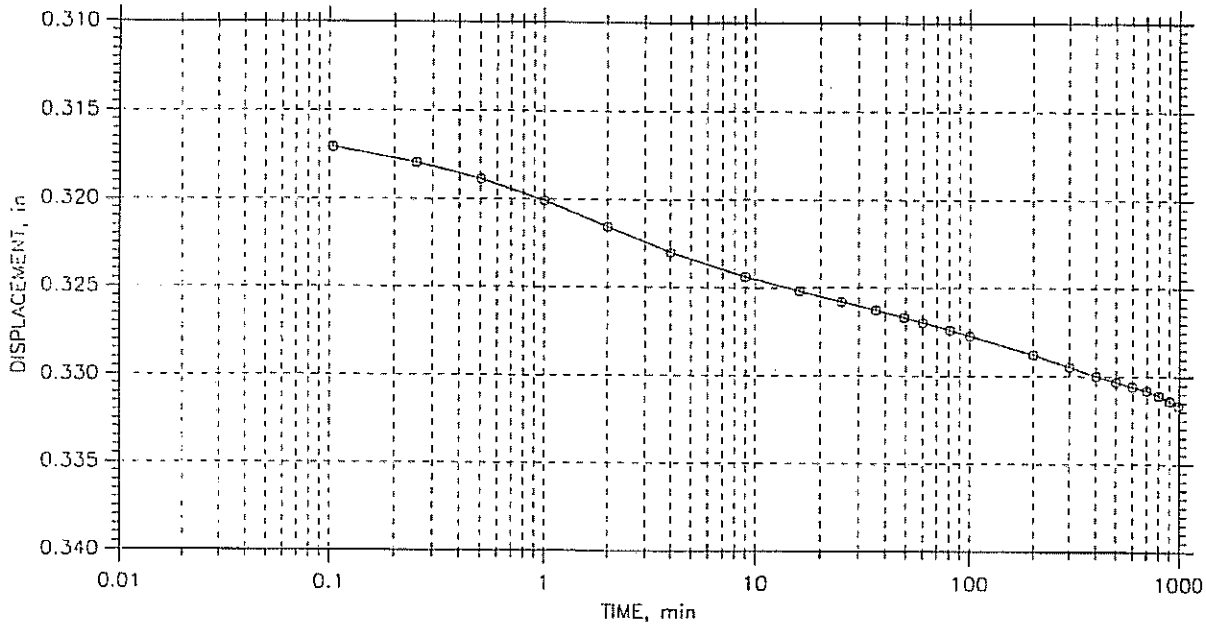
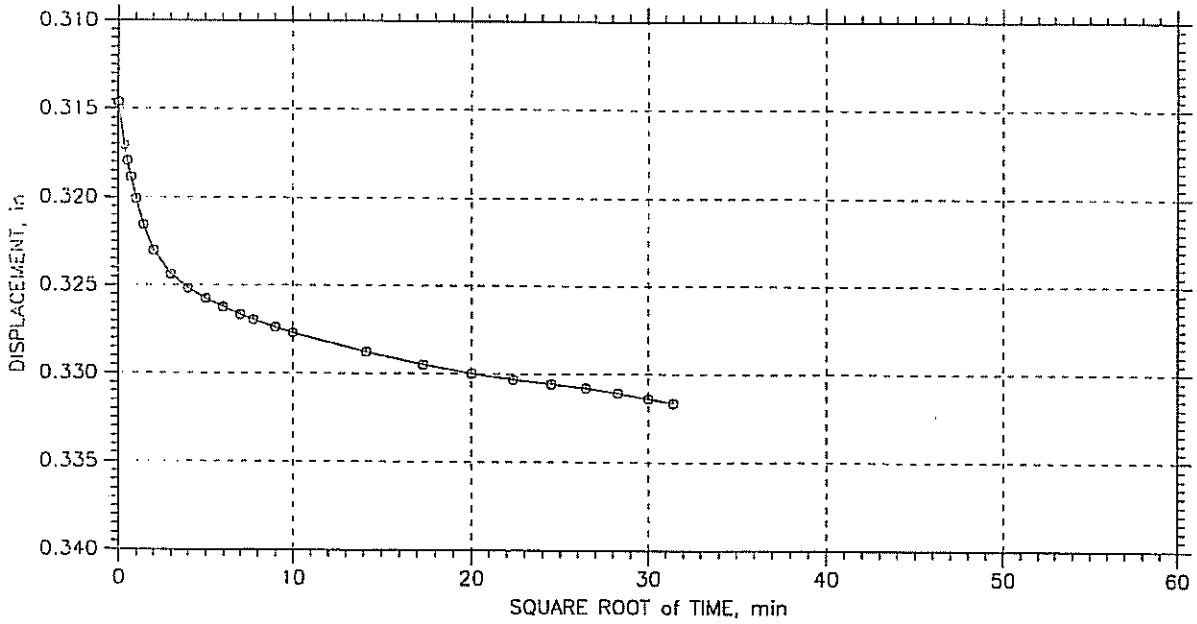
CONSOLIDATION TEST DATA

TIME CURVES

Step: 10 of 17

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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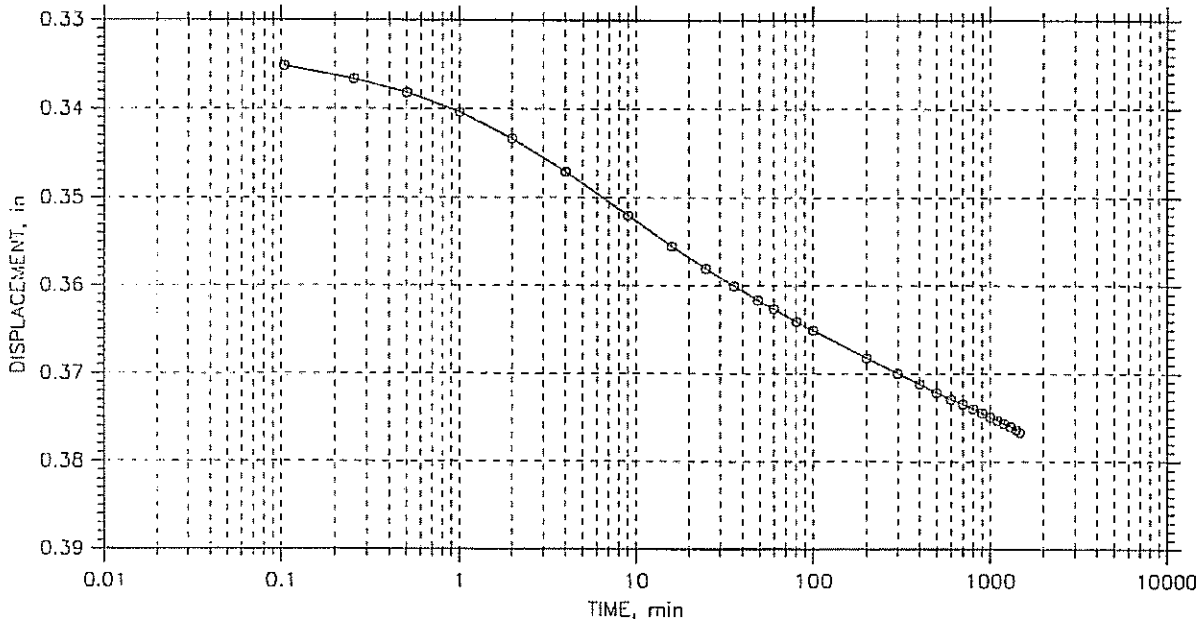
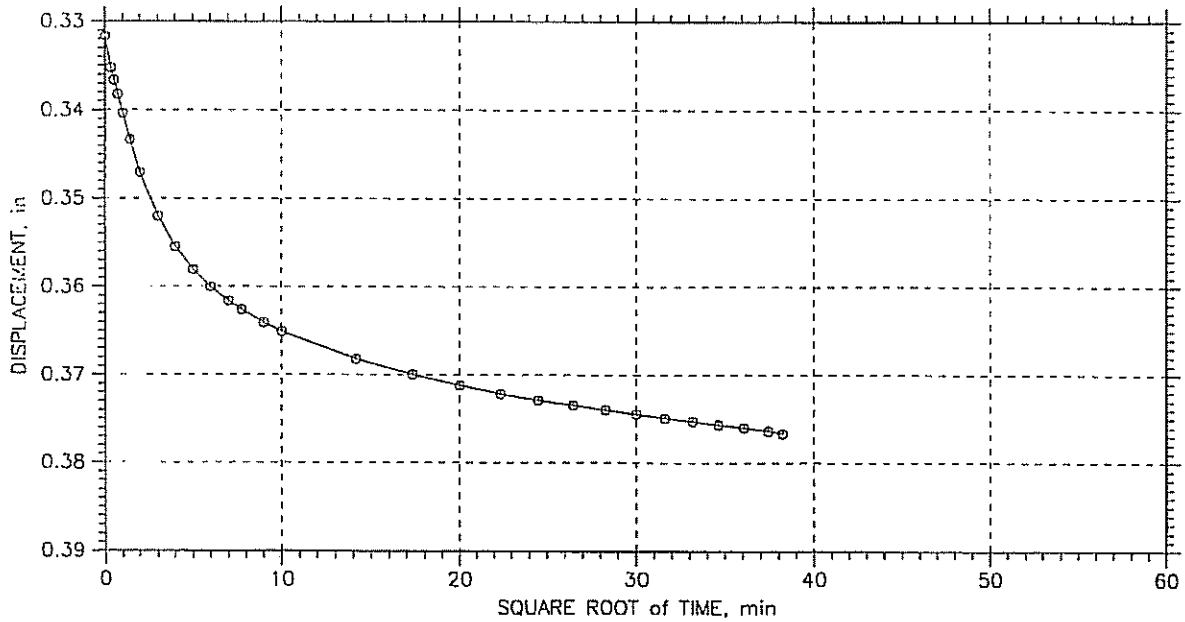
CONSOLIDATION TEST DATA

TIME CURVES

Step: 11 of 17

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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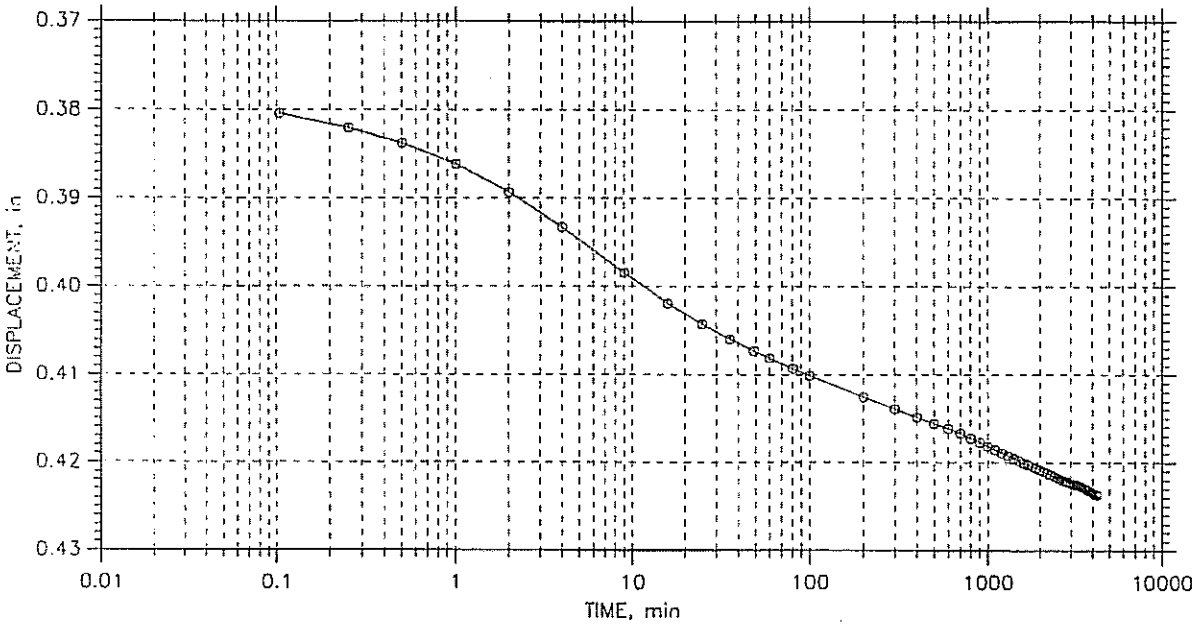
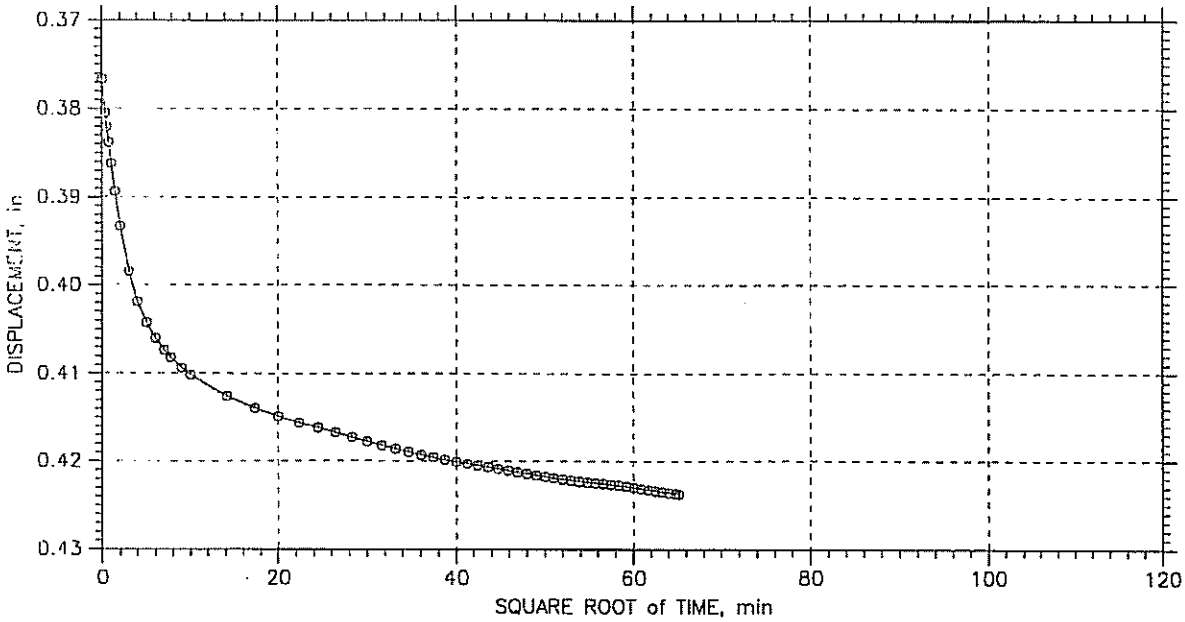
CONSOLIDATION TEST DATA

TIME CURVES

Step: 12 of 17

Stress: 8. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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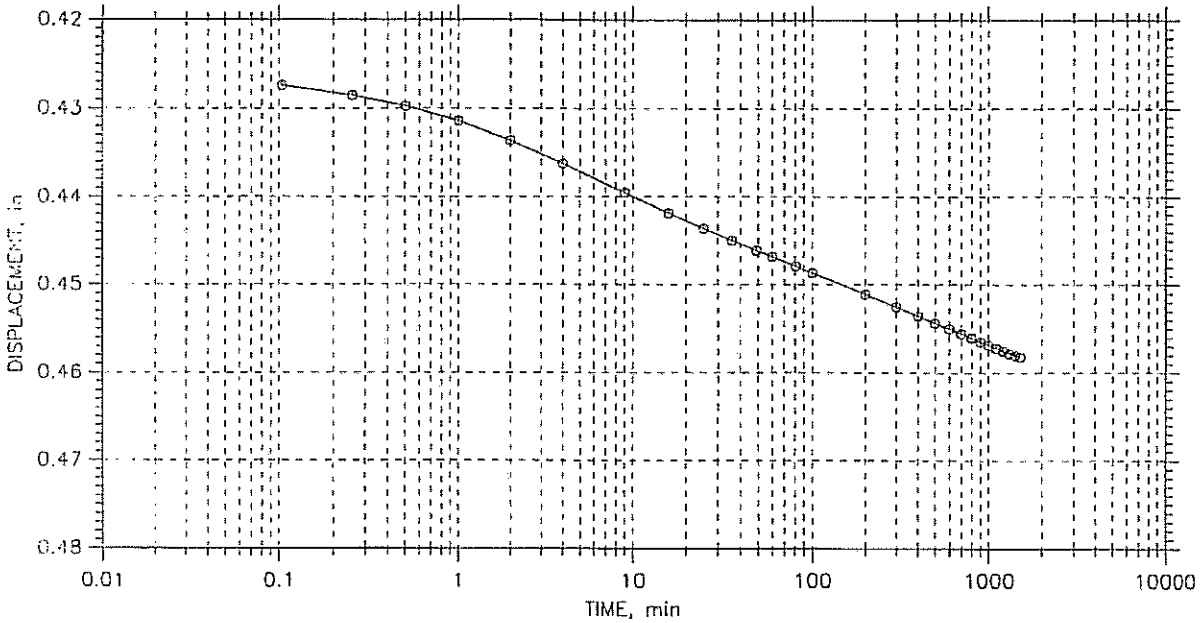
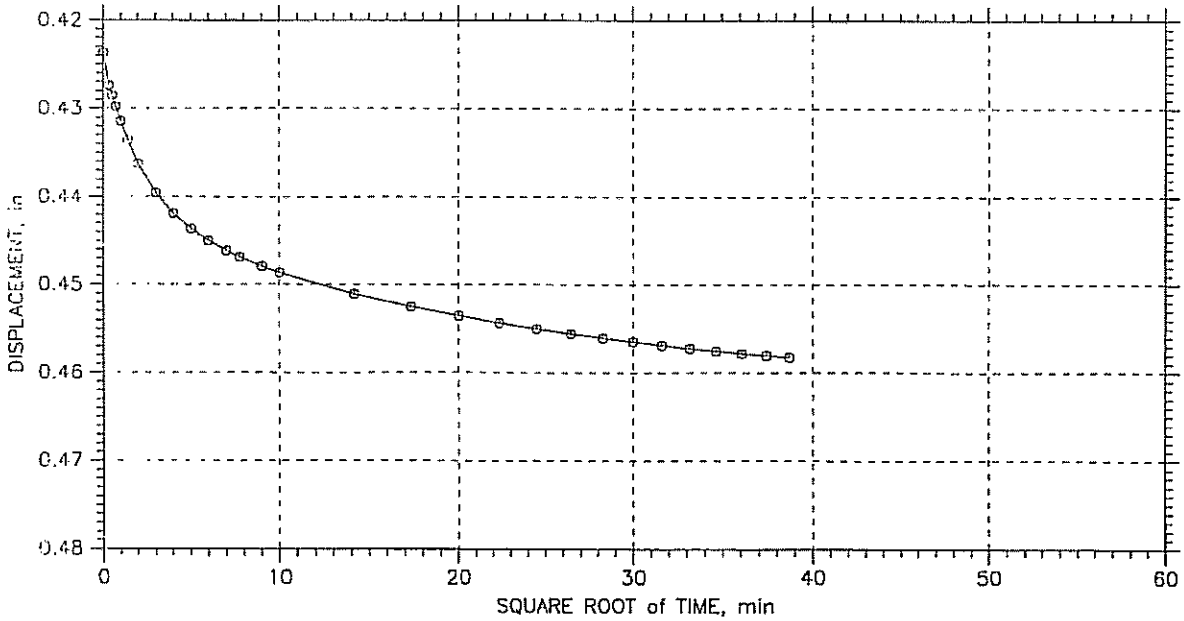
CONSOLIDATION TEST DATA

TIME CURVES

Step: 13 of 17

Stress: 16. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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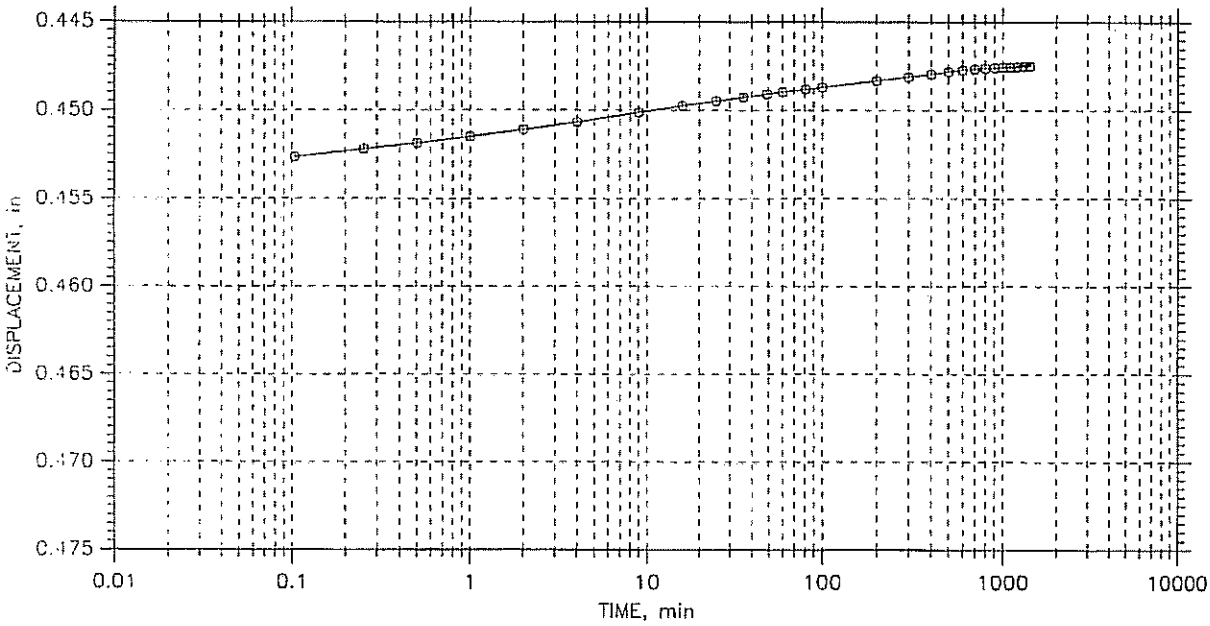
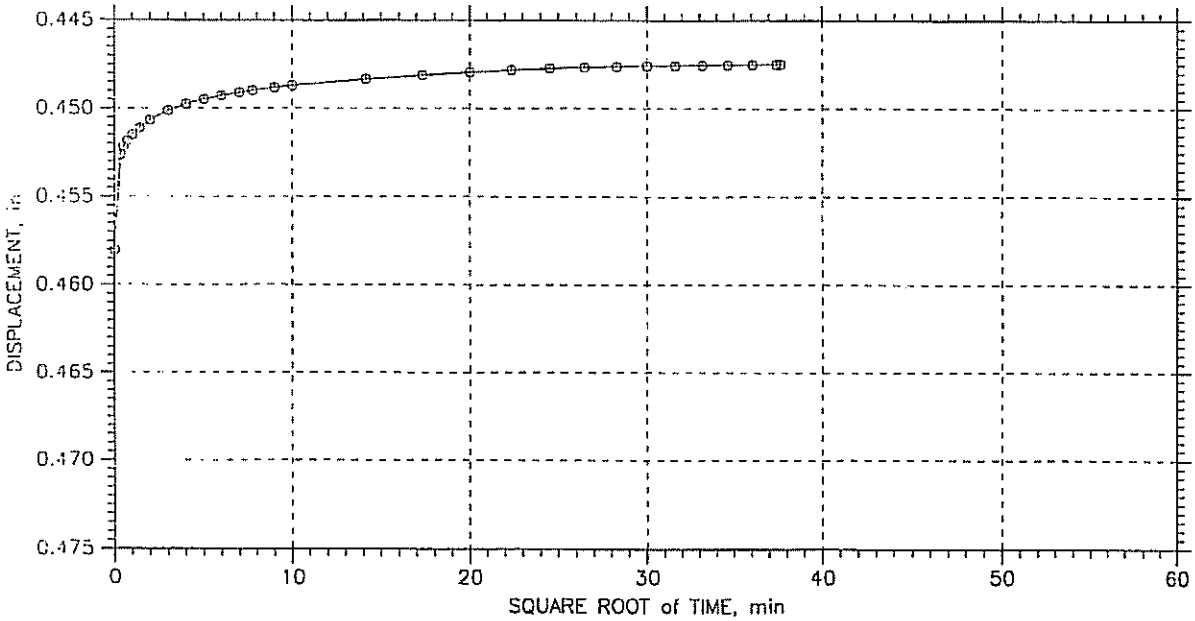
CONSOLIDATION TEST DATA

TIME CURVES

Step: 14 of 17

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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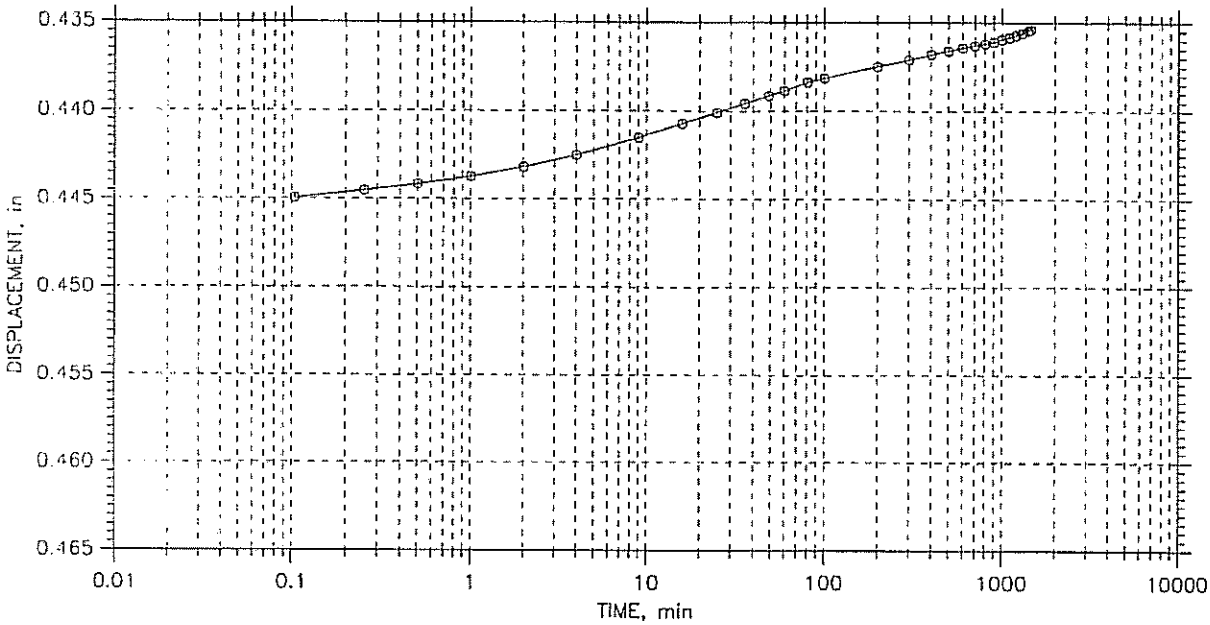
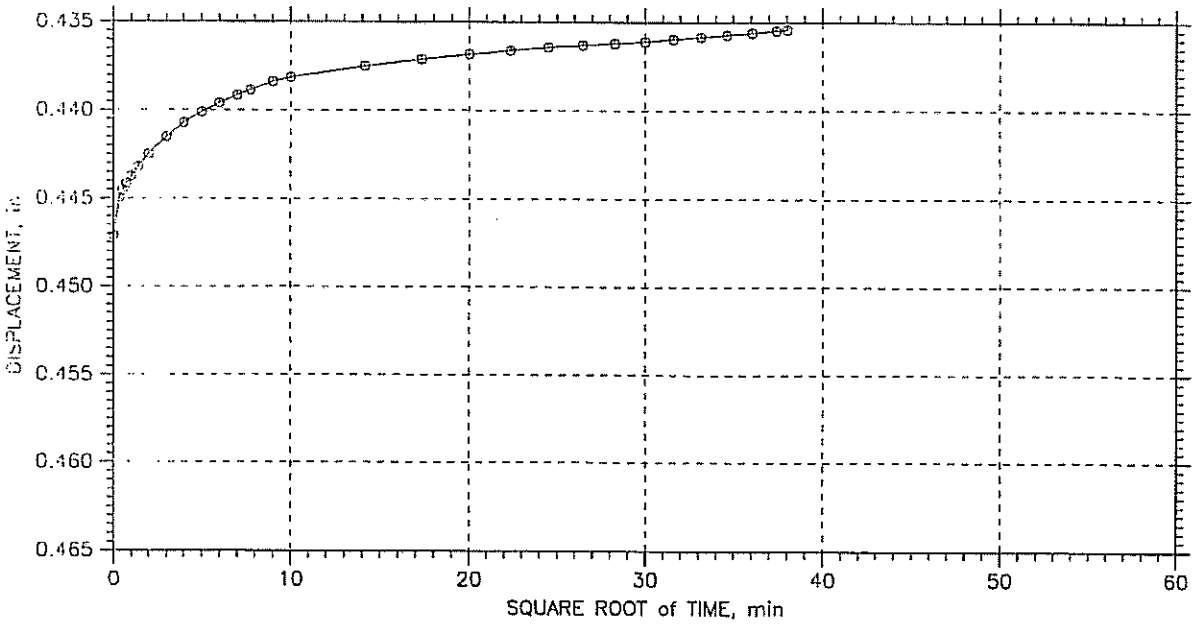
CONSOLIDATION TEST DATA

TIME CURVES

Step: 15 of 17

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

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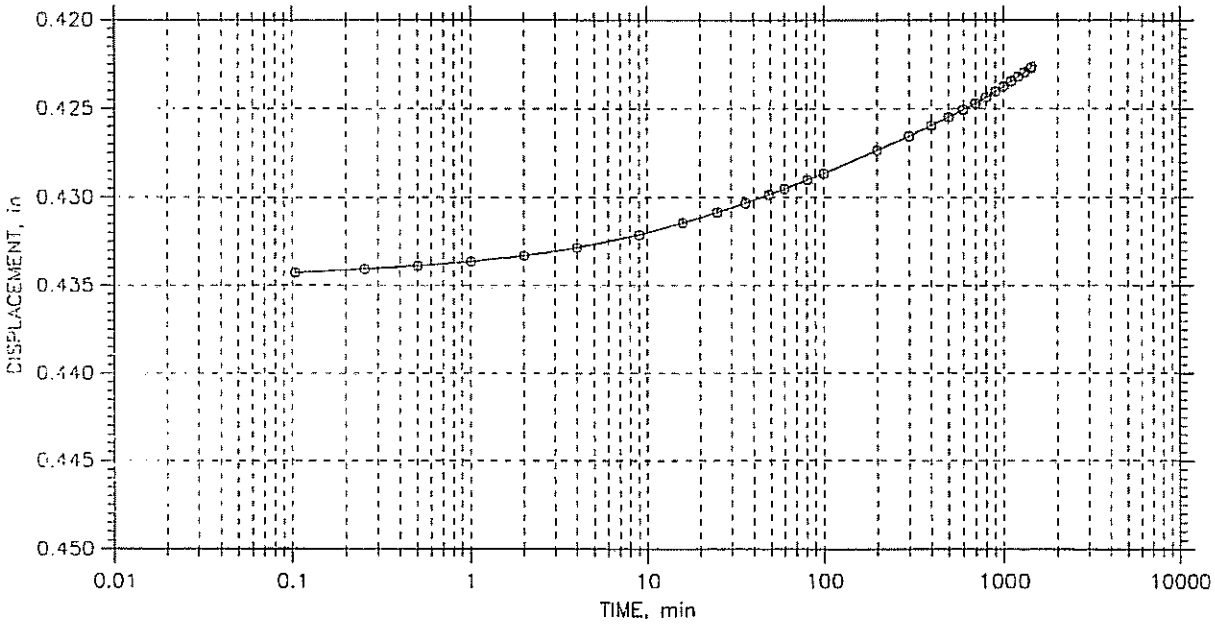
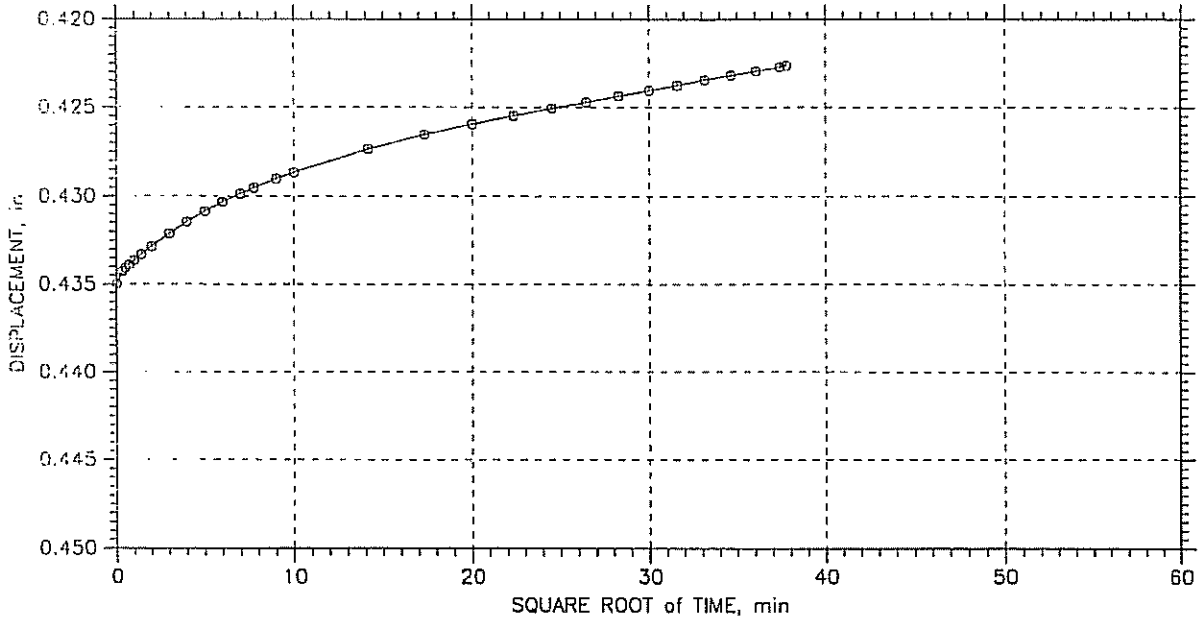
CONSOLIDATION TEST DATA

TIME CURVES

Step: 16 of 17

Stress: 0.25 tsf





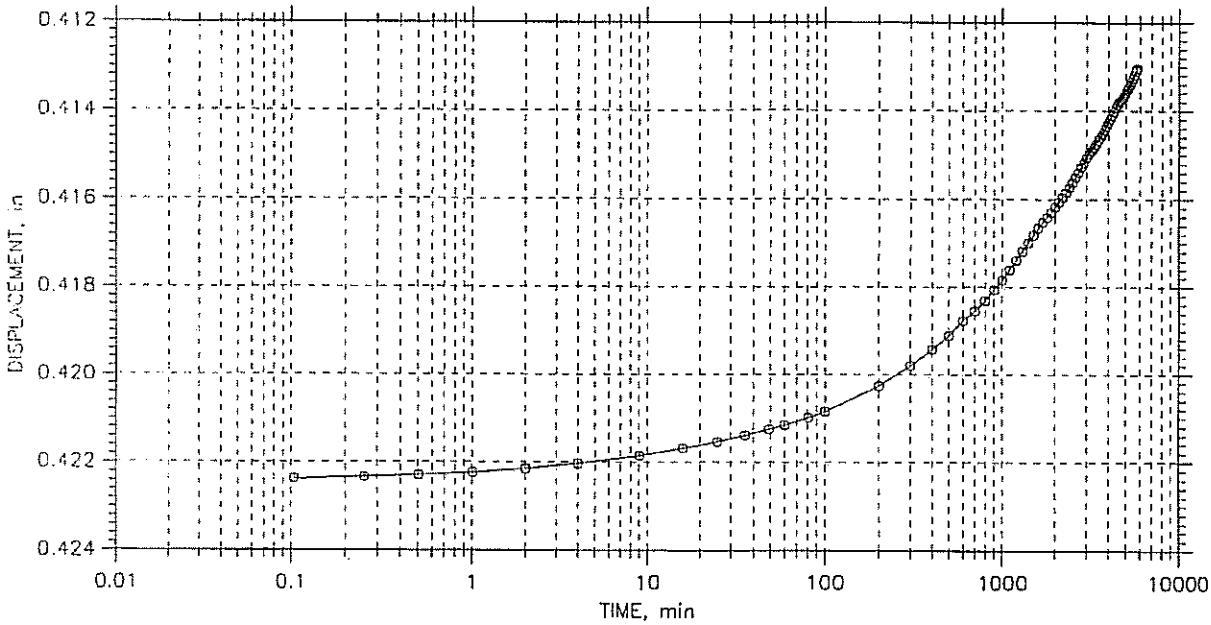
Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

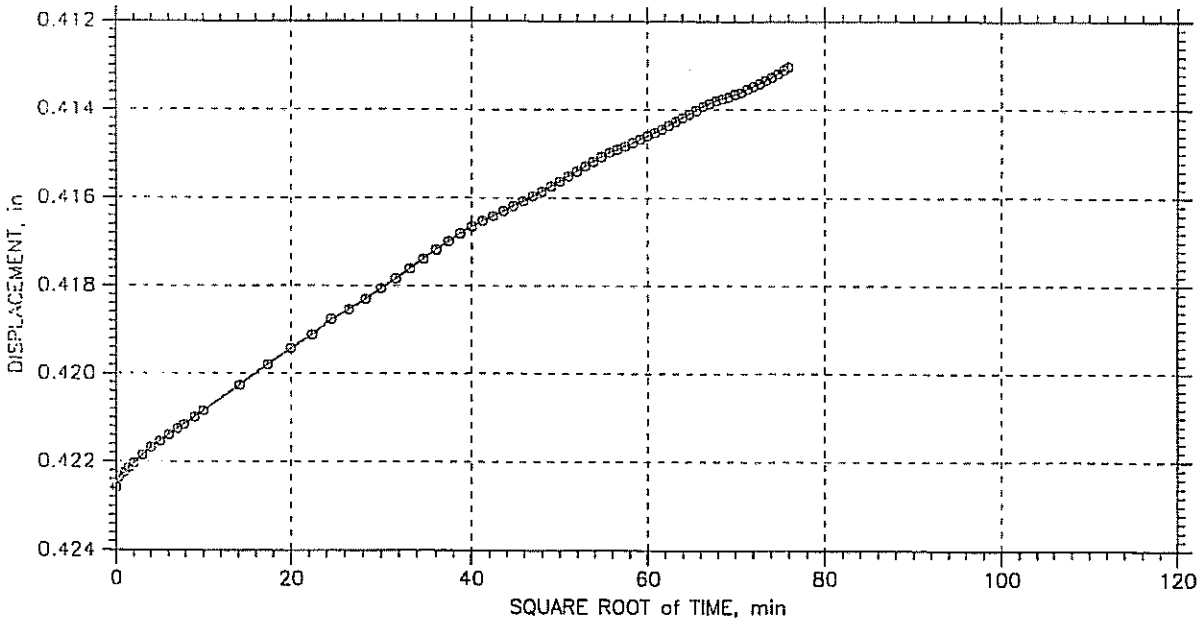
CONSOLIDATION TEST DATA

TIME CURVES

Step: 17 of 17

Stress: 0.125 tsf





Project: FOX RIVER	Location:	Project No.: X429316A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 1RA07SWA1DS	Test Date: 8/15/07	Depth:
Test No.: 16SWA1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND LITTLE ORGANICS - DARK BROWN (CL-ML)		
Remarks: Cc = 1.4 Ccr = 0.19 TEST PERFORMED AS PER ASTM D 2435		

D1, E1, E2

Foth

Foth Infrastructure & Environment, LLC

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page: 1 of 1

COC Number: COC-106006

Company:	Foth Infrastructure & Environment	Report To:	Janis Kesy	Requested Due Date:	See Sample Notes	Quote Reference:	
Address:	2737 South Ridge Rd	Copy To:		*TAT:		Project Manager:	
	Green Bay, WI 54307	Invoice To:				Project #:	
Phone: 920-497-2500	Fax: 920-496-6902	P.O.				Profile #:	
Email Address:	jkesy@foth.com	Project Name:	Lower Fox River OU1	Regulatory Agency:		Sampling Team Members:	
Site License No.:		Project Number:	07G007	State Location:	WI		MCC2, NRA

Valid Matrix Codes

Matrix	Code
Soil	S
Sediment	SE
Solid	SO
Surface Water	SW
Drinking Water	DW
Wastewater	WW
Groundwater	GW
Hazardous Liquid	H
Air	A
Oil	O
Other	X

ITEM NUMBER	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G = Grab C = Composite	DATE COLLECTED MM/DD/YYYY	TIME COLLECTED (Military time)	# Containers	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Grain size distribution (N)	Triaxial shear (N)	Consolidation (N)	Hydraulic conductivity (N)	Atterberg limits (N)							REMARKS
						Preservatives								Requested Analysis											← File
1	1-RA-07-EB1-DS-03-Comp	SE	C	09/07/2007	1535	1	1							X	X	X	X	X							
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS	ITEM #	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION
					Foth	9/11/07	1130	
					DTS	9/11	3:30 pm	

SAMPLE CONDITION:

Temp in C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Sample Intact	Y / N

SAMPLE NOTES:

Contents in 1 large double bagged bag

Additional Comments:

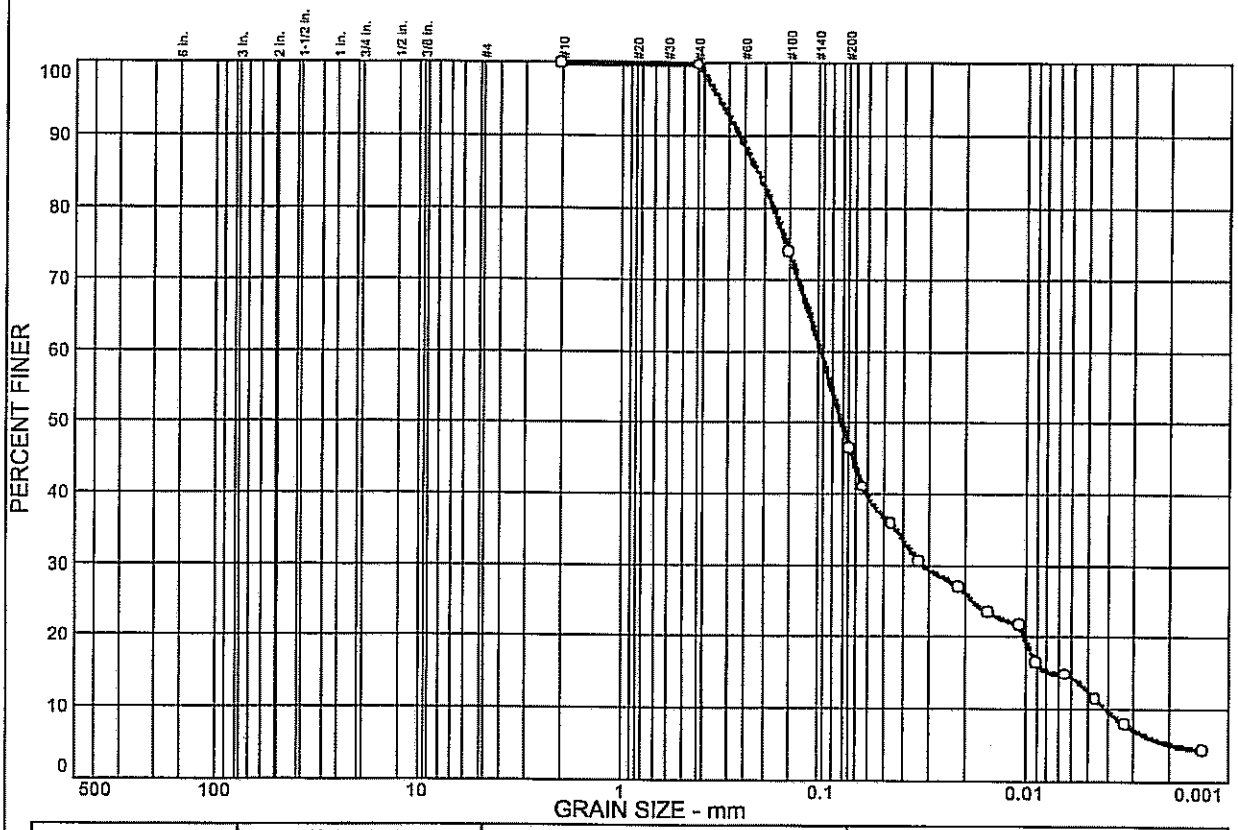
SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark Ciardelli

SIGNATURE of SAMPLER

DATE Signed 9/11/07

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.2	53.3	34.1	12.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#40	99.8		
#100	73.9		
#200	46.5		

* (no specification provided)

Soil Description

DARK GRAY BROWN ORGANIC SILTY SAND, TRACE CLAY

Atterberg Limits

PL= 54 LL= 152 PI= 98

Coefficients

D_{85}= 0.217 D_{60}= 0.105 D_{50}= 0.0820
D_{30}= 0.0319 D_{15}= 0.0076 D_{10}= 0.0041
C_u= 25.35 C_c= 2.35

Classification

USCS= OH AASHTO=

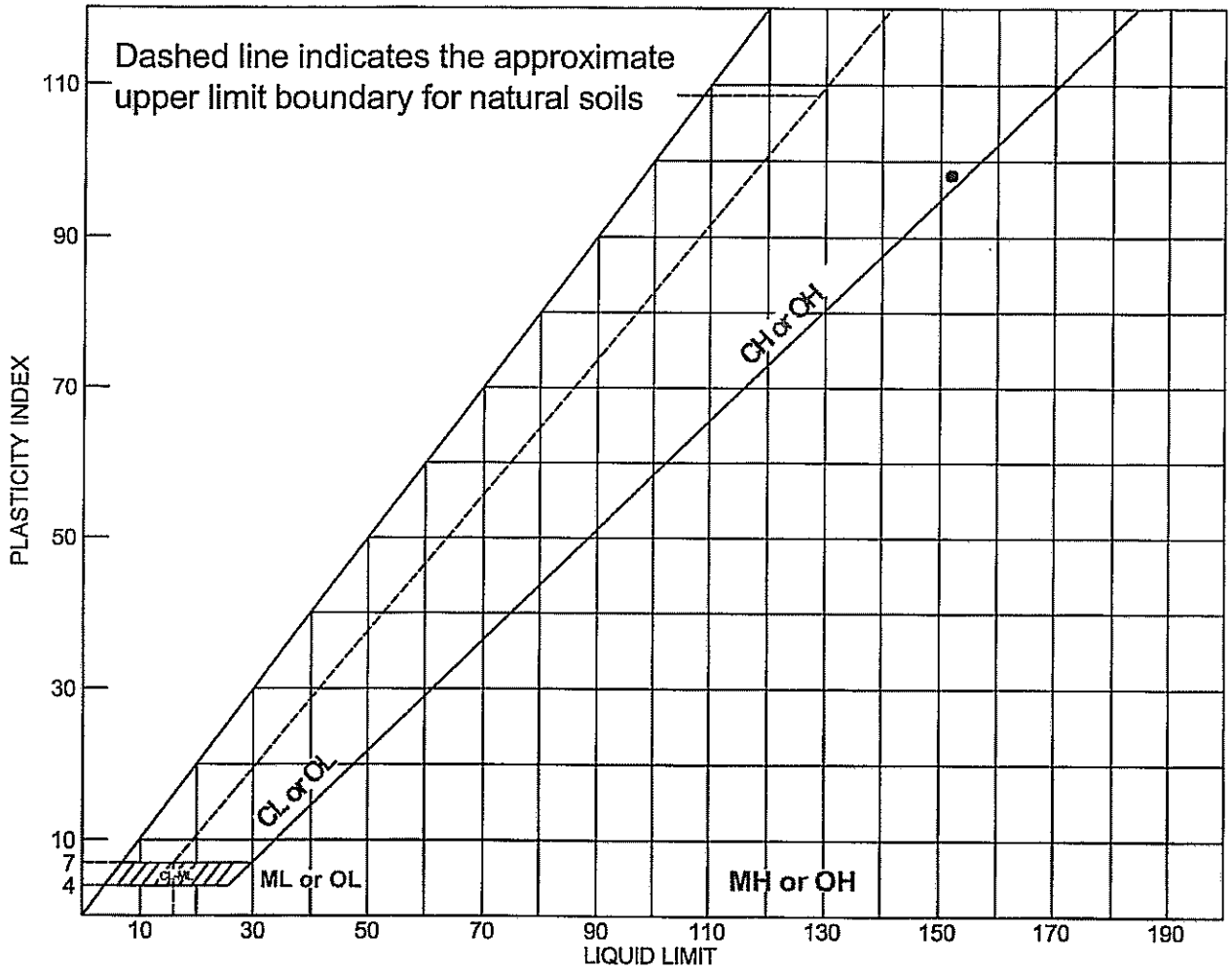
Remarks

Sample No.: DS-03 **Source of Sample:** On-site Material **Date:** 09/28/07
Location: 1-RA-07-EB1-DS-03-COMP **Elev./Depth:** COMP

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA
Project No: 4-29316A **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	On-site	DS-03	COMP	162.3	54	152	98	OH

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA

Project No.: 4-29316A **Figure**

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATION
ASTM D 5084, METHOD C
RISING TAILWATER LEVEL

STS PROJECT NO.:	X429316A
PROJECT:	LOWER FOX RIVER OU1
DATE:	10/3/2007

SUMMARY OF TEST RESULTS

SAMPLE NO.	1-RA-07-EB1-DS-03-COMP
LOCATION	0
CLASSIFICATION	RIVER SEDIMENTS - ORGANIC SANDY SILT

	INITIAL	FINAL
DRY UNIT WEIGHT (pcf)	29.9	46.6
WATER CONTENT (%)	163.3	98.9
DIAMETER (cm)	5.00	4.26
LENGTH (cm)	8.80	7.97
HYDRAULIC GRADIENT (MAXIMUM)		10.2
PERCENT SATURATION	95.316127	102.2796
HYDRAULIC CONDUCTIVITY k (cm/sec)		1.39E-07

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATIC
Rising tailwater method in a triaxial permeameter
ASTM D 5084, Method C (EM-1110-2-1906 7)

Project Name: LOWER FOX RIVER OU1
Project No.: X429316A
Project Location: WISCONSIN
Sample No.: 1-RA-07-EB1-DS-03-COMP
Sample Location:

Sample Description: RIVER SEDIMENTS - ORGANIC SANDY SILT

Cell No.: 3

Date Sampled:
Date Received:

MOISTURE CONTENT	INITIAL	FINAL
Container No.	1	0
Wet Sample & Tare (g)	263.30	273.70
Dry Sample & Tare (g)	100.00	189.80
Wt. Water (g)	163.30	83.90
Wt. Tare (g)	0.00	105.00
Wt. Dry Soil (g)	100.00	84.80
Water Content, w (%)	163.3	98.9

SATURATION DATA

Initial Cell Pressure (psi)	Final Cell Pressure (psi)	Initial PWP (psi)	Final PWP (psi)	B Value
23.0	25.0	21.0	23.0	1.00
			Final B value =	1.00

SPECIMEN INFORMATION	INITIAL	FINAL
Avg. Diameter (cm)	5.00	4.26
Avg. Height, L (cm)	8.80	7.97
X-Section Area, A (cm^2)	19.635	14.253
Specimen wet wt. (g)	217.91	168.60
Specimen Dry wt., W_s (g)	82.76	84.75
Total Volume, V (cm^3)	172.79	113.60
Dry Unit Weight (lbs/ft^3)	29.9	46.6
G_s estimated (Y or N)?	Y	#NAME?
Specific Gravity, G_s	2.700	2.700
Volume Solids, V_s (cm^3)	30.71	31.45
Pore Volume (cm^3)	142.07	82.15
Void Ratio, e	4.626	2.612
Degree of Saturation	95.3	102.3

COMMENTS:
REMOLDED SAMPLE

$$\text{Volume Solids} = \frac{W_s}{(G_s)(\text{Water Density})}$$

$$\text{Void Ratio} = \frac{V - V_s}{V_s}$$

$$\text{Degree of Saturation} = \frac{(w)(G_s)}{e}$$

Proj Name: LOWER FOX RIVER OU1
Proj No.: X429316A
Sample: 1-RA-07-EB1-DS-03-COMP

k (cm/sec)	Max i
10^{-3} to 10^{-4}	2
10^{-4} to 10^{-5}	5
10^{-5} to 10^{-6}	10
10^{-6} to 10^{-7}	20
less than 10^{-7}	30

Hydraulic Gradient, i, Guidlines as per ASTM D5084, section 8.5.1

TEST CONDITIONS

Influent Burette Area a_{in} (cm^2)	Effluent Burette Area a_{out} (cm^2)	# ascend as burette empties? (Y or N)
1.00	1.00	y

Cell Pressure (psi)	Headwater Pressure (psi)	Tailwater Pressure (psi)	Driving Head (psi)	Hydraulic Gradient Max	Hydraulic Gradient Min
25.0	23.0	22.0	1.0	10.2	7.6

TEST DATA

Date/Time (M/D/YY H:MM)	Temp. °C	Elapsed Time, t (sec)	Influent Reading (cm)	Effluent Reading (cm)	Total Change (cm)	Inflow to Outflow Ratio	Hydraulic Head, h (cm)	k, Hydraulic Conductivity (cm/sec)	k_{20} corrected for temperature (cm/sec)
9/27/2007 10:20	21.0	0	3.0	22.5	0.0	0.00	89.8	0	0
9/28/2007 7:00	21.0	74400	4.2	19.0	2.3	0.34	85.1	1.62E-07	1.58E-07
9/28/2007 15:15	21.0	29700	5.9	18.0	-0.7	1.70	82.4	2.43E-07	2.37E-07
9/29/2007 8:00	21.0	60300	6.3	16.2	1.4	0.22	80.2	1.01E-07	9.82E-08
9/30/2007 9:30	21.0	91800	8.0	13.8	0.7	0.71	76.1	1.28E-07	1.25E-07
10/1/2007 7:00	21.0	77400	9.5	12.0	0.3	0.83	72.8	1.28E-07	1.25E-07
10/1/2007 16:30	21.0	34200	10.3	11.3	-0.1	1.14	71.3	1.36E-07	1.33E-07
10/2/2007 7:00	21.0	52200	11.2	10.2	0.2	0.82	69.3	1.22E-07	1.19E-07
10/2/2007 17:00	21.0	36000	12.2	9.2	0.0	1.00	67.3	1.82E-07	1.78E-07
						(0.75-1.25)		Final Value =	1.39E-07

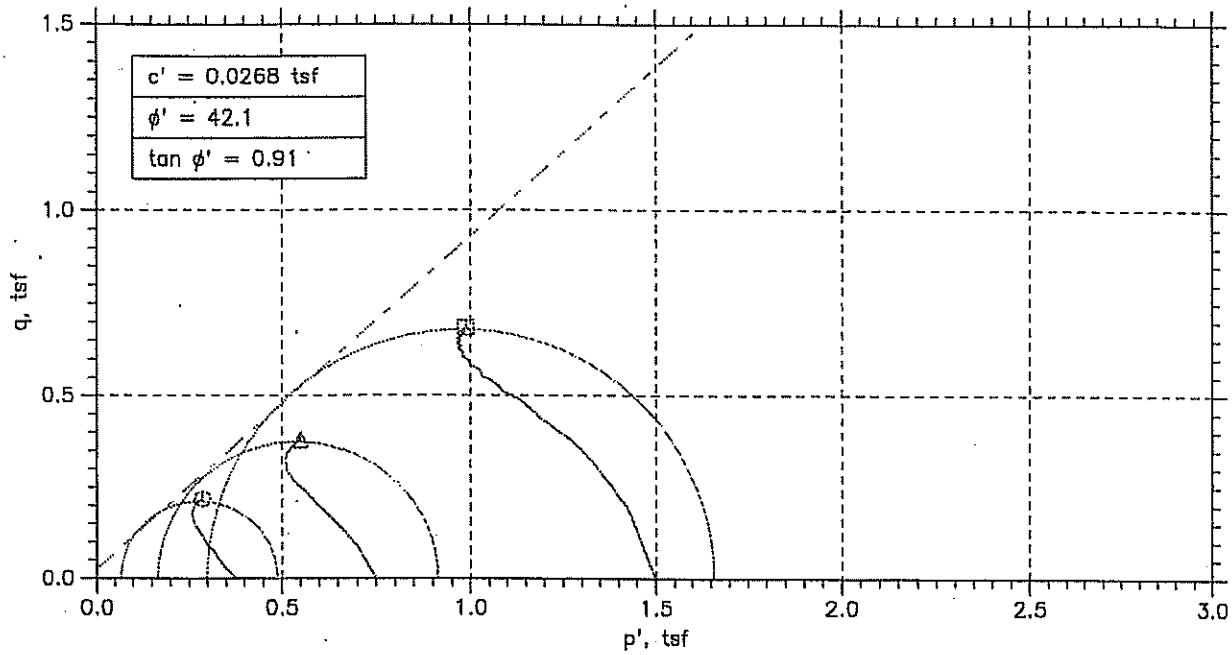
$$k_{20} = \frac{(a_{in})(a_{out})L[\ln(h_{n-1}/h_n)]*R_T}{At(a_{in} + a_{out})}$$

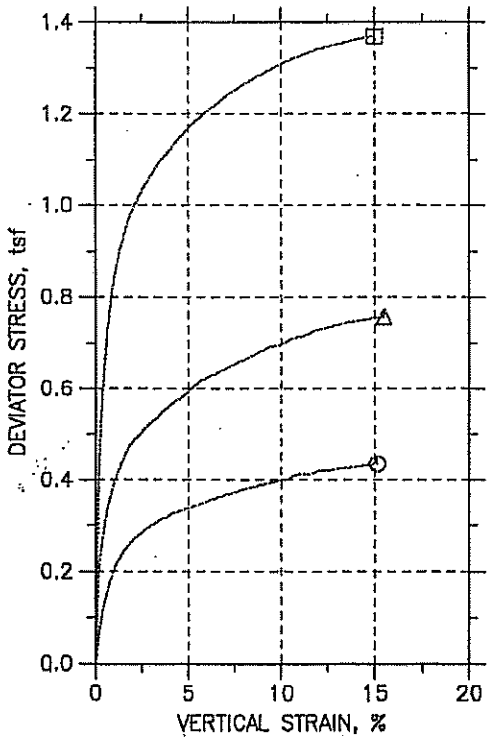
Total Change = $(Eff_{n-1} - Eff_n) - (Inf_n - Inf_{n-1})$

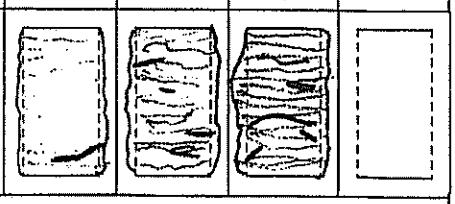
"Hydraulic Head" incorporates the difference in head as well as the added driving head pressure.
"Total Change" is the difference between the Effluent change from t_0 to t_1 and the Influent change from t_0 to t_1.

Notate temperature to the nearest half a degree. The correction calculation averages the two consecutive readings.
k is multiplied by the temperature correction, R_T, which is the ratio of the viscosity of water at test temperature to the viscosity of water at 20° C. Temperature range may be between 19° and 25° for formula calculation.
"Final Value" is the average of 4 consecutive readings of which none are less than or greater than 25% of their average. (50% of average if < 1 x 10^{-8})

TRIAXIAL COMPRESSION TEST REPORT





Symbol		⊙	△	⊡	
Test No.		EB1T1	EB1T2	EB1T3	
Initial	Diameter, in	2.7949	2.8469	2.8374	
	Height, in	5.5689	5.4256	5.3965	
	Water Content, %	160.02	157.90	150.70	
	Dry Density, pcf	32.19	32.	33.49	
	Saturation, %	103.41	101.30	102.38	
	Void Ratio	3.946	3.9747	3.7535	
Before Shear	Water Content, %	85.31	72.16	61.12	
	Dry Density, pcf	35.14	37.	40.96	
	Saturation, %	100.00	100.00	100.00	
	Void Ratio	3.5299	3.3029	2.8869	
	Back Press., tsf	5.0402	5.0401	5.0398	
Minor Prin. Stress, tsf		0.37423	0.74868	1.4978	
Max. Dev. Stress, tsf		0.43473	0.75725	1.3694	
Time to Failure, min		204	204	196	
Strain Rate, %/min		0.0773	0.0749	0.0767	
B-Value		---	---	---	
Estimated Specific Gravity		2.55	2.55	2.55	
Liquid Limit		0	0	0	
Plastic Limit		0	0	0	
Plasticity Index		0	0	0	
Failure Sketch					

Project: FOX RIVER

Location:

Project No.: 29316-A

Boring No.: RA-07-EB1

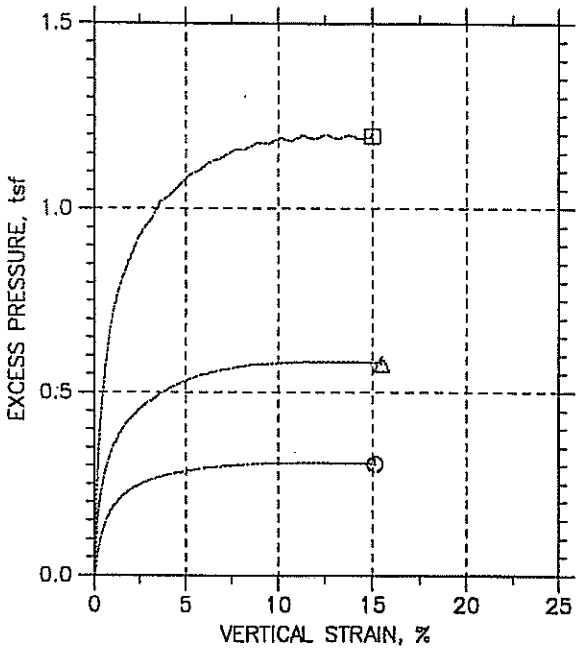
Sample Type: REMOLDED

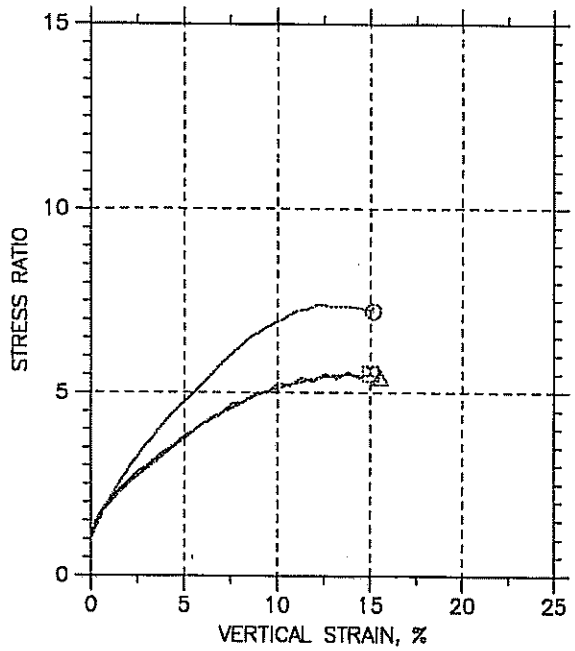
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN

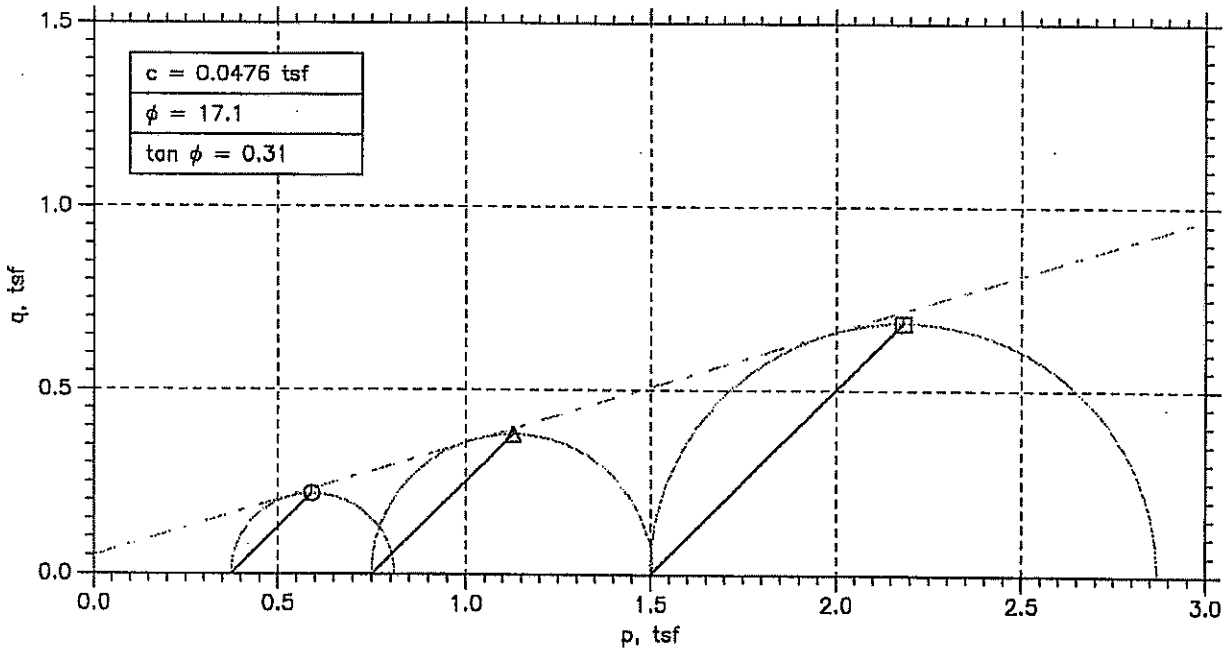
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Thu, 25-OCT-2007 08:06:42

TRIAXIAL COMPRESSION TEST REPORT







Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: RA-07-EB1	Test Date: 10/11/07	Depth:
Test No.: EB1T1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767		

Tue, 16-OCT-2007 09:32:53

TRIAXIAL TEST

Project: FOX [illegible]R
Boring No.:
Sample No.: RA-07-EB1
Test No.: EB1T1

Location:
Tested By: MJS
Test Date: 10/11/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.57 in
Specimen Area: 6.14 in^2
Specimen Volume: 34.17 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.55

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.135	0	0	5.0402	5.4144	5.4144
2	2.004	0.14069	6.1437	4.1986	0.049205	5.0887	5.4144	5.4636
3	4.004	0.28792	6.1527	8.0888	0.094656	5.1291	5.4144	5.5091
4	6.003	0.43679	6.1619	11.315	0.13221	5.1595	5.4144	5.5466
5	8.003	0.58566	6.1712	13.521	0.15775	5.1824	5.4144	5.5722
6	10.003	0.73453	6.1804	15.229	0.17741	5.1999	5.4144	5.5918
7	12.003	0.8834	6.1897	16.628	0.19342	5.214	5.4144	5.6078
8	14.003	1.0355	6.1992	17.933	0.20828	5.2263	5.4144	5.6227
9	16.003	1.1877	6.2088	19.095	0.22144	5.2362	5.4144	5.6358
10	18.003	1.3349	6.218	20.092	0.23265	5.2456	5.4144	5.647
11	20.003	1.4854	6.2275	20.874	0.24134	5.2532	5.4144	5.6557
12	24.002	1.7766	6.246	22.155	0.25539	5.2655	5.4144	5.6698
13	28.002	2.0695	6.2647	23.484	0.2699	5.276	5.4144	5.6843
14	32.002	2.3623	6.2835	24.456	0.28024	5.2848	5.4144	5.6946
15	36.001	2.6584	6.3026	25.334	0.28941	5.2924	5.4144	5.7038
16	40.001	2.9545	6.3218	26.164	0.29799	5.2982	5.4144	5.7124
17	44.001	3.2522	6.3413	26.947	0.30596	5.3029	5.4144	5.7204
18	48.001	3.5532	6.3611	27.659	0.31306	5.3076	5.4144	5.7275
19	52.004	3.8559	6.3811	28.275	0.31904	5.3123	5.4144	5.7334
20	56.004	4.1553	6.401	28.987	0.32605	5.3158	5.4144	5.7405
21	60.004	4.4448	6.4204	29.461	0.33039	5.3193	5.4144	5.7448
22	68.004	5.0354	6.4603	30.363	0.33839	5.3246	5.4144	5.7528
23	76	5.6292	6.501	31.312	0.34678	5.3292	5.4144	5.7612
24	84.003	6.2296	6.5426	32.284	0.35528	5.3333	5.4144	5.7697
25	92.003	6.8284	6.5847	33.352	0.36468	5.3369	5.4144	5.7791
26	100	7.414	6.6263	34.158	0.37115	5.3398	5.4144	5.7856
27	108	8.0013	6.6686	35.059	0.37853	5.3421	5.4144	5.7929
28	116	8.5985	6.7122	35.89	0.38498	5.3445	5.4144	5.7994
29	124	9.2054	6.757	36.791	0.39203	5.3456	5.4144	5.8064
30	132	9.7943	6.8012	37.55	0.39752	5.3468	5.4144	5.8119
31	140	10.378	6.8455	38.262	0.40243	5.3474	5.4144	5.8168
32	148	10.966	6.8906	39.472	0.41244	5.348	5.4144	5.8268
33	156	11.56	6.9369	39.685	0.4119	5.3486	5.4144	5.8263
34	164	12.165	6.9847	40.895	0.42155	5.3486	5.4144	5.836
35	172	12.749	7.0315	41.274	0.42264	5.348	5.4144	5.837
36	180	13.339	7.0794	41.891	0.42605	5.3474	5.4144	5.8404
37	188	13.943	7.129	42.46	0.42883	5.3468	5.4144	5.8432
38	196	14.548	7.1795	43.101	0.43224	5.3456	5.4144	5.8466
39	204	15.131	7.2288	43.646	0.43473	5.3445	5.4144	5.8491

TRIAXIAL TEST

Project: FOX [illegible]ER
Boring No.:
Sample No.: RA-07-EB1
Test No.: EB1T1

Location:
Tested By: MJS
Test Date: 10/11/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.57 in
Specimen Area: 6.14 in^2
Specimen Volume: 34.17 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.55

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.4144	5.4144	0	0.000	0.37423	0.37423	1.000	0.37423	0
2	0.14	5.4636	5.4144	0.04857	0.987	0.37487	0.32566	1.151	0.35027	0.024602
3	0.29	5.5091	5.4144	0.088948	0.940	0.37994	0.28529	1.332	0.33261	0.047328
4	0.44	5.5466	5.4144	0.11938	0.903	0.38707	0.25486	1.519	0.32096	0.066105
5	0.59	5.5722	5.4144	0.1422	0.901	0.38979	0.23204	1.680	0.31091	0.078875
6	0.73	5.5918	5.4144	0.15975	0.900	0.39189	0.21448	1.827	0.30319	0.088705
7	0.88	5.6078	5.4144	0.1738	0.899	0.39386	0.20044	1.965	0.29715	0.096712
8	1.04	5.6227	5.4144	0.18609	0.893	0.39643	0.18815	2.107	0.29229	0.10414
9	1.19	5.6358	5.4144	0.19604	0.885	0.39964	0.1782	2.243	0.28892	0.11072
10	1.33	5.647	5.4144	0.2054	0.883	0.40148	0.16884	2.378	0.28516	0.11632
11	1.49	5.6557	5.4144	0.21301	0.883	0.40257	0.16123	2.497	0.2819	0.12067
12	1.78	5.6698	5.4144	0.22529	0.882	0.40433	0.14894	2.715	0.27664	0.1277
13	2.07	5.6843	5.4144	0.23583	0.874	0.4083	0.13841	2.950	0.27336	0.13495
14	2.36	5.6946	5.4144	0.24461	0.873	0.40986	0.12963	3.162	0.26975	0.14012
15	2.66	5.7038	5.4144	0.25221	0.871	0.41143	0.12202	3.372	0.26673	0.14471
16	2.95	5.7124	5.4144	0.25806	0.866	0.41416	0.11617	3.565	0.26516	0.14899
17	3.25	5.7204	5.4144	0.26275	0.859	0.41745	0.11149	3.744	0.26447	0.15298
18	3.55	5.7275	5.4144	0.26743	0.854	0.41987	0.10681	3.931	0.26334	0.15653
19	3.86	5.7334	5.4144	0.27211	0.853	0.42117	0.10212	4.124	0.26165	0.15952
20	4.16	5.7405	5.4144	0.27562	0.845	0.42467	0.098614	4.306	0.26164	0.16303
21	4.44	5.7448	5.4144	0.27913	0.845	0.42549	0.095103	4.474	0.2603	0.16519
22	5.04	5.7528	5.4144	0.2844	0.840	0.42823	0.089836	4.767	0.25903	0.1692
23	5.63	5.7612	5.4144	0.28908	0.834	0.43194	0.085155	5.072	0.25855	0.17339
24	6.23	5.7697	5.4144	0.29318	0.825	0.43634	0.081058	5.383	0.2587	0.17764
25	6.83	5.7791	5.4144	0.29669	0.814	0.44223	0.077547	5.703	0.25989	0.18234
26	7.41	5.7856	5.4144	0.29961	0.807	0.44578	0.074621	5.974	0.2602	0.18558
27	8.00	5.7929	5.4144	0.30195	0.798	0.45081	0.072281	6.237	0.26155	0.18927
28	8.60	5.7994	5.4144	0.30429	0.790	0.45492	0.06994	6.504	0.26243	0.19249
29	9.21	5.8064	5.4144	0.30546	0.779	0.4608	0.06877	6.701	0.26478	0.19601
30	9.79	5.8119	5.4144	0.30663	0.771	0.46512	0.067599	6.881	0.26636	0.19876
31	10.38	5.8168	5.4144	0.30722	0.763	0.46945	0.067014	7.005	0.26823	0.20122
32	10.97	5.8268	5.4144	0.30781	0.746	0.47887	0.066429	7.209	0.27265	0.20622
33	11.56	5.8263	5.4144	0.30839	0.749	0.47775	0.065844	7.256	0.27179	0.20595
34	12.16	5.836	5.4144	0.30839	0.732	0.4874	0.065844	7.402	0.27662	0.21078
35	12.75	5.837	5.4144	0.30781	0.728	0.48907	0.066429	7.362	0.27775	0.21132
36	13.34	5.8404	5.4144	0.30722	0.721	0.49306	0.067014	7.358	0.28004	0.21302
37	13.94	5.8432	5.4144	0.30663	0.715	0.49643	0.067599	7.344	0.28201	0.21442
38	14.55	5.8466	5.4144	0.30546	0.707	0.50101	0.06877	7.285	0.28489	0.21612
39	15.13	5.8491	5.4144	0.30429	0.700	0.50467	0.06994	7.216	0.2873	0.21736

TRIAXIAL TEST

Project: FOX [illegible]R
Boring No.:
Sample No.: RA-07-EB1
Test No.: EB1T2

Location:
Tested By: MJS
Test Date: 10/11/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.43 in
Specimen Area: 6.37 in^2
Specimen Volume: 34.54 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.55

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.3653	0	0	5.0401	5.7888	5.7888
2	2.0041	0.12768	6.3734	16.561	0.18709	5.1853	5.7888	5.9759
3	4.004	0.27918	6.3831	22.135	0.24968	5.2448	5.7888	6.0385
4	6.004	0.43069	6.3928	26.262	0.29578	5.2891	5.7888	6.0846
5	8.004	0.5822	6.4026	29.37	0.33028	5.323	5.7888	6.1191
6	10.004	0.73371	6.4124	31.836	0.35746	5.3492	5.7888	6.1463
7	12.004	0.88522	6.4222	33.926	0.38035	5.3714	5.7888	6.1691
8	14.003	1.0367	6.432	35.641	0.39897	5.3906	5.7888	6.1878
9	16.003	1.1882	6.4418	37.142	0.41513	5.4064	5.7888	6.2039
10	18.003	1.338	6.4516	38.803	0.43304	5.421	5.7888	6.2218
11	20.003	1.4896	6.4616	39.928	0.44492	5.4332	5.7888	6.2337
12	24.003	1.7892	6.4813	42.18	0.46857	5.4548	5.7888	6.2574
13	28.002	2.0922	6.5013	43.895	0.48612	5.4734	5.7888	6.2749
14	32.002	2.3969	6.5216	45.342	0.50058	5.4892	5.7888	6.2894
15	36.002	2.7016	6.542	46.735	0.51435	5.5026	5.7888	6.3032
16	40.002	3.008	6.5627	48.075	0.52743	5.5148	5.7888	6.3162
17	44.001	3.3111	6.5833	49.04	0.53634	5.5259	5.7888	6.3251
18	48.001	3.6158	6.6041	50.433	0.54984	5.5358	5.7888	6.3386
19	52.001	3.9205	6.625	51.612	0.56091	5.5458	5.7888	6.3497
20	56.001	4.2252	6.6461	52.577	0.56959	5.5533	5.7888	6.3584
21	60.001	4.5282	6.6672	53.542	0.5782	5.5615	5.7888	6.367
22	68.001	5.1343	6.7098	55.739	0.59811	5.5743	5.7888	6.3869
23	76.004	5.7437	6.7532	57.99	0.61827	5.586	5.7888	6.4071
24	84.004	6.3532	6.7971	59.437	0.6296	5.5936	5.7888	6.4184
25	92	6.9592	6.8414	60.938	0.64132	5.6012	5.7888	6.4301
26	100	7.5652	6.8863	62.653	0.65507	5.6058	5.7888	6.4439
27	108	8.1764	6.9321	64.1	0.66577	5.6105	5.7888	6.4546
28	116	8.7875	6.9785	65.761	0.67848	5.6152	5.7888	6.4673
29	124	9.4004	7.0257	67.423	0.69095	5.6175	5.7888	6.4798
30	132	10.012	7.0735	68.495	0.6972	5.6192	5.7888	6.486
31	140	10.623	7.1218	70.156	0.70926	5.6204	5.7888	6.4981
32	148	11.224	7.17	71.175	0.71472	5.6216	5.7888	6.5035
33	156	11.836	7.2199	72.836	0.72635	5.6227	5.7888	6.5152
34	164	12.439	7.2696	74.069	0.7336	5.6233	5.7888	6.5224
35	172	13.052	7.3208	75.248	0.74006	5.6233	5.7888	6.5289
36	180	13.666	7.3729	76.427	0.74634	5.6227	5.7888	6.5351
37	188	14.274	7.4252	77.231	0.74889	5.6216	5.7888	6.5377
38	196	14.882	7.4782	78.356	0.75441	5.6204	5.7888	6.5432
39	204	15.486	7.5317	79.214	0.75725	5.6181	5.7888	6.5461

TRIAXIAL TEST

Project: FOX [illegible]ER
Boring No.:
Sample No.: RA-07-EB1
Test No.: EB1T2

Location:
Tested By: MJS
Test Date: 10/11/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.43 in
Specimen Area: 6.37 in^2
Specimen Volume: 34.54 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.55

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.7888	5.7888	0	0.000	0.74868	0.74868	1.000	0.74868	0
2	0.13	5.9759	5.7888	0.14522	0.776	0.79055	0.60347	1.310	0.69701	0.093544
3	0.28	6.0385	5.7888	0.20471	0.820	0.79365	0.54398	1.459	0.66882	0.12484
4	0.43	6.0846	5.7888	0.24903	0.842	0.79543	0.49965	1.592	0.64754	0.14789
5	0.58	6.1191	5.7888	0.28286	0.856	0.79611	0.46583	1.709	0.63097	0.16514
6	0.73	6.1463	5.7888	0.3091	0.865	0.79704	0.43958	1.813	0.61831	0.17873
7	0.89	6.1691	5.7888	0.33126	0.871	0.79777	0.41742	1.911	0.6076	0.19017
8	1.04	6.1878	5.7888	0.35051	0.879	0.79714	0.39817	2.002	0.59766	0.19948
9	1.19	6.2039	5.7888	0.36626	0.882	0.79756	0.38243	2.086	0.58999	0.20756
10	1.34	6.2218	5.7888	0.38084	0.879	0.80089	0.36785	2.177	0.58437	0.21652
11	1.49	6.2337	5.7888	0.39308	0.884	0.80052	0.3556	2.251	0.57806	0.22246
12	1.79	6.2574	5.7888	0.41466	0.885	0.80259	0.33402	2.403	0.56831	0.23428
13	2.09	6.2749	5.7888	0.43333	0.891	0.80148	0.31536	2.541	0.55842	0.24306
14	2.40	6.2894	5.7888	0.44907	0.897	0.80019	0.29961	2.671	0.5499	0.25029
15	2.70	6.3032	5.7888	0.46249	0.899	0.80055	0.2862	2.797	0.54338	0.25718
16	3.01	6.3162	5.7888	0.47473	0.900	0.80138	0.27395	2.925	0.53767	0.26372
17	3.31	6.3251	5.7888	0.48582	0.906	0.79921	0.26287	3.040	0.53104	0.26817
18	3.62	6.3386	5.7888	0.49573	0.902	0.80279	0.25296	3.174	0.52787	0.27492
19	3.92	6.3497	5.7888	0.50564	0.901	0.80396	0.24304	3.308	0.5235	0.28046
20	4.23	6.3584	5.7888	0.51323	0.901	0.80505	0.23546	3.419	0.52025	0.28479
21	4.53	6.367	5.7888	0.52139	0.902	0.8055	0.22729	3.544	0.5164	0.2891
22	5.13	6.3869	5.7888	0.53422	0.893	0.81258	0.21446	3.789	0.51352	0.29906
23	5.74	6.4071	5.7888	0.54589	0.883	0.82107	0.2028	4.049	0.51193	0.30913
24	6.35	6.4184	5.7888	0.55347	0.879	0.82482	0.19522	4.225	0.51002	0.3148
25	6.96	6.4301	5.7888	0.56105	0.875	0.82895	0.18764	4.418	0.50829	0.32066
26	7.57	6.4439	5.7888	0.56572	0.864	0.83804	0.18297	4.580	0.51051	0.32754
27	8.18	6.4546	5.7888	0.57038	0.857	0.84408	0.1783	4.734	0.51119	0.33289
28	8.79	6.4673	5.7888	0.57505	0.848	0.85212	0.17364	4.907	0.51288	0.33924
29	9.40	6.4798	5.7888	0.57738	0.836	0.86226	0.17131	5.033	0.51678	0.34548
30	10.01	6.486	5.7888	0.57913	0.831	0.86676	0.16956	5.112	0.51816	0.3486
31	10.62	6.4981	5.7888	0.5803	0.818	0.87765	0.16839	5.212	0.52302	0.35463
32	11.22	6.5035	5.7888	0.58146	0.814	0.88194	0.16722	5.274	0.52458	0.35736
33	11.84	6.5152	5.7888	0.58263	0.802	0.89241	0.16606	5.374	0.52923	0.36318
34	12.44	6.5224	5.7888	0.58321	0.795	0.89907	0.16547	5.433	0.53227	0.3668
35	13.05	6.5289	5.7888	0.58321	0.788	0.90553	0.16547	5.472	0.5355	0.37003
36	13.67	6.5351	5.7888	0.58263	0.781	0.9124	0.16606	5.495	0.53923	0.37317
37	14.27	6.5377	5.7888	0.58146	0.776	0.91611	0.16722	5.478	0.54167	0.37444
38	14.88	6.5432	5.7888	0.5803	0.769	0.9228	0.16839	5.480	0.5456	0.37721
39	15.49	6.5461	5.7888	0.57796	0.763	0.92798	0.17072	5.436	0.54935	0.37863

TRIAXIAL TEST

Project: FOX R
Boring No.:
Sample No.: RA-07-EB1
Test No.: EB1T3

Location:
Tested By: MJS
Test Date: 10/11/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 137.07 mm
Specimen Area: 6.32 in^2
Specimen Volume: 34.12 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/mm
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.55

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.3231	0	0	5.0398	6.5376	6.5376
2	2.0028	0.13203	6.3315	32.781	0.37278	5.2965	6.5376	6.9104
3	4.0028	0.27759	6.3407	47.041	0.53415	5.4342	6.5376	7.0718
4	6.0028	0.42485	6.3501	56.091	0.63598	5.5268	6.5376	7.1736
5	8.0027	0.57211	6.3595	62.721	0.7101	5.5959	6.5376	7.2477
6	10.003	0.72275	6.3692	67.72	0.76554	5.6563	6.5376	7.3031
7	12.003	0.87509	6.3789	71.771	0.81009	5.7085	6.5376	7.3477
8	14.003	1.0257	6.3887	75.139	0.84681	5.7518	6.5376	7.3844
9	16.003	1.1764	6.3984	77.98	0.8775	5.787	6.5376	7.4151
10	18.002	1.3304	6.4084	80.506	0.90451	5.8133	6.5376	7.4421
11	20.002	1.4844	6.4184	82.611	0.9267	5.8374	6.5376	7.4643
12	24.002	1.7874	6.4382	86.399	0.96622	5.8784	6.5376	7.5038
13	28.002	2.0904	6.4581	89.398	0.99668	5.9223	6.5376	7.5343
14	32.001	2.3951	6.4783	92.082	1.0234	5.9616	6.5376	7.561
15	36.001	2.7014	6.4987	94.45	1.0464	5.9827	6.5376	7.584
16	40.001	3.0078	6.5192	96.554	1.0664	6.002	6.5376	7.604
17	44.001	3.3142	6.5399	98.659	1.0862	6.0284	6.5376	7.6238
18	48.001	3.6205	6.5607	100.5	1.1029	6.056	6.5376	7.6405
19	52.001	3.9303	6.5818	102.24	1.1184	6.0677	6.5376	7.656
20	56.001	4.235	6.6027	103.97	1.1338	6.0788	6.5376	7.6714
21	60.001	4.5413	6.6239	105.66	1.1485	6.0964	6.5376	7.6861
22	68.002	5.1558	6.6668	108.71	1.174	6.1269	6.5376	7.7116
23	76.004	5.7719	6.7104	111.5	1.1963	6.1439	6.5376	7.7339
24	84	6.388	6.7546	114.23	1.2177	6.1679	6.5376	7.7553
25	92.003	6.9906	6.7984	116.76	1.2366	6.1761	6.5376	7.7742
26	100	7.6067	6.8437	119.23	1.2544	6.1978	6.5376	7.792
27	108	8.2228	6.8896	121.55	1.2702	6.1984	6.5376	7.8078
28	116	8.8491	6.937	123.76	1.2845	6.2171	6.5376	7.8221
29	124	9.4601	6.9838	125.86	1.2976	6.2136	6.5376	7.8352
30	132	10.071	7.0313	127.91	1.3098	6.23	6.5376	7.8474
31	140	10.684	7.0795	129.81	1.3202	6.2218	6.5376	7.8578
32	148	11.305	7.1291	131.65	1.3296	6.2365	6.5376	7.8672
33	156	11.918	7.1787	133.65	1.3405	6.2259	6.5376	7.8781
34	164	12.532	7.2291	135.23	1.3468	6.24	6.5376	7.8844
35	172	13.145	7.2801	136.7	1.352	6.2283	6.5376	7.8896
36	180	13.763	7.3322	138.39	1.3589	6.2388	6.5376	7.8965
37	188	14.386	7.3856	140.02	1.365	6.2265	6.5376	7.9026
38	196	15	7.439	141.49	1.3694	6.2347	6.5376	7.907

TRIAXIAL TEST

Project: FOX [illegible]R
Boring No.:
Sample No.: RA-07-EB1
Test No.: EB1T3

Location:
Tested By: MJS
Test Date: 10/11/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 137.07 mm
Specimen Area: 6.32 in^2
Specimen Volume: 34.12 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/mm
Correction Type: Uniform

Liquid Limit: 0

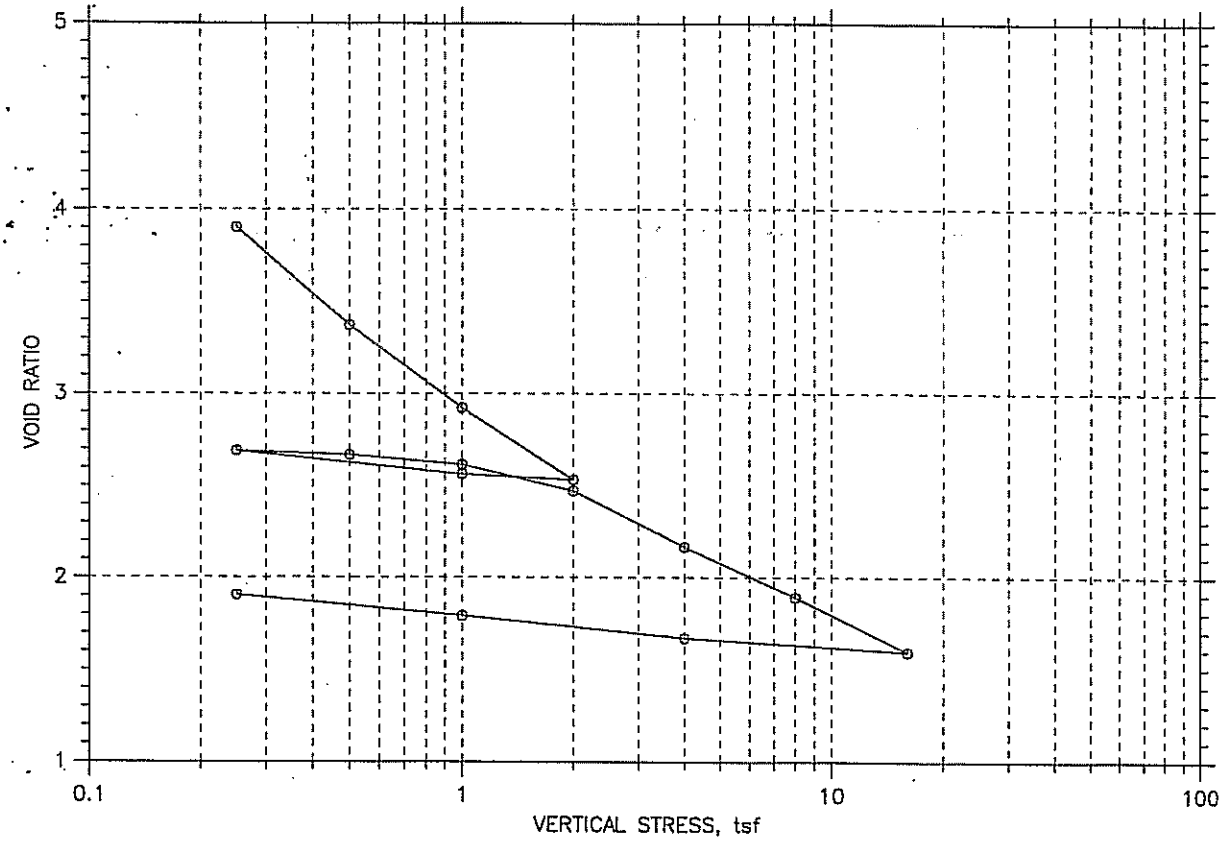
Plastic Limit: 0

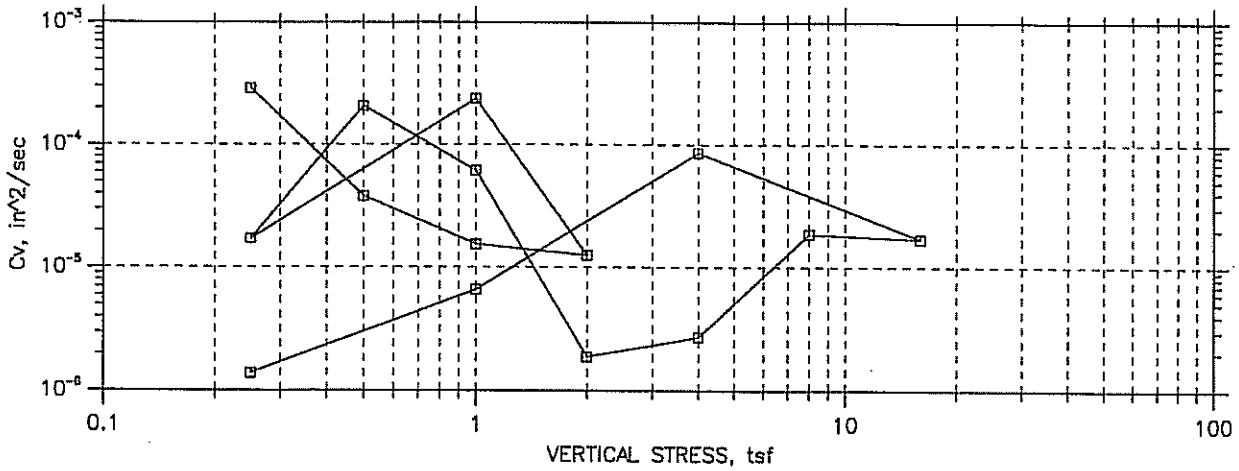
Estimated Specific Gravity: 2.55

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	6.5376	6.5376	0	0.000	1.4978	1.4978	1.000	1.4978	0
2	0.13	6.9104	6.5376	0.25668	0.689	1.6139	1.2411	1.300	1.4275	0.18639
3	0.28	7.0718	6.5376	0.39439	0.738	1.6376	1.1034	1.484	1.3705	0.26708
4	0.42	7.1736	6.5376	0.48699	0.766	1.6468	1.0108	1.629	1.3288	0.31799
5	0.57	7.2477	6.5376	0.55614	0.783	1.6518	0.94167	1.754	1.2967	0.35505
6	0.72	7.3031	6.5376	0.6165	0.805	1.6468	0.88131	1.869	1.2641	0.38277
7	0.88	7.3477	6.5376	0.66865	0.825	1.6392	0.82915	1.977	1.2342	0.40505
8	1.03	7.3844	6.5376	0.71202	0.841	1.6326	0.78578	2.078	1.2092	0.42341
9	1.18	7.4151	6.5376	0.74718	0.851	1.6281	0.75062	2.169	1.1894	0.43875
10	1.33	7.4421	6.5376	0.77355	0.855	1.6288	0.72425	2.249	1.1765	0.45225
11	1.48	7.4643	6.5376	0.79758	0.861	1.6269	0.70022	2.323	1.1636	0.46335
12	1.79	7.5038	6.5376	0.8386	0.868	1.6254	0.6592	2.466	1.1423	0.48311
13	2.09	7.5343	6.5376	0.88255	0.885	1.6119	0.61525	2.620	1.1136	0.49834
14	2.40	7.561	6.5376	0.92181	0.901	1.5994	0.57599	2.777	1.0877	0.5117
15	2.70	7.584	6.5376	0.94291	0.901	1.6013	0.55489	2.886	1.0781	0.52321
16	3.01	7.604	6.5376	0.96225	0.902	1.6019	0.53555	2.991	1.0687	0.53319
17	3.31	7.6238	6.5376	0.98862	0.910	1.5954	0.50918	3.133	1.0523	0.54309
18	3.62	7.6405	6.5376	1.0162	0.921	1.5846	0.48164	3.290	1.0331	0.55147
19	3.93	7.656	6.5376	1.0279	0.919	1.5883	0.46992	3.380	1.0291	0.5592
20	4.23	7.6714	6.5376	1.039	0.916	1.5926	0.45878	3.471	1.0257	0.56689
21	4.54	7.6861	6.5376	1.0566	0.920	1.5897	0.4412	3.603	1.0154	0.57423
22	5.16	7.7116	6.5376	1.0871	0.926	1.5848	0.41073	3.858	0.99774	0.58701
23	5.77	7.7339	6.5376	1.1041	0.923	1.5901	0.39373	4.038	0.9919	0.59816
24	6.39	7.7553	6.5376	1.1281	0.926	1.5874	0.36971	4.294	0.97854	0.60883
25	6.99	7.7742	6.5376	1.1363	0.919	1.5981	0.3615	4.421	0.97979	0.61829
26	7.61	7.792	6.5376	1.158	0.923	1.5942	0.33982	4.691	0.96702	0.6272
27	8.22	7.8078	6.5376	1.1586	0.912	1.6095	0.33923	4.744	0.97435	0.63512
28	8.85	7.8221	6.5376	1.1773	0.917	1.605	0.32048	5.008	0.96273	0.64225
29	9.46	7.8352	6.5376	1.1738	0.905	1.6216	0.324	5.005	0.97279	0.6488
30	10.07	7.8474	6.5376	1.1902	0.909	1.6174	0.30759	5.258	0.96251	0.65492
31	10.68	7.8578	6.5376	1.182	0.895	1.636	0.31579	5.181	0.97589	0.66009
32	11.31	7.8672	6.5376	1.1967	0.900	1.6307	0.30114	5.415	0.96595	0.6648
33	11.92	7.8781	6.5376	1.1861	0.885	1.6522	0.31169	5.301	0.98193	0.67024
34	12.53	7.8844	6.5376	1.2002	0.891	1.6445	0.29763	5.525	0.97105	0.67342
35	13.14	7.8896	6.5376	1.1885	0.879	1.6613	0.30935	5.370	0.98534	0.67599
36	13.76	7.8965	6.5376	1.199	0.882	1.6577	0.2988	5.548	0.97825	0.67945
37	14.39	7.9026	6.5376	1.1867	0.869	1.6761	0.31111	5.388	0.9936	0.68249
38	15.00	7.907	6.5376	1.1949	0.873	1.6724	0.3029	5.521	0.98763	0.68472

CONSOLIDATION TEST DATA

SUMMARY REPORT





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: I-RA-07-EB1
Test No.: 16EB1

Location:
Tested By: MJS
Test Date: 10/8/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435

Estimated Specific Gravity: 2.50
Initial Void Ratio: 5.25
Final Void Ratio: 1.91

Liquid Limit: 0
Plastic Limit: 0
Plasticity Index: 0

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	X-7	RING	RING	RING
Wt. Container + Wet Soil, gm	171.6	151.56	116.05	116.05
Wt. Container + Dry Soil, gm	94.55	98.51	98.51	98.51
Wt. Container, gm	44.59	74.36	74.36	74.36
Wt. Dry Soil, gm	49.96	24.15	24.15	24.15
Water Content, %	154.22	219.67	72.63	72.63
Void Ratio	---	5.25	1.91	---
Degree of Saturation, %	---	104.70	95.30	---
Dry Unit Weight, pcf	---	24.99	53.719	---

CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: I-RA-07-EB1
Test No.: 16EB1

Location:
Tested By: MJS
Test Date: 10/8/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435

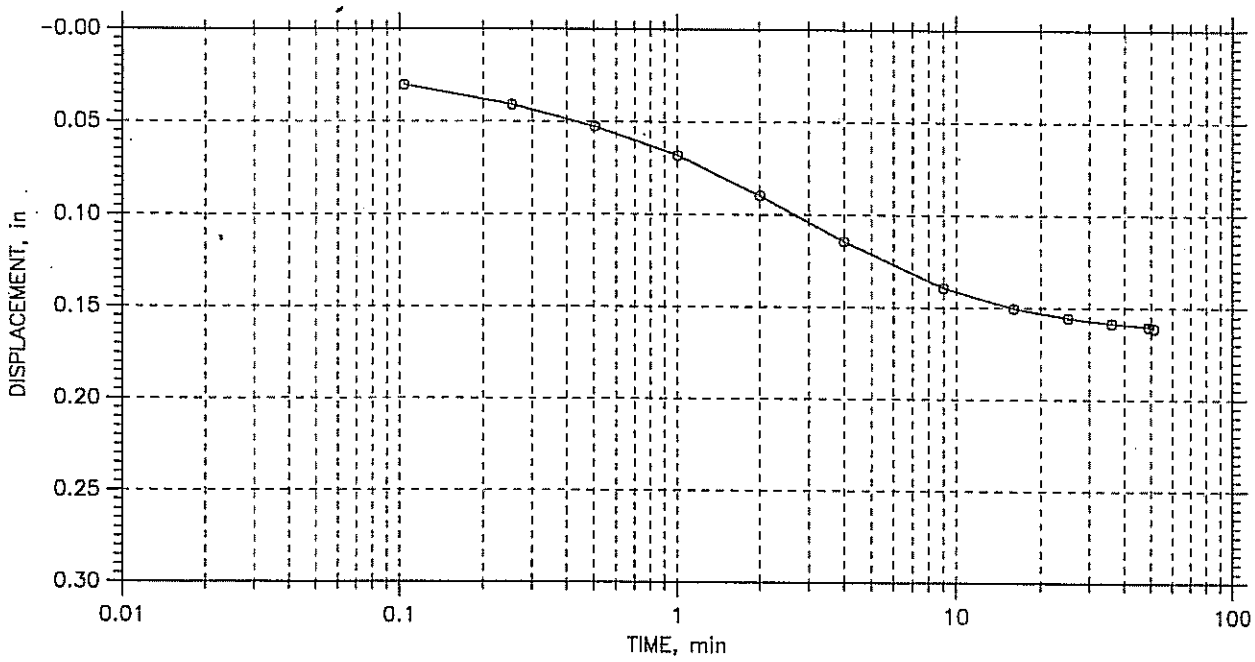
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.25	0.1612	3.903	21.49	1.0	1.6	3.69e-004	2.38e-004	2.89e-004
2	0.5	0.225	3.372	30.00	7.7	5.8	3.32e-005	4.42e-005	3.80e-005
3	1	0.2791	2.921	37.21	19.2	7.4	1.06e-005	2.76e-005	1.54e-005
4	2	0.3259	2.531	43.45	19.1	7.0	8.60e-006	2.34e-005	1.26e-005
5	1	0.3223	2.562	42.97	1.0	0.3	1.56e-004	4.92e-004	2.37e-004
6	0.25	0.3069	2.690	40.91	13.5	4.8	1.15e-005	3.27e-005	1.71e-005
7	0.5	0.3096	2.668	41.27	0.9	0.6	1.70e-004	2.64e-004	2.06e-004
8	1	0.316	2.614	42.13	3.9	1.3	4.08e-005	1.24e-004	6.13e-005
9	2	0.3332	2.471	44.43	79.0	0.0	1.88e-006	0.00e+000	1.88e-006
10	4	0.3697	2.167	49.29	48.1	0.0	2.71e-006	0.00e+000	2.71e-006
11	8	0.4027	1.892	53.69	8.6	3.1	1.26e-005	3.51e-005	1.86e-005
12	16	0.4386	1.593	58.48	7.6	2.9	1.17e-005	3.03e-005	1.69e-005
13	4	0.4294	1.669	57.26	0.9	0.0	8.65e-005	0.00e+000	8.65e-005
14	1	0.4149	1.790	55.32	19.2	7.7	4.60e-006	1.15e-005	6.58e-006
15	0.25	0.4011	1.905	53.48	69.3	0.0	1.39e-006	0.00e+000	1.39e-006

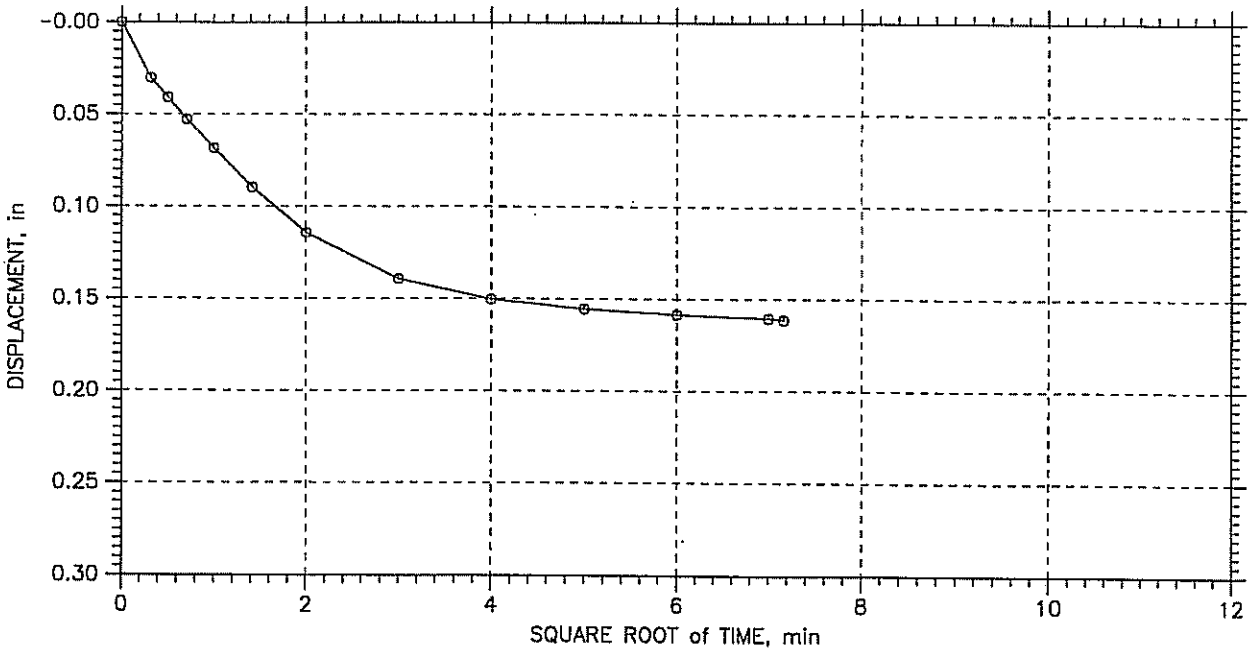
CONSOLIDATION TEST DATA

TIME CURVES

Step: 1 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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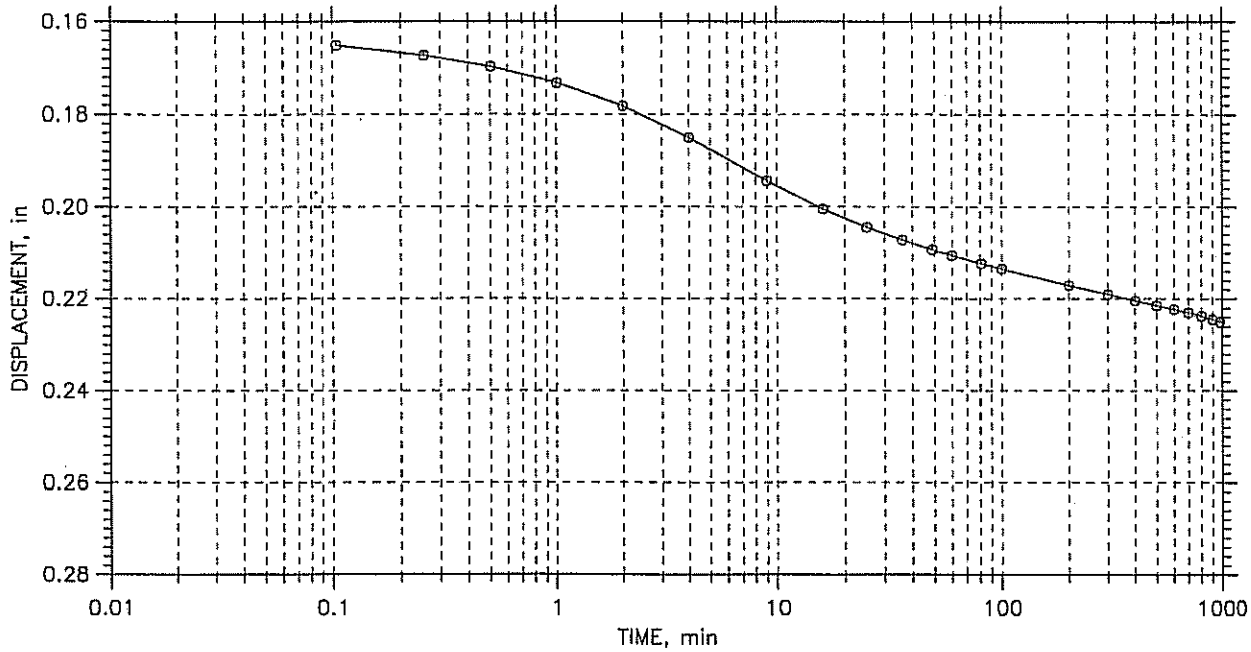
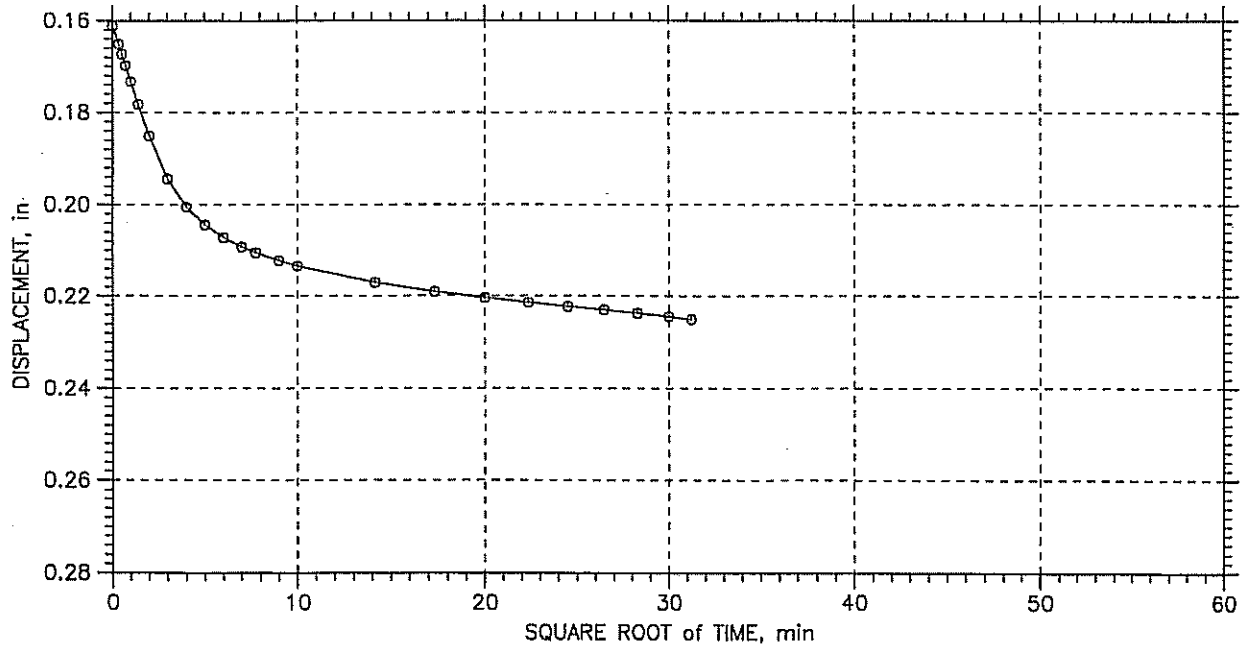
CONSOLIDATION TEST DATA

TIME CURVES

Step: 2 of 15

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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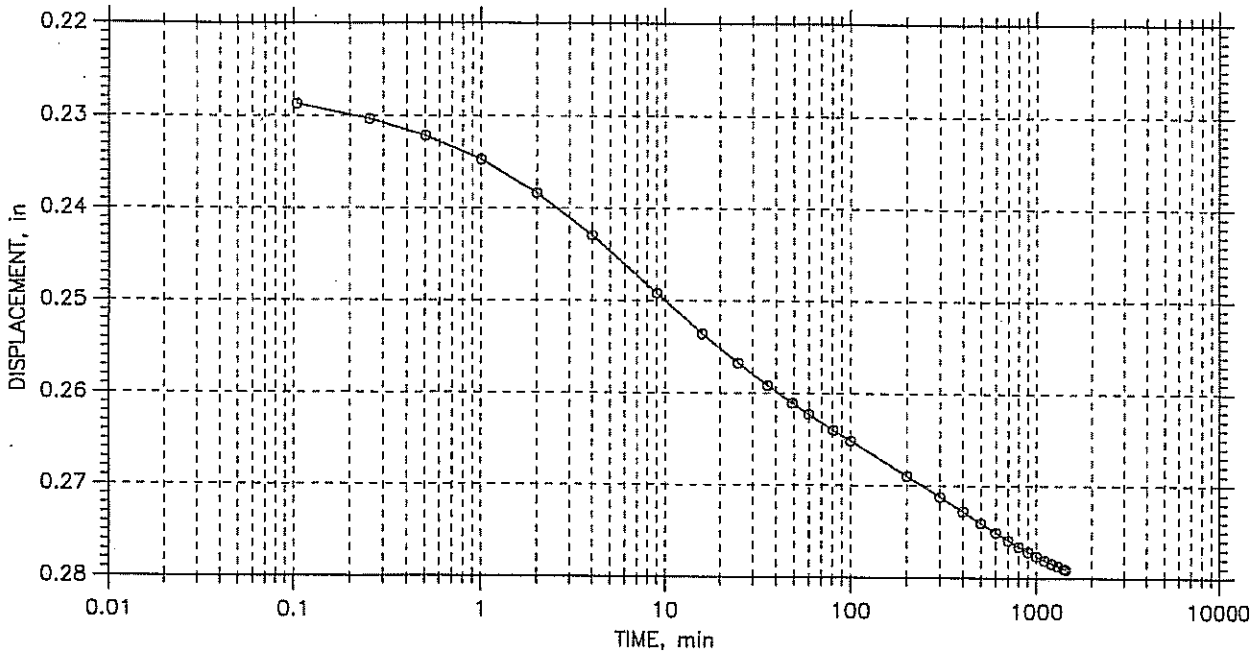
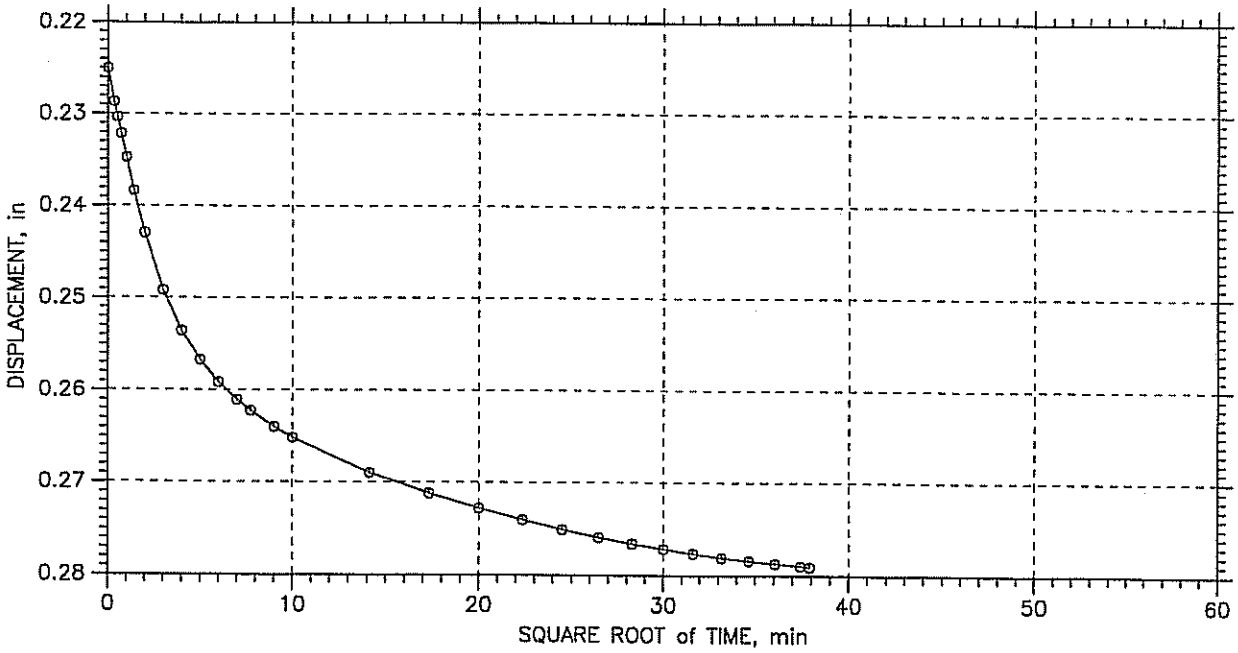
CONSOLIDATION TEST DATA

TIME CURVES

Step: 3 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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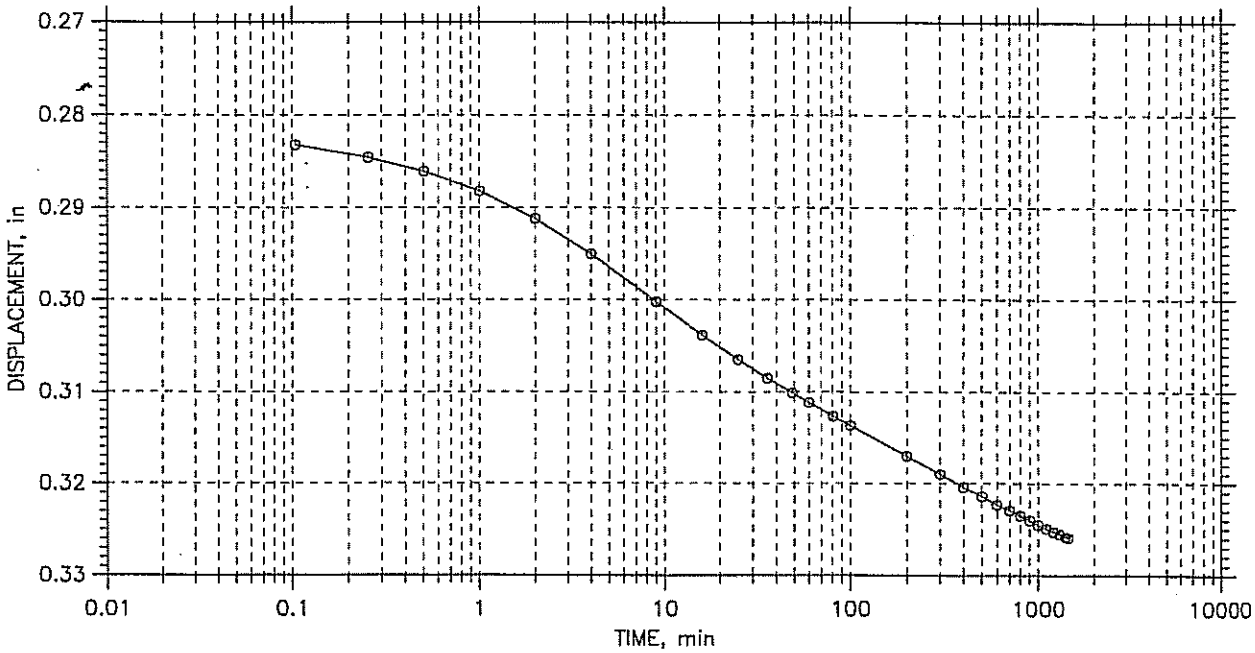
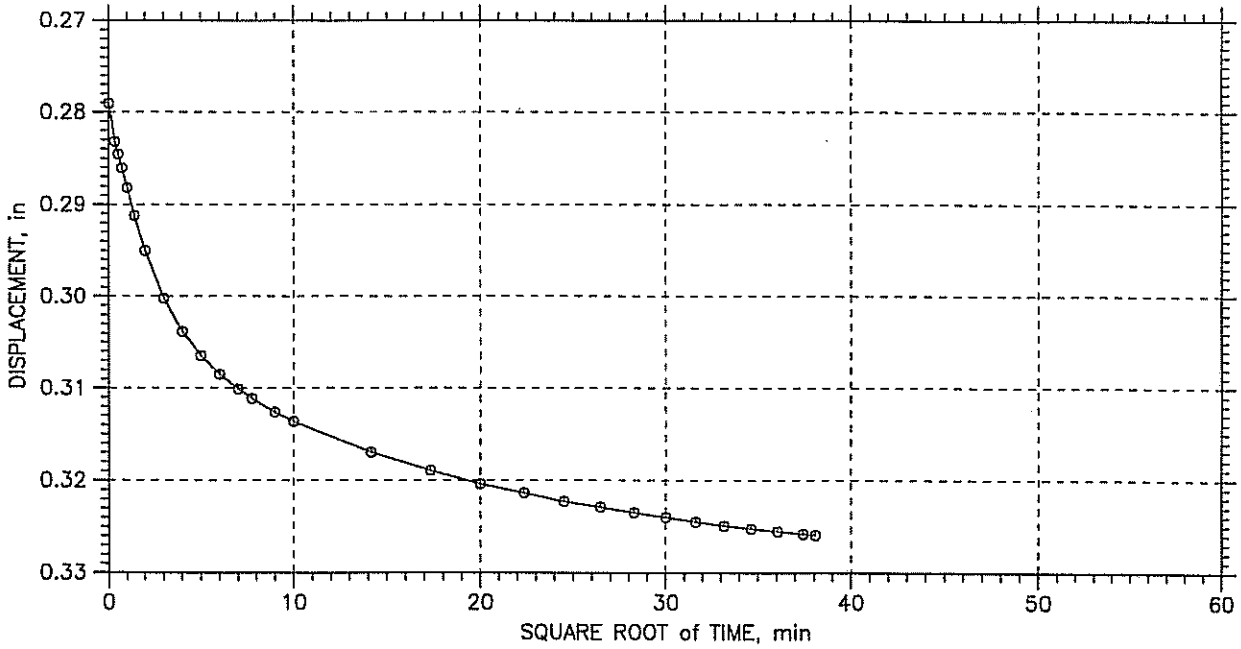
CONSOLIDATION TEST DATA

TIME CURVES

Step: 4 of 15

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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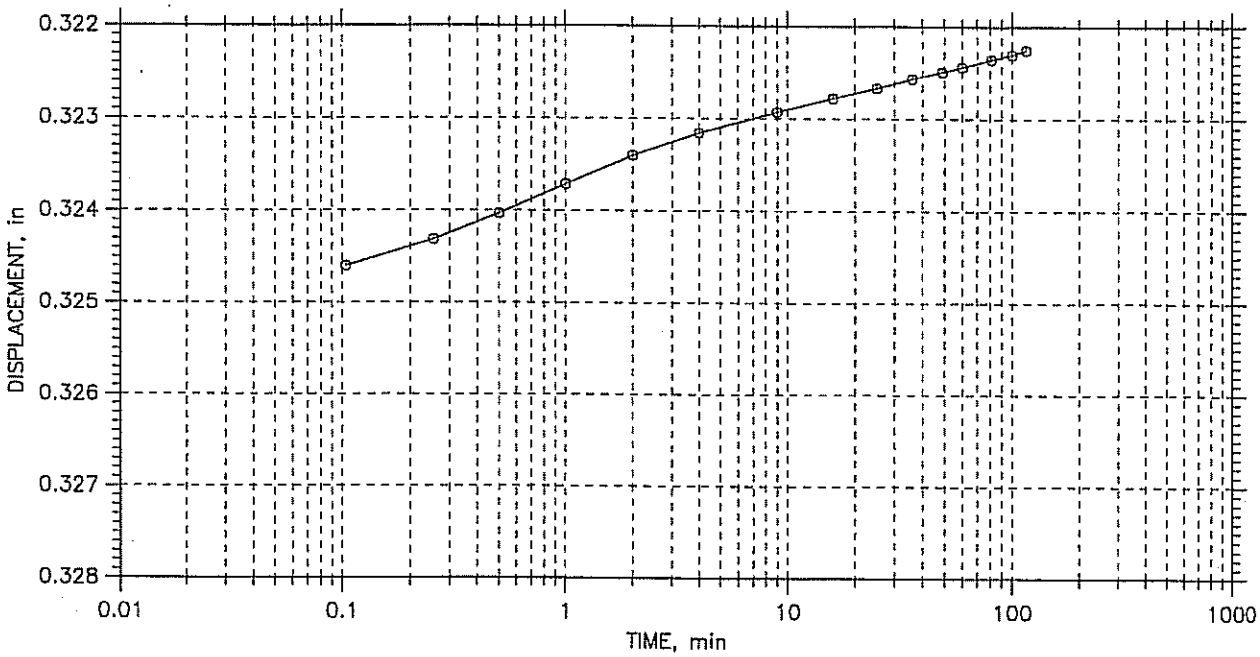
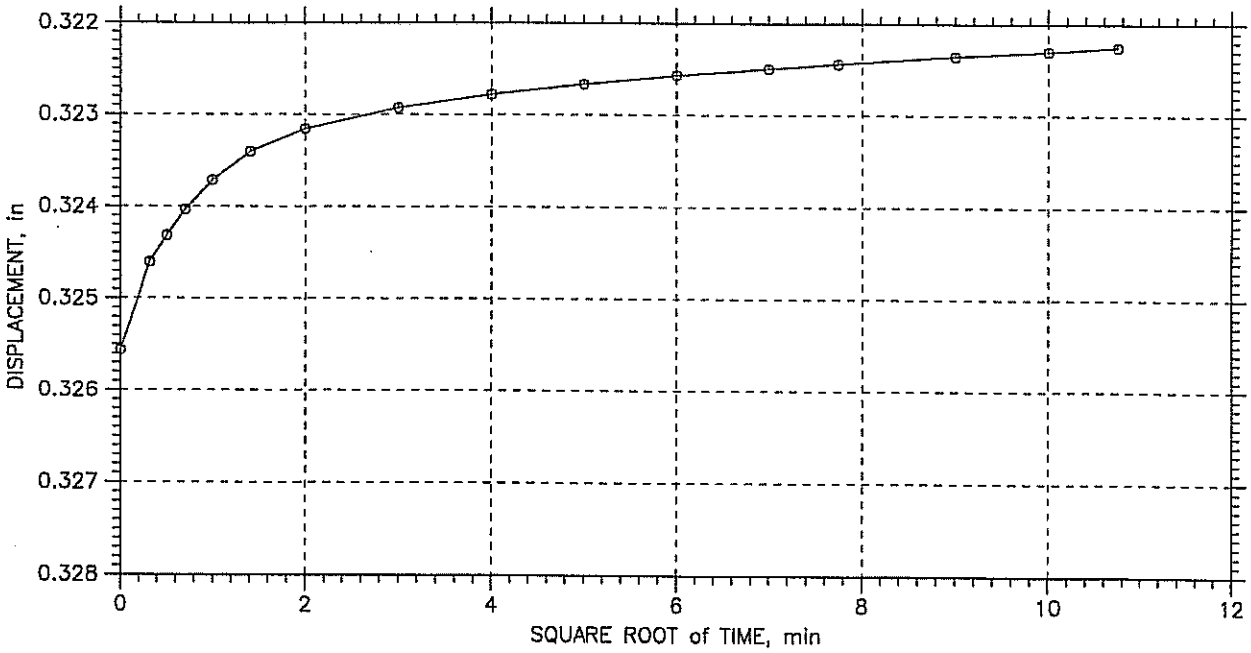
CONSOLIDATION TEST DATA

TIME CURVES

Step: 5 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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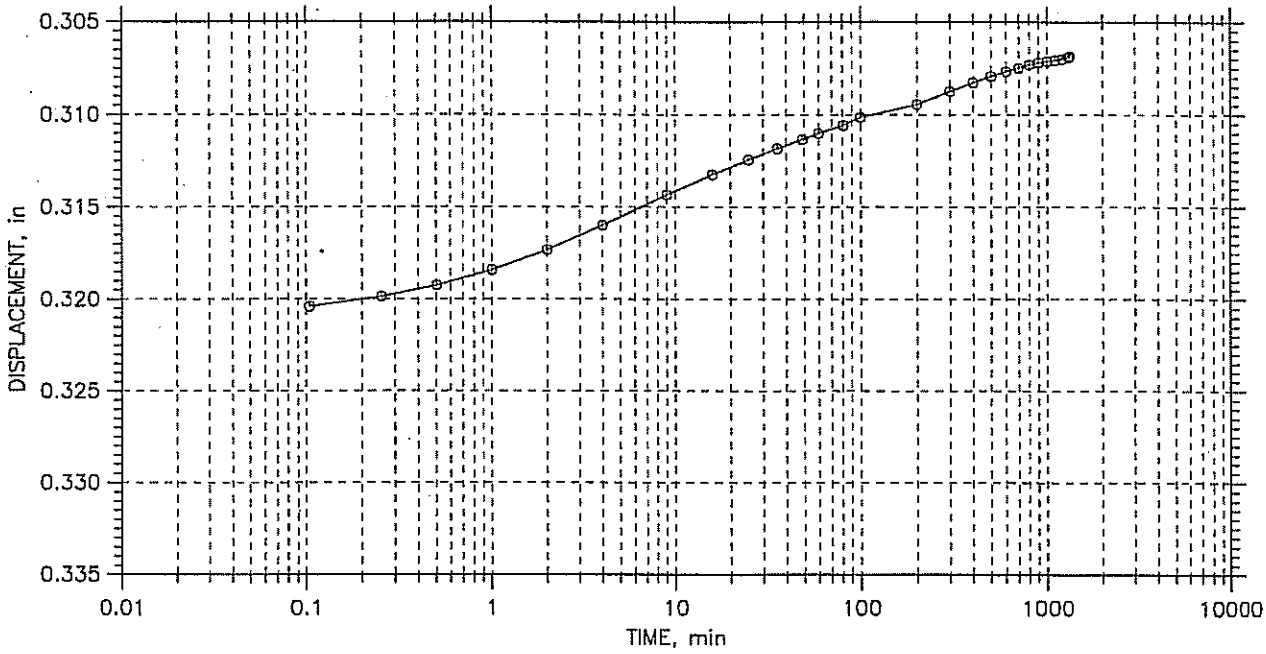
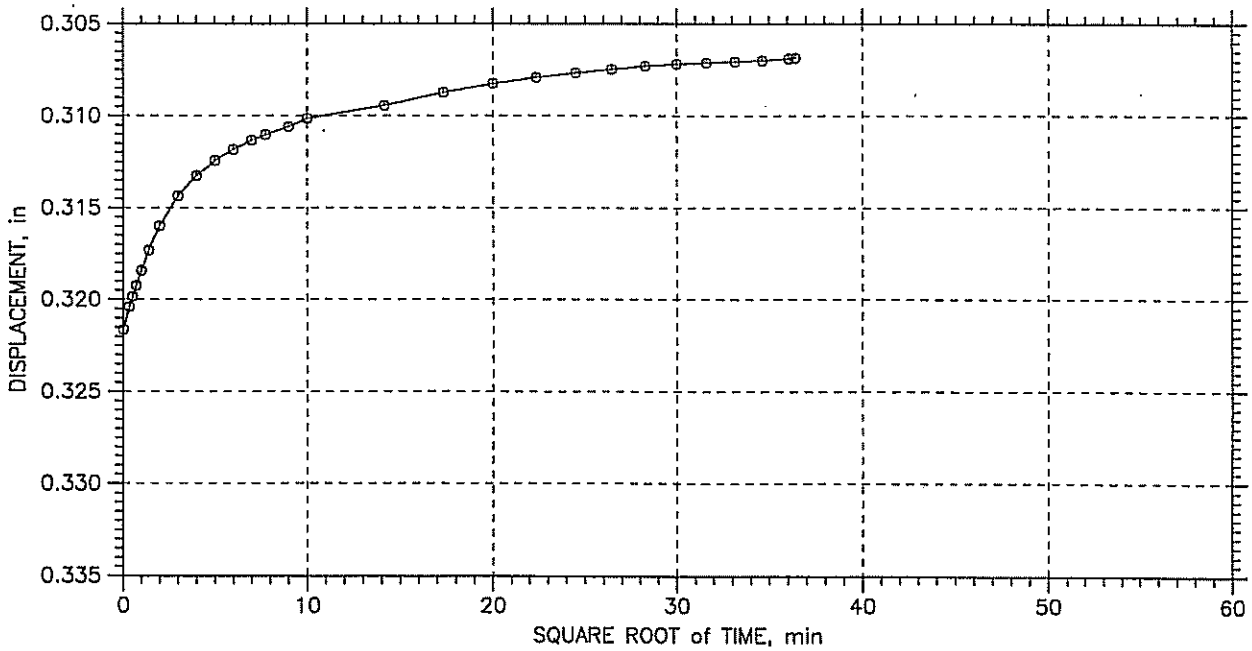
CONSOLIDATION TEST DATA

TIME CURVES

Step: 6 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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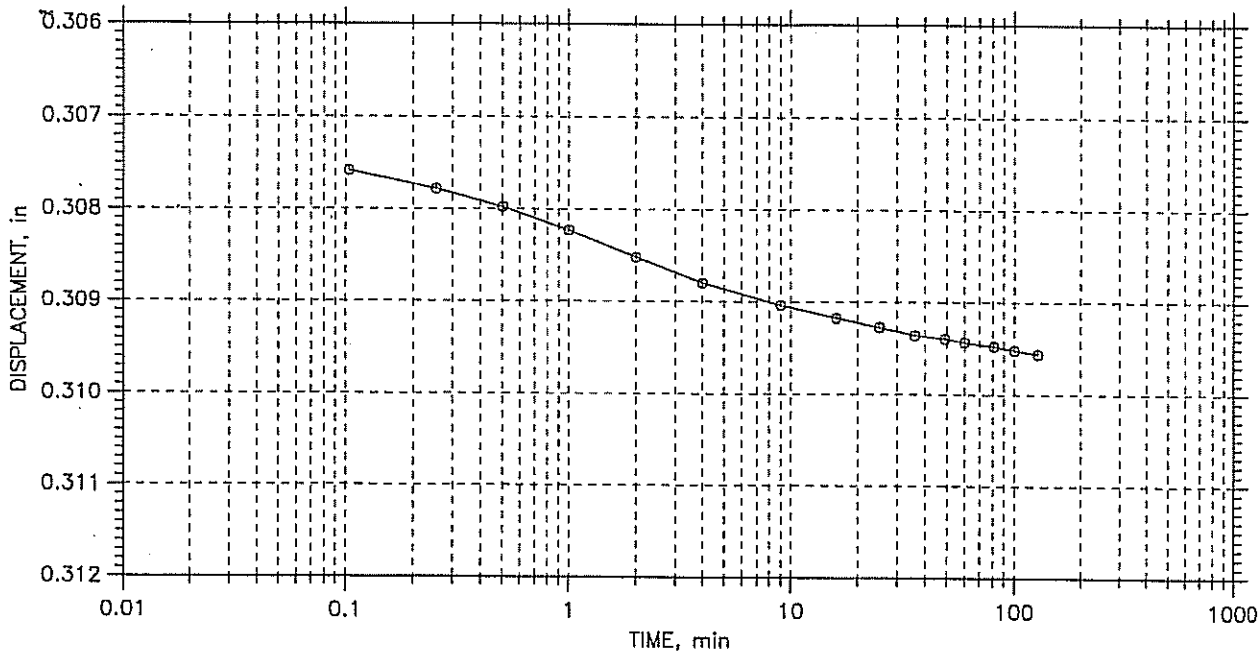
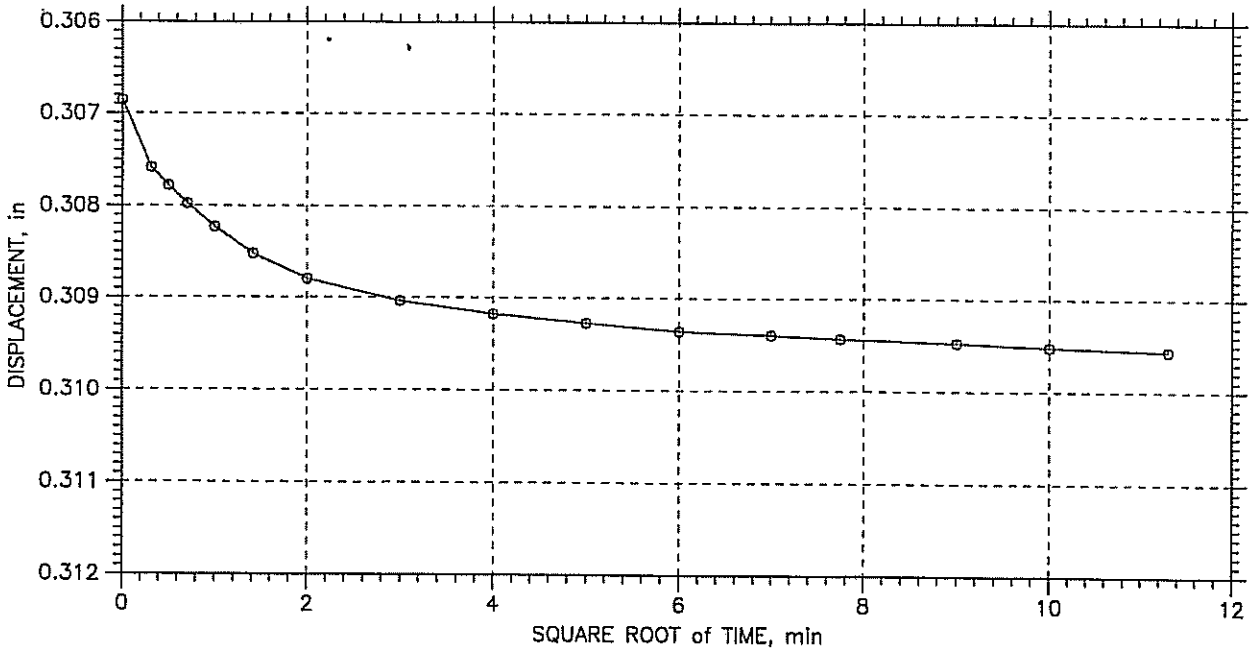
CONSOLIDATION TEST DATA

TIME CURVES

Step: 7 of 15

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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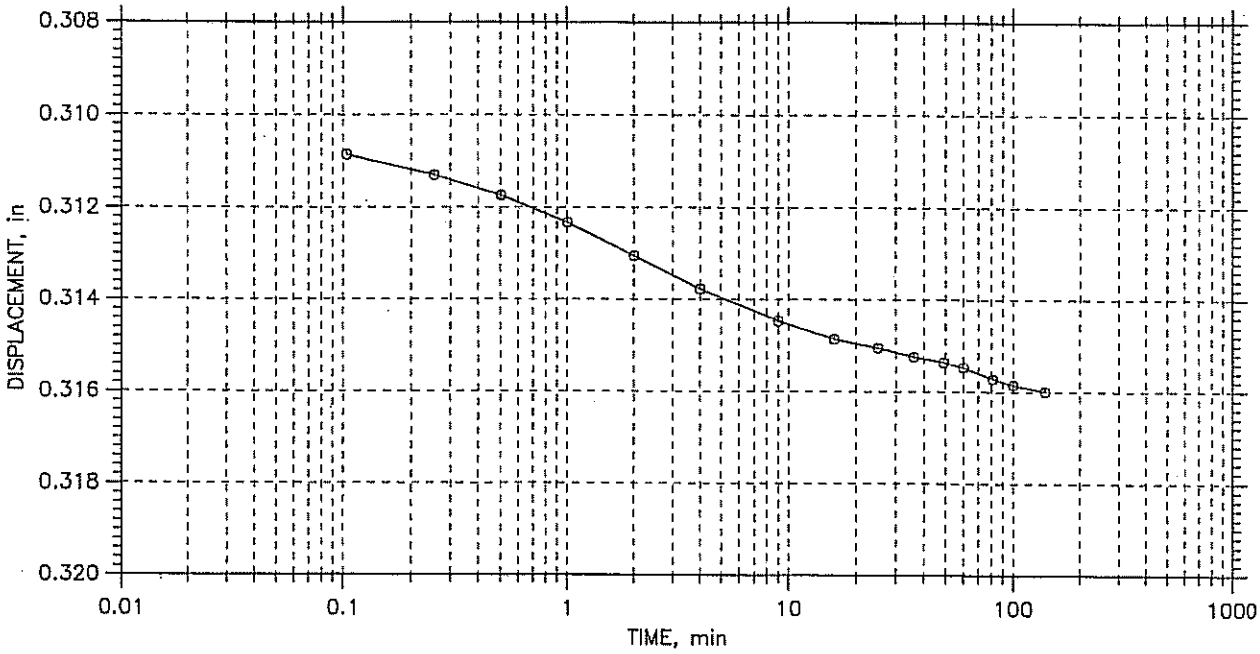
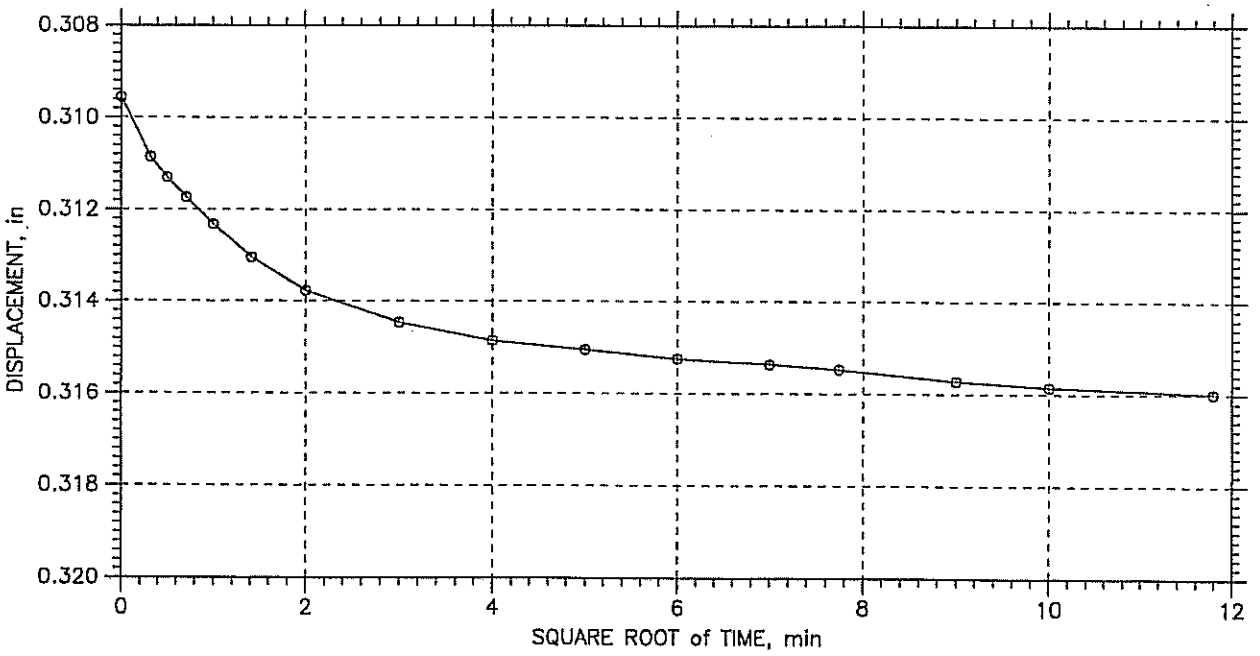
CONSOLIDATION TEST DATA

TIME CURVES

Step: 8 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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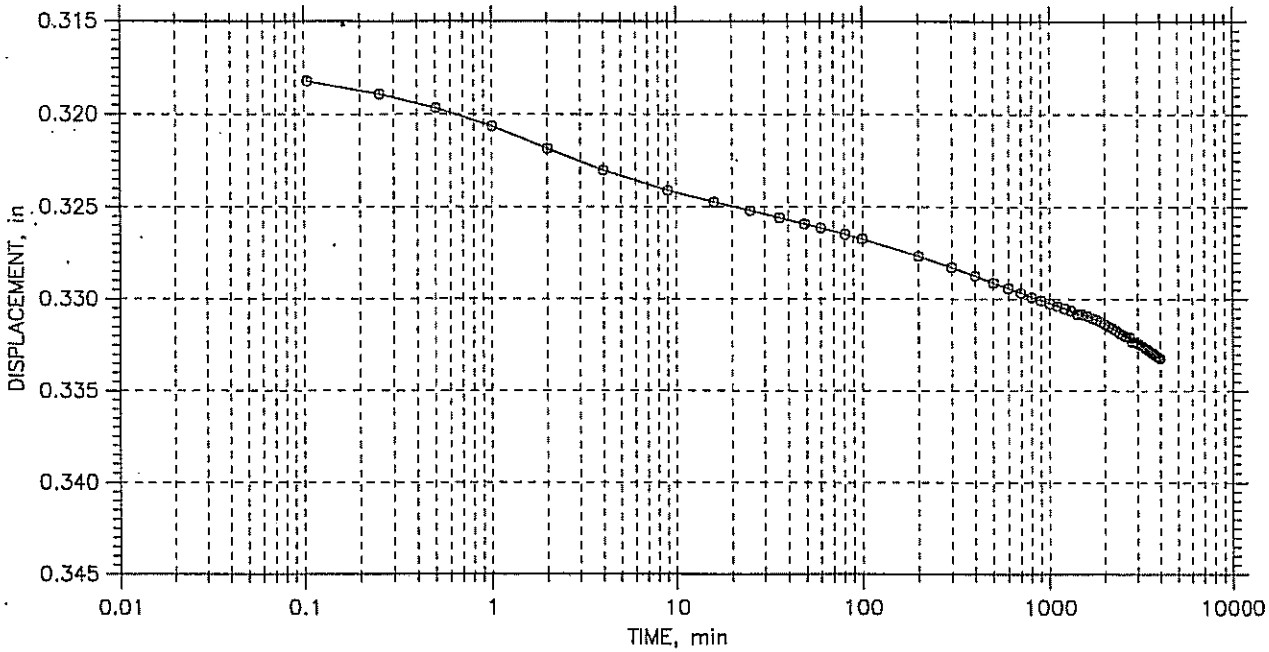
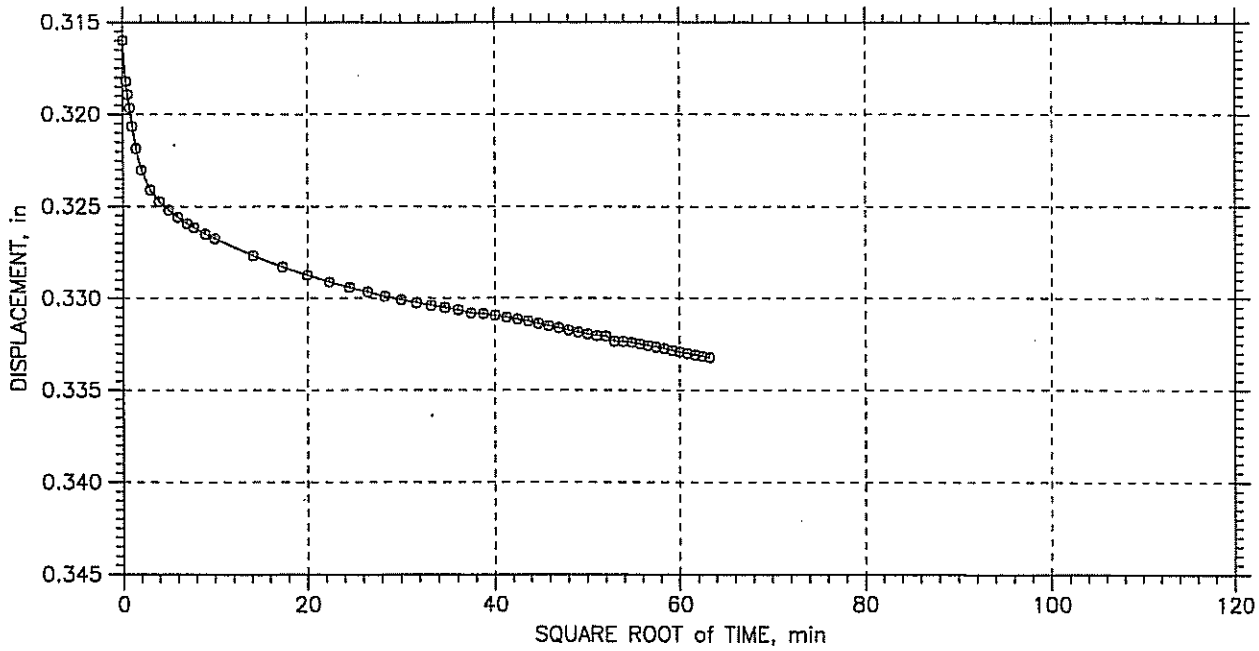
CONSOLIDATION TEST DATA

TIME CURVES

Step: 9 of 15

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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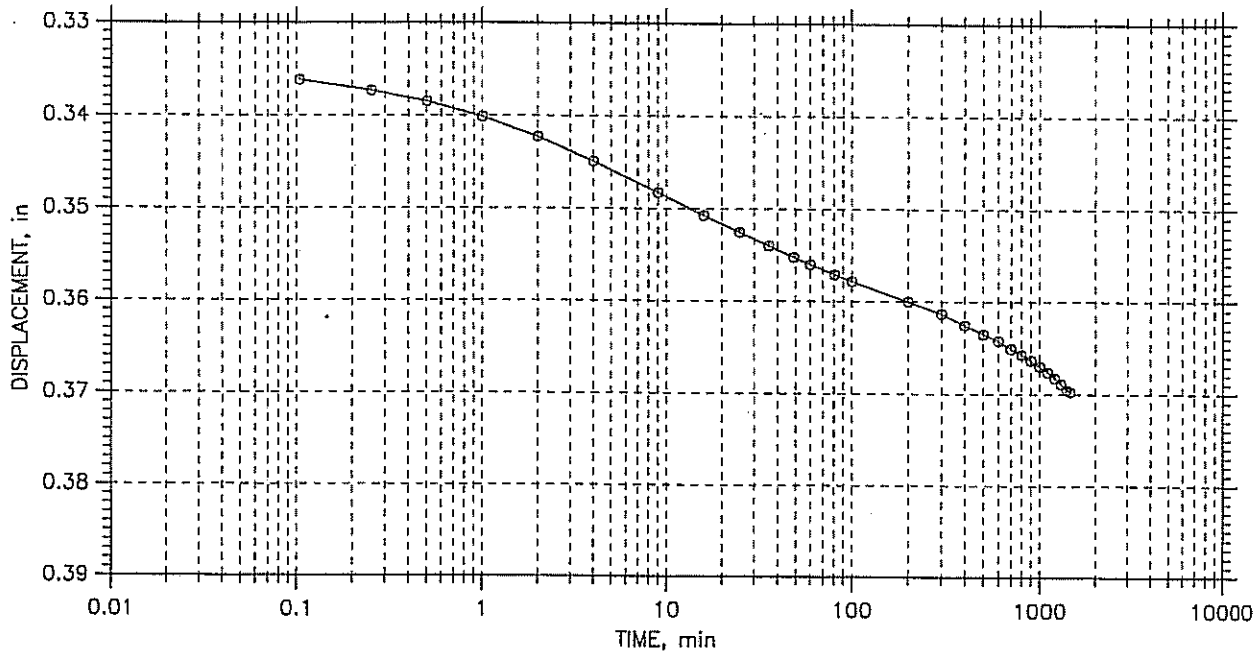
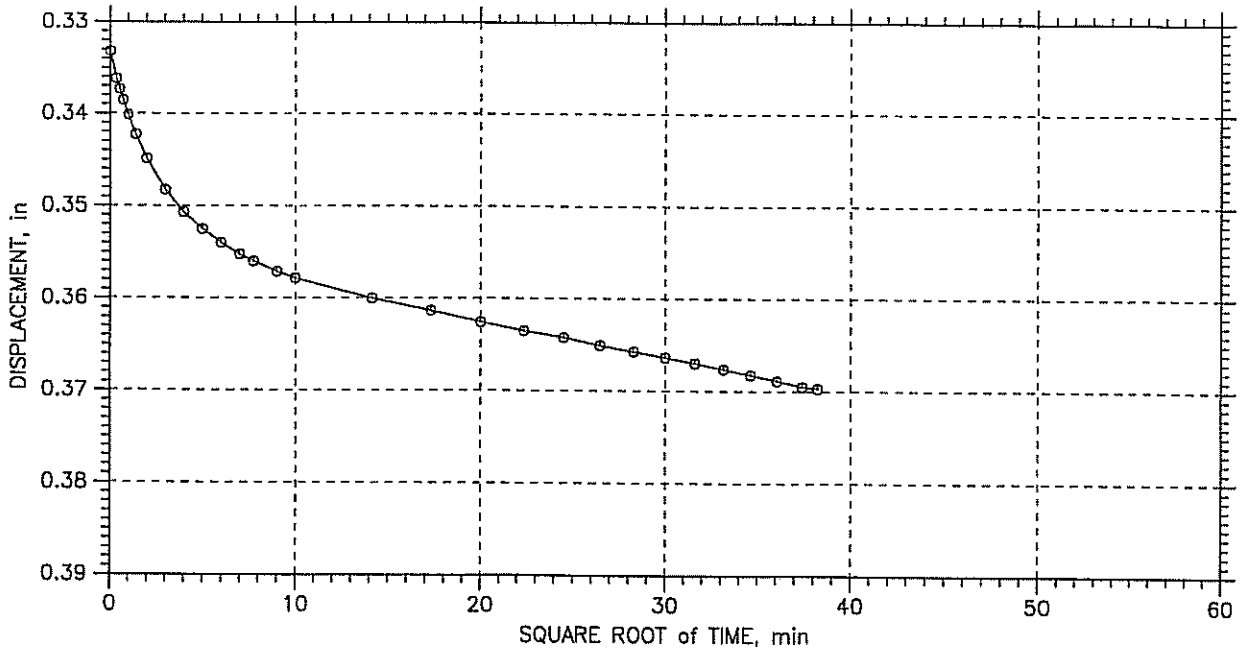
CONSOLIDATION TEST DATA

TIME CURVES

Step: 10 of 15

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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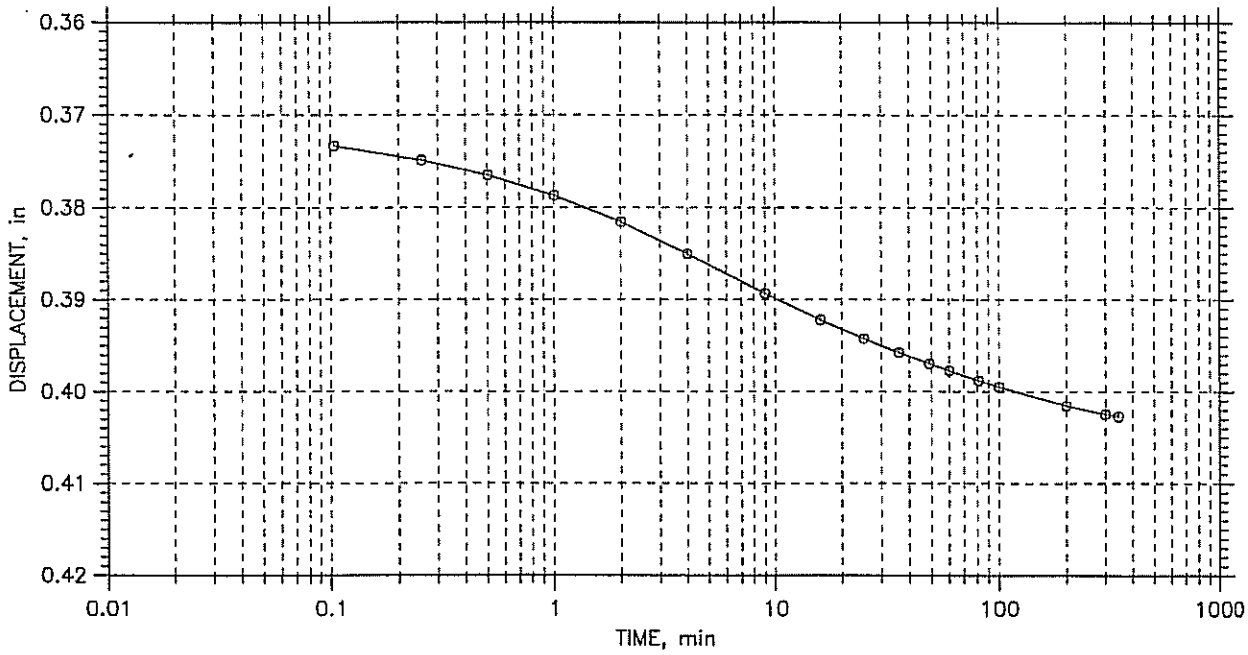
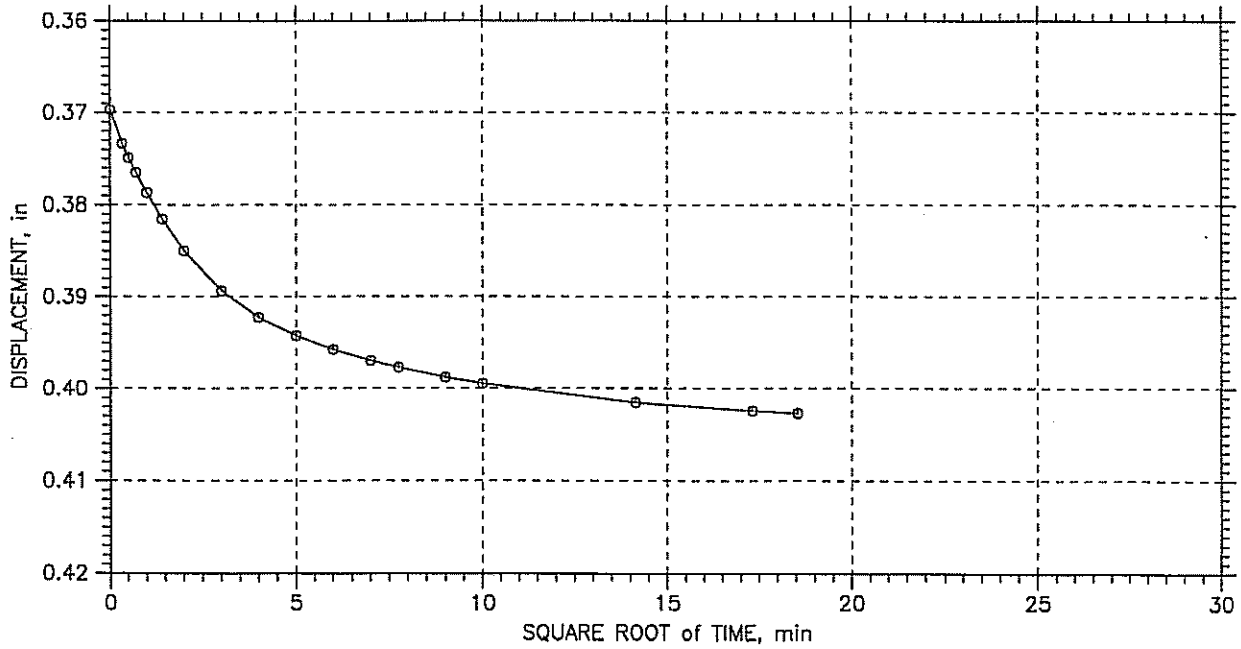
CONSOLIDATION TEST DATA

TIME CURVES

Step: 11 of 15

Stress: 8. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

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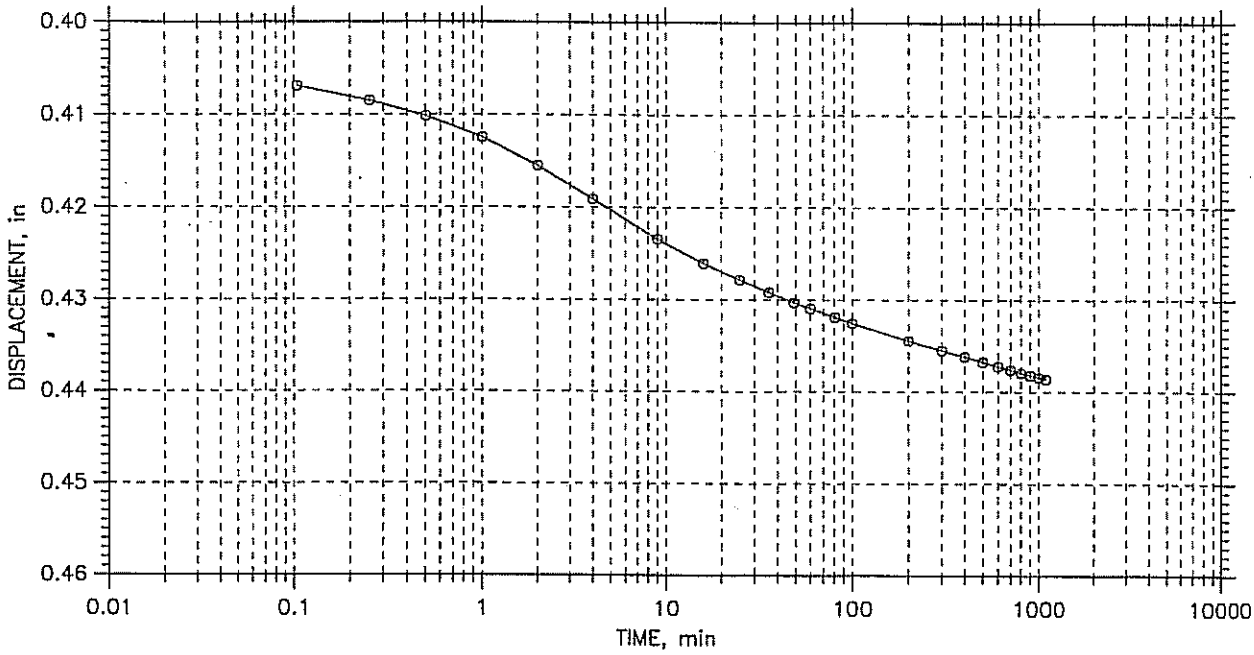
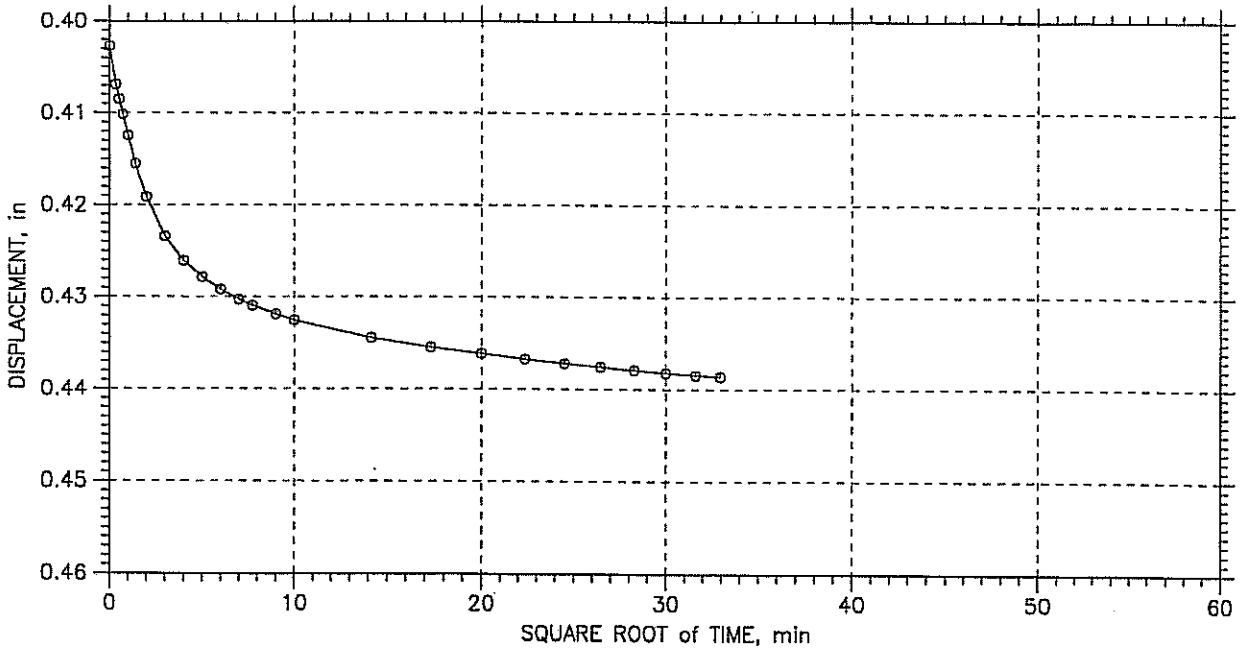
CONSOLIDATION TEST DATA

TIME CURVES

Step: 12 of 15

Stress: 16. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

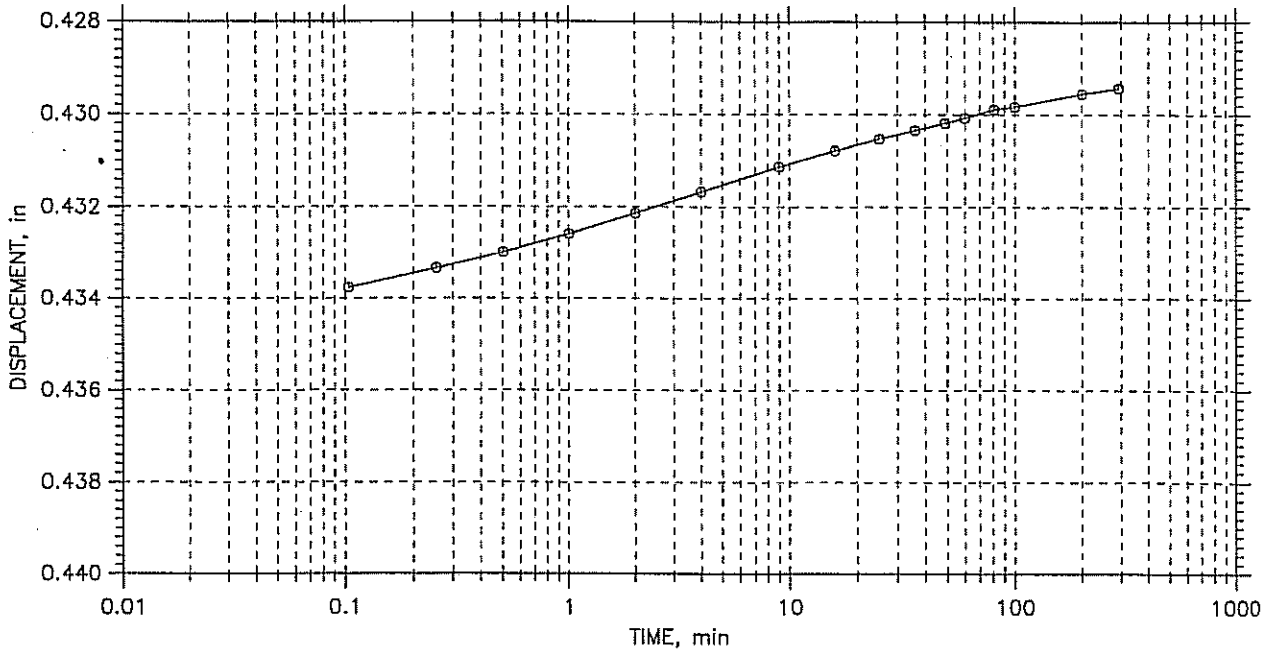
Thu, 25-OCT-2007 07:54:03

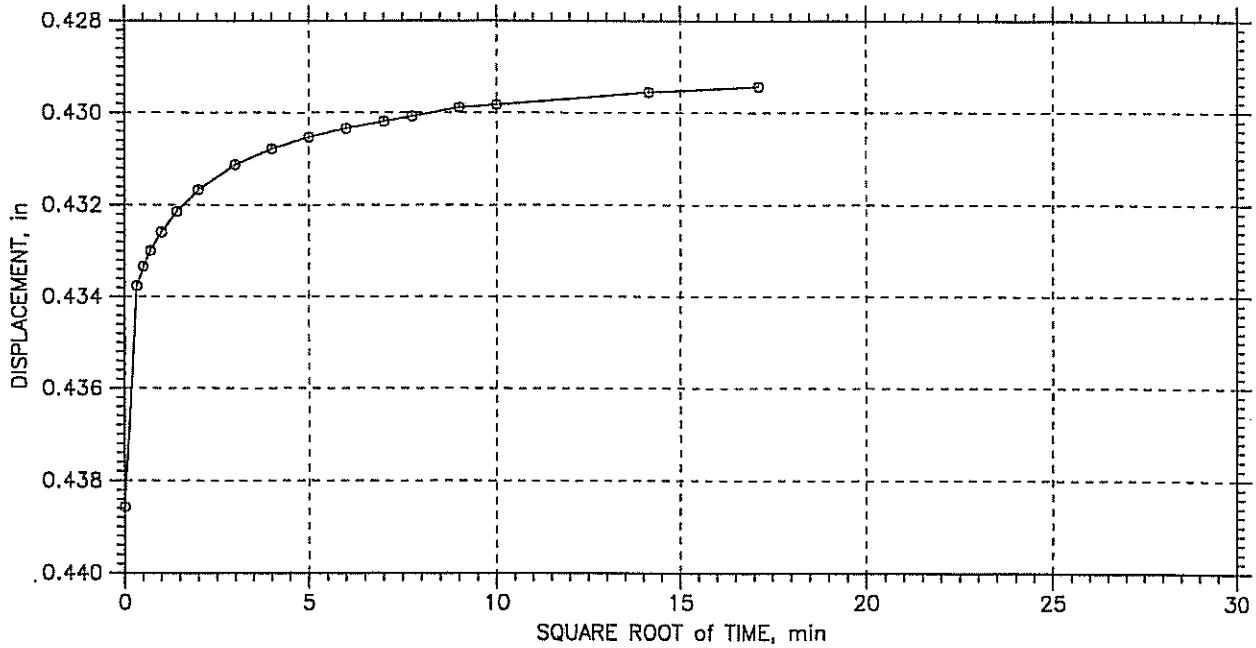
CONSOLIDATION TEST DATA

TIME CURVES

Step: 13 of 15

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

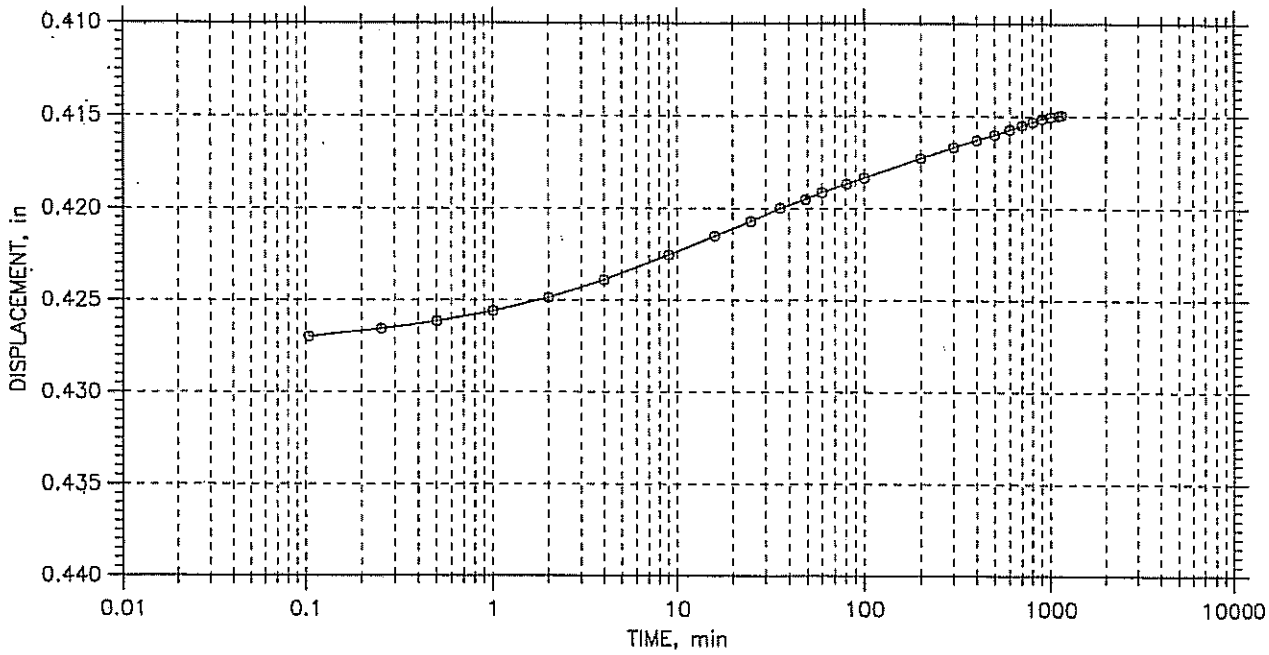
Thu, 25-OCT-2007 07:54:03

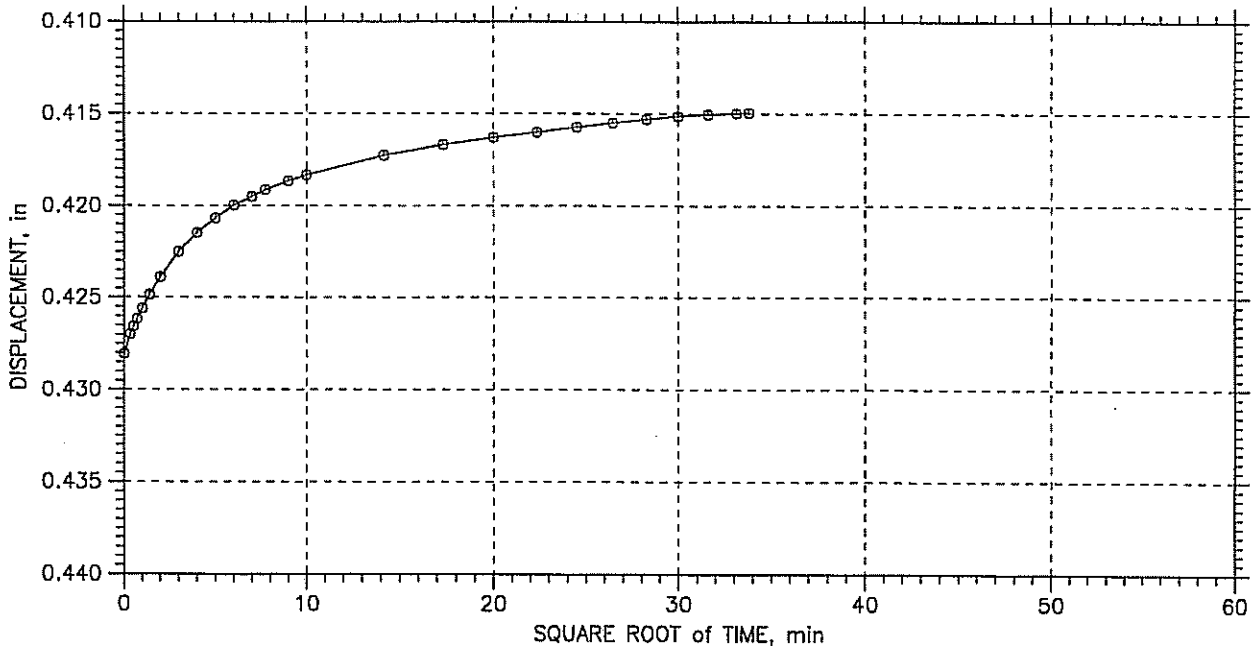
CONSOLIDATION TEST DATA

TIME CURVES

Step: 14 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

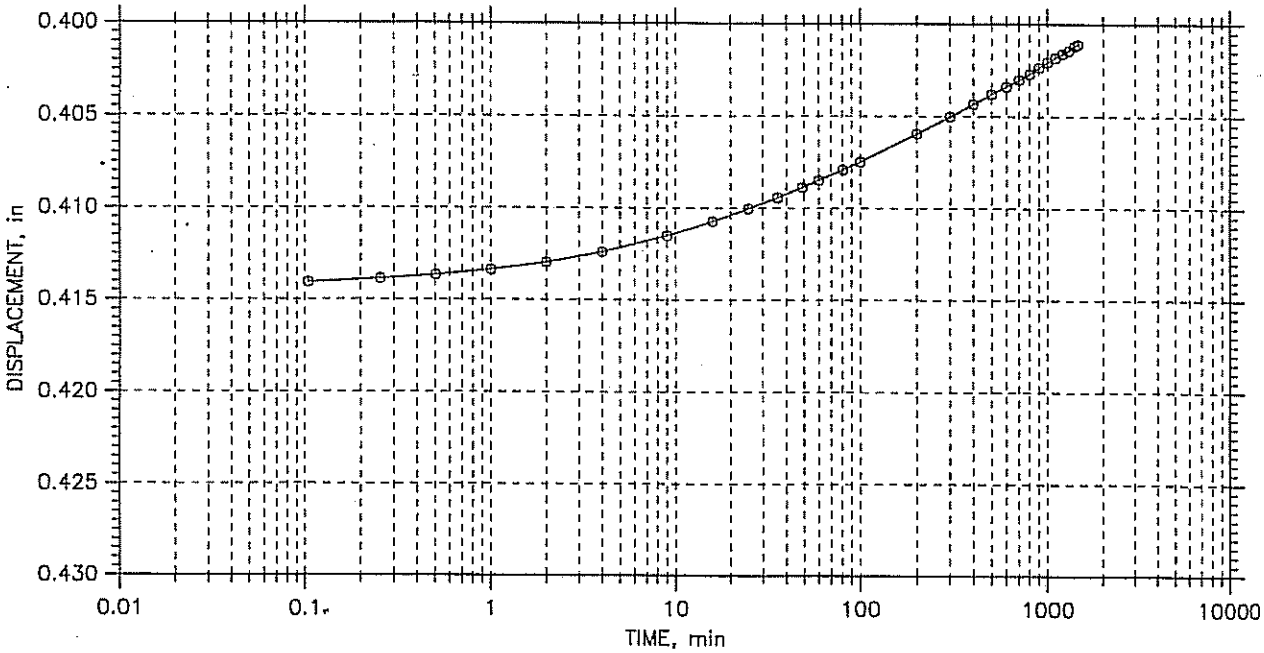
Thu, 25-OCT-2007 07:54:03

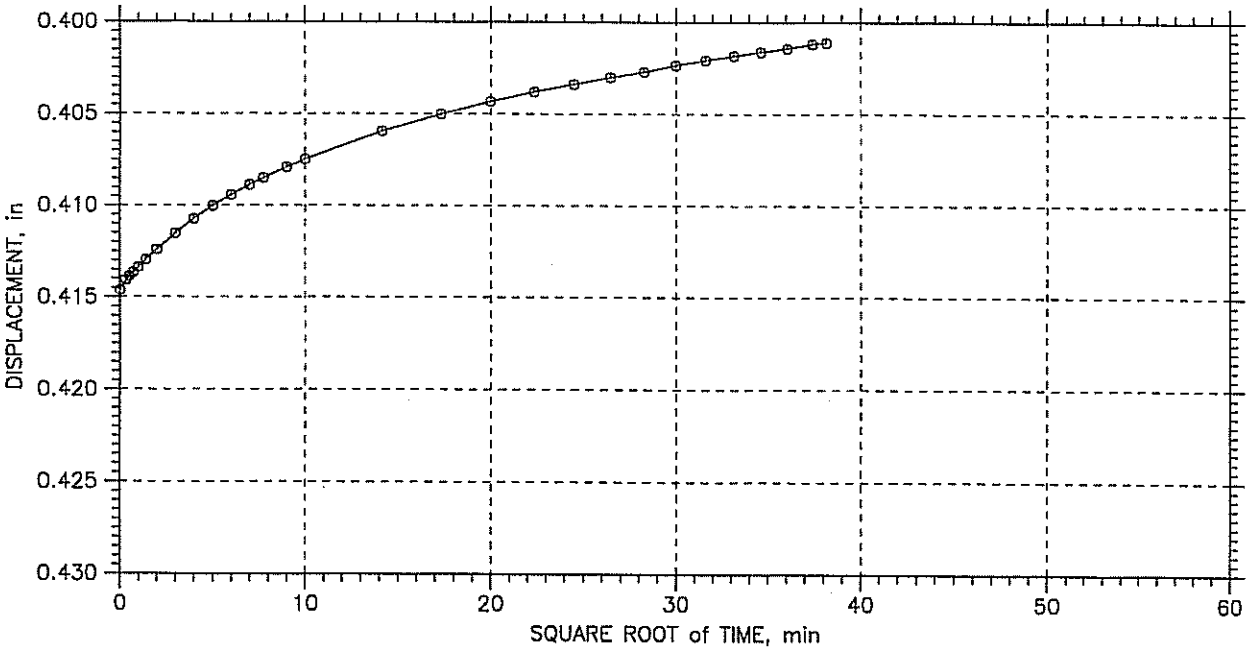
CONSOLIDATION TEST DATA

TIME CURVES

Step: 15 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: I-RA-07-EB1	Test Date: 10/8/07	Depth:
Test No.: 16EB1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - VERY DARK BROWN		
Remarks: Cc = 0.83 Ccr = 0.15 TEST PERFORMED AS PER ASTM D 2435		

Thu, 25-OCT-2007 07:54:04

Foth

Foth Infrastructure & Environment, LLC

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page: 1 **of** 1

COC Number: COC-106201

Company: Foth Infrastructure & Environment	Report To: Janis Kesy	Requested Due Date: See Sample Notes	Quote Reference:
Address: 2737 South Ridge Rd	Copy To:	*TAT:	Project Manager:
Green Bay, WI 54307	Invoice To:		Project #:
Phone: 920-497-2500 Fax: 920-496-6902	P.O.		Profile #:
Email Address: jkesy@foth.com	Project Name: Lower Fox River OU1	Regulatory Agency:	Sampling Team Members:
Site License No.:	Project Number: 07G007	State Location: WI	MCC2

Valid Matrix Codes

Matrix	Code
Soil	S
Sediment	SE
Solid	SO
Surface Water	SW
Drinking Water	DW
Wastewater	WW
Groundwater	GW
Hazardous Liquid	H
Air	A
Oil	O
Other	X

ITEM NUMBER	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G = Grab C = Composite	DATE COLLECTED MM/DD/YYYY	TIME COLLECTED (Military time)	Preservatives: # Containers	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Requested Analysis: Grain size distribution (N)	Triaxial shear (N)	Consolidation (N)	Hydraulic conductivity (N)	Atterberg limits (N)								Filtered (Y/N)	REMARKS / Lab ID
1	1-RA-07-EA18-DS-04-Comp	SE	C	10/18/2007	1514	1	1							X	X	X	X	X									
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS

ITEM #	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE

SAMPLE CONDITION:

Temp in C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Sample Intact	Y / N

SAMPLE NOTES:

Contents in 1 large double bagged bag

Additional Comments:

SAMPLER NAME AND SIGNATURE

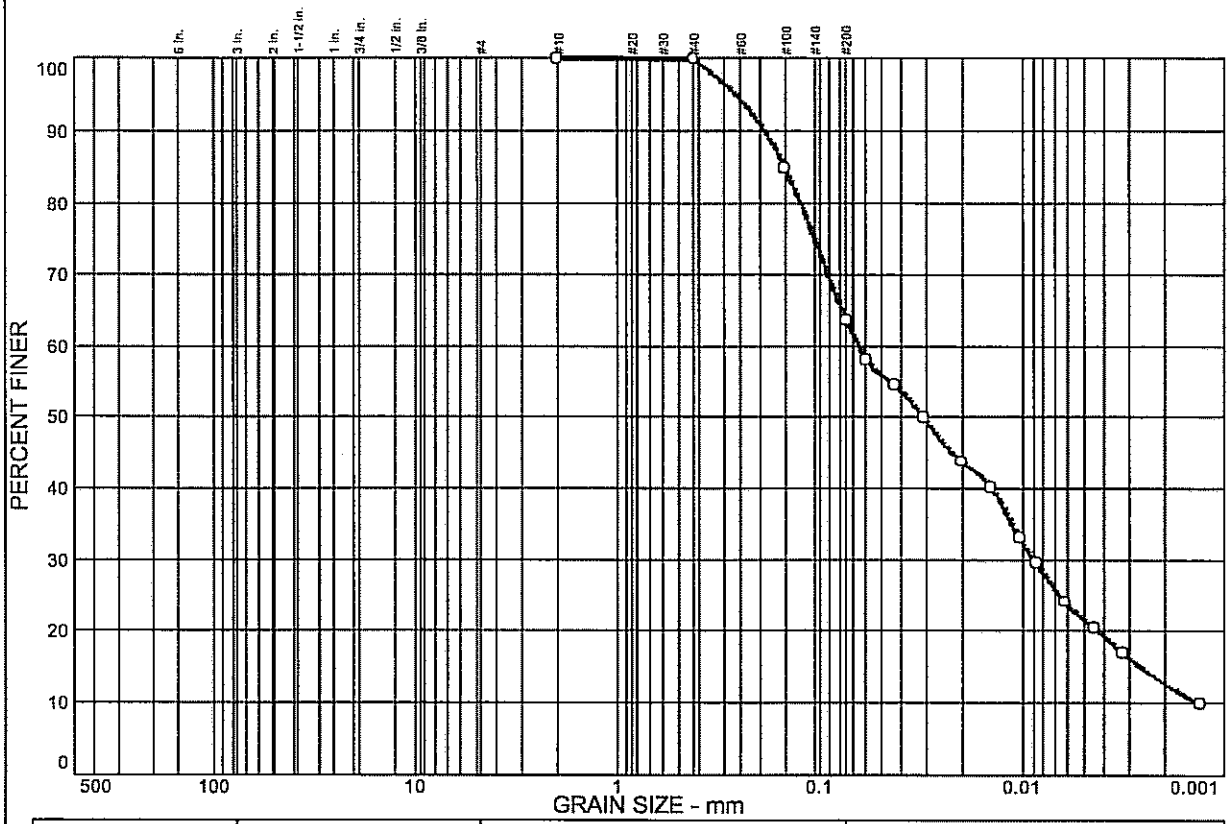
PRINT Name of SAMPLER: Mark Ciardelli

SIGNATURE of SAMPLER

DATE Signed:

D1.E35.E6

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.1	36.2	42.1	21.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#40	99.9		
#100	84.8		
#200	63.7		

* (no specification provided)

Soil Description

DARK GRAY RIVER SEDIMENT

Atterberg Limits

PL= 75 LL= 110 PI= 35

Coefficients

D_{85}= 0.151 D_{60}= 0.0653 D_{50}= 0.0309
D_{30}= 0.0089 D_{15}= 0.0026 D_{10}= 0.0014
C_u= 47.45 C_c= 0.88

Classification

USCS= OH AASHTO=

Remarks

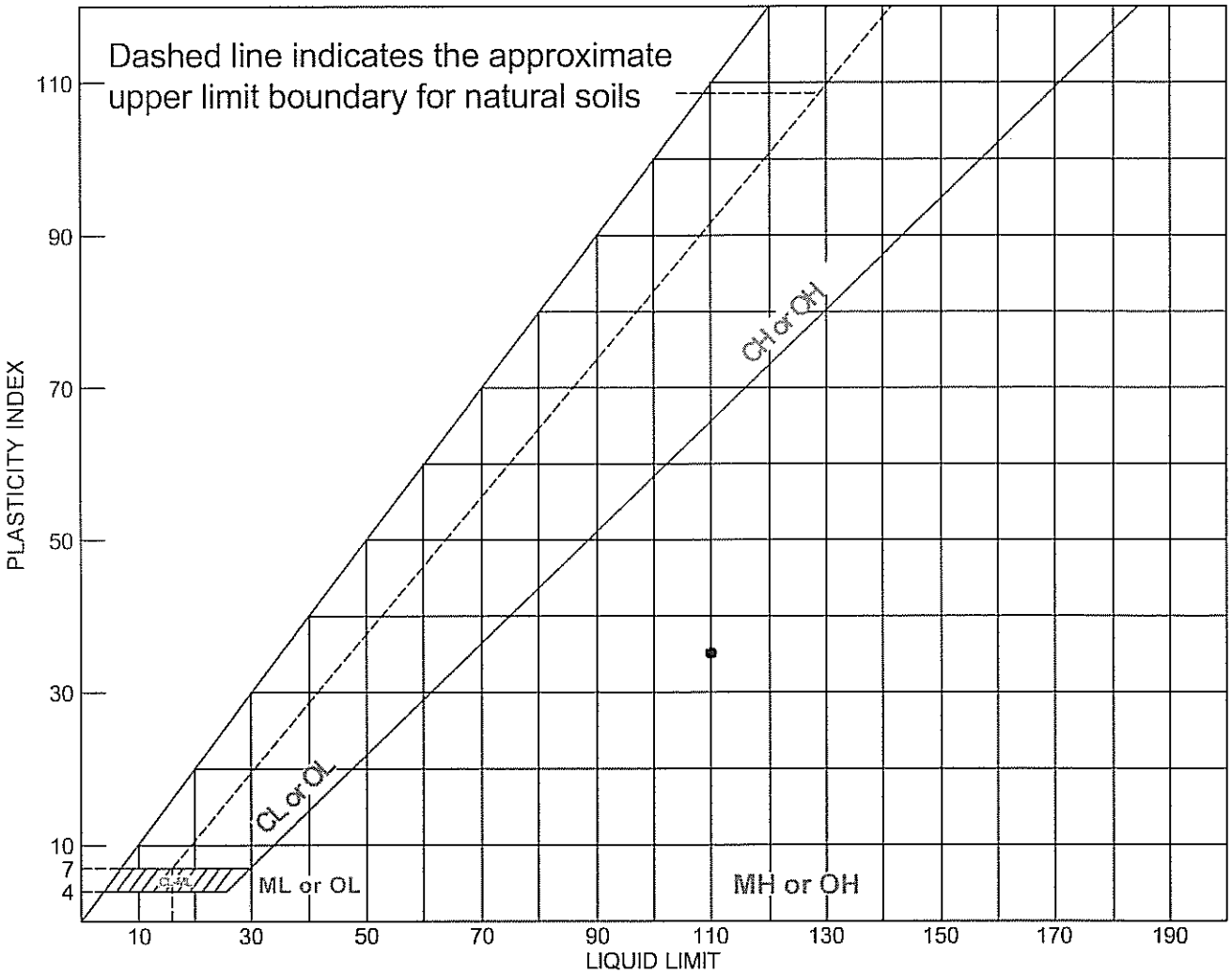
Sample No.: DS-04 **Source of Sample:** On-site Material **Date:** 10/31/07
Location: I-RA-07-EA18-DS-04-COMP **Elev./Depth:** COMP

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA

Project No: 4-29316A **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



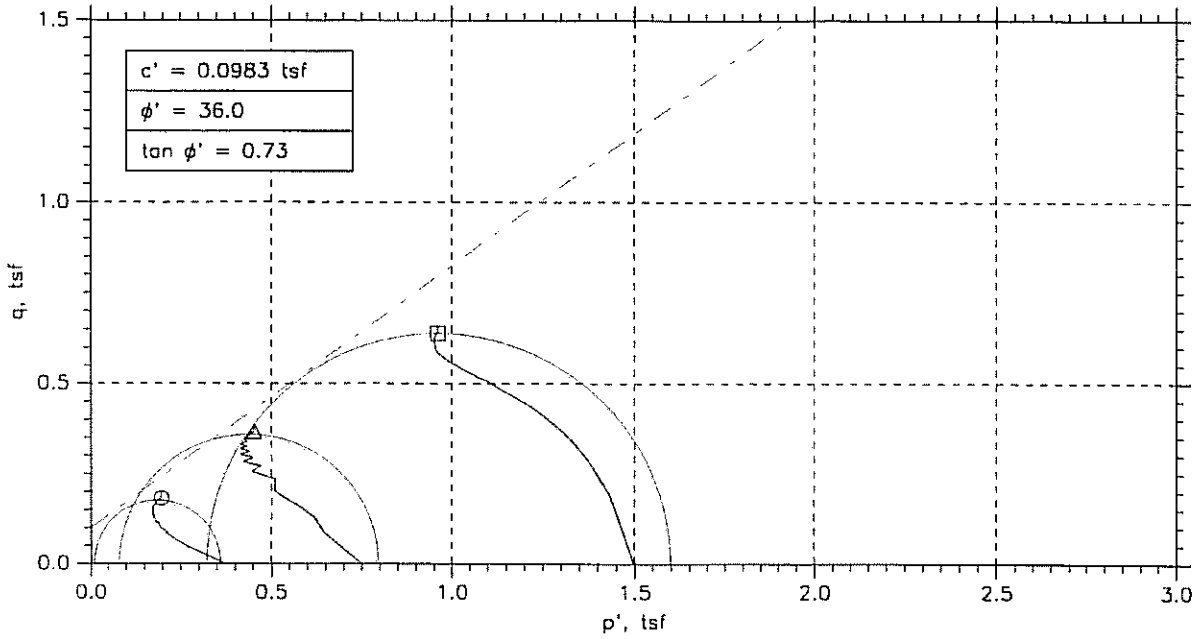
SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	On-site	DS-04	COMP		75	110	35	OH

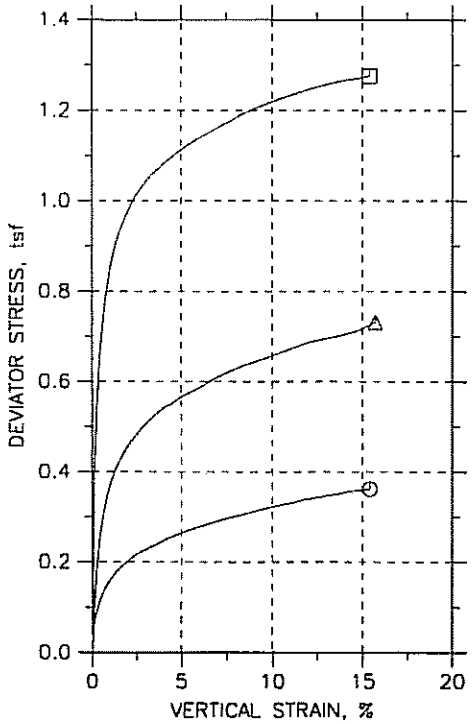
STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

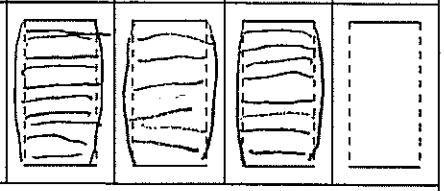
Client: GW Partners LLC
Project: Fox River OU-1 20052 RA

Project No.: 4-29316A **Figure**

TRIAXIAL COMPRESSION TEST REPORT





Symbol		⊙	△	⊡	
Test No.		EA18T1	EA18T2	EA18T3	
Initial	Diameter, in	2.813	2.8087	2.876	
	Height, in	5.4744	5.5268	5.2469	
	Water Content, %	150.43	158.01	155.07	
	Dry Density, pcf	33.7	32.7	32.93	
	Saturation, %	102.48	103.63	102.60	
	Void Ratio	3.8164	3.9644	3.9295	
Before Shear	Water Content, %	137.43	129.73	120.10	
	Dry Density, pcf	36.09	37.64	39.73	
	Saturation, %	102.15	101.83	101.21	
	Void Ratio	3.4981	3.3123	3.0853	
	Back Press., tsf	5.0402	5.04	5.0401	
Minor Prin. Stress, tsf		0.37416	0.7488	1.4975	
Max. Dev. Stress, tsf		0.36195	0.73163	1.2754	
Time to Failure, min		204	140	196	
Strain Rate, %/min		0.0793	0.0728	0.0863	
B-Value		---	---	---	
Estimated Specific Gravity		2.60	2.60	2.60	
Liquid Limit		0	0	0	
Plastic Limit		0	0	0	
Plasticity Index		0	0	0	
Failure Sketch					

Project: FOX RIVER

Location:

Project No.: 29316-A

Boring No.: EA18-DS-04

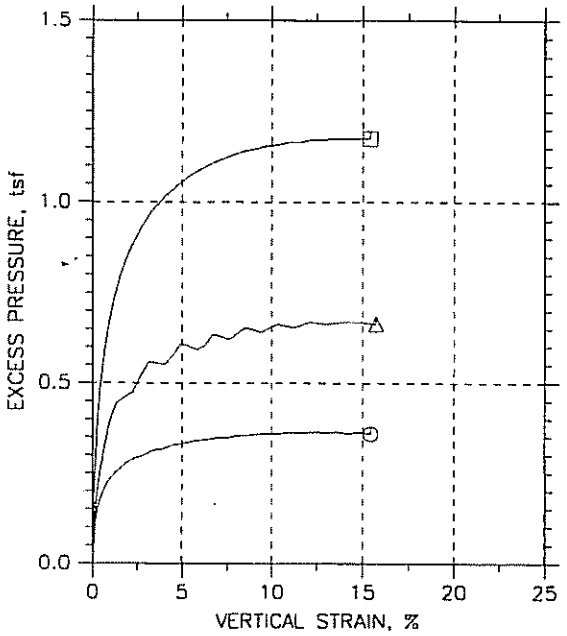
Sample Type: REMOLDED

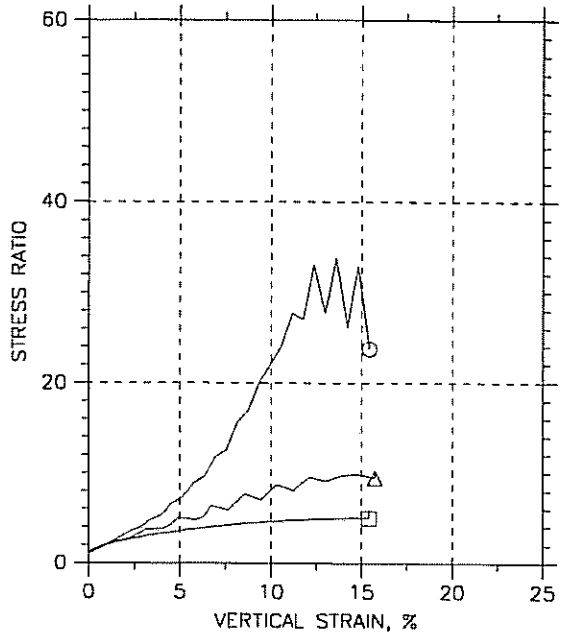
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED

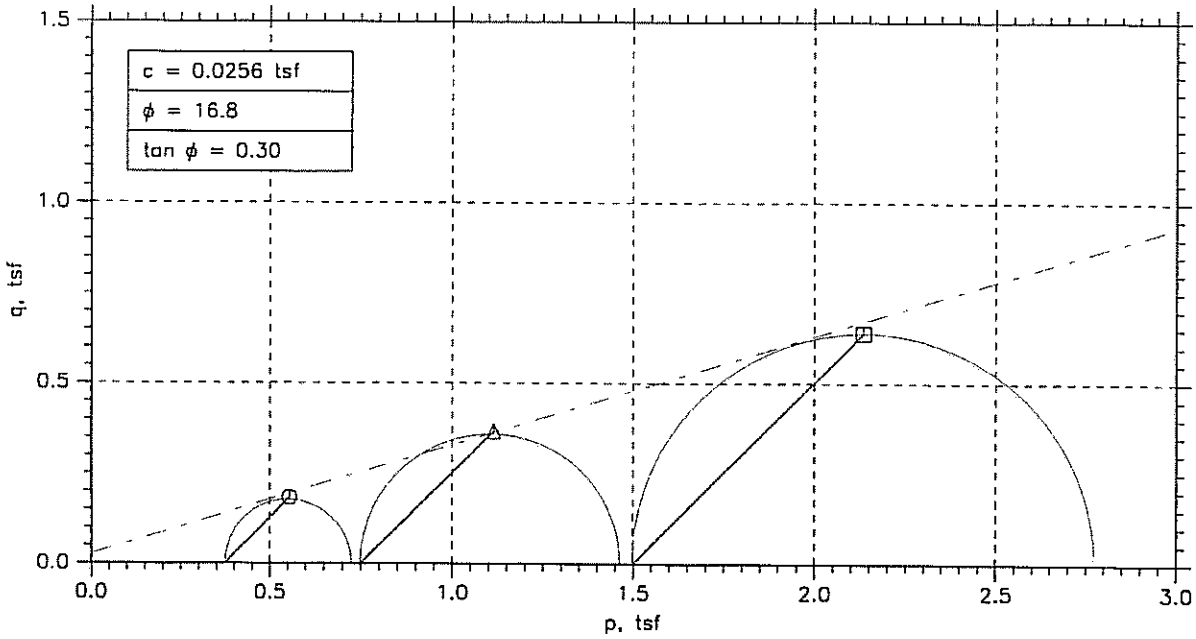
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Tue, 11-DEC-2007 15:03:35

TRIAXIAL COMPRESSION TEST REPORT







Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.: EA18-DS-04	Tested By: MS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/16/07	Depth:
Test No.: EA18T1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767		

Tue, 11-DEC-2007 15:04:00

TRIAXIAL TEST

Project: FOX RIVER
Boring No.: EA18-DS-04
Sample No.: EA18-DS-04
Test No.: EA18T1

Location:
Tested By: MS
Test Date: 11/16/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.47 in
Specimen Area: 6.21 in^2
Specimen Volume: 34.02 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.2148	0	0	5.0402	5.4144	5.4144
2	2.0005	0.14683	6.2239	6.0511	0.070001	5.1532	5.4144	5.4844
3	4.0005	0.29867	6.2334	8.2084	0.094813	5.1913	5.4144	5.5092
4	6.0005	0.44717	6.2427	9.9448	0.1147	5.2188	5.4144	5.5291
5	8.0005	0.59567	6.252	11.208	0.12907	5.2392	5.4144	5.5435
6	10	0.7475	6.2616	12.365	0.14218	5.2556	5.4144	5.5566
7	12.001	0.89767	6.2711	13.26	0.15224	5.2679	5.4144	5.5666
8	14.004	1.0495	6.2807	13.944	0.15985	5.2773	5.4144	5.5742
9	16.004	1.2013	6.2904	14.786	0.16924	5.2855	5.4144	5.5836
10	18	1.3498	6.2998	15.47	0.1768	5.2931	5.4144	5.5912
11	20	1.4983	6.3093	15.996	0.18254	5.299	5.4144	5.5969
12	24	1.802	6.3288	17.154	0.19515	5.3142	5.4144	5.6095
13	28.004	2.1023	6.3483	18.101	0.20529	5.3247	5.4144	5.6197
14	32.004	2.4027	6.3678	18.943	0.21418	5.3311	5.4144	5.6286
15	36.001	2.7097	6.3879	19.679	0.22181	5.3358	5.4144	5.6362
16	40.001	3.02	6.4083	20.205	0.22702	5.3434	5.4144	5.6414
17	44.003	3.3154	6.4279	20.889	0.23399	5.351	5.4144	5.6484
18	48	3.6257	6.4486	21.416	0.23911	5.354	5.4144	5.6535
19	52	3.921	6.4684	22.047	0.24541	5.3563	5.4144	5.6598
20	56.003	4.2164	6.4884	22.678	0.25166	5.3616	5.4144	5.6661
21	60.003	4.5117	6.5084	23.152	0.25612	5.368	5.4144	5.6705
22	68.003	5.1191	6.5501	24.257	0.26664	5.3715	5.4144	5.681
23	76.003	5.7231	6.5921	25.099	0.27414	5.3791	5.4144	5.6885
24	84.003	6.3271	6.6346	26.046	0.28266	5.3815	5.4144	5.6971
25	92.003	6.9227	6.677	26.888	0.28994	5.3873	5.4144	5.7043
26	100	7.5284	6.7208	27.73	0.29707	5.3885	5.4144	5.7115
27	108	8.1358	6.7652	28.414	0.3024	5.3938	5.4144	5.7168
28	116	8.7431	6.8102	29.256	0.3093	5.3949	5.4144	5.7237
29	124	9.3454	6.8555	30.045	0.31555	5.3979	5.4144	5.7299
30	132	9.9495	6.9015	30.834	0.32168	5.399	5.4144	5.7361
31	140	10.555	6.9482	31.571	0.32715	5.4002	5.4144	5.7416
32	148	11.167	6.9961	32.202	0.33141	5.402	5.4144	5.7458
33	156	11.77	7.0438	33.097	0.33831	5.4014	5.4144	5.7527
34	164	12.377	7.0927	33.728	0.34239	5.4037	5.4144	5.7568
35	172	12.985	7.1422	34.412	0.34691	5.4014	5.4144	5.7613
36	180	13.595	7.1927	34.991	0.35027	5.4037	5.4144	5.7647
37	188	14.204	7.2437	35.833	0.35617	5.4002	5.4144	5.7706
38	196	14.815	7.2956	36.359	0.35883	5.4031	5.4144	5.7732
39	204	15.419	7.3477	36.938	0.36195	5.3985	5.4144	5.7764

TRIAXIAL TEST

Project: FOX RIVER
Boring No.: EA18-DS-04
Sample No.: EA18-DS-04
Test No.: EA18T1

Location:
Tested By: MS
Test Date: 11/16/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.47 in
Specimen Area: 6.21 in^2
Specimen Volume: 34.02 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.4144	5.4144	0	0.000	0.37416	0.37416	1.000	0.37416	0
2	0.15	5.4844	5.4144	0.11297	1.614	0.33119	0.26119	1.268	0.29619	0.035
3	0.30	5.5092	5.4144	0.15101	1.593	0.31796	0.22315	1.425	0.27055	0.047406
4	0.45	5.5291	5.4144	0.17852	1.556	0.31033	0.19564	1.586	0.25299	0.057349
5	0.60	5.5435	5.4144	0.19901	1.542	0.30422	0.17515	1.737	0.23969	0.064535
6	0.75	5.5566	5.4144	0.2154	1.515	0.30095	0.15876	1.896	0.22985	0.071092
7	0.90	5.5666	5.4144	0.22769	1.496	0.29871	0.14647	2.039	0.22259	0.07612
8	1.05	5.5742	5.4144	0.23706	1.483	0.29695	0.1371	2.166	0.21703	0.079924
9	1.20	5.5836	5.4144	0.24525	1.449	0.29815	0.12891	2.313	0.21353	0.084619
10	1.35	5.5912	5.4144	0.25286	1.430	0.2981	0.1213	2.458	0.2097	0.088401
11	1.50	5.5969	5.4144	0.25871	1.417	0.29799	0.11545	2.581	0.20672	0.09127
12	1.80	5.6095	5.4144	0.27393	1.404	0.29538	0.10023	2.947	0.1978	0.097573
13	2.10	5.6197	5.4144	0.28447	1.386	0.29498	0.089693	3.289	0.19234	0.10265
14	2.40	5.6286	5.4144	0.29091	1.358	0.29744	0.083254	3.573	0.19034	0.10709
15	2.71	5.6362	5.4144	0.29559	1.333	0.30038	0.078572	3.823	0.18948	0.11091
16	3.02	5.6414	5.4144	0.3032	1.336	0.29798	0.070962	4.199	0.18447	0.11351
17	3.32	5.6484	5.4144	0.31081	1.328	0.29734	0.063353	4.693	0.18035	0.11699
18	3.63	5.6535	5.4144	0.31373	1.312	0.29954	0.060426	4.957	0.17998	0.11955
19	3.92	5.6598	5.4144	0.31608	1.288	0.30349	0.058085	5.225	0.18079	0.1227
20	4.22	5.6661	5.4144	0.32134	1.277	0.30447	0.052817	5.765	0.17865	0.12583
21	4.51	5.6705	5.4144	0.32778	1.280	0.3025	0.046379	6.522	0.17444	0.12806
22	5.12	5.681	5.4144	0.33129	1.242	0.3095	0.042867	7.220	0.17619	0.13332
23	5.72	5.6885	5.4144	0.3389	1.236	0.30939	0.035257	8.775	0.17233	0.13707
24	6.33	5.6971	5.4144	0.34124	1.207	0.31557	0.032916	9.587	0.17424	0.14133
25	6.92	5.7043	5.4144	0.3471	1.197	0.317	0.027063	11.714	0.17203	0.14497
26	7.53	5.7115	5.4144	0.34827	1.172	0.32296	0.025892	12.473	0.17443	0.14854
27	8.14	5.7168	5.4144	0.35354	1.169	0.32302	0.020624	15.662	0.17182	0.1512
28	8.74	5.7237	5.4144	0.35471	1.147	0.32876	0.019454	16.899	0.1741	0.15465
29	9.35	5.7299	5.4144	0.35763	1.133	0.33208	0.016527	20.093	0.1743	0.15777
30	9.95	5.7361	5.4144	0.3588	1.115	0.33704	0.015356	21.948	0.1762	0.16084
31	10.56	5.7416	5.4144	0.35998	1.100	0.34134	0.014186	24.062	0.17776	0.16358
32	11.17	5.7458	5.4144	0.36173	1.091	0.34384	0.01243	27.663	0.17813	0.1657
33	11.77	5.7527	5.4144	0.36115	1.068	0.35132	0.013015	26.993	0.18217	0.16915
34	12.38	5.7568	5.4144	0.36349	1.062	0.35306	0.010674	33.077	0.18187	0.17119
35	12.98	5.7613	5.4144	0.36115	1.041	0.35992	0.013015	27.654	0.18647	0.17345
36	13.60	5.7647	5.4144	0.36349	1.038	0.36094	0.010674	33.816	0.18581	0.17513
37	14.20	5.7706	5.4144	0.35998	1.011	0.37035	0.014186	26.108	0.19227	0.17808
38	14.81	5.7732	5.4144	0.3629	1.011	0.37008	0.011259	32.870	0.19067	0.17941
39	15.42	5.7764	5.4144	0.35822	0.990	0.37789	0.015942	23.705	0.19692	0.18098

TRIAXIAL TEST

Project: FOX RIVER
Boring No.: EA18-DS-04
Sample No.: EA18-DS-04
Test No.: EA18T2

Location:
Tested By: MJS
Test Date: 11/19/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.53 in
Specimen Area: 6.20 in^2
Specimen Volume: 34.24 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.1957	0	0	5.04	5.7888	5.7888
2	2.004	0.2206	6.2094	14.524	0.16841	5.2262	5.7888	5.9572
3	4.004	0.44286	6.2232	22.296	0.25795	5.3006	5.7888	6.0468
4	6.0039	0.66847	6.2374	27.173	0.31366	5.3651	5.7888	6.1025
5	8.0039	0.89408	6.2516	30.603	0.35246	5.4178	5.7888	6.1413
6	10.004	1.1197	6.2658	33.229	0.38183	5.457	5.7888	6.1706
7	12.004	1.342	6.2799	35.373	0.40555	5.4828	5.7888	6.1944
8	14.004	1.5642	6.2941	37.088	0.42426	5.4922	5.7888	6.2131
9	16	1.7865	6.3084	38.749	0.44226	5.5004	5.7888	6.2311
10	18.001	2.0088	6.3227	40.196	0.45774	5.508	5.7888	6.2465
11	20.001	2.2344	6.3373	41.322	0.46947	5.5144	5.7888	6.2583
12	24.001	2.6839	6.3665	43.466	0.49156	5.5589	5.7888	6.2804
13	28	3.1385	6.3964	45.395	0.51098	5.597	5.7888	6.2998
14	32.004	3.5914	6.4265	47.11	0.52781	5.5935	5.7888	6.3166
15	36	4.0392	6.4565	48.665	0.54269	5.59	5.7888	6.3315
16	40	4.4854	6.4866	49.629	0.55087	5.6157	5.7888	6.3397
17	44	4.9317	6.5171	51.076	0.56429	5.6474	5.7888	6.3531
18	48.004	5.3829	6.5482	52.148	0.57339	5.6409	5.7888	6.3622
19	52.001	5.8374	6.5798	53.274	0.58296	5.6316	5.7888	6.3718
20	56.001	6.282	6.611	54.453	0.59304	5.6427	5.7888	6.3818
21	60.004	6.7332	6.643	55.739	0.60413	5.6749	5.7888	6.3929
22	68	7.6273	6.7073	57.883	0.62135	5.6597	5.7888	6.4102
23	76.003	8.5347	6.7738	59.92	0.6369	5.6925	5.7888	6.4257
24	84.003	9.4321	6.8409	61.688	0.64926	5.6796	5.7888	6.4381
25	92.003	10.316	6.9084	63.51	0.66192	5.7024	5.7888	6.4507
26	100	11.222	6.9788	65.493	0.67569	5.6925	5.7888	6.4645
27	108	12.129	7.0509	67.423	0.68849	5.7077	5.7888	6.4773
28	116	13.024	7.1234	68.816	0.69556	5.7024	5.7888	6.4844
29	124	13.933	7.1986	70.371	0.70384	5.7077	5.7888	6.4926
30	132	14.833	7.2748	72.193	0.71451	5.7077	5.7888	6.5033
31	140	15.732	7.3524	74.712	0.73163	5.7018	5.7888	6.5204

TRIAXIAL TEST

Project: FOX RIVER
Boring No.: EA18-DS-04
Sample No.: EA18-DS-04
Test No.: EA18T2

Location:
Tested By: MJS
Test Date: 11/19/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.53 in
Specimen Area: 6.20 in^2
Specimen Volume: 34.24 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.7888	5.7888	0	0.000	0.7488	0.7488	1.000	0.7488	0
2	0.22	5.9572	5.7888	0.18625	1.106	0.73097	0.56255	1.299	0.64676	0.084207
3	0.44	6.0468	5.7888	0.26064	1.010	0.74612	0.48817	1.528	0.61714	0.12898
4	0.67	6.1025	5.7888	0.32507	1.036	0.7374	0.42374	1.740	0.58057	0.15683
5	0.89	6.1413	5.7888	0.37778	1.072	0.72348	0.37102	1.950	0.54725	0.17623
6	1.12	6.1706	5.7888	0.41702	1.092	0.71361	0.33178	2.151	0.5227	0.19092
7	1.34	6.1944	5.7888	0.44279	1.092	0.71156	0.30601	2.325	0.50879	0.20278
8	1.56	6.2131	5.7888	0.45216	1.066	0.7209	0.29664	2.430	0.50877	0.21213
9	1.79	6.2311	5.7888	0.46036	1.041	0.7307	0.28844	2.533	0.50957	0.22113
10	2.01	6.2465	5.7888	0.46798	1.022	0.73857	0.28083	2.630	0.5097	0.22887
11	2.23	6.2583	5.7888	0.47442	1.011	0.74386	0.27438	2.711	0.50912	0.23474
12	2.68	6.2804	5.7888	0.51894	1.056	0.72143	0.22987	3.138	0.47565	0.24578
13	3.14	6.2998	5.7888	0.55701	1.090	0.70278	0.1918	3.664	0.44729	0.25549
14	3.59	6.3166	5.7888	0.55349	1.049	0.72312	0.19531	3.702	0.45922	0.2639
15	4.04	6.3315	5.7888	0.54998	1.013	0.74152	0.19883	3.729	0.47017	0.27134
16	4.49	6.3397	5.7888	0.57575	1.045	0.72393	0.17306	4.183	0.44849	0.27544
17	4.93	6.3531	5.7888	0.60738	1.076	0.70571	0.14143	4.990	0.42357	0.28214
18	5.38	6.3622	5.7888	0.60093	1.048	0.72127	0.14787	4.878	0.43457	0.2867
19	5.84	6.3718	5.7888	0.59156	1.015	0.7402	0.15724	4.707	0.44872	0.29148
20	6.28	6.3818	5.7888	0.60269	1.016	0.73916	0.14611	5.059	0.44264	0.29652
21	6.73	6.3929	5.7888	0.6349	1.051	0.71803	0.1139	6.304	0.41597	0.30207
22	7.63	6.4102	5.7888	0.61968	0.997	0.75048	0.12913	5.812	0.4398	0.31068
23	8.53	6.4257	5.7888	0.65248	1.024	0.73323	0.096329	7.612	0.41478	0.31845
24	9.43	6.4381	5.7888	0.63959	0.985	0.75848	0.10921	6.945	0.43385	0.32463
25	10.32	6.4507	5.7888	0.66243	1.001	0.74829	0.086372	8.664	0.41733	0.33096
26	11.22	6.4645	5.7888	0.65248	0.966	0.77202	0.096329	8.014	0.43417	0.33784
27	12.13	6.4773	5.7888	0.6677	0.970	0.76959	0.081101	9.489	0.42534	0.34424
28	13.02	6.4844	5.7888	0.66243	0.952	0.78194	0.086372	9.053	0.43415	0.34778
29	13.93	6.4926	5.7888	0.6677	0.949	0.78494	0.081101	9.679	0.43302	0.35192
30	14.83	6.5033	5.7888	0.6677	0.934	0.79561	0.081101	9.810	0.43835	0.35725
31	15.73	6.5204	5.7888	0.66185	0.905	0.81859	0.086958	9.414	0.45277	0.36582

TRIAXIAL TEST

Project: FOX RIVER
Boring No.: EA18-DS-04
Sample No.: EA18-DS-04
Test No.: EA18T3

Location:
Tested By: MJS
Test Date: 11/19/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.25 in
Specimen Area: 6.50 in^2
Specimen Volume: 34.08 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.4963	0	0	5.0401	6.5376	6.5376
2	2.0041	0.13023	6.5047	34.514	0.38203	5.2962	6.5376	6.9196
3	4.0041	0.28129	6.5146	50.004	0.55265	5.4338	6.5376	7.0902
4	6.0041	0.43235	6.5245	59.539	0.65704	5.5262	6.5376	7.1946
5	8.0041	0.59036	6.5348	66.229	0.7297	5.597	6.5376	7.2673
6	10.004	0.74663	6.5451	71.02	0.78126	5.6528	6.5376	7.3189
7	12.001	0.9029	6.5554	74.816	0.82172	5.6992	6.5376	7.3593
8	14.001	1.0592	6.5658	78.089	0.85632	5.7381	6.5376	7.3939
9	16.001	1.2154	6.5762	80.722	0.8838	5.7724	6.5376	7.4214
10	18.001	1.3717	6.5866	83.071	0.90807	5.8043	6.5376	7.4457
11	20.001	1.5297	6.5972	85.111	0.92888	5.8322	6.5376	7.4665
12	24.001	1.844	6.6183	88.36	0.96127	5.8781	6.5376	7.4989
13	28.004	2.16	6.6397	91.207	0.98904	5.9164	6.5376	7.5266
14	32	2.4708	6.6608	93.626	1.0121	5.9449	6.5376	7.5497
15	36	2.7868	6.6825	95.595	1.03	5.9756	6.5376	7.5676
16	40	3.1046	6.7044	97.493	1.047	6.0006	6.5376	7.5846
17	44.004	3.4223	6.7265	99.058	1.0603	6.0209	6.5376	7.5979
18	48	3.7384	6.7485	100.43	1.0715	6.036	6.5376	7.6091
19	52	4.0561	6.7709	101.88	1.0834	6.0552	6.5376	7.621
20	56.003	4.3669	6.7929	103.16	1.0934	6.0686	6.5376	7.631
21	60.003	4.6812	6.8153	104.49	1.1039	6.0825	6.5376	7.6415
22	68.001	5.3011	6.8599	106.84	1.1214	6.1069	6.5376	7.659
23	76.004	5.9314	6.9059	109.09	1.1374	6.126	6.5376	7.675
24	84.004	6.5669	6.9528	111.23	1.1518	6.1435	6.5376	7.6894
25	92.003	7.1989	7.0002	113.31	1.1655	6.1574	6.5376	7.7031
26	100	7.8274	7.0479	115.35	1.1784	6.169	6.5376	7.716
27	108	8.4508	7.0959	117.61	1.1933	6.1801	6.5376	7.7309
28	116	9.0846	7.1454	119.55	1.2047	6.1853	6.5376	7.7423
29	124	9.7201	7.1957	121.38	1.2145	6.194	6.5376	7.7521
30	132	10.356	7.2467	123.16	1.2237	6.1969	6.5376	7.7613
31	140	10.979	7.2974	124.84	1.2318	6.205	6.5376	7.7694
32	148	11.607	7.3493	126.57	1.24	6.2044	6.5376	7.7776
33	156	12.245	7.4027	128.35	1.2484	6.2114	6.5376	7.786
34	164	12.875	7.4562	129.99	1.2552	6.2114	6.5376	7.7928
35	172	13.502	7.5103	131.63	1.2619	6.2149	6.5376	7.7995
36	180	14.13	7.5653	133.03	1.266	6.2137	6.5376	7.8036
37	188	14.771	7.6221	134.5	1.2705	6.2155	6.5376	7.8081
38	196	15.408	7.6795	136.04	1.2754	6.2143	6.5376	7.813

TRIAXIAL TEST

Project: FOX RIVER
Boring No.: EA18-DS-04
Sample No.: EA18-DS-04
Test No.: EA18T3

Location:
Tested By: MJS
Test Date: 11/19/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.25 in
Specimen Area: 6.50 in^2
Specimen Volume: 34.08 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

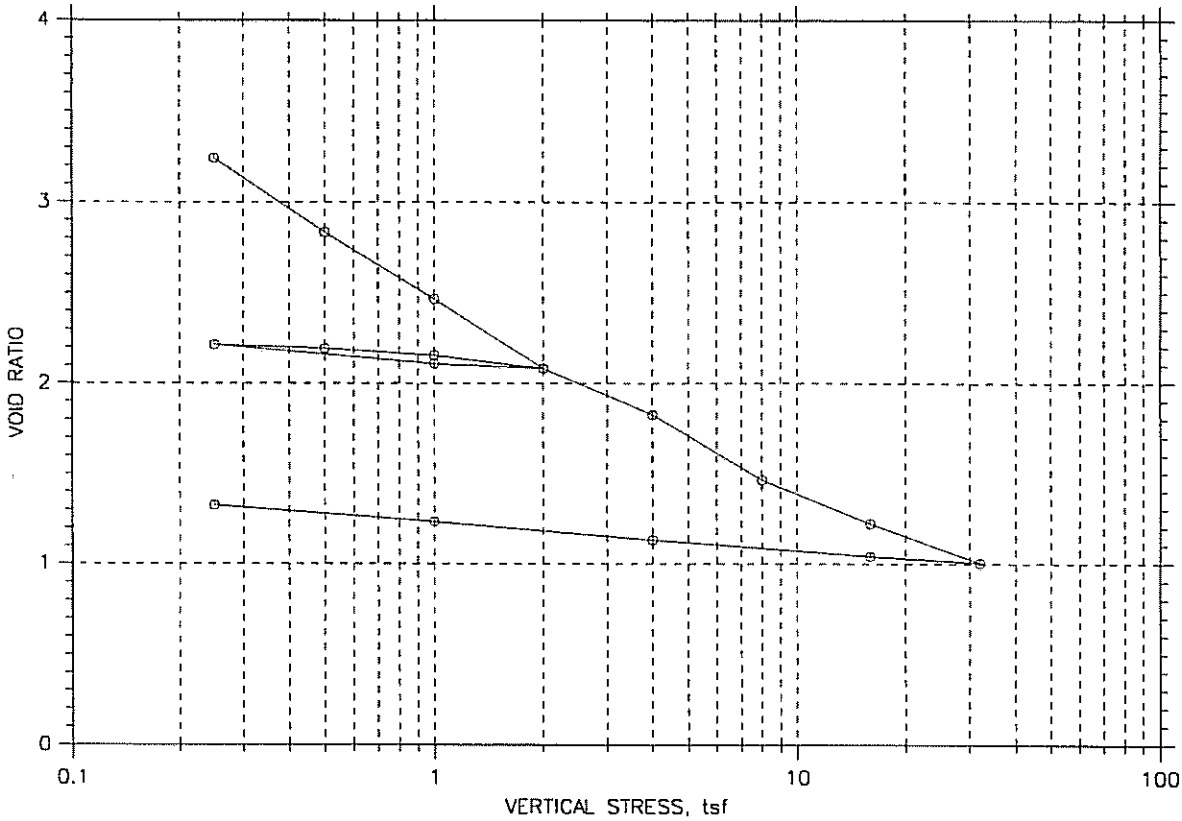
Plastic Limit: 0

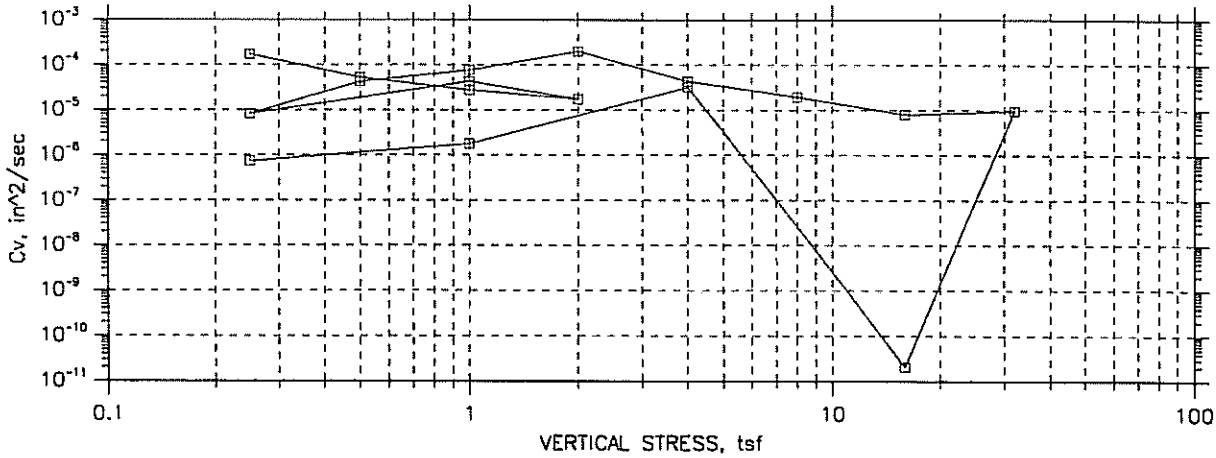
Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	6.5376	6.5376	0	0.000	1.4975	1.4975	1.000	1.4975	0
2	0.13	6.9196	6.5376	0.2561	0.670	1.6234	1.2414	1.308	1.4324	0.19102
3	0.28	7.0902	6.5376	0.39373	0.712	1.6564	1.1038	1.501	1.3801	0.27632
4	0.43	7.1946	6.5376	0.48607	0.740	1.6685	1.0114	1.650	1.34	0.32852
5	0.59	7.2673	6.5376	0.55691	0.763	1.6703	0.94059	1.776	1.3054	0.36485
6	0.75	7.3189	6.5376	0.61266	0.784	1.6661	0.88484	1.883	1.2755	0.39063
7	0.90	7.3593	6.5376	0.65912	0.802	1.6601	0.83838	1.980	1.2492	0.41086
8	1.06	7.3939	6.5376	0.69803	0.815	1.6558	0.79947	2.071	1.2276	0.42816
9	1.22	7.4214	6.5376	0.73229	0.829	1.649	0.76521	2.155	1.2071	0.4419
10	1.37	7.4457	6.5376	0.76423	0.842	1.6413	0.73327	2.238	1.1873	0.45403
11	1.53	7.4665	6.5376	0.79211	0.853	1.6343	0.7054	2.317	1.1698	0.46444
12	1.84	7.4989	6.5376	0.83798	0.872	1.6208	0.65952	2.458	1.1402	0.48063
13	2.16	7.5266	6.5376	0.87631	0.886	1.6102	0.62119	2.592	1.1157	0.49452
14	2.47	7.5497	6.5376	0.90477	0.894	1.6048	0.59274	2.707	1.0988	0.50603
15	2.79	7.5676	6.5376	0.93555	0.908	1.5919	0.56196	2.833	1.077	0.51499
16	3.10	7.5846	6.5376	0.96052	0.917	1.584	0.53699	2.950	1.0605	0.5235
17	3.42	7.5979	6.5376	0.98084	0.925	1.577	0.51666	3.052	1.0468	0.53016
18	3.74	7.6091	6.5376	0.99594	0.929	1.5731	0.50156	3.136	1.0373	0.53577
19	4.06	7.621	6.5376	1.0151	0.937	1.5658	0.4824	3.246	1.0241	0.54169
20	4.37	7.631	6.5376	1.0285	0.941	1.5625	0.46904	3.331	1.0158	0.54672
21	4.68	7.6415	6.5376	1.0424	0.944	1.559	0.45511	3.426	1.007	0.55194
22	5.30	7.659	6.5376	1.0668	0.951	1.5521	0.43071	3.603	0.99139	0.56068
23	5.93	7.675	6.5376	1.086	0.955	1.5489	0.41155	3.764	0.98025	0.56869
24	6.57	7.6894	6.5376	1.1034	0.958	1.5459	0.39413	3.922	0.97004	0.57591
25	7.20	7.7031	6.5376	1.1173	0.959	1.5457	0.38019	4.066	0.96294	0.58275
26	7.83	7.716	6.5376	1.1289	0.958	1.547	0.36858	4.197	0.9578	0.58922
27	8.45	7.7309	6.5376	1.14	0.955	1.5509	0.35754	4.338	0.95421	0.59667
28	9.08	7.7423	6.5376	1.1452	0.951	1.557	0.35232	4.419	0.95465	0.60234
29	9.72	7.7521	6.5376	1.1539	0.950	1.5581	0.34361	4.535	0.95087	0.60726
30	10.36	7.7613	6.5376	1.1568	0.945	1.5644	0.3407	4.592	0.95253	0.61183
31	10.98	7.7694	6.5376	1.1649	0.946	1.5643	0.33257	4.704	0.94845	0.61588
32	11.61	7.7776	6.5376	1.1644	0.939	1.5732	0.33315	4.722	0.95317	0.62001
33	12.24	7.786	6.5376	1.1713	0.938	1.5746	0.32618	4.827	0.95038	0.6242
34	12.87	7.7928	6.5376	1.1713	0.933	1.5814	0.32618	4.848	0.9538	0.62762
35	13.50	7.7995	6.5376	1.1748	0.931	1.5846	0.3227	4.910	0.95365	0.63095
36	14.13	7.8036	6.5376	1.1736	0.927	1.5899	0.32386	4.909	0.95688	0.63302
37	14.77	7.8081	6.5376	1.1754	0.925	1.5926	0.32212	4.944	0.95736	0.63524
38	15.41	7.813	6.5376	1.1742	0.921	1.5987	0.32328	4.945	0.961	0.63772

CONSOLIDATION TEST DATA

SUMMARY REPORT



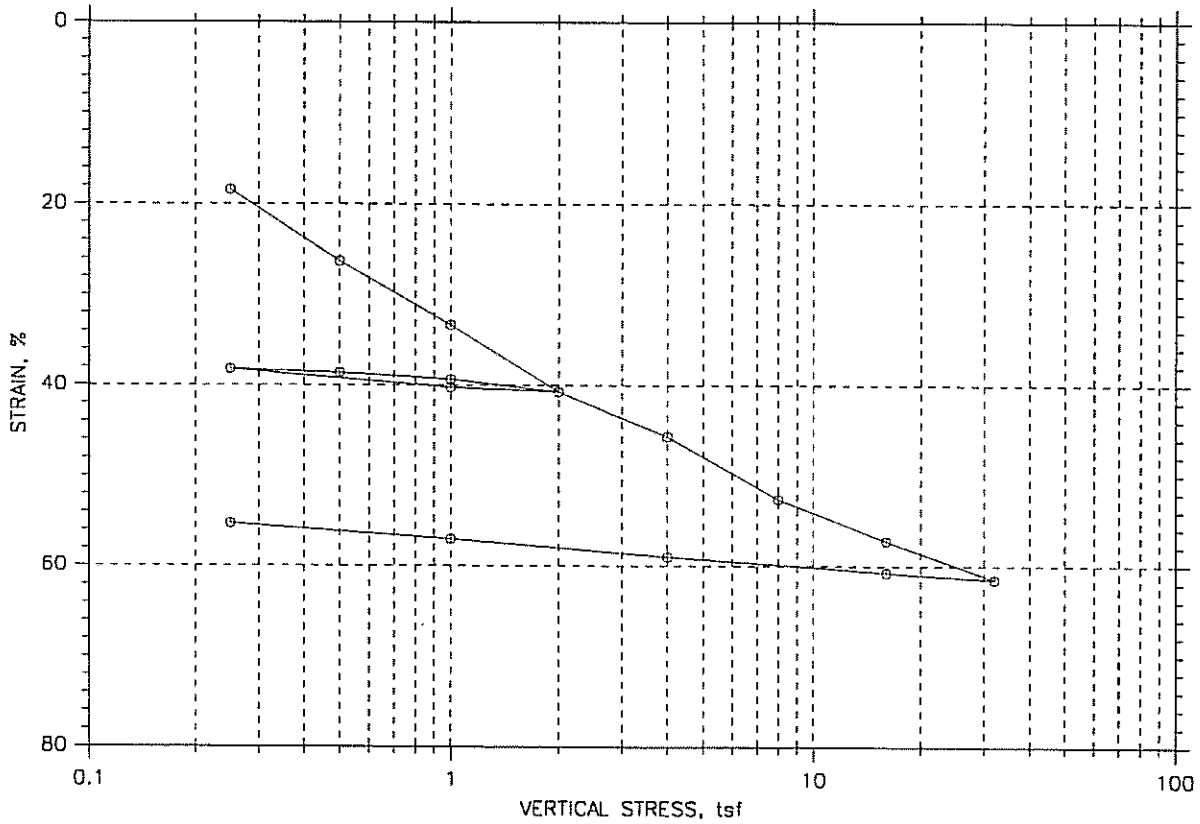


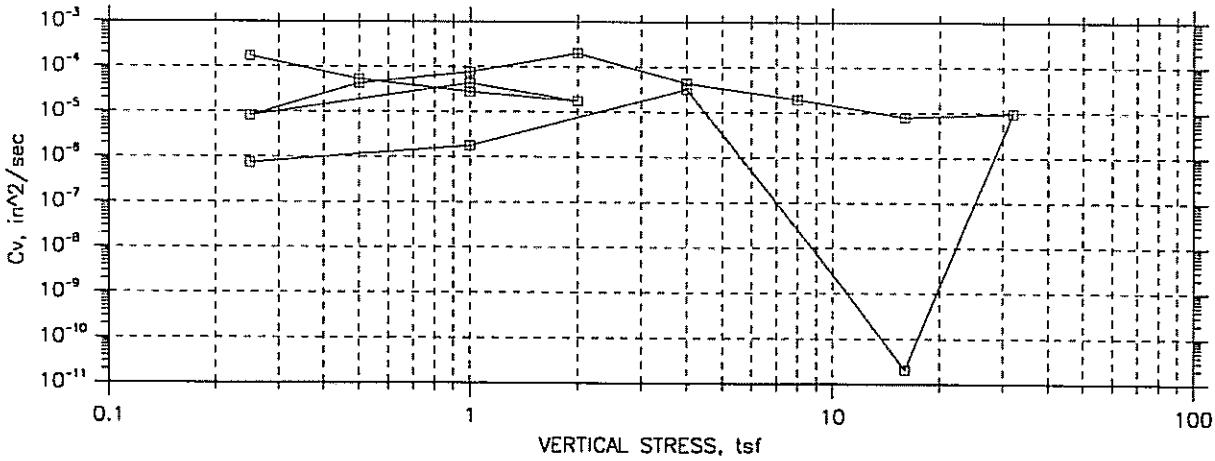
Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

Tue, 11-DEC-2007 15:20:11

CONSOLIDATION TEST DATA

SUMMARY REPORT





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

Tue, 11-DEC-2007 15:20:43

CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: EA18-DS-04
Test No.: 16EA18

Location:
Tested By: MJS
Test Date: 11/14/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435

Estimated Specific Gravity: 2.55
Initial Void Ratio: 4.20
Final Void Ratio: 1.32

Liquid Limit: 0
Plastic Limit: 0
Plasticity Index: 0

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	X-7	RING	RING	RING
Wt. Container + Wet Soil, gm	142.82	153.42	118.74	118.74
Wt. Container + Dry Soil, gm	83.67	103.93	103.93	103.93
Wt. Container, gm	44.58	74.35	74.35	74.35
Wt. Dry Soil, gm	39.09	29.58	29.58	29.58
Water Content, %	151.32	167.31	50.07	50.07
Void Ratio	---	4.20	1.32	---
Degree of Saturation, %	---	101.56	96.51	---
Dry Unit Weight, pcf	---	30.609	68.533	---

CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: EA18-DS-04
Test No.: 16EA18

Location:
Tested By: MJS
Test Date: 11/14/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435

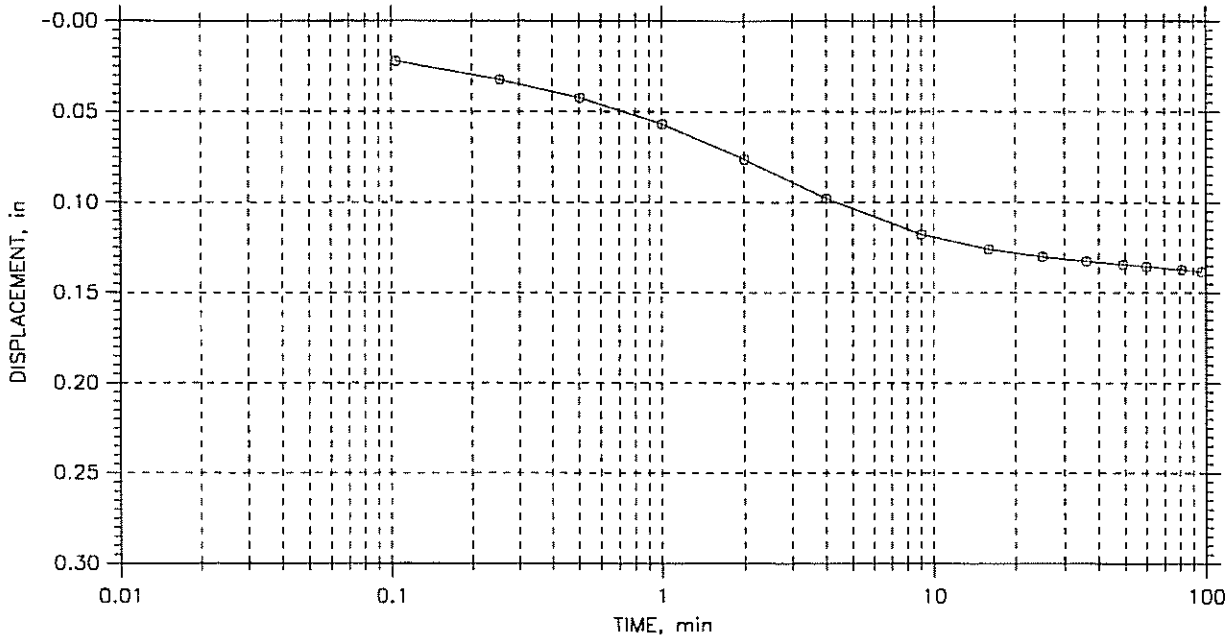
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.25	0.1385	3.241	18.46	2.9	1.6	1.31e-004	2.39e-004	1.69e-004
2	0.5	0.1974	2.832	26.32	7.6	3.1	3.65e-005	9.01e-005	5.20e-005
3	1	0.2503	2.465	33.38	11.7	5.0	1.95e-005	4.54e-005	2.73e-005
4	2	0.3057	2.081	40.76	14.8	6.5	1.24e-005	2.82e-005	1.72e-005
5	1	0.3022	2.105	40.29	3.8	0.0	4.26e-005	0.00e+000	4.26e-005
6	0.25	0.2868	2.212	38.24	21.1	0.0	8.09e-006	0.00e+000	8.09e-006
7	0.5	0.2899	2.191	38.65	7.7	0.6	2.28e-005	2.91e-004	4.23e-005
8	1	0.2954	2.152	39.39	3.9	0.7	4.45e-005	2.53e-004	7.57e-005
9	2	0.306	2.079	40.79	0.9	0.7	1.75e-004	2.32e-004	1.99e-004
10	4	0.3426	1.825	45.68	3.8	3.1	3.91e-005	4.79e-005	4.30e-005
11	8	0.3949	1.462	52.66	7.8	4.6	1.53e-005	2.62e-005	1.93e-005
12	16	0.4297	1.221	57.29	18.0	5.7	5.20e-006	1.64e-005	7.90e-006
13	32	0.4613	1.002	61.50	13.5	2.6	5.65e-006	2.92e-005	9.46e-006
14	16	0.4559	1.040	60.78	0.2	6886873.3	2.87e-004	1.01e-011	2.03e-011
15	4	0.4429	1.130	59.05	3.4	1.3	2.21e-005	5.81e-005	3.21e-005
16	1	0.4282	1.232	57.09	46.2	0.0	1.76e-006	0.00e+000	1.76e-006
17	0.25	0.415	1.323	55.34	121.5	0.0	7.30e-007	0.00e+000	7.30e-007

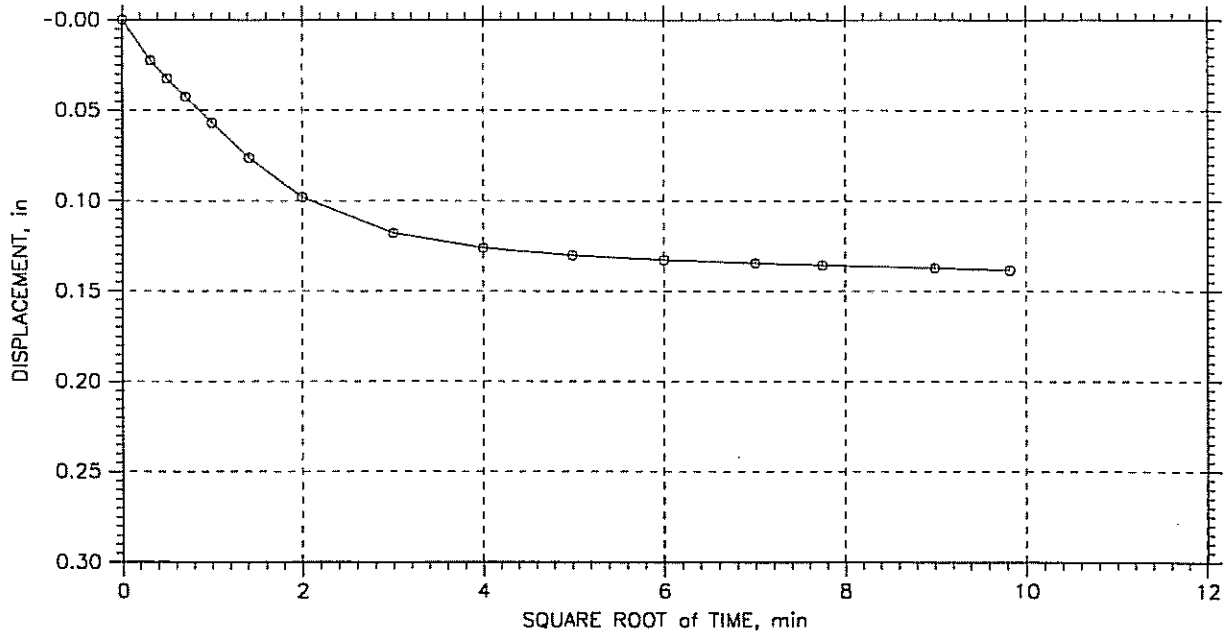
CONSOLIDATION TEST DATA

TIME CURVES

Step: 1 of 17

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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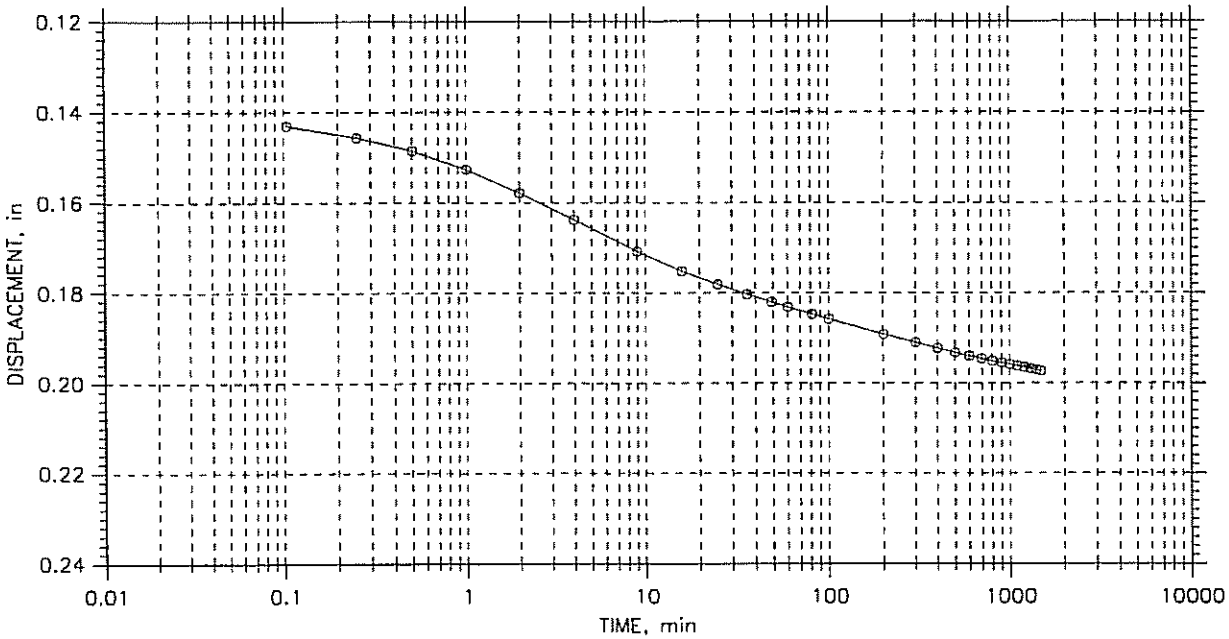
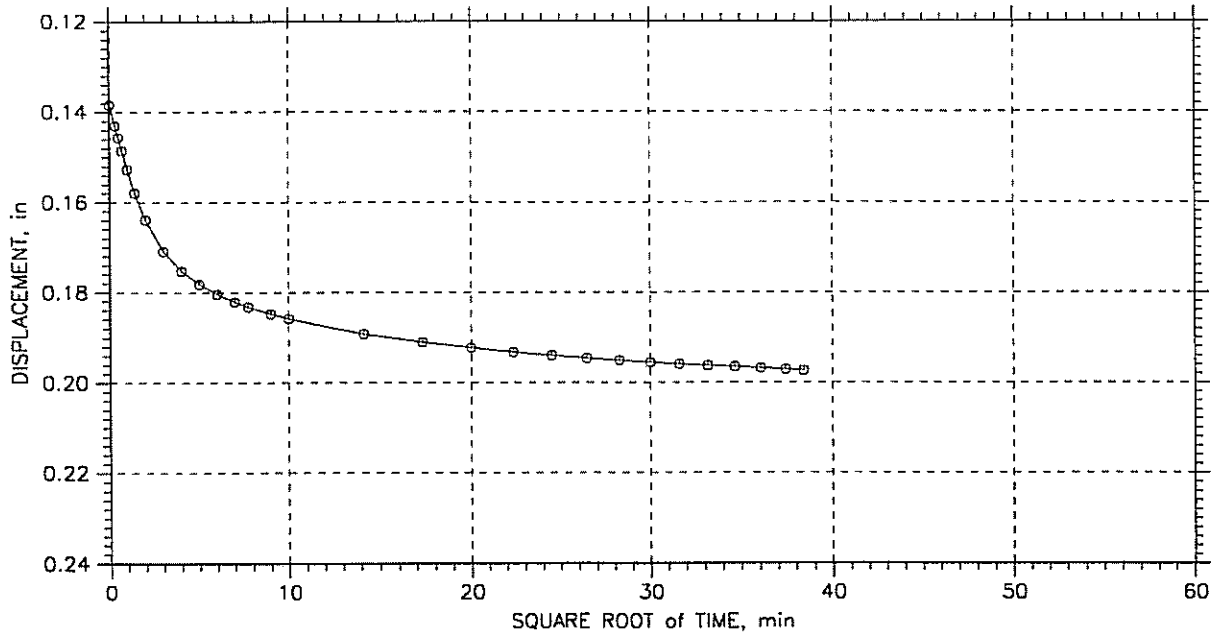
CONSOLIDATION TEST DATA

TIME CURVES

Step: 2 of 17

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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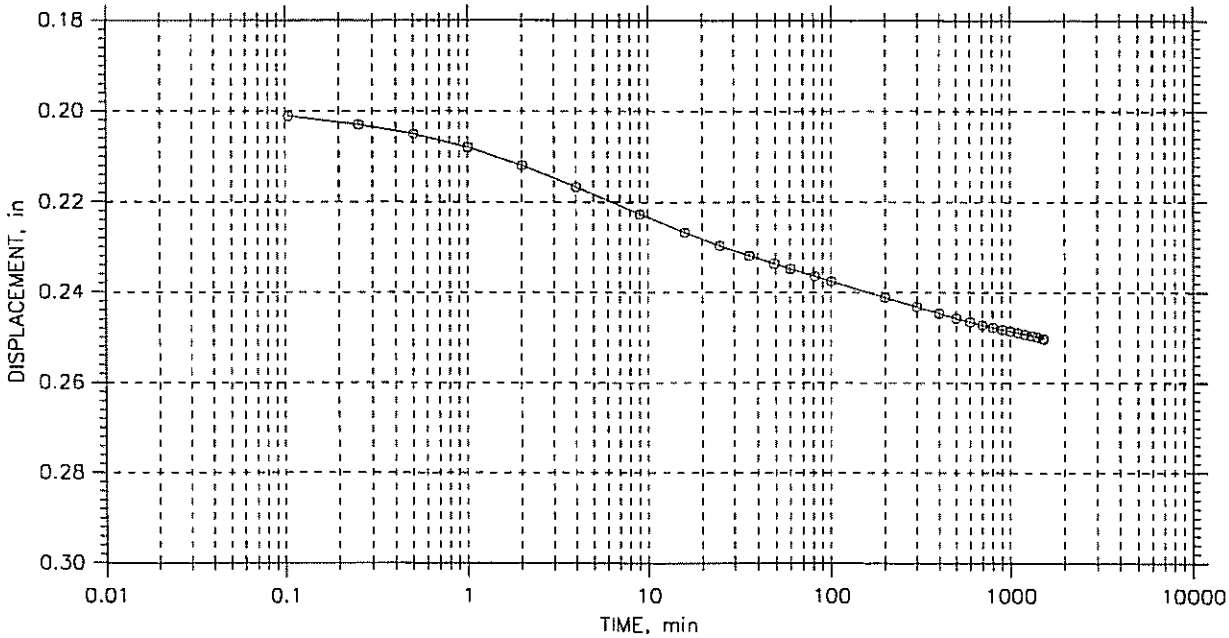
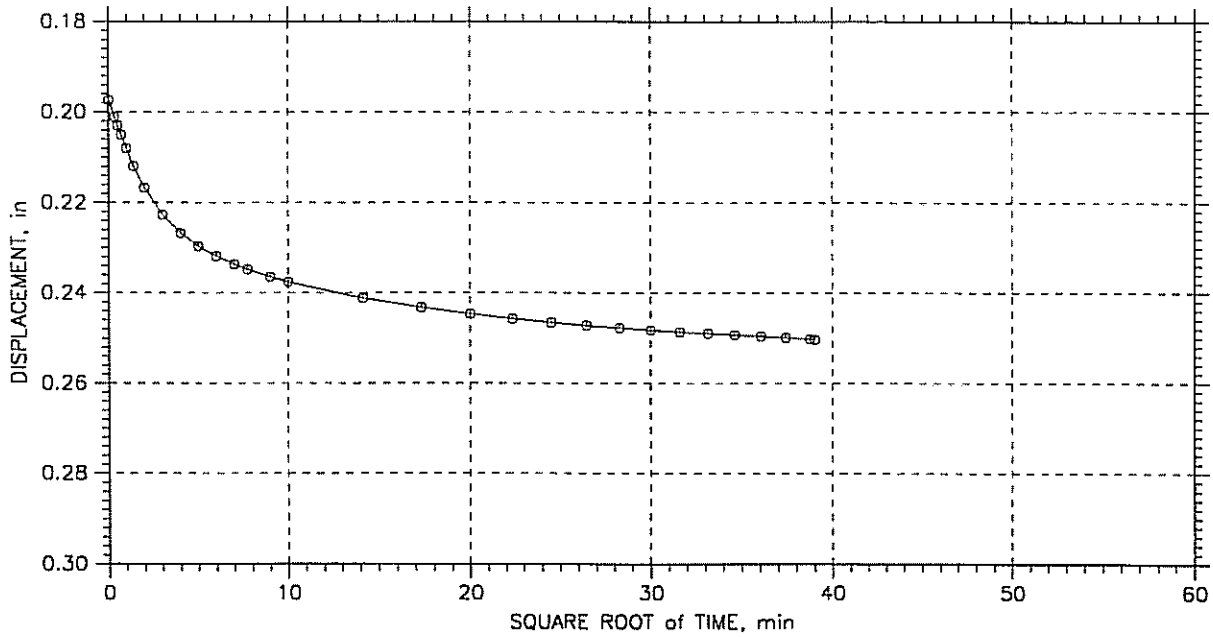
CONSOLIDATION TEST DATA

TIME CURVES

Step: 3 of 17

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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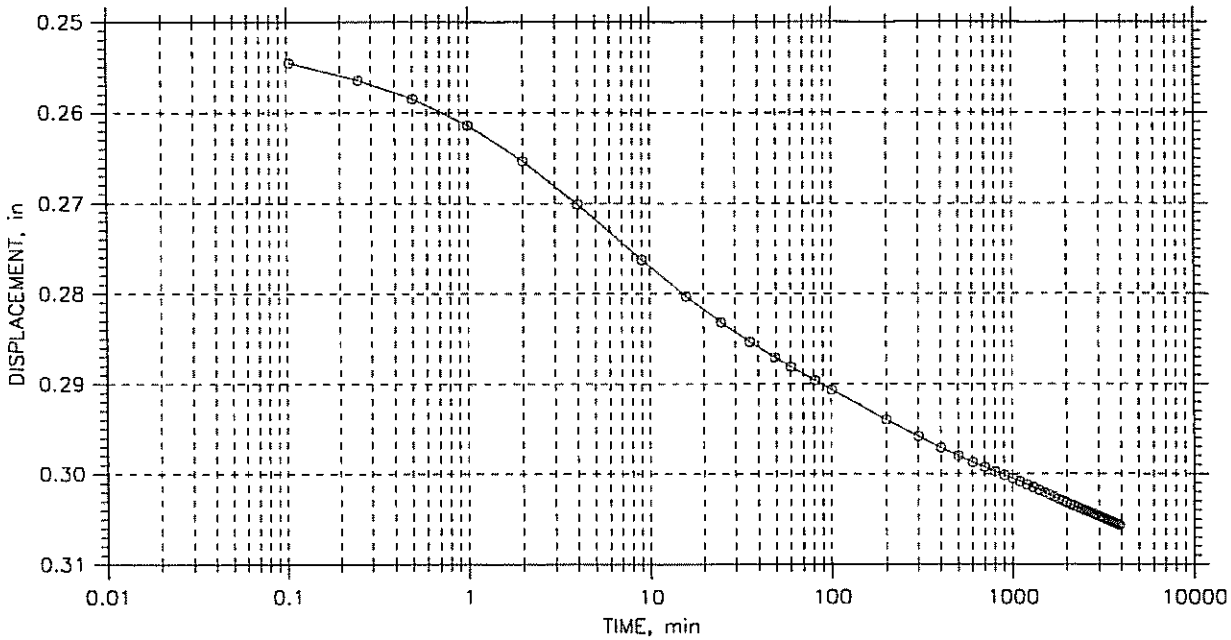
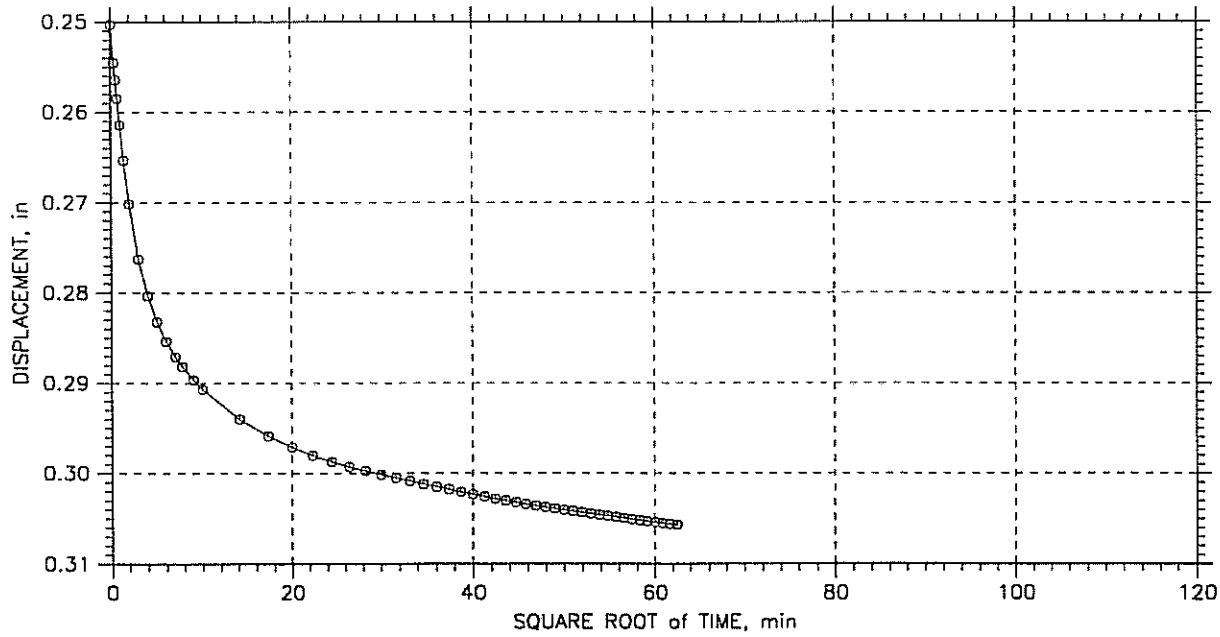
CONSOLIDATION TEST DATA

TIME CURVES

Step: 4 of 17

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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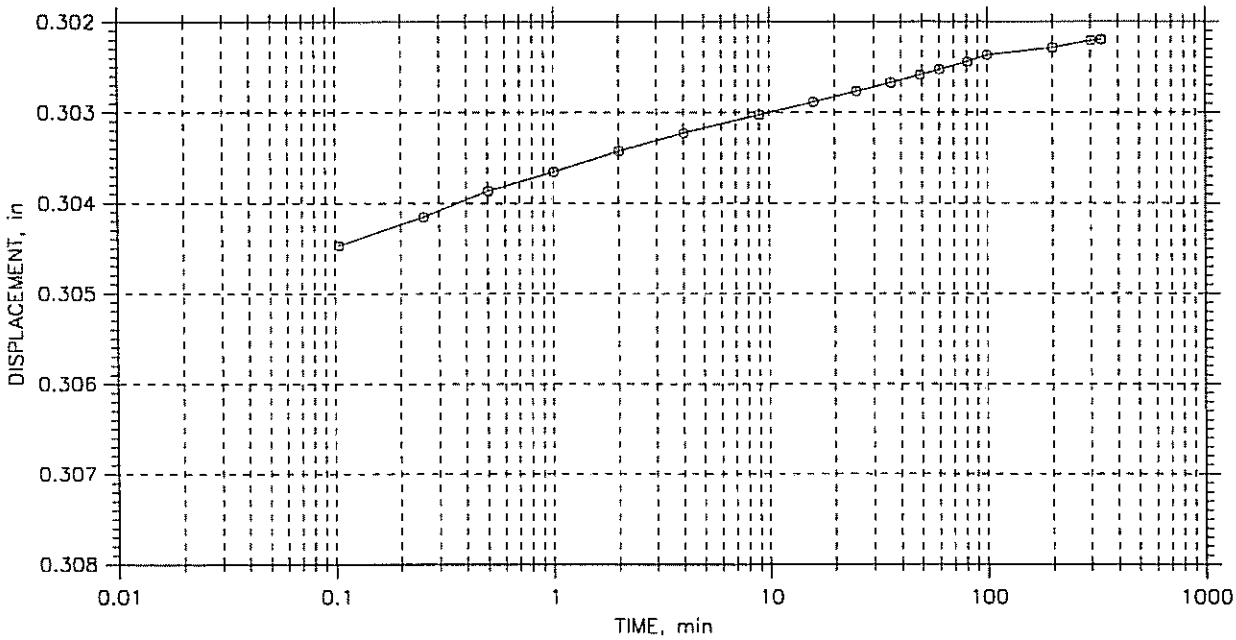
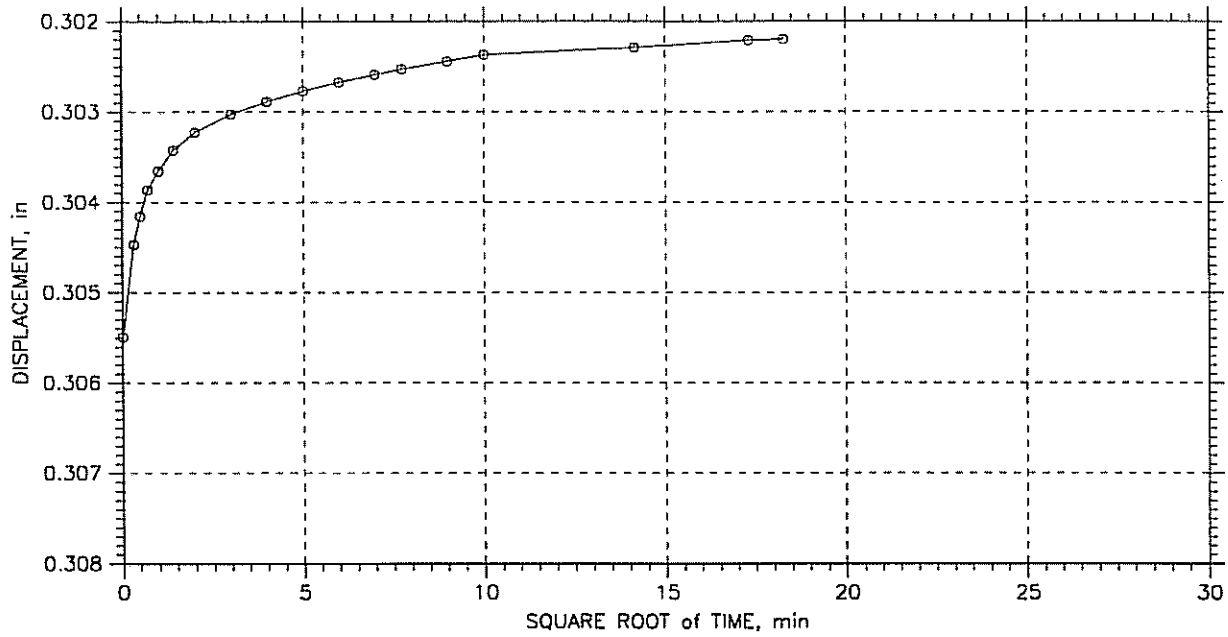
CONSOLIDATION TEST DATA

TIME CURVES

Step: 5 of 17

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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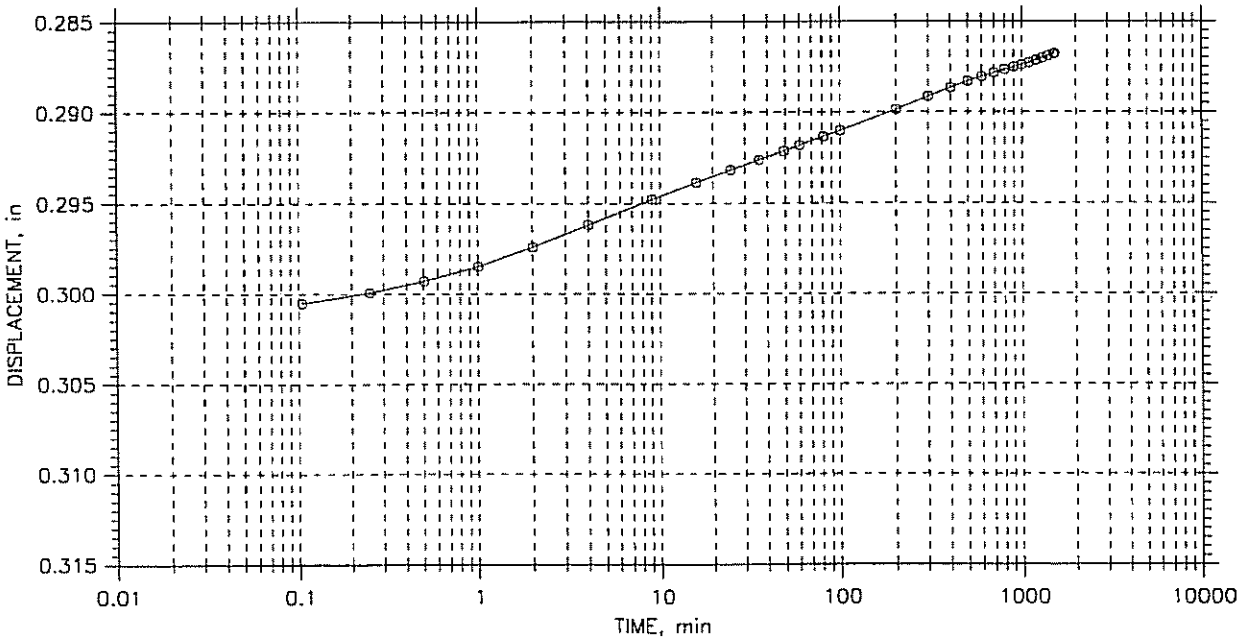
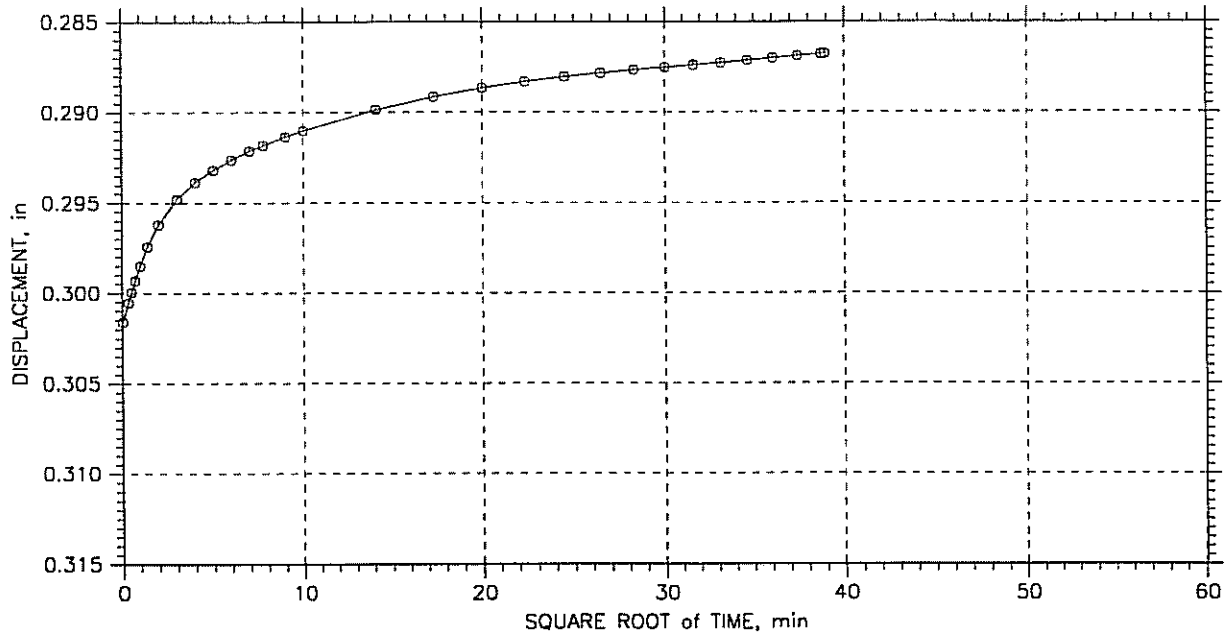
CONSOLIDATION TEST DATA

TIME CURVES

Step: 6 of 17

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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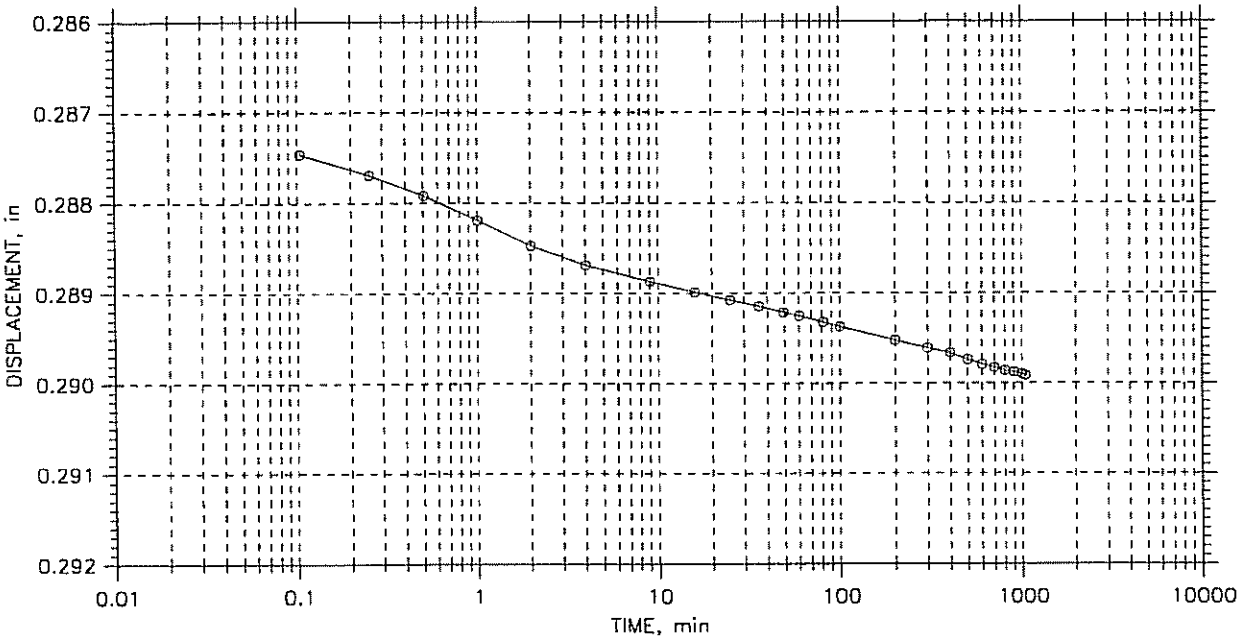
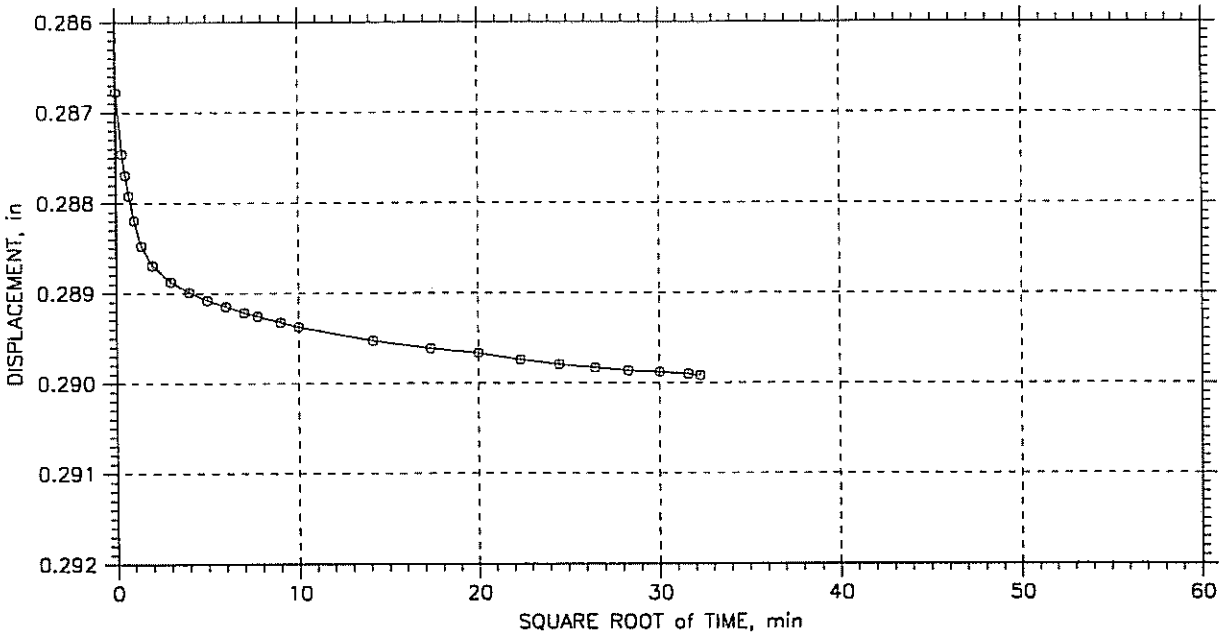
CONSOLIDATION TEST DATA

TIME CURVES

Step: 7 of 17

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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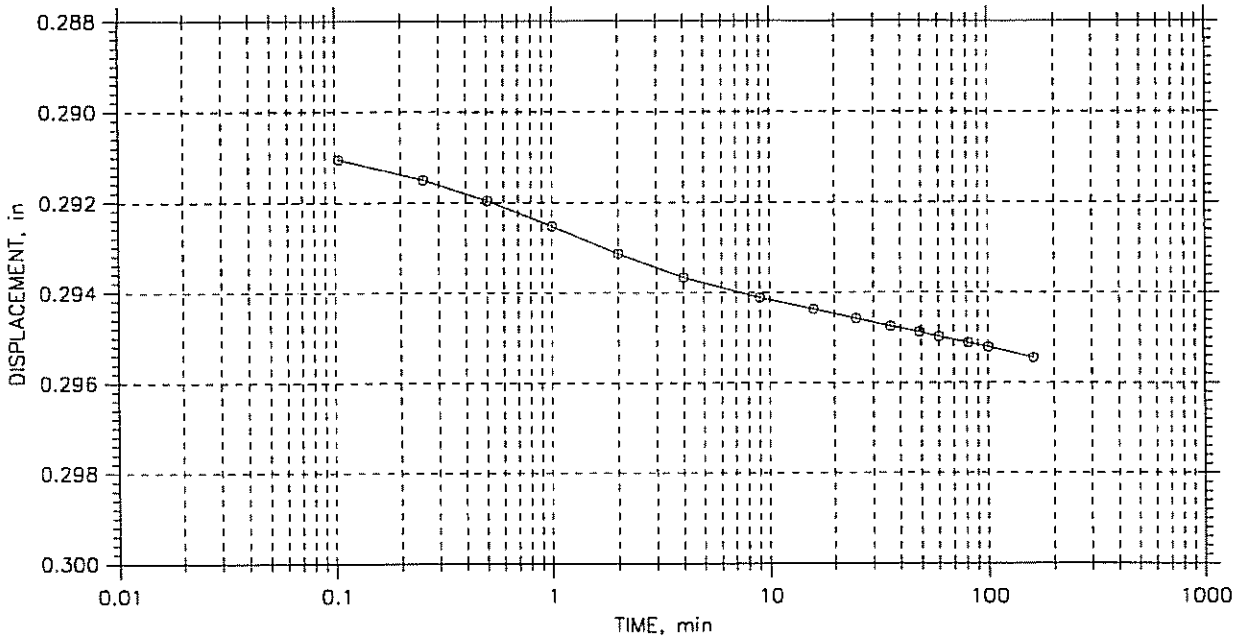
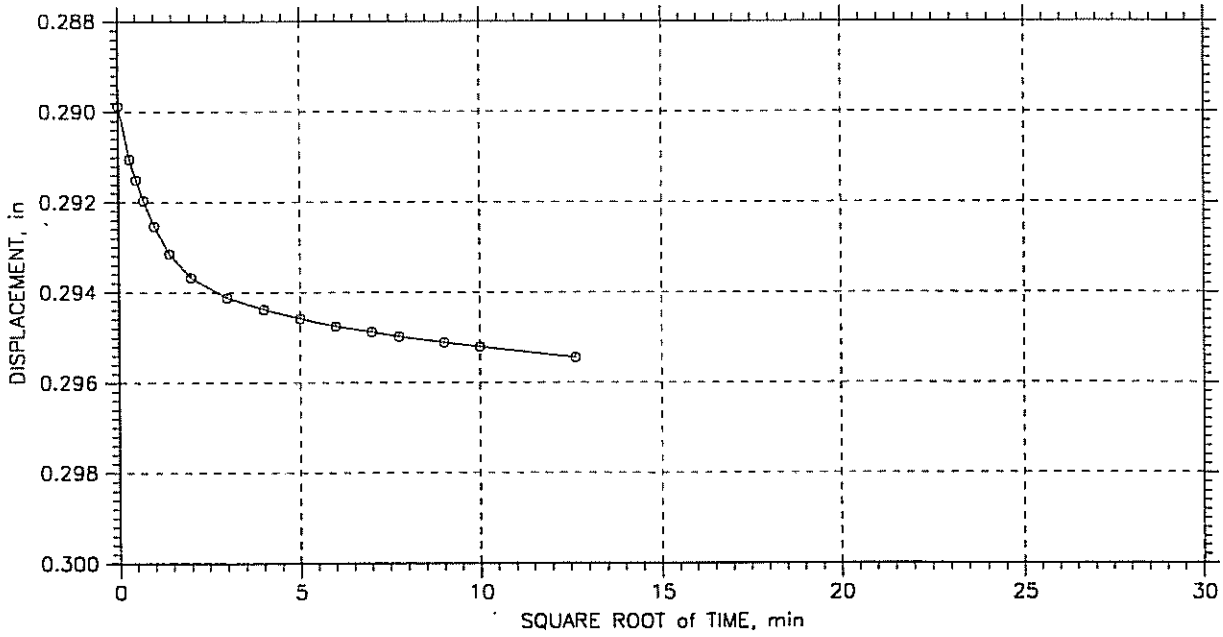
CONSOLIDATION TEST DATA

TIME CURVES

Step: 8 of 17

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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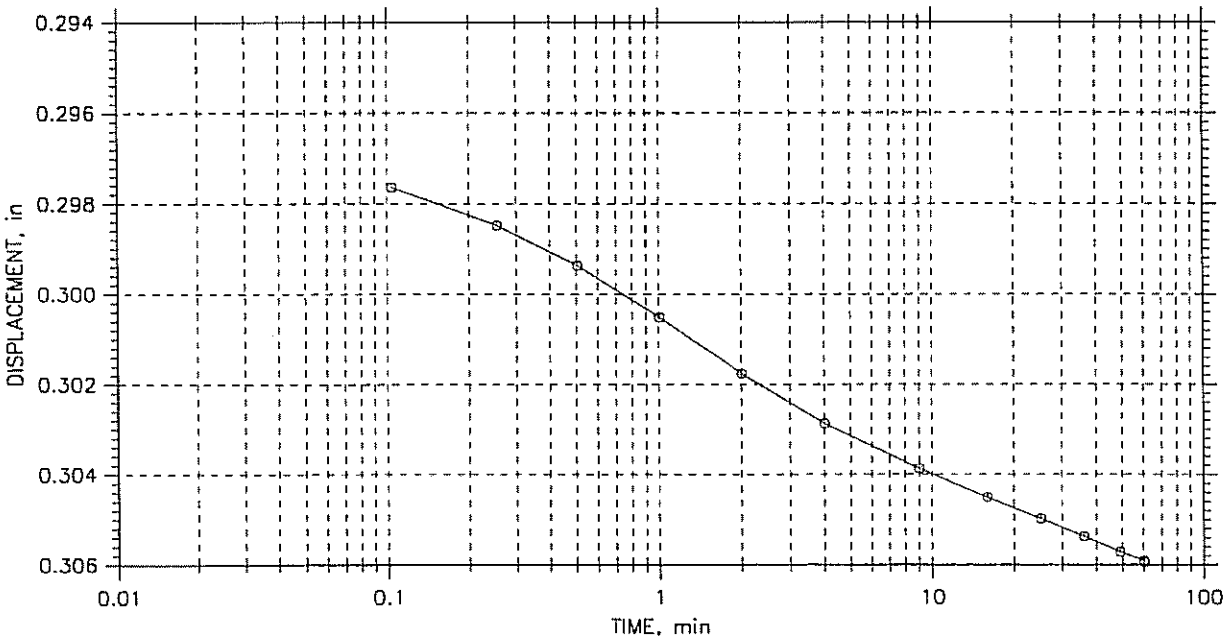
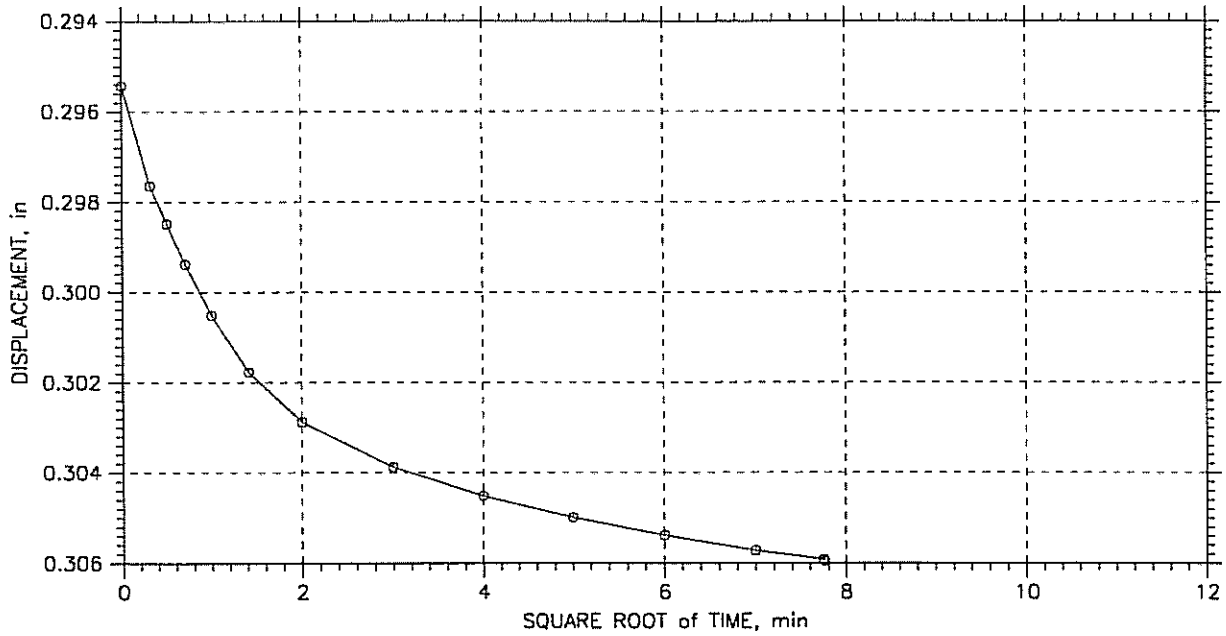
CONSOLIDATION TEST DATA

TIME CURVES

Step: 9 of 17

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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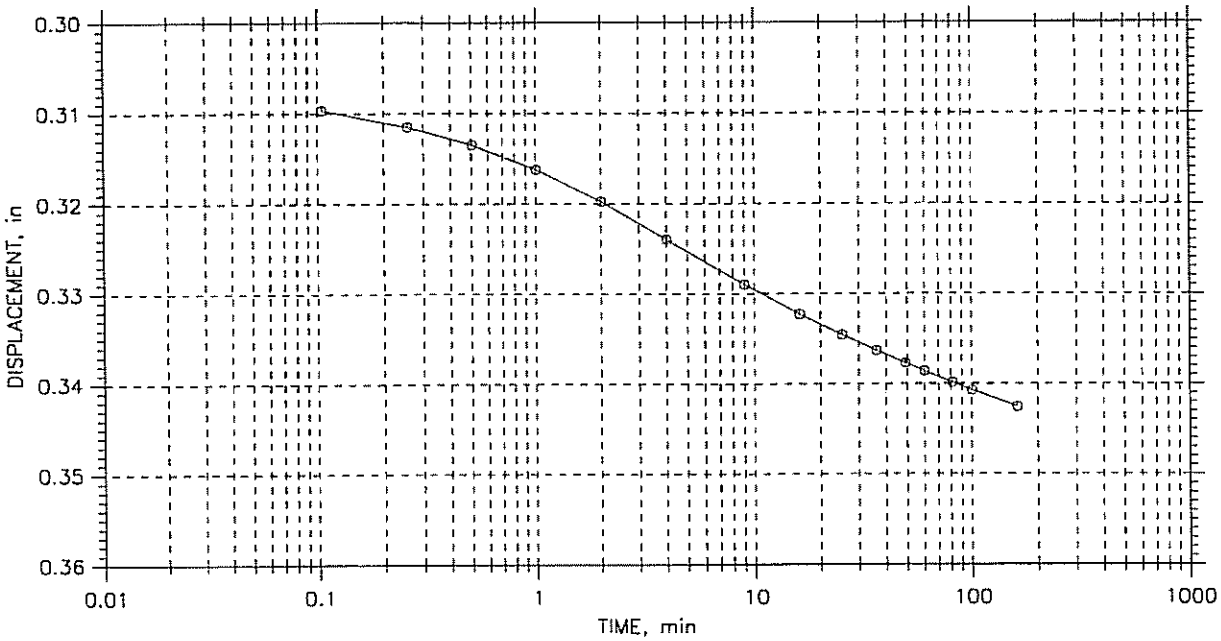
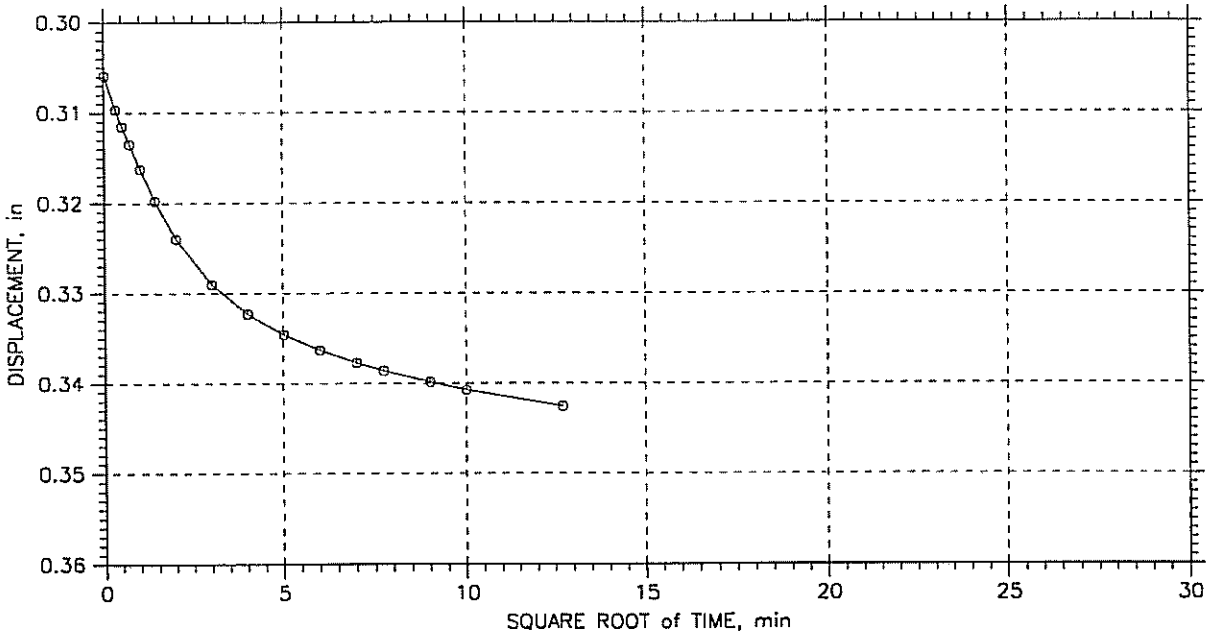
CONSOLIDATION TEST DATA

TIME CURVES

Step: 10 of 17

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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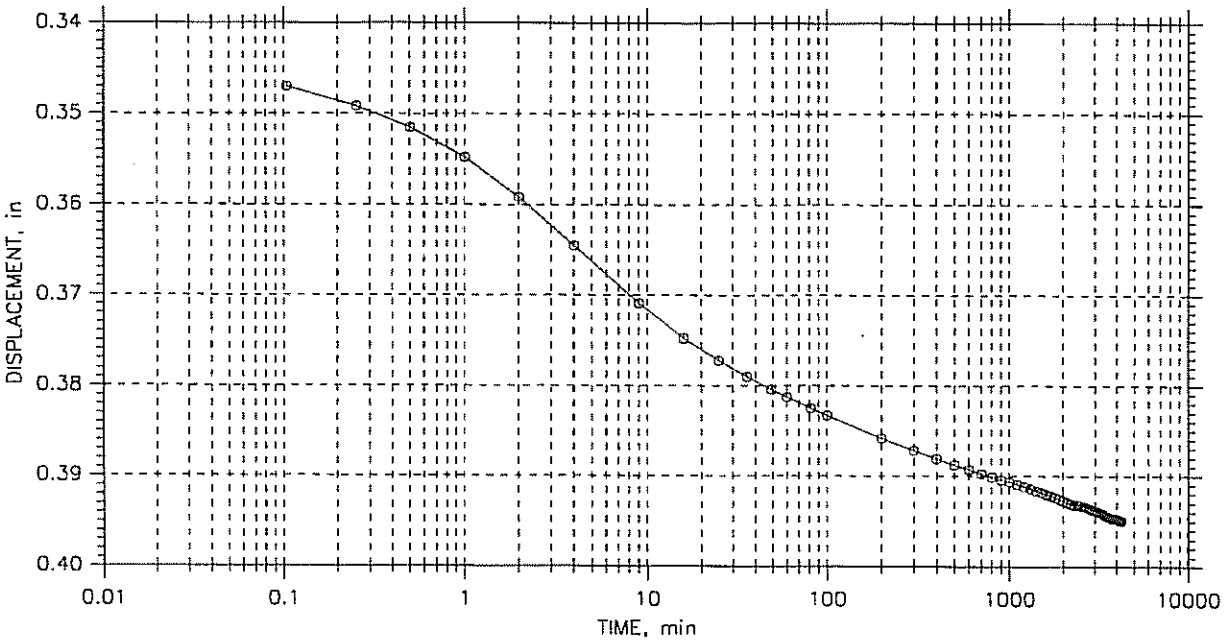
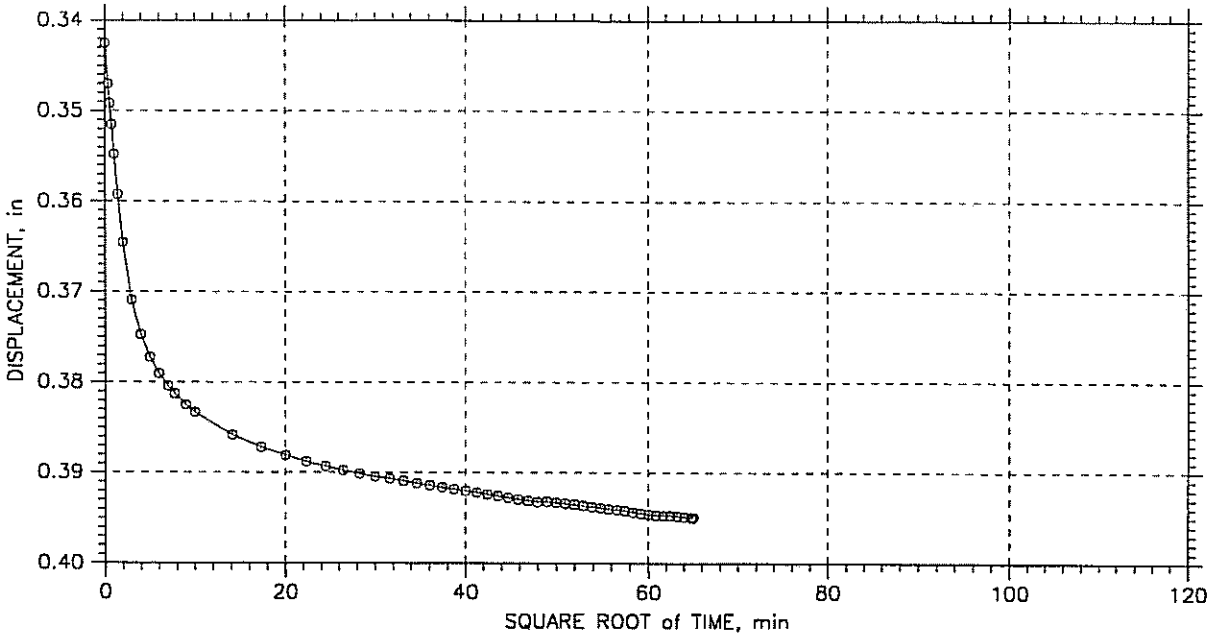
CONSOLIDATION TEST DATA

TIME CURVES

Step: 11 of 17

Stress: 8. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

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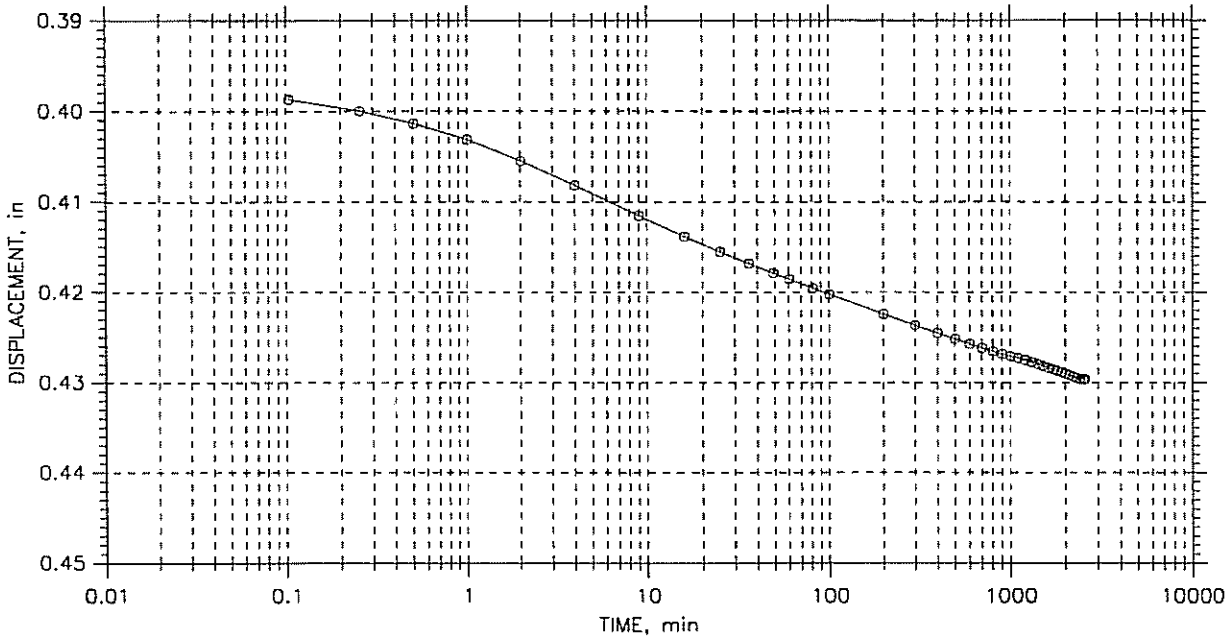
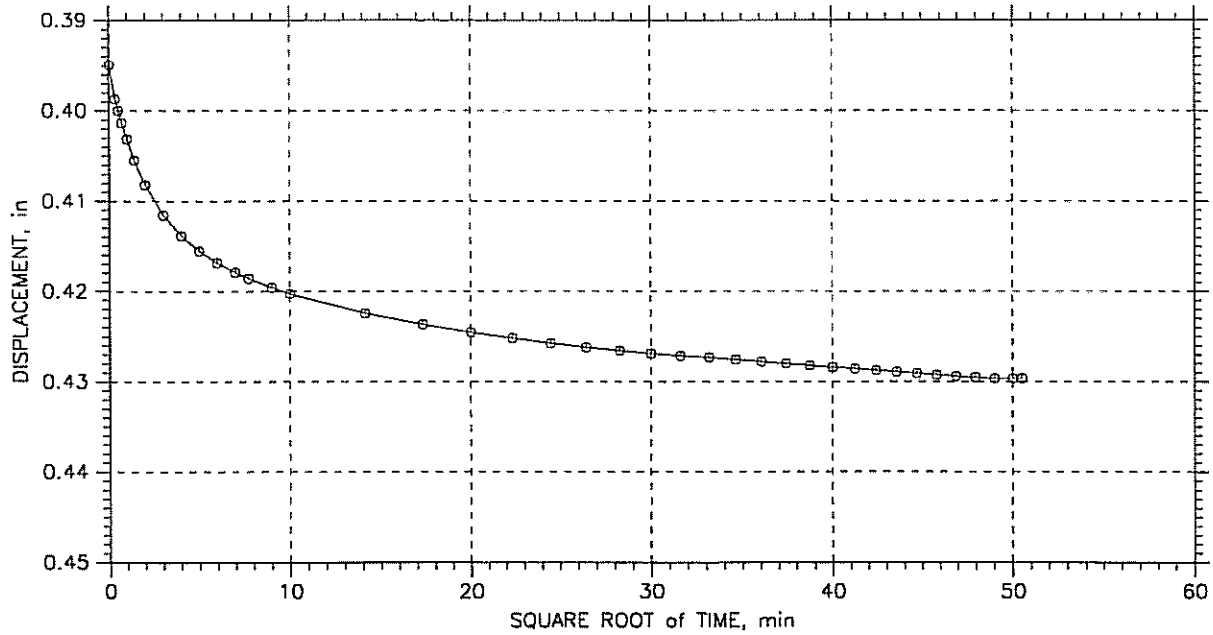
CONSOLIDATION TEST DATA

TIME CURVES

Step: 12 of 17

Stress: 16. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

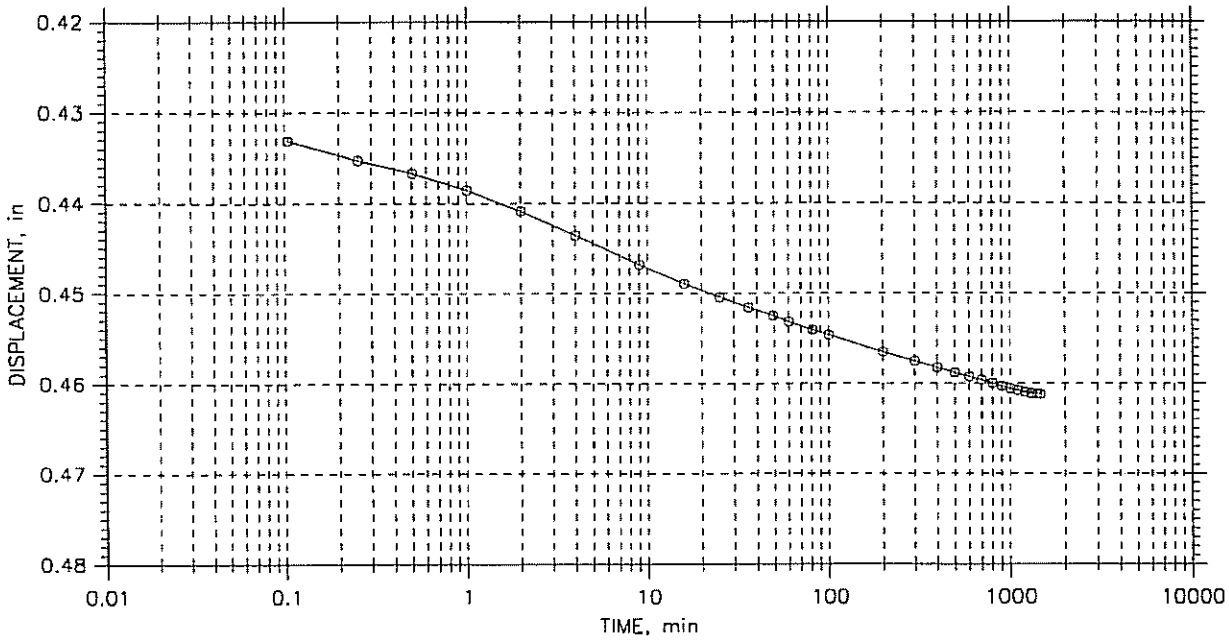
Tue, 11-DEC-2007 15:26:50

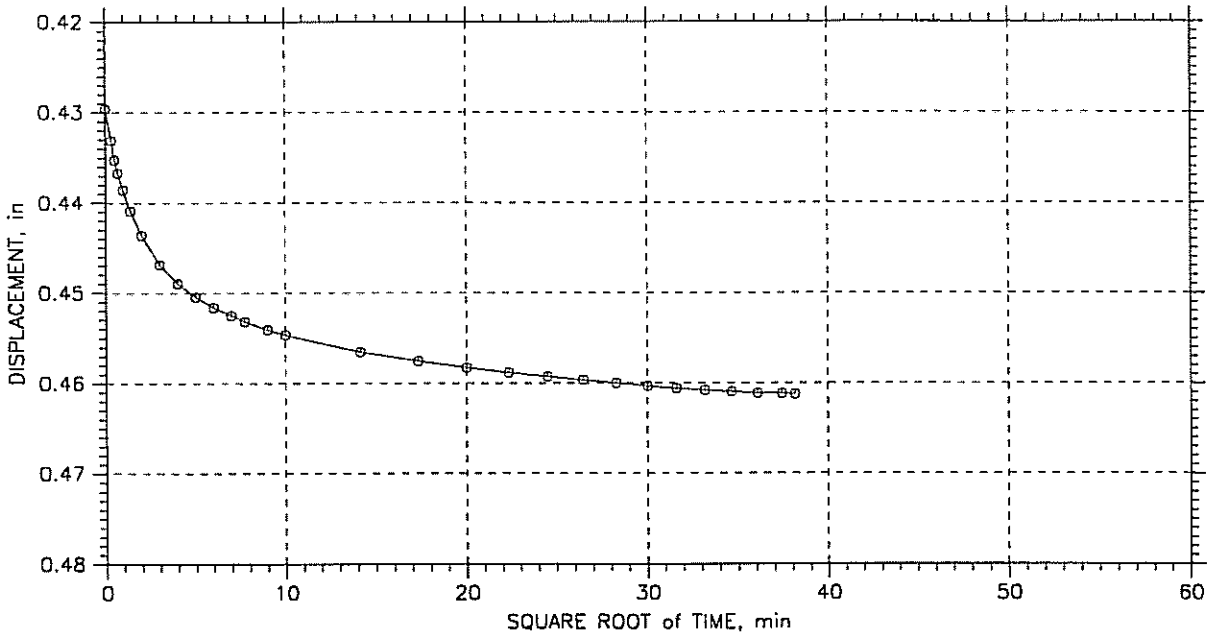
CONSOLIDATION TEST DATA

TIME CURVES

Step: 13 of 17

Stress: 32. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

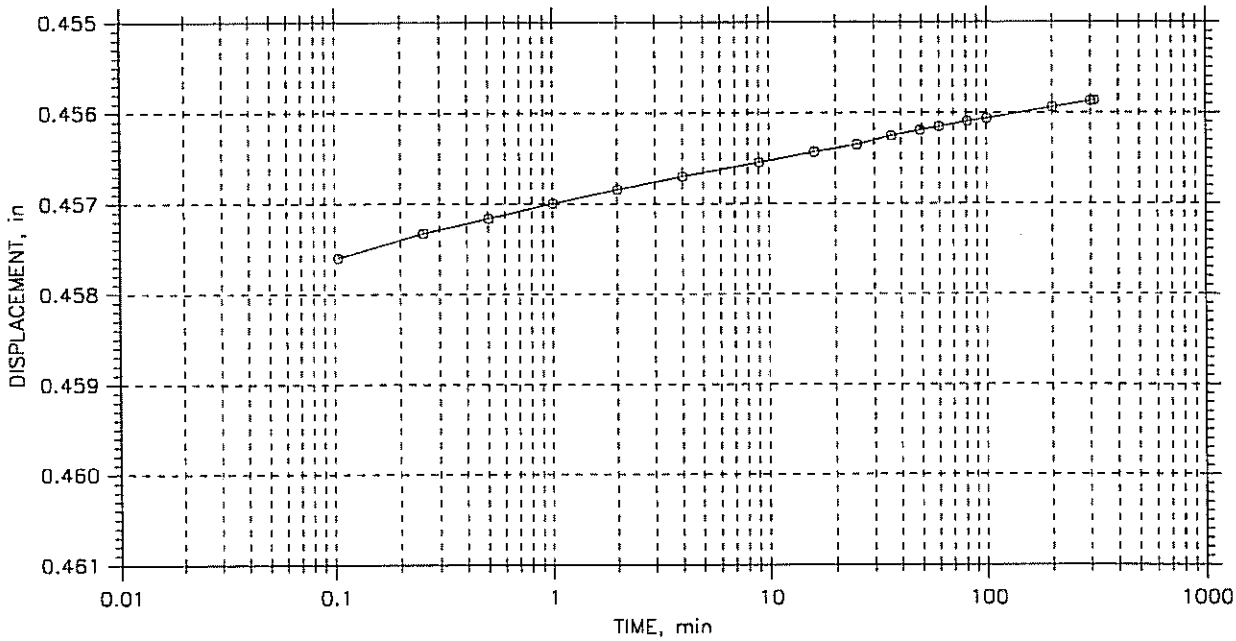
Tue, 11-DEC-2007 15:26:50

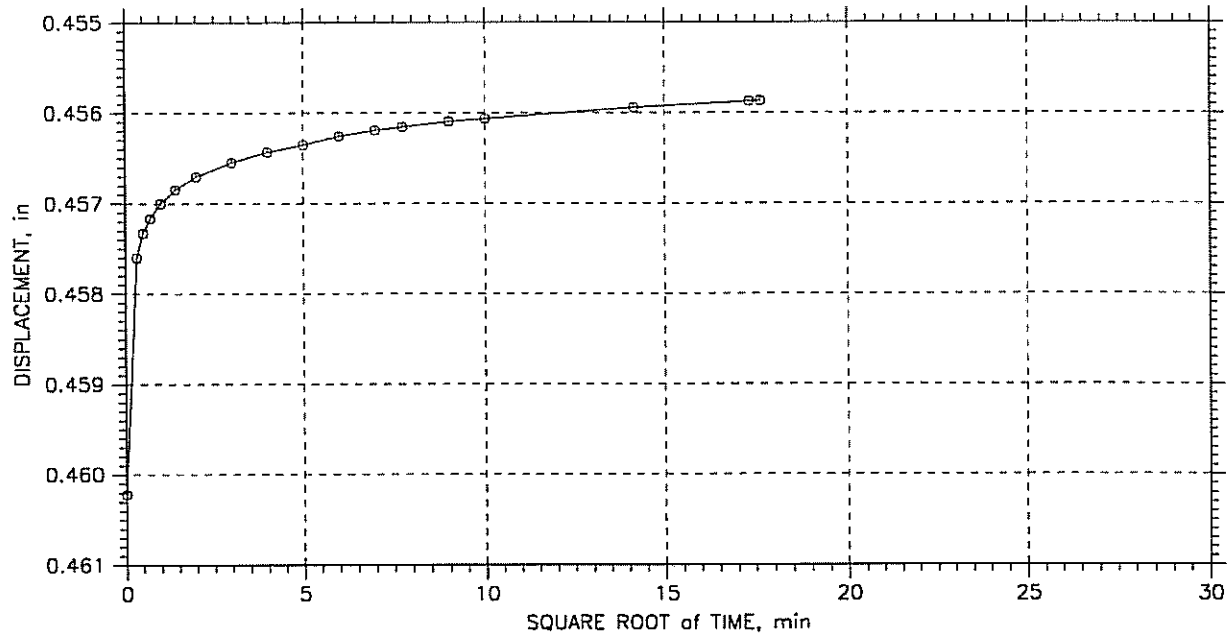
CONSOLIDATION TEST DATA

TIME CURVES

Step: 14 of 17

Stress: 16. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

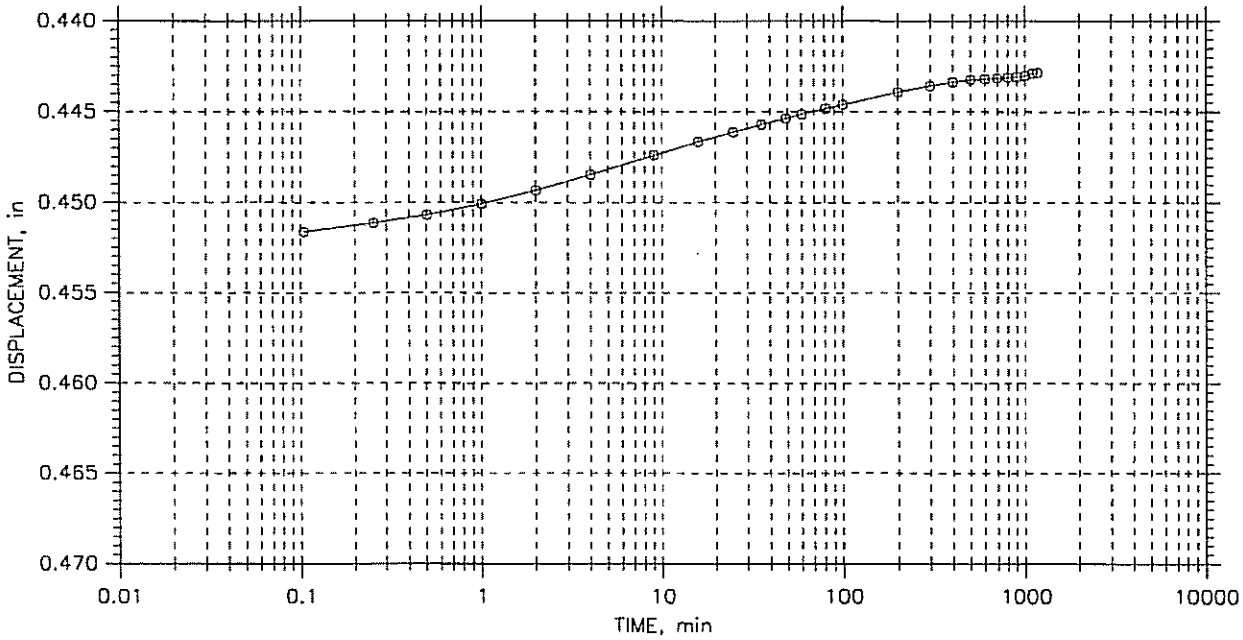
Tue, 11-DEC-2007 15:26:50

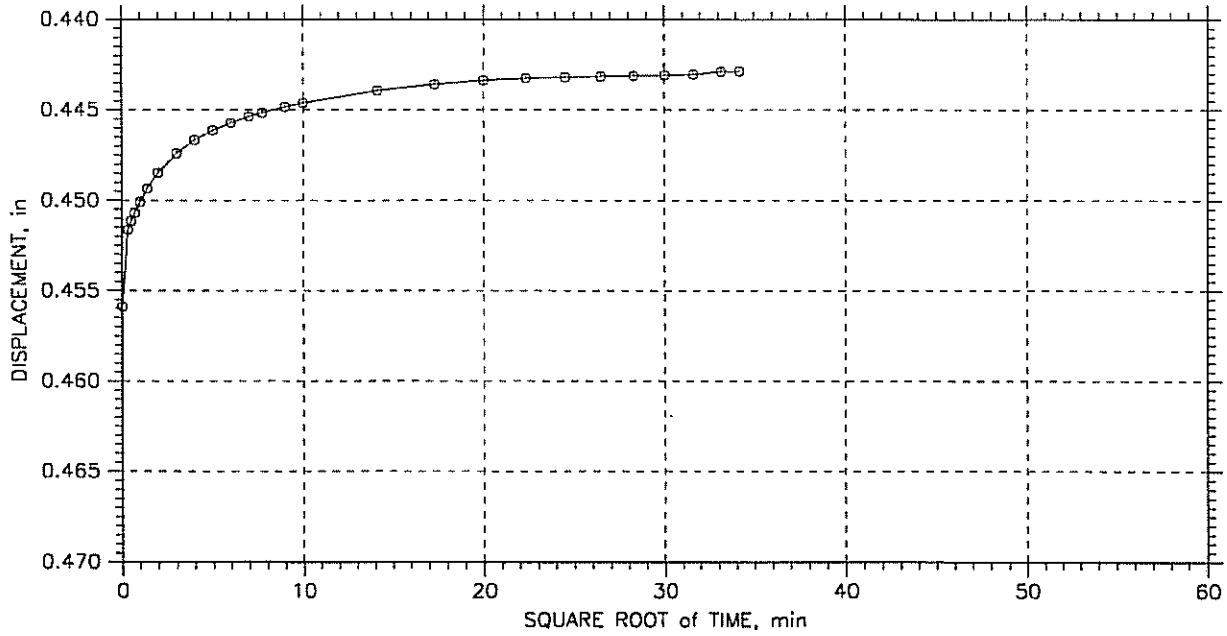
CONSOLIDATION TEST DATA

TIME CURVES

Step: 15 of 17

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

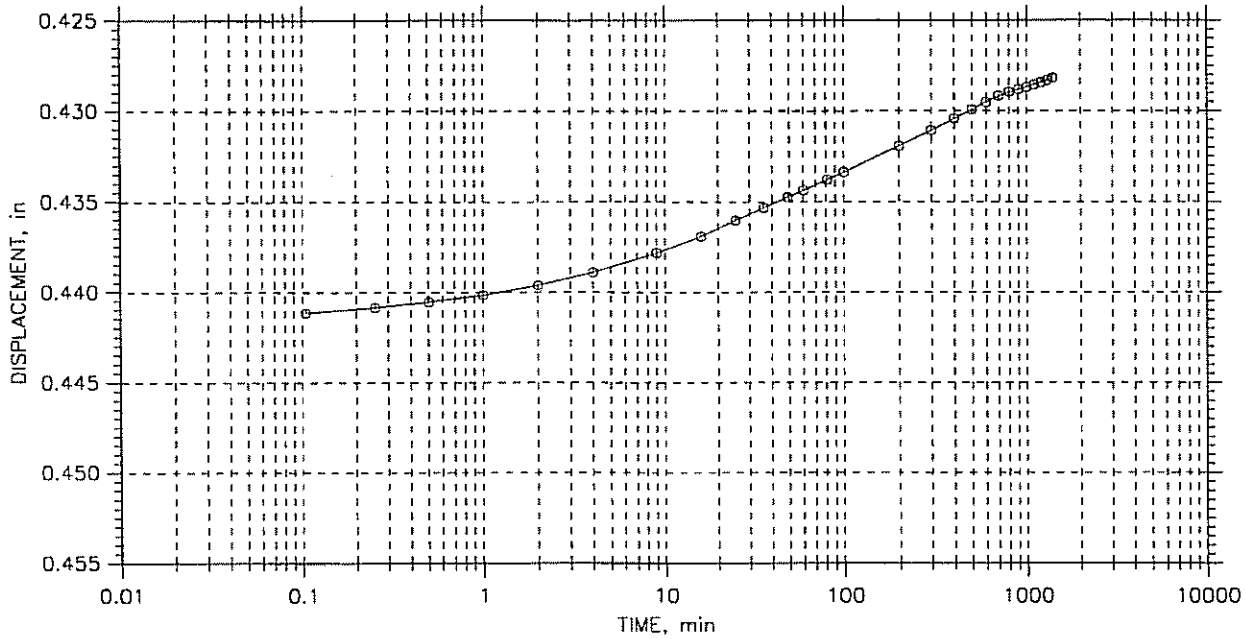
Tue, 11-DEC-2007 15:26:50

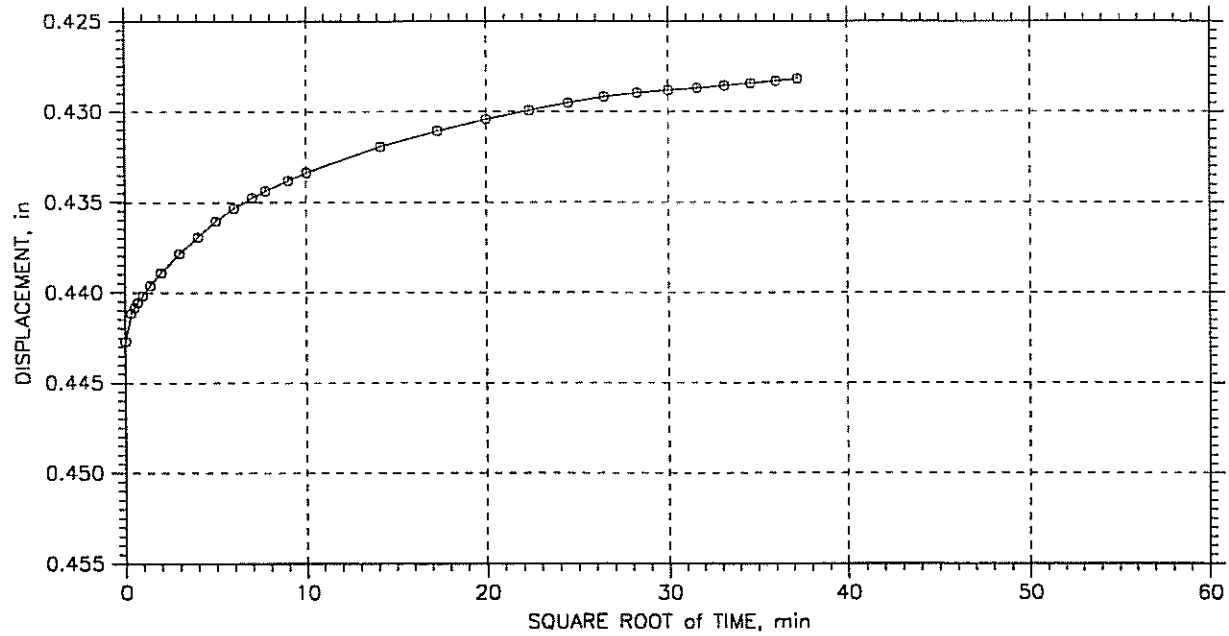
CONSOLIDATION TEST DATA

TIME CURVES

Step: 16 of 17

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

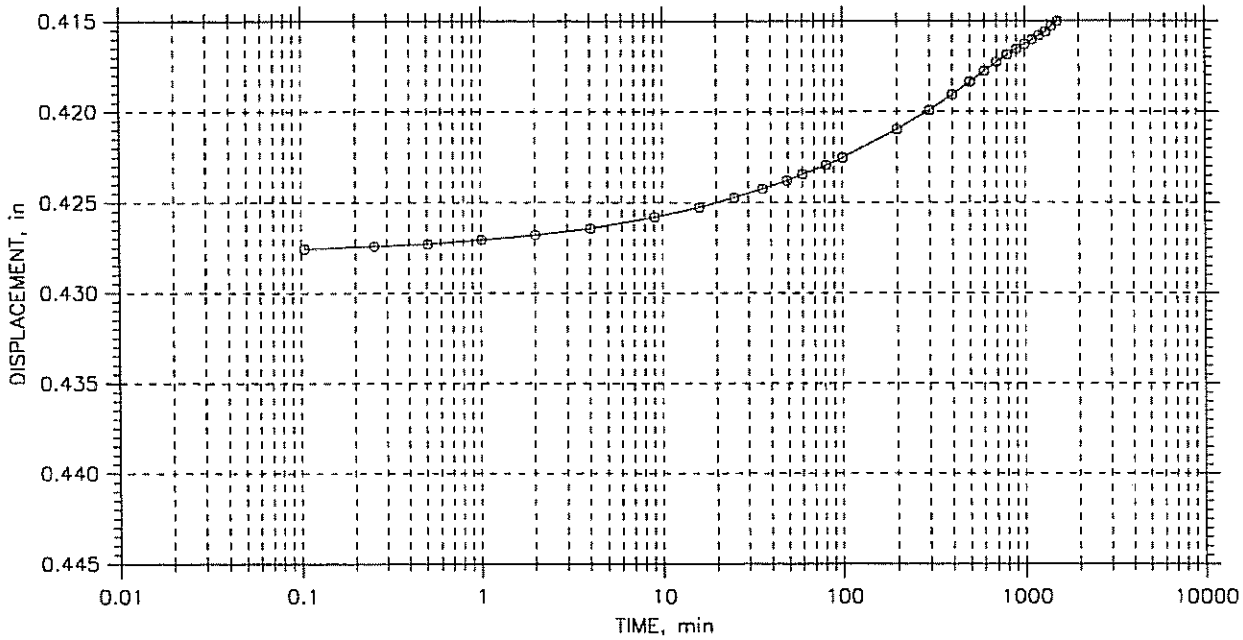
Tue, 11-DEC-2007 15:26:51

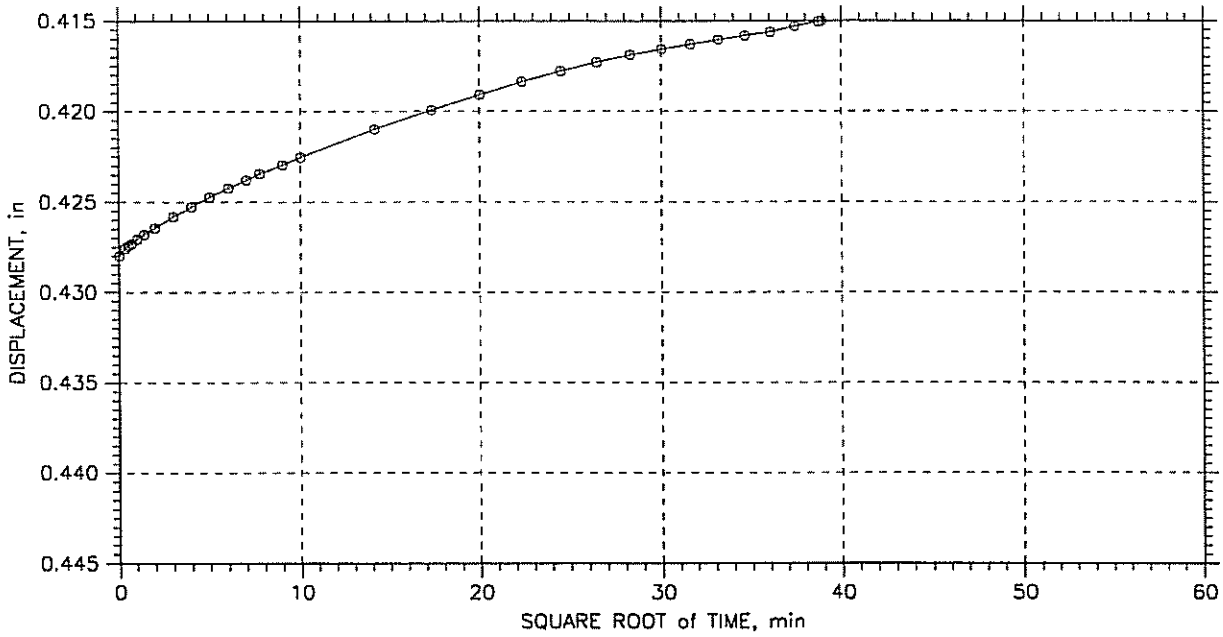
CONSOLIDATION TEST DATA

TIME CURVES

Step: 17 of 17

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: EA18-DS-04	Test Date: 11/14/07	Depth:
Test No.: 16EA18	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT TRACE F-C SAND - BROWN (ML) VEGETATION & SHELLS NOTED		
Remarks: Cc = 0.820 Ccr = 0.140 TEST PERFORMED AS PER ASTM D 2435		

Tue, 11-DEC-2007 15:26:51

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATION
ASTM D 5084, METHOD C
RISING TAILWATER LEVEL

STS PROJECT NO.: X429316A

PROJECT: LOWER FOX RIVER OU-1

DATE: 11/21/2007

SUMMARY OF TEST RESULTS

SAMPLE NO. 1-RA-07-EA18-04-COMP

LOCATION 0

CLASSIFICATION RIVER SEDIMENTS- ORGANIC SANDY SILT

	INITIAL	FINAL
DRY UNIT WEIGHT (pcf)	32.7	45.4
WATER CONTENT (%)	153.0	101.0
DIAMETER (cm)	4.75	4.44
LENGTH (cm)	9.35	7.66
HYDRAULIC GRADIENT (MAXIMUM)		9.8
PERCENT SATURATION	99.69702	100.76689
HYDRAULIC CONDUCTIVITY k (cm/sec)		2.39E-07

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATIC
Rising tailwater method in a triaxial permeameter
ASTM D 5084, Method C (EM-1110-2-1906 7)

Project Name: LOWER FOX RIVER OU-1
Project No.: X429316A
Project Location: WISCONSIN
Sample No.: 1-RA-07-EA18-04-COMP
Sample Location:

Sample Description: RIVER SEDIMENTS- ORGANIC SANDY SILT

Cell No.: 3

Date Sampled:
Date Received:

MOISTURE CONTENT	INITIAL	FINAL
Container No.	104	11
Wet Sample & Tare (g)	193.97	281.40
Dry Sample & Tare (g)	92.10	194.30
Wt. Water (g)	101.87	87.10
Wt. Tare (g)	25.51	108.10
Wt. Dry Soil (g)	66.59	86.20
Water Content, w (%)	153.0	101.0

SATURATION DATA

Initial Cell Pressure (psi)	Final Cell Pressure (psi)	Initial PWP (psi)	Final PWP (psi)	B Value
30.0	32.0	28.0	30.0	1.00
			Final B value =	1.00

SPECIMEN INFORMATION	INITIAL	FINAL
Avg. Diameter (cm)	4.75	4.44
Avg. Height, L (cm)	9.35	7.66
X-Section Area, A (cm^2)	17.721	15.483
Specimen wet wt. (g)	219.61	173.30
Specimen Dry wt., W_s (g)	86.81	86.20
Total Volume, V (cm^3)	165.69	118.60
Dry Unit Weight (lbs/ft^3)	32.7	45.4
G_s estimated (Y or N)?	Y	#NAME?
Specific Gravity, G_s	2.700	2.700
Volume Solids, V_s (cm^3)	32.22	31.99
Pore Volume (cm^3)	133.47	86.61
Void Ratio, e	4.143	2.707
Degree of Saturation	99.7	100.8

COMMENTS:

$$\text{Volume Solids} = \frac{W_s}{(G_s)(\text{Water Density})}$$

$$\text{Void Ratio} = \frac{V - V_s}{V_s}$$

$$\text{Degree of Saturation} = \frac{(w)(G_s)}{e}$$

Proj Name: LOWER FOX RIVER OU-1
Proj No.: X429316A
Sample: 1-RA-07-EA18-04-COMP

k (cm/sec)	Max i
10^{-3} to 10^{-4}	2
10^{-4} to 10^{-5}	5
10^{-5} to 10^{-6}	10
10^{-6} to 10^{-7}	20
less than 10^{-7}	30

Hydraulic Gradient, i, Guidlines as per ASTM D5084, section 8.5.1

TEST CONDITIONS

Influent Burette Area a_{in} (cm^2)	Effluent Burette Area a_{out} (cm^2)	# ascend as burette empties? (Y or N)
1.00	1.00	y

Cell Pressure (psi)	Headwater Pressure (psi)	Tailwater Pressure (psi)	Driving Head (psi)	Hydraulic Gradient Max	Hydraulic Gradient Min
32.0	30.0	29.0	1.0	9.8	7.1

TEST DATA

Date/Time (M/D/YY H:MM)	Temp. °C	Elapsed Time, t (sec)	Influent Reading (cm)	Effluent Reading (cm)	Total Change (cm)	Inflow to Outflow Ratio	Hydraulic Head, h (cm)	k, Hydraulic Conductivity (cm/sec)	k_{20} corrected for temperature (cm/sec)
11/2/2007 11:05	21.0	0	0.5	22.2	0.0	0.00	92.0	0	0
11/2/2007 11:30	21.0	1500	0.7	22.0	0.0	1.00	91.6	7.66E-07	7.48E-07
11/2/2007 13:00	21.0	5400	0.8	21.6	0.3	0.25	91.1	2.67E-07	2.61E-07
11/3/2007 9:45	21.0	74700	3.8	17.7	0.9	0.77	84.2	2.78E-07	2.72E-07
11/3/2007 19:00	21.0	33300	5.1	16.1	0.3	0.81	81.3	2.78E-07	2.71E-07
11/4/2007 9:15	21.0	51300	6.9	14.0	0.3	0.86	77.4	2.53E-07	2.47E-07
11/5/2007 7:45	21.0	81000	9.5	11.0	0.4	0.87	71.8	2.45E-07	2.39E-07
11/5/2007 13:05	21.0	19200	10.2	10.2	0.1	0.87	70.3	2.90E-07	2.83E-07
11/5/2007 16:00	21.0	10500	10.5	9.9	0.0	1.00	69.7	2.15E-07	2.10E-07
11/6/2007 7:00	21.0	54000	12.0	8.2	0.2	0.88	66.5	2.30E-07	2.24E-07
						(0.75-1.25)		Final Value =	2.39E-07

$$k_{20} = \frac{(a_{in})(a_{out})L[\ln(h_{n-1}/h_n)]*R_T}{At(a_{in} + a_{out})}$$

Total Change = $(Eff_{n-1} - Eff_n) - (Inf_n - Inf_{n-1})$

"Hydraulic Head" incorporates the difference in head as well as the added driving head pressure.
"Total Change" is the difference between the Effluent change from t_0 to t_1 and the Influent change from t_0 to t_1.

Notate temperature to the nearest half a degree. The correction calculation averages the two consecutive readings.
k is multiplied by the temperature correction, R_T, which is the ratio of the viscosity of water at test temperature to the viscosity of water at 20° C. Temperature range may be between 19° and 25° for formula calculation.
"Final Value" is the average of 4 consecutive readings of which none are less than or greater than 25% of their average. (50% of average if < 1 x 10^{-8})

Foth

Foth Infrastructure & Environment, LLC

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be complete. urately

Page: 1 of 1

COC Number: COC-106202

Company: Foth Infrastructure & Environment	Report To: Janis Kesy	Requested Due Date: See Sample Notes	Quote Reference:
Address: 2737 South Ridge Rd	Copy To:	*TAT:	Project Manager:
Green Bay, WI 54307	Invoice To:		Project #:
Phone: 920-497-2500 Fax: 920-496-6902	P.O.		Profile #:
Email Address: jkesy@foth.com	Project Name: Lower Fox River OU1	Regulatory Agency:	Sampling Team Members:
Site License No.:	Project Number: 07G007	State Location: WI	MCC2

Valid Matrix Codes

Matrix	Code
Soil	S
Sediment	SE
Solid	SO
Surface Water	SW
Drinking Water	DW
Wastewater	WW
Groundwater	GW
Hazardous Liquid	H
Air	A
Oil	O
Other	X

ITEM NUMBER	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G = Grab C = Composite	DATE COLLECTED MMDD/YYYY	TIME COLLECTED (Military time)	# Containers	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Grain size distribution (N)	Triaxial shear (N)	Consolidation (N)	Hydraulic conductivity (N)	Atterberg limits (N)								REMARKS (← Filte)
1	1-RA-07-EC11-DS-05-Comp	SE	C	11/13/2007	1030	1	1							X	X	X	X	X								
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

SHIPMENT METHOD	AIRBILL NO	SHIPPING DATE	NO. OF COOLERS	ITEM #	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION
					Foth	11/14/07	1320	

SAMPLE CONDITION:

Temp in C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Sample Intact	Y / N

SAMPLE NOTES:

Contents in 1 large double bagged bag

Additional Comments:

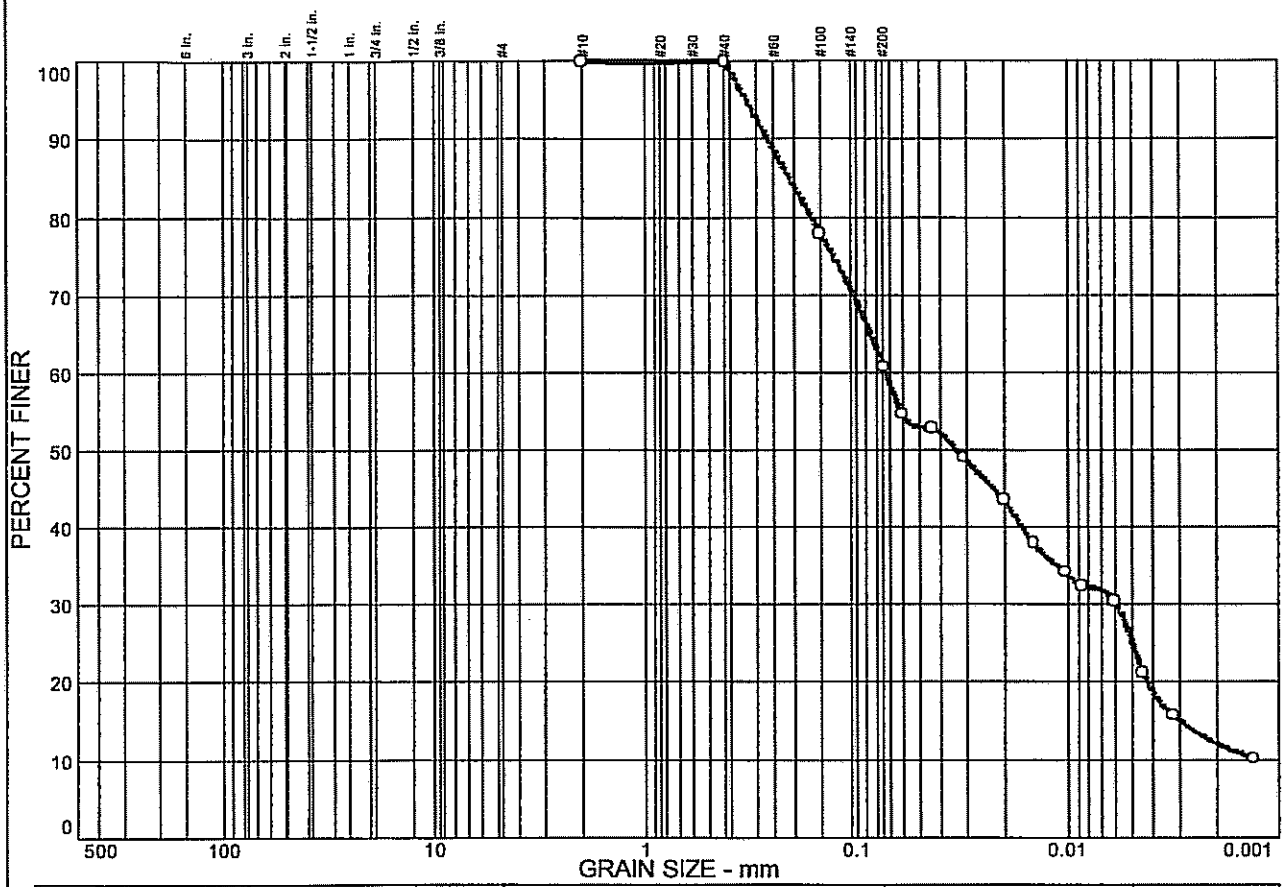
SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark Ciardelli

SIGNATURE of SAMPLER

DATE Signed 11/14/07

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	39.3	36.0	24.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#40	100.0		
#100	77.9		
#200	60.7		

* (no specification provided)

Soil Description

RIVER SEDIMENTS - ORGANIC SILTS

Atterberg Limits

PL= 59 LL= 86 PI= 27

Coefficients

D_{85}= 0.210 D_{60}= 0.0734 D_{50}= 0.0337
D_{30}= 0.0060 D_{15}= 0.0030 D_{10}=
C_u= C_c=

Classification

USCS= OH AASHTO=

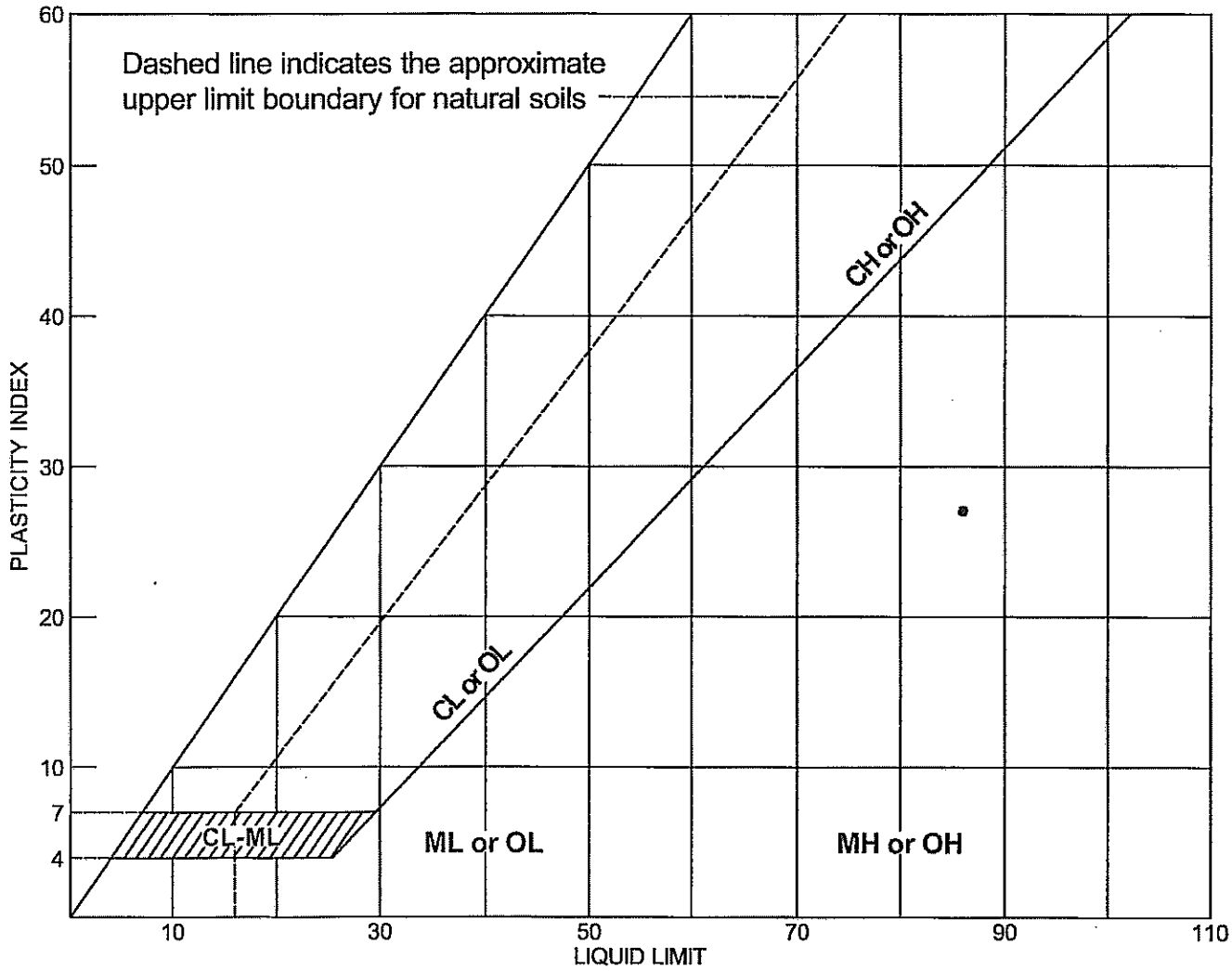
Remarks

Sample No.: DS-05 **Source of Sample:** On-site Material **Date:** 11/30/07
Location: 1-RA-07-EC11-DS-05-COMP **Elev./Depth:** COMP

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA
Project No: 4-29316A **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	On-site	DS-05	COMP		59	86	27	OH

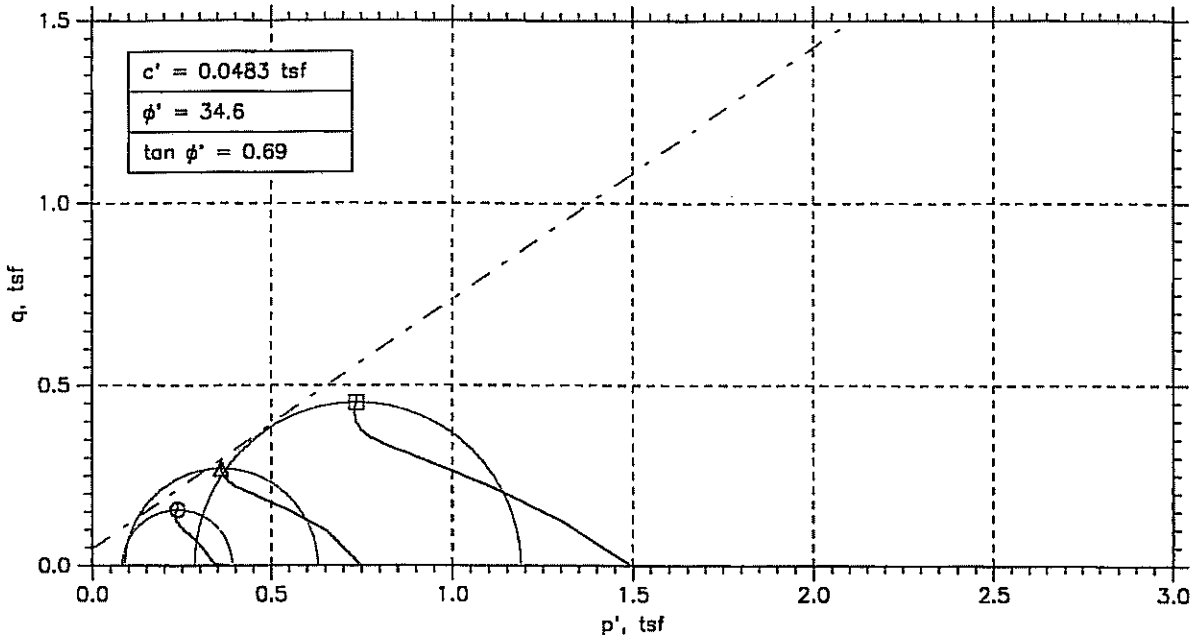
STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

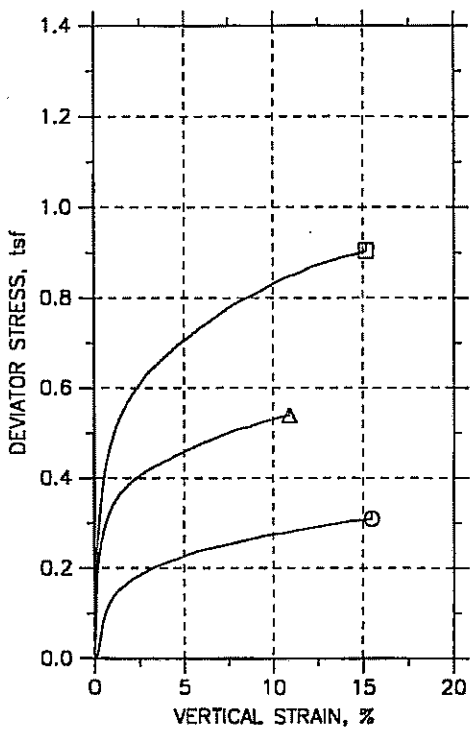
Client: GW Partners LLC
Project: Fox River OU-1 20052 RA

Project No.: 4-29316A

Figure

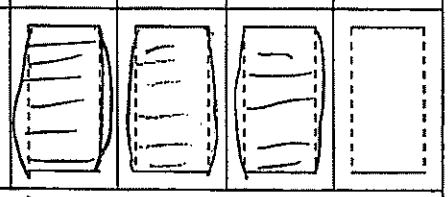
TRIAXIAL COMPRESSION TEST REPORT





Symbol		⊙	△	⊡	
Test No.		DS05T1	DS05T2	DS05T3	
Initial	Diameter, in	2.8004	2.863	2.8169	
	Height, in	5.4425	5.1224	5.2917	
	Water Content, %	178.03	144.45	167.35	
	Dry Density, pcf	30.06	34.66	31.42	
	Saturation, %	104.75	101.45	103.98	
	Void Ratio	4.5038	3.773	4.2652	
Before Shear	Water Content, %	154.45	121.27	122.55	
	Dry Density, pcf	32.98	39.42	39.18	
	Saturation, %	101.92	100.54	100.79	
	Void Ratio	4.0159	3.1964	3.2222	
	Back Press., tsf	5.0401	5.0402	5.0401	
Minor Prin. Stress, tsf		0.3743	0.74863	1.4975	
Max. Dev. Stress, tsf		0.30881	0.53975	0.90364	
Time to Failure, min		204	135.69	196	
Strain Rate, %/min		0.079	0.0851	0.087	
B-Value		---	---	---	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		0	0	0	
Plastic Limit		0	0	0	
Plasticity Index		0	0	0	

Failure Sketch



Project: FOX RIVER

Location:

Project No.: 29316-A

Boring No.: 07-EC11DS05

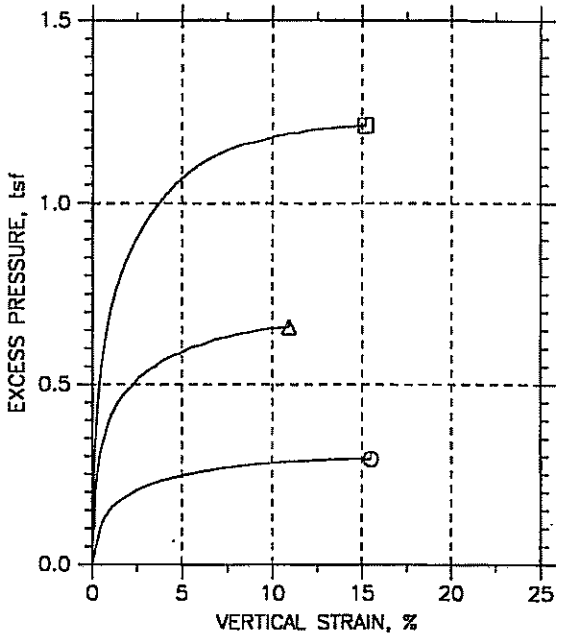
Sample Type: REMOLDED

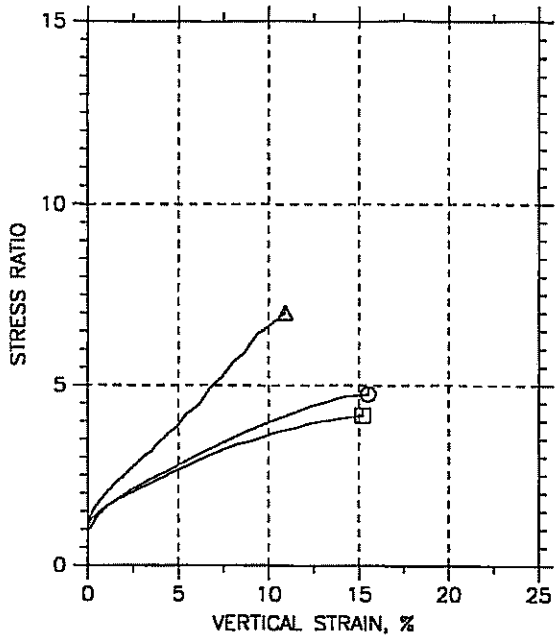
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)

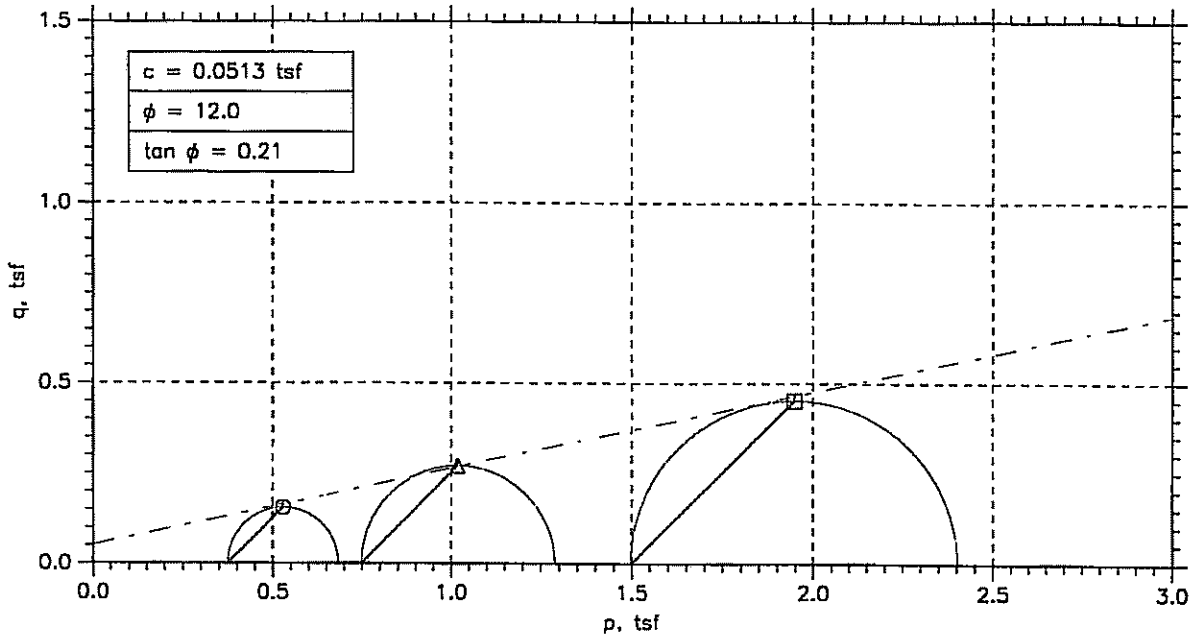
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Tue, 08-JAN-2008 09:19:05

TRIAXIAL COMPRESSION TEST REPORT







Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.: 07-EC11DS05	Tested By: MJS	Checked By: WPQ
Sample No.: 07-EC11DS05	Test Date: 12/17/07	Depth:
Test No.: DS05T1	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767		

Tue, 08-JAN-2008 09:19:27

TRIAXIAL TEST

Project: FOX [illegible]3
Boring No.: 07-[illegible]11DS05
Sample No.: 07-EC11DS05
Test No.: DS05T1

Location:
Tested By: MJS
Test Date: 12/17/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.44 in
Specimen Area: 6.16 in^2
Specimen Volume: 33.52 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.65

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.1593	0	0	5.0401	5.4144	5.4144
2	2.0039	0.14061	6.1679	0.61674	0.0071994	5.0755	5.4144	5.4216
3	4	0.28624	6.1769	3.487	0.040645	5.1069	5.4144	5.455
4	6	0.43689	6.1863	6.8553	0.079787	5.14	5.4144	5.4942
5	8	0.59257	6.196	8.6818	0.10089	5.1591	5.4144	5.5153
6	10	0.74992	6.2058	9.9391	0.11531	5.1737	5.4144	5.5297
7	12.004	0.90726	6.2156	11.03	0.12777	5.1847	5.4144	5.5422
8	14.004	1.0596	6.2252	11.932	0.138	5.1946	5.4144	5.5524
9	16.004	1.2153	6.235	12.62	0.14573	5.2021	5.4144	5.5601
10	18.004	1.3693	6.2448	13.213	0.15234	5.2091	5.4144	5.5667
11	20.003	1.5249	6.2546	13.711	0.15783	5.2155	5.4144	5.5722
12	24.003	1.8296	6.274	14.588	0.16741	5.2253	5.4144	5.5818
13	28.003	2.1342	6.2936	15.466	0.17694	5.2346	5.4144	5.5913
14	32.003	2.4372	6.3131	16.106	0.18369	5.2451	5.4144	5.5981
15	36.003	2.7369	6.3326	16.771	0.19068	5.2521	5.4144	5.6051
16	40.003	3.0365	6.3521	17.316	0.19628	5.2579	5.4144	5.6107
17	44.003	3.3378	6.3719	17.909	0.20237	5.2637	5.4144	5.6168
18	48.003	3.6425	6.3921	18.36	0.20681	5.2689	5.4144	5.6212
19	52.002	3.9505	6.4126	18.858	0.21174	5.2735	5.4144	5.6261
20	56.002	4.2585	6.4332	19.309	0.2161	5.277	5.4144	5.6305
21	60.002	4.5631	6.4537	19.688	0.21965	5.2811	5.4144	5.634
22	68.002	5.1674	6.4949	20.661	0.22904	5.2886	5.4144	5.6434
23	76.002	5.7667	6.5362	21.491	0.23674	5.295	5.4144	5.6511
24	84.003	6.3743	6.5786	22.179	0.24274	5.3008	5.4144	5.6571
25	92.003	6.9886	6.622	22.82	0.24811	5.3055	5.4144	5.6625
26	100	7.5996	6.6658	23.484	0.25366	5.3101	5.4144	5.6681
27	108	8.1989	6.7093	24.148	0.25914	5.3136	5.4144	5.6735
28	116	8.8048	6.7539	24.836	0.26476	5.3171	5.4144	5.6792
29	124	9.4158	6.7995	25.5	0.27002	5.3194	5.4144	5.6844
30	132	10.03	6.8459	26.093	0.27443	5.3223	5.4144	5.6888
31	140	10.633	6.8921	26.544	0.2773	5.3247	5.4144	5.6917
32	148	11.232	6.9386	27.208	0.28233	5.3264	5.4144	5.6967
33	156	11.84	6.9864	27.825	0.28675	5.3281	5.4144	5.7012
34	164	12.459	7.0358	28.418	0.29081	5.3299	5.4144	5.7052
35	172	13.068	7.0852	29.011	0.29481	5.3305	5.4144	5.7092
36	180	13.663	7.1339	29.651	0.29926	5.3316	5.4144	5.7137
37	188	14.265	7.1841	30.315	0.30383	5.3322	5.4144	5.7182
38	196	14.883	7.2362	30.719	0.30565	5.3322	5.4144	5.72
39	204	15.502	7.2892	31.264	0.30881	5.3322	5.4144	5.7232

TRIAXIAL TEST

Project: FOX [illegible]
Boring No.: 07-[illegible]11DS05
Sample No.: 07-EC11DS05
Test No.: DS05T1

Location:
Tested By: MJS
Test Date: 12/17/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.44 in
Specimen Area: 6.16 in^2
Specimen Volume: 33.52 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.65

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.4144	5.4144	0	0.000	0.3743	0.3743	1.000	0.3743	0
2	0.14	5.4216	5.4144	0.035424	4.920	0.34608	0.33888	1.021	0.34248	0.0035997
3	0.29	5.455	5.4144	0.066783	1.643	0.34817	0.30752	1.132	0.32784	0.020323
4	0.44	5.4942	5.4144	0.099884	1.252	0.35421	0.27442	1.291	0.31431	0.039893
5	0.59	5.5153	5.4144	0.11905	1.180	0.35614	0.25526	1.395	0.3057	0.050444
6	0.75	5.5297	5.4144	0.13357	1.158	0.35605	0.24074	1.479	0.29839	0.057657
7	0.91	5.5422	5.4144	0.1446	1.132	0.35747	0.2297	1.556	0.29359	0.063885
8	1.06	5.5524	5.4144	0.15447	1.119	0.35783	0.21983	1.628	0.28883	0.069
9	1.22	5.5601	5.4144	0.16202	1.112	0.35801	0.21228	1.686	0.28514	0.072863
10	1.37	5.5667	5.4144	0.16899	1.109	0.35765	0.20531	1.742	0.28148	0.076168
11	1.52	5.5722	5.4144	0.17538	1.111	0.35675	0.19892	1.793	0.27784	0.078915
12	1.83	5.5818	5.4144	0.18525	1.107	0.35647	0.18905	1.886	0.27276	0.083707
13	2.13	5.5913	5.4144	0.19454	1.100	0.3567	0.17976	1.984	0.26823	0.088468
14	2.44	5.5981	5.4144	0.205	1.116	0.353	0.16931	2.085	0.26115	0.091846
15	2.74	5.6051	5.4144	0.21196	1.112	0.35302	0.16234	2.175	0.25768	0.09534
16	3.04	5.6107	5.4144	0.21777	1.110	0.35281	0.15653	2.254	0.25467	0.098138
17	3.34	5.6168	5.4144	0.22358	1.105	0.35309	0.15072	2.343	0.25191	0.10118
18	3.64	5.6212	5.4144	0.2288	1.106	0.3523	0.1455	2.421	0.2489	0.1034
19	3.95	5.6261	5.4144	0.23345	1.103	0.35259	0.14085	2.503	0.24672	0.10587
20	4.26	5.6305	5.4144	0.23694	1.096	0.35347	0.13737	2.573	0.24542	0.10805
21	4.56	5.634	5.4144	0.241	1.097	0.35295	0.1333	2.648	0.24313	0.10982
22	5.17	5.6434	5.4144	0.24855	1.085	0.35479	0.12575	2.821	0.24027	0.11452
23	5.77	5.6511	5.4144	0.25494	1.077	0.3561	0.11937	2.983	0.23773	0.11837
24	6.37	5.6571	5.4144	0.26074	1.074	0.3563	0.11356	3.138	0.23493	0.12137
25	6.99	5.6625	5.4144	0.26539	1.070	0.35702	0.10891	3.278	0.23297	0.12406
26	7.60	5.6681	5.4144	0.27004	1.065	0.35792	0.10427	3.433	0.23109	0.12683
27	8.20	5.6735	5.4144	0.27352	1.056	0.35992	0.10078	3.571	0.23035	0.12957
28	8.80	5.6792	5.4144	0.277	1.046	0.36206	0.097298	3.721	0.22968	0.13238
29	9.42	5.6844	5.4144	0.27933	1.034	0.365	0.094975	3.843	0.22999	0.13501
30	10.03	5.6888	5.4144	0.28223	1.028	0.3665	0.092072	3.981	0.22928	0.13721
31	10.63	5.6917	5.4144	0.28455	1.026	0.36705	0.089749	4.090	0.2284	0.13865
32	11.23	5.6967	5.4144	0.2863	1.014	0.37034	0.088007	4.208	0.22917	0.14116
33	11.84	5.7012	5.4144	0.28804	1.004	0.37302	0.086265	4.324	0.22964	0.14338
34	12.46	5.7052	5.4144	0.28978	0.996	0.37533	0.084522	4.441	0.22993	0.1454
35	13.07	5.7092	5.4144	0.29036	0.985	0.37875	0.083942	4.512	0.23135	0.1474
36	13.66	5.7137	5.4144	0.29152	0.974	0.38204	0.08278	4.615	0.23241	0.14963
37	14.27	5.7182	5.4144	0.2921	0.961	0.38602	0.0822	4.696	0.23411	0.15191
38	14.88	5.72	5.4144	0.2921	0.956	0.38785	0.0822	4.718	0.23502	0.15282
39	15.50	5.7232	5.4144	0.2921	0.946	0.39101	0.0822	4.757	0.23661	0.15441

TRIAXIAL TEST

Project: FOX R
Boring No.: 07-EC11DS05
Sample No.: 07-EC11DS05
Test No.: DS05T2

Location:
Tested By: MJS
Test Date: 12/21/05
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.12 in
Specimen Area: 6.44 in^2
Specimen Volume: 32.98 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.65

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.4377	0	0	5.0402	5.7888	5.7888
2	2.004	0.1494	6.4473	17.079	0.19073	5.2298	5.7888	5.9795
3	4.004	0.30768	6.4576	21.894	0.24412	5.3047	5.7888	6.0329
4	6.004	0.46597	6.4678	24.883	0.277	5.3521	5.7888	6.0658
5	8.004	0.62426	6.4781	27.066	0.30082	5.3837	5.7888	6.0896
6	10.001	0.78433	6.4886	28.75	0.31902	5.4118	5.7888	6.1078
7	12.001	0.94617	6.4992	30.102	0.33348	5.4375	5.7888	6.1223
8	14.001	1.108	6.5098	31.264	0.34579	5.4574	5.7888	6.1346
9	16.001	1.2681	6.5204	32.213	0.35571	5.4738	5.7888	6.1445
10	18.001	1.4317	6.5312	33.138	0.36531	5.4884	5.7888	6.1541
11	20.001	1.5953	6.5421	33.826	0.37228	5.5013	5.7888	6.1611
12	24	1.919	6.5636	35.297	0.38719	5.5218	5.7888	6.176
13	28.001	2.2427	6.5854	36.412	0.3981	5.5376	5.7888	6.1869
14	32.001	2.5646	6.6071	37.36	0.40713	5.5569	5.7888	6.1959
15	36	2.8883	6.6292	38.309	0.41608	5.5709	5.7888	6.2049
16	40.004	3.2067	6.651	39.163	0.42396	5.582	5.7888	6.2128
17	44.004	3.525	6.6729	39.827	0.42973	5.5902	5.7888	6.2185
18	48.004	3.8487	6.6954	40.563	0.4362	5.6043	5.7888	6.225
19	52.004	4.1742	6.7181	41.298	0.4426	5.6131	5.7888	6.2314
20	56.003	4.4996	6.741	42.105	0.44971	5.6213	5.7888	6.2385
21	60.003	4.8251	6.7641	42.793	0.4555	5.6259	5.7888	6.2443
22	68.003	5.4725	6.8104	44.216	0.46745	5.6429	5.7888	6.2563
23	76.002	6.1092	6.8566	45.615	0.479	5.6499	5.7888	6.2678
24	84.002	6.7512	6.9038	46.92	0.48933	5.664	5.7888	6.2781
25	92	7.4022	6.9523	48.225	0.49943	5.6704	5.7888	6.2882
26	100	8.0496	7.0013	49.482	0.50886	5.6792	5.7888	6.2977
27	108	8.6898	7.0504	50.454	0.51525	5.6839	5.7888	6.3041
28	116	9.3283	7.1	51.688	0.52416	5.6915	5.7888	6.313
29	124	9.9793	7.1513	52.684	0.53043	5.6944	5.7888	6.3192
30	132	10.628	7.2033	53.775	0.53751	5.6973	5.7888	6.3263
31	135.69	10.924	7.2272	54.179	0.53975	5.6991	5.7888	6.3285

TRIAXIAL TEST

Project: FOX R
Boring No.: 07-EC11DS05
Sample No.: 07-EC11DS05
Test No.: DS05T2

Location:
Tested By: MJS
Test Date: 12/21/05
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.12 in
Specimen Area: 6.44 in^2
Specimen Volume: 32.98 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.65

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.7888	5.7888	0	0.000	0.74863	0.74863	1.000	0.74863	0
2	0.15	5.9795	5.7888	0.1896	0.994	0.74976	0.55904	1.341	0.6544	0.095364
3	0.31	6.0329	5.7888	0.2645	1.084	0.72825	0.48413	1.504	0.60619	0.12206
4	0.47	6.0658	5.7888	0.3119	1.126	0.71373	0.43673	1.634	0.57523	0.1385
5	0.62	6.0896	5.7888	0.3435	1.142	0.70595	0.40513	1.743	0.55554	0.15041
6	0.78	6.1078	5.7888	0.37159	1.165	0.69606	0.37704	1.846	0.53655	0.15951
7	0.95	6.1223	5.7888	0.39734	1.191	0.68477	0.3513	1.949	0.51803	0.16674
8	1.11	6.1346	5.7888	0.41723	1.207	0.67719	0.3314	2.043	0.50429	0.17289
9	1.27	6.1445	5.7888	0.43362	1.219	0.67072	0.31501	2.129	0.49287	0.17785
10	1.43	6.1541	5.7888	0.44825	1.227	0.6657	0.30039	2.216	0.48304	0.18266
11	1.60	6.1611	5.7888	0.46112	1.239	0.65979	0.28751	2.295	0.47365	0.18614
12	1.92	6.176	5.7888	0.4816	1.244	0.65422	0.26703	2.450	0.46062	0.19359
13	2.24	6.1869	5.7888	0.4974	1.249	0.64933	0.25123	2.585	0.45028	0.19905
14	2.56	6.1959	5.7888	0.51672	1.269	0.63905	0.23192	2.755	0.43548	0.20356
15	2.89	6.2049	5.7888	0.53076	1.276	0.63396	0.21787	2.910	0.42592	0.20804
16	3.21	6.2128	5.7888	0.54188	1.278	0.63072	0.20676	3.051	0.41874	0.21198
17	3.53	6.2185	5.7888	0.55007	1.280	0.6283	0.19856	3.164	0.41343	0.21487
18	3.85	6.225	5.7888	0.56411	1.293	0.62072	0.18452	3.364	0.40262	0.2181
19	4.17	6.2314	5.7888	0.57289	1.294	0.61835	0.17574	3.518	0.39704	0.2213
20	4.50	6.2385	5.7888	0.58108	1.292	0.61726	0.16755	3.684	0.39241	0.22486
21	4.83	6.2443	5.7888	0.58577	1.286	0.61837	0.16287	3.797	0.39062	0.22775
22	5.47	6.2563	5.7888	0.60274	1.289	0.61335	0.1459	4.204	0.37962	0.23373
23	6.11	6.2678	5.7888	0.60976	1.273	0.61788	0.13888	4.449	0.37838	0.2395
24	6.75	6.2781	5.7888	0.6238	1.275	0.61416	0.12483	4.920	0.3695	0.24467
25	7.40	6.2882	5.7888	0.63024	1.262	0.61782	0.11839	5.218	0.36811	0.24971
26	8.05	6.2977	5.7888	0.63902	1.256	0.61848	0.10962	5.642	0.36405	0.25443
27	8.69	6.3041	5.7888	0.6437	1.249	0.62019	0.10493	5.910	0.36256	0.25763
28	9.33	6.313	5.7888	0.65131	1.243	0.62149	0.097327	6.386	0.35941	0.26208
29	9.98	6.3192	5.7888	0.65423	1.233	0.62483	0.094402	6.619	0.35961	0.26521
30	10.63	6.3263	5.7888	0.65716	1.223	0.62898	0.091476	6.876	0.36023	0.26875
31	10.92	6.3285	5.7888	0.65891	1.221	0.62947	0.08972	7.016	0.35959	0.26987

TRIAXIAL TEST

Project: FOX [illegible]
Boring No.: 07-[illegible]11DS05
Sample No.: 07-EC11DS05
Test No.: DS05T3

Location:
Tested By: MJS
Test Date: 12/20/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.29 in
Specimen Area: 6.23 in^2
Specimen Volume: 32.98 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.65

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.2322	0	0	5.0401	6.5376	6.5376
2	2.0041	0.14117	6.241	21.539	0.24848	5.3601	6.5376	6.7861
3	4.0005	0.29268	6.2505	28.441	0.32762	5.4797	6.5376	6.8652
4	6.0005	0.4459	6.2601	33.138	0.38113	5.5604	6.5376	6.9187
5	8.0005	0.5974	6.2697	36.578	0.42005	5.6214	6.5376	6.9577
6	10	0.75235	6.2794	39.258	0.45013	5.6708	6.5376	6.9877
7	12	0.90385	6.289	41.488	0.47497	5.712	6.5376	7.0126
8	14	1.0588	6.2989	43.219	0.49402	5.748	6.5376	7.0316
9	16	1.212	6.3087	45.022	0.51383	5.7782	6.5376	7.0514
10	18	1.3652	6.3185	46.398	0.52871	5.8055	6.5376	7.0663
11	20	1.5202	6.3284	47.703	0.54273	5.8299	6.5376	7.0803
12	24	1.8318	6.3485	50.099	0.56818	5.8734	6.5376	7.1058
13	28	2.1417	6.3686	52.044	0.58838	5.91	6.5376	7.126
14	32	2.455	6.3891	53.728	0.60547	5.942	6.5376	7.1431
15	36.002	2.7684	6.4096	55.554	0.62405	5.9698	6.5376	7.1616
16	40.002	3.08	6.4303	56.93	0.63745	5.9954	6.5376	7.1751
17	44.002	3.3899	6.4509	58.14	0.64892	6.018	6.5376	7.1865
18	48.002	3.6998	6.4716	59.397	0.66082	6.0378	6.5376	7.1984
19	52.002	4.0096	6.4925	60.654	0.67264	6.0575	6.5376	7.2102
20	56.002	4.3195	6.5136	61.888	0.6841	6.0744	6.5376	7.2217
21	60.002	4.6277	6.5346	63.145	0.69575	6.0912	6.5376	7.2333
22	68.002	5.2544	6.5778	65.138	0.71299	6.1191	6.5376	7.2506
23	76.003	5.8776	6.6214	67.391	0.7328	6.1429	6.5376	7.2704
24	84.003	6.4991	6.6654	69.36	0.74923	6.1621	6.5376	7.2868
25	92.002	7.1154	6.7096	71.471	0.76695	6.176	6.5376	7.3045
26	100	7.7352	6.7547	73.606	0.78458	6.1905	6.5376	7.3222
27	108	8.3602	6.8008	75.314	0.79735	6.2015	6.5376	7.335
28	116	8.9817	6.8472	76.879	0.80841	6.2062	6.5376	7.346
29	124	9.6015	6.8941	78.753	0.82247	6.2149	6.5376	7.3601
30	132	10.22	6.9416	80.604	0.83604	6.2236	6.5376	7.3736
31	140	10.846	6.9904	82.217	0.84682	6.2294	6.5376	7.3844
32	148	11.473	7.0399	83.616	0.85518	6.2329	6.5376	7.3928
33	156	12.094	7.0897	85.419	0.86748	6.2399	6.5376	7.4051
34	164	12.711	7.1397	86.818	0.87552	6.2434	6.5376	7.4131
35	172	13.332	7.1909	88.194	0.88306	6.2451	6.5376	7.4207
36	180	13.964	7.2437	89.618	0.89077	6.2486	6.5376	7.4284
37	188	14.589	7.2967	90.827	0.89623	6.2503	6.5376	7.4338
38	196	15.212	7.3504	92.251	0.90364	6.2521	6.5376	7.4412

TRIAXIAL TEST

Project: FOX [illegible]
Boring No.: 07 [illegible]11DS05
Sample No.: 07-EC11DS05
Test No.: DS05T3

Location:
Tested By: MJS
Test Date: 12/20/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.29 in
Specimen Area: 6.23 in^2
Specimen Volume: 32.98 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

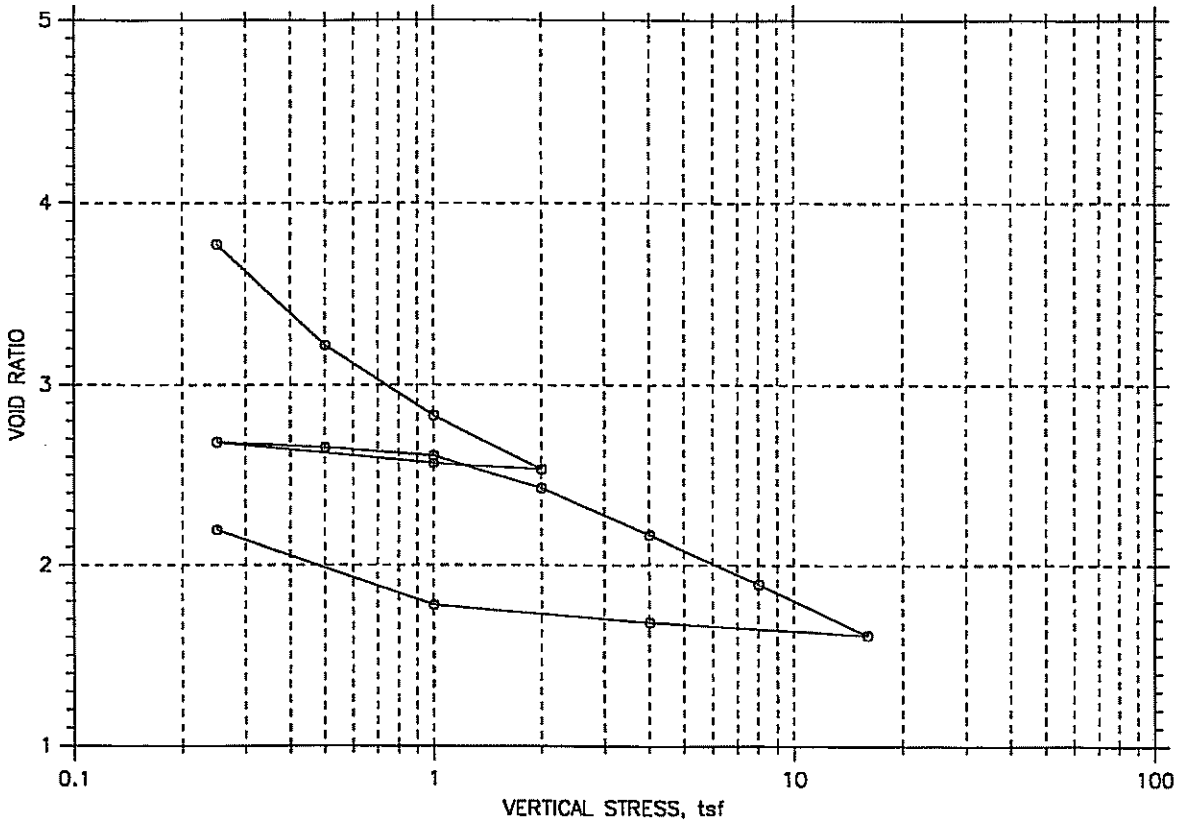
Plastic Limit: 0

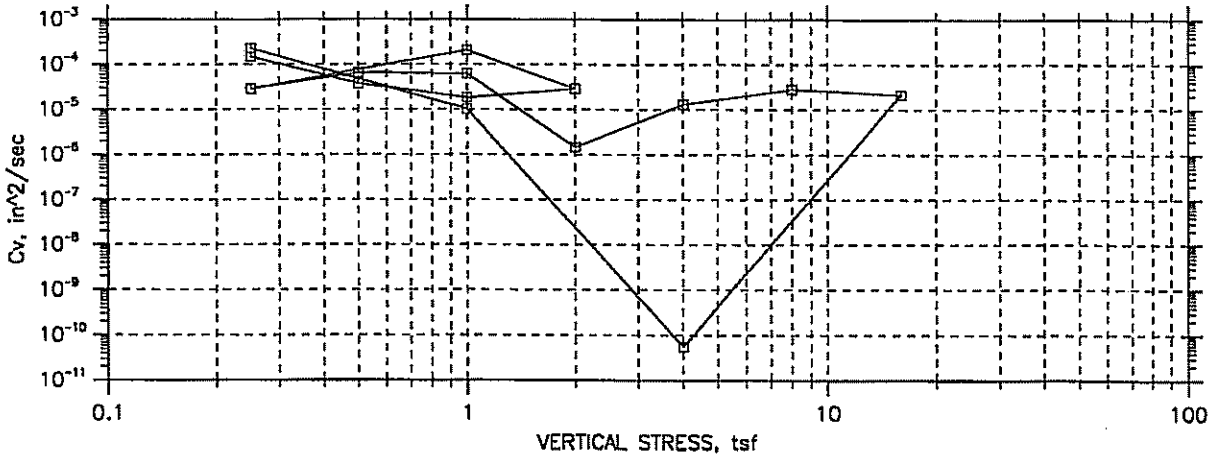
Estimated Specific Gravity: 2.65

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	6.5376	6.5376	0	0.000	1.4975	1.4975	1.000	1.4975	0
2	0.14	6.7861	6.5376	0.31998	1.288	1.426	1.1775	1.211	1.3018	0.12424
3	0.29	6.8652	6.5376	0.43961	1.342	1.3855	1.0579	1.310	1.2217	0.16381
4	0.45	6.9187	6.5376	0.52033	1.365	1.3583	0.97718	1.390	1.1677	0.19057
5	0.60	6.9577	6.5376	0.5813	1.384	1.3363	0.9162	1.458	1.1262	0.21003
6	0.75	6.9877	6.5376	0.63067	1.401	1.317	0.86684	1.519	1.0919	0.22507
7	0.90	7.0126	6.5376	0.6719	1.415	1.3006	0.82561	1.575	1.0631	0.23749
8	1.06	7.0316	6.5376	0.7079	1.433	1.2836	0.7896	1.626	1.0366	0.24701
9	1.21	7.0514	6.5376	0.7381	1.436	1.2732	0.7594	1.677	1.0163	0.25692
10	1.37	7.0663	6.5376	0.76539	1.448	1.2608	0.73211	1.722	0.99647	0.26436
11	1.52	7.0803	6.5376	0.78978	1.455	1.2504	0.70772	1.767	0.97908	0.27136
12	1.83	7.1058	6.5376	0.83334	1.467	1.2323	0.66417	1.855	0.94826	0.28409
13	2.14	7.126	6.5376	0.86992	1.479	1.216	0.62758	1.938	0.92177	0.29419
14	2.46	7.1431	6.5376	0.90186	1.490	1.2011	0.59564	2.017	0.89838	0.30274
15	2.77	7.1616	6.5376	0.92974	1.490	1.1918	0.56777	2.099	0.87979	0.31202
16	3.08	7.1751	6.5376	0.95529	1.499	1.1797	0.54221	2.176	0.86094	0.31873
17	3.39	7.1865	6.5376	0.97794	1.507	1.1685	0.51957	2.249	0.84402	0.32446
18	3.70	7.1984	6.5376	0.99768	1.510	1.1606	0.49982	2.322	0.83023	0.33041
19	4.01	7.2102	6.5376	1.0174	1.513	1.1527	0.48008	2.401	0.81639	0.33632
20	4.32	7.2217	6.5376	1.0343	1.512	1.1473	0.46324	2.477	0.80529	0.34205
21	4.63	7.2333	6.5376	1.0511	1.511	1.1421	0.44639	2.559	0.79427	0.34787
22	5.25	7.2506	6.5376	1.079	1.513	1.1315	0.41852	2.704	0.77501	0.35649
23	5.88	7.2704	6.5376	1.1028	1.505	1.1275	0.39471	2.857	0.76111	0.3664
24	6.50	7.2868	6.5376	1.122	1.497	1.1248	0.37555	2.995	0.75016	0.37461
25	7.12	7.3045	6.5376	1.1359	1.481	1.1286	0.36161	3.121	0.74508	0.38347
26	7.74	7.3222	6.5376	1.1504	1.466	1.1317	0.34709	3.260	0.73938	0.39229
27	8.36	7.335	6.5376	1.1614	1.457	1.1334	0.33606	3.373	0.73473	0.39868
28	8.98	7.346	6.5376	1.1661	1.442	1.1398	0.33141	3.439	0.73561	0.4042
29	9.60	7.3601	6.5376	1.1748	1.428	1.1452	0.3227	3.549	0.73394	0.41124
30	10.22	7.3736	6.5376	1.1835	1.416	1.15	0.31399	3.663	0.73201	0.41802
31	10.85	7.3844	6.5376	1.1893	1.404	1.155	0.30818	3.748	0.73159	0.42341
32	11.47	7.3928	6.5376	1.1928	1.395	1.1599	0.3047	3.807	0.73229	0.42759
33	12.09	7.4051	6.5376	1.1998	1.383	1.1652	0.29773	3.914	0.73147	0.43374
34	12.71	7.4131	6.5376	1.2033	1.374	1.1698	0.29424	3.975	0.732	0.43776
35	13.33	7.4207	6.5376	1.205	1.365	1.1756	0.2925	4.019	0.73403	0.44153
36	13.96	7.4284	6.5376	1.2085	1.357	1.1798	0.28902	4.082	0.7344	0.44538
37	14.59	7.4338	6.5376	1.2102	1.350	1.1835	0.28728	4.120	0.73539	0.44812
38	15.21	7.4412	6.5376	1.212	1.341	1.1892	0.28553	4.165	0.73735	0.45182

CONSOLIDATION TEST DATA

SUMMARY REPORT





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

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CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: 07-ED11DS05
Test No.: 16EC11

Location:
Tested By: MJS
Test Date: 12/10/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435

Estimated Specific Gravity: 2.55
Initial Void Ratio: 5.47
Final Void Ratio: 2.19

Liquid Limit: 0
Plastic Limit: 0
Plasticity Index: 0

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	X-16	RING	RING	RING
Wt. Container + Wet Soil, gm	150.44	148.42	118.74	118.74
Wt. Container + Dry Soil, gm	78.6	98.16	98.16	98.16
Wt. Container, gm	44.71	74.38	74.38	74.38
Wt. Dry Soil, gm	33.89	23.78	23.78	23.78
Water Content, %	211.98	211.35	86.54	86.54
Void Ratio	---	5.47	2.19	---
Degree of Saturation, %	---	98.54	100.68	---
Dry Unit Weight, pcf	---	24.607	49.874	---

CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: 07-ED11DS05
Test No.: 16EC11

Location:
Tested By: MJS
Test Date: 12/10/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435

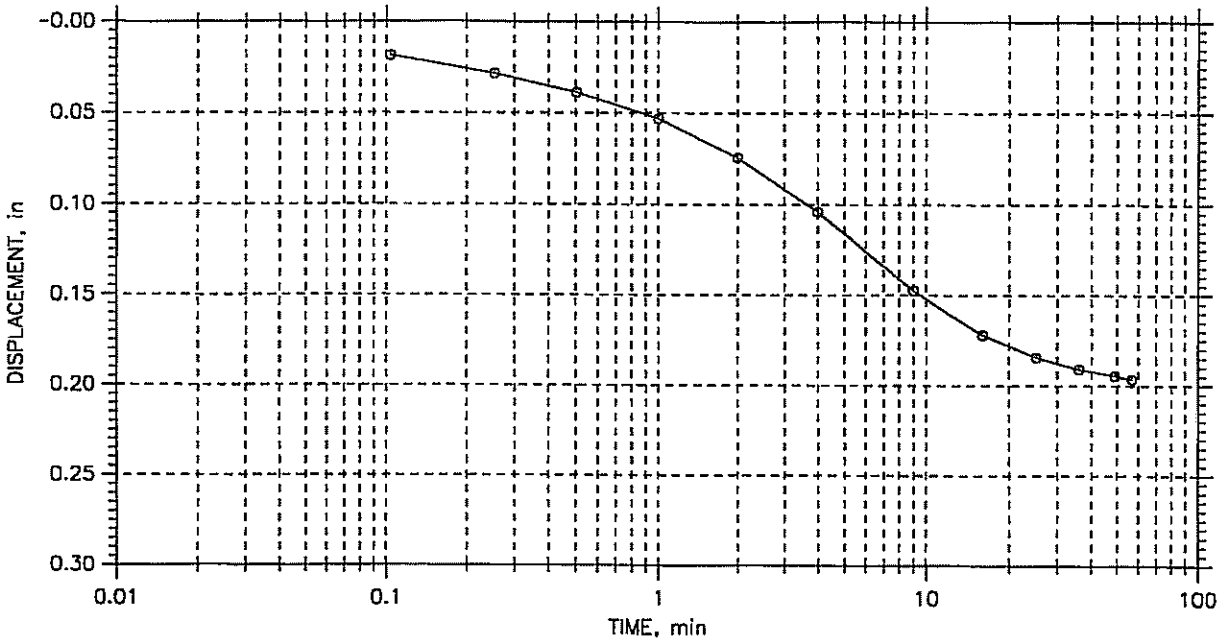
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.25	0.1965	3.775	26.19	2.4	0.0	1.48e-004	0.00e+000	1.48e-004
2	0.5	0.261	3.218	34.80	5.4	6.4	4.10e-005	3.52e-005	3.79e-005
3	1	0.306	2.830	40.80	13.5	5.9	1.32e-005	3.01e-005	1.84e-005
4	2	0.3407	2.530	45.43	6.8	3.6	2.22e-005	4.15e-005	2.89e-005
5	1	0.3368	2.564	44.90	1.0	0.4	1.45e-004	3.63e-004	2.08e-004
6	0.25	0.3232	2.681	43.10	6.8	3.3	2.13e-005	4.43e-005	2.87e-005
7	0.5	0.3266	2.652	43.55	3.4	1.2	4.42e-005	1.29e-004	6.59e-005
8	1	0.332	2.606	44.27	3.9	0.8	3.77e-005	1.92e-004	6.30e-005
9	2	0.3528	2.426	47.05	92.6	0.0	1.47e-006	0.00e+000	1.47e-006
10	4	0.383	2.166	51.07	12.8	5.5	9.40e-006	2.17e-005	1.31e-005
11	8	0.4147	1.893	55.29	3.8	3.4	2.65e-005	2.98e-005	2.81e-005
12	16	0.4475	1.609	59.67	4.8	3.0	1.74e-005	2.82e-005	2.15e-005
13	4	0.4391	1.681	58.55	0.4	2787585.3	1.72e-004	2.77e-011	5.55e-011
14	1	0.428	1.777	57.07	13.6	2.6	6.07e-006	3.19e-005	1.02e-005
15	0.25	0.38	2.192	50.66	0.4	0.4	2.23e-004	2.29e-004	2.26e-004

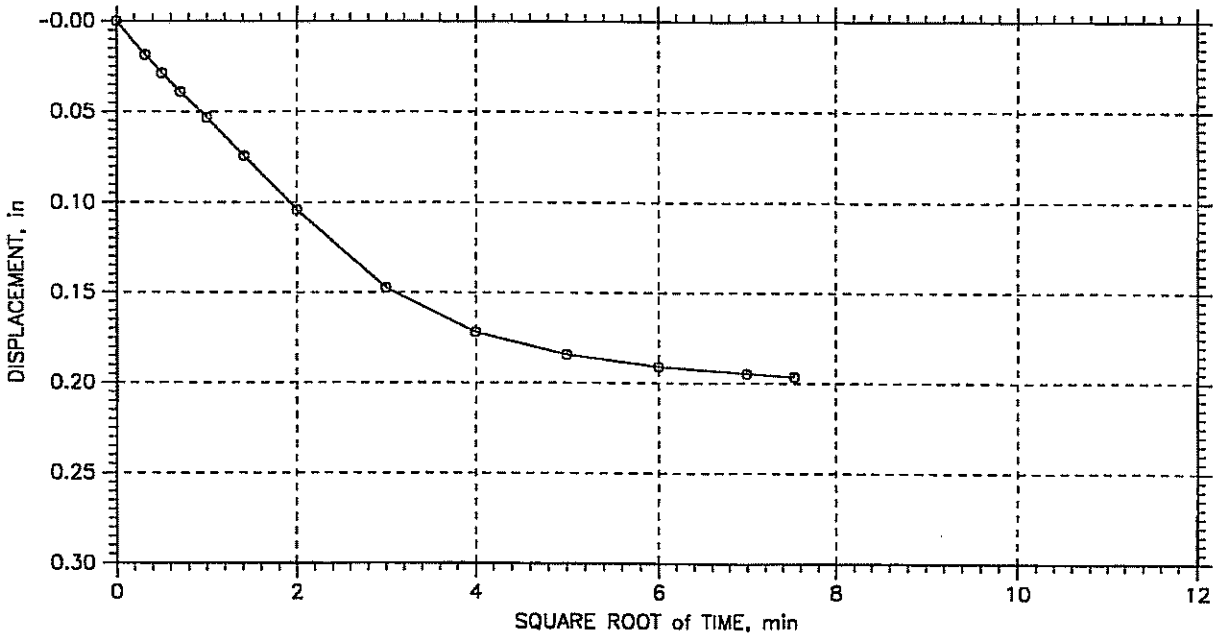
CONSOLIDATION TEST DATA

TIME CURVES

Step: 1 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

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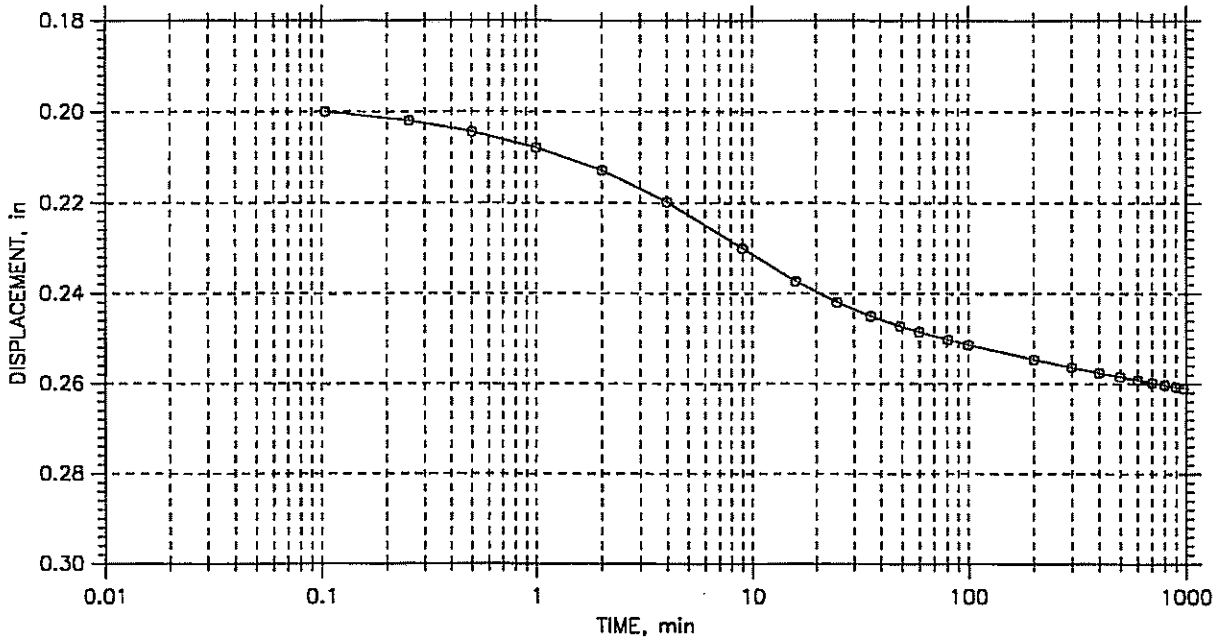
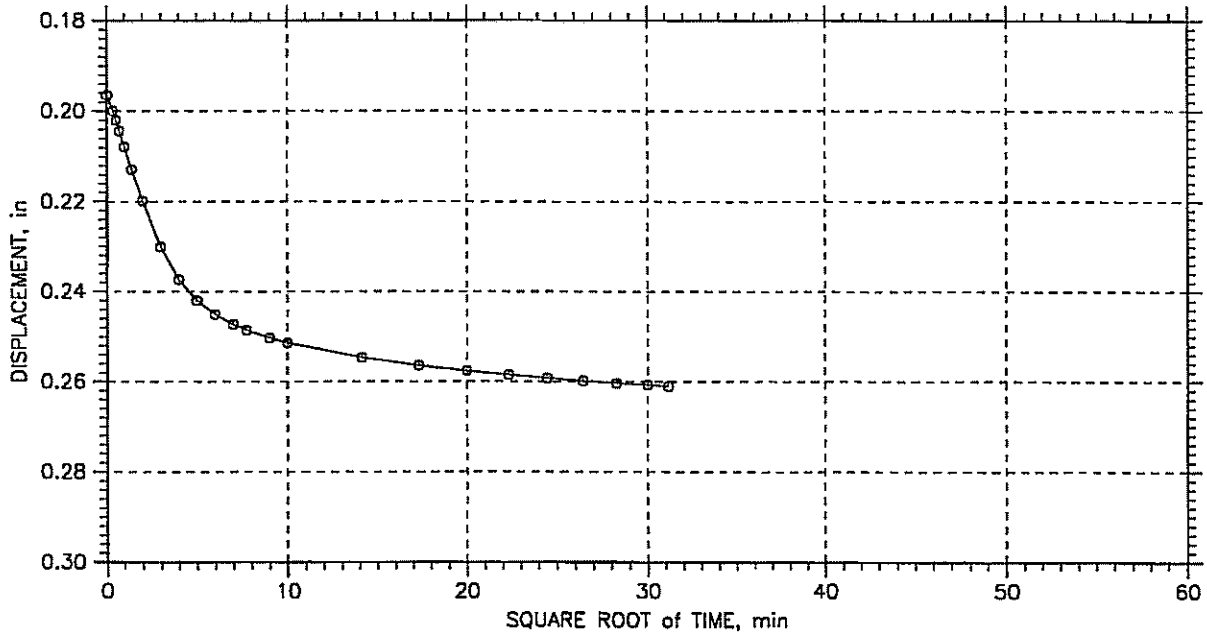
CONSOLIDATION TEST DATA

TIME CURVES

Step: 2 of 15

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

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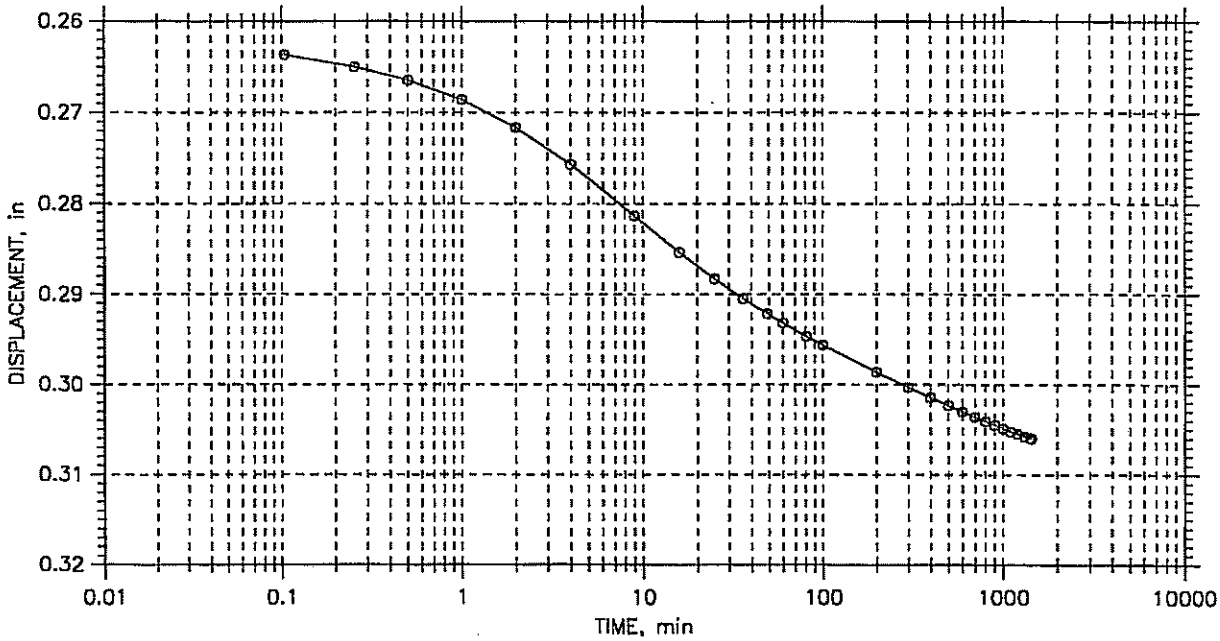
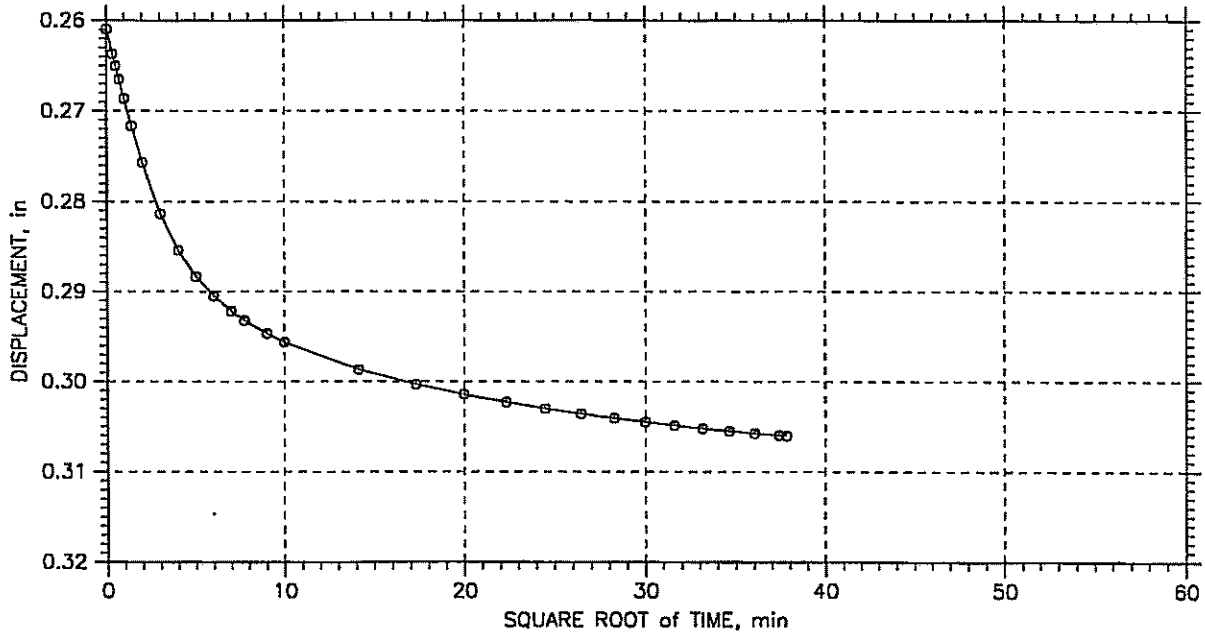
CONSOLIDATION TEST DATA

TIME CURVES

Step: 3 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

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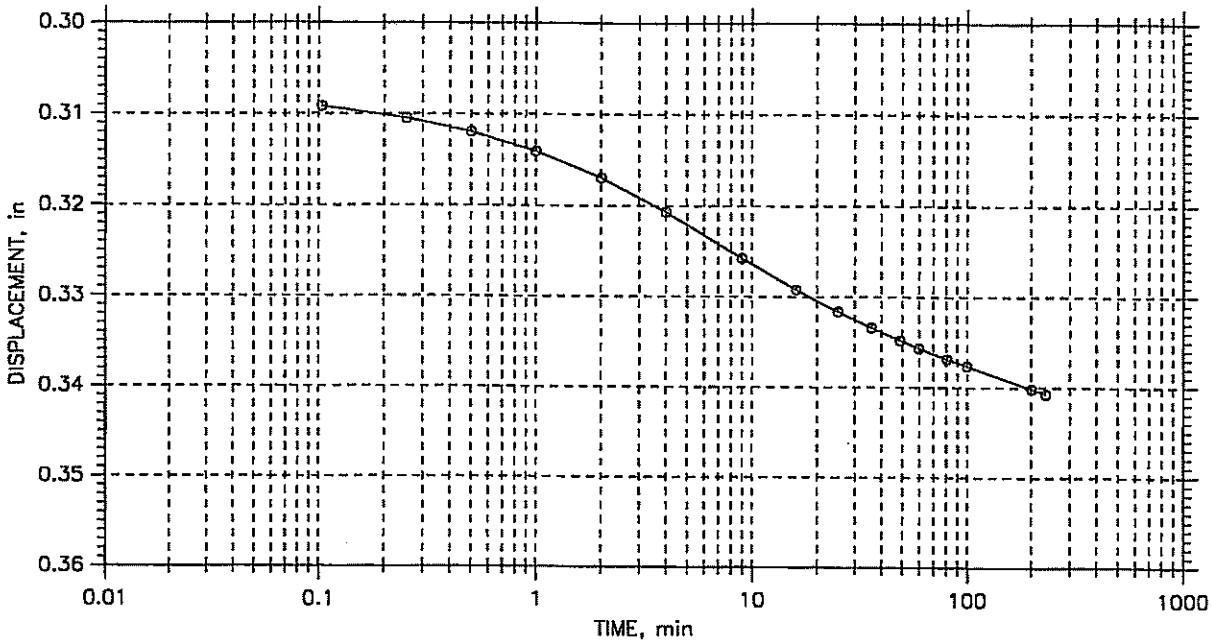
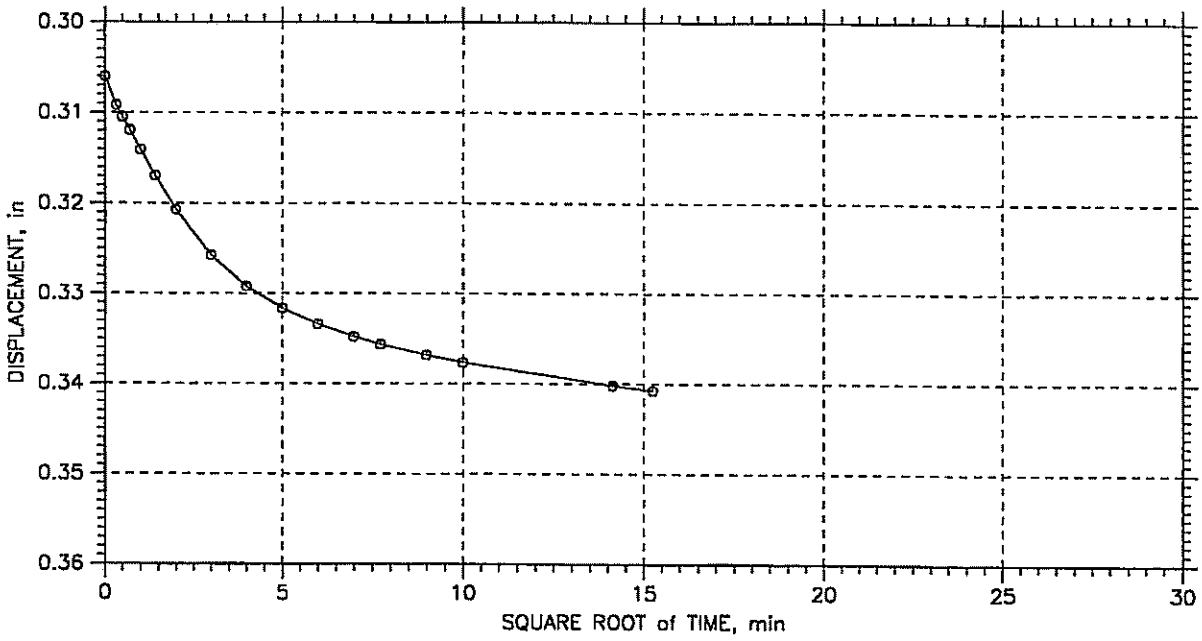
CONSOLIDATION TEST DATA

TIME CURVES

Step: 4 of 15

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

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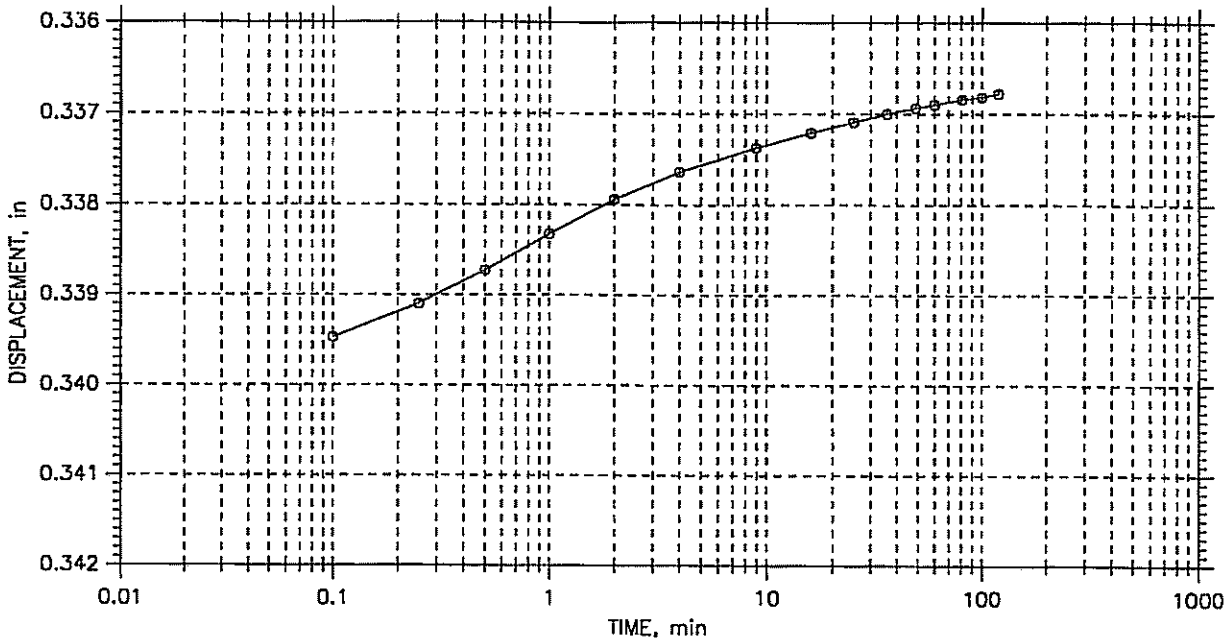
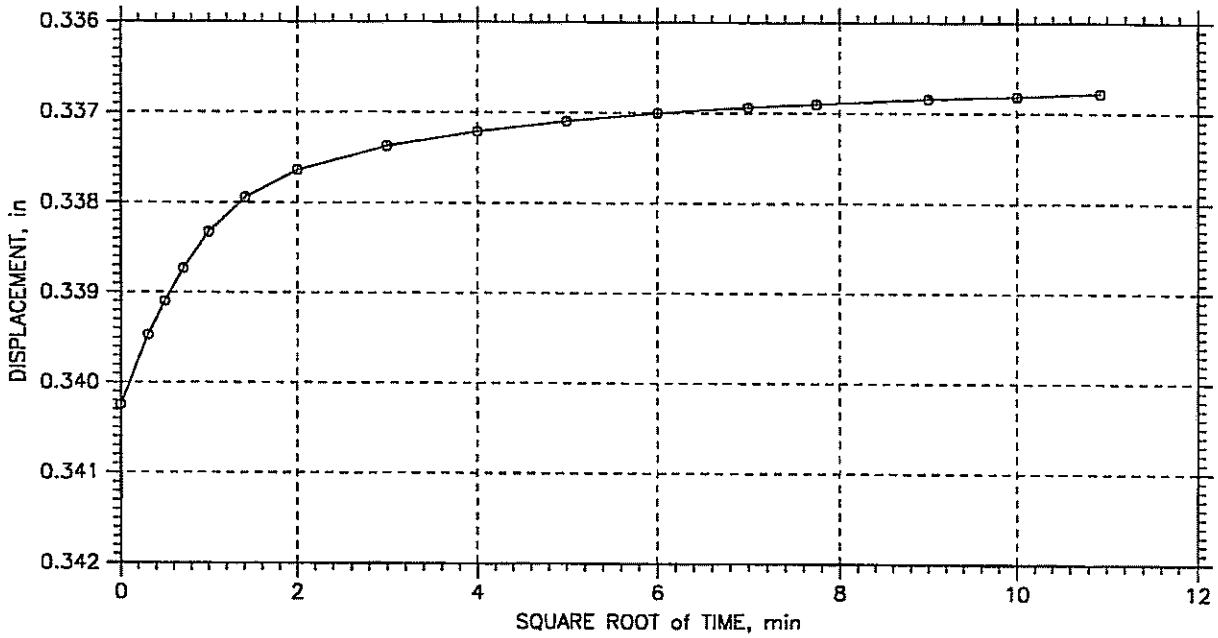
CONSOLIDATION TEST DATA

TIME CURVES

Step: 5 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

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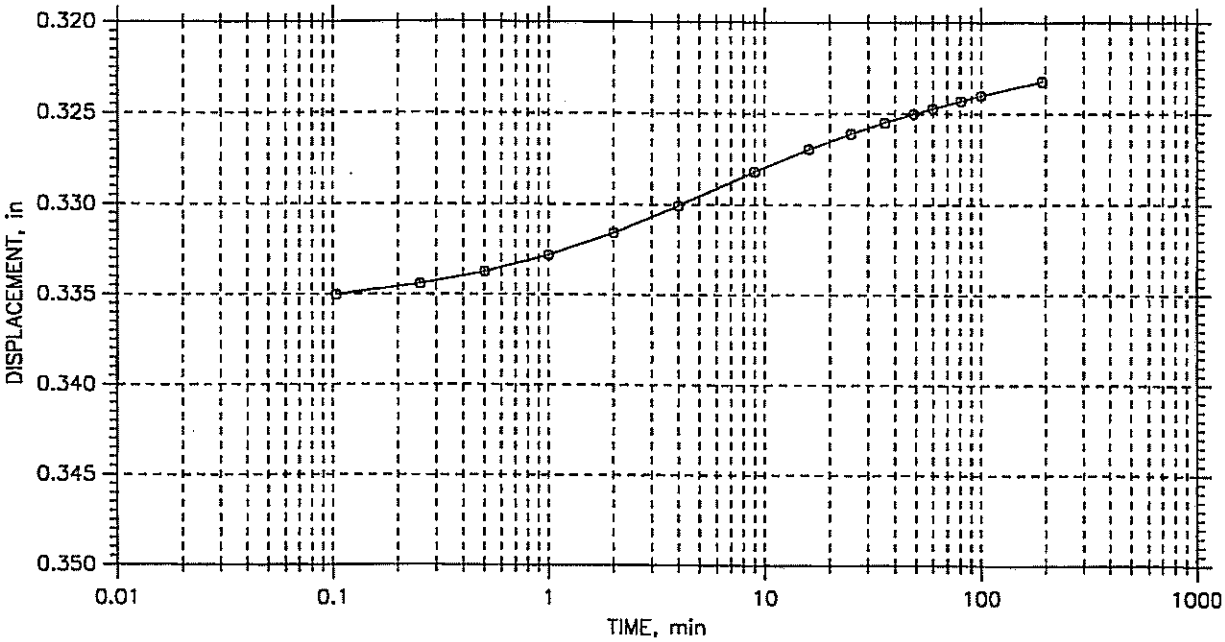
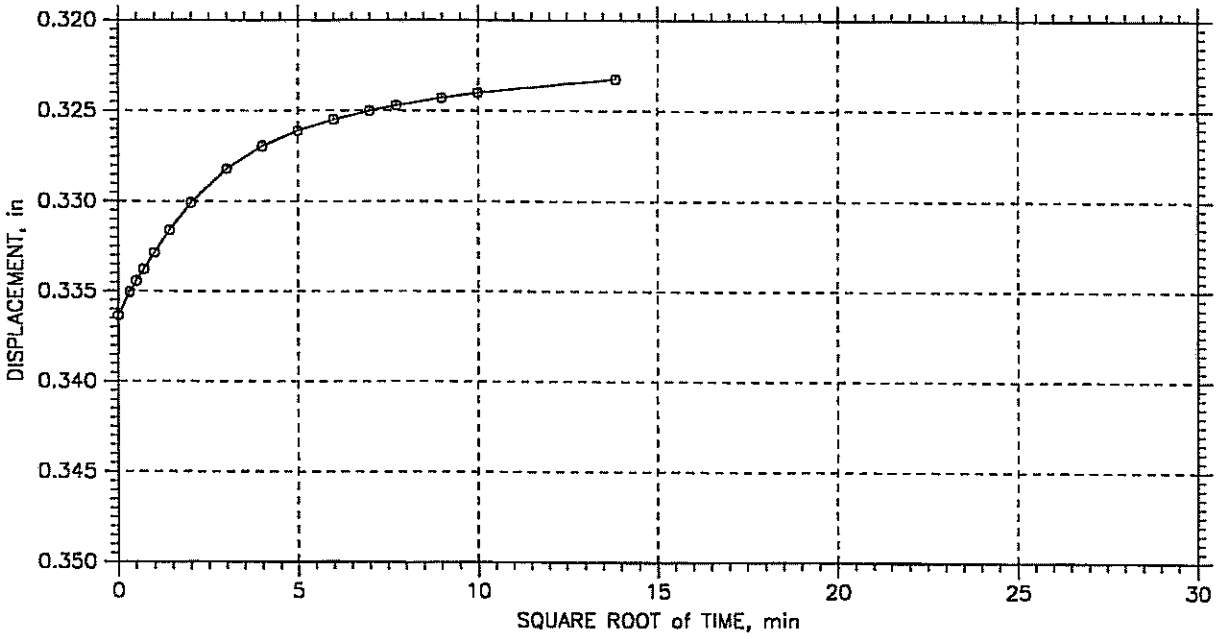
CONSOLIDATION TEST DATA

TIME CURVES

Step: 6 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

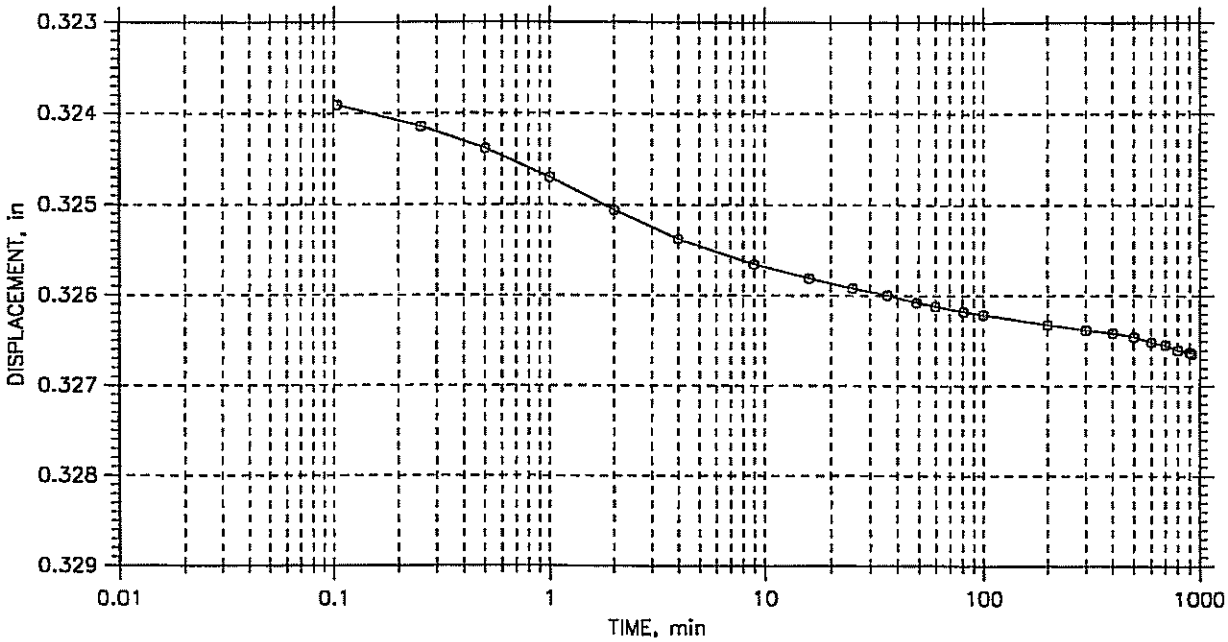
Tue, 08-JAN-2008 10:52:34

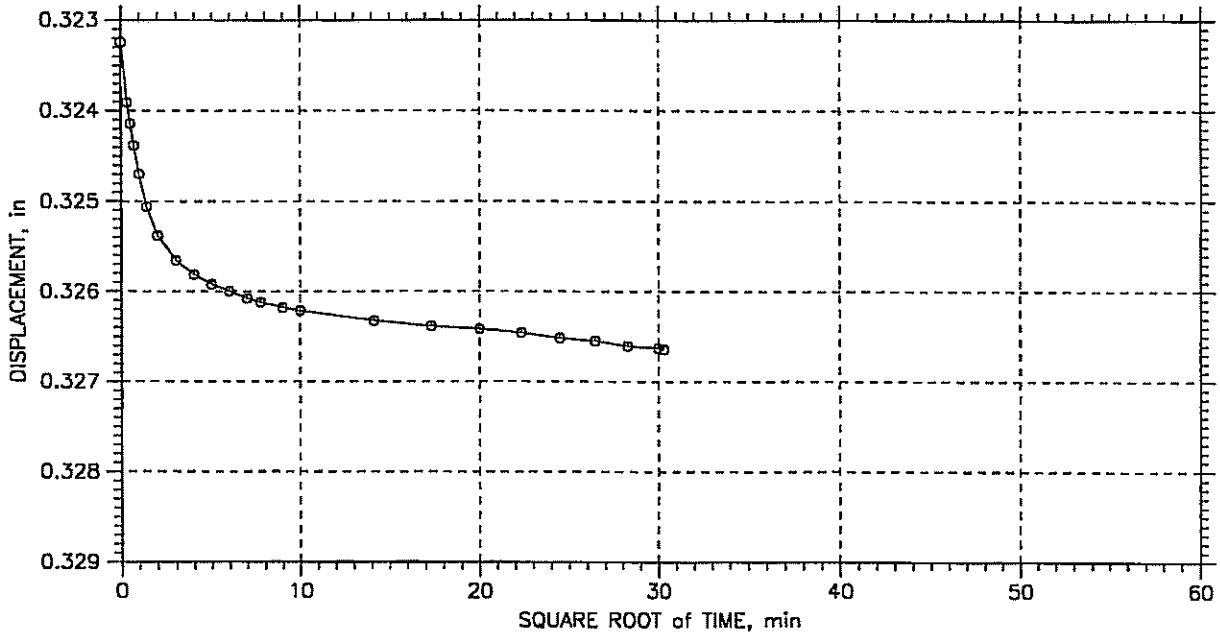
CONSOLIDATION TEST DATA

TIME CURVES

Step: 7 of 15

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

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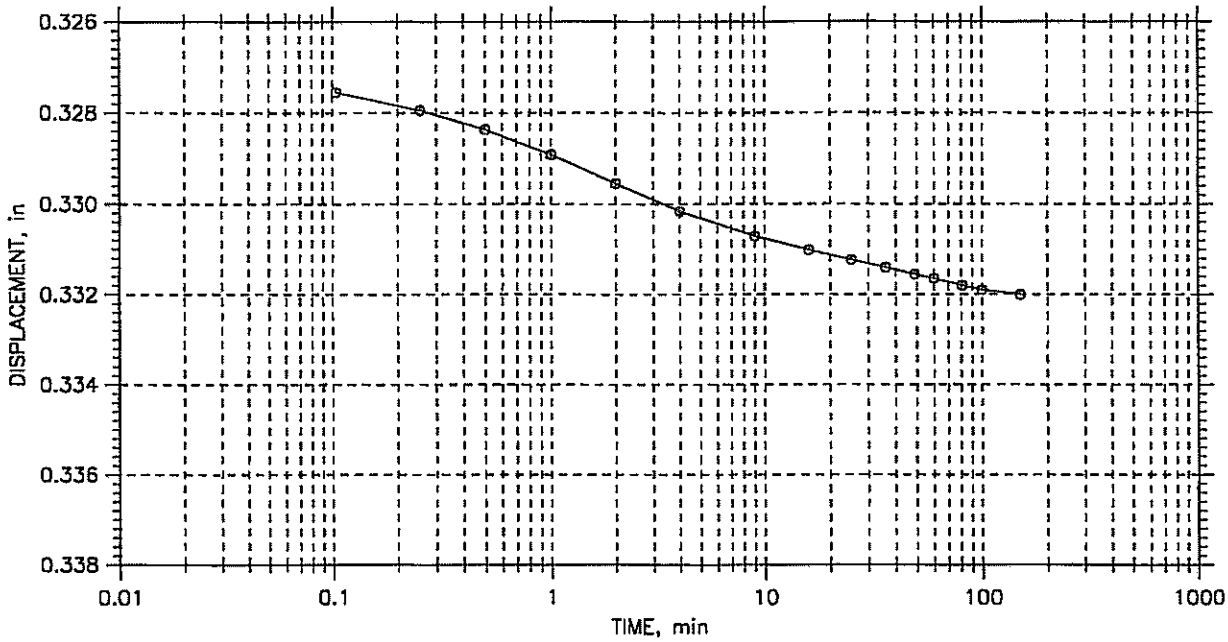
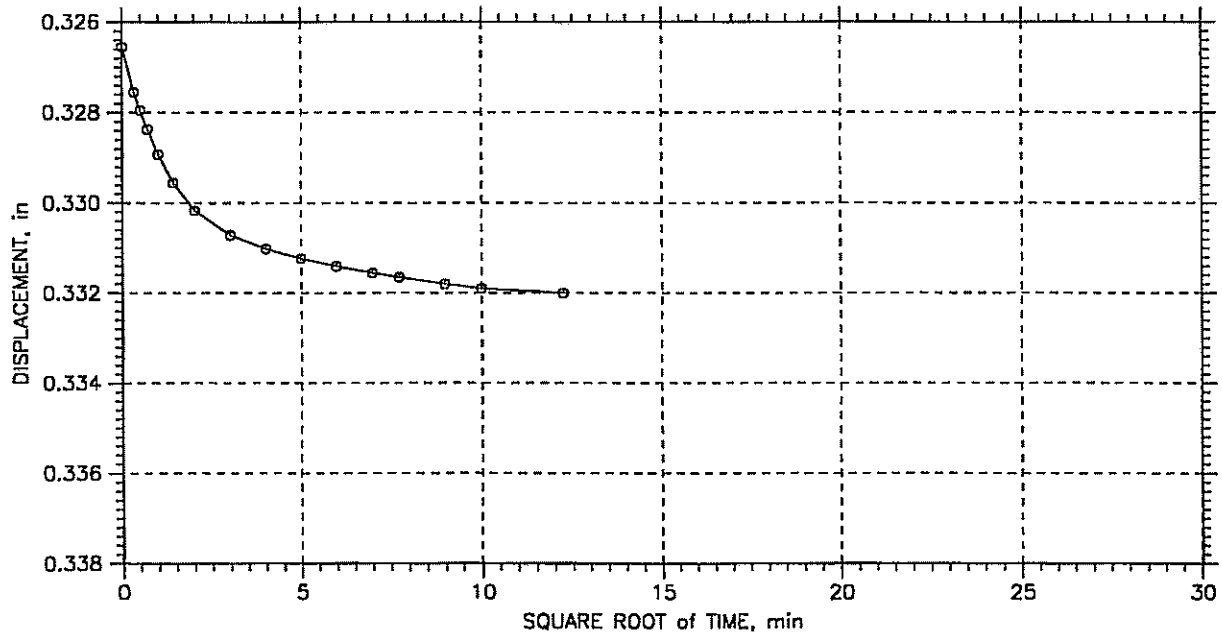
CONSOLIDATION TEST DATA

TIME CURVES

Step: 8 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

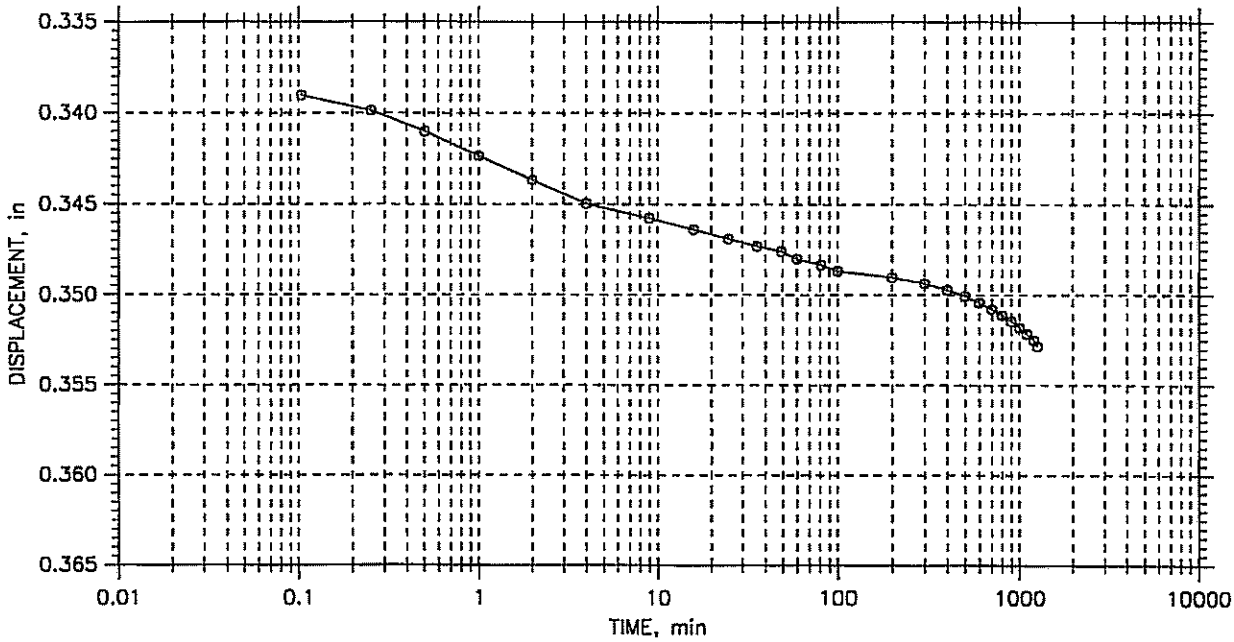
Tue, 08-JAN-2008 10:52:35

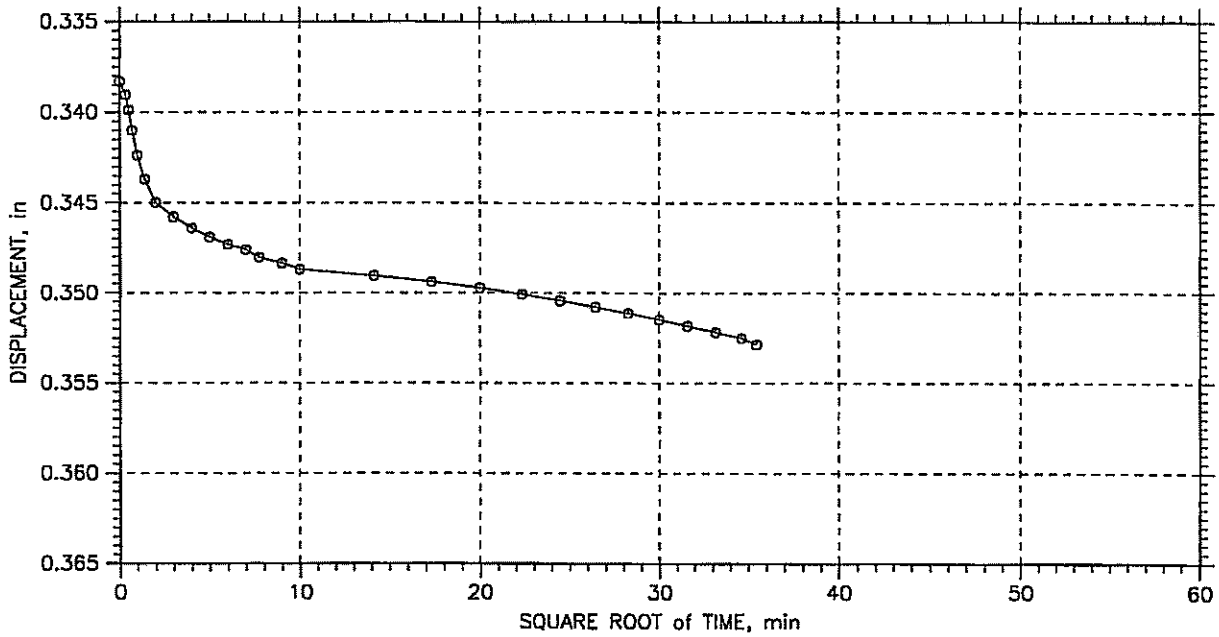
CONSOLIDATION TEST DATA

TIME CURVES

Step: 9 of 15

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

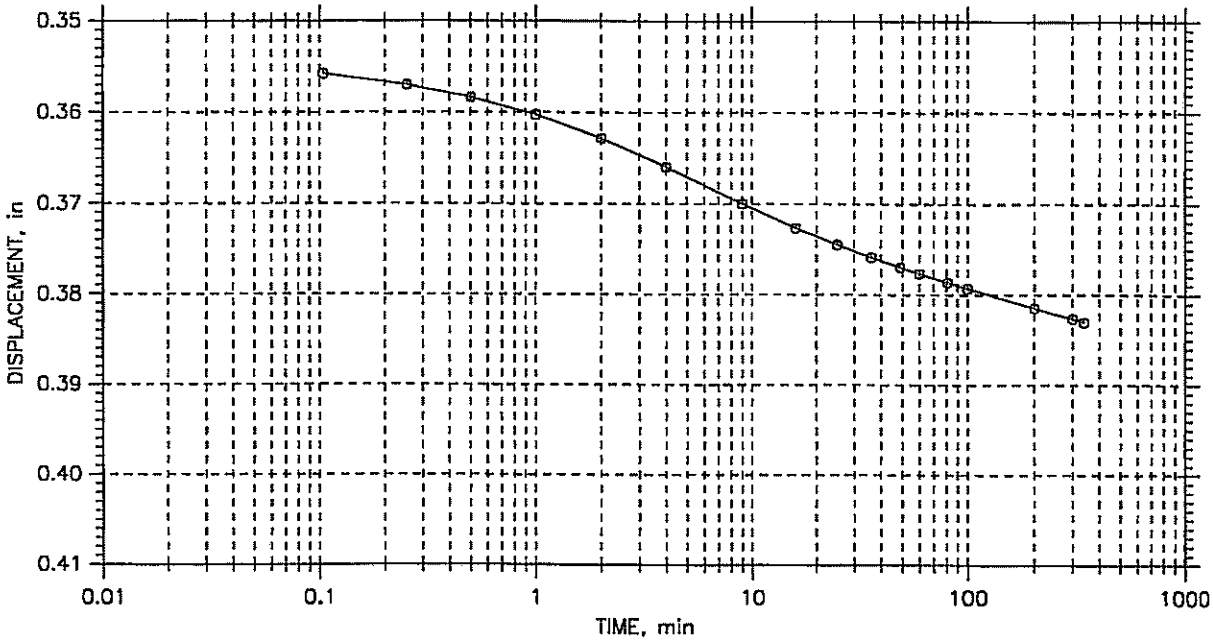
Tue, 08-JAN-2008 10:52:35

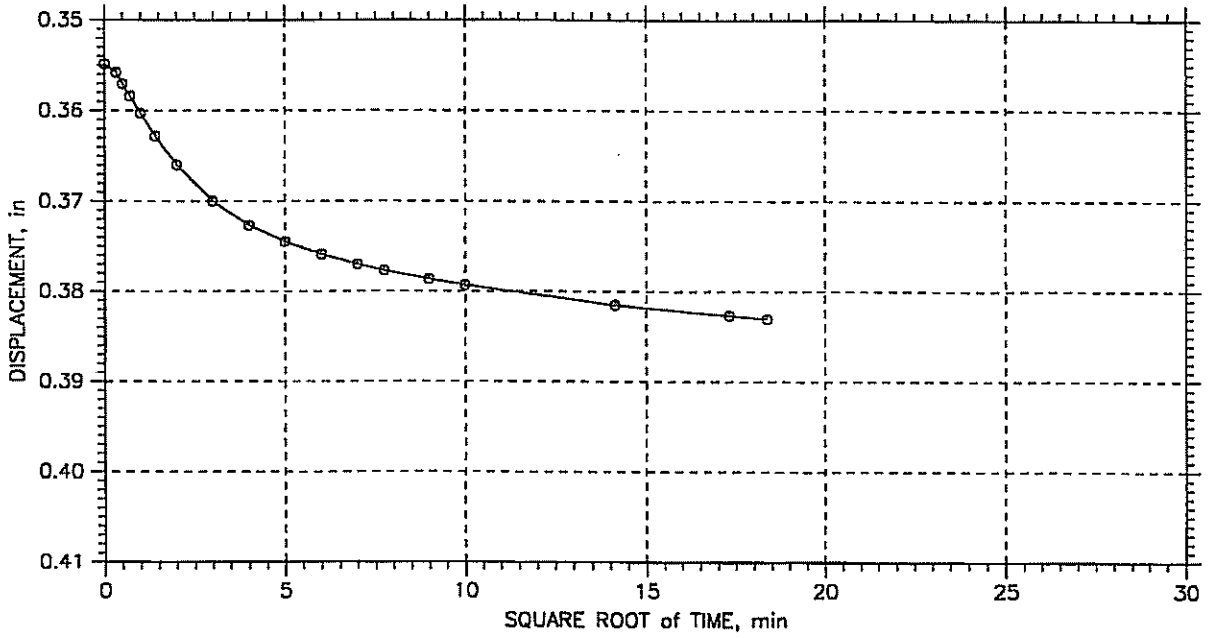
CONSOLIDATION TEST DATA

TIME CURVES

Step: 10 of 15

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

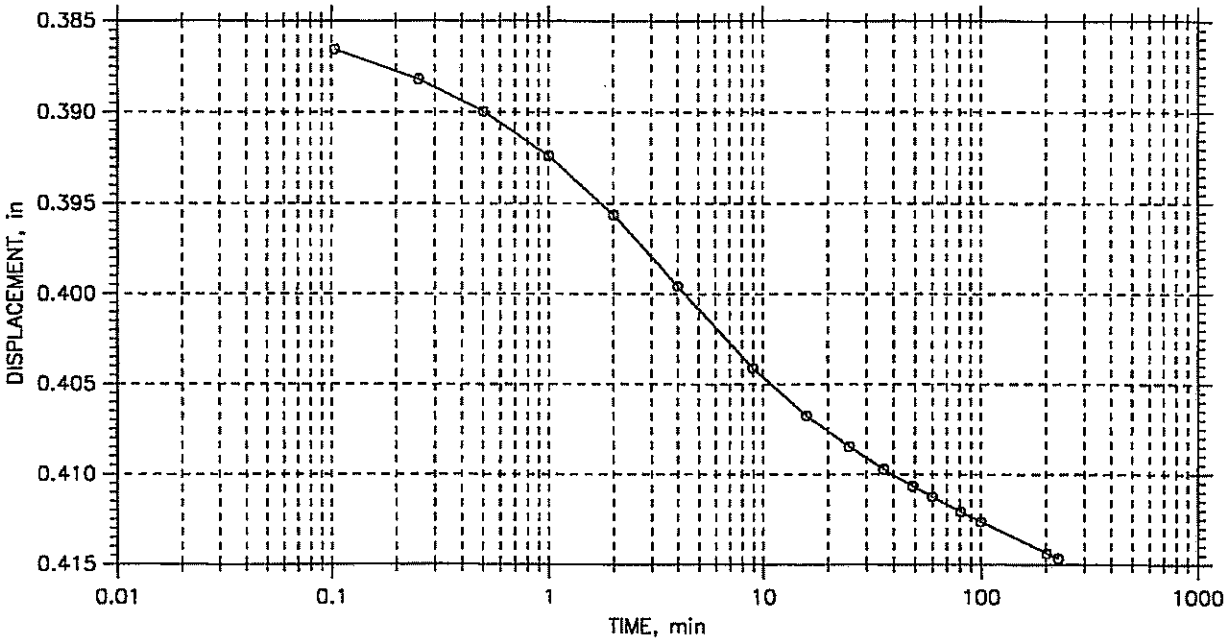
Tue, 08-JAN-2008 10:52:36

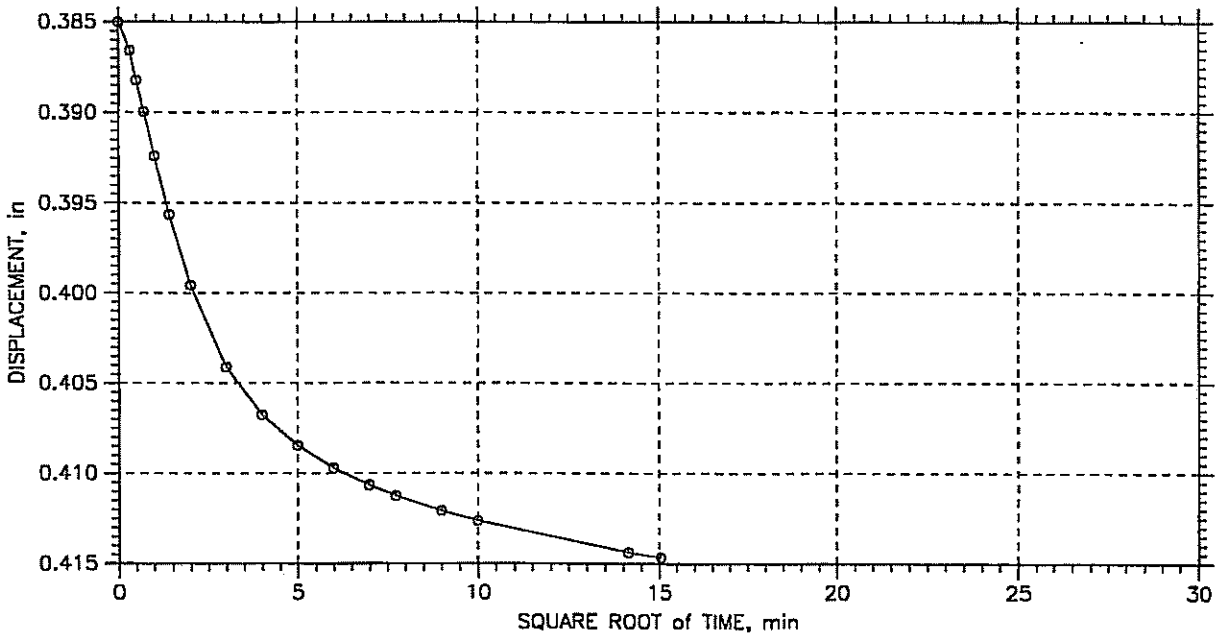
CONSOLIDATION TEST DATA

TIME CURVES

Step: 11 of 15

Stress: 8. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

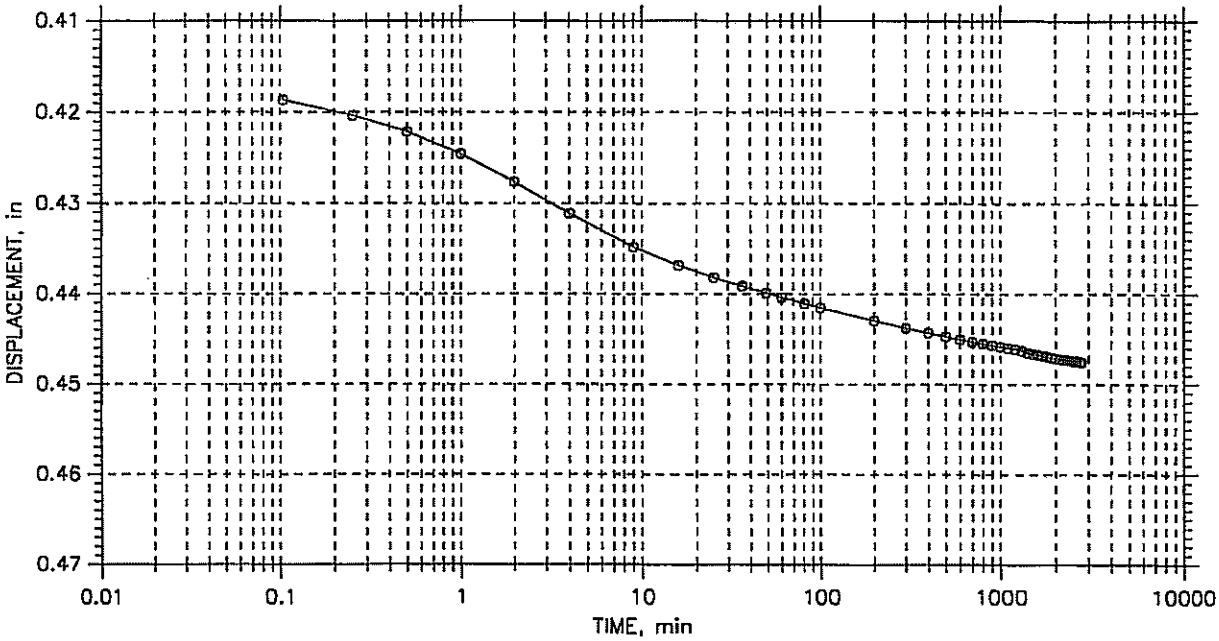
Tue, 08-JAN-2008 10:52:36

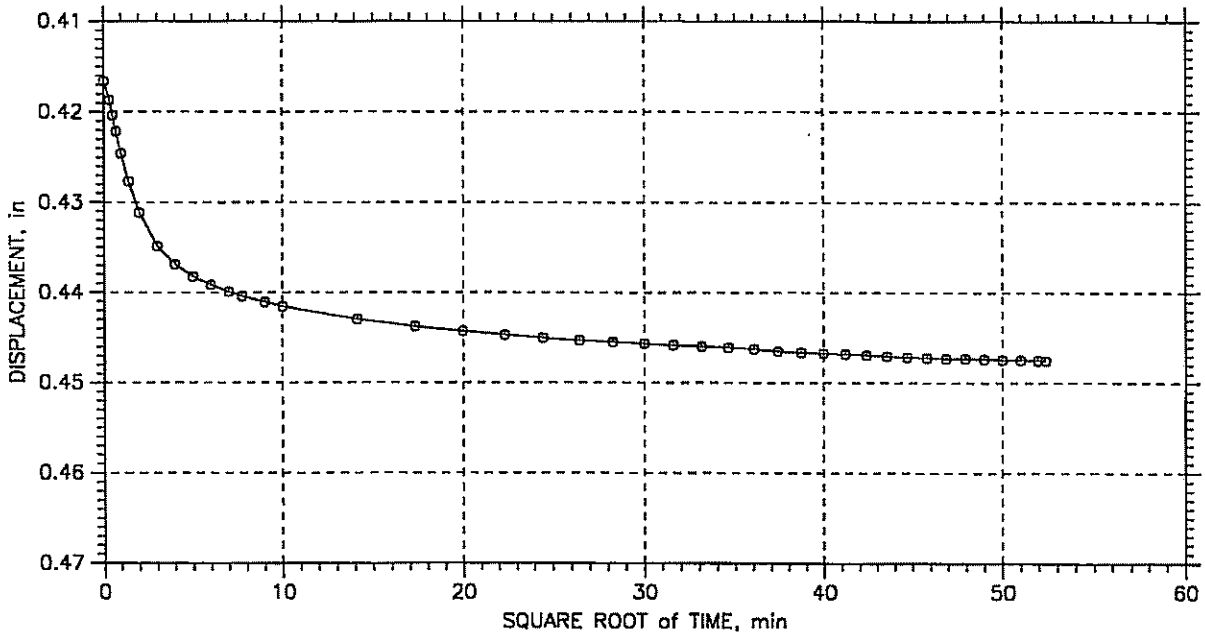
CONSOLIDATION TEST DATA

TIME CURVES

Step: 12 of 15

Stress: 16. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

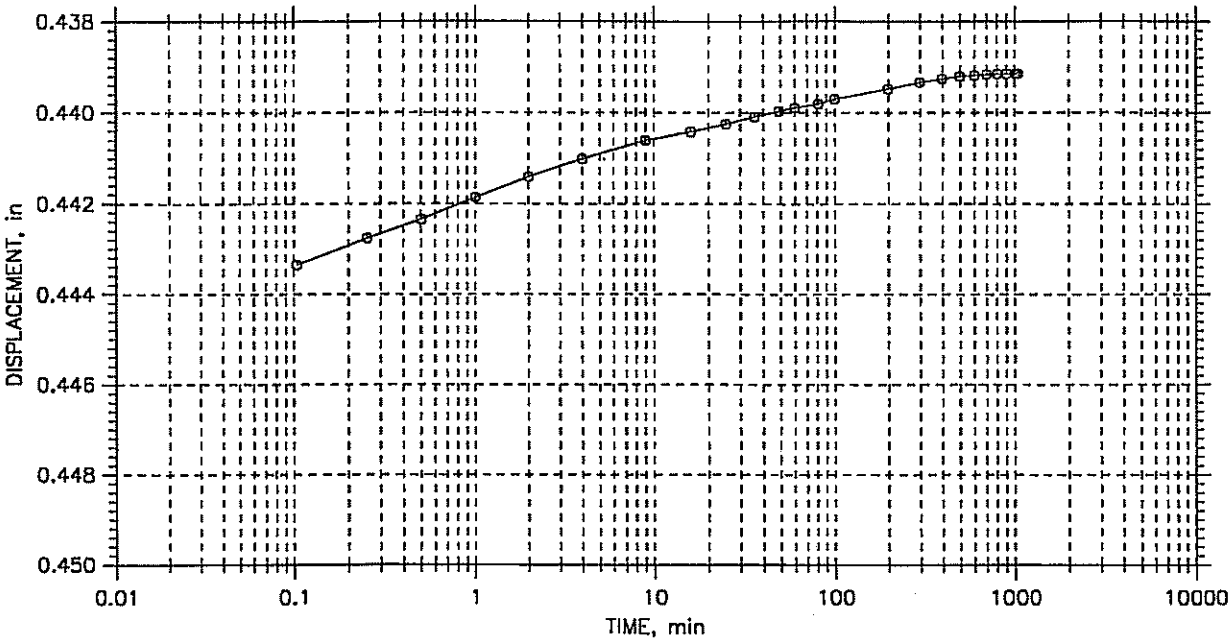
Tue, 08-JAN-2008 10:52:36

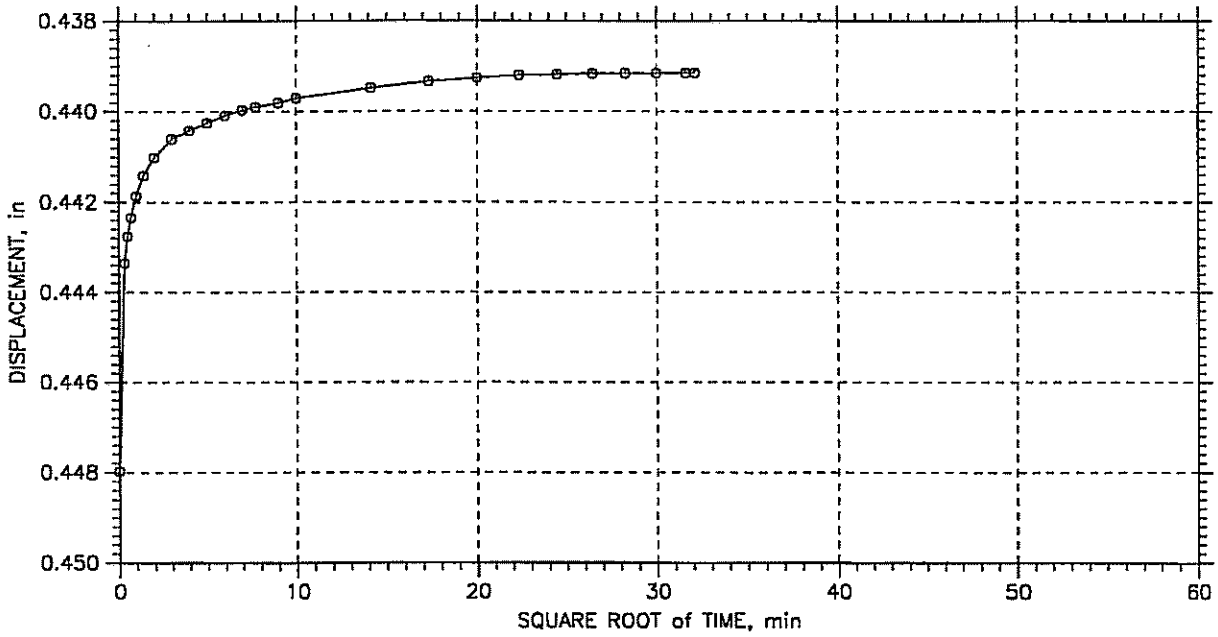
CONSOLIDATION TEST DATA

TIME CURVES

Step: 13 of 15

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

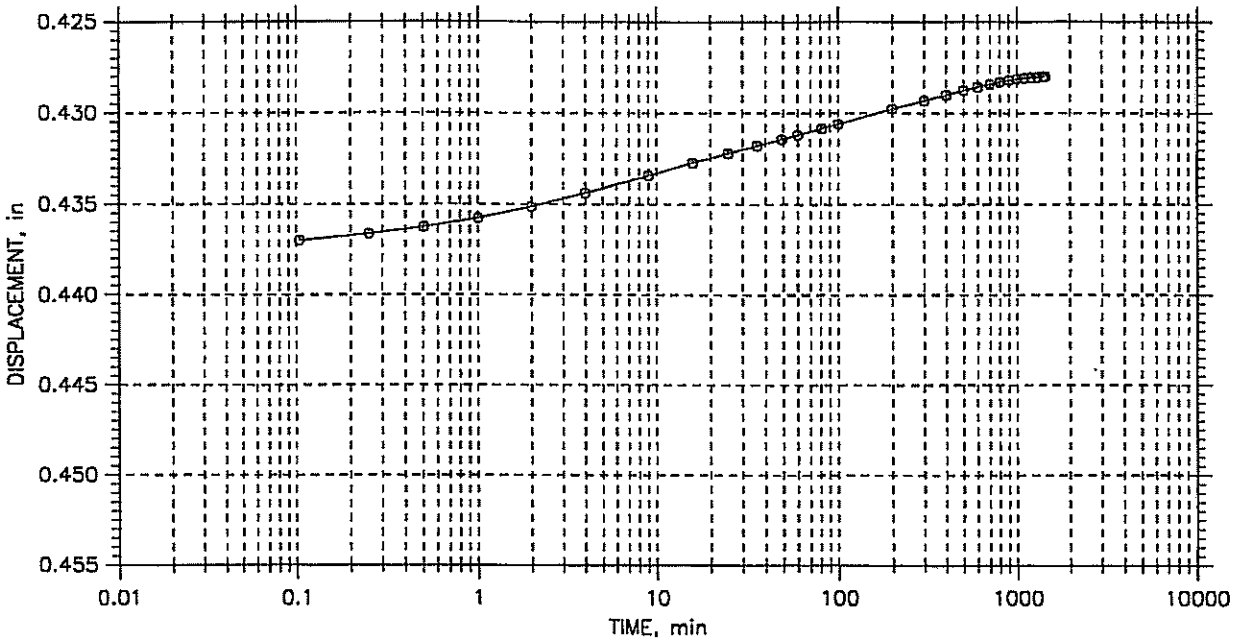
Tue, 08-JAN-2008 10:52:37

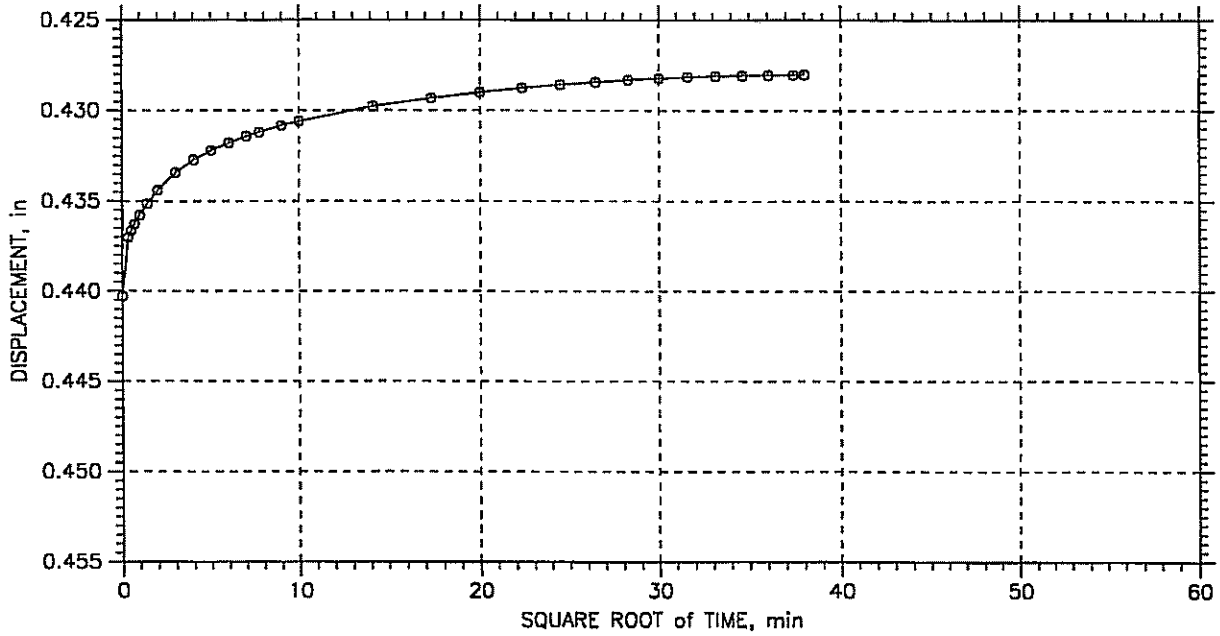
CONSOLIDATION TEST DATA

TIME CURVES

Step: 14 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

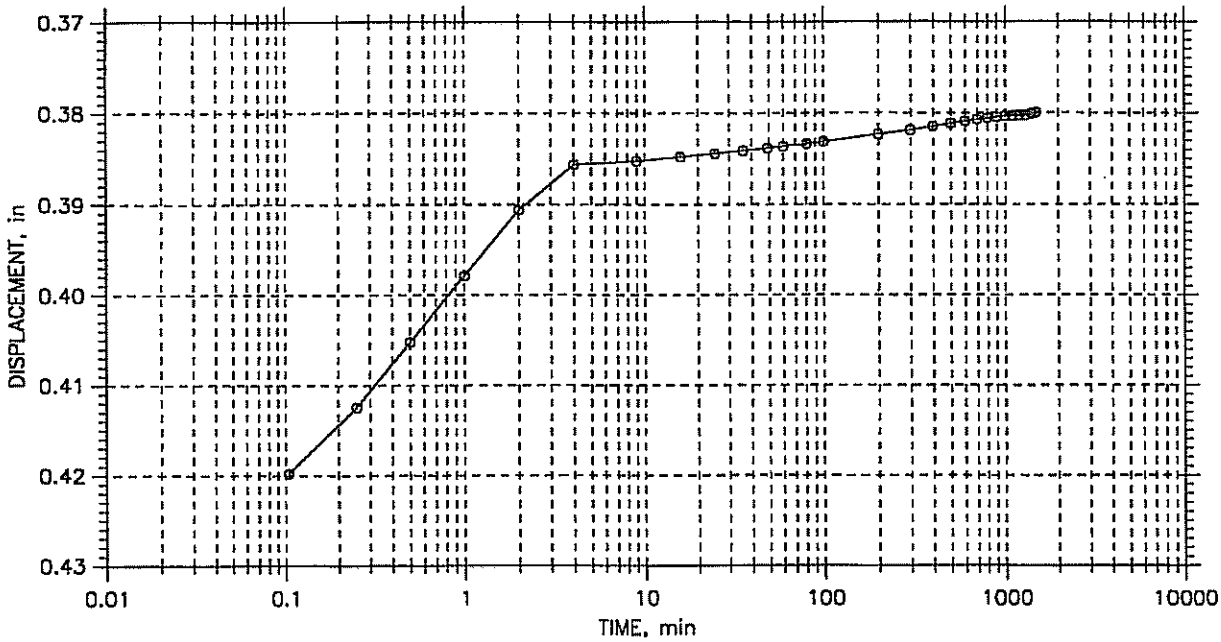
Tue, 08-JAN-2008 10:52:37

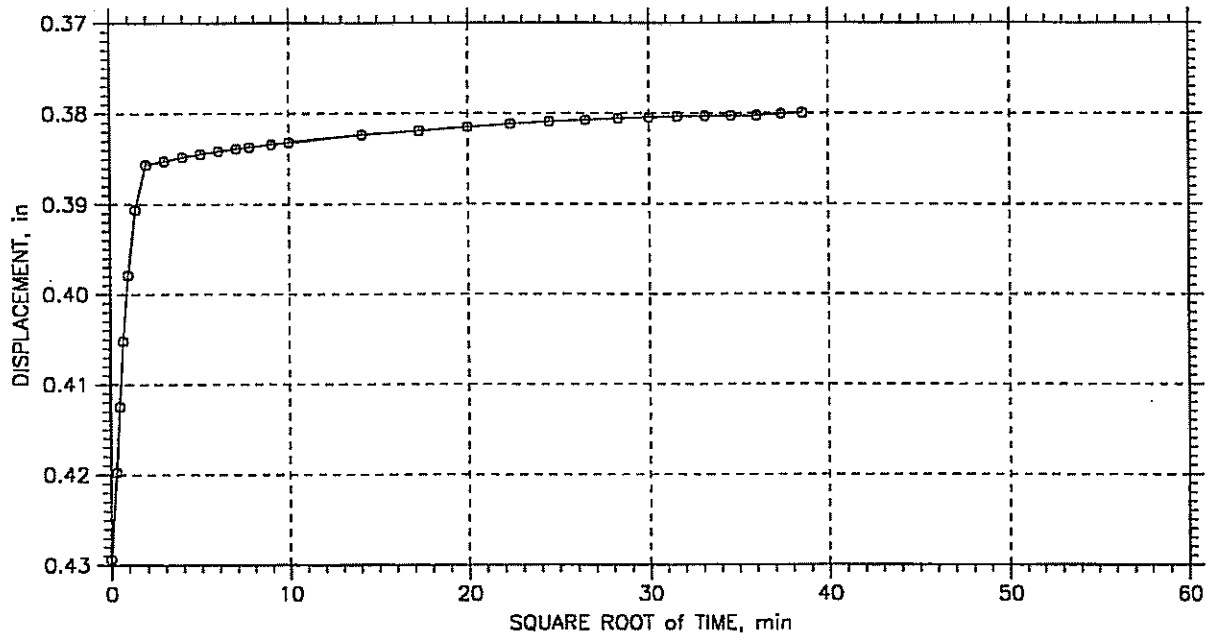
CONSOLIDATION TEST DATA

TIME CURVES

Step: 15 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-ED11DS05	Test Date: 12/10/07	Depth:
Test No.: 16EC11	Sample Type: REMOLDED	Elevation:
Description: CLAYEY SILT LITTLE F-C SAND TRACE ORGANIC MATERIAL - GRAY (CL-ML)		
Remarks: Cc = 0.933 Ccr = 0.166 TEST PERFORMED AS PER ASTM D 2435		

Tue, 08-JAN-2008 10:52:37

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATION
ASTM D 5084, METHOD C
RISING TAILWATER LEVEL

STS PROJECT NO.: X429316A

PROJECT: LOWER FOX RIVER OU-1

DATE: 12/5/2007

SUMMARY OF TEST RESULTS

SAMPLE NO. 1-RA-07-EC-11-DS-5-COMP.

LOCATION 0

CLASSIFICATION RIVER SEDIMENTS- ORGANIC SILTS

	INITIAL	FINAL
DRY UNIT WEIGHT (pcf)	42.4	45.0
WATER CONTENT (%)	217.5	105.7
DIAMETER (cm)	3.92	3.92
LENGTH (cm)	6.28	6.28
HYDRAULIC GRADIENT (MAXIMUM)		14.8
PERCENT SATURATION	198.00083	104.36786
HYDRAULIC CONDUCTIVITY k (cm/sec)		1.57E-07

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATIC
Rising tailwater method in a triaxial permeameter
ASTM D 5084, Method C (EM-1110-2-1906 7)

Project Name: LOWER FOX RIVER OU-1
Project No.: X429316A
Project Location: WISCONSIN
Sample No.: 1-RA-07-EC-11-DS-5-COMP.
Sample Location:

Sample Description: RIVER SEDIMENTS- ORGANIC SILTS

Cell No.: 3

Date Sampled:
Date Received:

MOISTURE CONTENT	INITIAL	FINAL
Container No.	28	77
Wet Sample & Tare (g)	285.93	214.00
Dry Sample & Tare (g)	107.20	156.20
Wt. Water (g)	178.73	57.80
Wt. Tare (g)	25.03	101.50
Wt. Dry Soil (g)	82.17	54.70
Water Content, w (%)	217.5	105.7

SATURATION DATA

Initial Cell Pressure (psi)	Final Cell Pressure (psi)	Initial PWP (psi)	Final PWP (psi)	B Value
33.0	35.0	31.0	33.0	1.00
			Final B value =	1.00

SPECIMEN INFORMATION	INITIAL	FINAL
Avg. Diameter (cm)	3.92	3.92
Avg. Height, L (cm)	6.28	6.28
X-Section Area, A (cm^2)	12.069	12.069
Specimen wet wt. (g)	163.50	112.50
Specimen Dry wt., W_s (g)	51.49	54.70
Total Volume, V (cm^3)	75.79	75.79
Dry Unit Weight (lbs/ft^3)	42.4	45.0
G_s estimated (Y or N)?	Y	#NAME?
Specific Gravity, G_s	2.700	2.700
Volume Solids, V_s (cm^3)	19.11	20.30
Pore Volume (cm^3)	56.68	55.49
Void Ratio, e	2.966	2.734
Degree of Saturation	198.0	104.4

COMMENTS:

$$\text{Volume Solids} = \frac{W_s}{(G_s)(\text{Water Density})}$$

$$\text{Void Ratio} = \frac{V - V_s}{V_s}$$

$$\text{Degree of Saturation} = \frac{(w)(G_s)}{e}$$

Proj Name: LOWER FOX RIVER OU-1
Proj No.: X429316A
Sample: 1-RA-07-EC-11-DS-5-COMP.

k (cm/sec)	Max i
10^{-3} to 10^{-4}	2
10^{-4} to 10^{-5}	5
10^{-5} to 10^{-6}	10
10^{-6} to 10^{-7}	20
less than 10^{-7}	30

Hydraulic Gradient, I, Guidlines as per ASTM D5084, section 8.5.1

TEST CONDITIONS

Influent Burette Area a_{in} (cm^2)	Effluent Burette Area a_{out} (cm^2)	# ascend as burette empties? (Y or N)
1.00	1.00	y

Cell Pressure (psi)	Headwater Pressure (psi)	Tailwater Pressure (psi)	Driving Head (psi)	Hydraulic Gradient Max	Hydraulic Gradient Min
35.0	33.0	32.0	1.0	14.8	11.3

TEST DATA

Date/Time (M/D/YY H:MM)	Temp. °C	Elapsed Time, t (sec)	Influent Reading (cm)	Effluent Reading (cm)	Total Change (cm)	Inflow to Outflow Ratio	Hydraulic Head, h (cm)	k, Hydraulic Conductivity (cm/sec)	k_{20} corrected for temperature (cm/sec)
11/23/2007 8:00	21.0	0	0.2	22.8	0.0	0.00	92.9	0	0
11/24/2007 14:30	21.0	109800	3.5	19.7	-0.2	1.06	86.5	1.69E-07	1.65E-07
11/25/2007 7:00	21.0	59400	5.1	18.0	0.1	0.94	83.2	1.70E-07	1.66E-07
11/26/2007 7:00	21.0	86400	7.2	15.9	0.0	1.00	79.0	1.56E-07	1.52E-07
11/26/2007 16:00	21.0	32400	8.0	15.0	0.1	0.89	77.3	1.75E-07	1.71E-07
11/27/2007 7:00	21.0	54000	9.3	13.9	-0.2	1.18	74.9	1.52E-07	1.48E-07
11/28/2007 7:00	21.0	86400	11.1	11.8	0.3	0.86	71.0	1.61E-07	1.57E-07
						(0.75-1.25)		Final Value =	1.57E-07

$$k_{20} = \frac{(a_{in})(a_{out})L[\ln(h_{n-1}/h_n)]*R_T}{At(a_{in} + a_{out})}$$

Total Change = $(Eff_{n-1} - Eff_n) - (Inf_n - Inf_{n-1})$

"Hydraulic Head" incorporates the difference in head as well as the added driving head pressure.
"Total Change" is the difference between the Effluent change from t_0 to t_t and the Influent change from t_0 to t_t.

Notate temperature to the nearest half a degree. The correction calculation averages the two consecutive readings.
k is multiplied by the temperature correction, R_T, which is the ratio of the viscosity of water at test temperature to the viscosity of water at 20° C. Temperature range may be between 19° and 25° for formula calculation.
"Final Value" is the average of 4 consecutive readings of which none are less than or greater than 25% of their average. (50% of average if < 1 x 10^{-8})

Foth

Foth Infrastructure & Environment, LLC

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be complete accurately

Page: 1 of 1

COC Number: COC-106203

Company: Foth Infrastructure & Environment	Report To: Janis Kesy	Requested Due Date: See Sample Notes	Quote Reference:
Address: 2737 South Ridge Rd	Copy To:	*TAT:	Project Manager:
Green Bay, WI 54307	Invoice To:		Project #:
Phone: 920-497-2500 Fax: 920-496-6902	P.O.		Profile #:
Email Address: jkesy@foth.com	Project Name: Lower Fox River OU1	Regulatory Agency:	Sampling Team Members:
Site License No.:	Project Number: 07G007	State Location: WI	MCC2

Valid Matrix Codes

Matrix	Code
Soil	S
Sediment	SE
Solid	SO
Surface Water	SW
Drinking Water	DW
Wastewater	WW
Groundwater	GW
Hazardous Liquid	H
Air	A
Oil	O
Other	X

ITEM NUMBER	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G = Grab C = Composite	DATE COLLECTED MM/DD/YYYY	TIME COLLECTED (Military time)	# Containers	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Grain size distribution (N)	Triaxial shear (N)	Consolidation (N)	Hydraulic conductivity (N)	Atterberg limits (N)								REMARKS (← Filte)
1	1-RA-07-NC1-DS-06-Comp	SE	C	12/04/2007	1425	1	1							X	X	X	X	X								
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS	ITEM #	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION
						12-7-07	11:00	(STS)

SAMPLE CONDITION:

Temp in C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Sample Intact	Y / N

SAMPLE NOTES:

Contents in 1 large double bagged bag

Additional Comments:

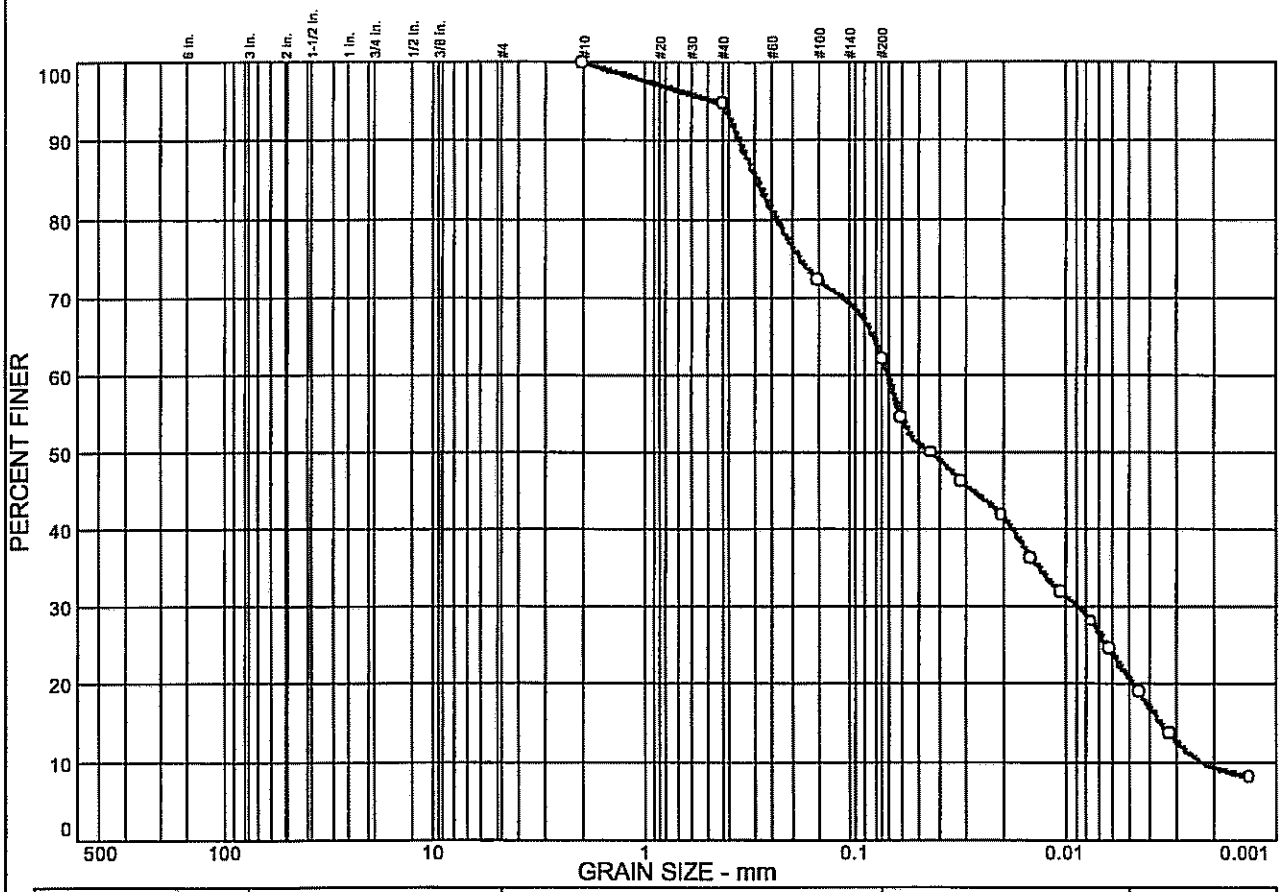
SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark Clardelli

SIGNATURE of SAMPLER

DATE Signed 12/5/07

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	38.0	41.3	20.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#40	94.8		
#100	72.3		
#200	62.0		

* (no specification provided)

Soil Description

DARK GRAY BROWN RIVER SEDIMENT

Atterberg Limits

PL= 86 LL= 155 PI= 69

Coefficients

D_{85}= 0.293 D_{60}= 0.0710 D_{50}= 0.0438
D_{30}= 0.0087 D_{15}= 0.0035 D_{10}= 0.0023
C_u= 31.50 C_c= 0.48

Classification

USCS= OH AASHTO=

Remarks

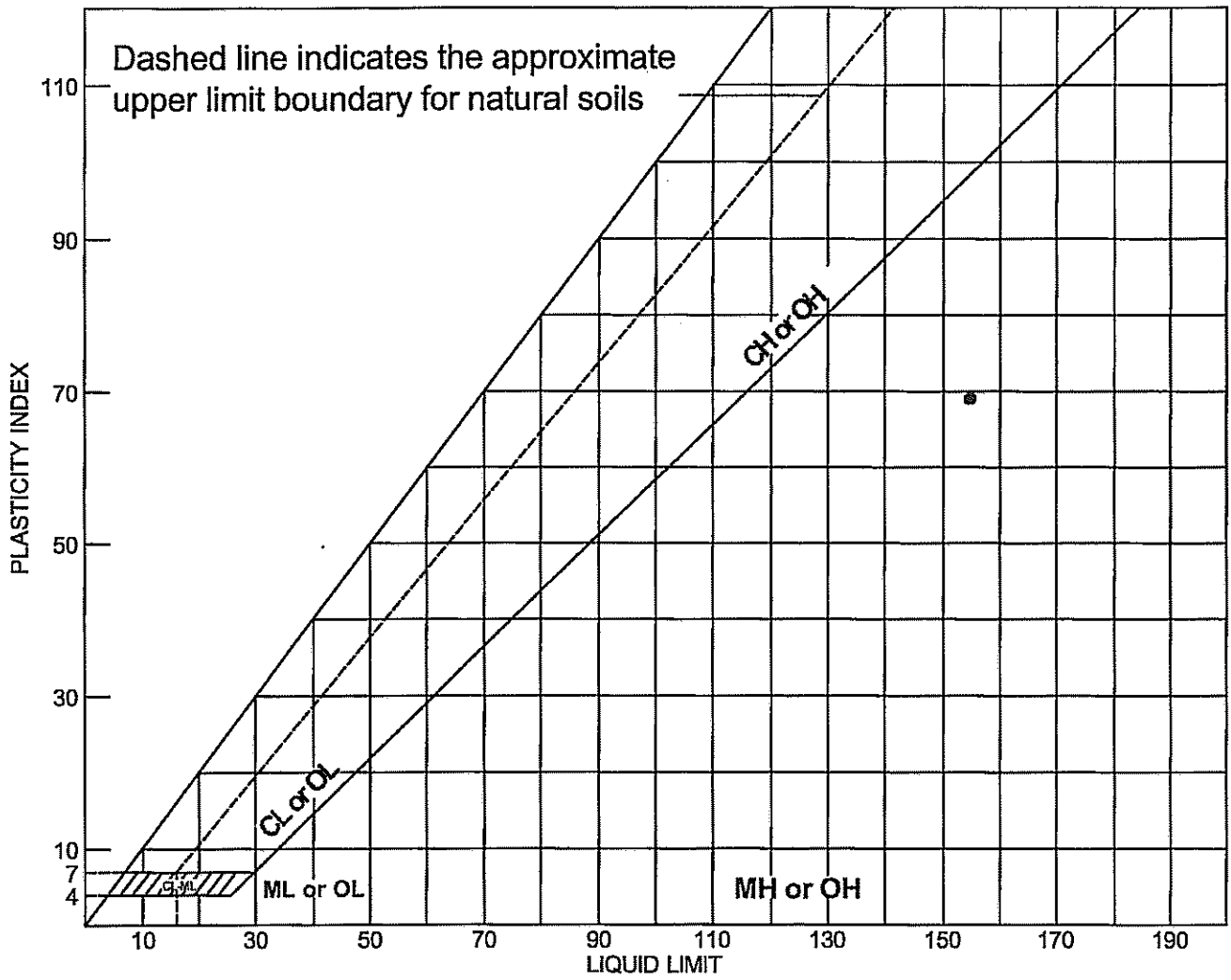
Sample No.: NCI-DS-06 **Source of Sample:** On-site Material **Date:** 12/21/07
Location: 2-RA-07-NCI-DS-06-COMP **Elev./Depth:** COMP

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Client: GW Partners LLC
Project: Fox River OU-1 20052 RA

Project No: 4-29316A **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



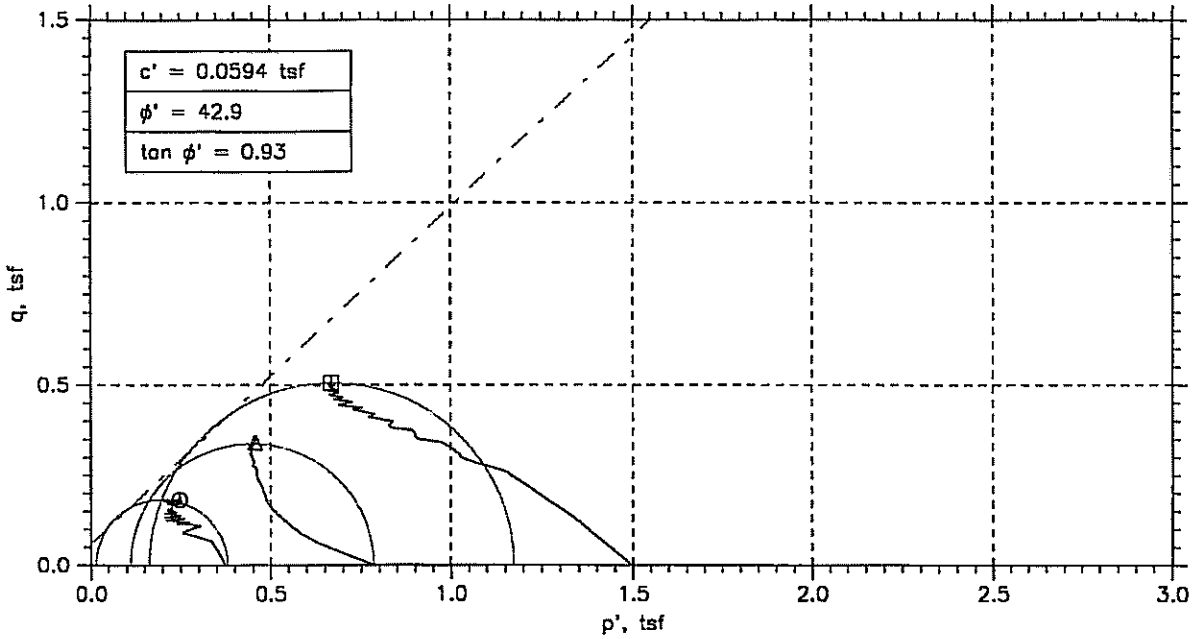
SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	On-site	NCI-DS-06	COMP	274.2	86	155	69	OH

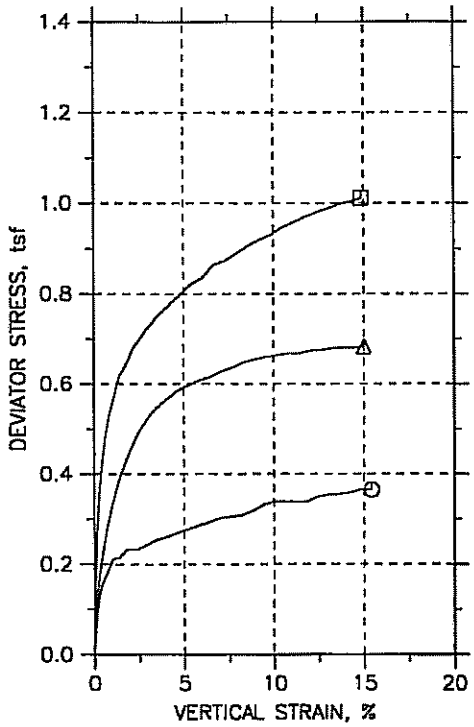
STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

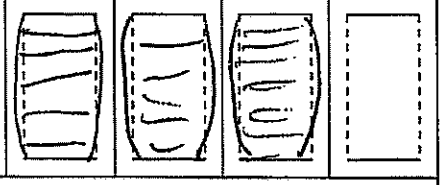
Client: GW Partners LLC
Project: Fox River OU-1 20052 RA

Project No.: 4-29316A **Figure**

TRIAXIAL COMPRESSION TEST REPORT





Symbol		⊙	△	⊡	
Test No.		DS06T1	DS06T2	DS06T3	
Initial	Diameter, in	2.7976	2.8386	2.8035	
	Height, in	5.4614	5.3882	5.2201	
	Water Content, %	178.55	201.02	237.51	
	Dry Density, pcf	28.22	25.86	24.23	
	Saturation, %	97.69	99.07	108.35	
	Void Ratio	4.7521	5.2759	5.6993	
Before Shear	Water Content, %	147.97	162.18	158.77	
	Dry Density, pcf	33.97	31.46	32.43	
	Saturation, %	101.81	101.39	103.07	
	Void Ratio	3.7786	4.1589	4.0051	
	Back Press., tsf	5.04	5.0402	5.04	
Minor Prin. Stress, tsf		0.3744	0.78456	1.4976	
Max. Dev. Stress, tsf		0.36559	0.68292	1.0107	
Time to Failure, min		196	196	188	
Strain Rate, %/min		0.082	0.0895	0.0916	
B-Value		---	---	---	
Estimated Specific Gravity		2.60	2.60	2.60	
Liquid Limit		0	0	0	
Plastic Limit		0	0	0	
Plasticity Index		0	0	0	
Failure Sketch					

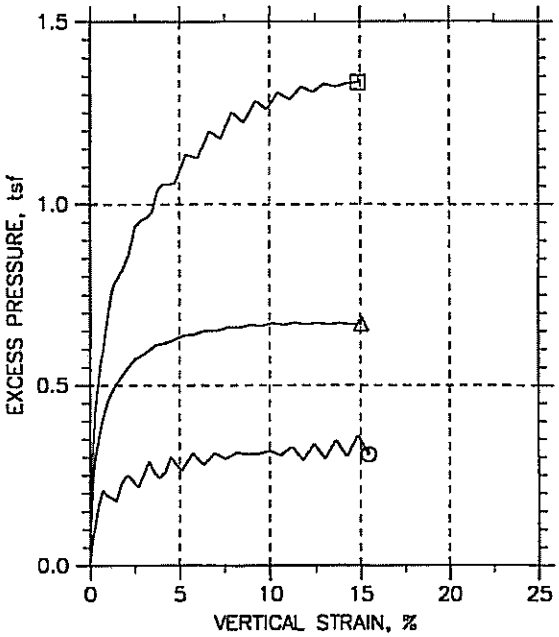
Project: FOX RIVER
Location:
Project No.: 29316-A
Boring No.: RA07NC1DS06
Sample Type: REMOLDED

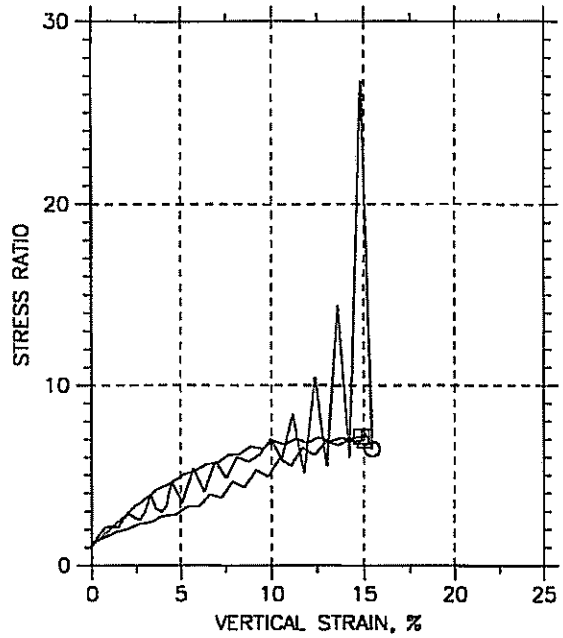
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - BROWN (OL) VEGETATION & SHELLS NOTED

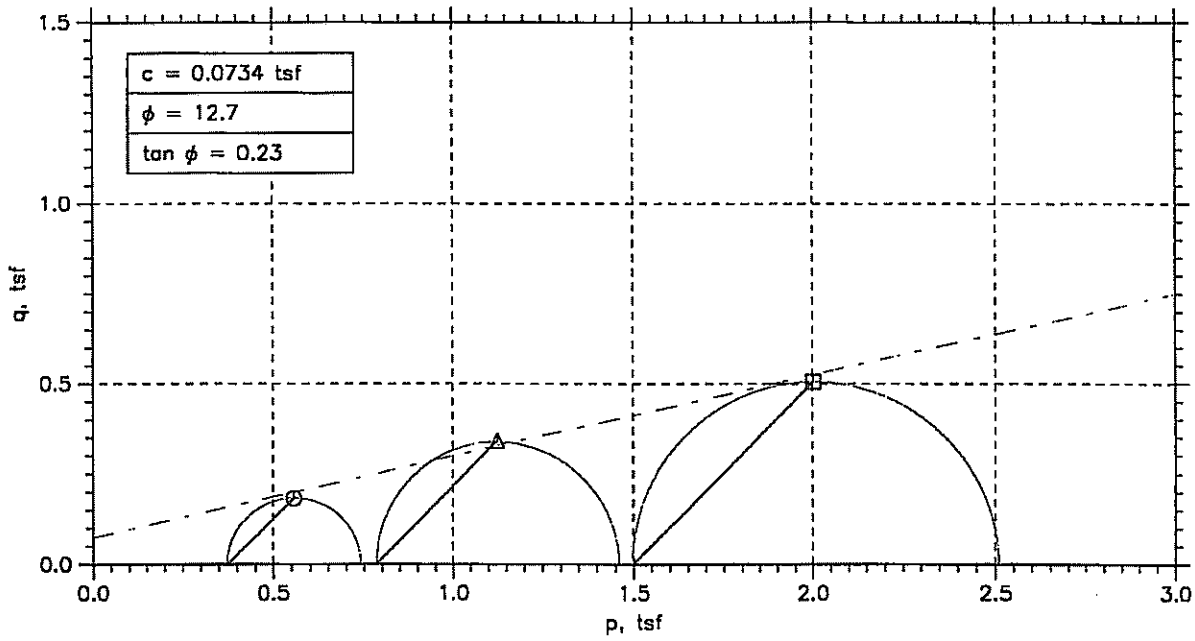
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Tue, 08-JAN-2008 10:10:02

TRIAXIAL COMPRESSION TEST REPORT







Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.: RA07NC1DS06	Tested By: MJS	Checked By: WPQ
Sample No.: RA07NC1DS06	Test Date: 12/24/07	Depth:
Test No.: DS06T1	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F-C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767		

Tue, 08-JAN-2008 10:10:24

TRIAXIAL TEST

Project: FOX . R
Boring No.: RA..NC1DS06
Sample No.: RA07NC1DS06
Test No.: DS06T1

Location:
Tested By: MJS
Test Date: 12/24/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - BROWN (OL) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.46 in
Specimen Area: 6.15 in^2
Specimen Volume: 33.57 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.1471	0	0	5.04	5.4144	5.4144
2	2.0014	0.14544	6.1561	7.8785	0.092145	5.112	5.4144	5.5065
3	4.0014	0.29427	6.1653	11.255	0.13144	5.1431	5.4144	5.5458
4	6.0014	0.44647	6.1747	13.292	0.15499	5.1899	5.4144	5.5694
5	8.0014	0.59868	6.1842	14.578	0.16973	5.2216	5.4144	5.5841
6	10.001	0.75088	6.1936	15.65	0.18193	5.2479	5.4144	5.5963
7	12.001	0.9014	6.2031	17.043	0.19782	5.238	5.4144	5.6122
8	14.001	1.0553	6.2127	18.222	0.21118	5.2315	5.4144	5.6256
9	16.001	1.2058	6.2222	18.383	0.21272	5.2268	5.4144	5.6271
10	18.001	1.358	6.2318	18.383	0.21239	5.2233	5.4144	5.6268
11	20.004	1.5068	6.2412	18.973	0.21887	5.2198	5.4144	5.6333
12	24.004	1.8079	6.2603	20.152	0.23177	5.2678	5.4144	5.6462
13	28.004	2.1038	6.2792	20.366	0.23353	5.2901	5.4144	5.6479
14	32.001	2.4049	6.2986	20.366	0.23281	5.2743	5.4144	5.6472
15	36.001	2.7076	6.3182	20.902	0.23819	5.2573	5.4144	5.6526
16	40.001	3.012	6.338	21.438	0.24354	5.2901	5.4144	5.6579
17	44.001	3.3181	6.3581	22.188	0.25126	5.3276	5.4144	5.6657
18	48.002	3.6259	6.3784	22.617	0.2553	5.2971	5.4144	5.6697
19	52.002	3.9269	6.3984	23.046	0.25933	5.2819	5.4144	5.6737
20	56.004	4.2279	6.4185	23.475	0.26333	5.2995	5.4144	5.6777
21	60.004	4.5273	6.4386	23.957	0.2679	5.3405	5.4144	5.6823
22	68	5.1277	6.4794	24.868	0.27634	5.3024	5.4144	5.6907
23	76.001	5.7348	6.5211	25.833	0.28522	5.3492	5.4144	5.6996
24	84.001	6.347	6.5637	26.69	0.29278	5.3194	5.4144	5.7072
25	92.001	6.9558	6.6067	27.655	0.30139	5.351	5.4144	5.7158
26	100	7.5596	6.6498	28.191	0.30523	5.3346	5.4144	5.7196
27	108	8.1684	6.6939	28.673	0.30841	5.3528	5.4144	5.7228
28	116	8.7823	6.739	29.799	0.31838	5.3469	5.4144	5.7328
29	124	9.386	6.7839	31.246	0.33163	5.3498	5.4144	5.746
30	132	9.9864	6.8291	32.104	0.33847	5.358	5.4144	5.7529
31	140	10.588	6.8751	32.372	0.33901	5.3451	5.4144	5.7534
32	148	11.204	6.9228	32.532	0.33835	5.3686	5.4144	5.7528
33	156	11.82	6.9711	32.747	0.33822	5.3317	5.4144	5.7526
34	164	12.427	7.0194	34.033	0.34909	5.3774	5.4144	5.7635
35	172	13.025	7.0677	34.783	0.35434	5.3364	5.4144	5.7687
36	180	13.633	7.1174	35.105	0.35512	5.3879	5.4144	5.7695
37	188	14.248	7.1685	35.694	0.35851	5.3422	5.4144	5.7729
38	196	14.855	7.2196	36.659	0.36559	5.4002	5.4144	5.78
39	204	15.459	7.2712	36.82	0.36459	5.3475	5.4144	5.779

TRIAXIAL TEST

Project: FOX : R
Boring No.: RA..NC1DS06
Sample No.: RA07NC1DS06
Test No.: DS06T1

Location:
Tested By: MJS
Test Date: 12/24/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - BROWN (OL) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.46 in
Specimen Area: 6.15 in^2
Specimen Volume: 33.57 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.4144	5.4144	0	0.000	0.3744	0.3744	1.000	0.3744	0
2	0.15	5.5065	5.4144	0.072042	0.782	0.39451	0.30236	1.305	0.34844	0.046072
3	0.29	5.5458	5.4144	0.10308	0.784	0.40276	0.27132	1.484	0.33704	0.06572
4	0.45	5.5694	5.4144	0.14994	0.967	0.37945	0.22446	1.690	0.30196	0.077493
5	0.60	5.5841	5.4144	0.18157	1.070	0.36256	0.19284	1.880	0.2777	0.084863
6	0.75	5.5963	5.4144	0.20793	1.143	0.34841	0.16648	2.093	0.25744	0.090963
7	0.90	5.6122	5.4144	0.19797	1.001	0.37426	0.17644	2.121	0.27535	0.098912
8	1.06	5.6256	5.4144	0.19153	0.907	0.39406	0.18288	2.155	0.28847	0.10559
9	1.21	5.6271	5.4144	0.18684	0.878	0.40029	0.18756	2.134	0.29393	0.10636
10	1.36	5.6268	5.4144	0.18333	0.863	0.40347	0.19108	2.112	0.29728	0.1062
11	1.51	5.6333	5.4144	0.17981	0.822	0.41347	0.19459	2.125	0.30403	0.10944
12	1.81	5.6462	5.4144	0.22784	0.983	0.37833	0.14657	2.581	0.26245	0.11588
13	2.10	5.6479	5.4144	0.2501	1.071	0.35783	0.12431	2.879	0.24107	0.11676
14	2.40	5.6472	5.4144	0.23428	1.006	0.37293	0.14012	2.661	0.25653	0.1164
15	2.71	5.6526	5.4144	0.2173	0.912	0.3953	0.15711	2.516	0.2762	0.1191
16	3.01	5.6579	5.4144	0.2501	1.027	0.36785	0.12431	2.959	0.24608	0.12177
17	3.32	5.6657	5.4144	0.28758	1.145	0.33809	0.086823	3.894	0.21246	0.12563
18	3.63	5.6697	5.4144	0.25712	1.007	0.37259	0.11728	3.177	0.24493	0.12765
19	3.93	5.6737	5.4144	0.2419	0.933	0.39184	0.13251	2.957	0.26217	0.12967
20	4.23	5.6777	5.4144	0.25947	0.985	0.37827	0.11494	3.291	0.2466	0.13166
21	4.53	5.6823	5.4144	0.30047	1.122	0.34184	0.073938	4.623	0.20789	0.13395
22	5.13	5.6907	5.4144	0.2624	0.950	0.38835	0.11201	3.467	0.25018	0.13817
23	5.73	5.6996	5.4144	0.30925	1.084	0.35038	0.065152	5.378	0.20776	0.14261
24	6.35	5.7072	5.4144	0.27938	0.954	0.3878	0.095023	4.081	0.24141	0.14639
25	6.96	5.7158	5.4144	0.31101	1.032	0.36478	0.063395	5.754	0.21409	0.15069
26	7.56	5.7196	5.4144	0.29461	0.965	0.38503	0.079795	4.825	0.23241	0.15262
27	8.17	5.7228	5.4144	0.31277	1.014	0.37005	0.061638	6.004	0.21584	0.15421
28	8.78	5.7328	5.4144	0.30691	0.964	0.38587	0.067495	5.717	0.22668	0.15919
29	9.39	5.746	5.4144	0.30984	0.934	0.39619	0.064567	6.136	0.23038	0.16581
30	9.99	5.7529	5.4144	0.31804	0.940	0.39484	0.056367	7.005	0.2256	0.16924
31	10.59	5.7534	5.4144	0.30515	0.900	0.40827	0.069252	5.895	0.23876	0.16951
32	11.20	5.7528	5.4144	0.32858	0.971	0.38418	0.045824	8.384	0.215	0.16918
33	11.82	5.7526	5.4144	0.29168	0.862	0.42094	0.082724	5.089	0.25183	0.16911
34	12.43	5.7635	5.4144	0.33737	0.966	0.38612	0.037039	10.425	0.21158	0.17454
35	13.03	5.7687	5.4144	0.29637	0.836	0.43238	0.078038	5.541	0.25521	0.17717
36	13.63	5.7695	5.4144	0.34791	0.980	0.38162	0.026496	14.403	0.20406	0.17756
37	14.25	5.7729	5.4144	0.30222	0.843	0.43069	0.072181	5.967	0.25144	0.17926
38	14.86	5.78	5.4144	0.36021	0.985	0.37979	0.014196	26.753	0.19699	0.1828
39	15.46	5.779	5.4144	0.3075	0.843	0.4315	0.06691	6.449	0.24921	0.1823

TRIAXIAL TEST

Project: FOX [illegible] R
Boring No.: RA[illegible]NC1DS06
Sample No.: RA07NC1DS06
Test No.: DS06T2

Location:
Tested By: MS
Test Date: 1/2/08
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - BROWN (OL) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.39 in
Specimen Area: 6.33 in^2
Specimen Volume: 34.10 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.3284	0.052618	0.00059865	5.0402	5.8248	5.8254
2	2.0027	0.1424	6.3374	10.471	0.11896	5.248	5.8248	5.9438
3	4.0026	0.29667	6.3472	15.312	0.17369	5.3253	5.8248	5.9985
4	6.0026	0.4628	6.3578	19.153	0.2169	5.3762	5.8248	6.0417
5	8.0026	0.60689	6.367	22.363	0.25288	5.4137	5.8248	6.0777
6	10.003	0.76285	6.377	25.151	0.28397	5.4465	5.8248	6.1088
7	12.003	0.91712	6.387	27.677	0.312	5.4751	5.8248	6.1368
8	14.003	1.0714	6.3969	29.992	0.33758	5.4991	5.8248	6.1624
9	16.001	1.2273	6.407	32.15	0.36129	5.5167	5.8248	6.1861
10	18.002	1.3816	6.417	34.202	0.38375	5.5319	5.8248	6.2085
11	20.002	1.5376	6.4272	35.991	0.40318	5.5454	5.8248	6.228
12	24.002	1.8461	6.4474	39.148	0.43718	5.5676	5.8248	6.262
13	28.002	2.158	6.468	41.884	0.46624	5.591	5.8248	6.291
14	32.003	2.4666	6.4884	44.357	0.49222	5.6098	5.8248	6.317
15	36.003	2.7734	6.5089	46.251	0.51162	5.6197	5.8248	6.3364
16	40.003	3.0802	6.5295	47.988	0.52915	5.6285	5.8248	6.354
17	44.003	3.3888	6.5504	49.408	0.54309	5.6396	5.8248	6.3679
18	48.002	3.6956	6.5712	50.619	0.55462	5.6519	5.8248	6.3794
19	52.002	4.0075	6.5926	51.776	0.56547	5.6554	5.8248	6.3903
20	56.002	4.3144	6.6137	52.671	0.5734	5.6589	5.8248	6.3982
21	60.002	4.6229	6.6351	53.828	0.58411	5.6648	5.8248	6.4089
22	68.003	5.24	6.6783	55.46	0.59792	5.6771	5.8248	6.4227
23	76.003	5.8519	6.7217	56.775	0.60815	5.6812	5.8248	6.4329
24	84.003	6.4639	6.7657	57.933	0.61651	5.6911	5.8248	6.4413
25	92.001	7.0793	6.8105	59.459	0.62859	5.6905	5.8248	6.4534
26	100	7.693	6.8558	60.669	0.63715	5.6999	5.8248	6.4619
27	108	8.3066	6.9017	62.142	0.64828	5.6987	5.8248	6.4731
28	116	8.9152	6.9478	63.194	0.65488	5.7075	5.8248	6.4797
29	124	9.5255	6.9947	64.089	0.6597	5.704	5.8248	6.4845
30	132	10.137	7.0423	64.931	0.66385	5.7122	5.8248	6.4886
31	140	10.76	7.0914	65.773	0.6678	5.7075	5.8248	6.4926
32	148	11.383	7.1413	66.194	0.66738	5.7139	5.8248	6.4922
33	156	11.987	7.1903	67.246	0.67337	5.7087	5.8248	6.4982
34	164	12.597	7.2405	67.93	0.6755	5.7139	5.8248	6.5003
35	172	13.211	7.2917	68.772	0.67907	5.7093	5.8248	6.5039
36	180	13.828	7.3439	69.456	0.68095	5.7128	5.8248	6.5058
37	188	14.445	7.3969	69.877	0.68017	5.7087	5.8248	6.505
38	196	15.059	7.4503	70.666	0.68292	5.7099	5.8248	6.5077

TRIAXIAL TEST

Project: FOX I [illegible]3
Boring No.: RA[illegible]C1DS06
Sample No.: RA07NC1DS06
Test No.: DS06T2

Location:
Tested By: MS
Test Date: 1/2/08
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - BROWN (OL) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.39 in
Specimen Area: 6.33 in^2
Specimen Volume: 34.10 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	5.8254	5.8248	0	0.000	0.78516	0.78456	1.001	0.78486	0.00029933
2	0.14	5.9438	5.8248	0.20779	1.756	0.69573	0.57677	1.206	0.63625	0.059481
3	0.30	5.9985	5.8248	0.28505	1.647	0.6732	0.49951	1.348	0.58635	0.086846
4	0.46	6.0417	5.8248	0.33598	1.553	0.66549	0.44858	1.484	0.55703	0.10845
5	0.61	6.0777	5.8248	0.37344	1.480	0.66401	0.41112	1.615	0.53757	0.12644
6	0.76	6.1088	5.8248	0.40622	1.433	0.66232	0.37834	1.751	0.52033	0.14199
7	0.92	6.1368	5.8248	0.4349	1.397	0.66167	0.34966	1.892	0.50567	0.156
8	1.07	6.1624	5.8248	0.4589	1.362	0.66324	0.32567	2.037	0.49445	0.16879
9	1.23	6.1861	5.8248	0.47646	1.321	0.66939	0.30811	2.173	0.48875	0.18064
10	1.38	6.2085	5.8248	0.49167	1.283	0.67664	0.29289	2.310	0.48476	0.19187
11	1.54	6.228	5.8248	0.50514	1.255	0.68261	0.27942	2.443	0.48102	0.20159
12	1.85	6.262	5.8248	0.52738	1.208	0.69436	0.25718	2.700	0.47577	0.21859
13	2.16	6.291	5.8248	0.55079	1.183	0.70001	0.23377	2.994	0.46689	0.23312
14	2.47	6.317	5.8248	0.56952	1.158	0.70726	0.21504	3.289	0.46115	0.24611
15	2.77	6.3364	5.8248	0.57947	1.134	0.71671	0.20509	3.495	0.4609	0.25581
16	3.08	6.354	5.8248	0.58825	1.113	0.72546	0.19631	3.696	0.46089	0.26458
17	3.39	6.3679	5.8248	0.59937	1.105	0.72827	0.18519	3.933	0.45673	0.27154
18	3.70	6.3794	5.8248	0.61167	1.104	0.72752	0.1729	4.208	0.45021	0.27731
19	4.01	6.3903	5.8248	0.61518	1.089	0.73485	0.16938	4.338	0.45212	0.28273
20	4.31	6.3982	5.8248	0.61869	1.080	0.73927	0.16587	4.457	0.45257	0.2867
21	4.62	6.4089	5.8248	0.62454	1.070	0.74413	0.16002	4.650	0.45207	0.29206
22	5.24	6.4227	5.8248	0.63683	1.066	0.74564	0.14773	5.047	0.44669	0.29896
23	5.85	6.4329	5.8248	0.64093	1.055	0.75178	0.14363	5.234	0.4477	0.30407
24	6.46	6.4413	5.8248	0.65088	1.057	0.75019	0.13368	5.612	0.44194	0.30826
25	7.08	6.4534	5.8248	0.6503	1.036	0.76285	0.13426	5.682	0.44856	0.31429
26	7.69	6.4619	5.8248	0.65966	1.036	0.76205	0.1249	6.101	0.44347	0.31857
27	8.31	6.4731	5.8248	0.65849	1.017	0.77435	0.12607	6.142	0.45021	0.32414
28	8.92	6.4797	5.8248	0.66727	1.020	0.77217	0.11729	6.583	0.44473	0.32744
29	9.53	6.4845	5.8248	0.66376	1.007	0.78051	0.1208	6.461	0.45065	0.32985
30	10.14	6.4886	5.8248	0.67195	1.013	0.77646	0.11261	6.895	0.44453	0.33192
31	10.76	6.4926	5.8248	0.66727	1.000	0.78509	0.11729	6.694	0.45119	0.3339
32	11.38	6.4922	5.8248	0.67371	1.010	0.77823	0.11085	7.020	0.44454	0.33369
33	11.99	6.4982	5.8248	0.66844	0.994	0.78949	0.11612	6.799	0.4528	0.33668
34	12.60	6.5003	5.8248	0.67371	0.998	0.78635	0.11085	7.094	0.4486	0.33775
35	13.21	6.5039	5.8248	0.66903	0.986	0.79461	0.11553	6.878	0.45507	0.33954
36	13.83	6.5058	5.8248	0.67254	0.989	0.79297	0.11202	7.079	0.4525	0.34048
37	14.45	6.505	5.8248	0.66844	0.984	0.79629	0.11612	6.858	0.45621	0.34009
38	15.06	6.5077	5.8248	0.66961	0.981	0.79787	0.11495	6.941	0.45641	0.34146

TRIAXIAL TEST

Project: FOX [illegible]
Boring No.: RA07NC1DS06
Sample No.: RA07NC1DS06
Test No.: DS06T3

Location:
Tested By: MJS
Test Date: 1/3/08
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - BROWN (OL) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.22 in
Specimen Area: 6.17 in^2
Specimen Volume: 32.22 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

Plastic Limit: 0

Estimated Specific Gravity: 2.60

	Time min	Vertical Strain %	Corrected Area in^2	Deviator Load lb	Deviator Stress tsf	Pore Pressure tsf	Horizontal Stress tsf	Vertical Stress tsf
1	0	0	6.1731	0	0	5.04	6.5376	6.5376
2	2.0001	0.15217	6.1825	23.475	0.27338	5.341	6.5376	6.811
3	4.0001	0.31141	6.1924	32.05	0.37265	5.4635	6.5376	6.9103
4	6.0001	0.46888	6.2022	37.785	0.43863	5.5425	6.5376	6.9762
5	8.0001	0.62989	6.2122	41.751	0.48389	5.5988	6.5376	7.0215
6	10	0.79268	6.2224	44.859	0.51907	5.6421	6.5376	7.0567
7	12	0.95192	6.2324	47.325	0.54672	5.7018	6.5376	7.0843
8	14	1.1112	6.2425	49.361	0.56933	5.7546	6.5376	7.1069
9	16	1.2704	6.2525	51.719	0.59557	5.8026	6.5376	7.1332
10	18	1.4296	6.2626	53.81	0.61864	5.8243	6.5376	7.1562
11	20	1.5854	6.2726	54.721	0.62812	5.8366	6.5376	7.1657
12	24	1.9003	6.2927	57.24	0.65493	5.8653	6.5376	7.1925
13	28	2.2135	6.3128	59.812	0.68218	5.9057	6.5376	7.2198
14	32	2.5284	6.3332	61.474	0.69887	5.976	6.5376	7.2365
15	36.002	2.8487	6.3541	63.35	0.71783	5.9953	6.5376	7.2554
16	40.004	3.1707	6.3753	64.797	0.73179	6.0029	6.5376	7.2694
17	44.004	3.491	6.3964	66.512	0.74868	6.0187	6.5376	7.2863
18	48.004	3.8094	6.4176	67.852	0.76124	6.0796	6.5376	7.2988
19	52.004	4.1262	6.4388	69.192	0.77372	6.0954	6.5376	7.3113
20	56.004	4.4429	6.4601	70.424	0.7849	6.0954	6.5376	7.3225
21	60.004	4.7578	6.4815	71.764	0.7972	6.0978	6.5376	7.3348
22	68.003	5.3895	6.5248	74.337	0.8203	6.1751	6.5376	7.3579
23	76	6.0265	6.569	76.32	0.83651	6.1663	6.5376	7.3741
24	84	6.6652	6.6139	79.482	0.86525	6.2401	6.5376	7.4028
25	92.001	7.2969	6.659	80.768	0.8733	6.2196	6.5376	7.4109
26	100	7.9285	6.7047	82.858	0.88979	6.2922	6.5376	7.4274
27	108	8.5637	6.7513	85.002	0.90652	6.2641	6.5376	7.4441
28	116	9.206	6.799	86.932	0.92058	6.3221	6.5376	7.4582
29	124	9.8448	6.8472	88.486	0.93045	6.2998	6.5376	7.468
30	132	10.476	6.8955	90.576	0.94576	6.3455	6.5376	7.4834
31	140	11.108	6.9445	92.345	0.95742	6.3262	6.5376	7.495
32	148	11.747	6.9948	94.167	0.9693	6.3619	6.5376	7.5069
33	156	12.38	7.0453	95.828	0.97932	6.3467	6.5376	7.5169
34	164	13.014	7.0967	97.329	0.98746	6.3695	6.5376	7.5251
35	172	13.642	7.1483	99.044	0.99761	6.3613	6.5376	7.5352
36	180	14.27	7.2006	100.28	1.0027	6.3707	6.5376	7.5403
37	188	14.9	7.2539	101.83	1.0107	6.3731	6.5376	7.5483

TRIAXIAL TEST

Project: FOX [illegible]
Boring No.: RA07NC1DS06
Sample No.: RA07NC1DS06
Test No.: DS06T3

Location:
Tested By: MJS
Test Date: 1/3/08
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F-C SAND - BROWN (OL) VEGETATION & SHELLS NOTED
Remarks: FAILURE CRITERIA = MAXIMUM EFFECTIVE STRESS RATIO TEST PERFORMED AS PER ASTM D 4767

Specimen Height: 5.22 in
Specimen Area: 6.17 in^2
Specimen Volume: 32.22 in^3

Piston Area: 0.00 in^2
Piston Friction: 0.00 lb
Piston Weight: 0.00 lb

Filter Strip Correction: 0.00 tsf
Membrane Correction: 0.00 lb/in
Correction Type: Uniform

Liquid Limit: 0

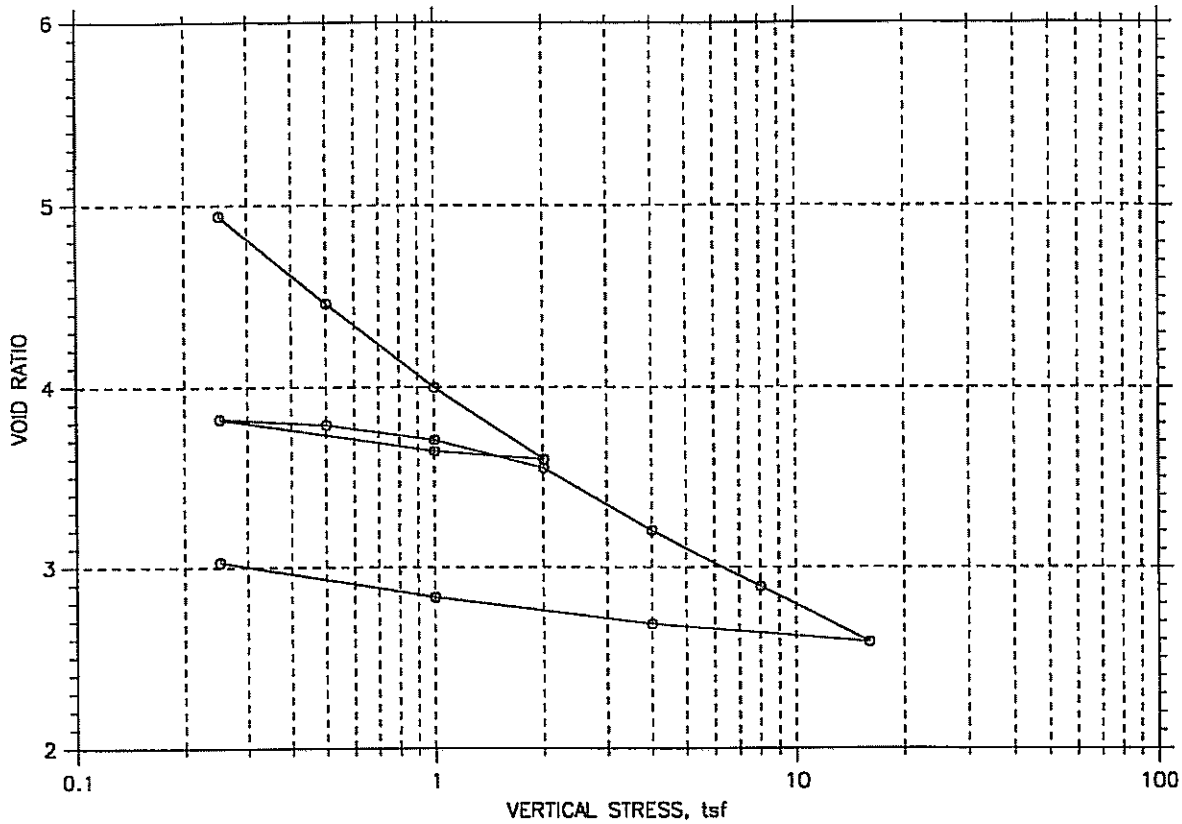
Plastic Limit: 0

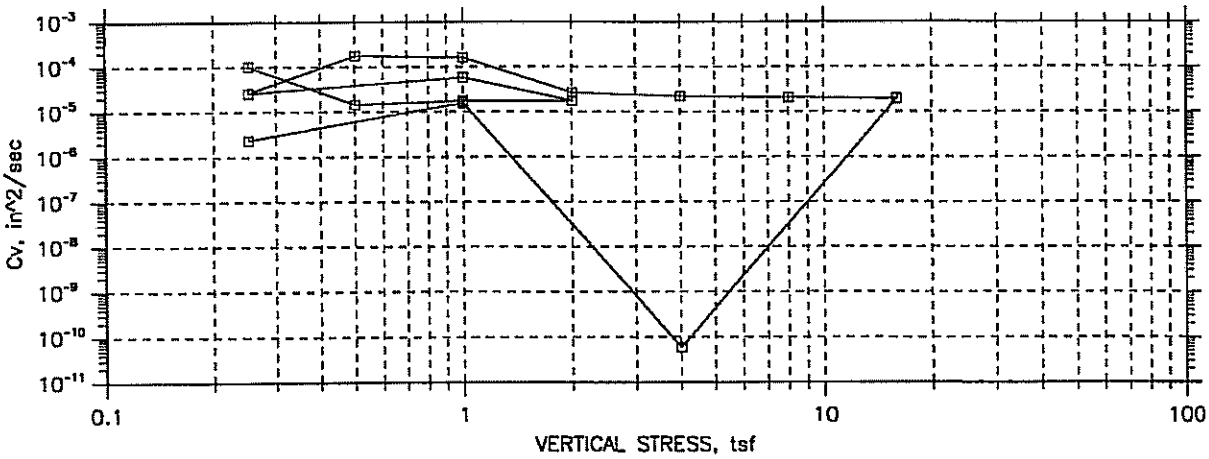
Estimated Specific Gravity: 2.60

	Vertical Strain %	Total Vertical Stress tsf	Total Horizontal Stress tsf	Excess Pore Pressure tsf	A Parameter	Effective Vertical Stress tsf	Effective Horizontal Stress tsf	Stress Ratio	Effective p tsf	q tsf
1	0.00	6.5376	6.5376	0	0.000	1.4976	1.4976	1.000	1.4976	0
2	0.15	6.811	6.5376	0.30105	1.101	1.4699	1.1966	1.228	1.3332	0.13669
3	0.31	6.9103	6.5376	0.42347	1.136	1.4468	1.0741	1.347	1.2605	0.18633
4	0.47	6.9762	6.5376	0.50254	1.146	1.4337	0.99507	1.441	1.2144	0.21932
5	0.63	7.0215	6.5376	0.55876	1.155	1.4227	0.93884	1.515	1.1808	0.24195
6	0.79	7.0567	6.5376	0.60211	1.160	1.4146	0.8955	1.580	1.155	0.25953
7	0.95	7.0843	6.5376	0.66185	1.211	1.3825	0.83576	1.654	1.1091	0.27336
8	1.11	7.1069	6.5376	0.71456	1.255	1.3524	0.78304	1.727	1.0677	0.28466
9	1.27	7.1332	6.5376	0.76259	1.280	1.3306	0.73502	1.810	1.0328	0.29778
10	1.43	7.1562	6.5376	0.78426	1.268	1.332	0.71335	1.867	1.0227	0.30932
11	1.59	7.1657	6.5376	0.79656	1.268	1.3292	0.70105	1.896	1.0151	0.31406
12	1.90	7.1925	6.5376	0.82526	1.260	1.3273	0.67235	1.974	0.99981	0.32746
13	2.21	7.2198	6.5376	0.86567	1.269	1.3141	0.63193	2.080	0.97302	0.34109
14	2.53	7.2365	6.5376	0.93596	1.339	1.2605	0.56165	2.244	0.91108	0.34943
15	2.85	7.2554	6.5376	0.95529	1.331	1.2601	0.54232	2.324	0.90123	0.35891
16	3.17	7.2694	6.5376	0.9629	1.316	1.2665	0.53471	2.369	0.9006	0.3659
17	3.49	7.2863	6.5376	0.97871	1.307	1.2676	0.51889	2.443	0.89323	0.37434
18	3.81	7.2988	6.5376	1.0396	1.366	1.2192	0.45798	2.662	0.8386	0.38062
19	4.13	7.3113	6.5376	1.0554	1.364	1.2159	0.44216	2.750	0.82902	0.38686
20	4.44	7.3225	6.5376	1.0554	1.345	1.2271	0.44216	2.775	0.83461	0.39245
21	4.76	7.3348	6.5376	1.0578	1.327	1.237	0.43982	2.813	0.83842	0.3986
22	5.39	7.3579	6.5376	1.1351	1.384	1.1828	0.36251	3.263	0.77266	0.41015
23	6.03	7.3741	6.5376	1.1263	1.346	1.2078	0.37129	3.253	0.78955	0.41825
24	6.67	7.4028	6.5376	1.2001	1.387	1.1627	0.29749	3.908	0.73012	0.43262
25	7.30	7.4109	6.5376	1.1796	1.351	1.1913	0.31799	3.746	0.75464	0.43665
26	7.93	7.4274	6.5376	1.2522	1.407	1.1352	0.24537	4.626	0.69026	0.4449
27	8.56	7.4441	6.5376	1.2241	1.350	1.18	0.27348	4.315	0.72674	0.45326
28	9.21	7.4582	6.5376	1.2821	1.393	1.1361	0.2155	5.272	0.67579	0.46029
29	9.84	7.468	6.5376	1.2599	1.354	1.1682	0.23775	4.914	0.70298	0.46522
30	10.48	7.4834	6.5376	1.3055	1.380	1.1378	0.19207	5.924	0.66495	0.47288
31	11.11	7.495	6.5376	1.2862	1.343	1.1688	0.2114	5.529	0.69011	0.47871
32	11.75	7.5069	6.5376	1.3219	1.364	1.145	0.17567	6.518	0.66032	0.48465
33	12.38	7.5169	6.5376	1.3067	1.334	1.1702	0.1909	6.130	0.68056	0.48966
34	13.01	7.5251	6.5376	1.3296	1.346	1.1555	0.16805	6.876	0.66179	0.49373
35	13.64	7.5352	6.5376	1.3214	1.325	1.1739	0.17625	6.660	0.67506	0.4988
36	14.27	7.5403	6.5376	1.3307	1.327	1.1696	0.16688	7.008	0.66822	0.50134
37	14.90	7.5483	6.5376	1.3331	1.319	1.1753	0.16454	7.143	0.66991	0.50537

CONSOLIDATION TEST DATA

SUMMARY REPORT





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: 07-NC1DS06
Test No.: 17S6

Location:
Tested By: MJS
Test Date: 12/14/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435

Estimated Specific Gravity: 2.60
Initial Void Ratio: 7.65
Final Void Ratio: 3.03

Liquid Limit: 0
Plastic Limit: 0
Plasticity Index: 0

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	X-5	RING	RING	RING
Wt. Container + Wet Soil, gm	184.12	145.86	114.93	114.93
Wt. Container + Dry Soil, gm	80.58	93.07	93.07	93.07
Wt. Container, gm	44.33	74.94	74.94	74.94
Wt. Dry Soil, gm	36.25	18.13	18.13	18.13
Water Content, %	285.63	291.17	120.57	120.57
Void Ratio	---	7.65	3.03	---
Degree of Saturation, %	---	98.94	103.54	---
Dry Unit Weight, pcf	---	18.761	40.3	---

CONSOLIDATION TEST DATA

Project: FOX RIVER
Boring No.:
Sample No.: 07-NC1DS06
Test No.: 17S6

Location:
Tested By: MJS
Test Date: 12/14/07
Sample Type: REMOLDED

Project No.: 29316-A
Checked By: WPQ
Depth:
Elevation:

Soil Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435

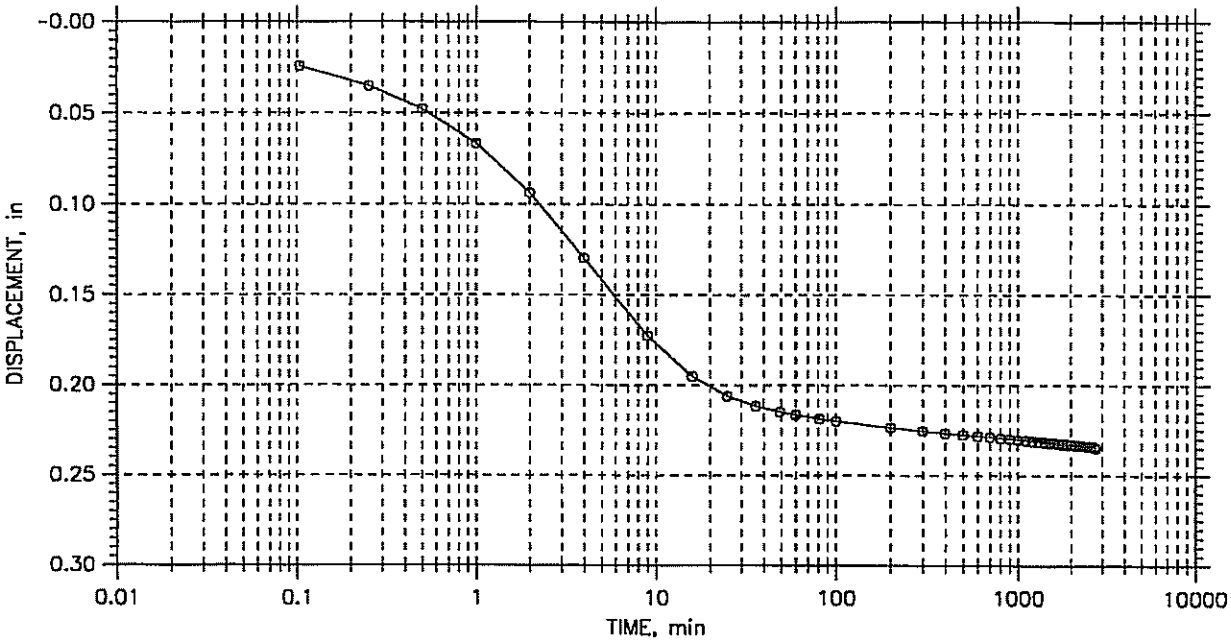
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.25	0.2349	4.942	31.33	2.9	3.5	1.15e-004	9.32e-005	1.03e-004
2	0.5	0.2766	4.461	36.88	19.2	8.6	1.05e-005	2.34e-005	1.45e-005
3	1	0.3168	3.997	42.24	13.5	5.7	1.25e-005	2.97e-005	1.76e-005
4	2	0.3513	3.599	46.84	12.8	3.4	1.11e-005	4.14e-005	1.75e-005
5	1	0.3474	3.644	46.32	3.9	0.7	3.42e-005	1.93e-004	5.82e-005
6	0.25	0.3321	3.821	44.28	7.7	2.9	1.80e-005	4.73e-005	2.61e-005
7	0.5	0.3348	3.789	44.64	0.9	0.7	1.50e-004	2.19e-004	1.78e-004
8	1	0.342	3.706	45.60	0.9	0.8	1.48e-004	1.80e-004	1.62e-004
9	2	0.3556	3.550	47.41	8.6	1.3	1.53e-005	9.81e-005	2.65e-005
10	4	0.3858	3.201	51.44	7.6	3.1	1.55e-005	3.81e-005	2.20e-005
11	8	0.4128	2.890	55.04	7.0	2.8	1.45e-005	3.59e-005	2.06e-005
12	16	0.4393	2.585	58.57	7.6	1.3	1.14e-005	6.79e-005	1.95e-005
13	4	0.4307	2.684	57.42	0.2	2787585.3	3.42e-004	2.93e-011	5.85e-011
14	1	0.4176	2.834	55.68	8.6	2.5	1.02e-005	3.55e-005	1.58e-005
15	0.25	0.4009	3.028	53.45	56.0	24.6	1.70e-006	3.89e-006	2.37e-006

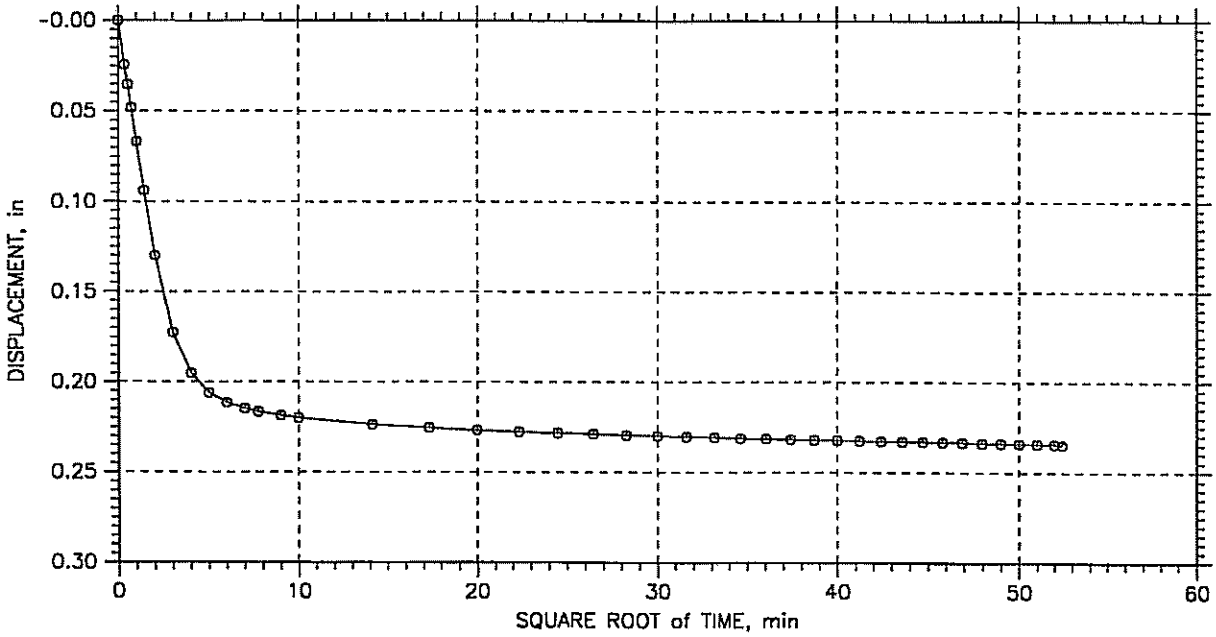
CONSOLIDATION TEST DATA

TIME CURVES

Step: 1 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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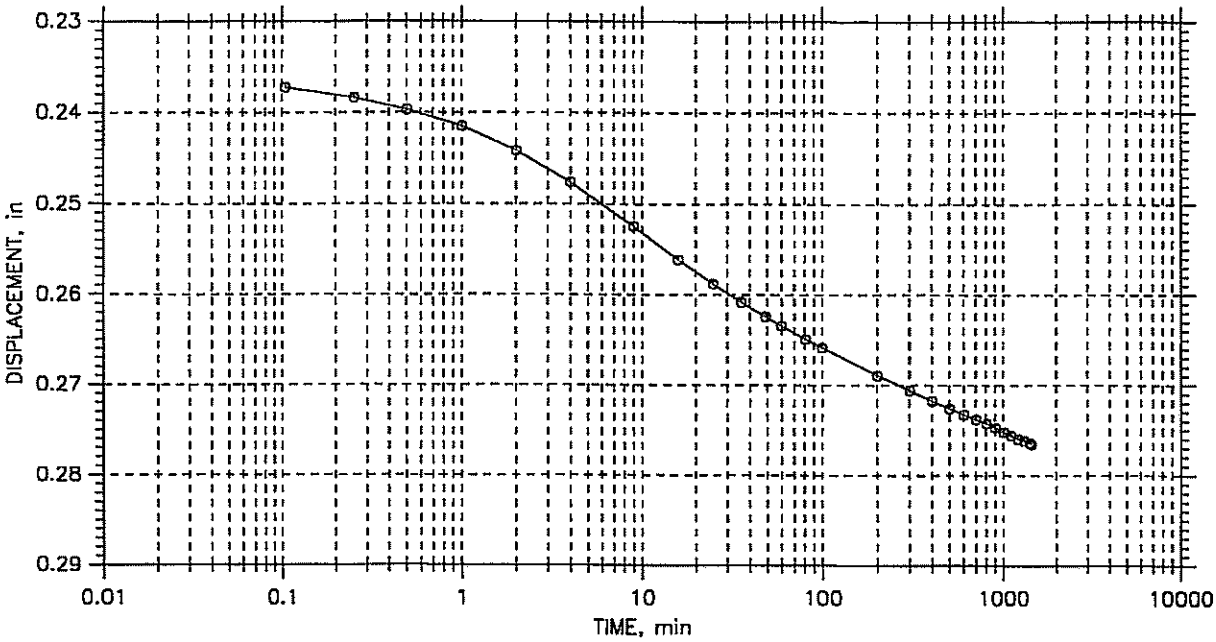
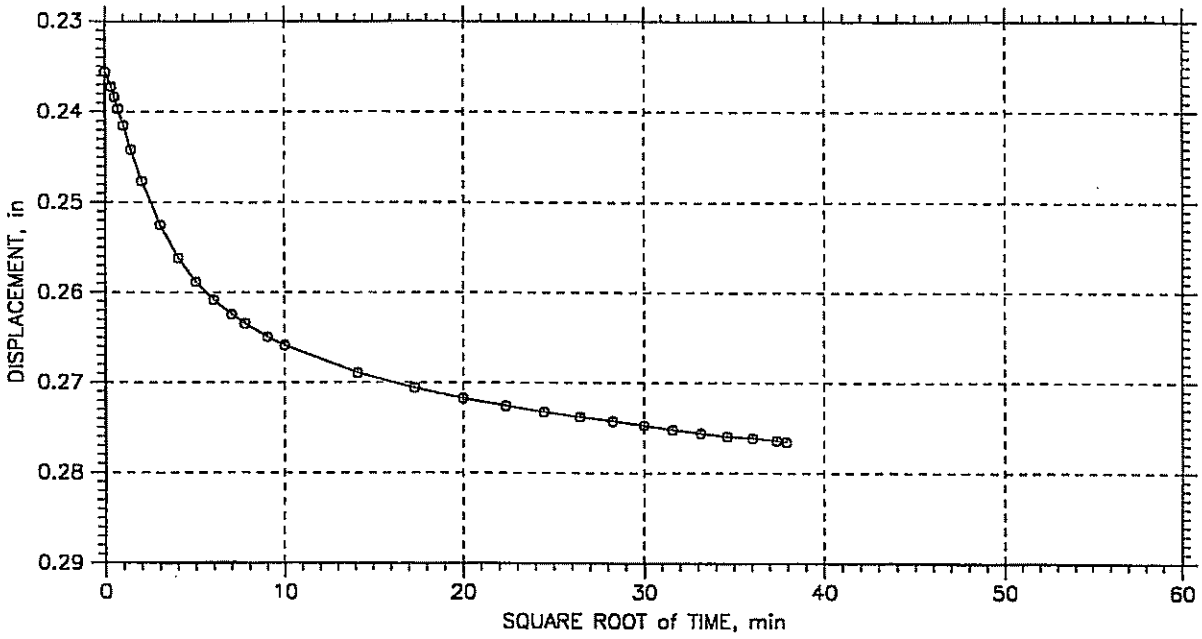
CONSOLIDATION TEST DATA

TIME CURVES

Step: 2 of 15

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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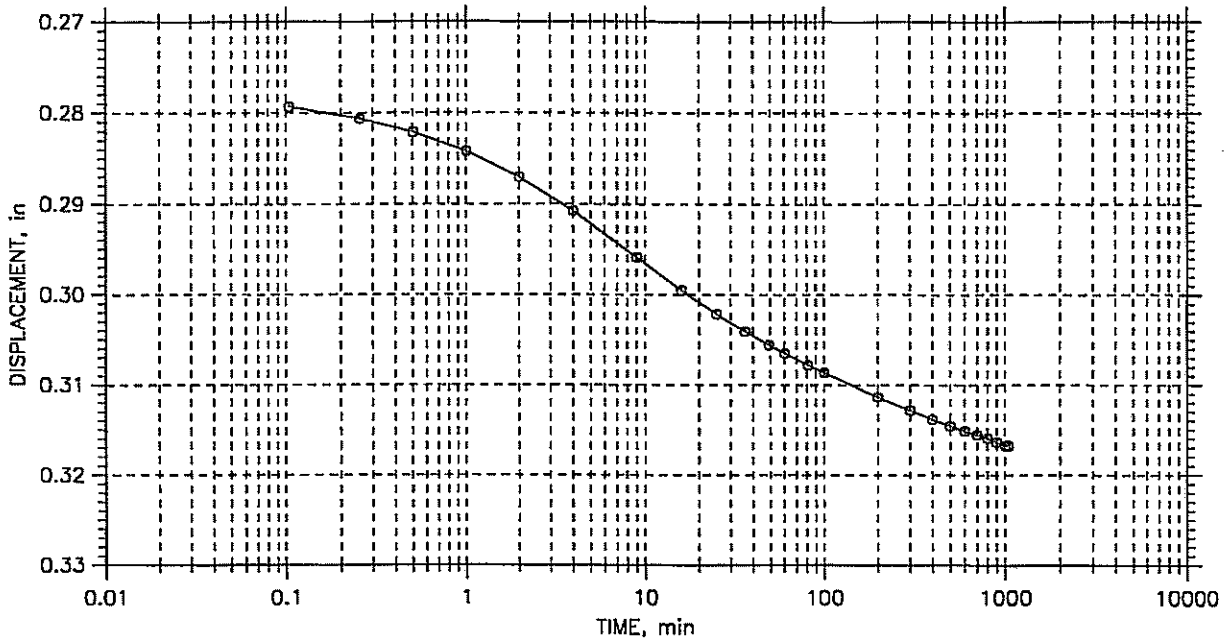
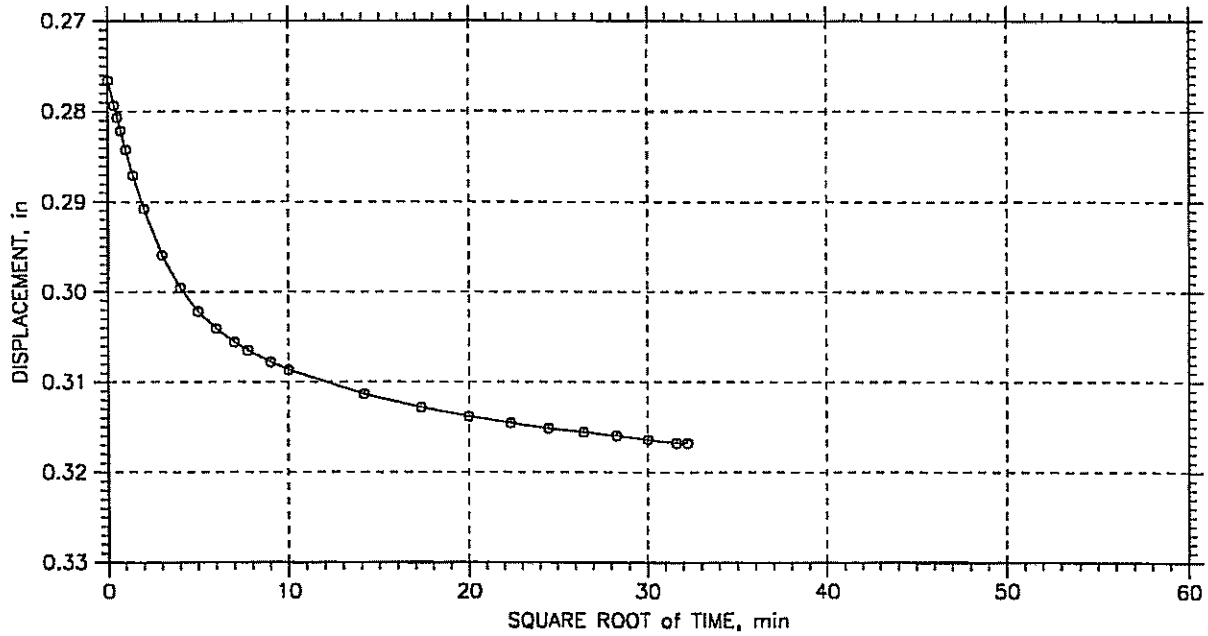
CONSOLIDATION TEST DATA

TIME CURVES

Step: 3 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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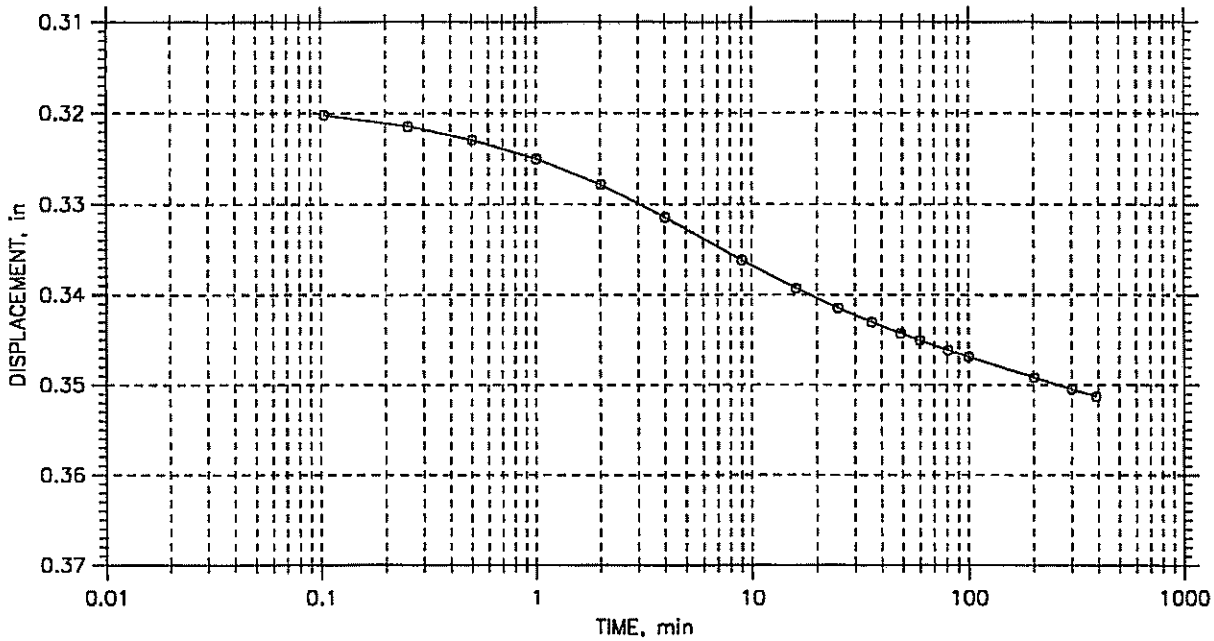
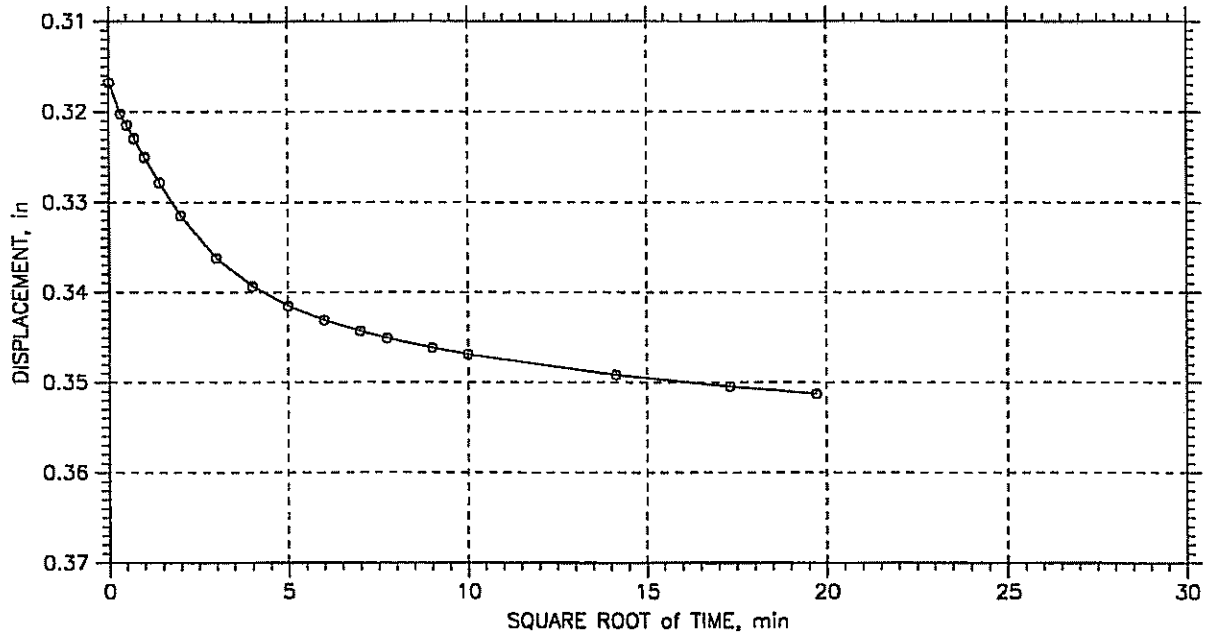
CONSOLIDATION TEST DATA

TIME CURVES

Step: 4 of 15

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

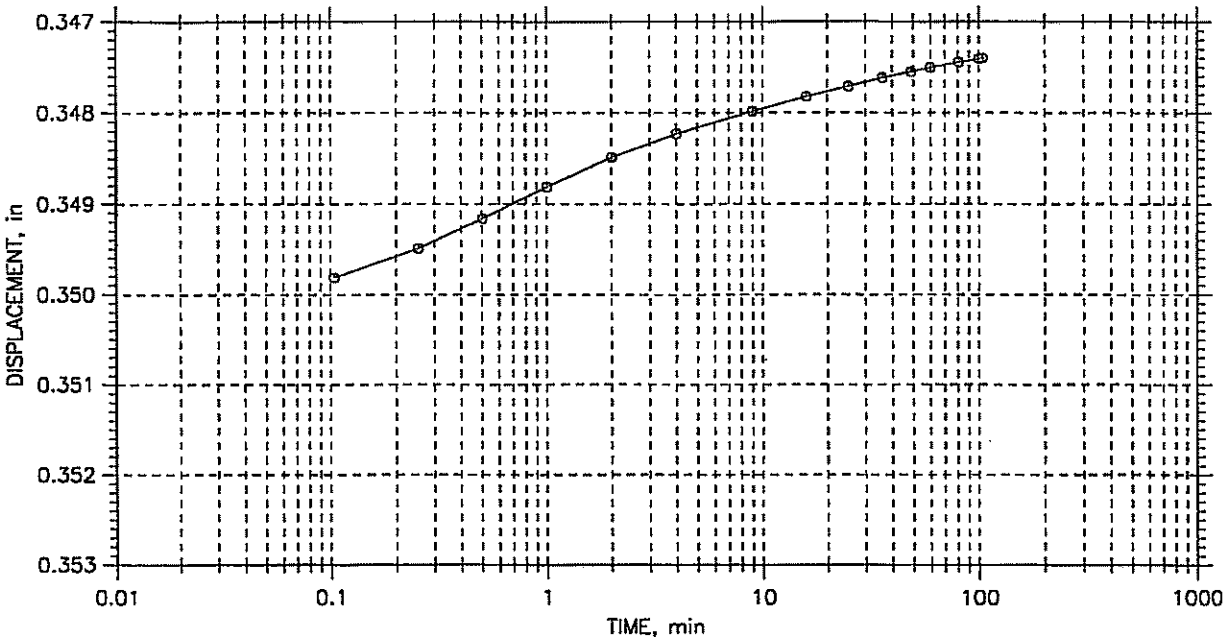
Tue, 08-JAN-2008 11:15:52

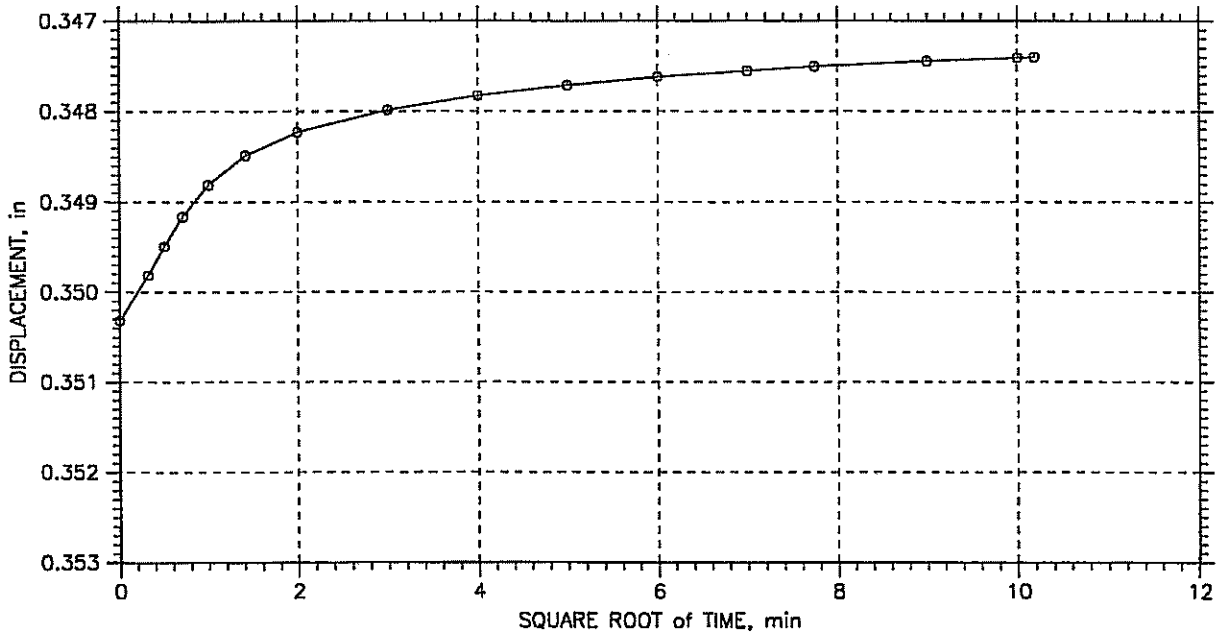
CONSOLIDATION TEST DATA

TIME CURVES

Step: 5 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

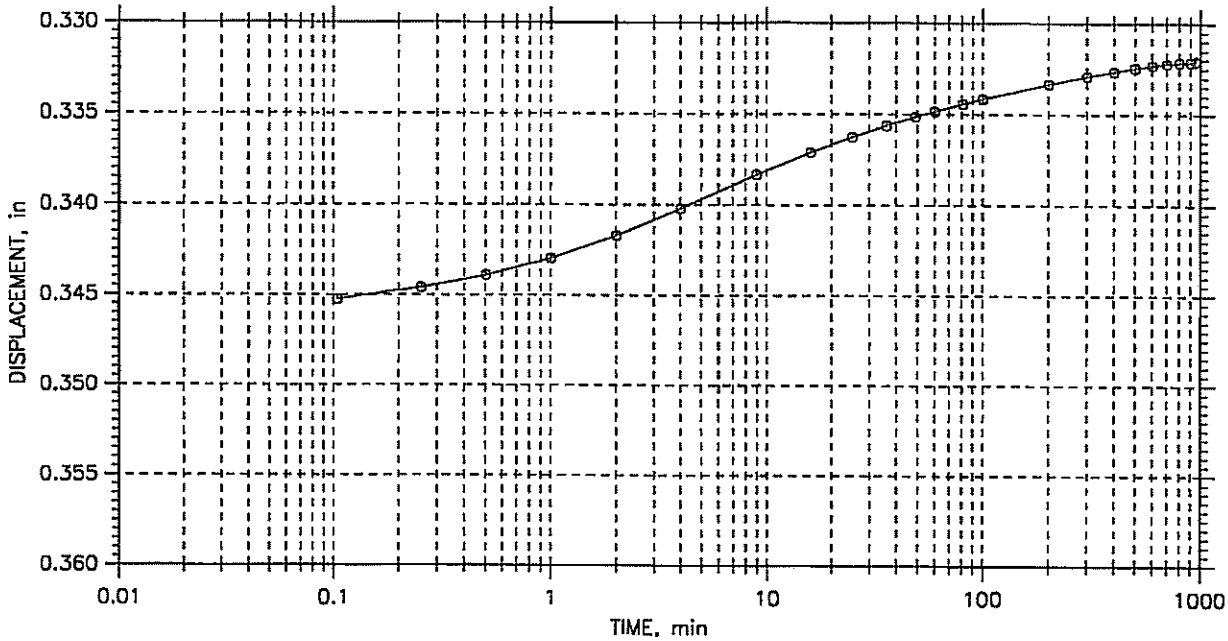
Tue, 08-JAN-2008 11:15:52

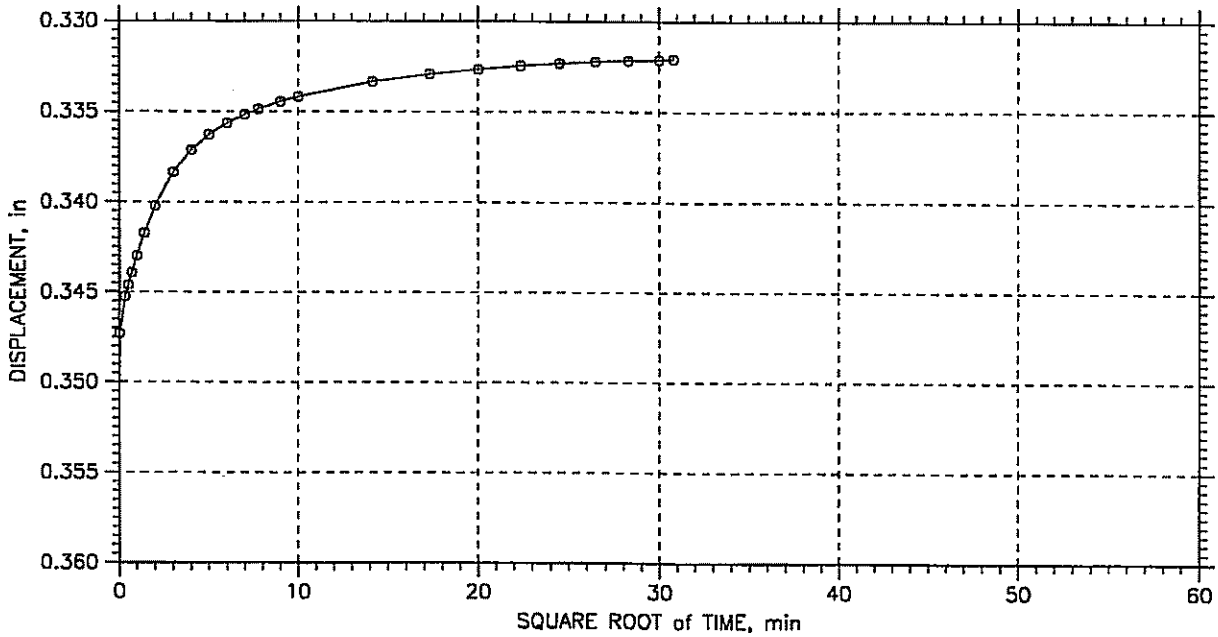
CONSOLIDATION TEST DATA

TIME CURVES

Step: 6 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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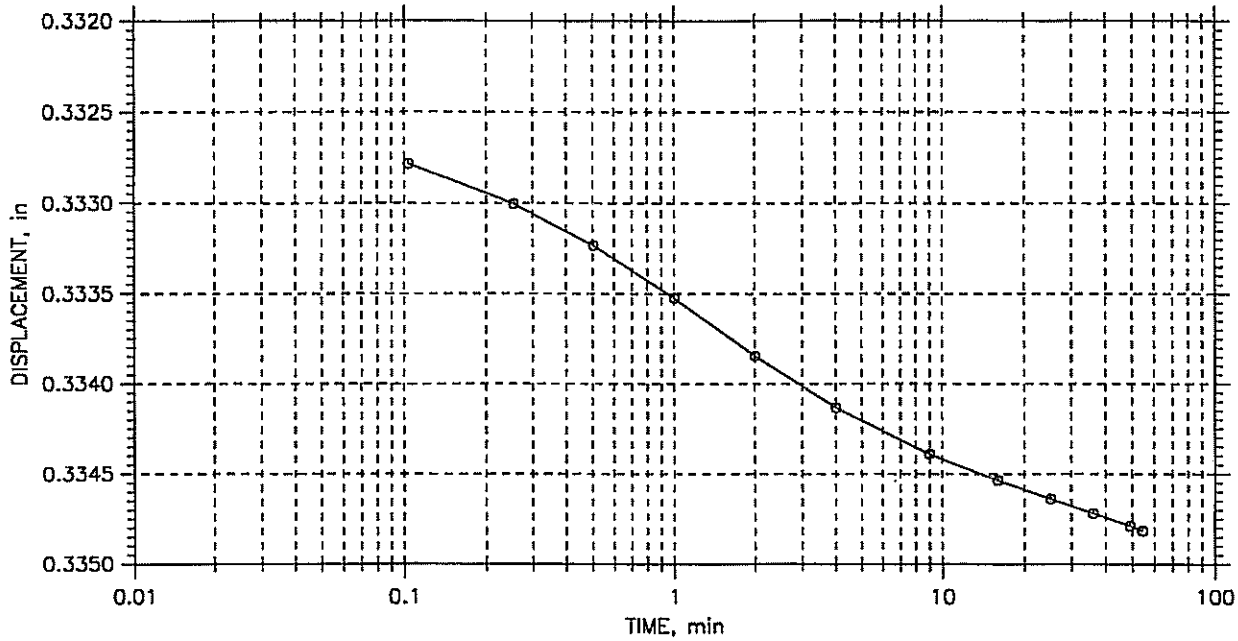
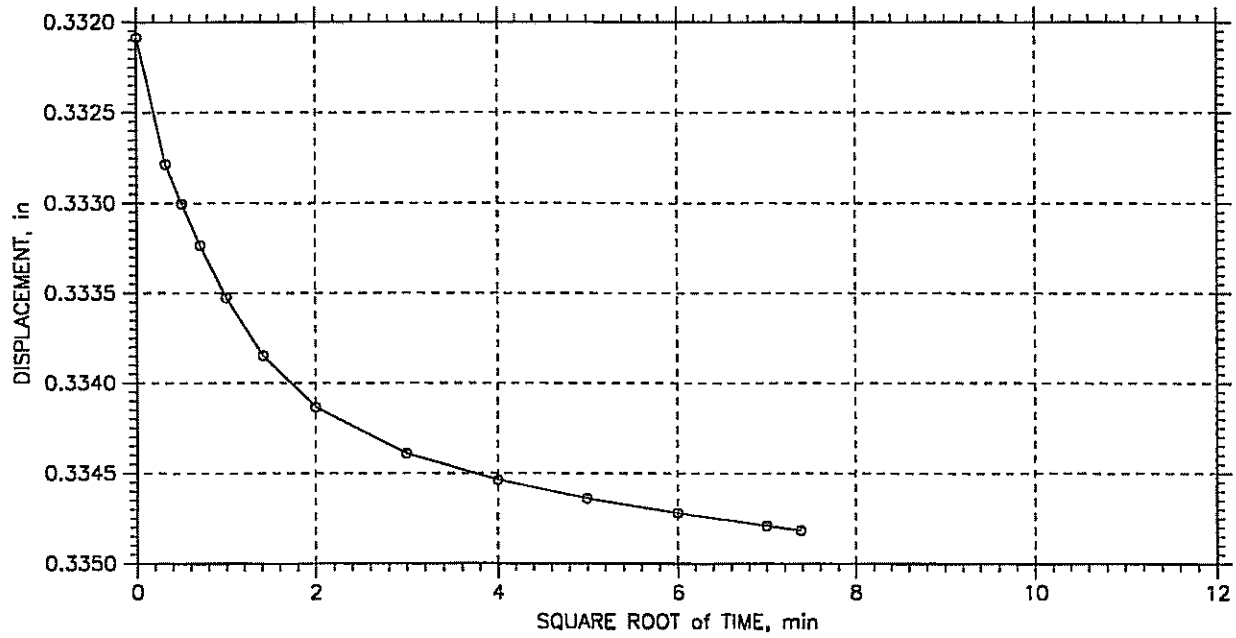
CONSOLIDATION TEST DATA

TIME CURVES

Step: 7 of 15

Stress: 0.5 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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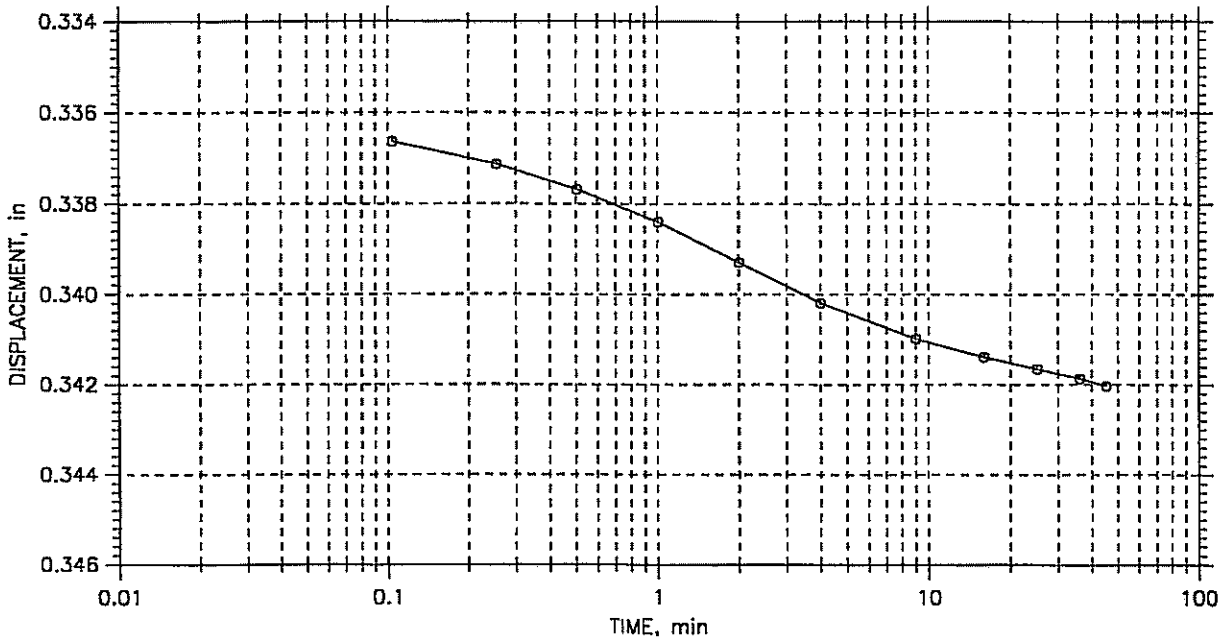
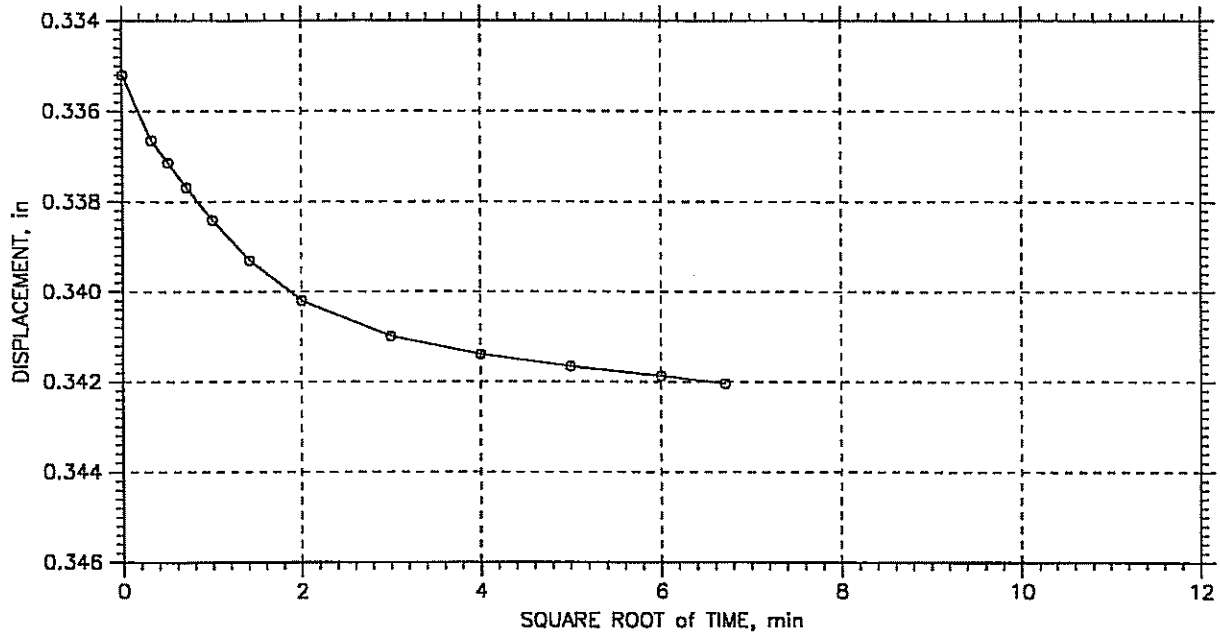
CONSOLIDATION TEST DATA

TIME CURVES

Step: 8 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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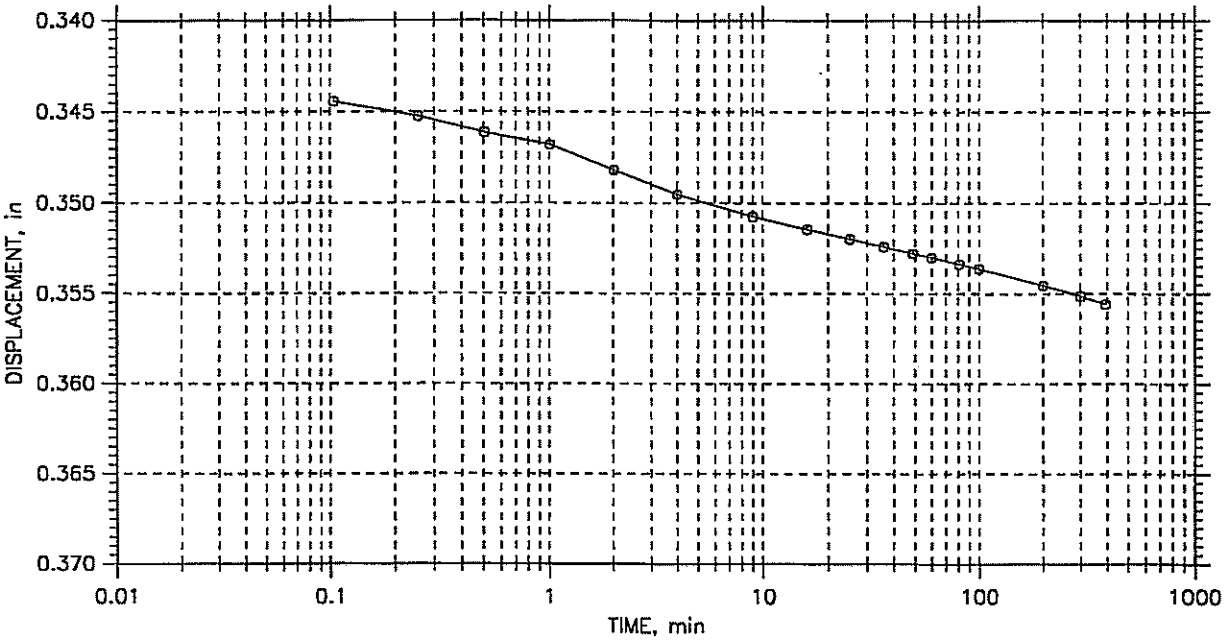
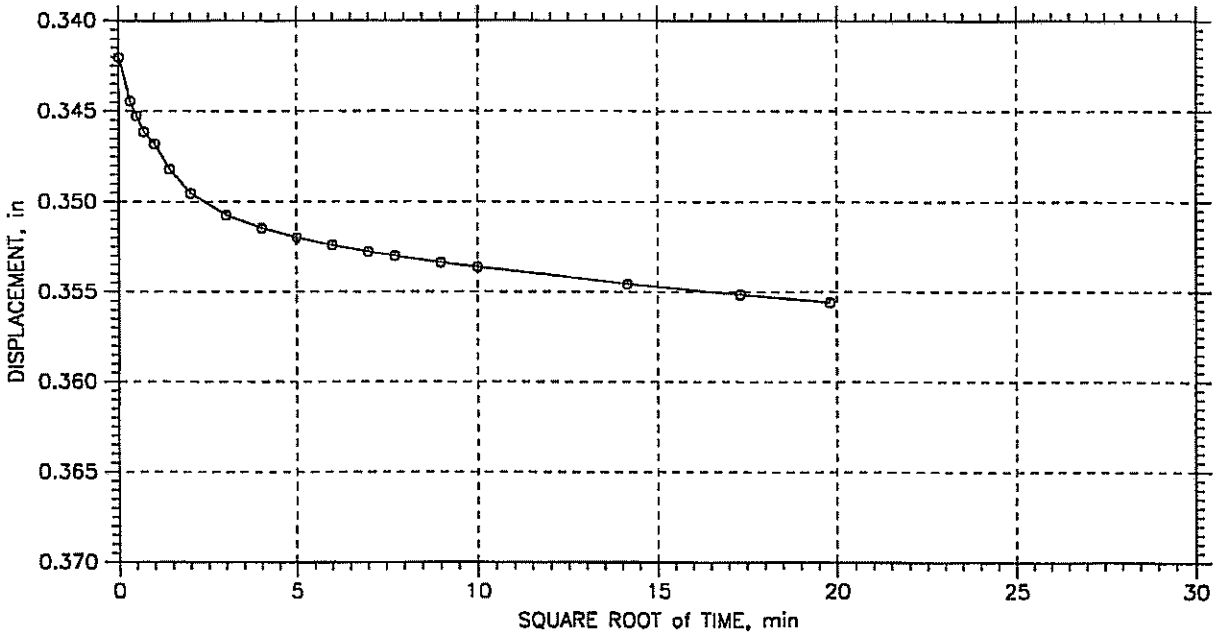
CONSOLIDATION TEST DATA

TIME CURVES

Step: 9 of 15

Stress: 2. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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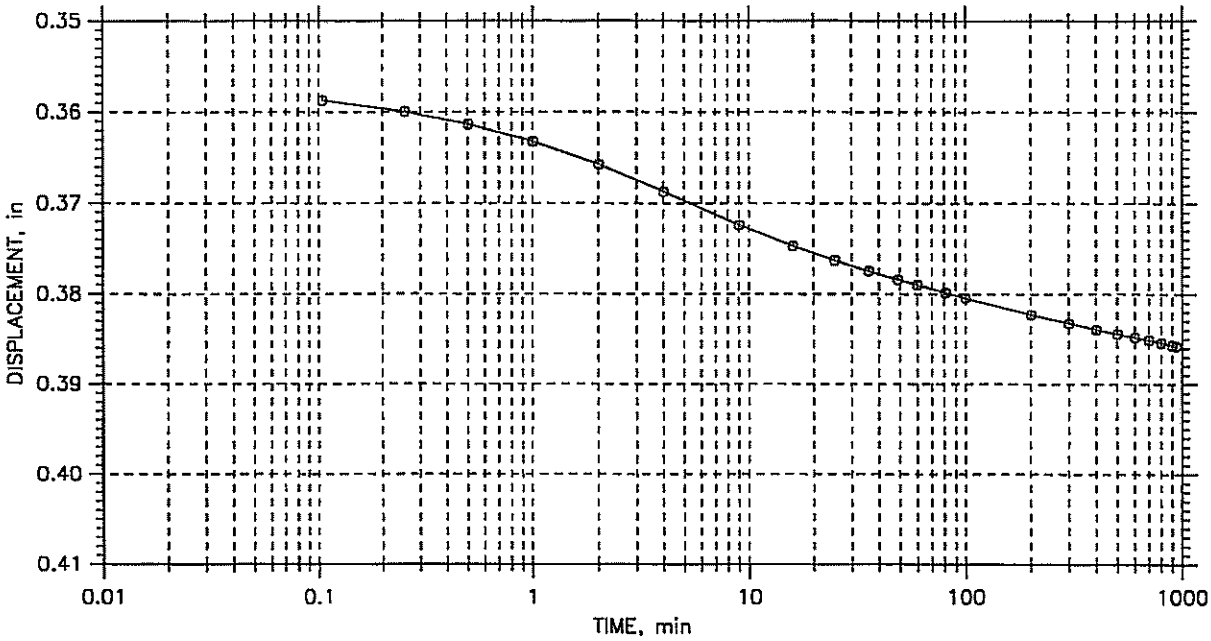
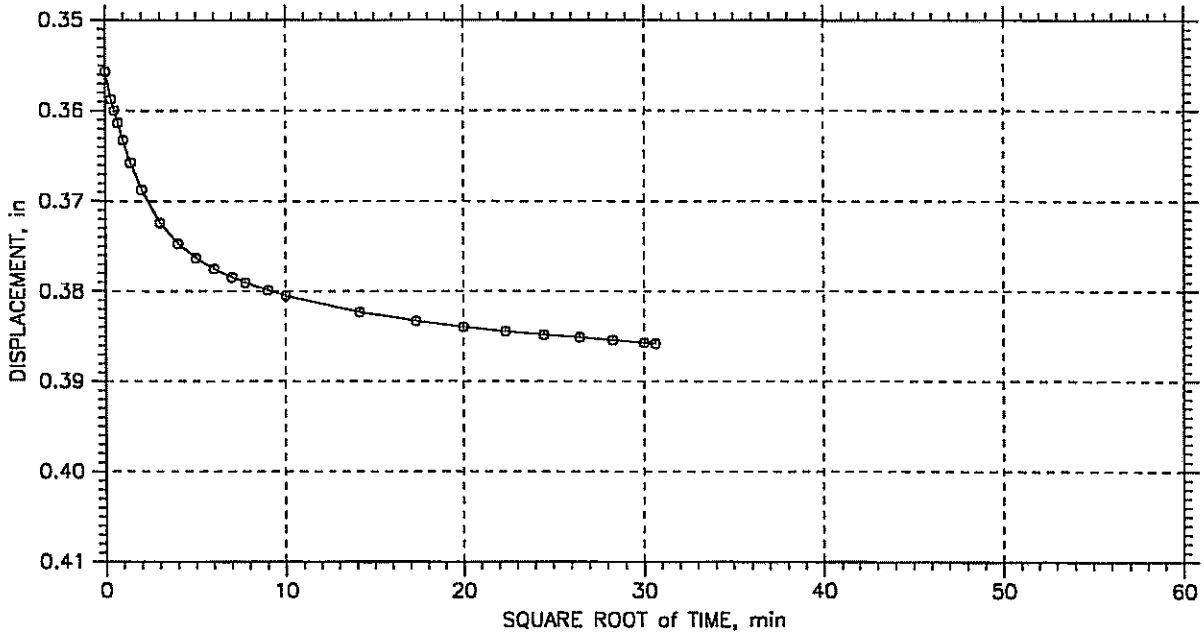
CONSOLIDATION TEST DATA

TIME CURVES

Step: 10 of 15

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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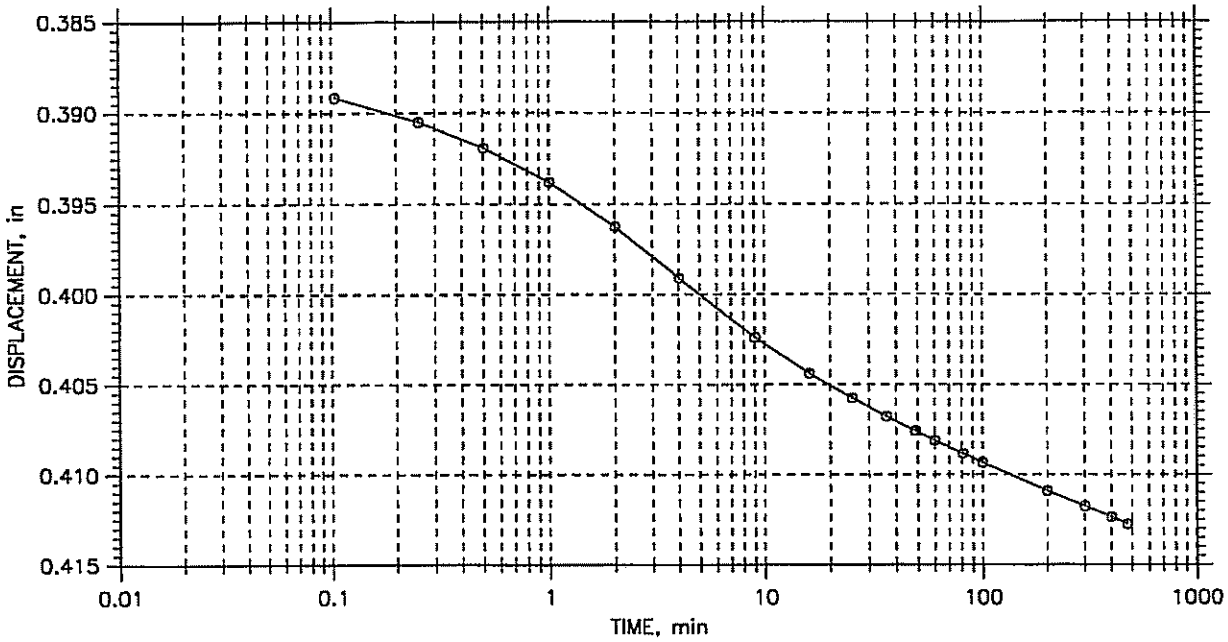
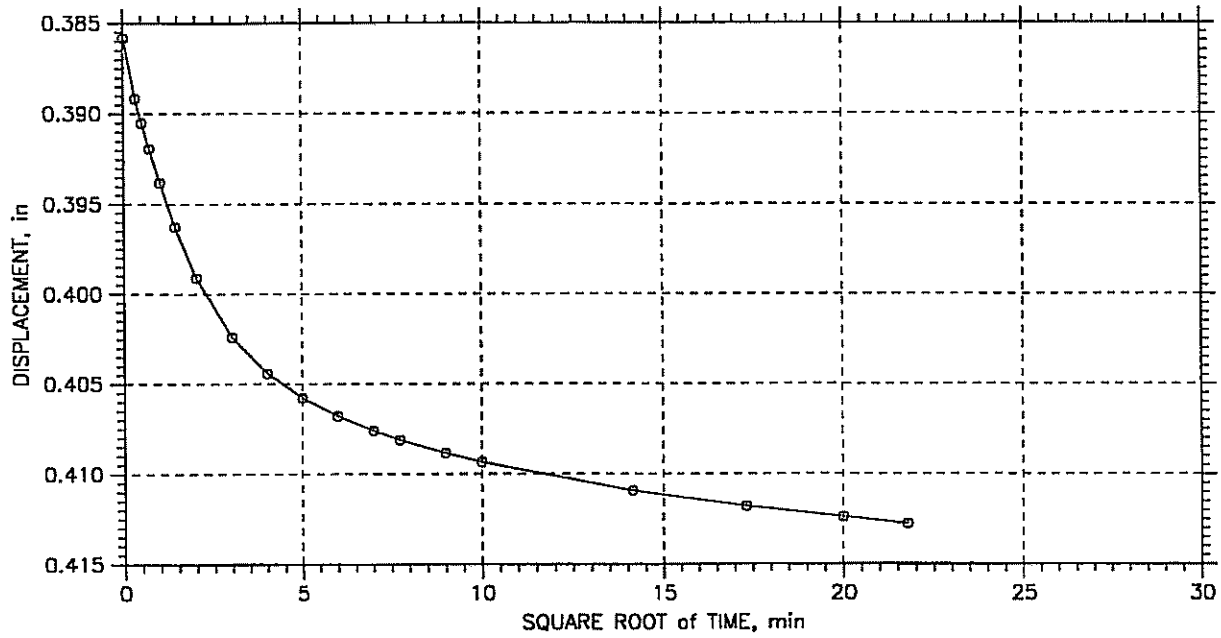
CONSOLIDATION TEST DATA

TIME CURVES

Step: 11 of 15

Stress: 8. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

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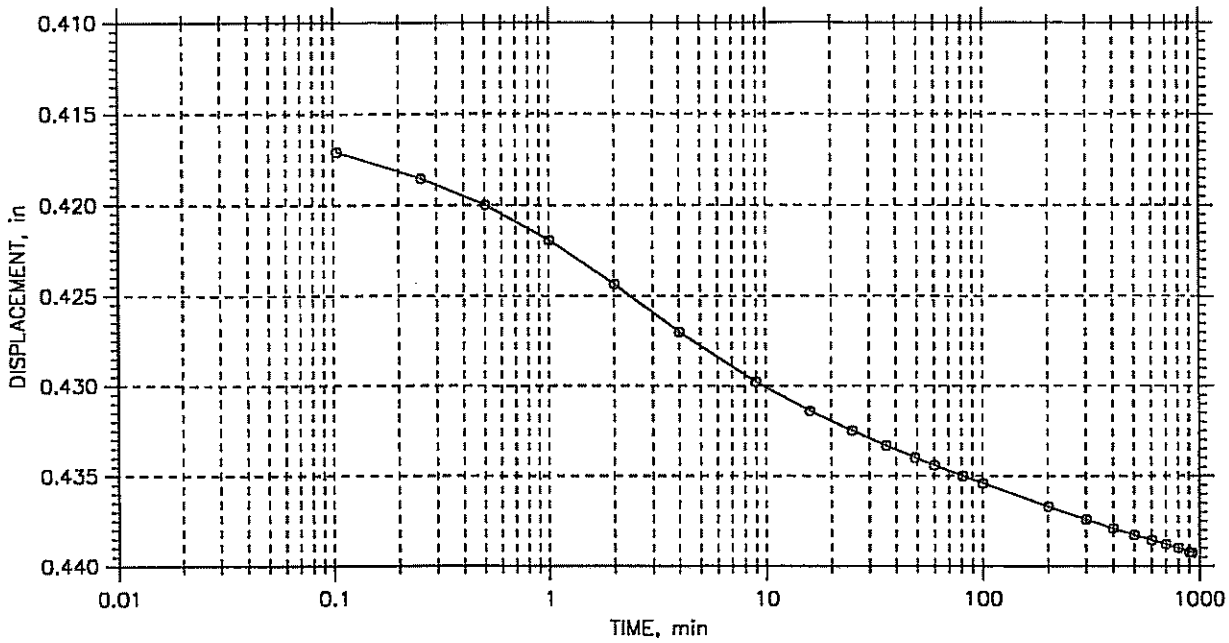
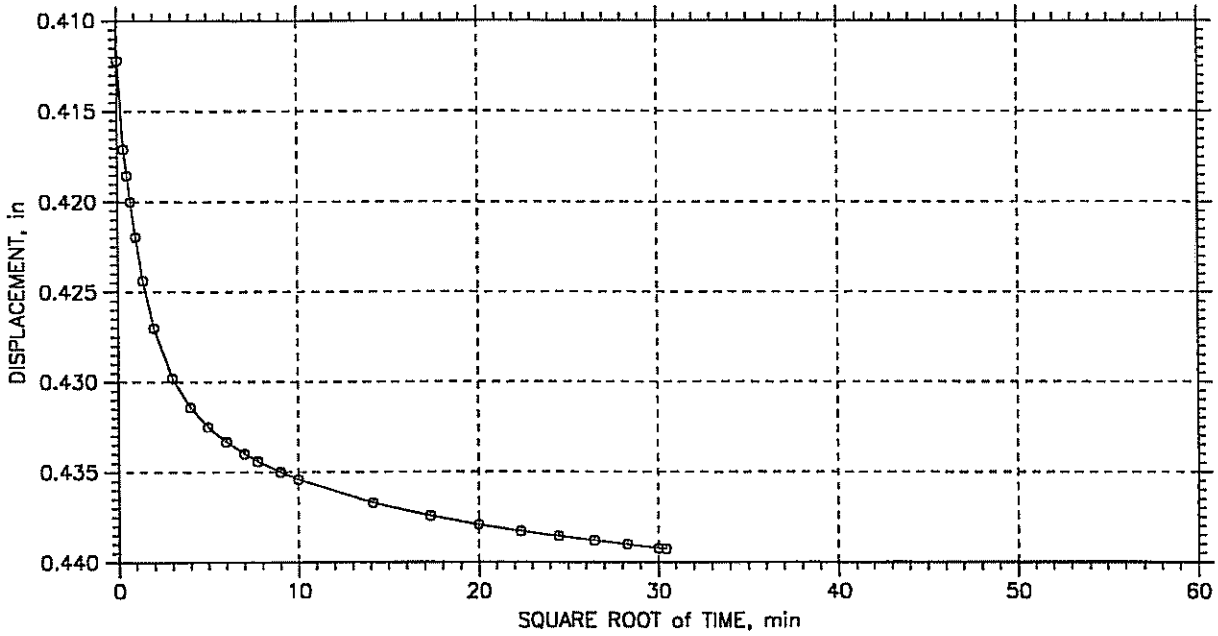
CONSOLIDATION TEST DATA

TIME CURVES

Step: 12 of 15

Stress: 16. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 1756	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

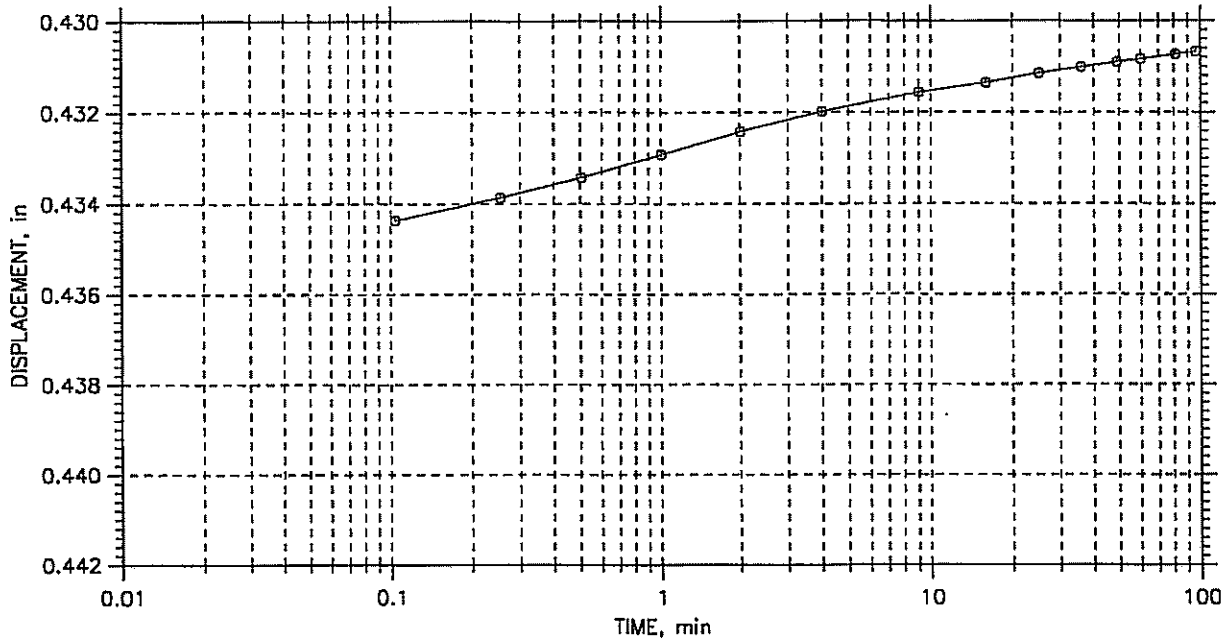
Tue, 08-JAN-2008 11:15:54

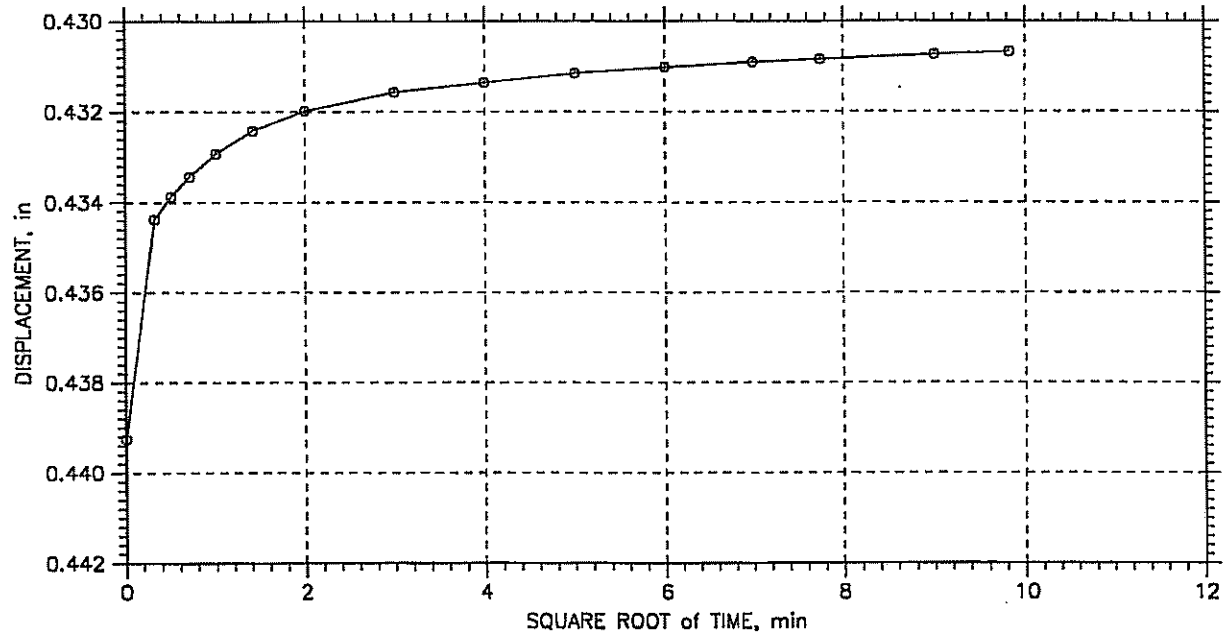
CONSOLIDATION TEST DATA

TIME CURVES

Step: 13 of 15

Stress: 4. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

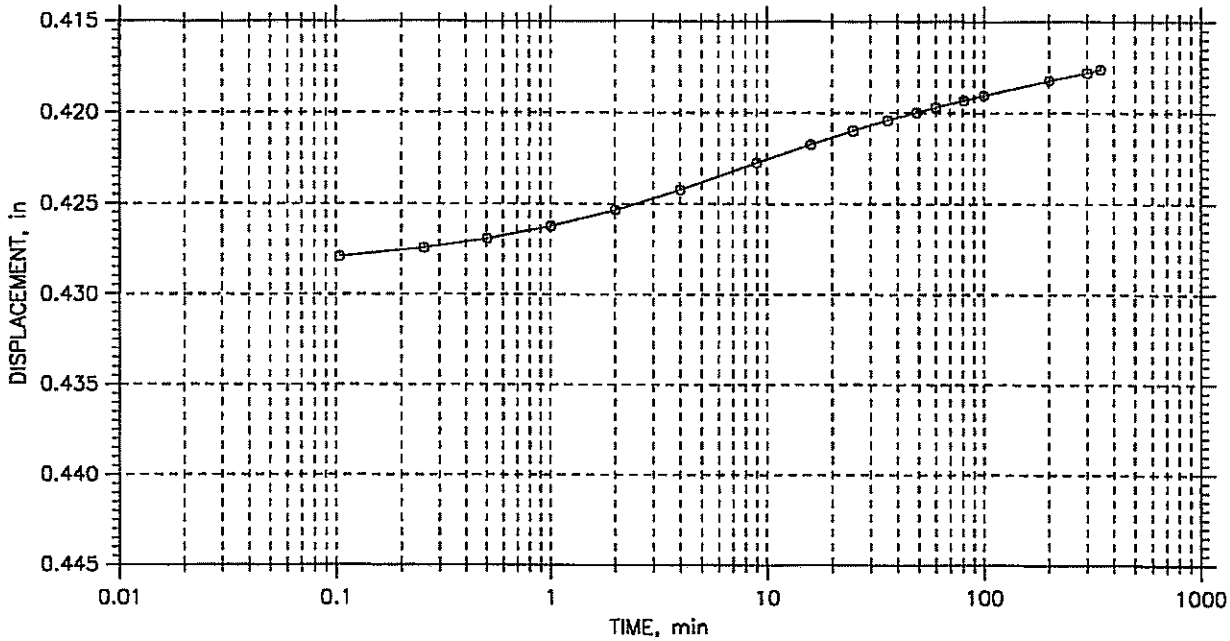
Tue, 08-JAN-2008 11:15:54

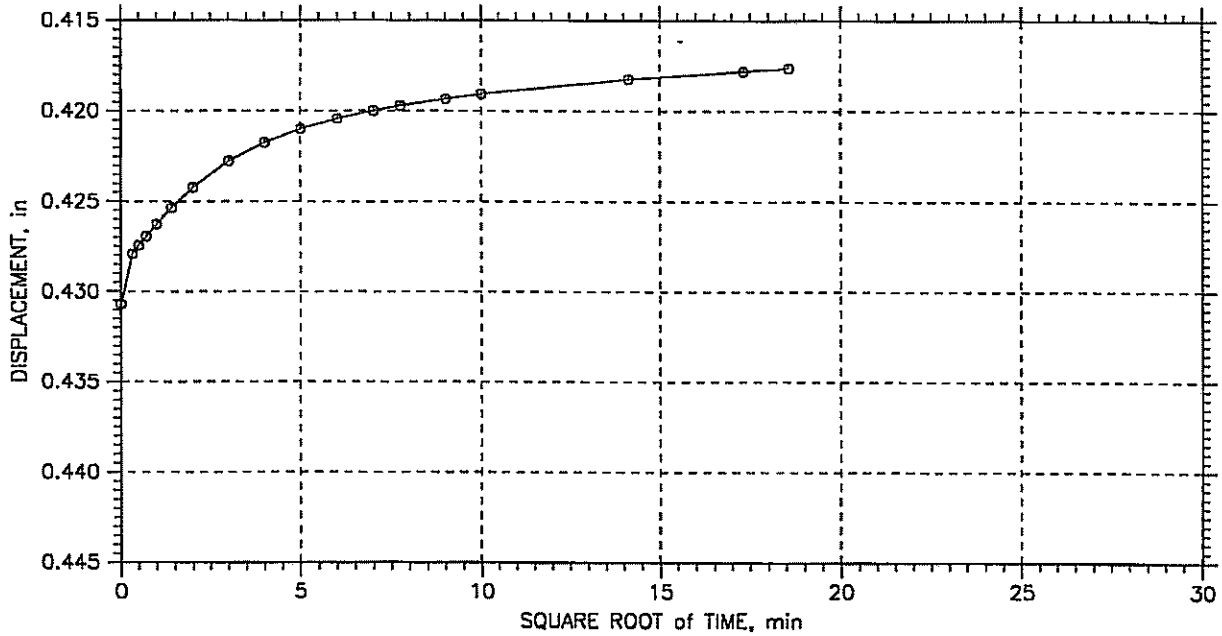
CONSOLIDATION TEST DATA

TIME CURVES

Step: 14 of 15

Stress: 1. tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

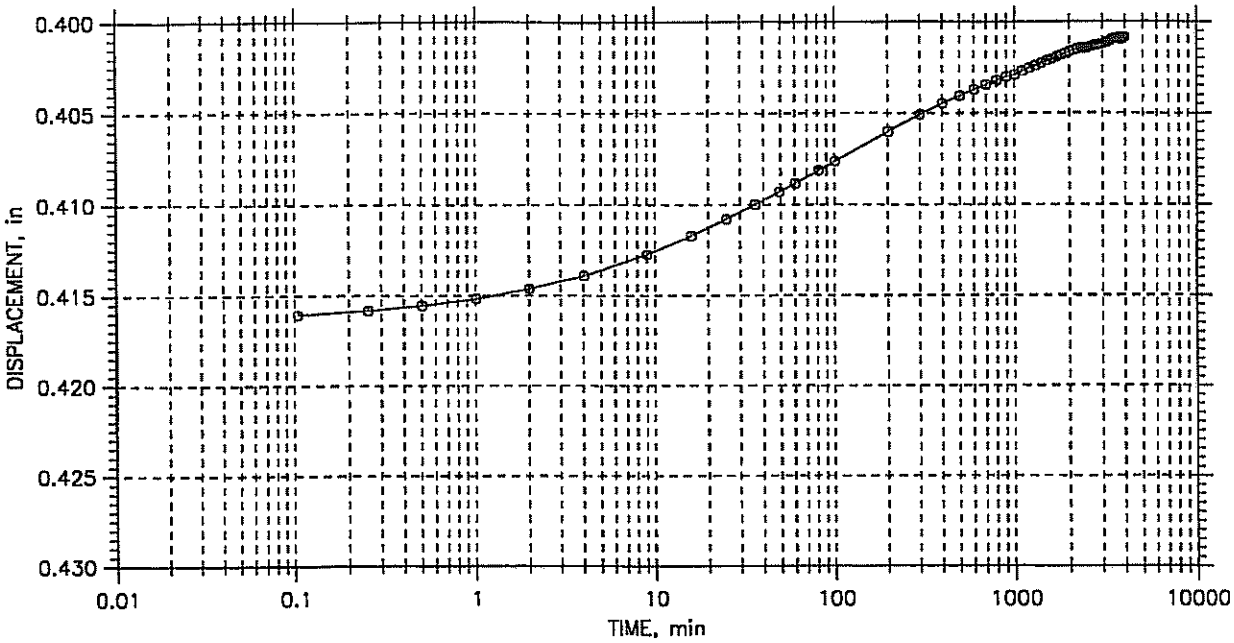
Tue, 08-JAN-2008 11:15:54

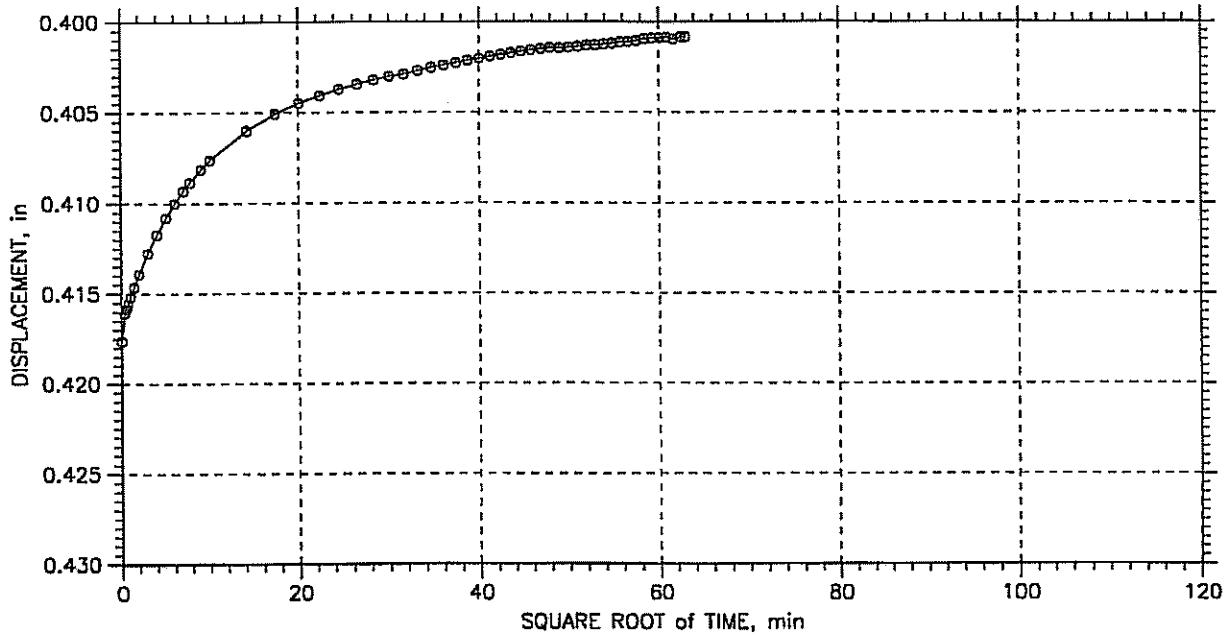
CONSOLIDATION TEST DATA

TIME CURVES

Step: 15 of 15

Stress: 0.25 tsf





Project: FOX RIVER	Location:	Project No.: 29316-A
Boring No.:	Tested By: MJS	Checked By: WPQ
Sample No.: 07-NC1DS06	Test Date: 12/14/07	Depth:
Test No.: 17S6	Sample Type: REMOLDED	Elevation:
Description: ORGANIC CLAYEY SILT TRACE F- C SAND - BROWN (OL) VEGETATION & SHELLS NOTED		
Remarks: Cc = 1.02 Ccr = 0.24 TEST PERFORMED AS PER ASTM D 2435		

Tue, 08-JAN-2008 11:15:55

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATION
ASTM D 5084, METHOD C
RISING TAILWATER LEVEL

STS PROJECT NO.:	X429316A
PROJECT:	FOX RIVER OU-I
DATE:	12/28/2007

SUMMARY OF TEST RESULTS

SAMPLE NO.	1-RA-07-NC1-DS-06-COMP
LOCATION	0
CLASSIFICATION	RIVER SEDIMENTS - ORGANIC SILTS

	INITIAL	FINAL
DRY UNIT WEIGHT (pcf)	33.6	33.1
WATER CONTENT (%)	274.2	134.5
DIAMETER (cm)	4.17	4.17
LENGTH (cm)	5.60	5.60
HYDRAULIC GRADIENT (MAXIMUM)		14.2
PERCENT SATURATION	184.73347	89.083869
HYDRAULIC CONDUCTIVITY k (cm/sec)		7.53E-08

STS Consultants, Ltd.

HYDRAULIC CONDUCTIVITY DETERMINATIC
Rising tailwater method in a triaxial permeameter
ASTM D 5084, Method C (EM-1110-2-1906 7)

Project Name: FOX RIVER OU-I
Project No.: X429316A
Project Location: WISCONSIN
Sample No.: 1-RA-07-NC1-DS-06-COMP
Sample Location:

Sample Description: RIVER SEDIMENTS - ORGANIC SILTS

Cell No.: 9

Date Sampled:
Date Received:

MOISTURE CONTENT	INITIAL	FINAL
Container No.	3	10
Wet Sample & Tare (g)	614.13	183.90
Dry Sample & Tare (g)	252.57	129.30
Wt. Water (g)	361.56	54.60
Wt. Tare (g)	120.70	88.70
Wt. Dry Soil (g)	131.87	40.60
Water Content, w (%)	274.2	134.5

SATURATION DATA

Initial Cell Pressure (psi)	Final Cell Pressure (psi)	Initial PWP (psi)	Final PWP (psi)	B Value
25.0	27.0	23.0	25.0	1.00
			Final B value =	1.00

SPECIMEN INFORMATION	INITIAL	FINAL
Avg. Diameter (cm)	4.17	4.17
Avg. Height, L (cm)	5.60	5.60
X-Section Area, A (cm^2)	13.657	13.657
Specimen wet wt. (g)	154.00	95.20
Specimen Dry wt., W_s (g)	41.16	40.60
Total Volume, V (cm^3)	76.48	76.48
Dry Unit Weight (lbs/ft^3)	33.6	33.1
G_s estimated (Y or N)?	y	#NAME?
Specific Gravity, G_s	2.700	2.700
Volume Solids, V_s (cm^3)	15.27	15.07
Pore Volume (cm^3)	61.21	61.41
Void Ratio, e	4.007	4.076
Degree of Saturation	184.7	89.1

COMMENTS:

$$\text{Volume Solids} = \frac{W_s}{(G_s)(\text{Water Density})}$$

$$\text{Void Ratio} = \frac{V - V_s}{V_s}$$

$$\text{Degree of Saturation} = \frac{(w)(G_s)}{e}$$

Proj Name: FOX RIVER OU-I
Proj No.: X429316A
Sample: 1-RA-07-NC1-DS-06-COMP

k (cm/sec)	Max i
10^{-3} to 10^{-4}	2
10^{-4} to 10^{-5}	5
10^{-5} to 10^{-6}	10
10^{-6} to 10^{-7}	20
less than 10^{-7}	30

Hydraulic Gradient, i, Guidlines as per ASTM D5084, section 8.5.1

TEST CONDITIONS

Influent Burette Area a_{in} (cm^2)	Effluent Burette Area a_{out} (cm^2)	# ascend as burette empties? (Y or N)
1.00	1.00	y

Cell Pressure (psi)	Headwater Pressure (psi)	Tailwater Pressure (psi)	Driving Head (psi)	Hydraulic Gradient Max	Hydraulic Gradient Min
27.0	25.0	24.0	1.0	14.2	11.3

TEST DATA

Date/Time (M/D/YY H:MM)	Temp. °C	Elapsed Time, t (sec)	Influent Reading (cm)	Effluent Reading (cm)	Total Change (cm)	Inflow to Outflow Ratio	Hydraulic Head, h (cm)	k, Hydraulic Conductivity (cm/sec)	k_{20} corrected for temperature (cm/sec)
12/20/2007 9:15	21.0	0	8.5	17.5	0.0	0.00	79.3	0	0
12/21/2007 7:00	21.0	78300	9.6	16.3	0.1	0.92	77.0	7.71E-08	7.52E-08
12/24/2007 7:00	21.0	259200	13.2	12.5	0.2	0.95	69.6	7.99E-08	7.80E-08
12/25/2007 16:30	21.0	120600	14.6	11.0	0.1	0.93	66.7	7.24E-08	7.06E-08
12/26/2007 6:30	21.0	50400	15.4	10.3	-0.1	1.14	65.2	9.25E-08	9.03E-08
12/26/2007 14:00	21.0	27000	15.7	10.0	0.0	1.00	64.6	7.02E-08	6.85E-08
12/27/2007 7:00	21.0	61200	16.4	9.3	0.0	1.00	63.2	7.34E-08	7.16E-08
						(0.75-1.25)		Final Value =	7.53E-08

$$k_{20} = \frac{(a_{in})(a_{out})L[\ln(h_{n-1}/h_n)]*R_T}{At(a_{in} + a_{out})}$$

Total Change = $(Eff_{n-1} - Eff_n) - (Inf_n - Inf_{n-1})$

"Hydraulic Head" incorporates the difference in head as well as the added driving head pressure.
"Total Change" is the difference between the Effluent change from t_0 to t_1 and the Influent change from t_0 to t_1.

Notate temperature to the nearest half a degree. The correction calculation averages the two consecutive readings.
k is multiplied by the temperature correction, R_T, which is the ratio of the viscosity of water at test temperature to the viscosity of water at 20° C. Temperature range may be between 19° and 25° for formula calculation.
"Final Value" is the average of 4 consecutive readings of which none are less than or greater than 25% of their average. (50% of average if < 1 x 10^{-8})