APPENDIX J
GEOTECHNICAL TEST RESULTS

July 1986 Geotech Data (2014 FR)

July 1986 Table 6 (2014 FR)

August 2000 Geotech Data (2014 FR)

August 2000 Existing Geotech Data / Hydraulic Conductivity (2014 FR)

2003 Soil Test Data (2014 FR)

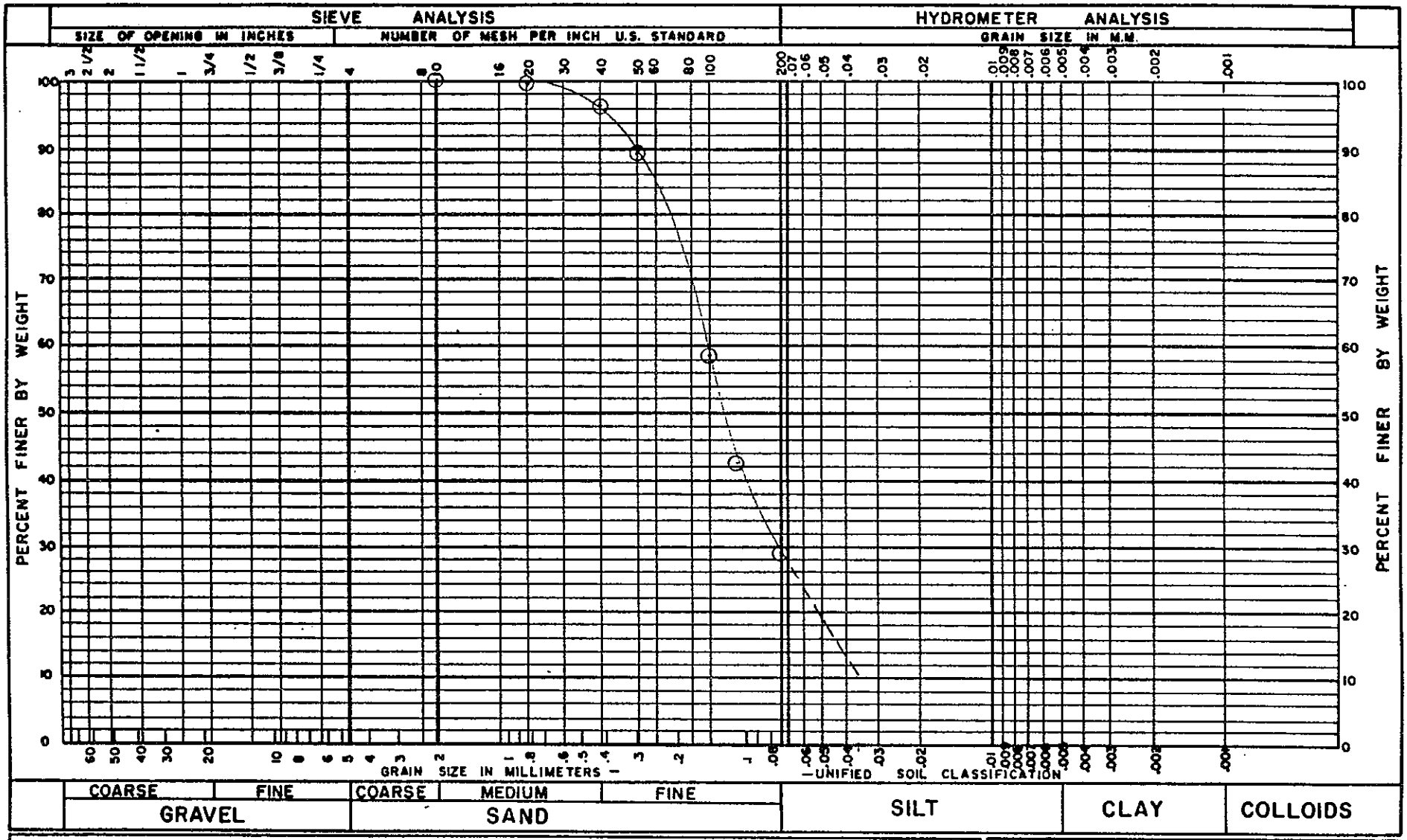
December 2018 Soil Test Data

July 1986 Geotech Data

(From 2014 FR)

APPENDIX F

PARTICLE SIZE ANALYSES



BORING NO.	DH-20	GRAVEL		F. SAND	67.3%	D_{60} .15	C_U 4.2 (EST.)
SAMPLE NO.	S-1	C. SAND		SILT / CLAY	28.9%	D_{30} .075	C_Z 1.0 (EST.)
DEPTH	5	M. SAND	3.8%			D_{10} .036 (EST.)	UNIFIED CLASS SM
ELEV.	905						

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

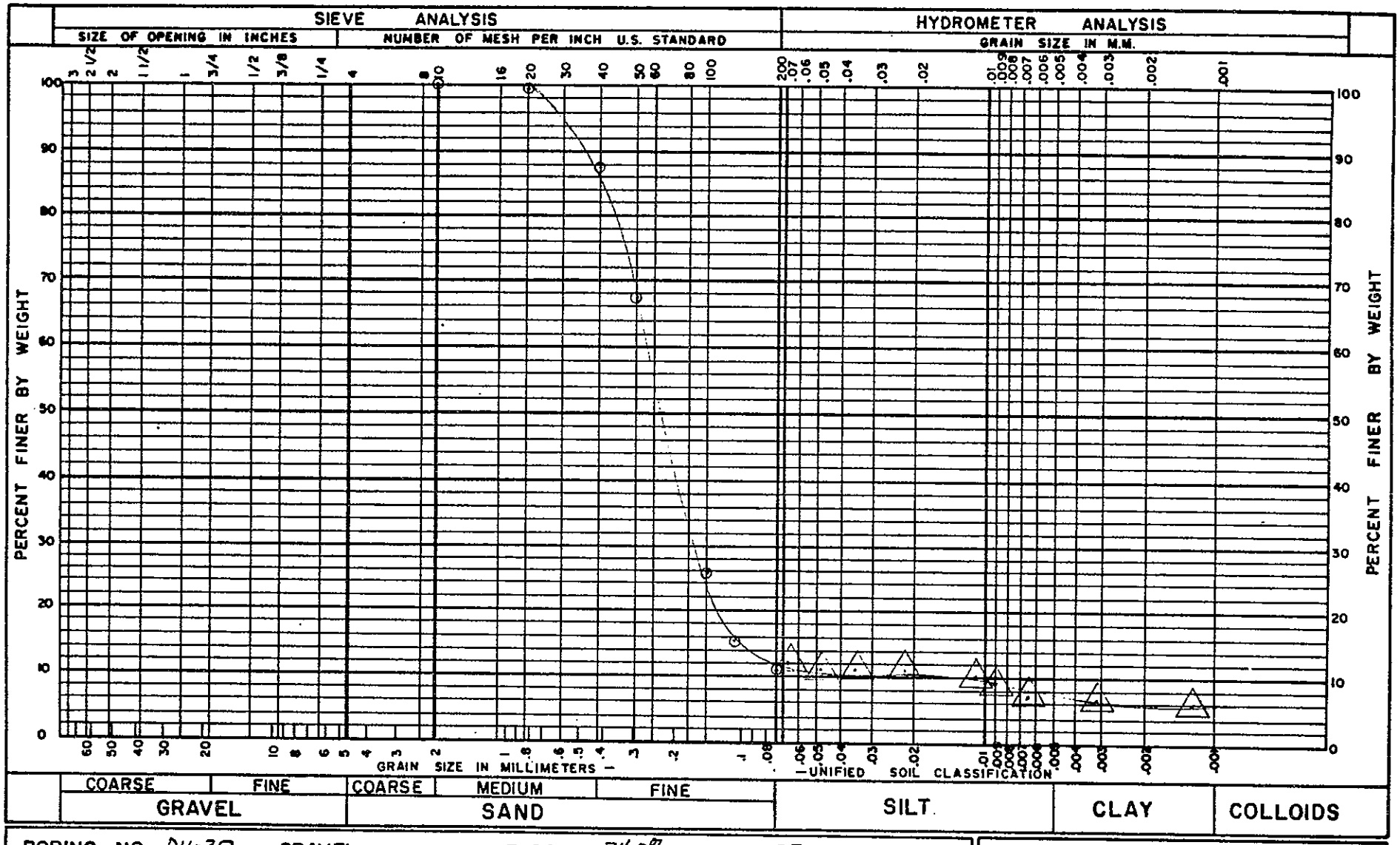
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. SEVENMILE FEASIBILITY

REMARKS:

DATE: 5/29/86

JOB NO: 4731.00



BORING NO.	DH-20	GRAVEL		F SAND	74.0%	D_{60} .27	C_U 18
SAMPLE NO.	S-3	C. SAND		SILT	2.5%	D_{30} .17	C_Z 7.1
DEPTH	15	M. SAND	14%	CLAY	9.5%	D_{10} .015	UNIFIED CLASS SP-SM
ELEV.	895						

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

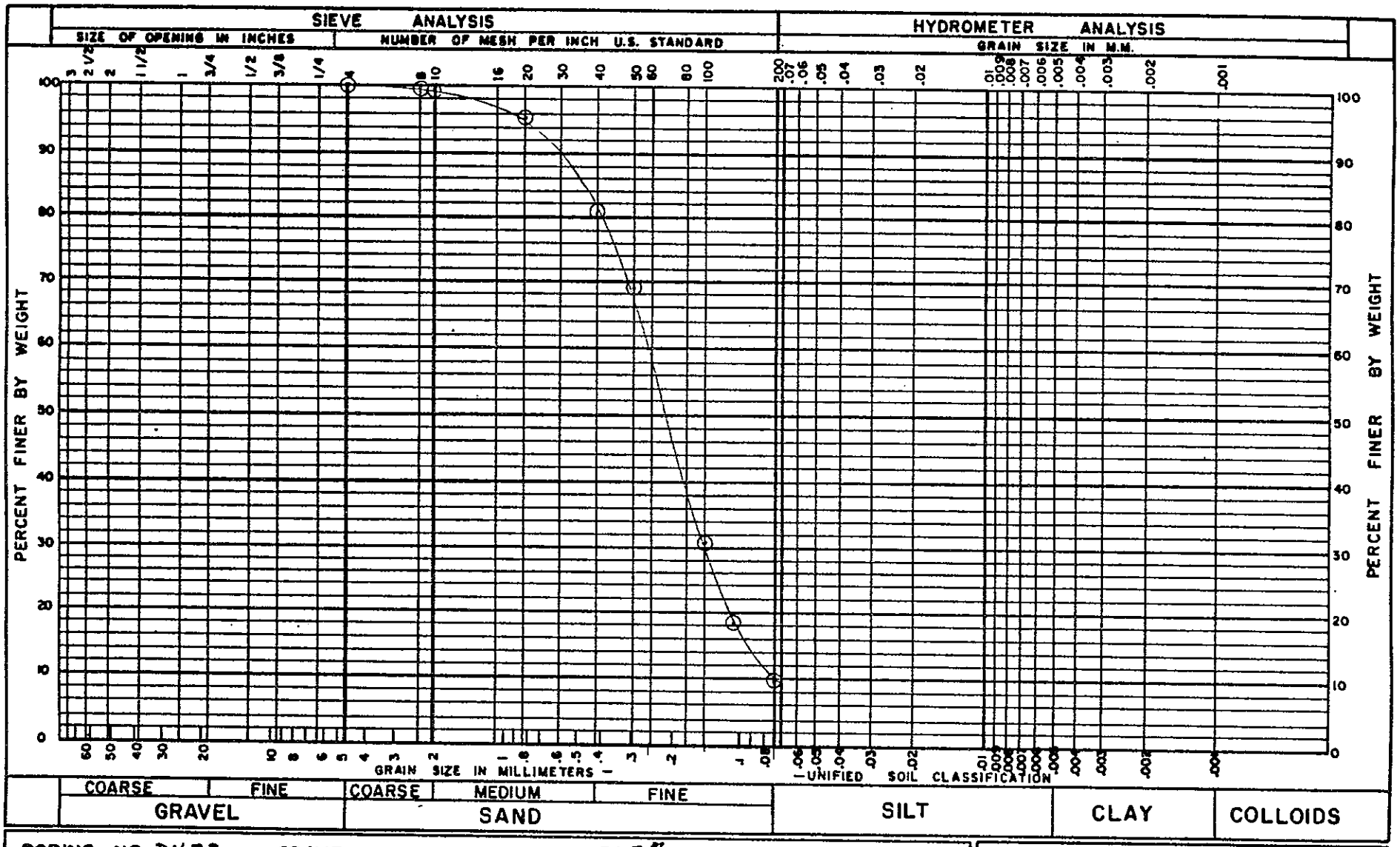
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. Sevenmile Feasibility

REMARKS:

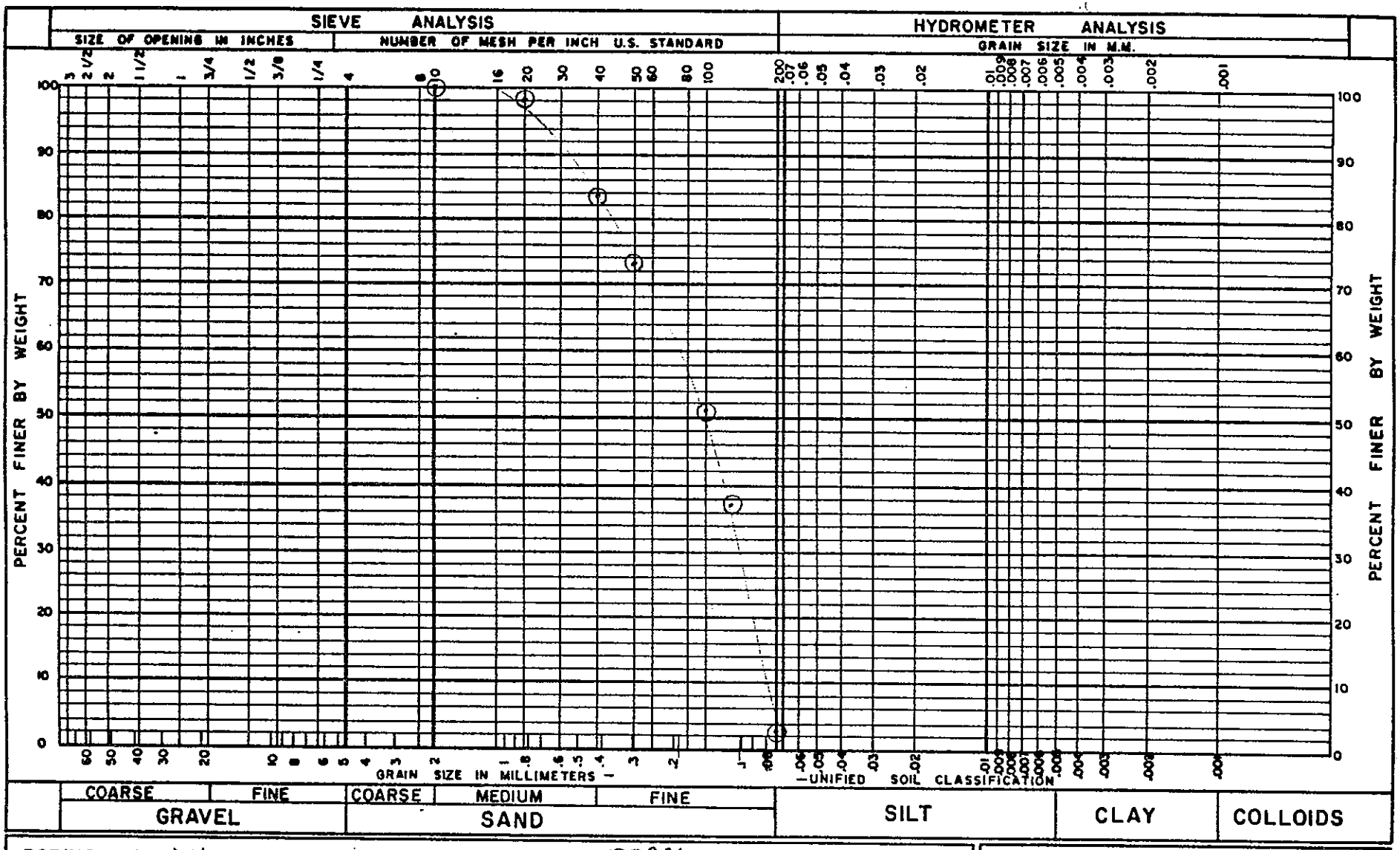
DATE: 05/27/86

JOB NO: 4731.00



BORING NO. DH-23	GRAVEL	F. SAND 70.3%	D_{60} .25	C_U 3.3	PROJECT: E.C. Co. SEVENMILE FEASIBILITY
SAMPLE NO. S-2	C. SAND 0.4%	SILT } 9.9%	D_{30} .15	C_Z 1.2	
DEPTH 10	M. SAND 19.4%	CLAY }	D_{10} .075	UNIFIED CLASS SP-SM	REMARKS:
ELEV. 902					DATE: 5/29/86
AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors		⊙ MECHANICAL △ HYDROMETER			JOB NO: 4731.00

F-3



BORING NO.	DH-23	GRAVEL		F. SAND	83.9%	D_{60} .19	C_U 2
SAMPLE NO.	S-3	C. SAND		SILT		D_{30} .10	C_Z 0.7
DEPTH	15	M. SAND	16.1%	CLAY		D_{10} .08	UNIFIED CLASS SP
ELEV.	897						

AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

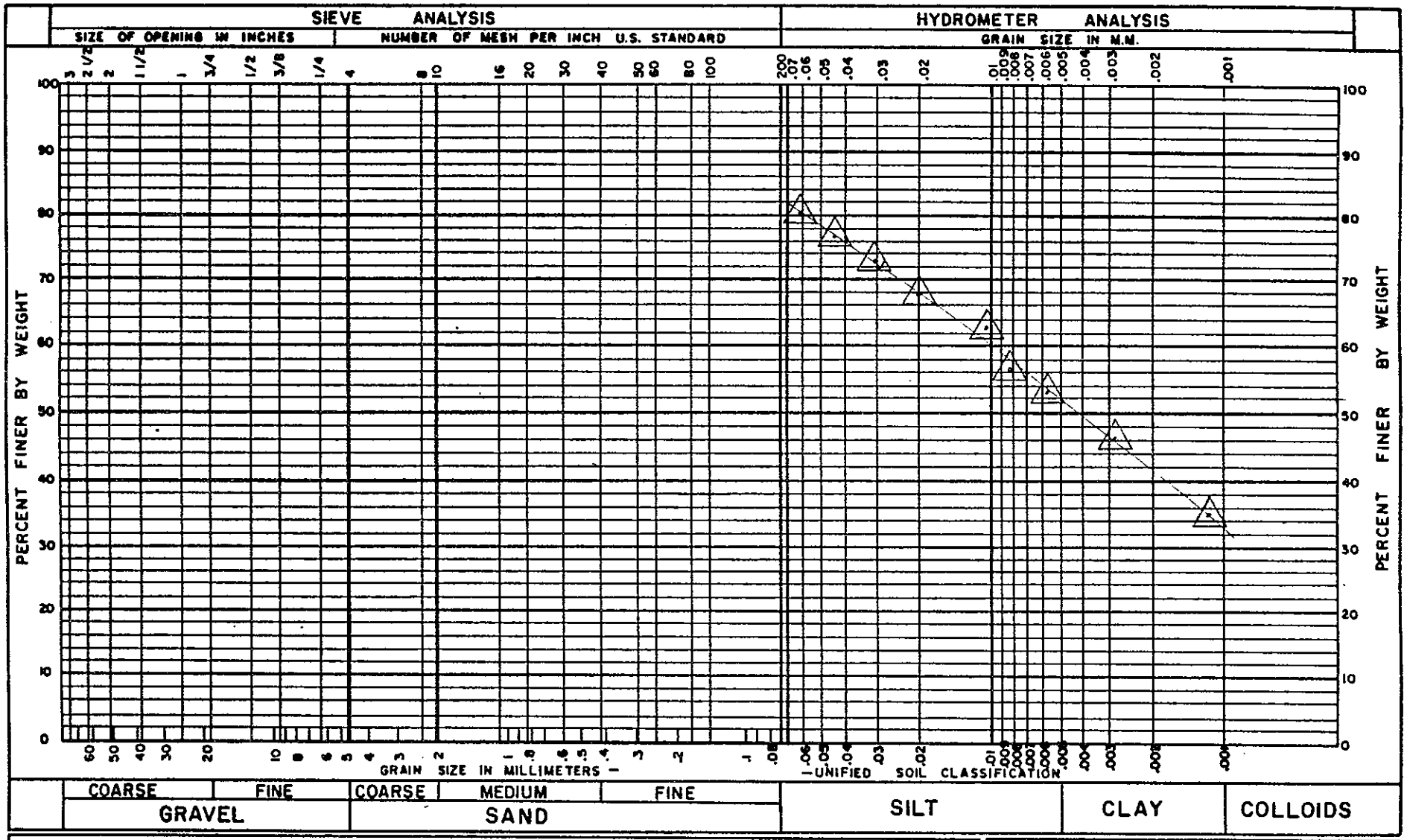
PROJECT: E.C. Co. 7-mi FEASIBILITY

REMARKS: COARSE FRACTION

DATE: 5/21/86

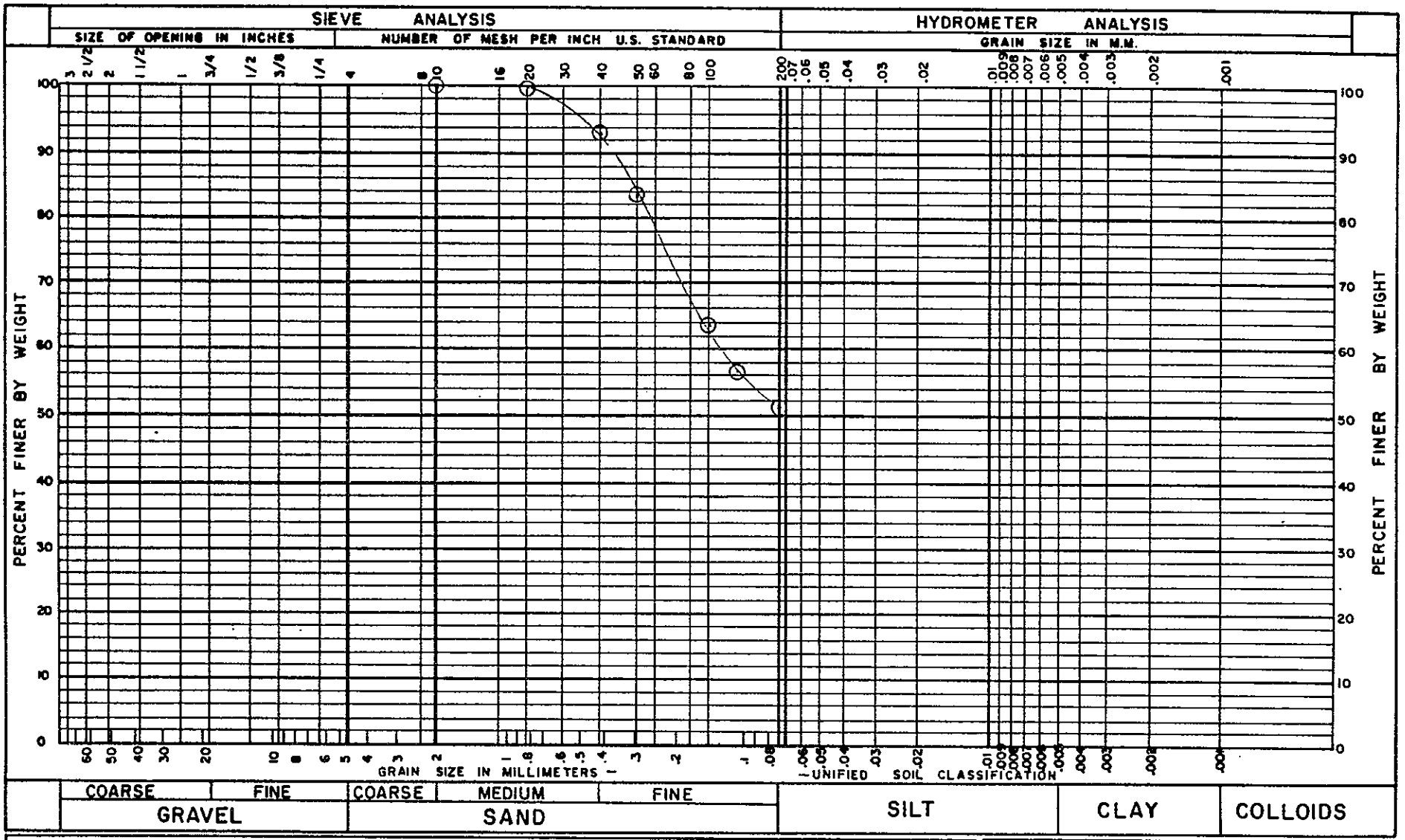
JOB NO: 4731.00

F-4

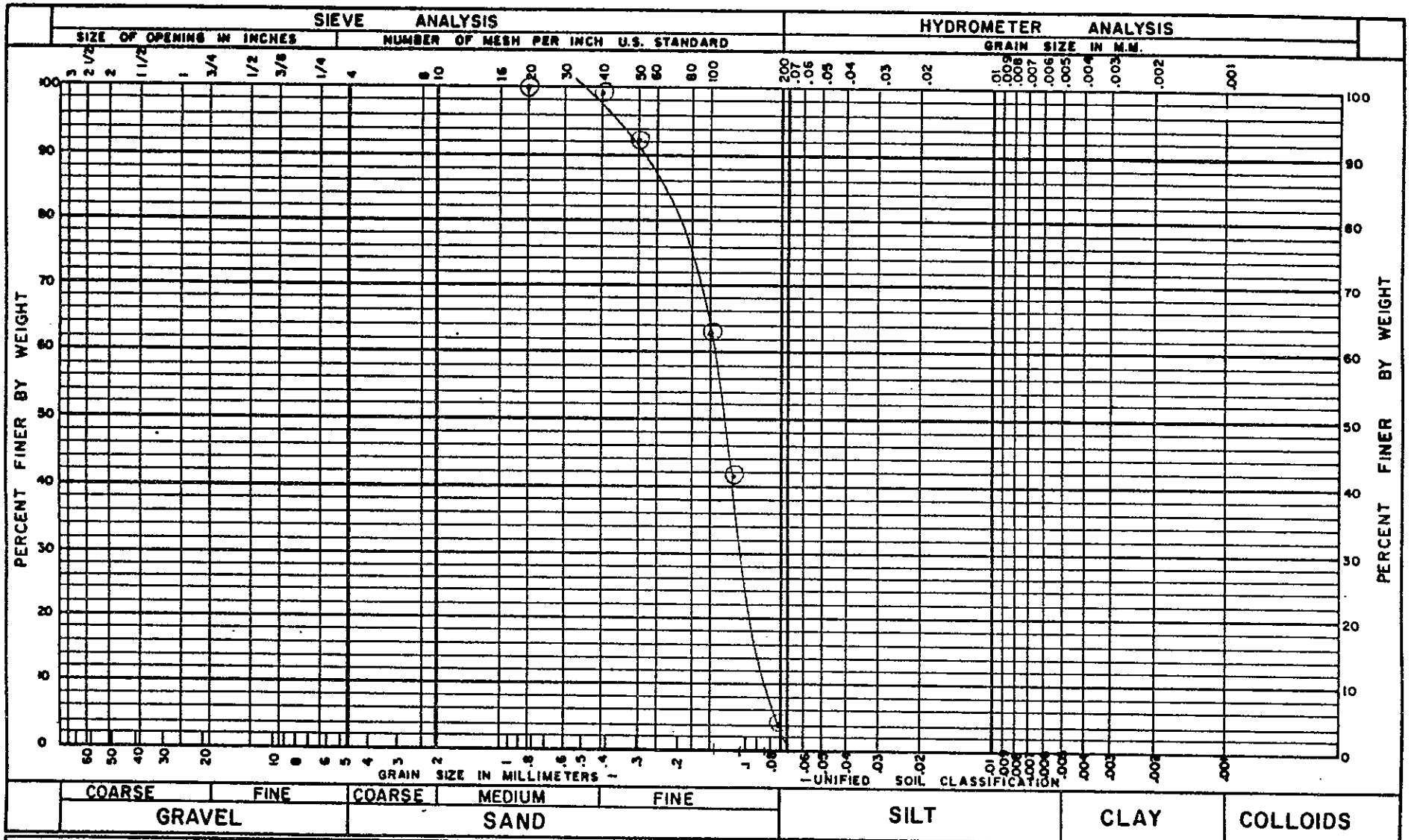


BORING NO. DH-23	GRAVEL	F. SAND	D_{60}	C_U	PROJECT: EC Co. - 7 Mile Feasibility
SAMPLE NO. S-3	C. SAND	SILT 48%	D_{30}	C_Z	
DEPTH	M. SAND	CLAY 52 %	D_{10}	UNIFIED CLASS CH	REMARKS: Fine Fraction
ELEV.	LL = 57.0	PL = 23.3	PI = 33.7		DATE: 5/21/86
AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors		⊙ MECHANICAL △ HYDROMETER			JOB NO: 4731.00

F-5



BORING NO. DH-24	GRAVEL	F. SAND 41.7 %	D_{60}	C_U	PROJECT: E.C. Co. SEVENMILE FEASIBILITY
SAMPLE NO. S-2	C. SAND	SILT } 51.0 %	D_{30}	C_Z	
DEPTH 10	M. SAND 7.3 %	CLAY	D_{10}	UNIFIED CLASS ML	REMARKS:
ELEV. 911					DATE: 5/29/86
AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors		⊙ MECHANICAL △ HYDROMETER			JOB NO: 4731.00



BORING NO.	DH-24	GRAVEL		F. SAND	97.8%	D_{60} .145	C_U 2
SAMPLE NO.	S-4	C. SAND		SILT		D_{30} .115	C_Z 1.1
DEPTH	20	M. SAND	3.2%	CLAY		D_{10} .085	UNIFIED CLASS SP
ELEV.	901						

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

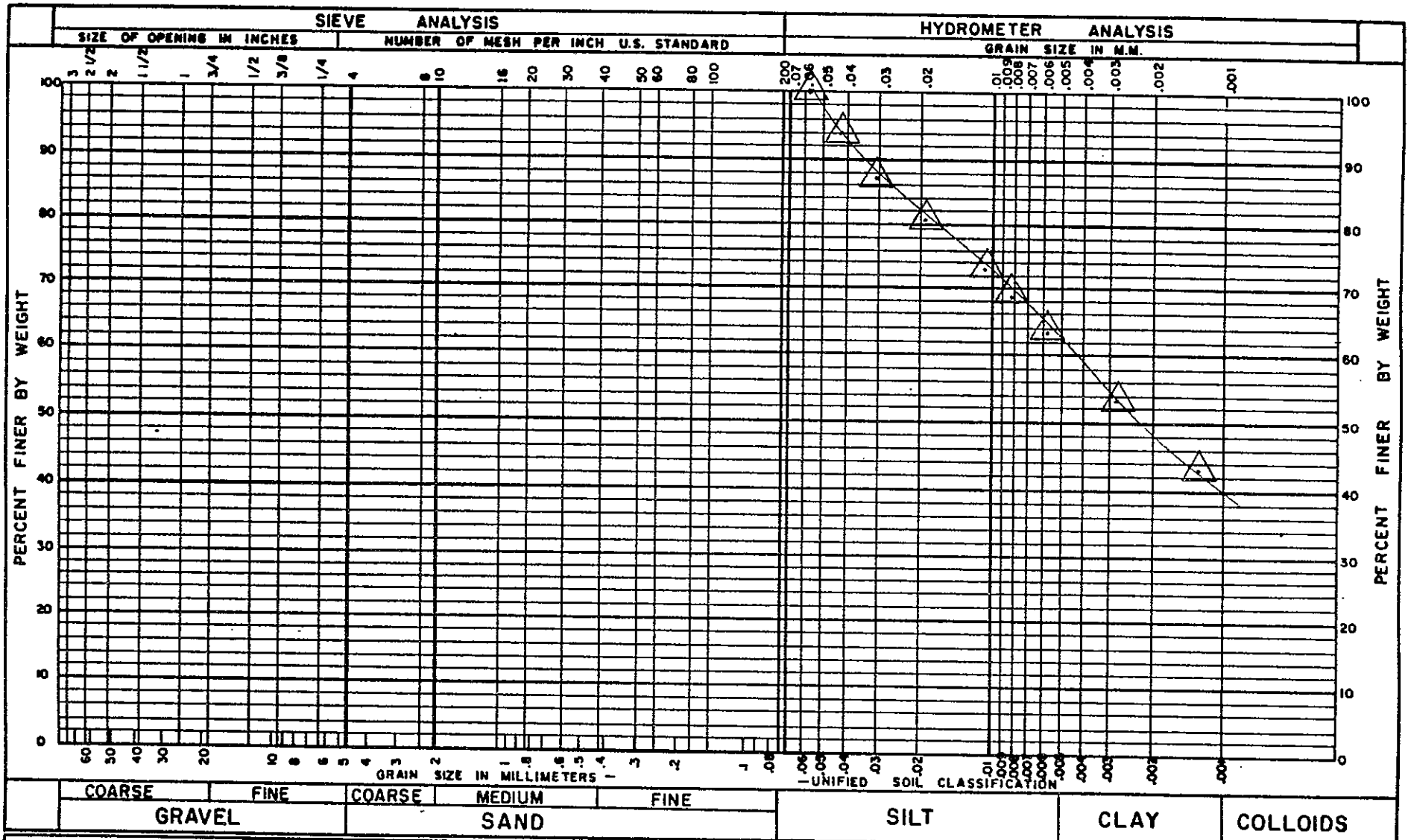
PROJECT: E.C.Co. 7-mi Feasibility

REMARKS: COARSE FRACTION

DATE: 5/27/86

JOB NO: 4731.00

F.7



BORING NO.	DH-24	GRAVEL		F. SAND		D_{60}	C_U
SAMPLE NO.	S-4	C. SAND		SILT	37.5%	D_{30}	C_Z
DEPTH		M. SAND		CLAY	62.5%	D_{10}	UNIFIED CLASS CH
ELEV.		LL = 54.8	PL = 23.3	PI = 31.5			

AYRES ASSOCIATES

⊙ MECHANICAL
△ HYDROMETER

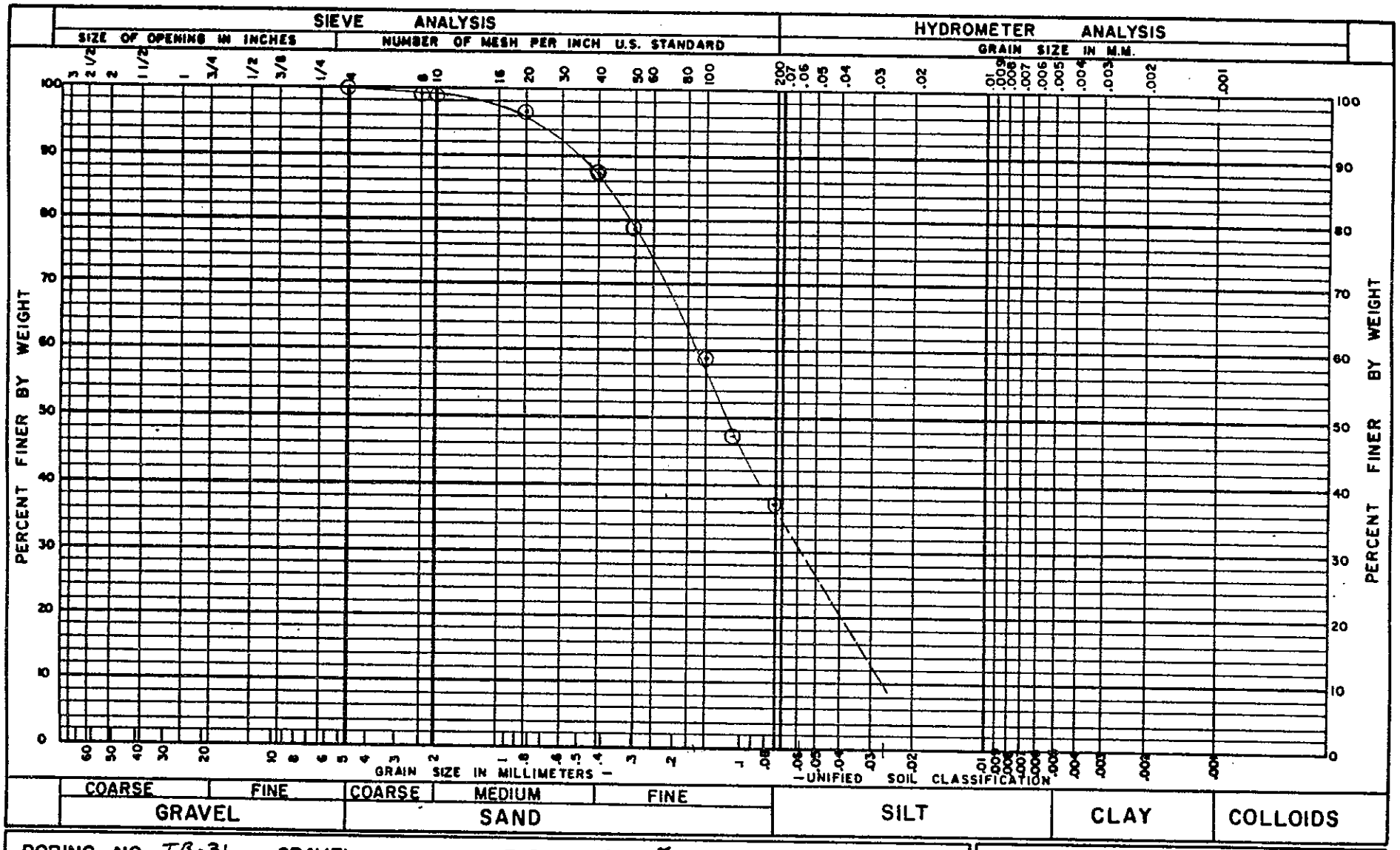
PROJECT: E.C. Co. 7 Mi FEASIBILITY

REMARKS: CLAY LENSE IN SAMPLE

DATE: 5/27/86

JOB NO: 4731.00

E-8

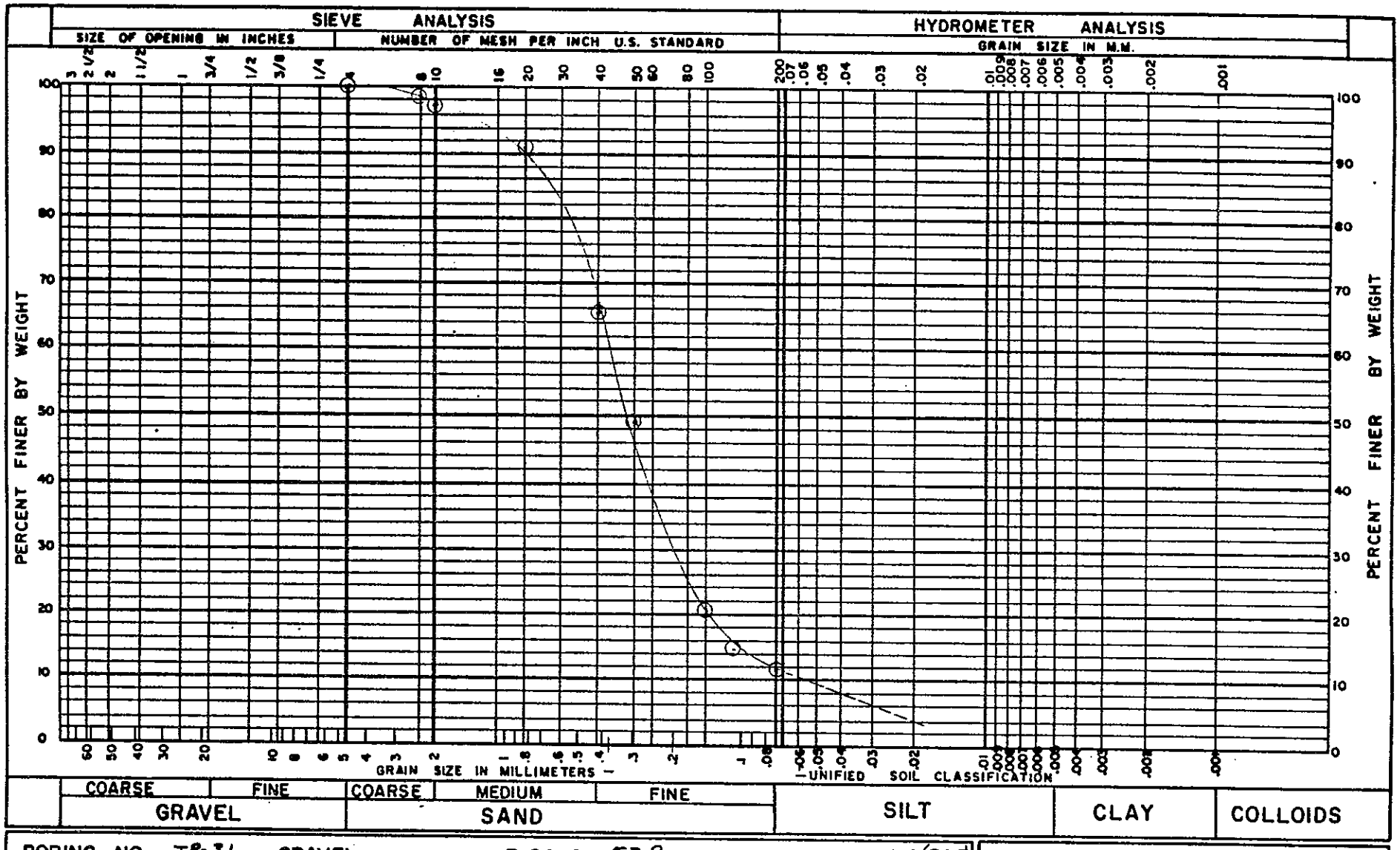


BORING NO. TB-31	GRAVEL	F. SAND 50.3%	D_{60} .165	C_U 6.1	PROJECT: E.C. COUNTY SEVENMILE CREEK FEASIBILITY		
SAMPLE NO. S-5	C. SAND 1.2%	SILT } 36.9%	D_{30} .059(EST.)	C_Z 0.8			
DEPTH 25	M. SAND 11.6%	CLAY }	D_{10} .027(EST.)	UNIFIED CLASS SM	REMARKS:		
ELEV. 878							

AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

DATE: 5/29/86
JOB NO: 4731.00



BORING NO.	T8-31	GRAVEL		F. SAND	53.9	D_{60}	.38	C_U	6.6 (EST.)
SAMPLE NO.	5-6	C. SAND	2.3 %	SILT } CLAY }	11.7	D_{30}	.20	C_Z	1.8 (EST.)
DEPTH	30	M. SAND	32.1 %			D_{10}	.058 (EST.)	UNIFIED CLASS	SW-SM
ELEV.	873								

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

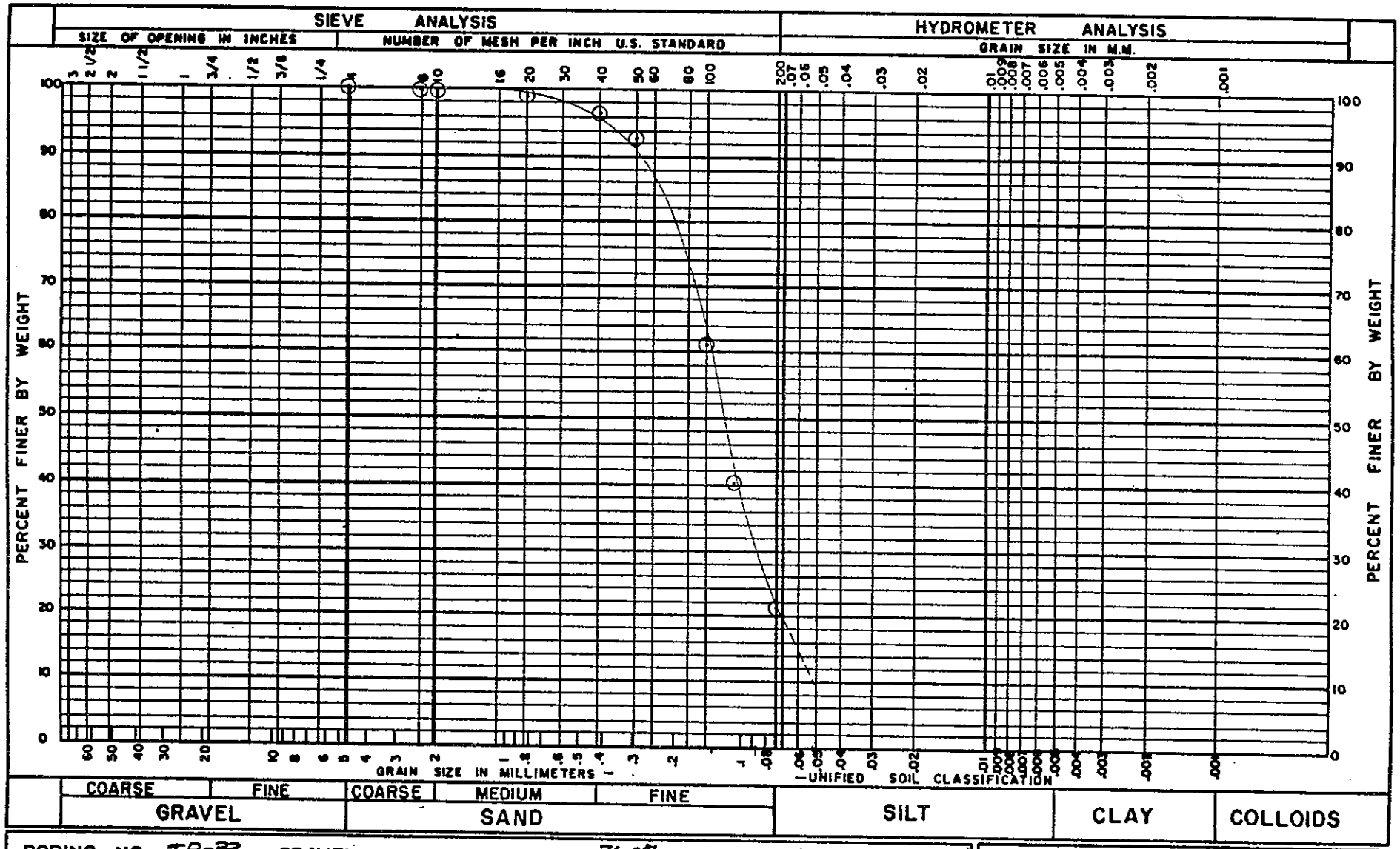
PROJECT: G.C. Co. 7 MILE FEASIBILITY

REMARKS:

DATE: 5/29/86

JOB NO: 4731.00

F-12



BORING NO.	TB-33	GRAVEL		F SAND	76.0%	D_{60} .14	C_U 2.7 (EST.)
SAMPLE NO.	S-1	C. SAND		SILT / CLAY	21.2%	D_{30} .089	C_Z 1.1 (EST.)
DEPTH	5	M. SAND	2.8%			D_{10} .052 (EST)	UNIFIED CLASS SM
ELEV.	911						

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

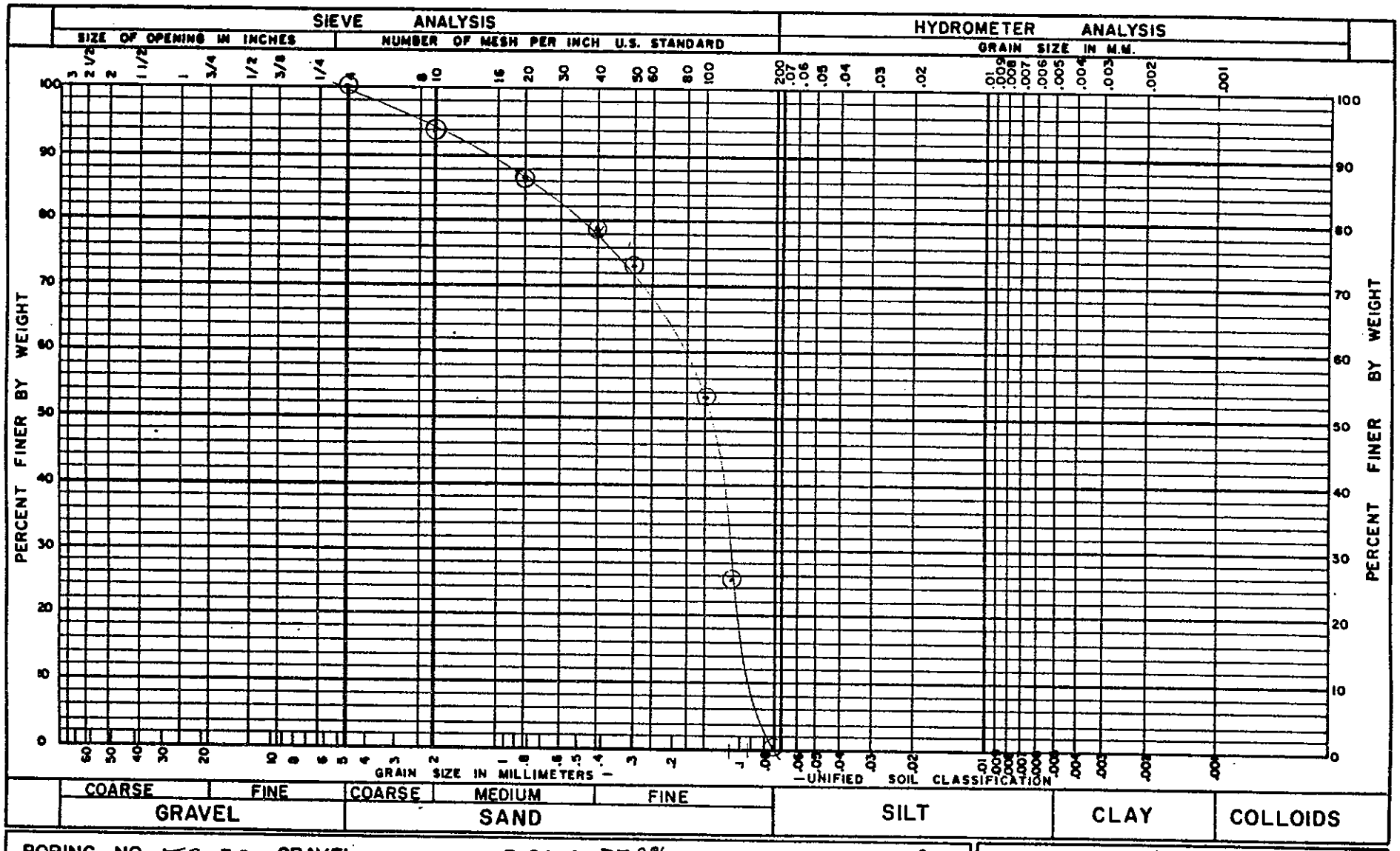
PROJECT: E.C. Co. SEVENMILE FEASIBILITY

REMARKS:

DATE: 5/29/86

JOB NO: 4731.00

F11



BORING NO.	TB-33	GRAVEL		F. SAND	77.9%	D_{60}	.175	C_U	1.9
SAMPLE NO.	S-3	C. SAND	5.0%	SILT		D_{30}	.12	C_Z	0.1
DEPTH	15	M. SAND	22.1%	CLAY		D_{10}	.091	UNIFIED CLASS	SP
ELEV.	901								

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

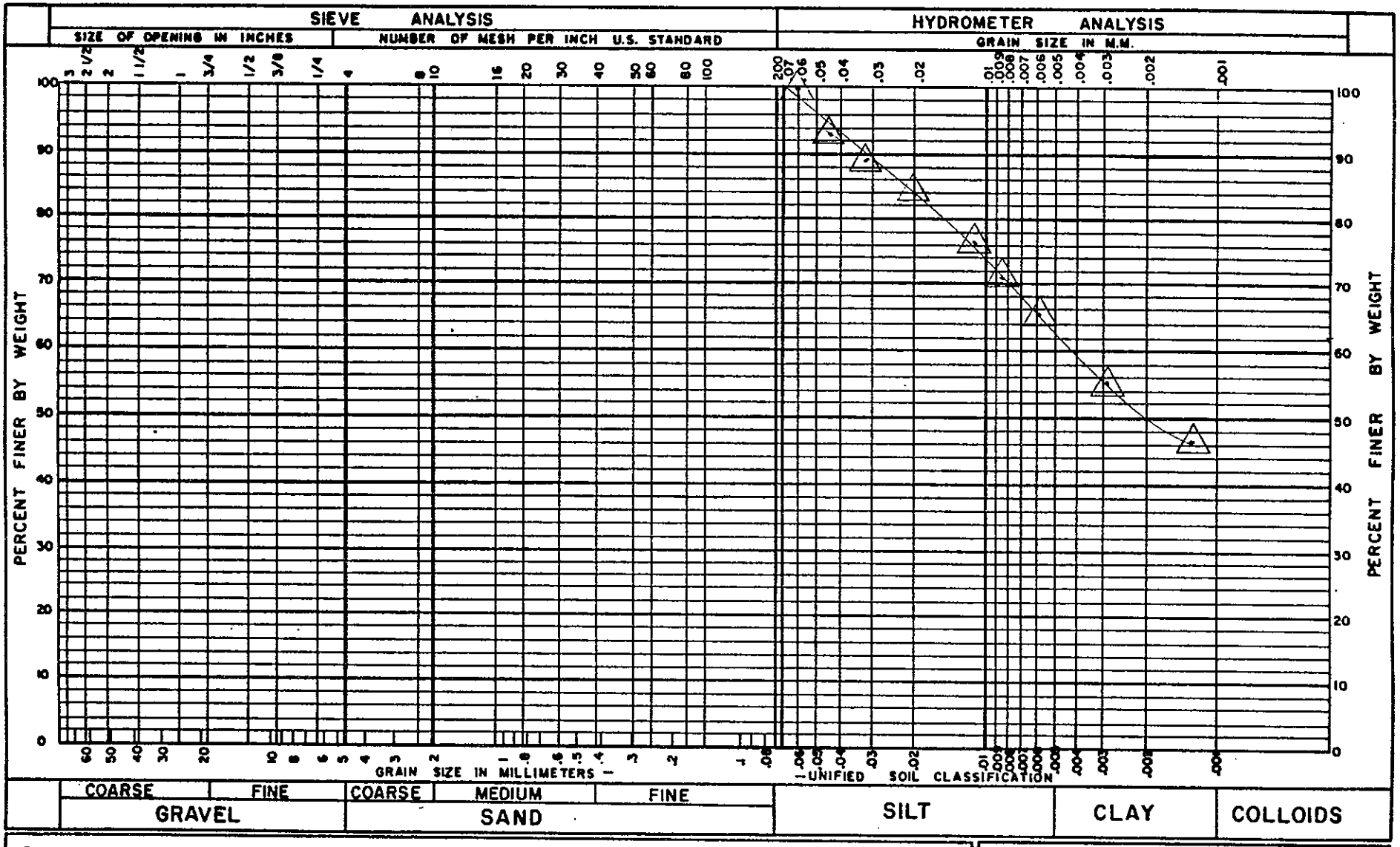
PROJECT: E. C. Co. 7-mi Flasibility

REMARKS: COARSE FRACTION

DATE: 5/27/86

JOB NO: 4731.00

E-19



BORING NO.	TB-33	GRAVEL		F SAND		D_{60}	C_U
SAMPLE NO.	S-3	C. SAND		SILT	37.7%	D_{30}	C_Z
DEPTH		M. SAND		CLAY	62.3%	D_{10}	UNIFIED CLASS CH
ELEV.		LL = 62.0	PL = 26.3	PI = 35.7			

AYRES ASSOCIATES

⊙ MECHANICAL
△ HYDROMETER

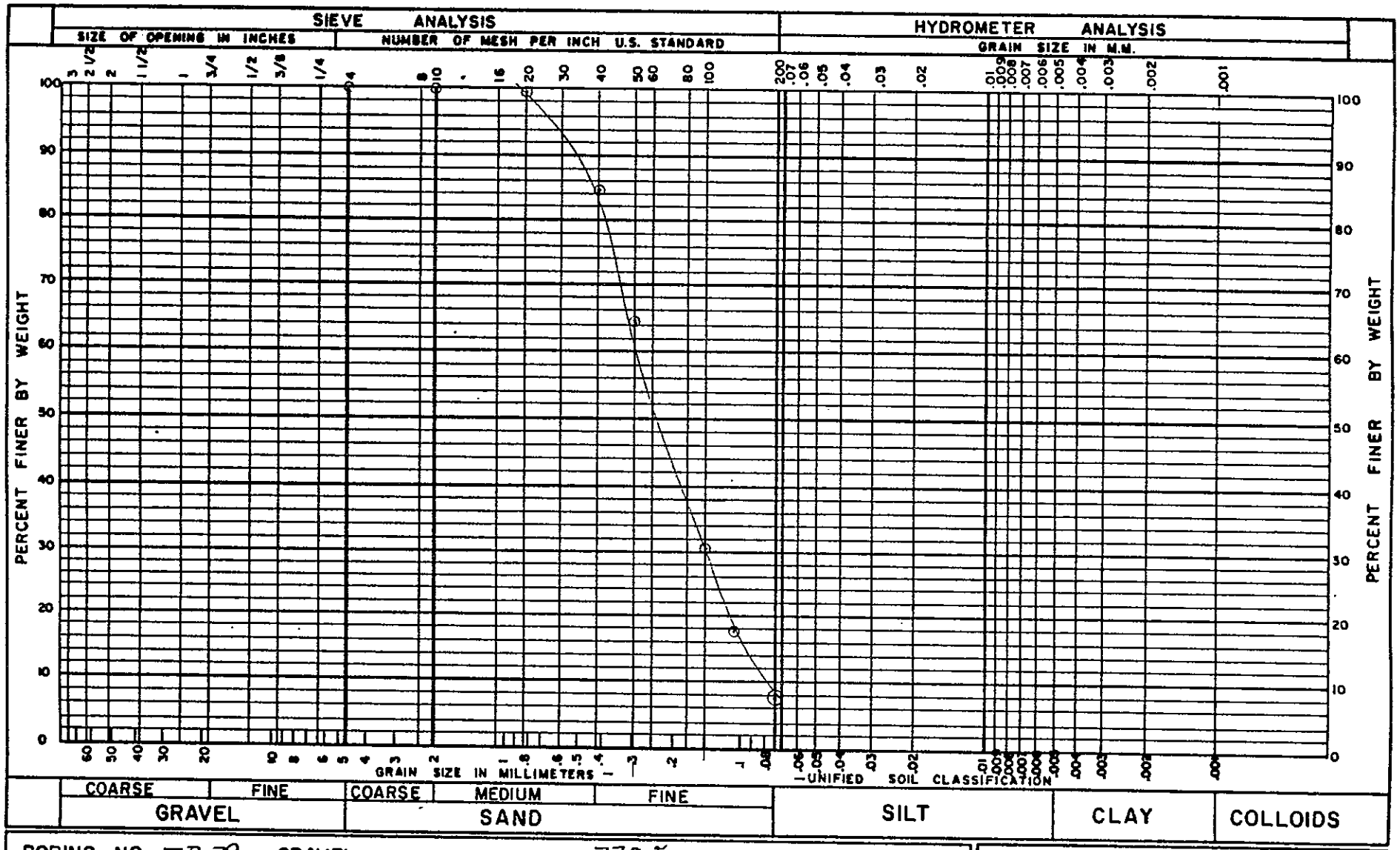
PROJECT: E.C. Co. - 7 Mile

REMARKS: Fines Portion

DATE: 5/27/96

JOB NO: 4731.00

F-13



BORING NO.	TB-39	GRAVEL		F. SAND	77.0 %	D_{60} .30	C_U 3.8
SAMPLE NO.	S-2	C. SAND		SILT / CLAY	7.4%	D_{30} .15	C_Z 0.9
DEPTH	10	M. SAND	15.6 %			D_{10} .08	UNIFIED CLASS SP-SM
ELEV.	904						

AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors

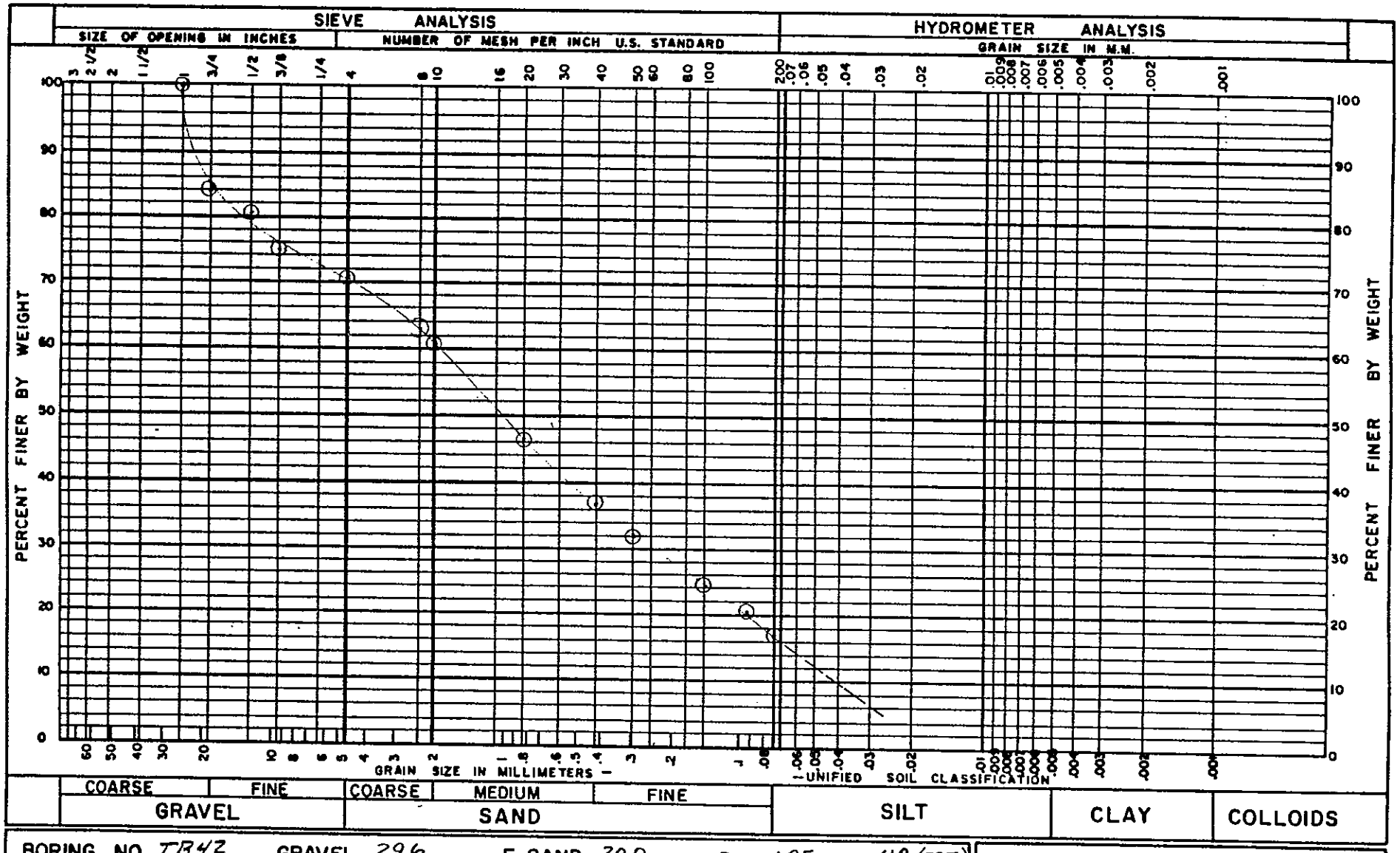
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. COUNTY - SEVENMILE FEASIBILITY

REMARKS:

DATE: 5/27/86

JOB NO: 4731.00

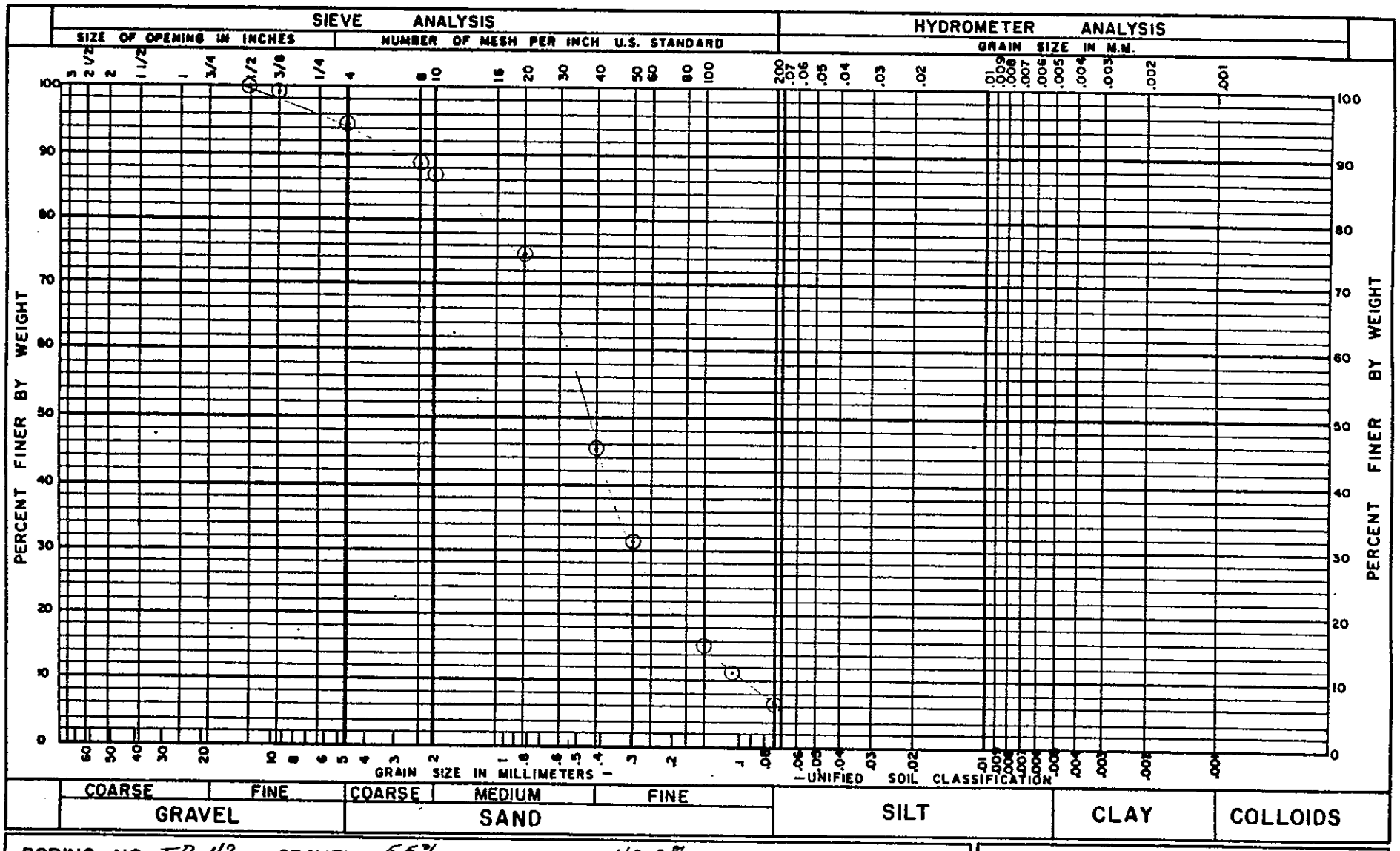


BORING NO. TB42	GRAVEL 29.6	F. SAND 20.0	D_{60} 1.95	C_U 48 (EST.)	PROJECT: E.C. SEVENMILE FEASIBILITY
SAMPLE NO. 5-1	C. SAND 10.0	SILT } 17	D_{30} .24	C_Z 0.7 (EST.)	
DEPTH 15	M. SAND 23.4	CLAY }	D_{10} .041 (EST.)	UNIFIED CLASS SM	REMARKS:
ELEV. 895					DATE: 5/27/86
					JOB NO: 4731.00

AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

F-15



BORING NO.	TB-42	GRAVEL	5.5%	F. SAND	40.8%	D_{60}	.55	C_U	5.8
SAMPLE NO.	5-3	C. SAND	7.5%	SILT }	6.4%	D_{30}	.30	C_Z	1.7
DEPTH	30	M. SAND	39.8%	CLAY }		D_{10}	.095	UNIFIED CLASS	SP-SM
ELEV.	880								

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. - 7 MI

REMARKS:

DATE: 5/27/86

JOB NO: 4731.00

E-16

July 1986 Table 6

(From 2014 FR)

TABLE 6

GRAINSIZE ANALYSIS TABLE

Boring	Sample #	Depth	Elevation	% GR	% SD	% Fines	% Silt	% Clay	Unified
DH-1	3	8	912	0	88	12			SM
DH-1	8	20	900	0	62	38	36	2	SM
DH-1	12	36	884	0	97	3			SP
DH-1	13	40	880	0	96	4			SP
DH-2	5	13	896	1	97	3			SP
DH-3	3	7.5	897	0	8	92	86	6	ML
DH-3	7	17.5	887	0	60	40			SM
DH-4	6	16	883	0	88	12			SM
DH-5	3	8	892	0	100	0			SP
DH-5	6	16	884	0	58	12			SM
DH-6	5	13	881	0	92	8			SP-SM
DH-6	6	15	879	0	75	25			SM
DH-6	12	35	859	0	46	64	62	2	ML
DH-20	1	5	905	0	71	29			SM
DH-20	3	15	895	0	88	12	3	9	SP-SM
DH-23	2	10	902	0	90	10			SP-SM
DH-23	3	15	897	0	97	3	1	2	SP
DH-24	2	10	911	0	49	51			ML
DH-24	4	20	901	0	96	4	1	3	SP

TABLE 6 (continued)

Boring	Sample #	Depth	Elevation	% GR	% SD	% Fines	% Silt	% Clay	Unified
TB-4	10	30-33	870	0	82	18			SM
TB-5	P	31	864	0	60	40	26	14	SM
TB-5	2	32	863	0	12	88	63	25	ML
TB-6	1	14-17	880	0	57	43			SM
TB-9	1	5	889	2	88	10			SP-SM
TB-11	1	4-7	894.5	0	70	30			SM
TB-11	P	15	885	0	66	34	23	11	SM
TB-13	2	7-10	892	0	63	37			SM
TB-13	3	10-13	888.5	0	85	15			SM
TB-14	P	11.5	895	0	43	69	57	10	ML
TB-14	2	11-13	875	0	24	76	43	33	ML
TB-17	2	12-15	895	0	65	35			SM
TB-21	1	5	908	0	41	59	39	20	ML
TB-21	P	11	901	0	78	22	11	11	SM
TB-21	P	19	894	0	86	14			SM
TB-24	4	13	900	0	97	3			SP
TB-26	P	8.5	902	0	64	36	25	11	SM

TABLE 6 (continued)

Boring	Sample #	Depth	Elevation	% GR	% SD	% Fines	% Silt	% Clay	Unified
TB-31	5	25	878	0	63	37			SM
TB-31	6	30	873	0	88	12			SW-SM
TB-33	1	5	911	0	79	21			SM
TB-33	3	15	901	0	99	1	38	62	SP
TB-39	2	10	904	0	93	7			SP-SM
TB-42	1	15	895	30	53	17			SM
TB-42	3	30	880	6	88	6			SP-SM
TB-45	2	10	886	0	97	3			SP

NOTE: Gradation Curves for DH-1 to DH-6 and TB-4 to TB-26 are in the Sector 2 Initial Site Report. Others are in Appendix F.

August 2000 Geotech Data

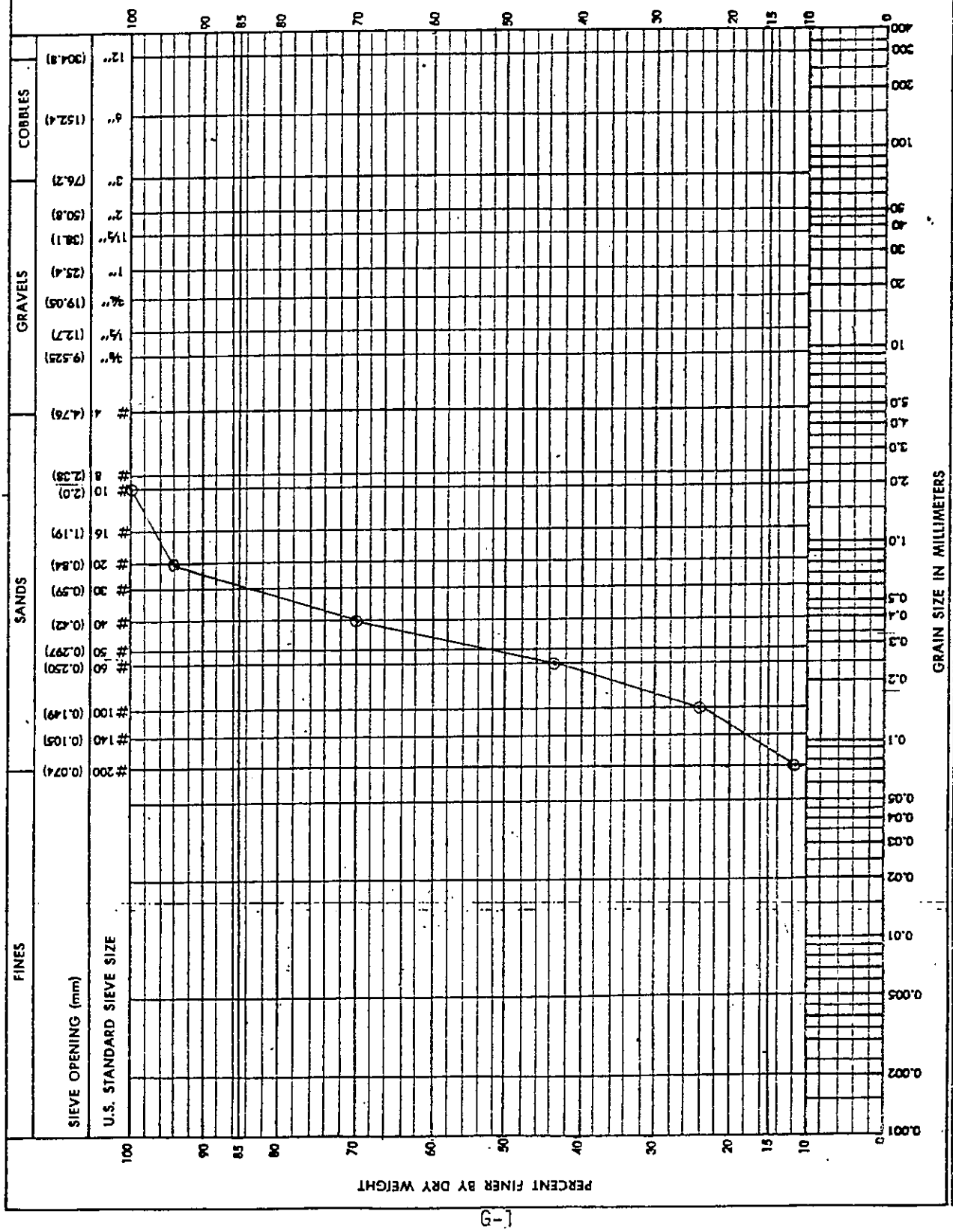
(From 2014 FR)

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. PERRY | DATE 2-18-76

REMARKS



GRAVEL 0 %	E SAND 58 %	D_{60} 0.34	C_u
C. SAND 0 %	SILT } 12 %	D_{30} 0.17	C_z
M. SAND 30 %	CLAY	D_{10}	UNIFIED CLS. SM

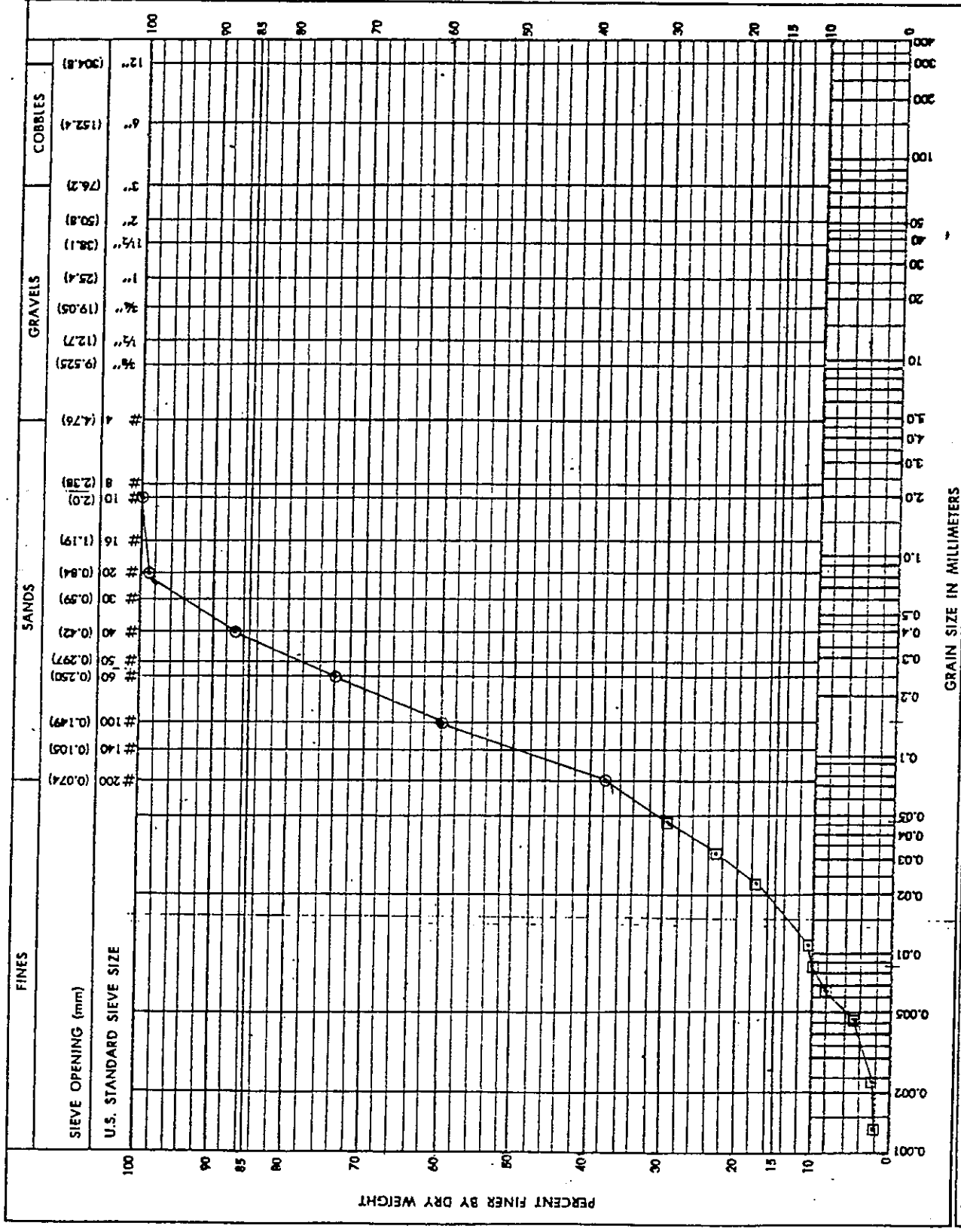
BORING NO. DH-1
SAMPLE NO. 3
DEPTH 8'
ELEV. 912'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY S. HANSON | DATE 2-23-76

REMARKS: WASHED NO. 200 SIEVE



C_u 17.44
C_z 1.71
UNIFIED CLS. SM

D_{60} 0.15
D_{30} 0.047
D_{10} 0.0086

F SAND 49 %
SILT 36 %
CLAY 2 %

GRAVEL 0 %
C. SAND 0 %
M. SAND 13 %

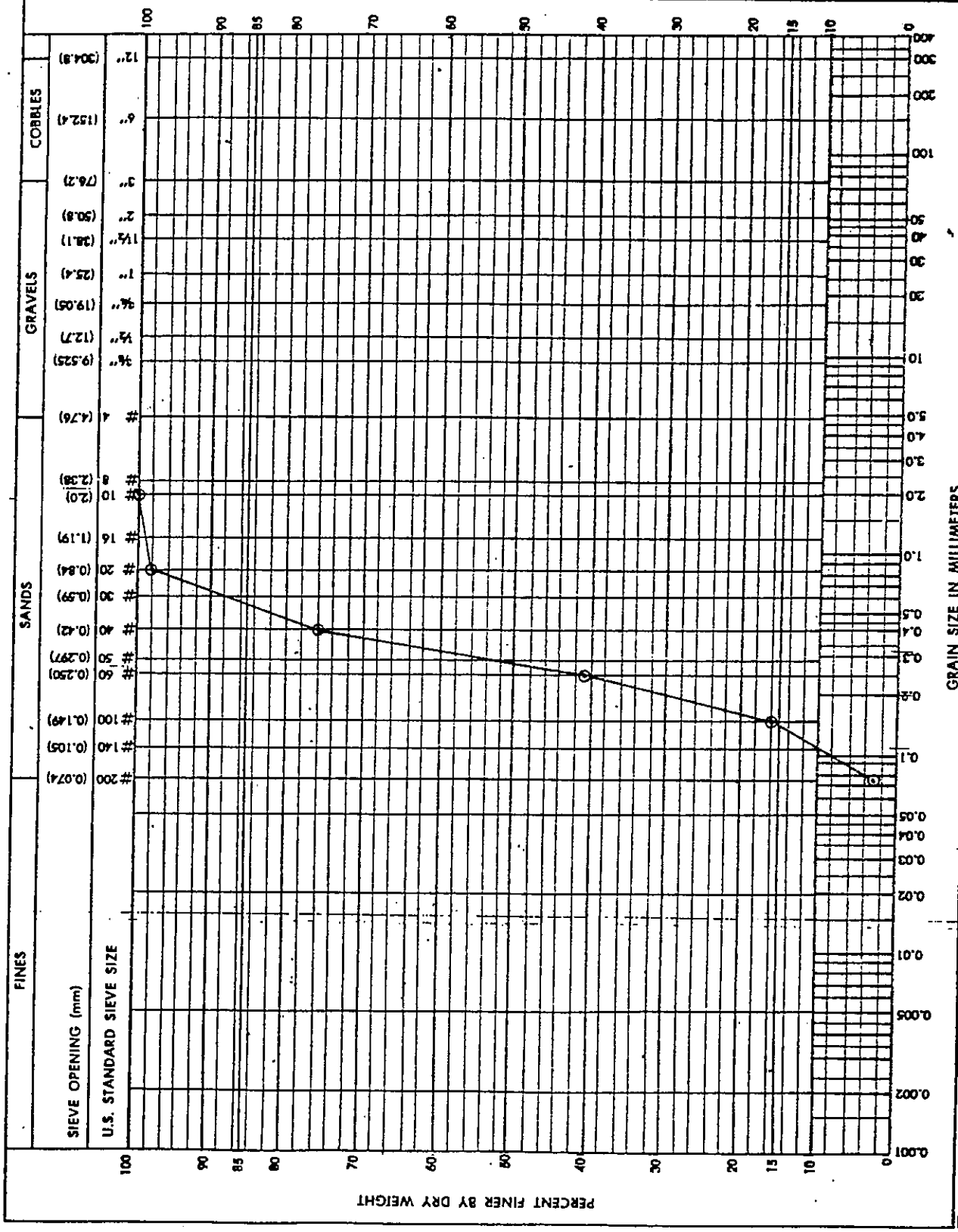
BORING NO. DH-1
SAMPLE NO. 8
DEPTH 20'
ELEV. 900'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. PERRY | DATE 2-18-76

REMARKS



C_u 3.00
C_z 1.10
UNIFIED CLS. SP

D_{60} 0.33
D_{30} 0.20
D_{10} 0.11

GRAVEL 0 %
C. SAND 0 %
M. SAND 24 %
F SAND 73 %
SILT } 3 %
CLAY

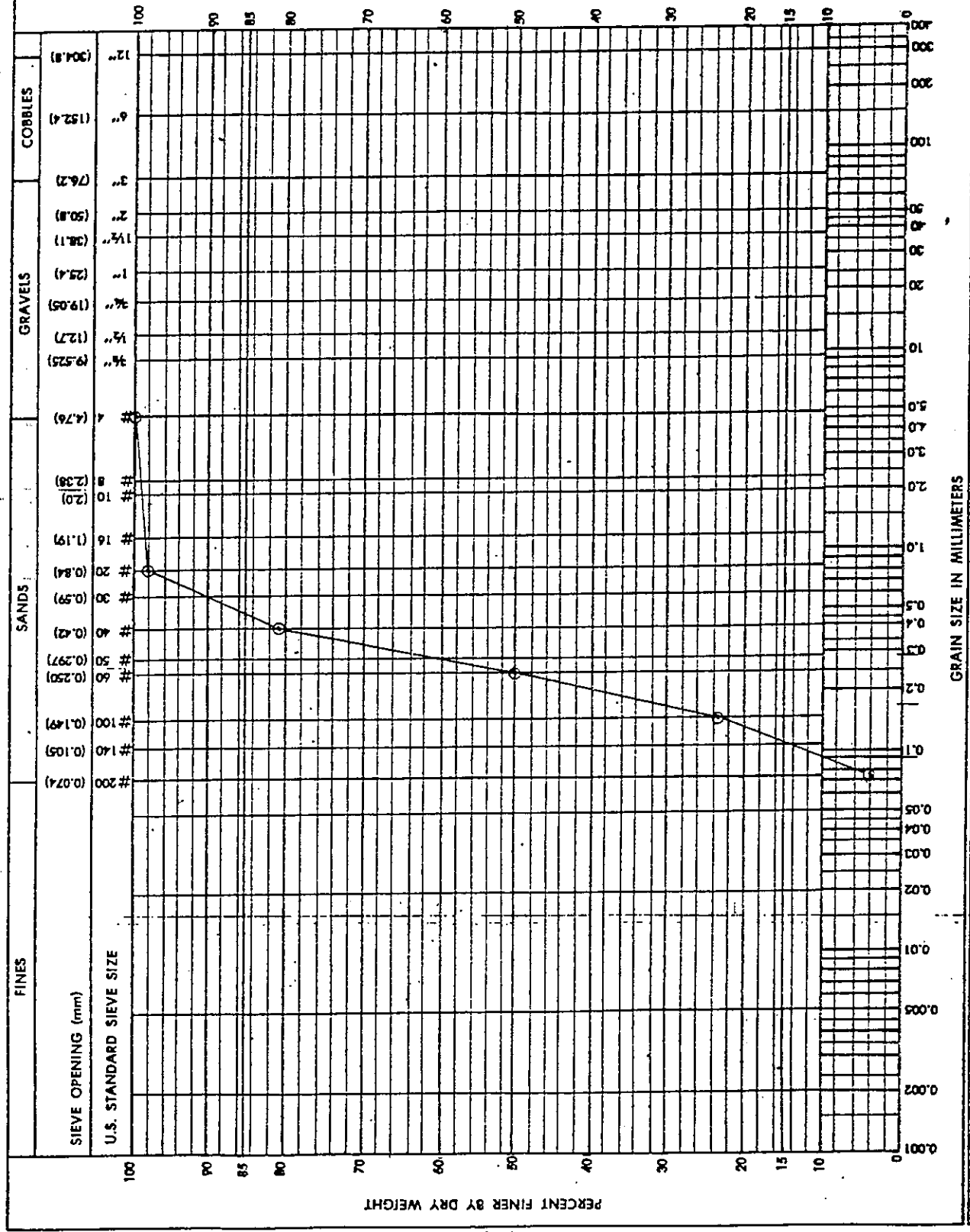
BORING NO. OH-1
SAMPLE NO. 12
DEPTH 36'
ELEV. 881'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.: H01-0050-181 | BY: S. HANSON | DATE: 2-23-76

REMARKS



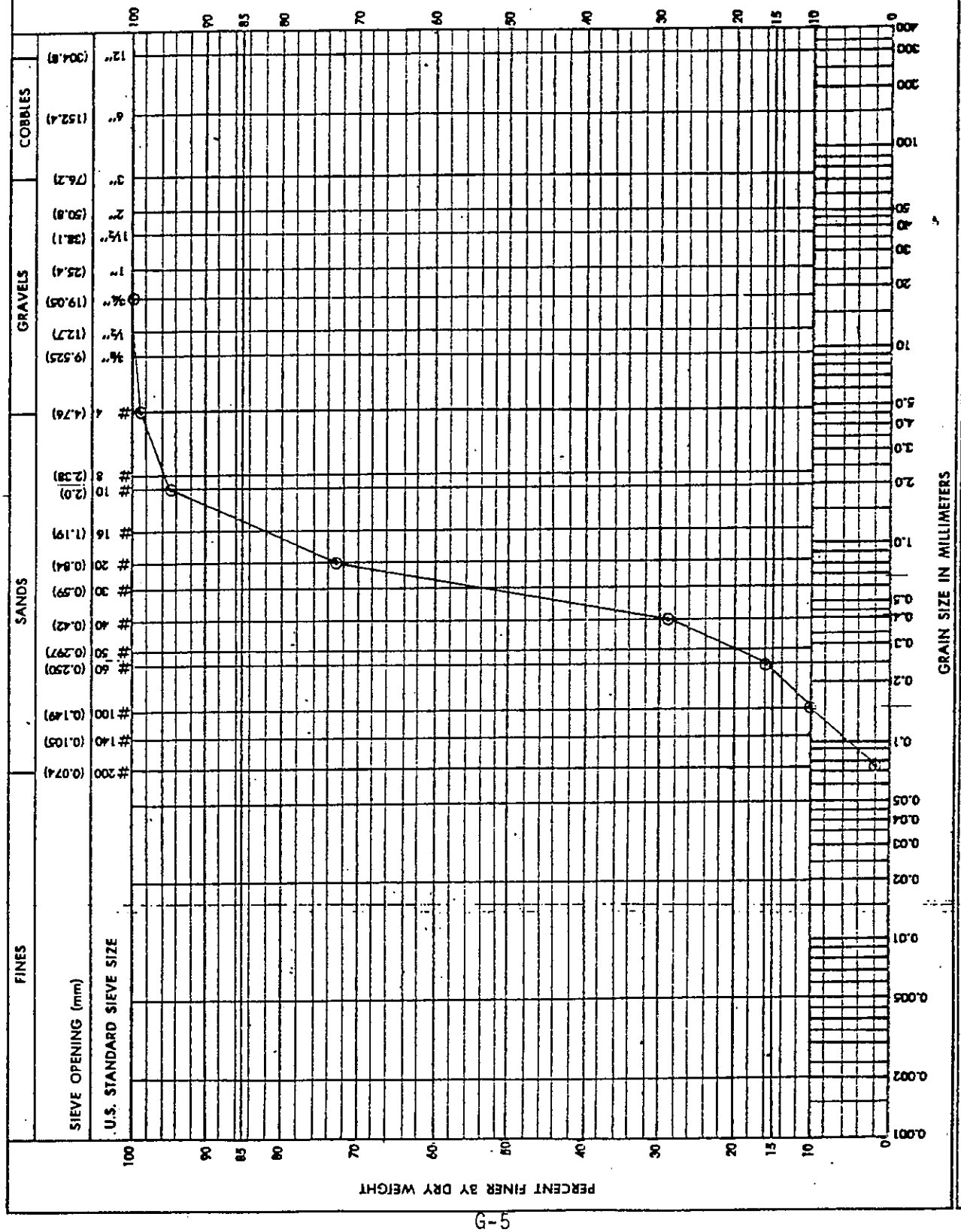
BORING NO. DH-1	GRAVEL 0 %	E SAND 77 %	C_U 3.11
SAMPLE NO. 13	C. SAND 0 %	SILT } 4 %	C_Z 1.15
DEPTH 40'	M. SAND 19 %	CLAY	UNIFIED CLS. SP
ELEV. 880'			D_{60} 0.28
			D_{30} 0.17
			D_{10} 0.09

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. PERRY | DATE 2-18-76

REMARKS



GRAVEL	1 %	E SAND	27 %
C. SAND	4 %	SILT	2 %
M. SAND	66 %	CLAY	

D_{60} 0.68 D_{30} 0.41 D_{10} 0.15

C_U 4.53 C_Z 1.65 UNIFIED CLS. SP

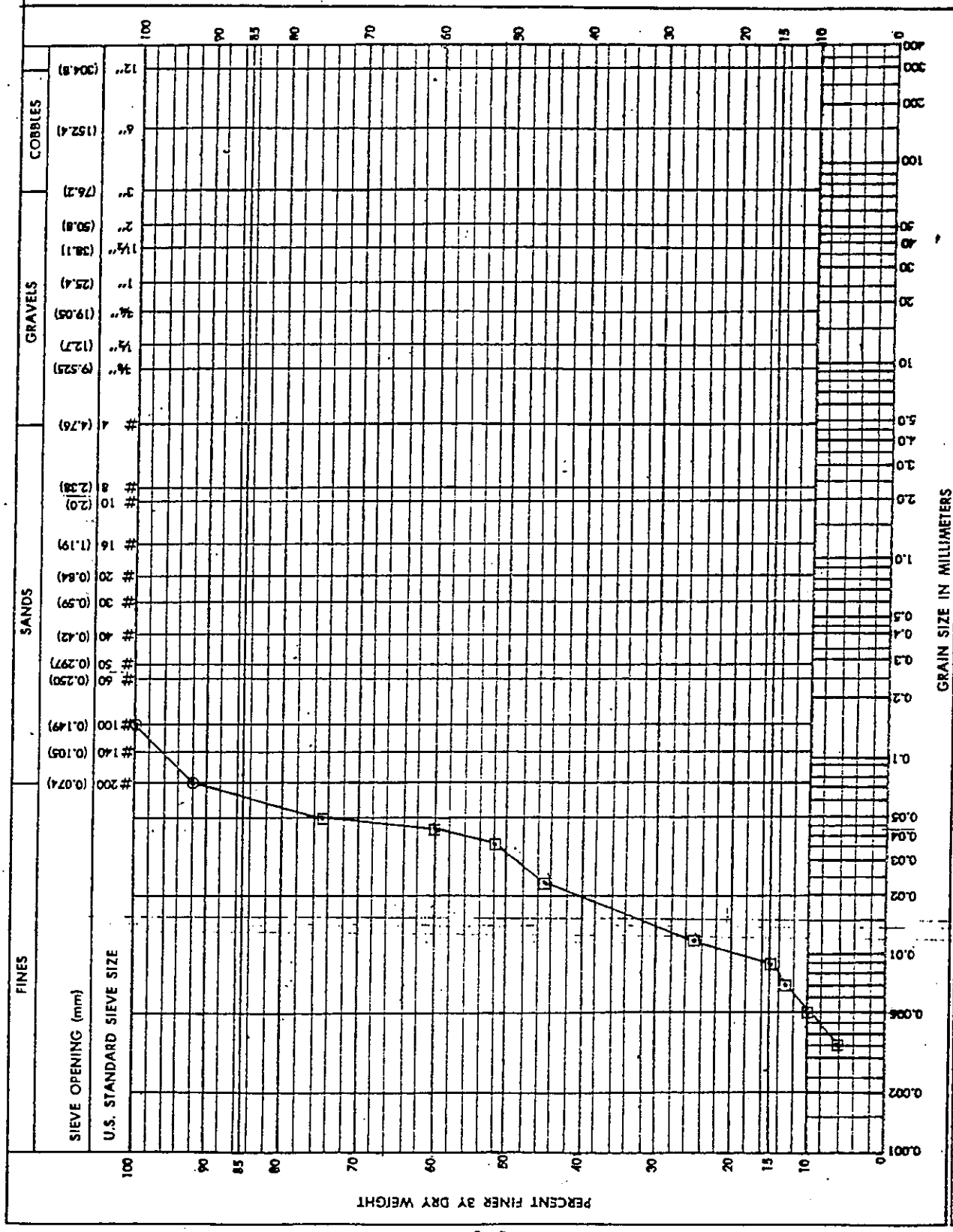
BORING NO. DH-2
SAMPLE NO. 5
DEPTH 13'
ELEV. 896'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY S. HANSON | DATE 2-23-76

REMARKS: WASHED NO. 200 SIEVE



BORING NO.	DH-3	GRAVEL	0 %
SAMPLE NO.	3	C. SAND	0 %
DEPTH	7.5'	M. SAND	0 %
ELEV.	897'	E SAND	8 %
		SILT	86 %
		CLAY	6 %

C_u 8.60
C_z 0.91
UNIFIED CLS. ML

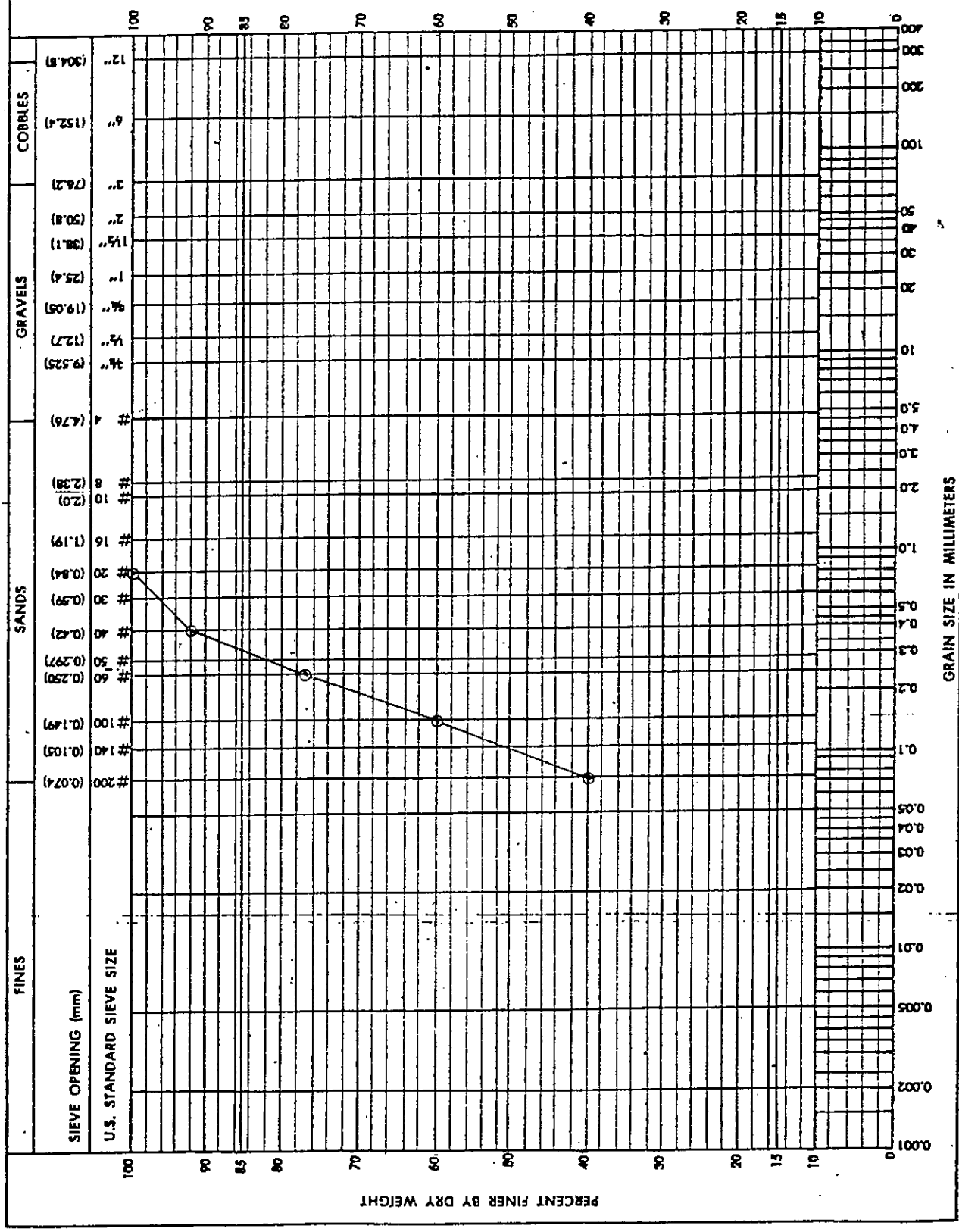
D_{60} 0.043
D_{30} 0.014
D_{10} 0.005

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY S. HANSON | DATE 2-23-76

REMARKS



BORING NO.	OH-3	GRAVEL 0 %	E SAND 52 %
SAMPLE NO.	7	C. SAND 0 %	SILT } 40 %
DEPTH	18'	M. SAND 8 %	CLAY
ELEV.	887'		

D_{60} 0.15 D_{30} ___ D_{10} ___

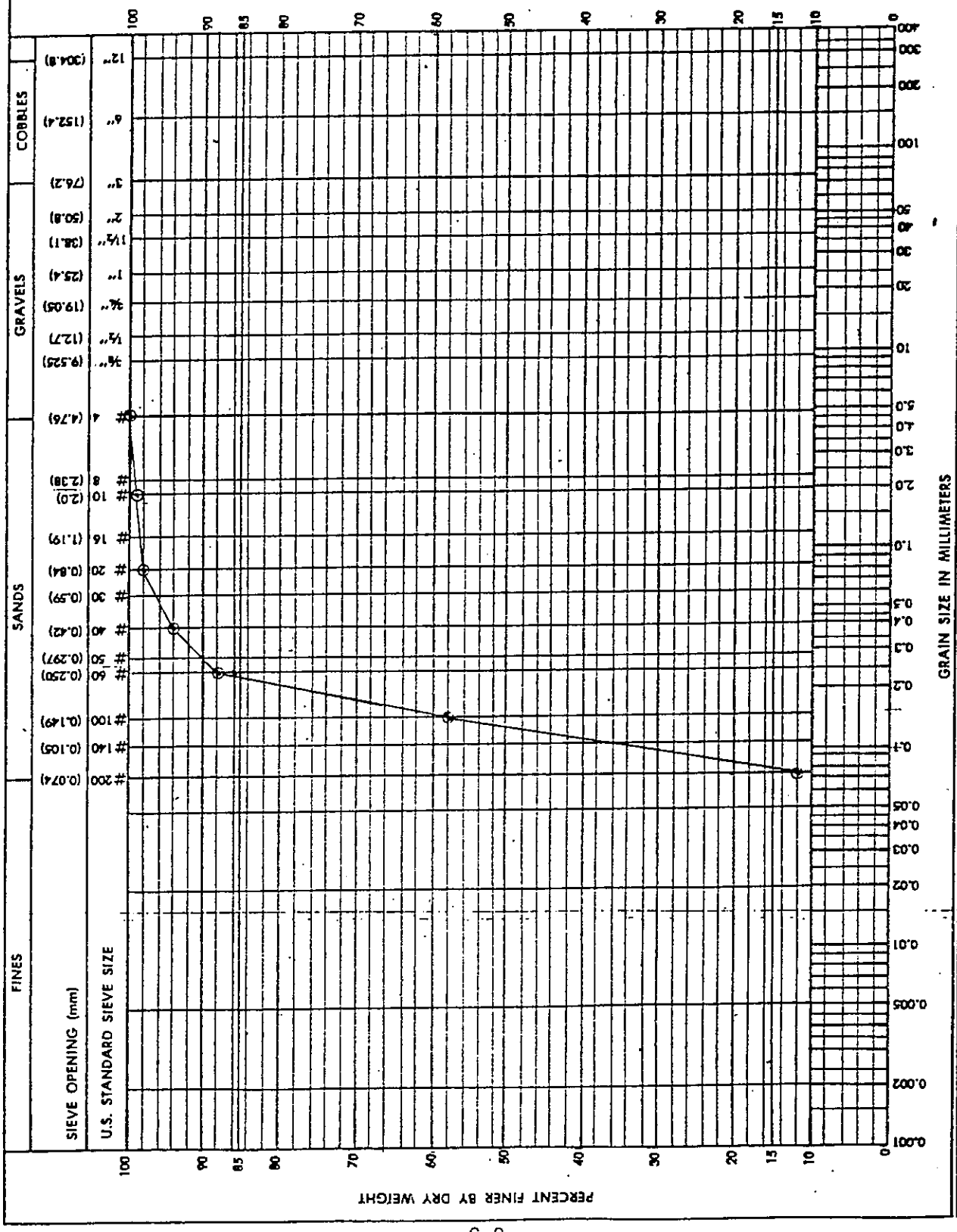
C_C ___ C_Z ___ UNIFIED CLS. SM

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. PERRY | DATE 2-18-76

REMARKS



C_u ____ C_z ____ UNIFIED CLS. SM

D_{60} 0.16 D_{30} 0.099 D_{10} ____

GRAVEL 0 % | E SAND 82 % | SILT } 12 %
C. SAND 1 % | CLAY
M. SAND 5 %

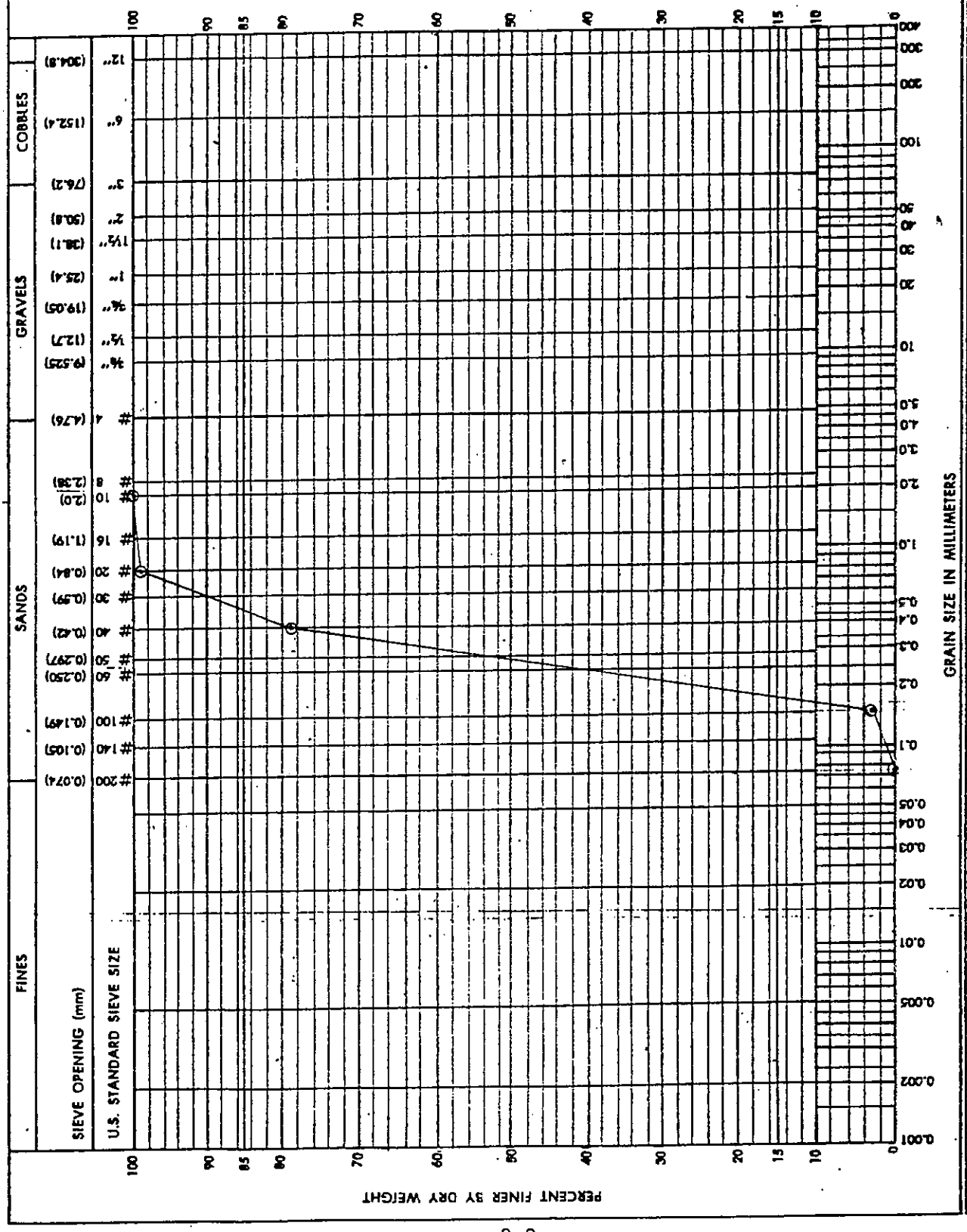
BORING NO. DH-4
SAMPLE NO. 6
DEPTH 16'
ELEV. 883'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. PERRY | DATE 2-18-76

REMARKS



C_U 1.88
C_Z 0.92
UNIFIED CLS. SP

D_{60} 0.30
D_{30} 0.21
D_{10} 0.16

GRAVEL 0 %
C. SAND 0 %
M. SAND 21 %
F. SAND 79 %
SILT } 0 %
CLAY

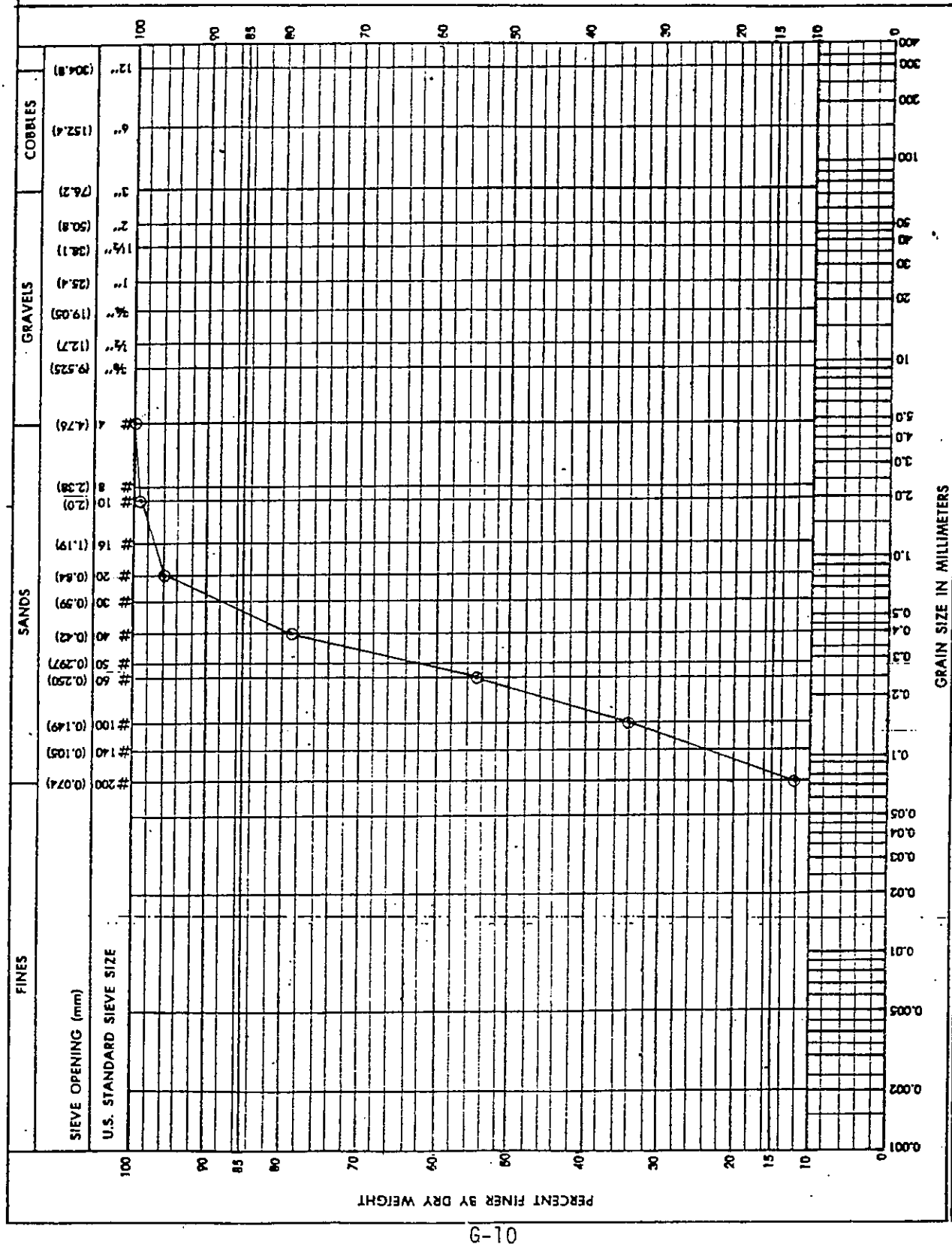
BORING NO. OH-5
SAMPLE NO. 3
DEPTH 8'
ELEV. 902'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. PERRY | DATE 2-18-76

REMARKS



BORING NO. DH-5	GRAVEL 0 %	SAND 67 %	D_{60} 0.28
SAMPLE NO. 6	C. SAND 1 %	SILT } 12 %	D_{30} 0.14
DEPTH 16'	M. SAND 20 %	CLAY	D_{10}
ELEV. 884'			

C_u ____ C_z ____

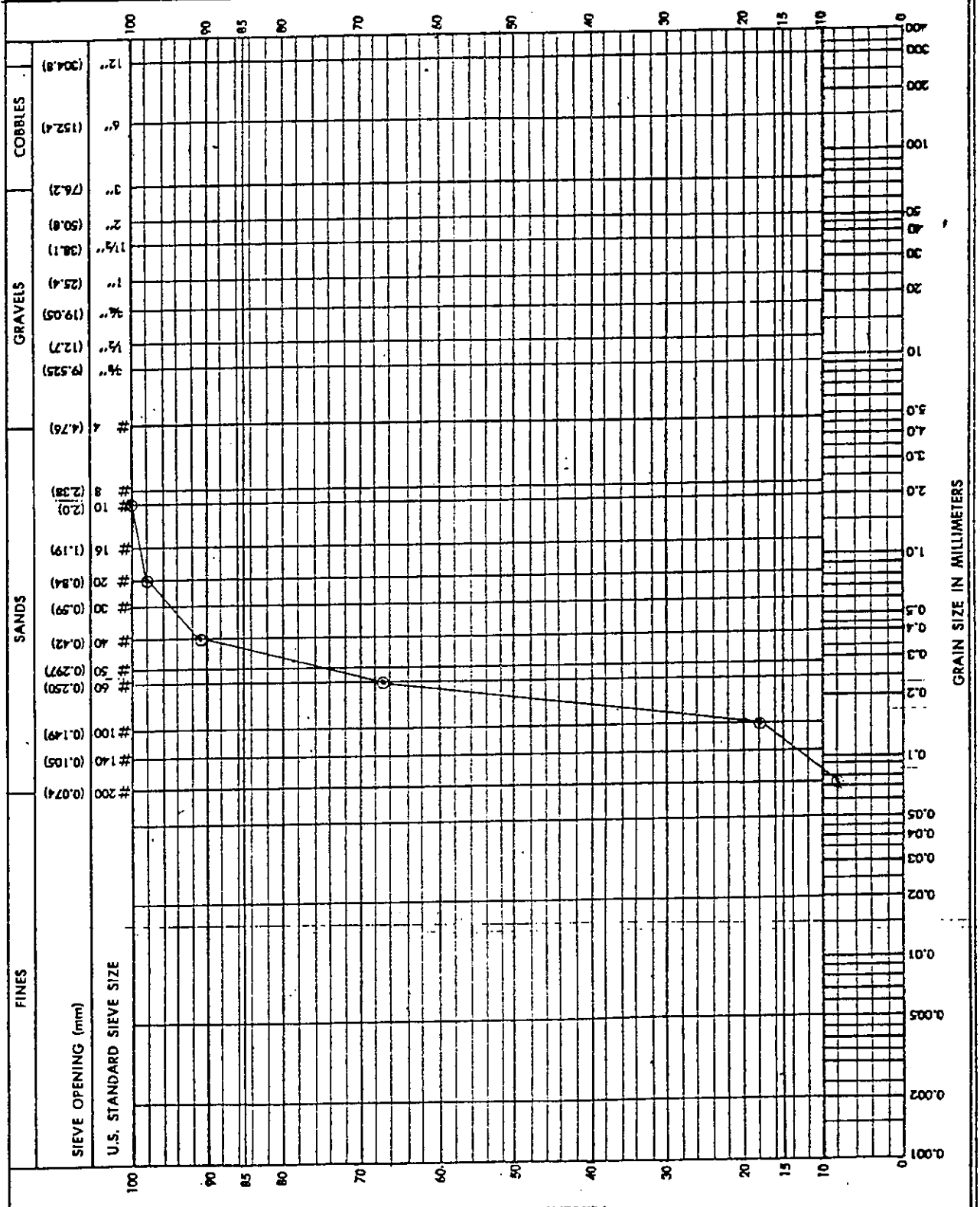
UNIFIED CLS. SM

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. PERRY | DATE 2-18-76

REMARKS



C_U 2.71
C_Z 1.66
UNIFIED CLS. SP-SM

D_{60} 0.23
D_{30} 0.18
D_{10} 0.085

GRAVEL 0 %
C. SAND 0 %
M. SAND 9 %
E SAND 83 %
SILT } 8 %
CLAY

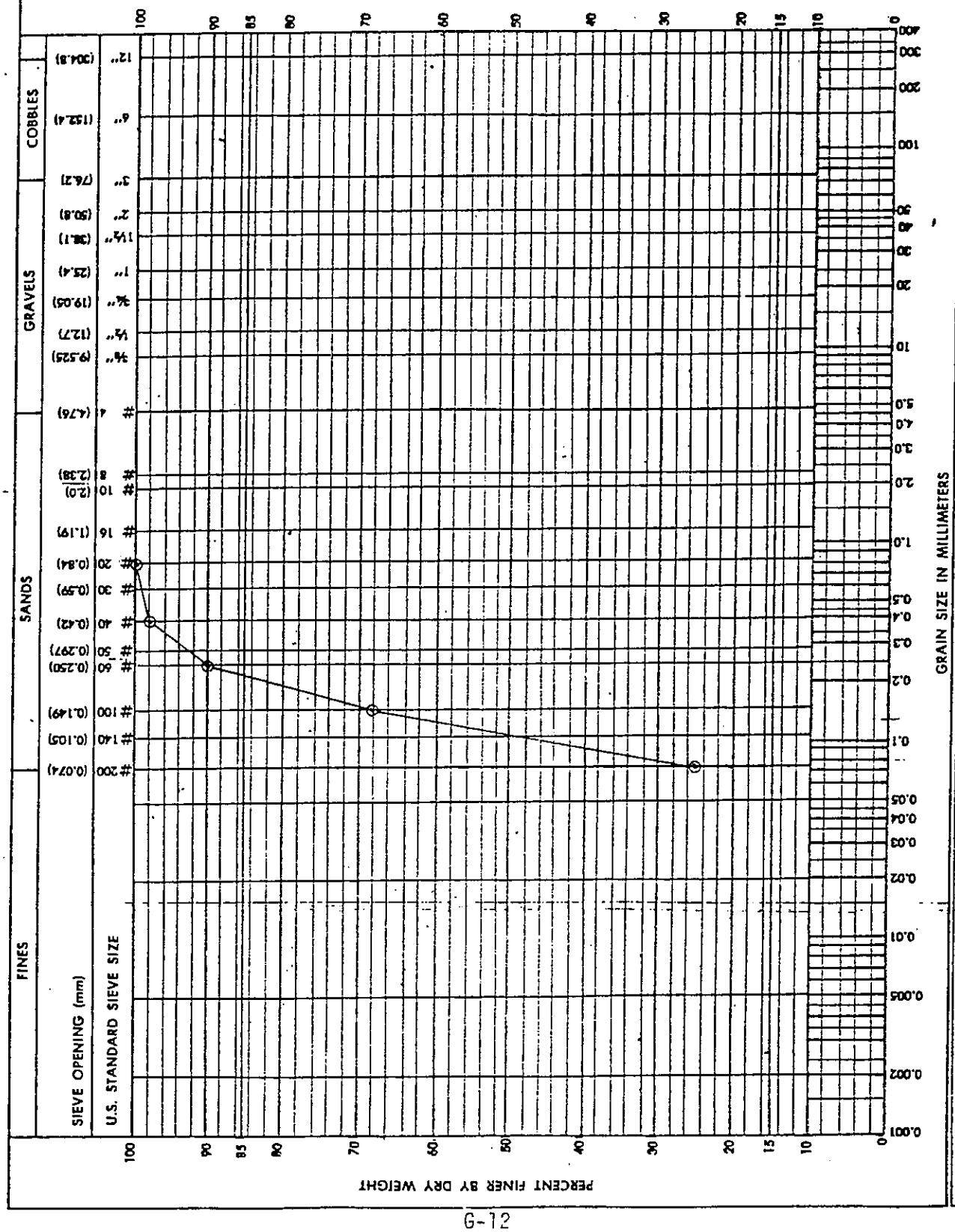
BORING NO. DH-6
SAMPLE NO. 5
DEPTH 13'
ELEV. 881'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.	BY	DATE
H01-0050-181	S. HAHSON	2-23-76

REMARKS



BORING NO. DH-6
SAMPLE NO. 6
DEPTH 15'
ELEV. 879'

GRAVEL 0%
C. SAND 0%
M. SAND 2%

E SAND 73%
SILT
CLAY } 25%

D_{60} 0.13
D_{30} 0.08
D_{10} ——

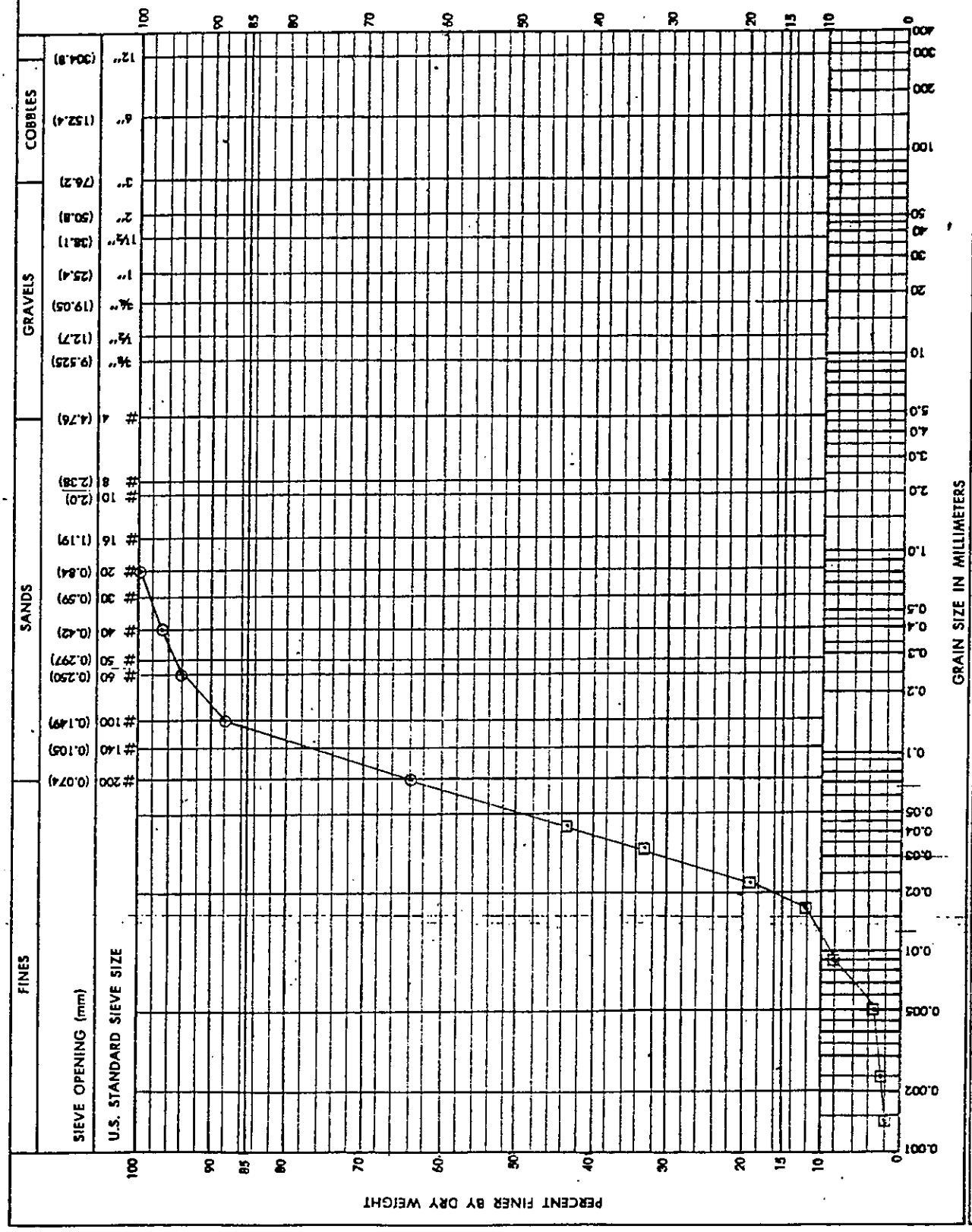
C_U ——
C_Z ——
UNIFIED CLS. SM

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY S. HANSON | DATE 2-23-76

REMARKS: WASHED NO. 200 SIEVE



GRAVEL	0 %	E SAND	33 %
C. SAND	0 %	SILT	62 %
M. SAND	3 %	CLAY	2 %

D_{60}	0.066
D_{30}	0.030
D_{10}	0.013

C_u 5.08

C_z 1.05

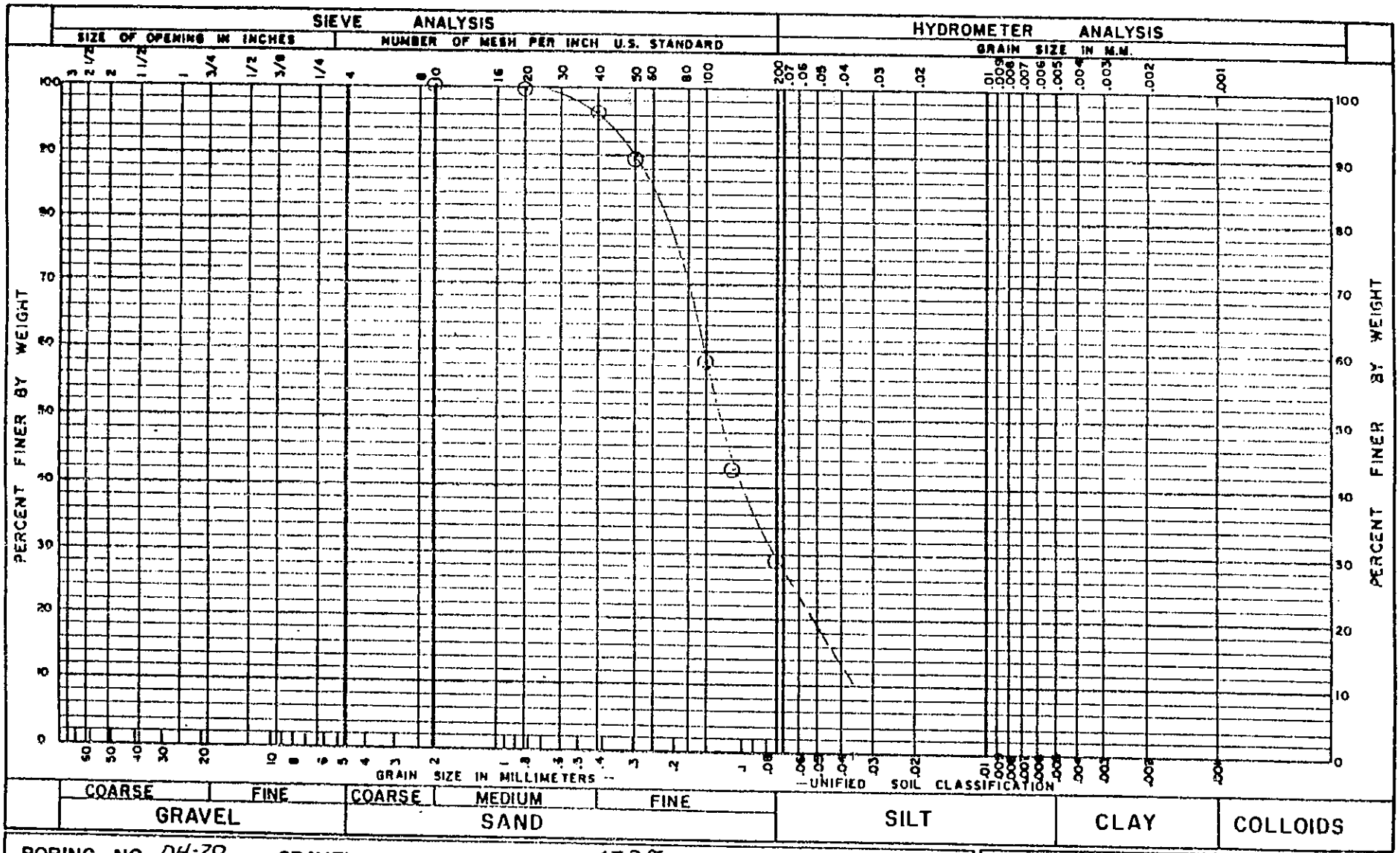
UNIFIED CLS. ML

BORING NO. DH-6

SAMPLE NO. 12

DEPTH 35'

ELEV. 959'



BORING NO. DH-20
SAMPLE NO. S-1
DEPTH 5
ELEV. 905

GRAVEL
C. SAND
M. SAND 3.8%

F. SAND 67.3%
SILT } 28.9%
CLAY

D_{60} .15
D_{30} .075
D_{10} .036 (EST.)

C_U 4.2 (EST.)
C_Z 1.0 (EST.)
UNIFIED CLASS SM

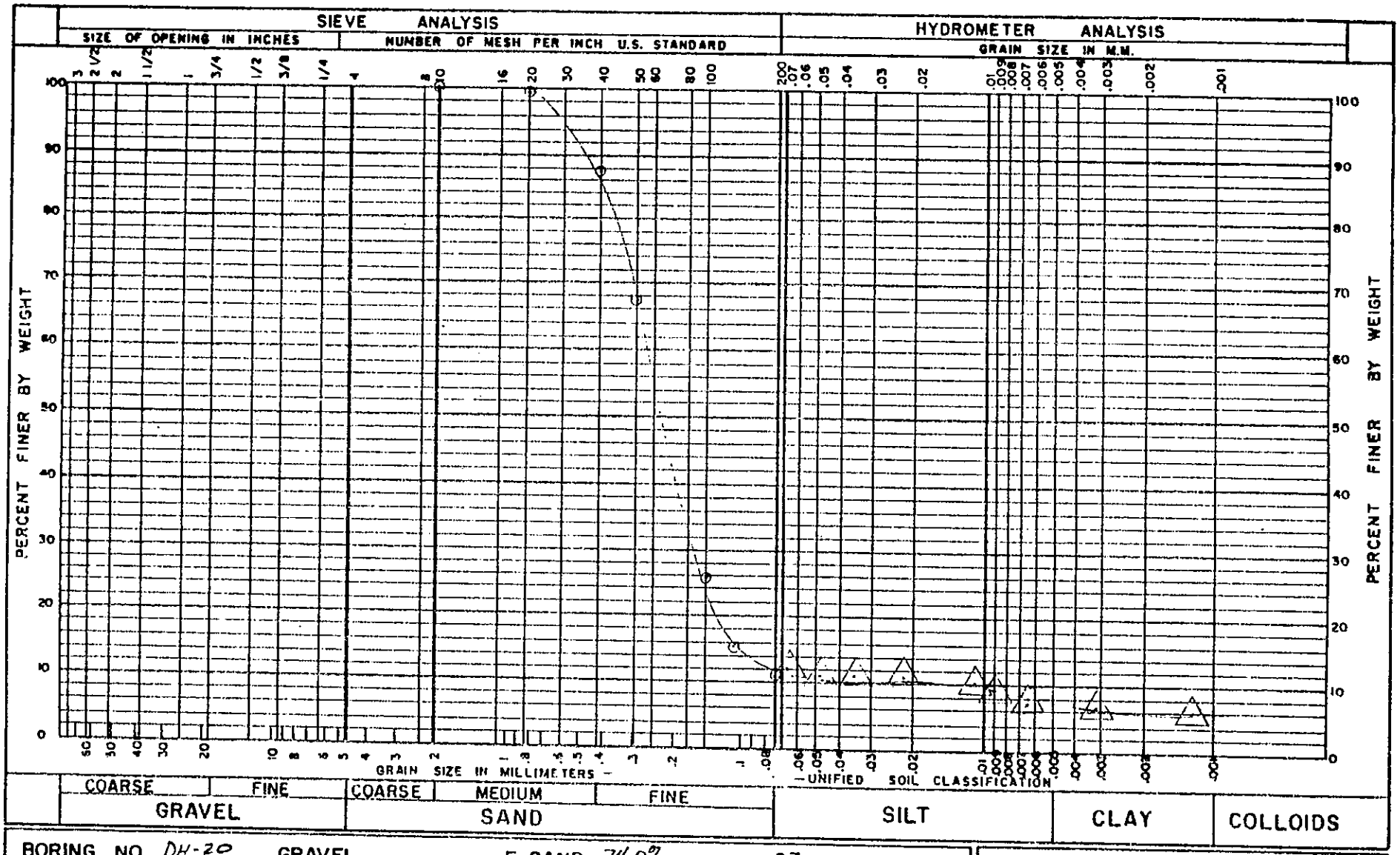
AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. SEVENMILE FEASIBILITY

REMARKS:

DATE: 5/29/86
JOB NO: 4731.00



BORING NO.	DH-20	GRAVEL		F. SAND	74.0%	D_{60} .27	C_U 18
SAMPLE NO.	S-3	C. SAND		SILT	2.5%	D_{30} .17	C_Z 7.1
DEPTH	15	M. SAND	14%	CLAY	9.5%	D_{10} .015	UNIFIED CLASS SP-SM
ELEV.	895						

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

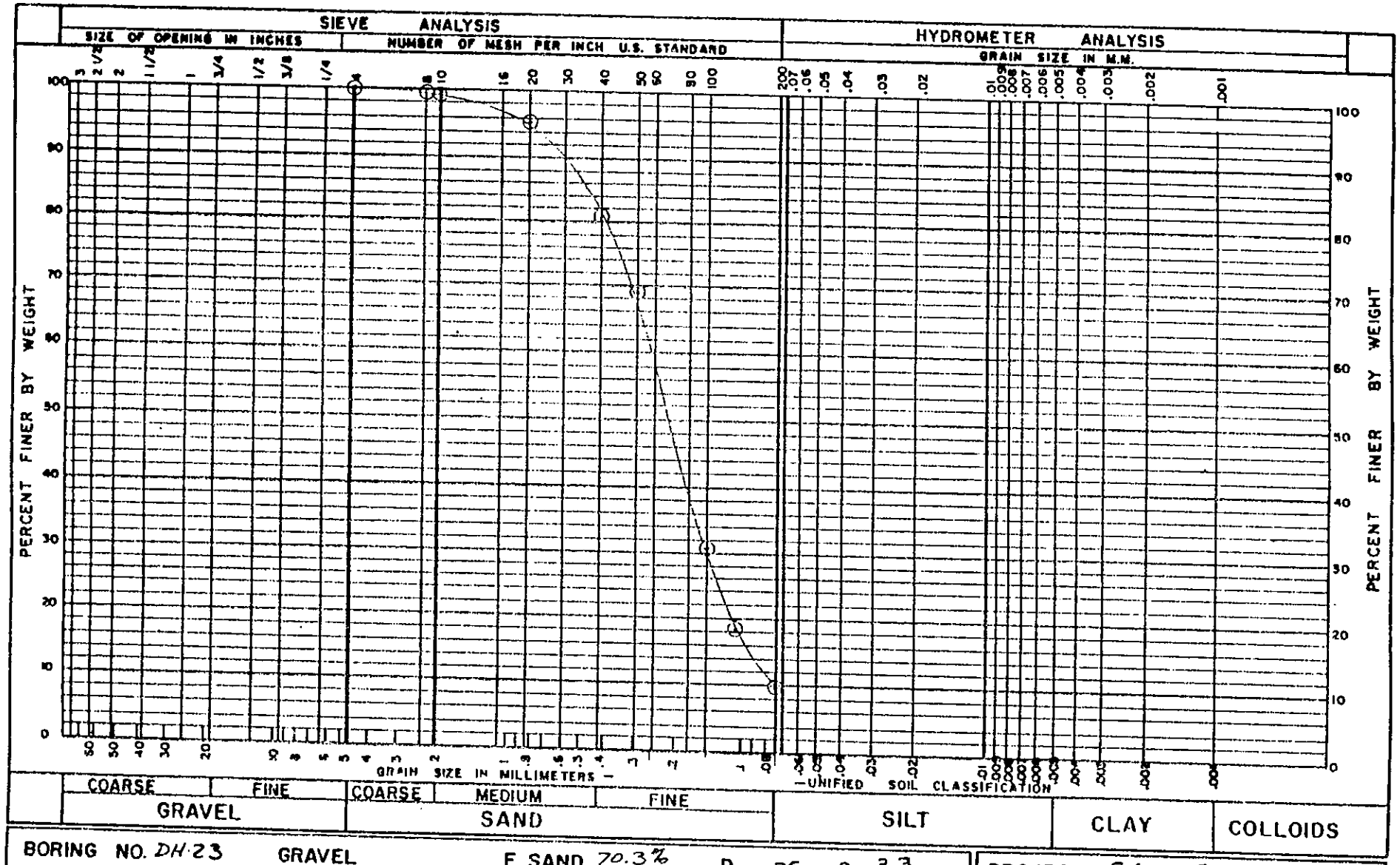
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. Sewerville Feasibility

REMARKS:

DATE: 05/27/86

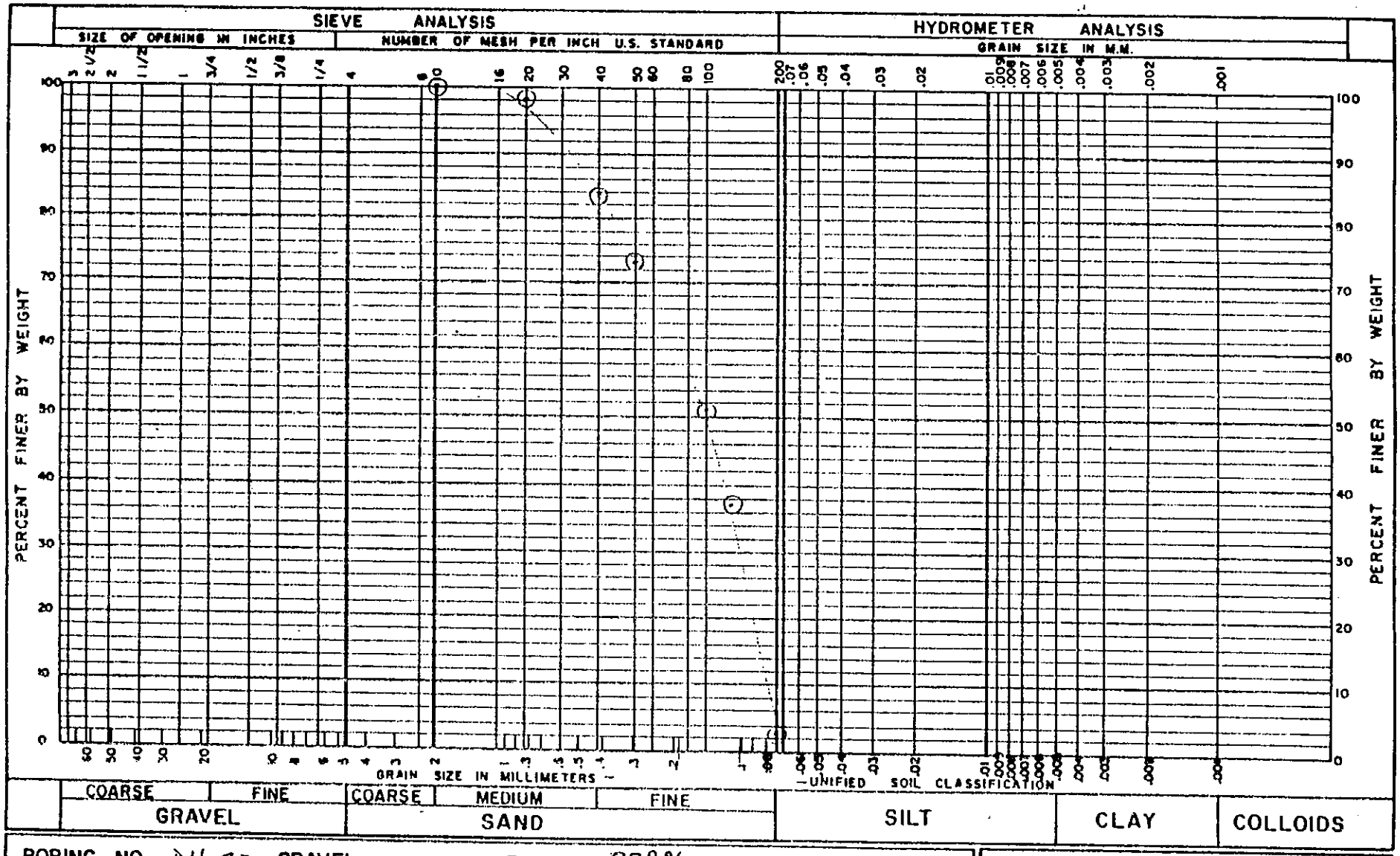
JOB NO: 4731.00



BORING NO. DH-23	GRAVEL	F SAND 70.3%	D_{60} .25	C_U 3.3	PROJECT: E.C. Co, SEVENMILE FEASIBILITY
SAMPLE NO. S-2	C. SAND 0.4%	SILT } 9.9%	D_{30} .15	C_Z 1.2	
DEPTH 10	M. SAND 19.4%	CLAY } 9.9%	D_{10} .075	UNIFIED CLASS SP-SM	REMARKS:
ELEV. 902					DATE: 5/29/86
					JOB NO: 4731.00

AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER



BORING NO.	DH-23	GRAVEL		F SAND	83.9 %	D_{60}	.19	C_U	2
SAMPLE NO.	S-3	C. SAND		SILT		D_{30}	.10	C_Z	0.7
DEPTH	15	M.SAND	16.1 %	CLAY		D_{10}	.08	UNIFIED CLASS	SP
ELEV.	897								

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

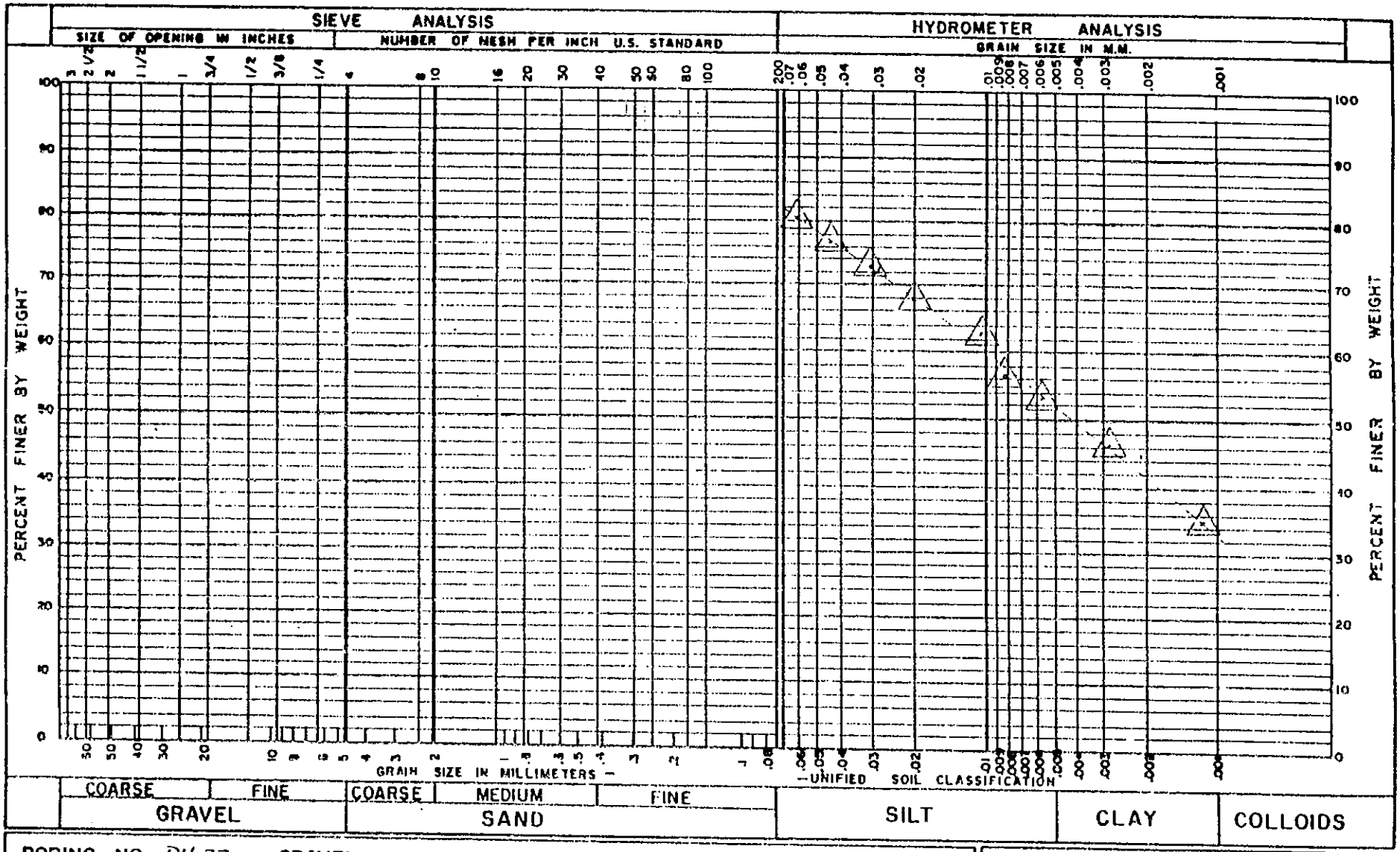
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. 7-mi FEASIBILITY

REMARKS: COARSE FRACTION

DATE: 5/21/86

JOB NO: 473.00



BORING NO. DH-23	GRAVEL	F SAND	D_{60}	C_U	
SAMPLE NO. S-3	C. SAND	SILT 48%	D_{30}	C_Z	
DEPTH	M. SAND	CLAY 52 %	D_{10}	UNIFIED CLASS	CH
ELEV.	LL = 57.0	PL = 23.3	PI = 33.7		

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

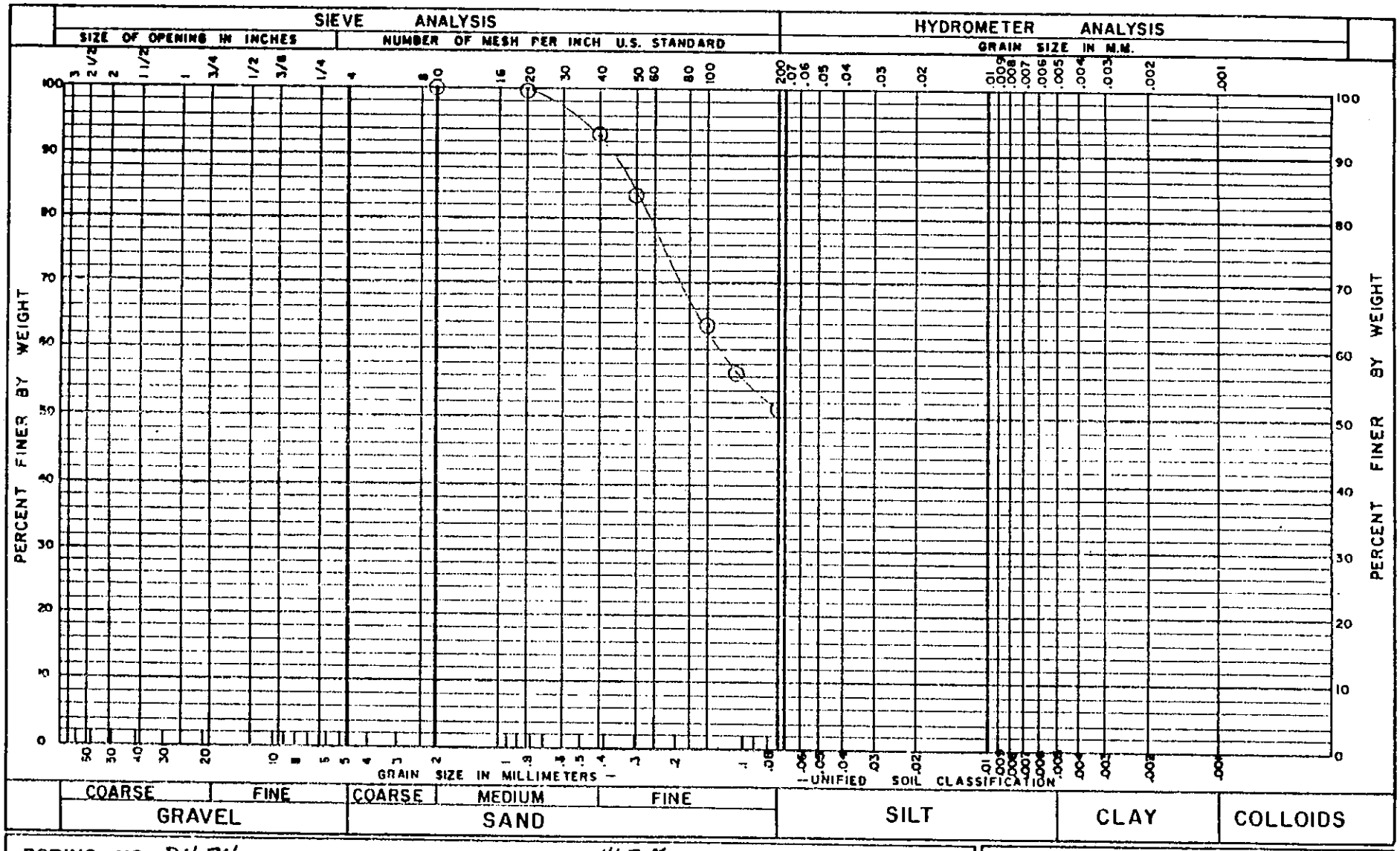
⊙ MECHANICAL
△ HYDROMETER

PROJECT: EC Co. - 7 Mile Feasibility

REMARKS: Fine Fraction

DATE: 5/21/86

JOB NO: 4731.00

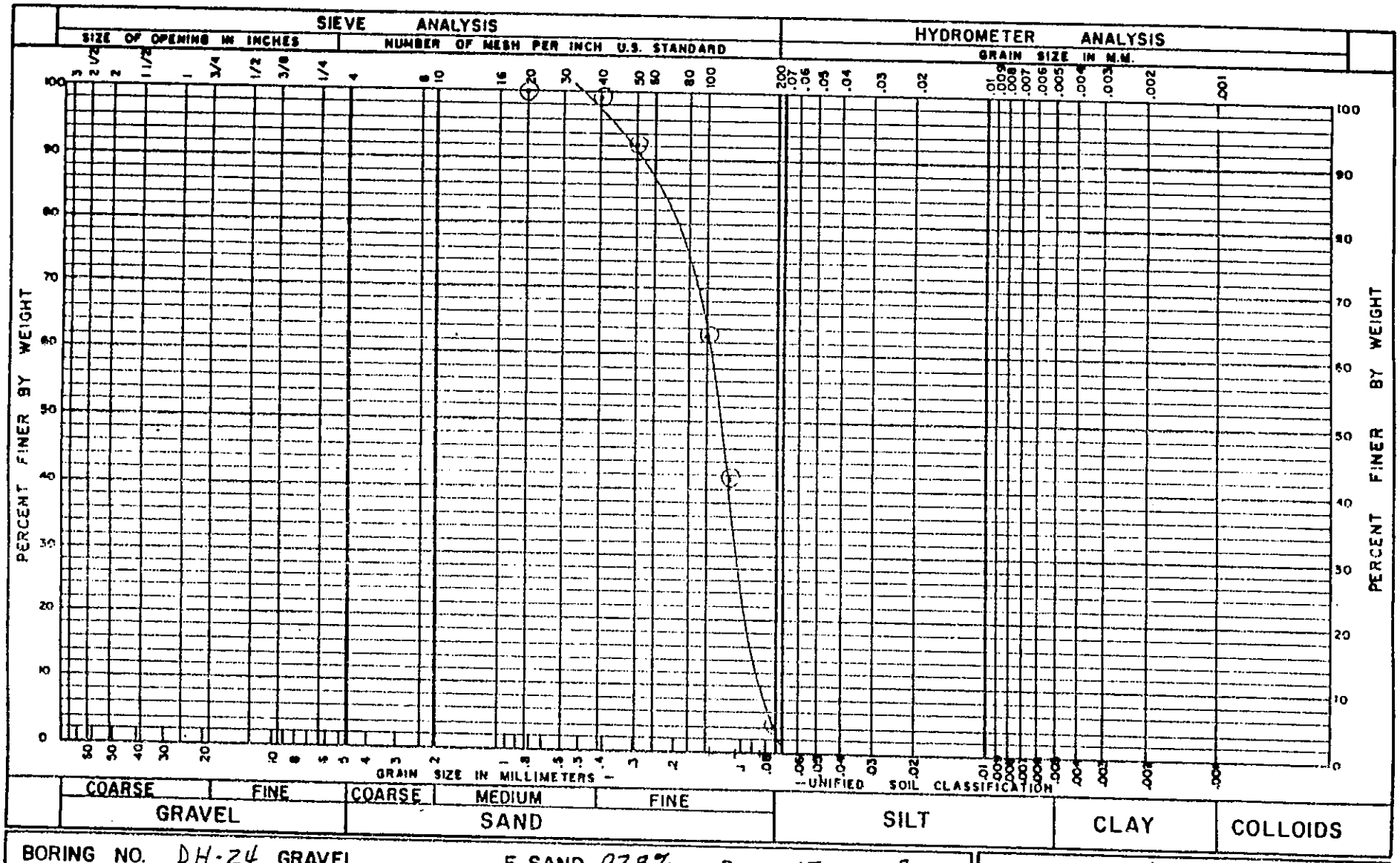


BORING NO. DH-24	GRAVEL	F SAND 41.7 %	D_{60}	C_U	PROJECT: E.C. Co. SEVENMILE FEASIBILITY
SAMPLE NO. S-2	C. SAND	SILT } 51.0 %	D_{30}	C_Z	
DEPTH 10	M. SAND 7.3 %	CLAY	D_{10}	UNIFIED CLASS ML	REMARKS:
ELEV. 911					

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

DATE: 5/29/86
JOB NO: 4731.00



BORING NO.	DH-24	GRAVEL		F SAND	97.8%	D_{60} .145	C_U 2
SAMPLE NO.	S-4	C. SAND		SILT		D_{30} .115	C_Z 1.1
DEPTH	20	M. SAND	3.2%	CLAY		D_{10} .085	UNIFIED CLASS SP
ELEV.	901						

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

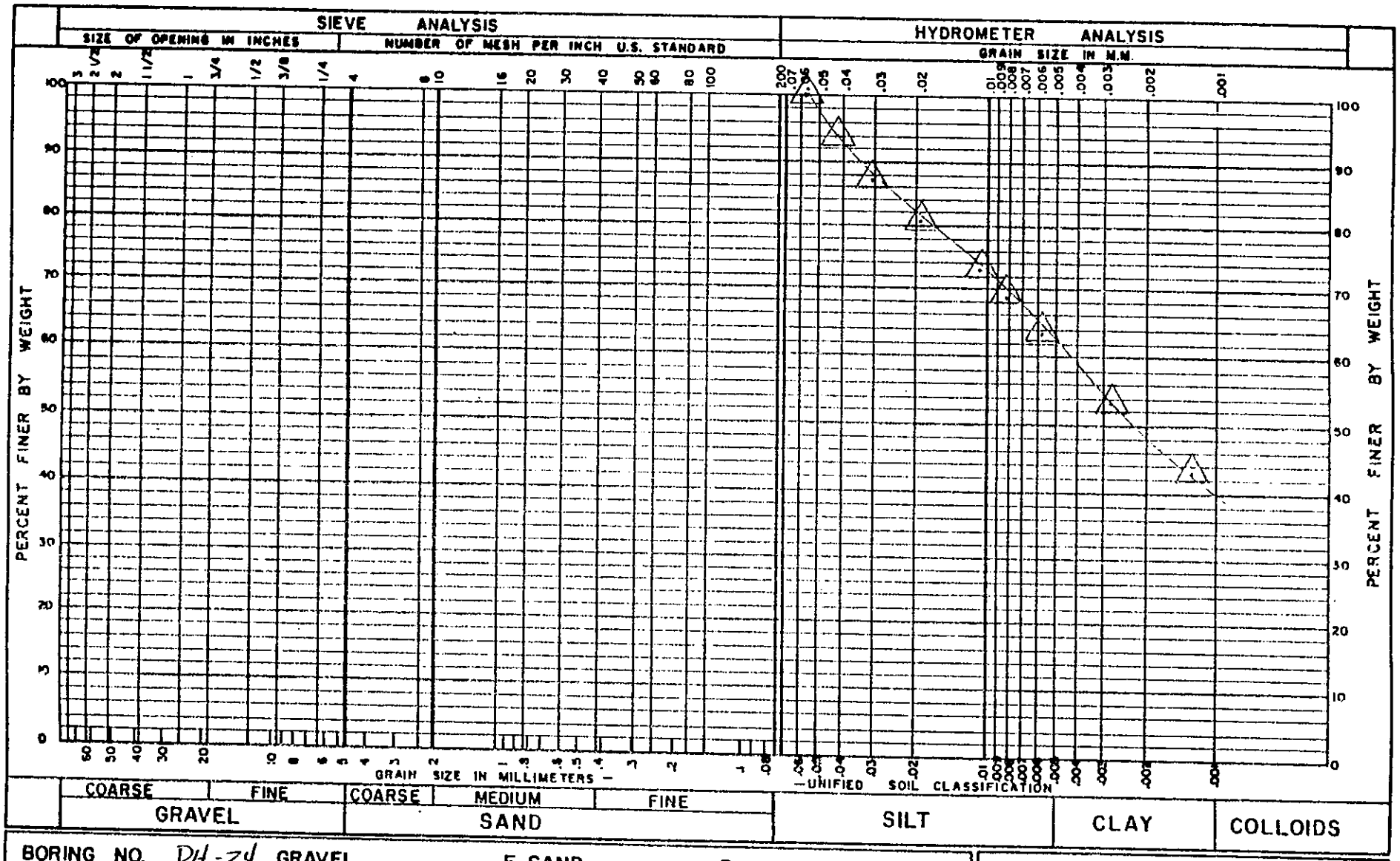
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. 7-mi Feasibility

REMARKS: COARSE FRACTION

DATE: 5/27/86

JOB NO: 4731.00



BORING NO.	DH-24	GRAVEL		F. SAND		D_{60}	C_U
SAMPLE NO.	S-4	C. SAND		SILT	37.5%	D_{30}	C_Z
DEPTH		M. SAND		CLAY	62.5%	D_{10}	UNIFIED CLASS CH
ELEV.		LL = 54.8	PL = 23.3	PI = 31.5			

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. 7 Mi FEASIBILITY

REMARKS: CLAY LENSE IN SAMPLE

DATE: 5/27/86

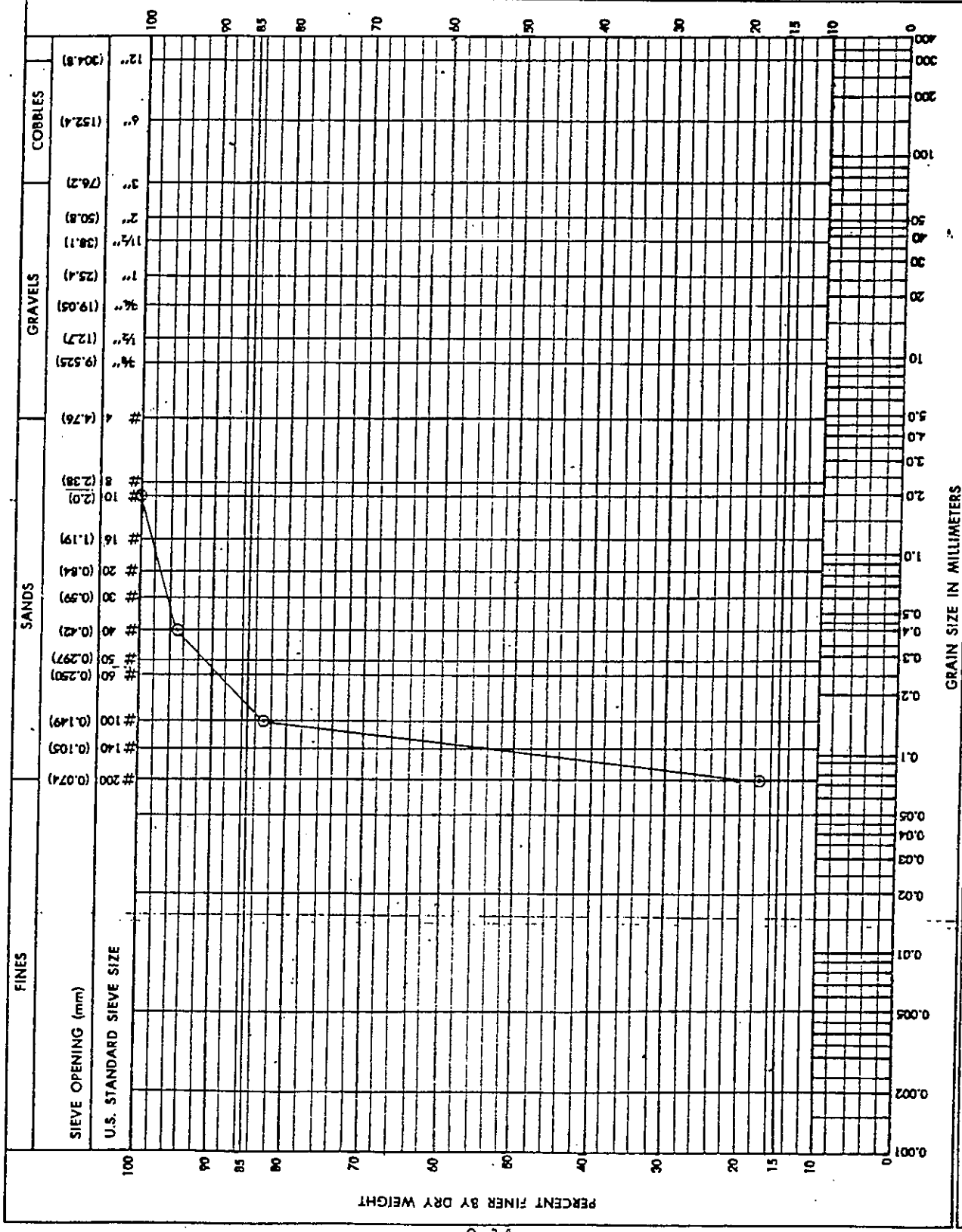
JOB NO: 4731.00

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.: H01-0050-181 | BY: J. STRIGEL | DATE: 6-3-76

REMARKS: WASHED NO. 200 SIEVE



C_U ____

C_Z

UNIFIED CLS. SM

D_{60} 0.11

D_{30} 0.083

D_{10} ____

GRAVEL 0 %

C. SAND 0 %

M. SAND 5 %

E SAND 77 %

SILT } 18 %

CLAY

BORING NO. TB-4

SAMPLE NO. 10

DEPTH 30'-33'

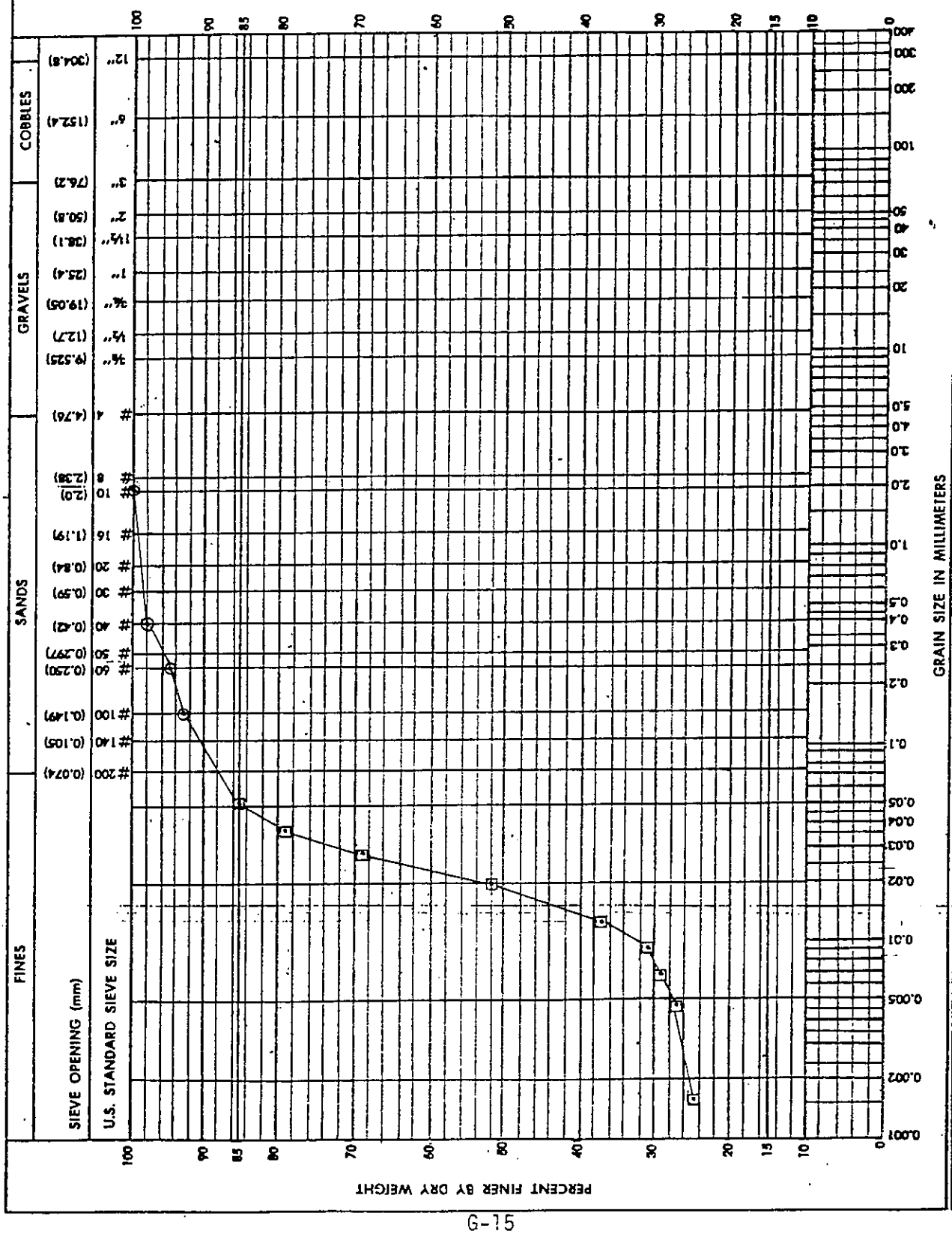
ELEV. 870'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. STRIGEL | DATE 6-3-76

REMARKS: WASHED NO. 200 SIEVE



BORING NO. TB-5
SAMPLE NO. 2
DEPTH 32'
ELEV 8.3'

GRAVEL 0%
C. SAND 0%
M. SAND 2%

E SAND 10%
SILT 63%
CLAY 25%

D_{60} 0.023
D_{30} 0.0081
D_{10} ——

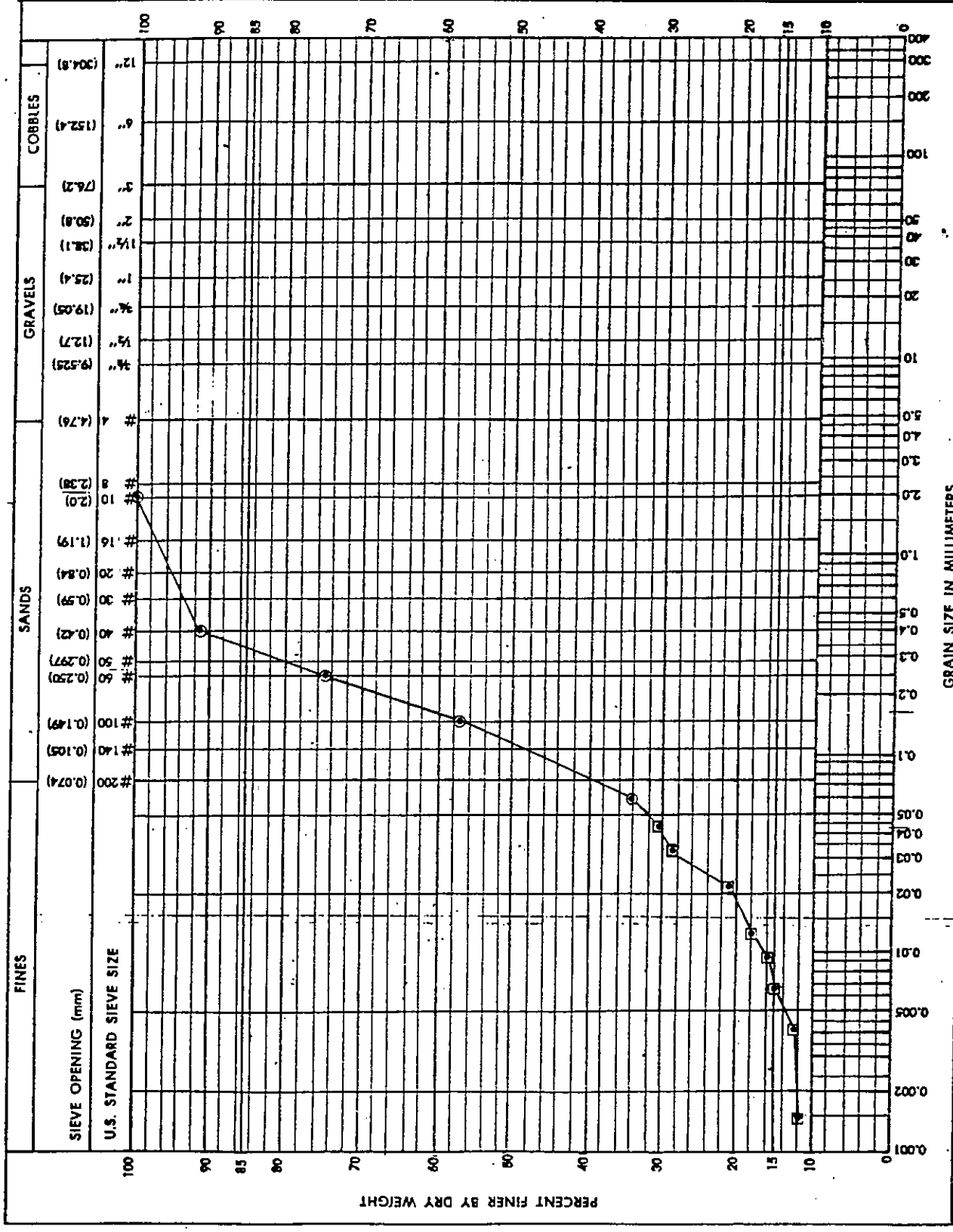
C_U ——
C_Z ——
UNIFIED CLS. ML

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.: H-01-0050-181 | BY: J. STRIGEL | DATE: 6-8-76

REMARKS: WASHED NO. 200 SIEVE



GRAVEL	0 %	E SAND	51 %
C. SAND	0 %	SILT	26 %
M. SAND	9 %	CLAY	14 %

D_{60} 0.17
D_{30} 0.42
D_{10} ____

C_U ____
C_Z ____
UNIFIED CLS. SM

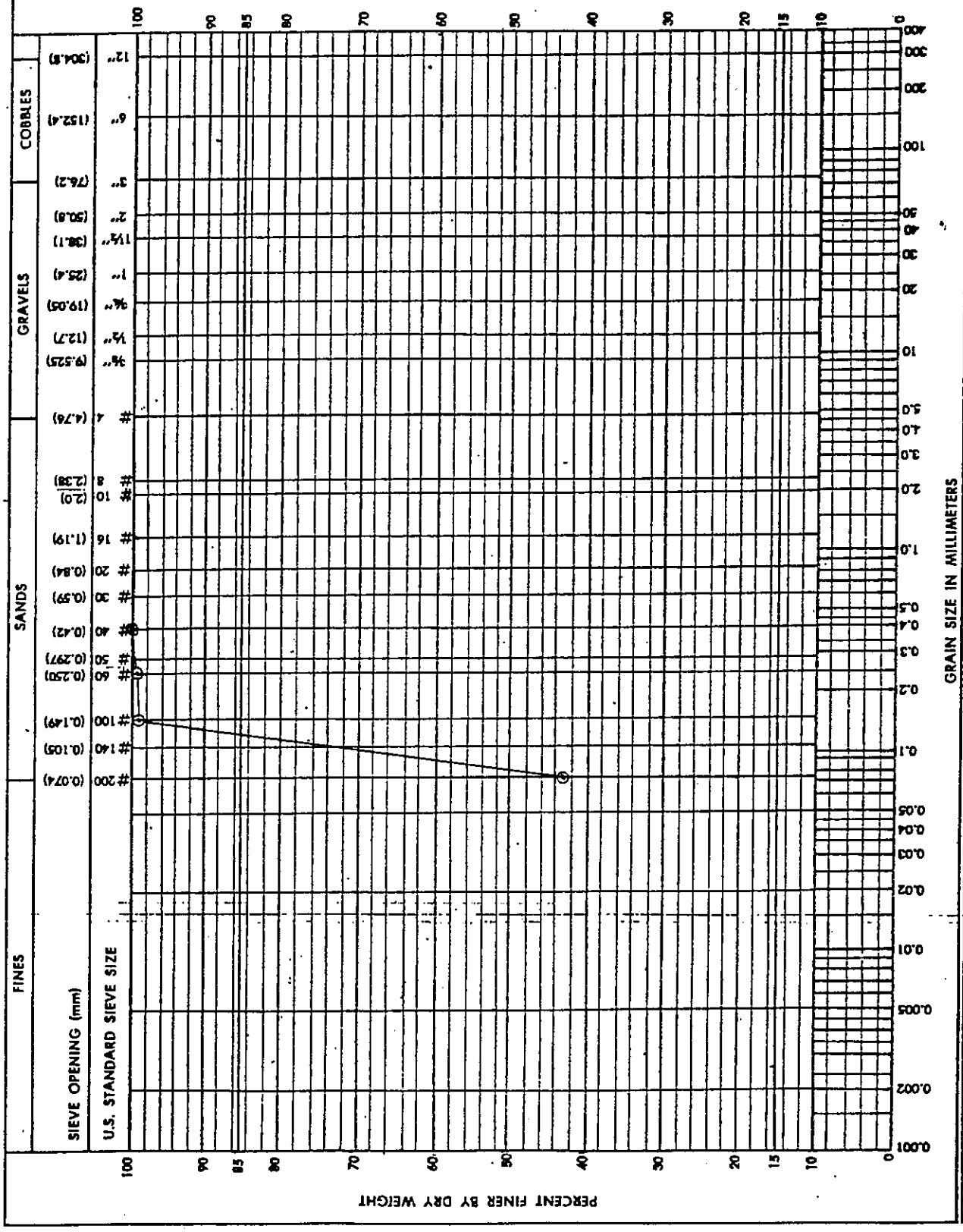
BORING NO. TB-5
SAMPLE NO. P
DEPTH 31'
ELEV. 864'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.	BY	DATE
H01-0050-181	J. STREGEL	4-29-76

REMARKS: WASHED NO. 200 SIEVE



BORING NO. TB-6
SAMPLE NO. 1
DEPTH 14'-17'
ELEV 990'

GRAVEL 0%
C. SAND 0%
M. SAND 0%

E SAND 57%
SILT } 43%
CLAY

D_{80} 0.090
D_{30}
D_{10}

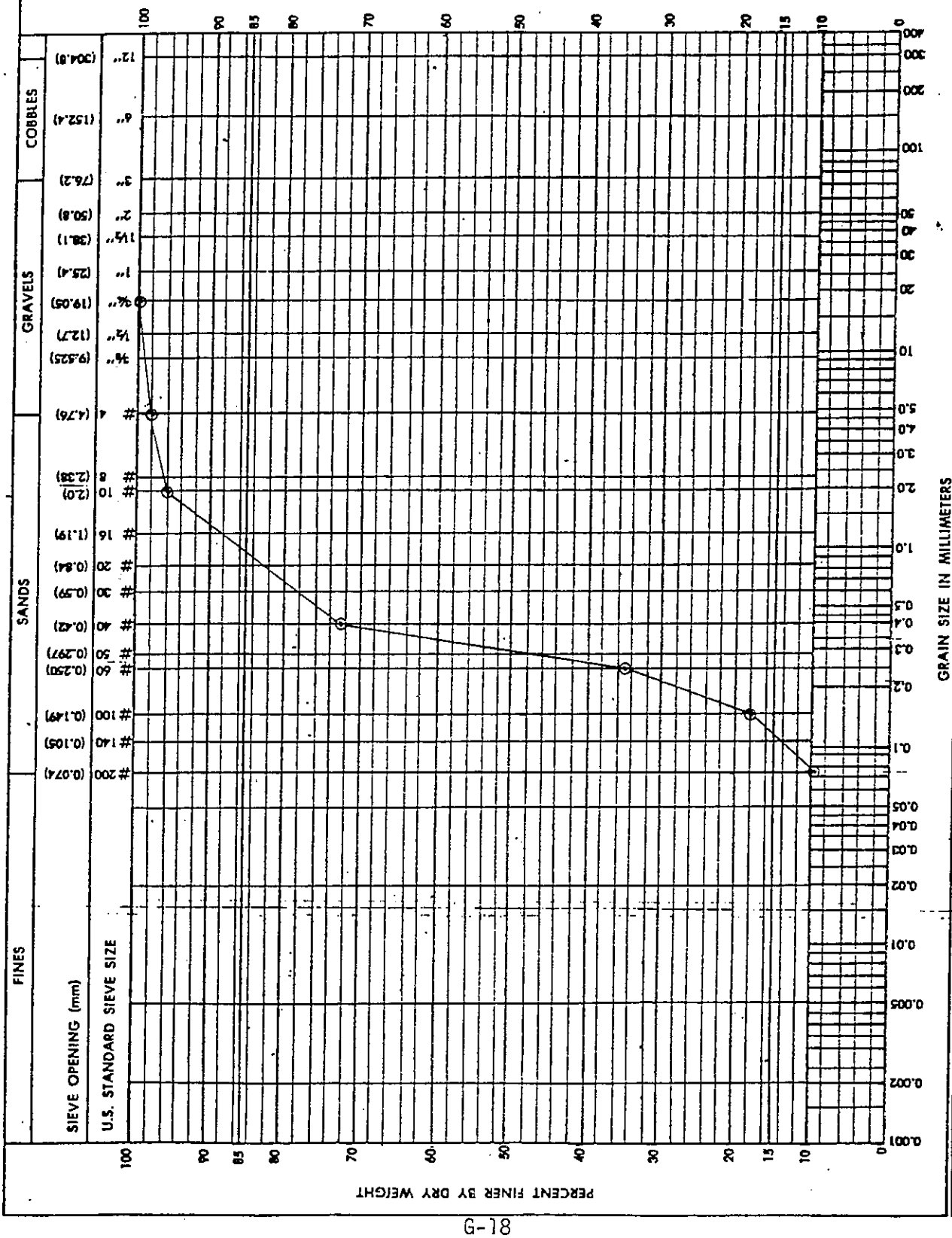
C_U
C_Z
UNIFIED CLS. SM

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. STREGEL | DATE 4-29-76

REMARKS



C_u 4.67
C_z 1.68
UNIFIED CLS. SP-SM

D_{60} 0.35
D_{30} 0.21
D_{10} 0.075

GRAVEL 2%
C. SAND 2%
M. SAND 23%
F SAND 63%
SILT } 10%
CLAY

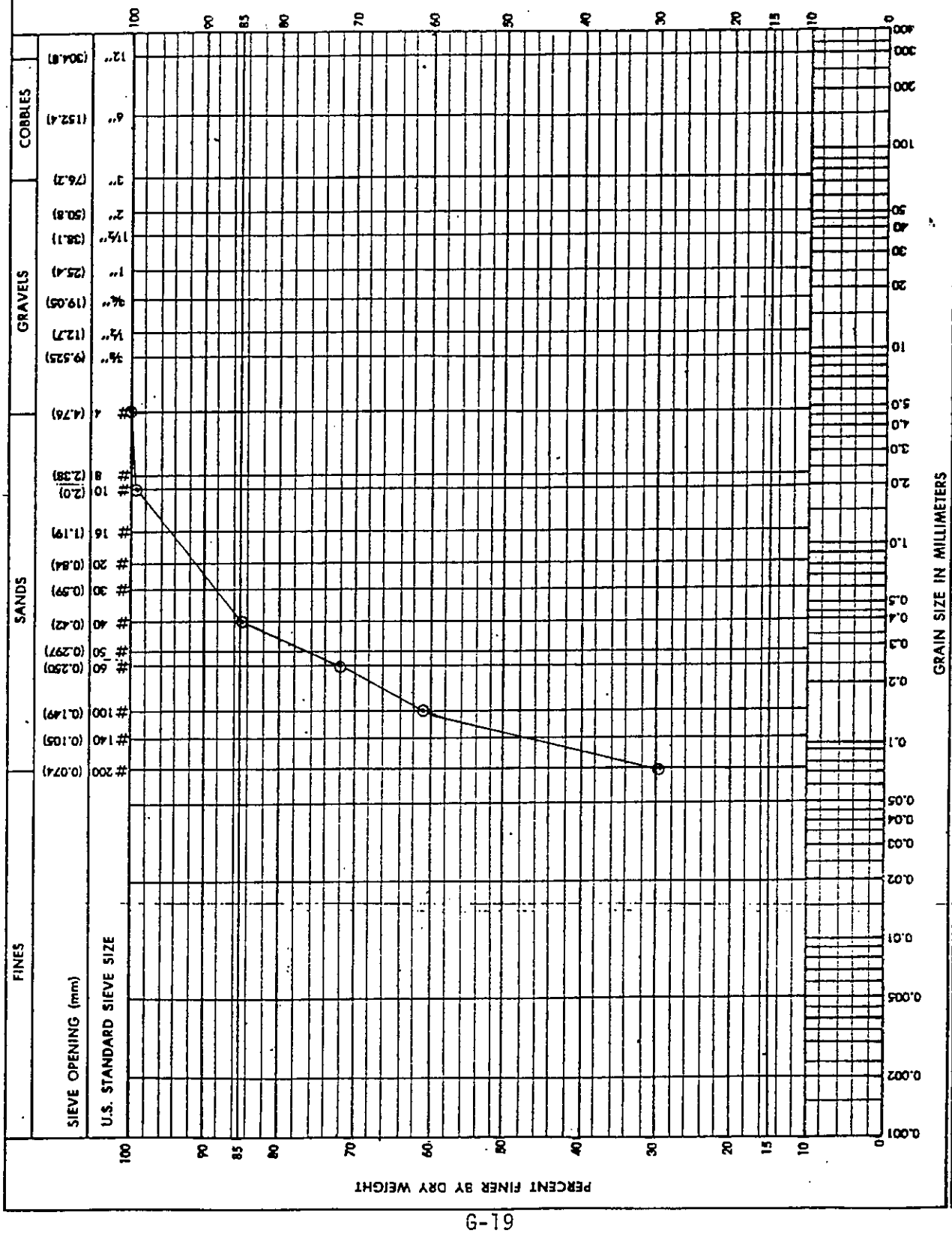
BORING NO. 78-9
SAMPLE NO. 1
DEPTH 5'
ELEV. 889'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. STRIGEL | DATE 4-29-76

REMARKS: WASHED NO. 200 SIEVE



BORING NO. 78-11	GRAVEL 0 %	F. SAND 55 %	D_{60} 0.15
SAMPLE NO. 1	C. SAND 0 %	SILT } 30 %	D_{30} 0.065
DEPTH 4'-7'	M. SAND 15 %	CLAY	D_{10}
ELEV. 891.5			

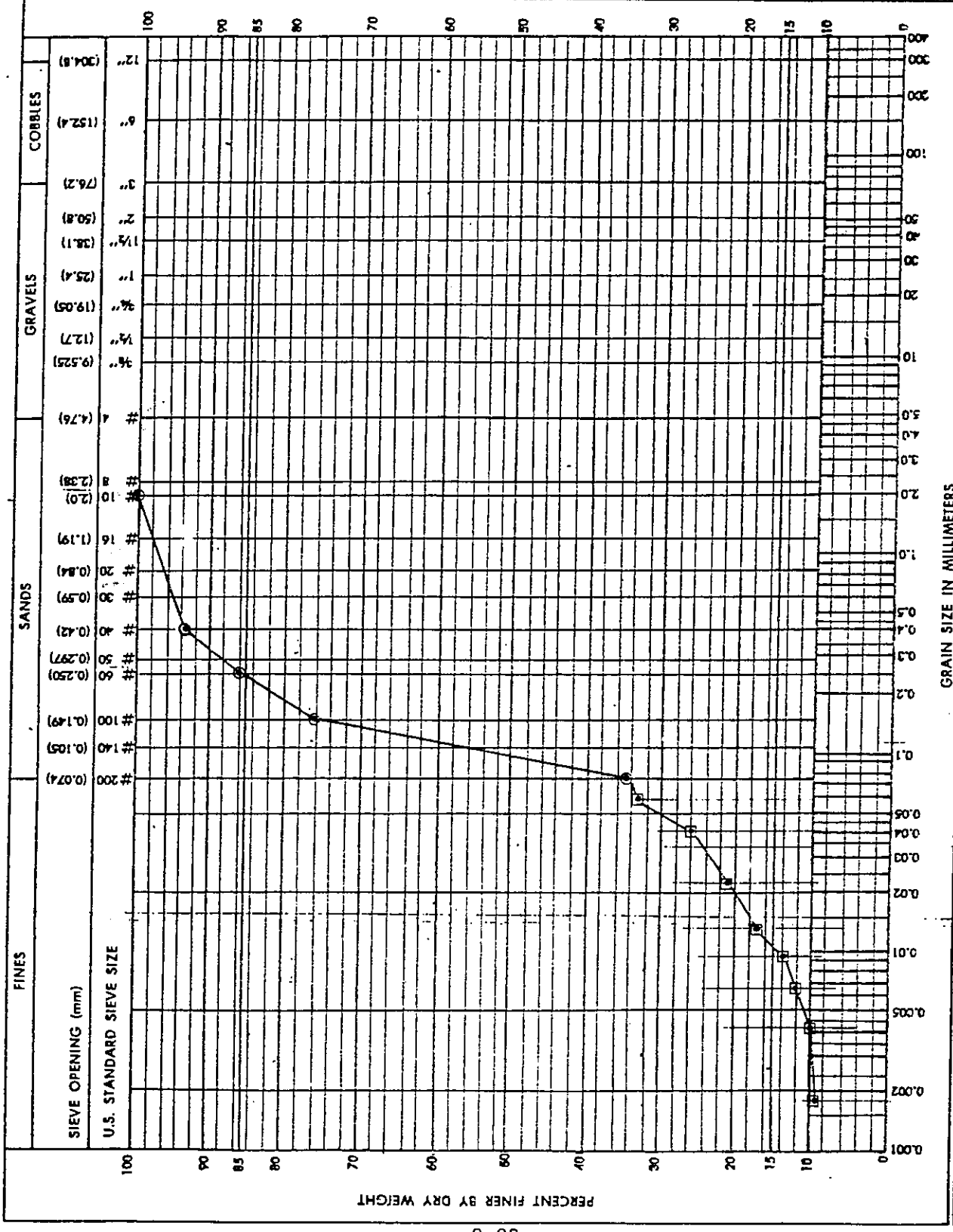
C_U ____ C_Z ____ UNIFIED CLS. SM

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.	BY	DATE
H-01-0050-181	J. STRIGEL	6-8-76

REMARKS: WASHED NO. 200 SIEVE



BORING NO.	TB-11	GRAVEL	0.%
SAMPLE NO.	P	C. SAND	0 %
DEPTH	15'	M. SAND	6 %
ELEV.	885'	E SAND	69%
		SILT	23%
		CLAY	11%

C_U 26.83
C_Z 5.54
UNIFIED CLS. SM

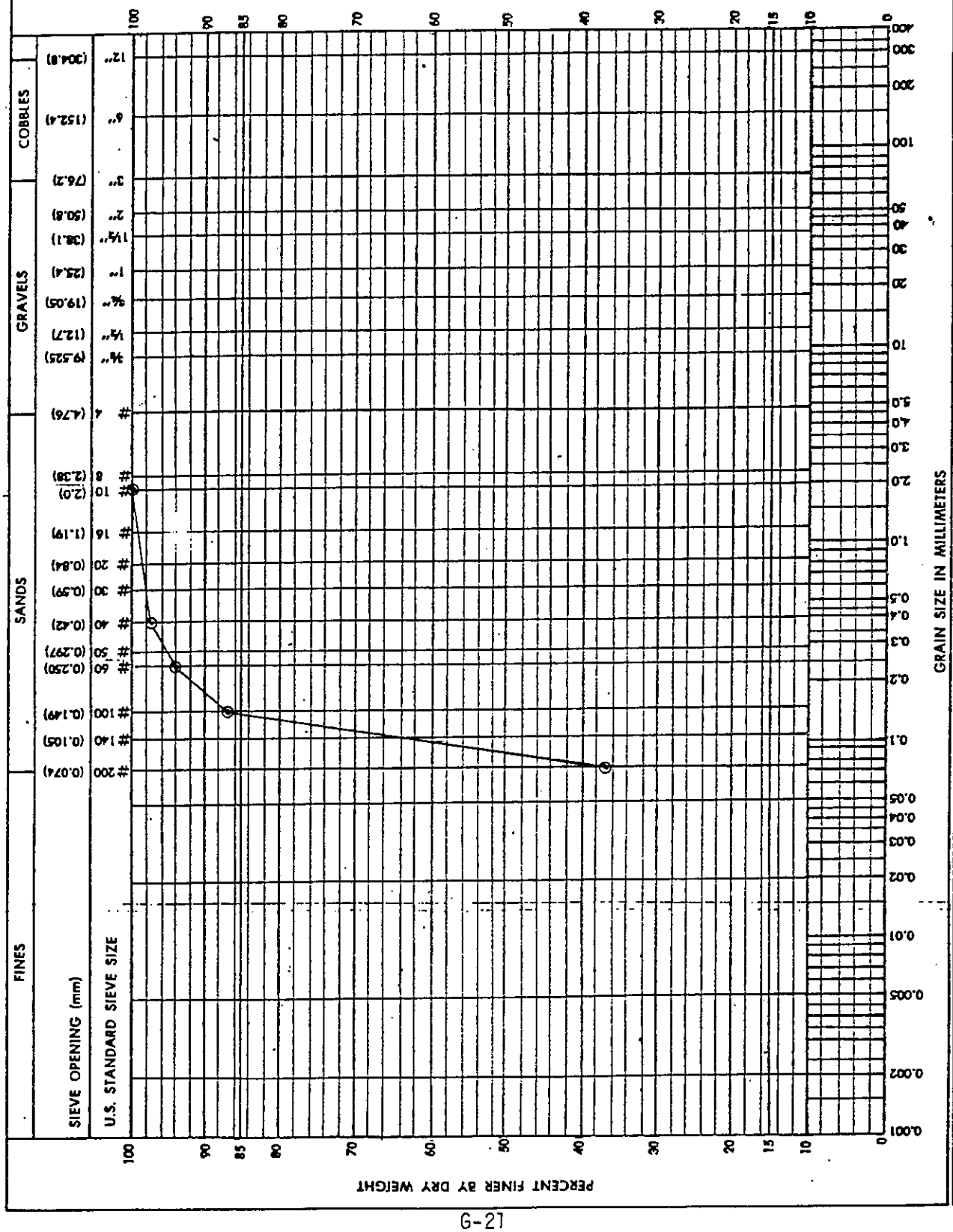
D_{60} 0.11
D_{30} 0.05
D_{10} 0.0041

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.	BY	DATE
H01 - 0050 - 181	J. STRIGEL	4 - 29 - 76

REMARKS WASHED NO. 200 SIEVE



BORING NO. TB-13 GRAVEL 0% E SAND 61% D_{60} 0.10 C_U ____

SAMPLE NO. 2 C. SAND 0% SILT } 37% D_{30} ____ C_Z ____

DEPTH 7'-10' M. SAND 2% CLAY D_{10} ____ UNIFIED CLS. SM

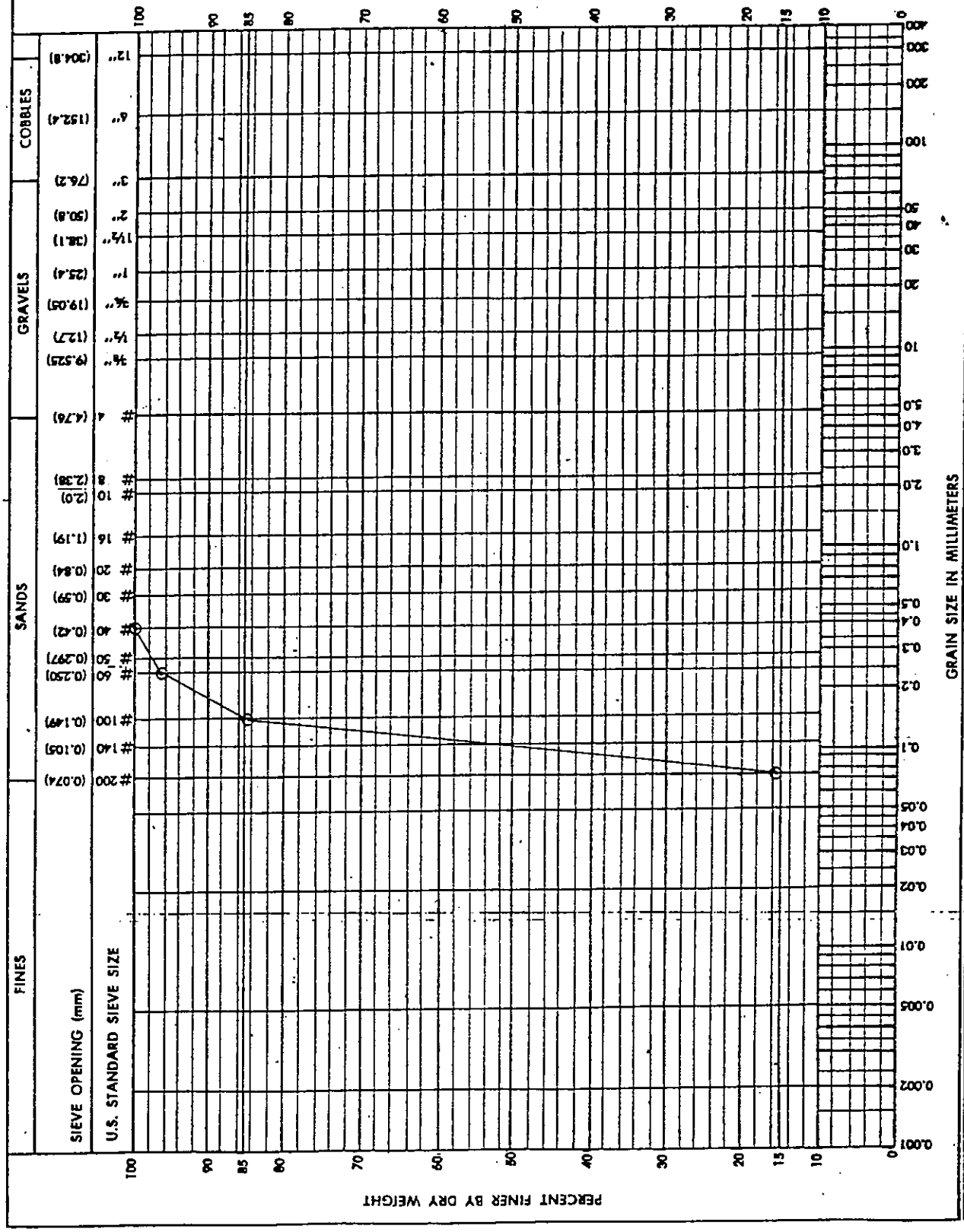
LEV 2'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050-181 | BY J. STRIGEL | DATE 6-03-76

REMARKS: WASHED NO. 200 SIEVE



BORING NO. TB-13 GRAVEL 0 % E SAND 85 % D_{60} 0.11 C_U ——

SAMPLE NO. 3 C. SAND 0 % SILT } 15 % D_{30} 0.085 C_Z ——

DEPTH 70'-13' M. SAND 0 % CLAY D_{10} —— UNIFIED CLS. SM

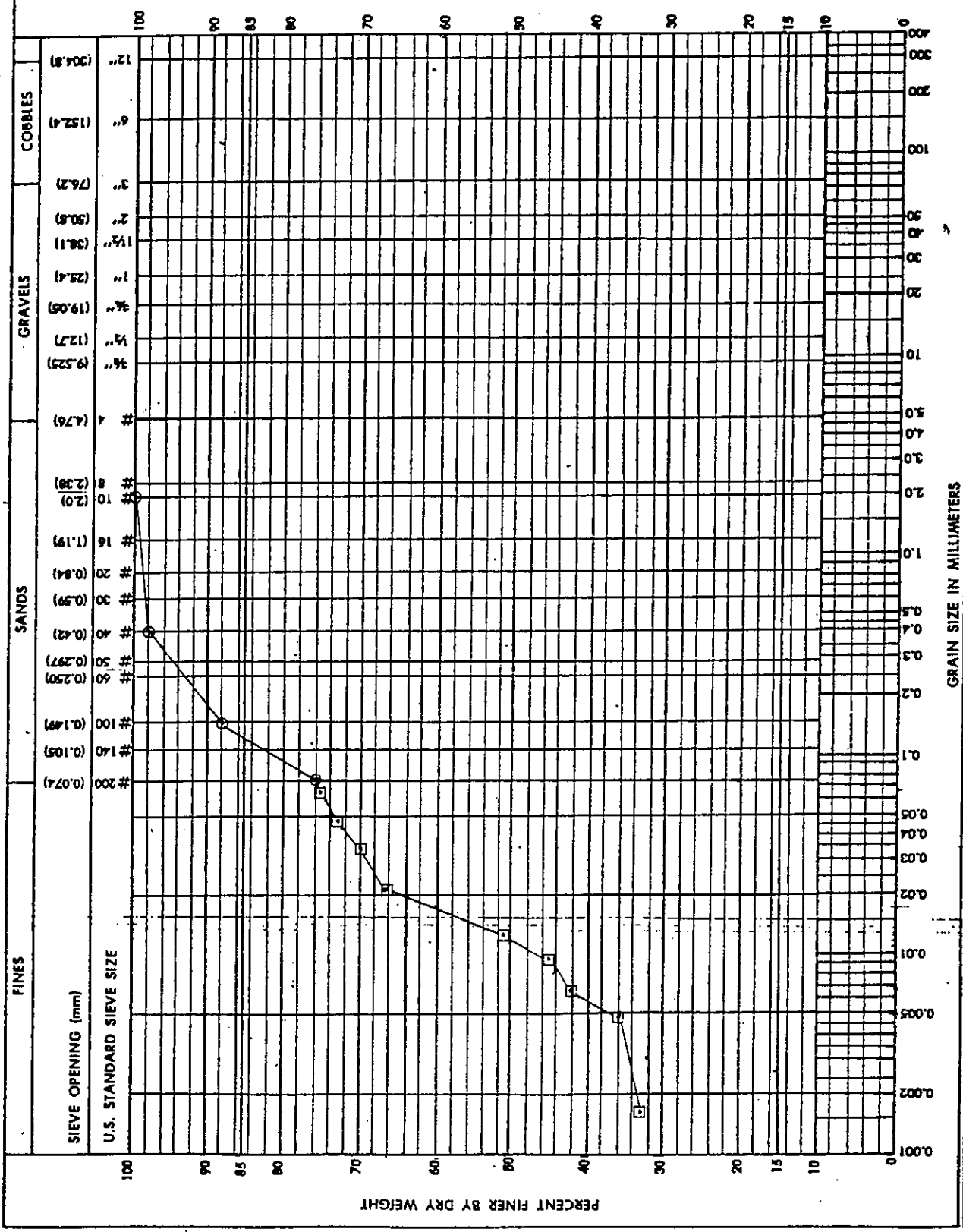
ELEV. 888.5'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H01-0050 | BY J. STRIGLE | DATE 6-3-76

REMARKS: WASHED NO. 200 SIEVE



BORING NO. TB-14
SAMPLE NO. 2
DEPTH 11'-13'
ELEV. 875'

GRAVEL 0 %
C. SAND 0 %
M. SAND 2 %

E SAND 22 %
SILT 43 %
CLAY 33 %

D_{60} 0.017
D_{30}
D_{10}

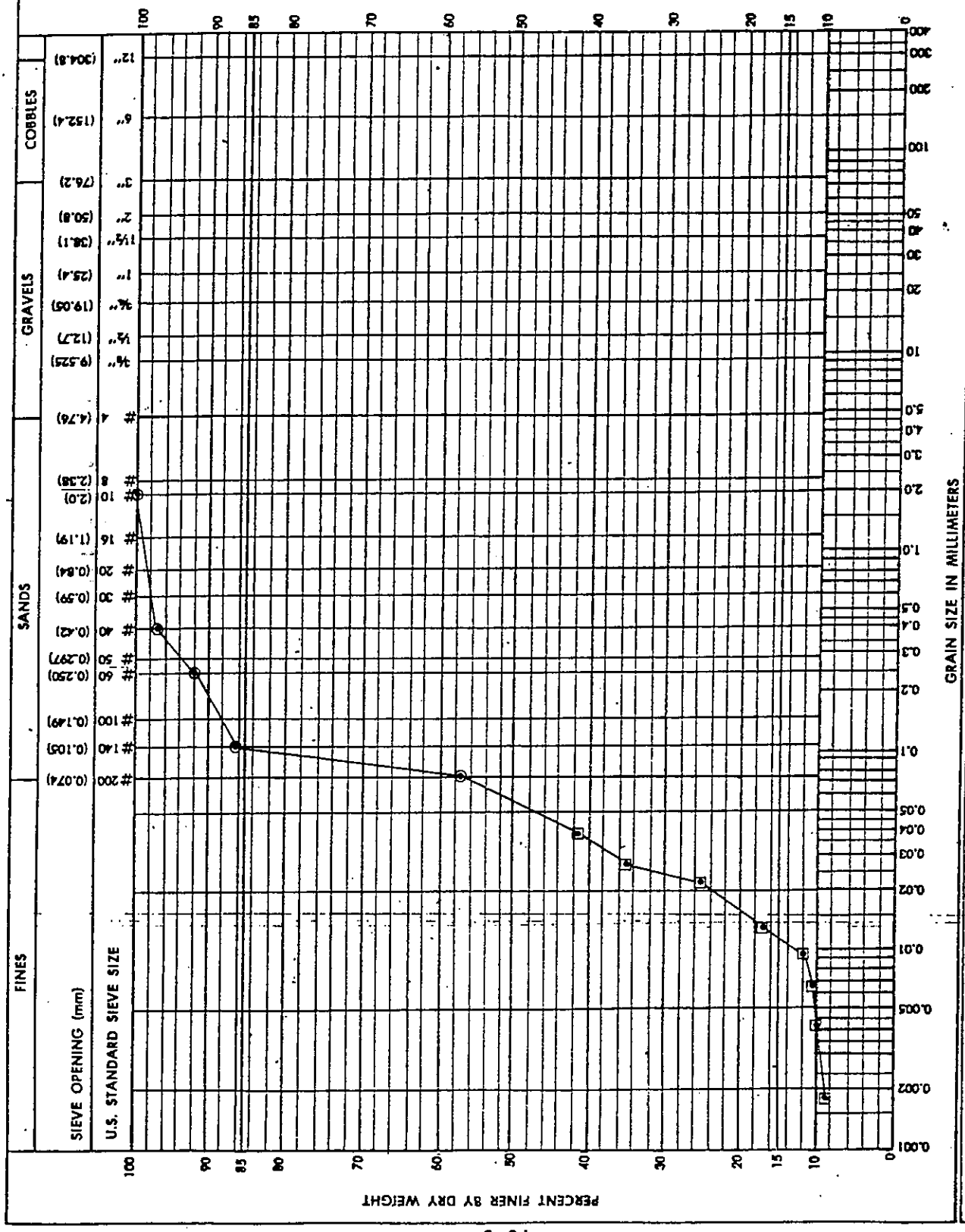
C_U
C_Z
UNIFIED CLS. ML

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.	BY	DATE
H-01-0050-181	J. STRIGEL	6-8-76

REMARKS: WASHED NO. 200 SIEVE



BORING NO. TB-14
SAMPLE NO. P
DEPTH 11.5'
ELEV. 885'

GRAVEL 0 %
C. SAND 0 %
M. SAND 3 %

E SAND 40 %
SILT 47 %
CLAY 10 %

D_{60} 0.080
D_{30} 0.024
D_{10} 0.0042

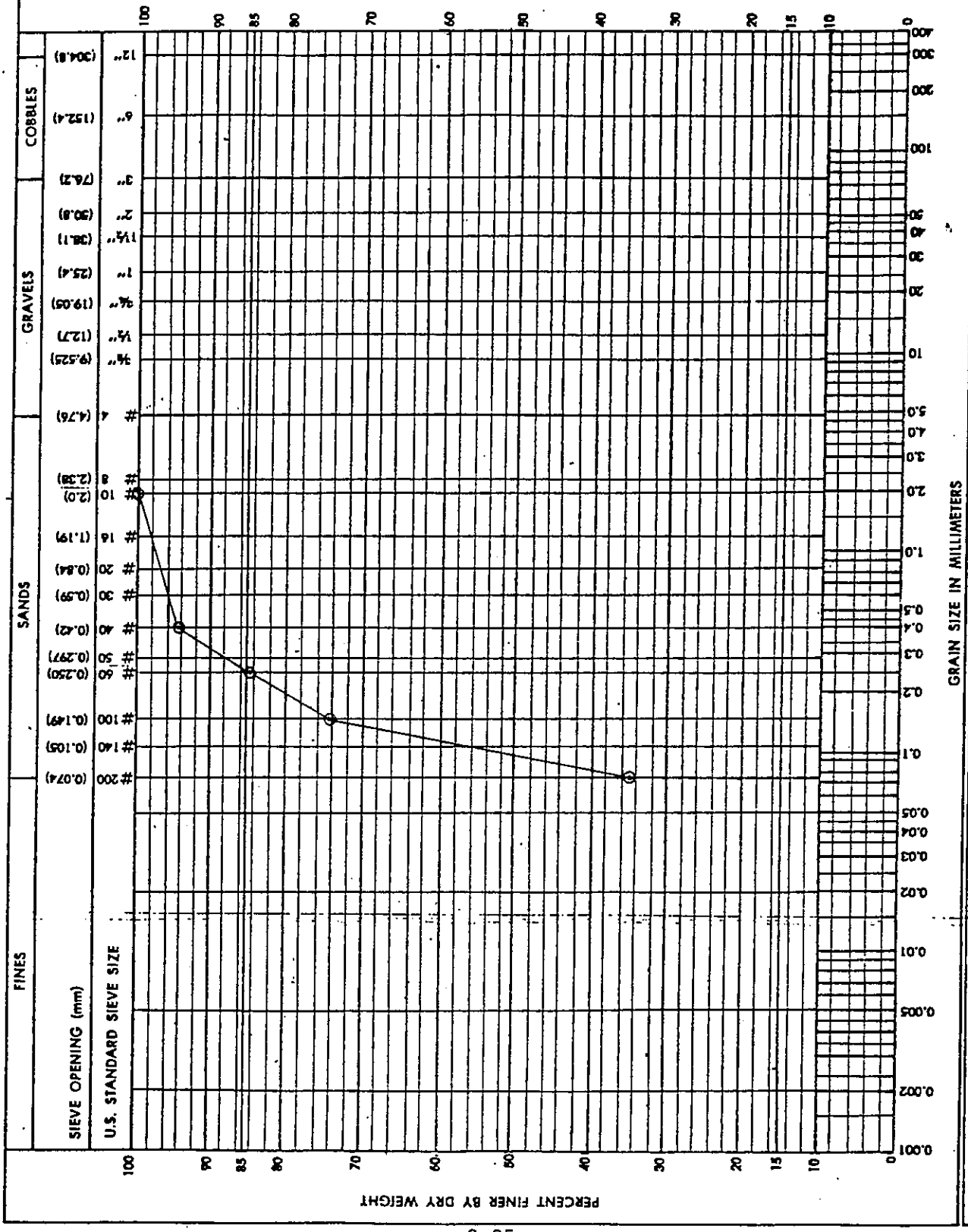
C_U 19.05
C_Z 1.71
UNIFIED CLS. ML

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.: H01-0050-181 | BY: S. HANSON | DATE: 5-26-76

REMARKS: WASHED NO. 200 SIEVE



C_U ____ C_Z ____ UNIFIED CLS. SM

D_{60} 0.11 D_{30} ____ D_{10} ____

GRAVEL 0 % | FINE SAND 59 % | SILT } 35 %
C. SAND 0 % | CLAY
M. SAND 6 %

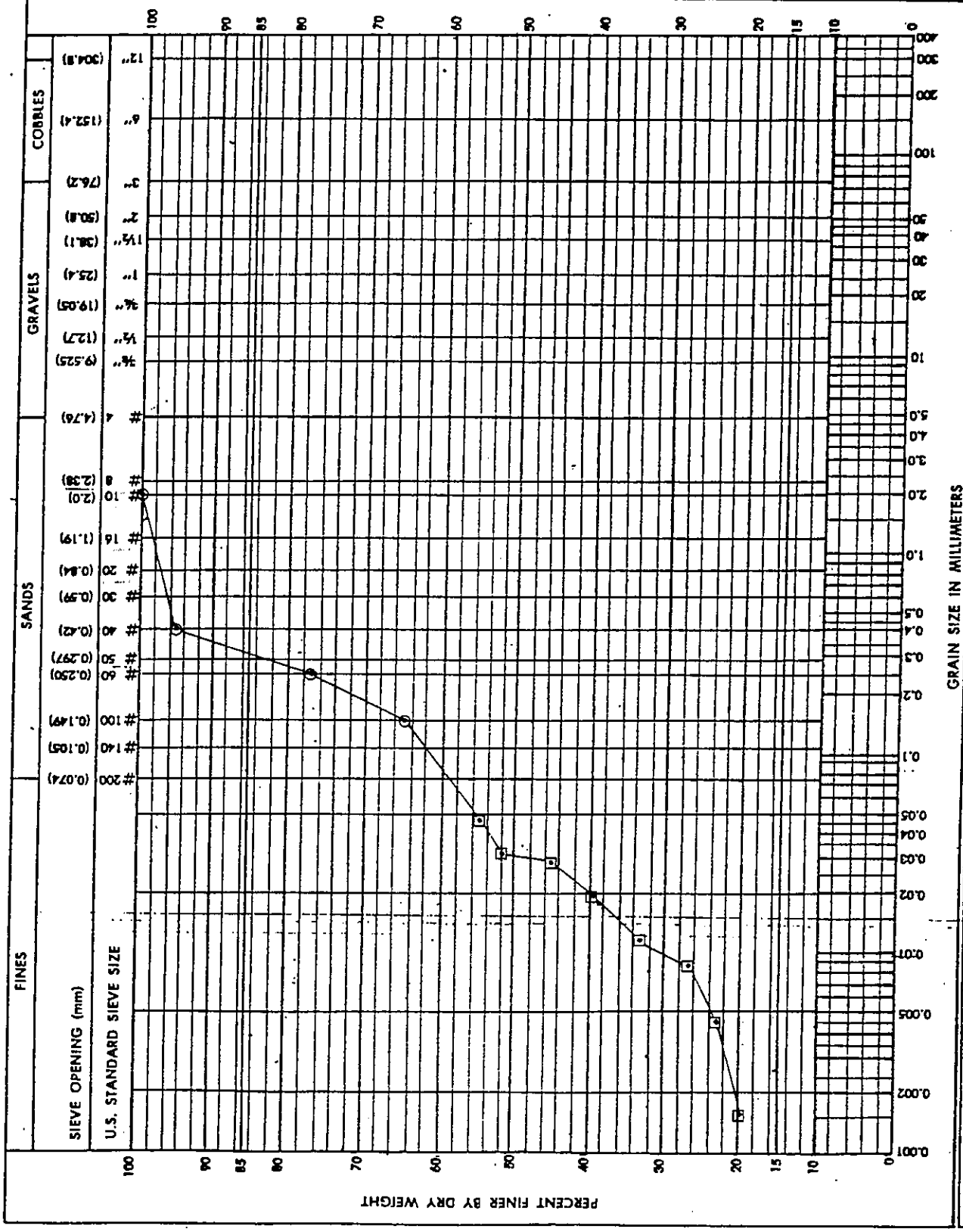
BORING NO. TB-17
SAMPLE NO. 2
DEPTH 12'-15'
ELEV. 885'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVEN CREEK SITE

JOB NO: 401-0050-181 | BY: J. STRIGEL | DATE: 6-3-76

REMARKS: WASHED NO. 200 SIEVE



GRAVEL 0 %	E SAND 36 %	D_{60} 0.082	C_U
C. SAND 0 %	SILT 39 %	D_{30} 0.0095	C_Z
M. SAND 5 %	CLAY 20 %	D_{10}	UNIFIED CLS. ML

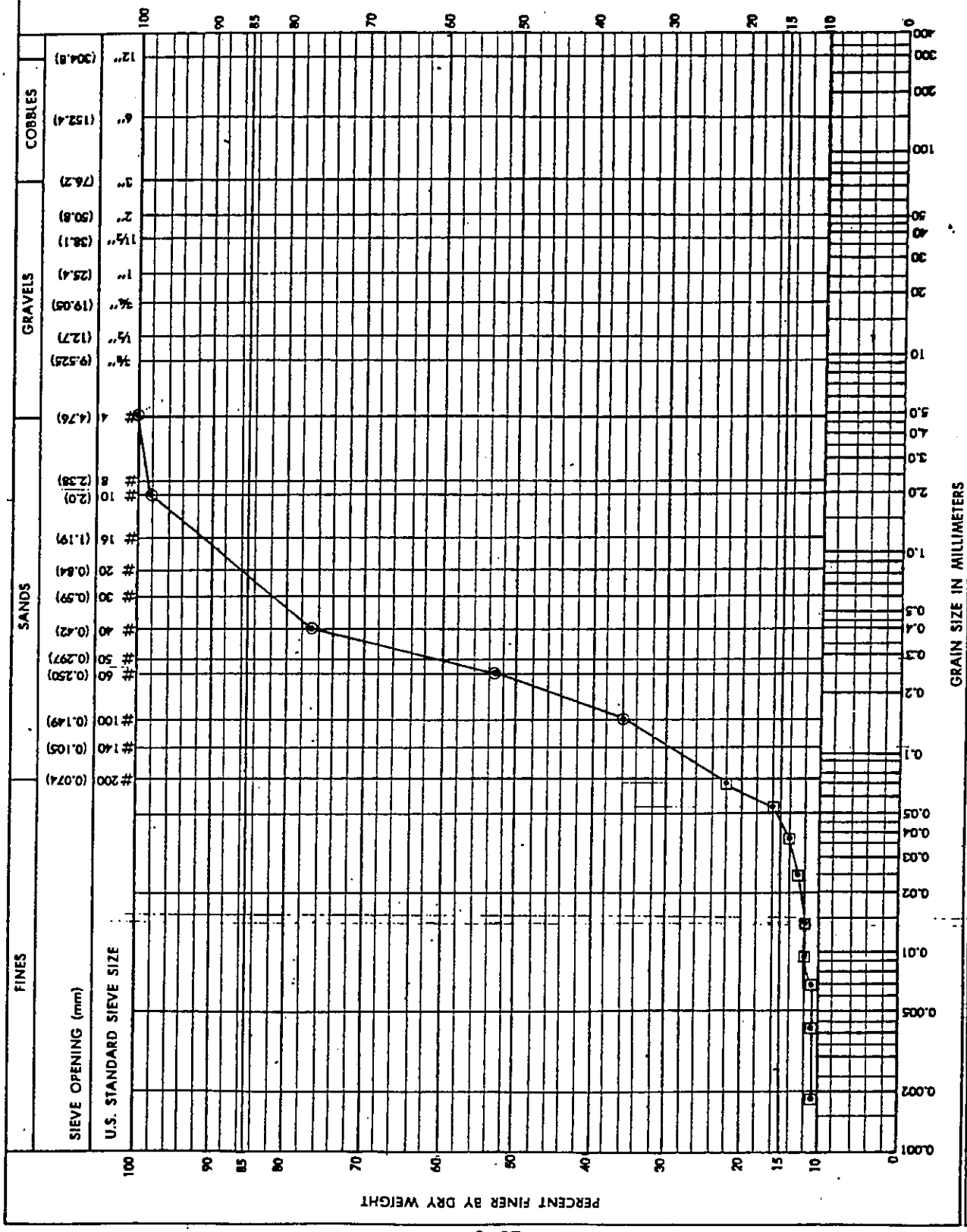
BORING NO. TB-21
SAMPLE NO. 1
DEPTH 5'
ELEV. 908'

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H-01-0050-181 | BY J. STRIGEL | DATE 6-8-76

REMARKS: WASHED NO 200 SIEVE



BORING NO.	TB-21	GRAVEL	0 %
SAMPLE NO.	P	C. SAND	2 %
DEPTH	11'	M. SAND	21 %
ELEV.	901'	F SAND	55 %
		SILT	11 %
		CLAY	11 %

D_{60} 0.29
D_{30} 0.11
D_{10} ____

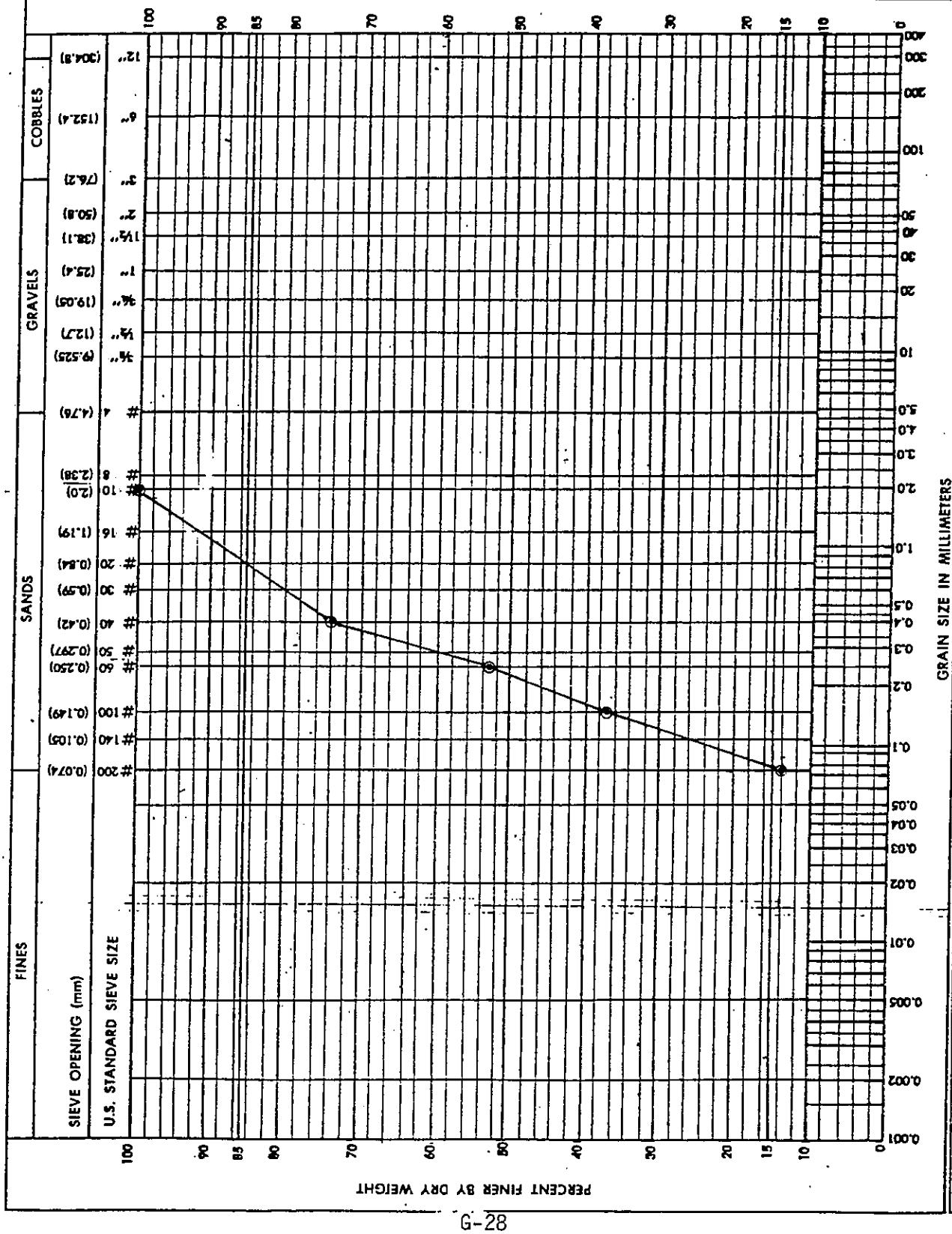
C_u ____
C_z ____
UNIFIED CLS. SM

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO.	BY	DATE
H-01-0050-181	J. STRIGEL	6-8-76

REMARKS



BORING NO. TB-21 GRAVEL 0% E SAND 60%

SAMPLE NO. P C. SAND 0% SILT } 14%

DEPTH 19' M. SAND 26% CLAY

ELEV. 894'

D_{60} 0.29

D_{30} 0.12

D_{10} ——

C_C ——

C_Z ——

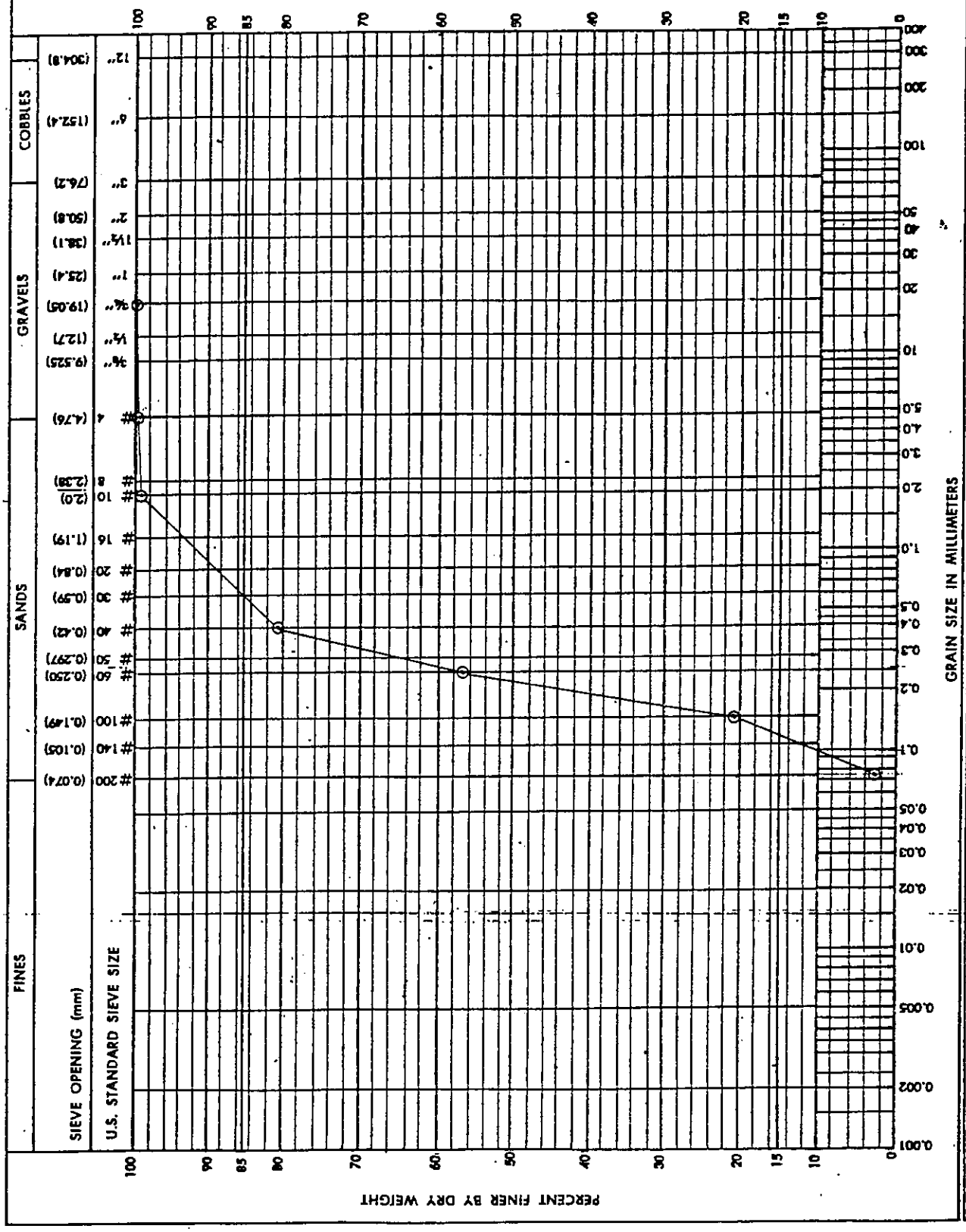
UNIFIED CLS. SM

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION EAU CLAIRE LANDFILL, SEVENMILE SITE

JOB NO. H01-0050-181 | BY S. HANSON | DATE 5-26-76

REMARKS



BORING NO. TB-24
SAMPLE NO. 4
DEPTH 13'
ELEV. 920'

GRAVEL 0 %
C. SAND 0 %
M. SAND 20 %
E SAND 77 %
SILT } 3 %
CLAY

D_{60} 0.21
D_{30} 0.17
D_{10} 0.10

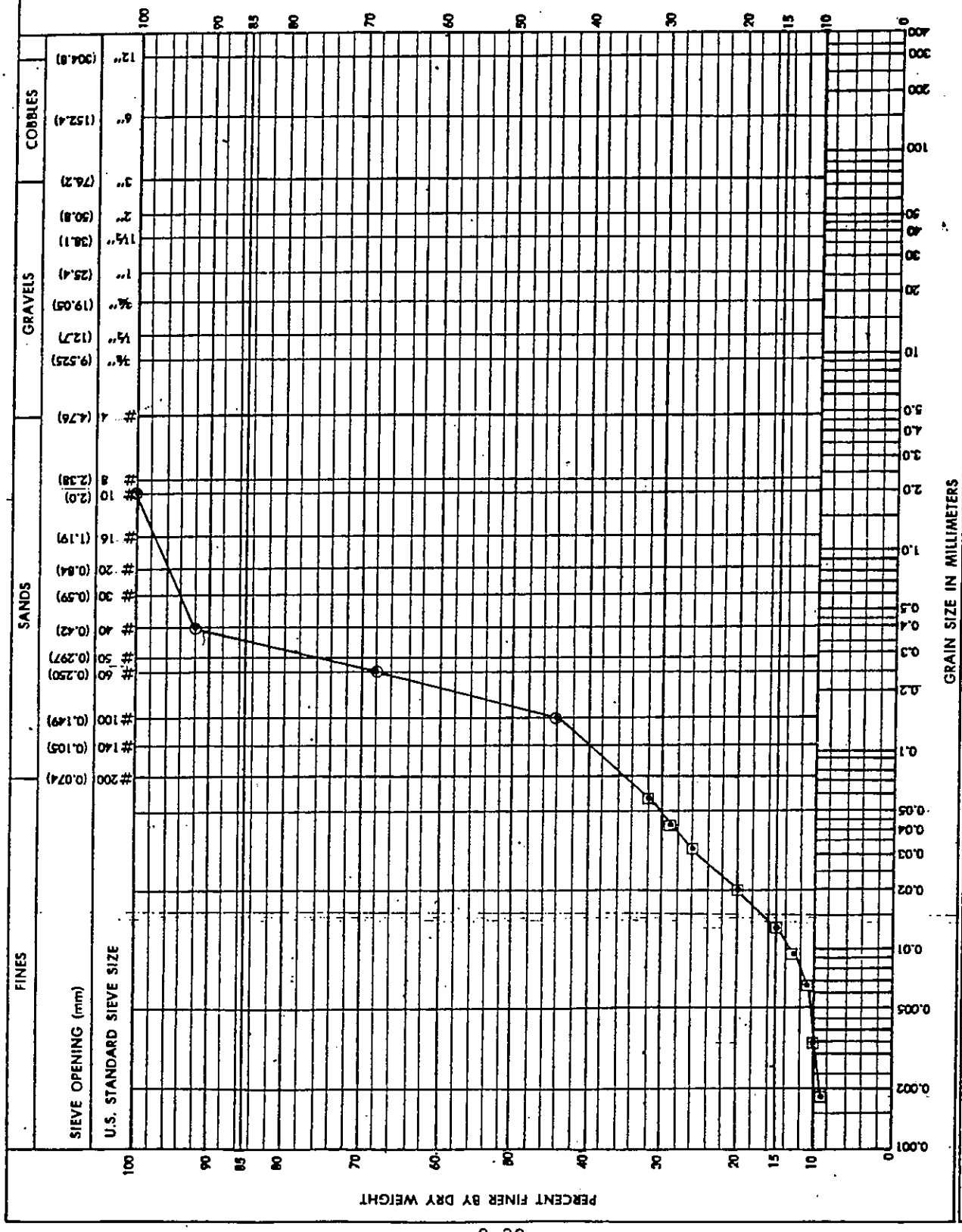
C 2.10
C_Z 1.37
UNIFIED CLS. SP

MATERIALS TESTING REPORT	GEOTECHNICAL DIVISION	Owen Ayres & Associates, Inc.

PROJECT and LOCATION: EAU CLAIRE LANDFILL, SEVENMILE CREEK SITE

JOB NO. H-01-0050-181 | BY J. STRIGEL | DATE 6-8-76

REMARKS: WASHED NO. 200 SIEVE

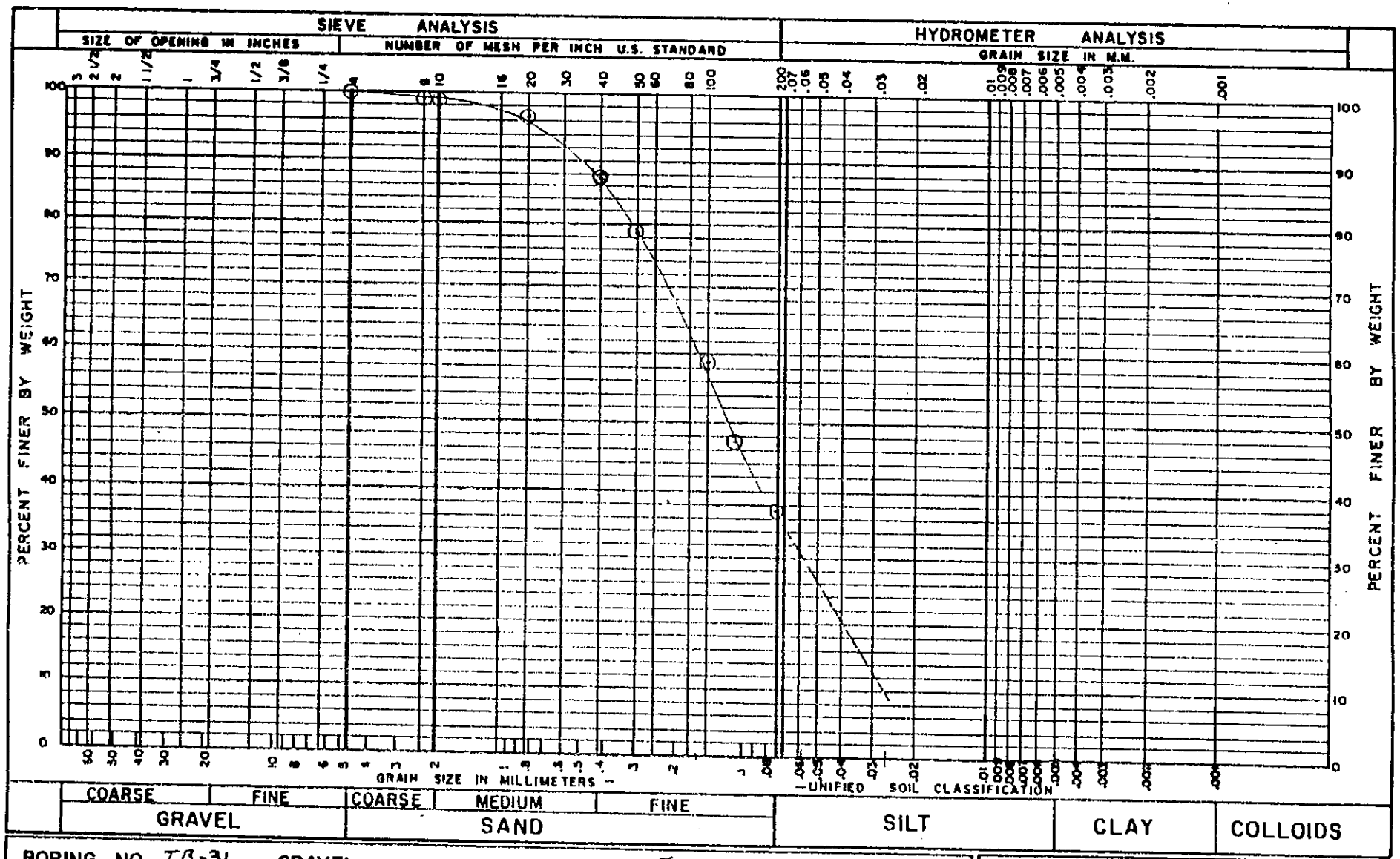


GRAVEL	0 %	E SAND	56 %
C. SAND	0 %	SILT	25 %
M. SAND	8 %	CLAY	11 %

D_{60} 0.21
D_{30} 0.05
D_{10} 0.0035

C_C 60.00
C_Z 3.40
UNIFIED CLS. SM

BORING NO. TB-26
SAMPLE NO. P
DEPTH 8.5'
ELEV. 902'



BORING NO. TB-31
SAMPLE NO. S-5
DEPTH 25
ELEV. 878

GRAVEL
C. SAND 1.2%
M. SAND 11.6%

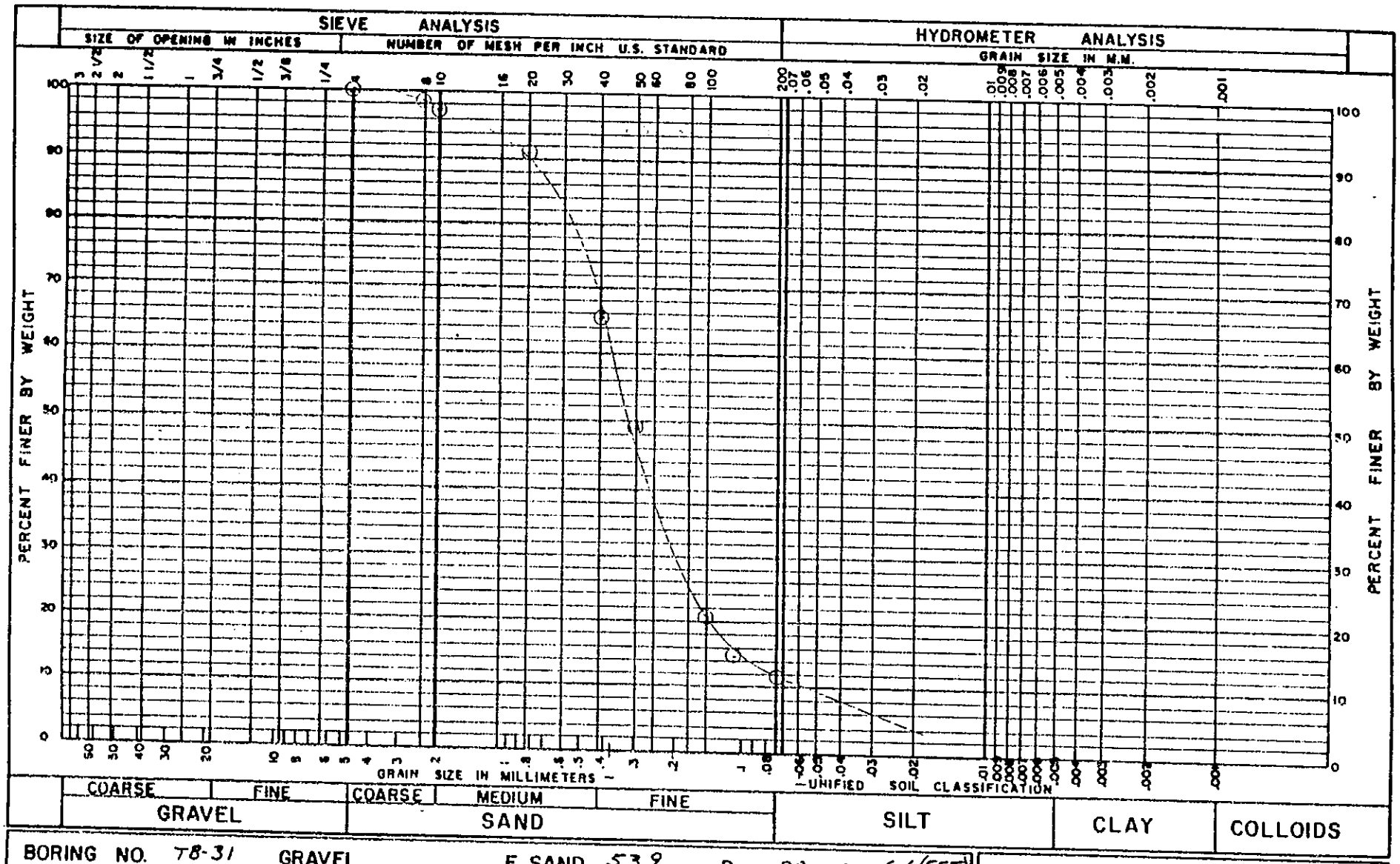
F SAND 50.3%
SILT } 36.9%
CLAY }

D_{60} .165 C_U 6.1
D_{30} .059(EST.) C_Z 0.8
D_{10} .027(EST.) UNIFIED CLASS SM

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. COUNTY SEVENMILE CREEK FEASIBILITY
REMARKS:
DATE: 5/29/86
JOB NO: 4731.00



BORING NO.	T8-31	GRAVEL		F. SAND	53.9	D_{60}	.38	C_U	6.6 (EST.)
SAMPLE NO.	S-6	C. SAND	2.3%	SILT / CLAY	11.7	D_{30}	.20	C_Z	1.8 (EST.)
DEPTH	30	M. SAND	32.1%			D_{10}	.058 (EST.)	UNIFIED CLASS	SW-SM
ELEV.	873								

AYRES ASSOCIATES

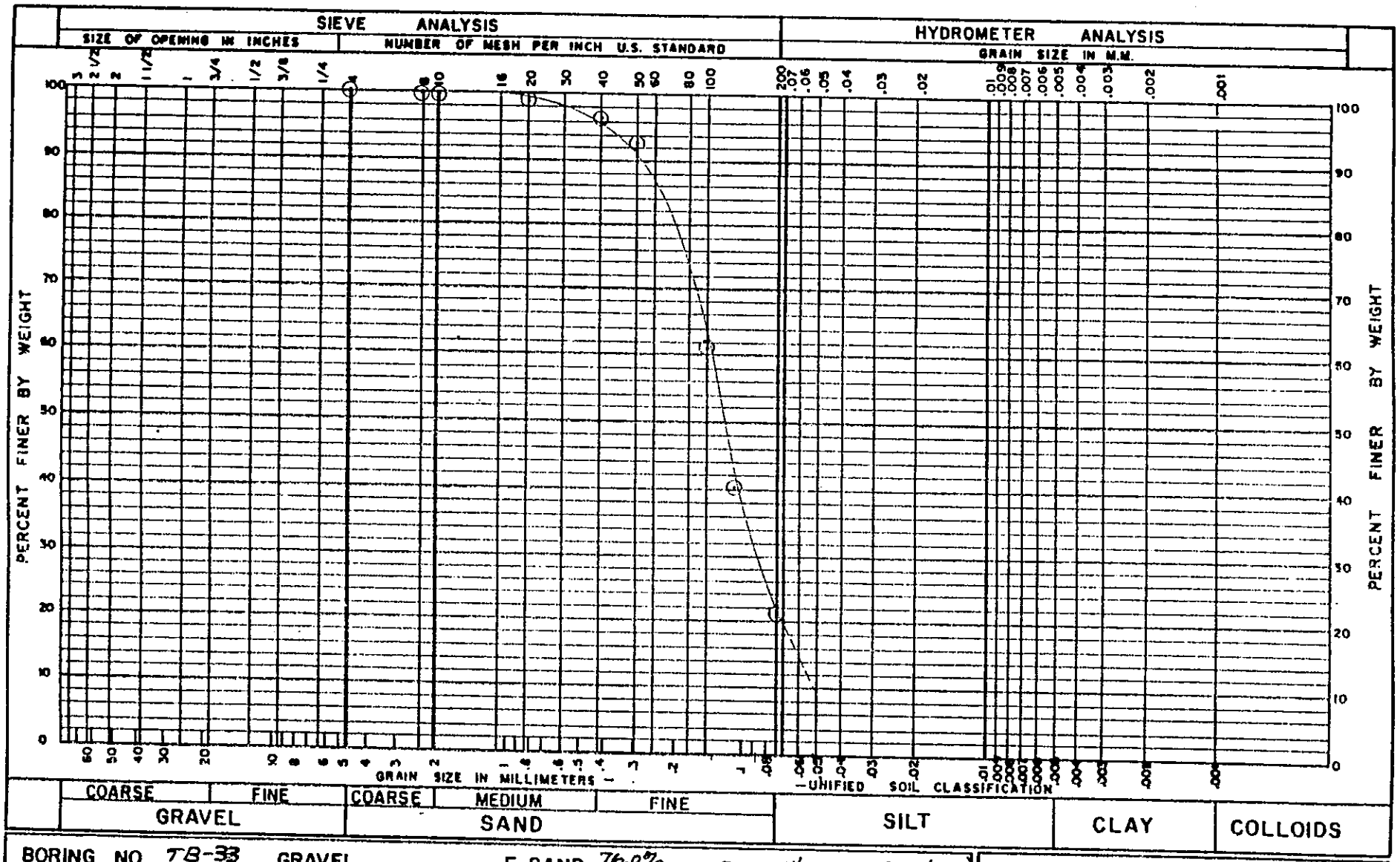
⊙ MECHANICAL
△ HYDROMETER

PROJECT: G.C. Co. 7 MILE FEASIBILITY

REMARKS:

DATE: 5/29/86

JOB NO: 4731.00



BORING NO.	TB-33	GRAVEL		F. SAND	76.0%	D_{60} .14	C_U 2.7 (EST.)
SAMPLE NO.	S-1	C. SAND		SILT / CLAY	21.2%	D_{30} .089	C_Z 1.1 (EST.)
DEPTH	5	M. SAND	2.8%			D_{10} .052 (EST)	UNIFIED CLASS SM
ELEV.	911						

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

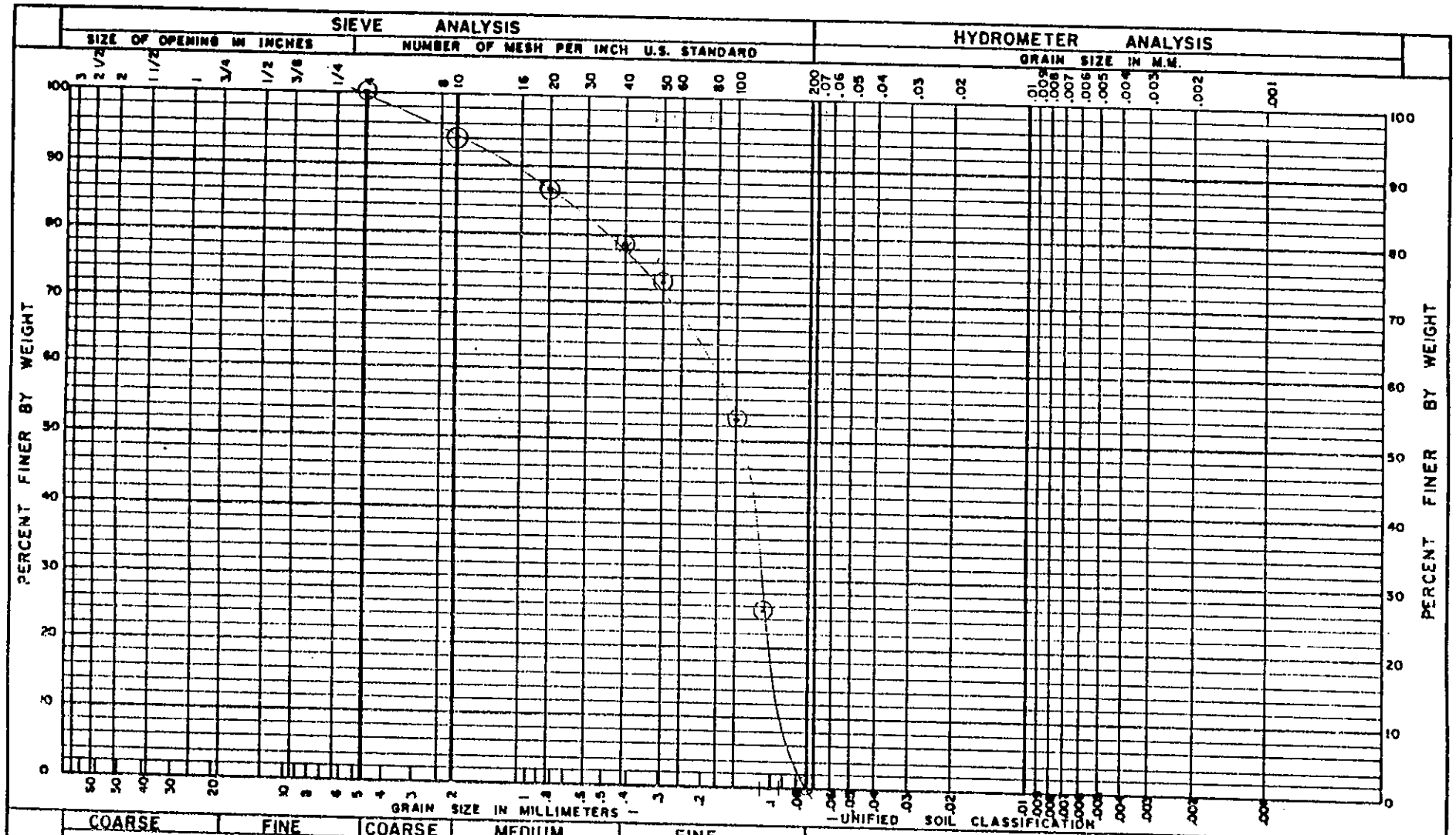
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. SEVENMILE FEASIBILITY

REMARKS:

DATE: 5/29/86

JOB NO: 4731.00



BORING NO.	TB-33	GRAVEL		F. SAND	77.9%	D_{60}	.175	C_U	1.9
SAMPLE NO.	S-3	C. SAND	5.0%	SILT		D_{30}	.12	C_Z	0.1
DEPTH	15	M. SAND	22.1%	CLAY		D_{10}	.091	UNIFIED CLASS	SP
ELEV.	901								

AYRES ASSOCIATES — Engineers / Architects / Planners / Surveyors

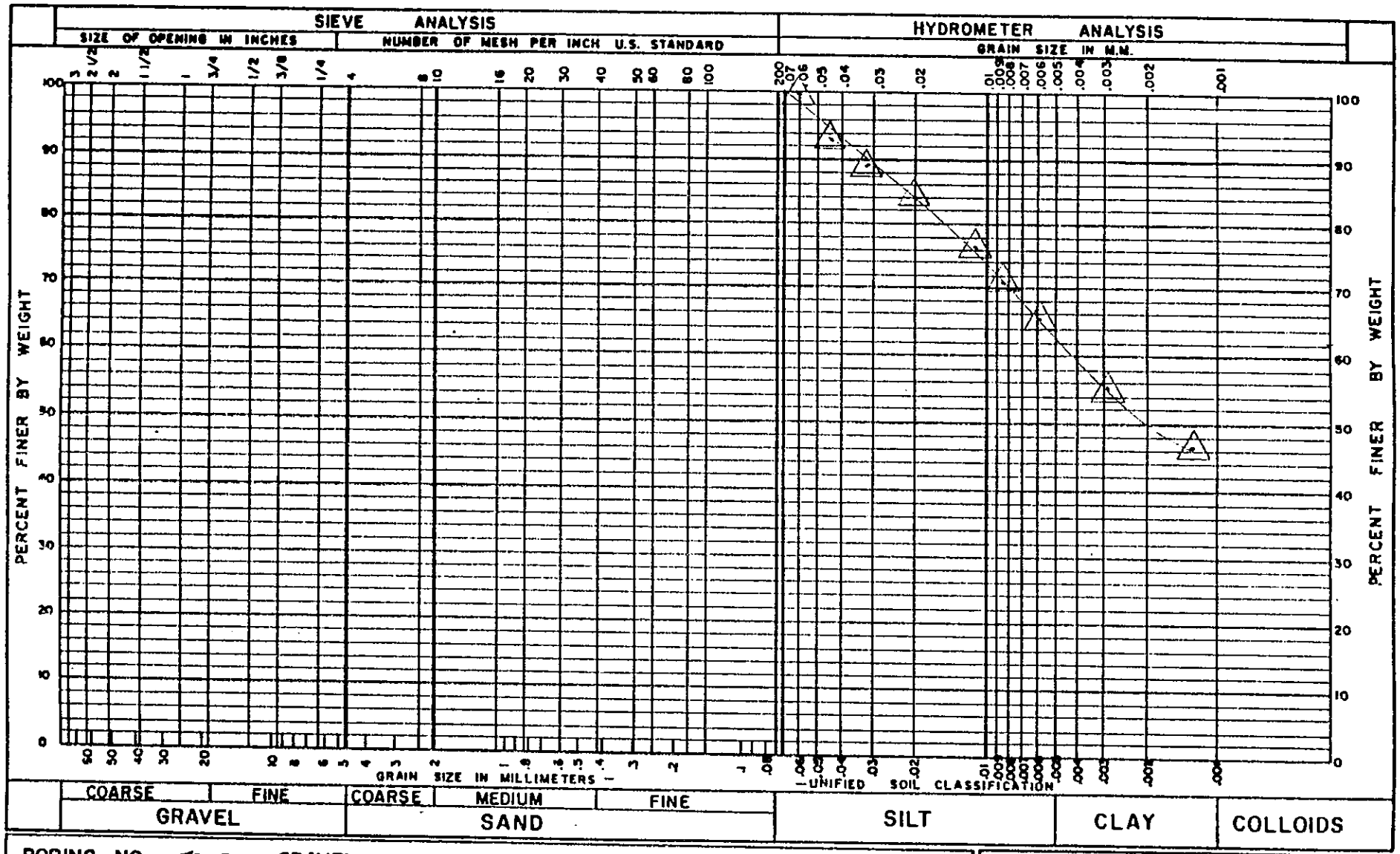
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E. C. Co. 1-mi Feasibility

REMARKS: Coarse Fraction

DATE: 5/27/84

JOB NO: 4731.00



BORING NO.	TB-33	GRAVEL		F. SAND		D_{60}	C_U
SAMPLE NO.	S-3	C. SAND		SILT	37.7%	D_{30}	C_Z
DEPTH		M. SAND		CLAY	62.3%	D_{10}	UNIFIED CLASS CH
ELEV.		LL = 62.0	PL = 26.3	PI = 35.7			

AYRES ASSOCIATES

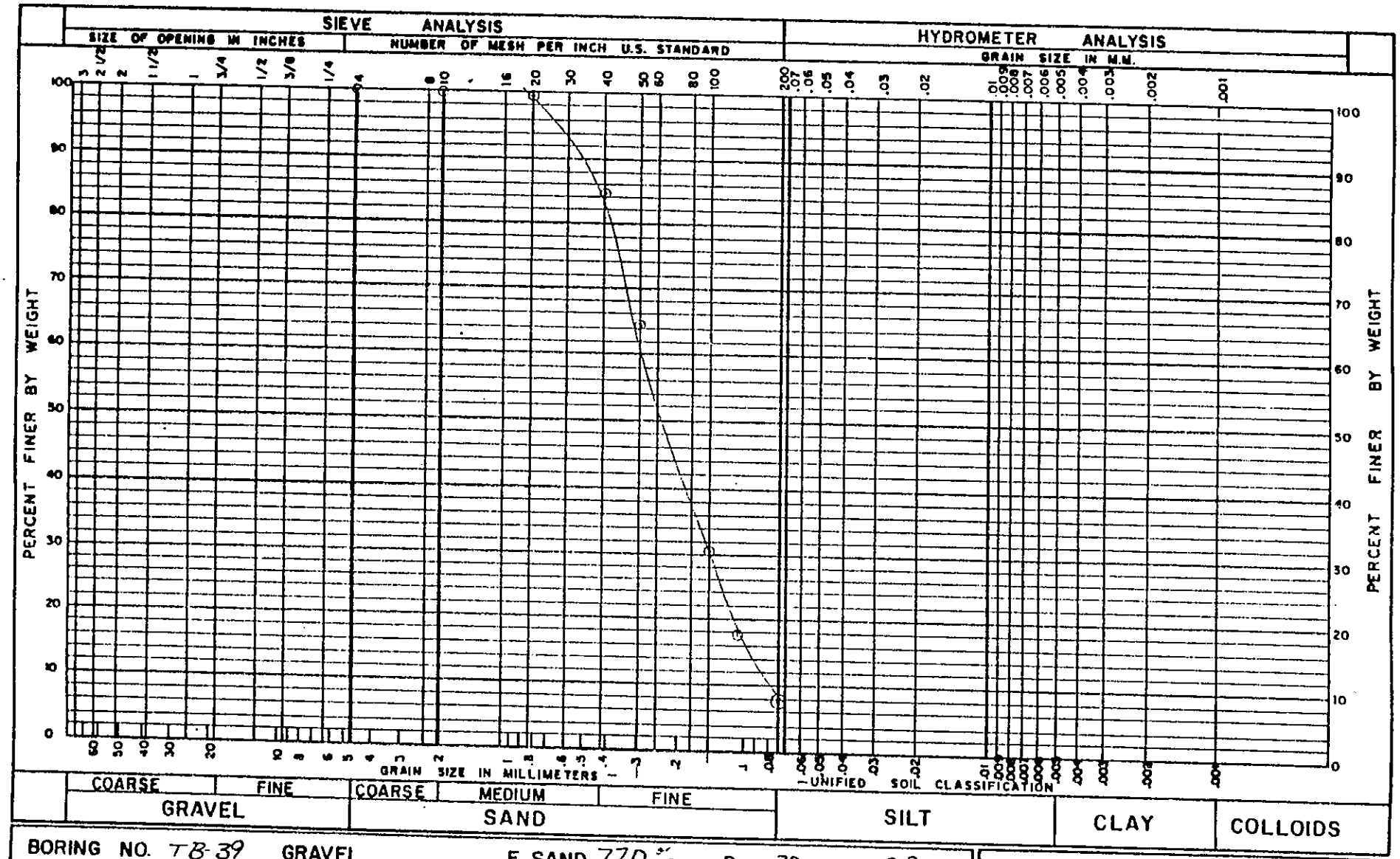
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. - 7 Mile

REMARKS: Fines Portion

DATE: 5/27/96

JOB NO: 4731.00



BORING NO.	TB-39	GRAVEL		F. SAND	77.0 %	D_{60} .30	C_U 3.8
SAMPLE NO.	S-2	C. SAND		SILT / CLAY	7.4%	D_{30} .15	C_Z 0.9
DEPTH	10	M. SAND	15.6 %			D_{10} .08	UNIFIED CLASS SP-SM
ELEV.	904						

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

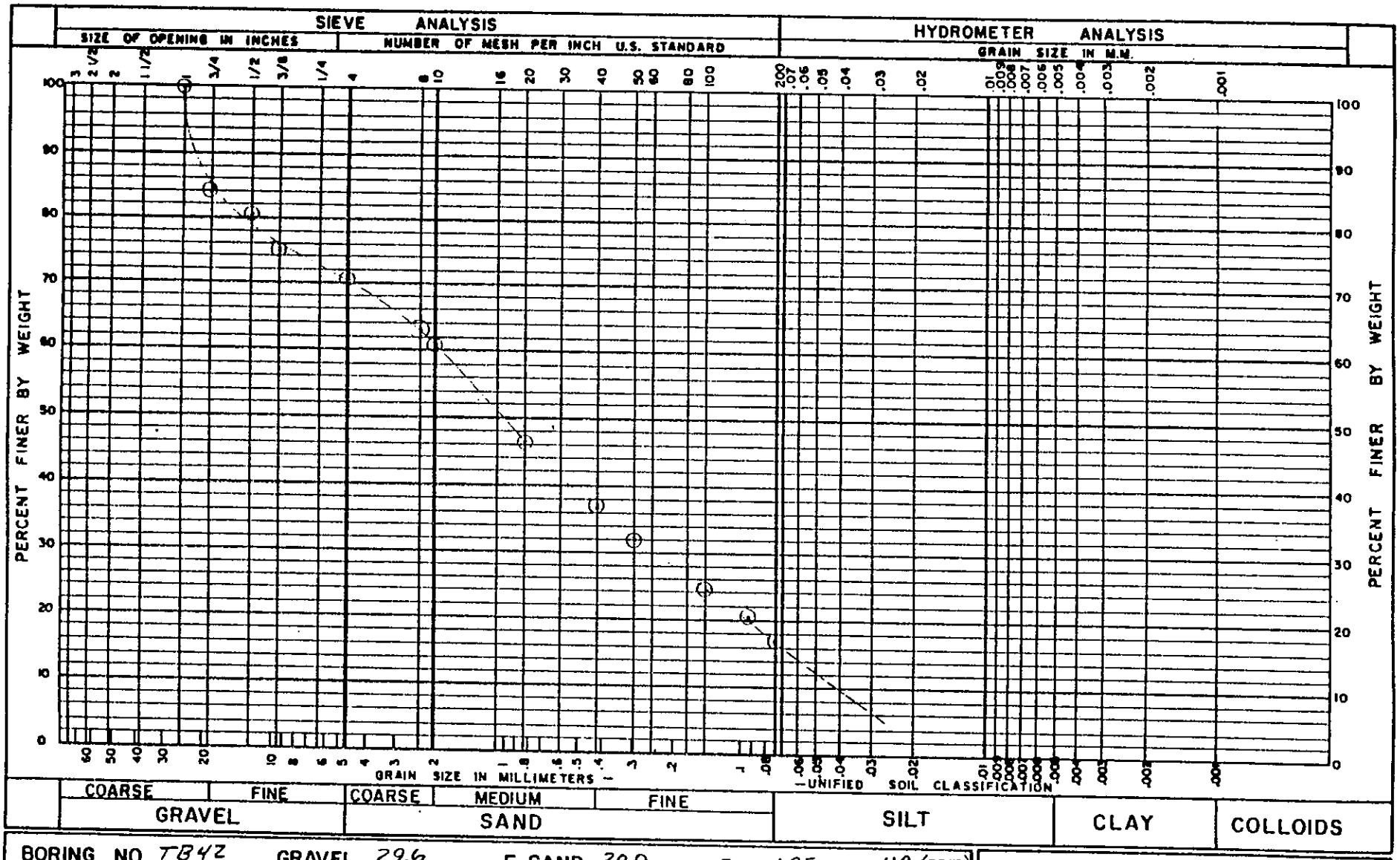
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. COUNTY - SEVENMILE FEASIBILITY

REMARKS:

DATE: 5/27/86

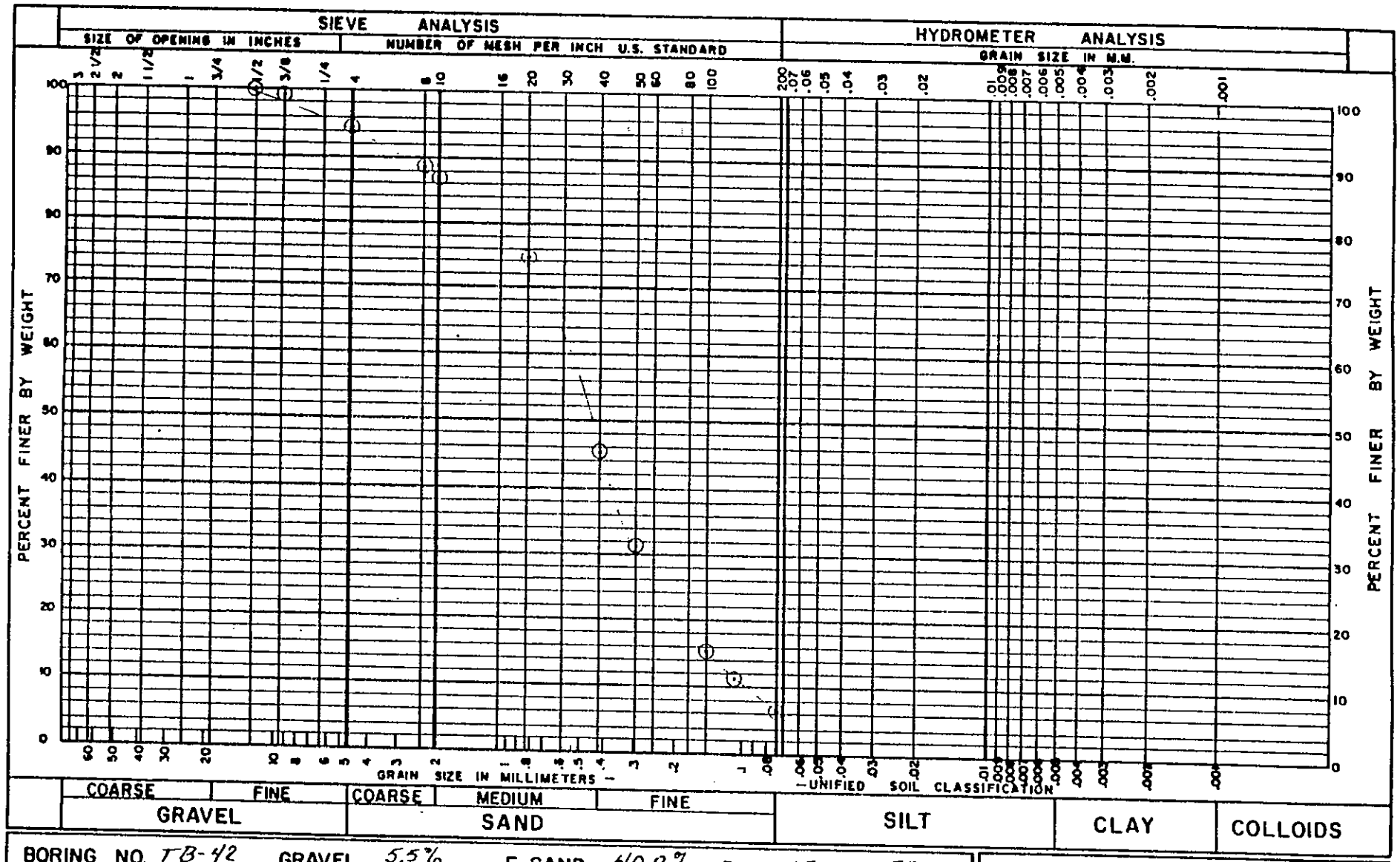
JOB NO: 4731.00



BORING NO. TB42	GRAVEL 29.6	F. SAND 20.0	D_{60} 1.95	C_U 48 (EST.)	PROJECT: E.C. SEVENMILE FEASIBILITY
SAMPLE NO. S-1	C. SAND 10.0	SILT } 17	D_{30} .24	C_Z 0.7 (EST.)	
DEPTH 15	M. SAND 23.4	CLAY }	D_{10} .041 (EST.)	UNIFIED CLASS SM	REMARKS:
ELEV. 895					DATE: 5/27/86
					JOB NO: 4731.00

AYRES ASSOCIATES Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER



BORING NO.	TB-42	GRAVEL	5.5%	F. SAND	40.8%	D_{60}	.55	C_U	5.8
SAMPLE NO.	S-3	C. SAND	7.5%	SILT }	6.4%	D_{30}	.30	C_Z	1.7
DEPTH	30	M. SAND	39.8%	CLAY }		D_{10}	.095	UNIFIED CLASS	SP-SM
ELEV.	880								

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

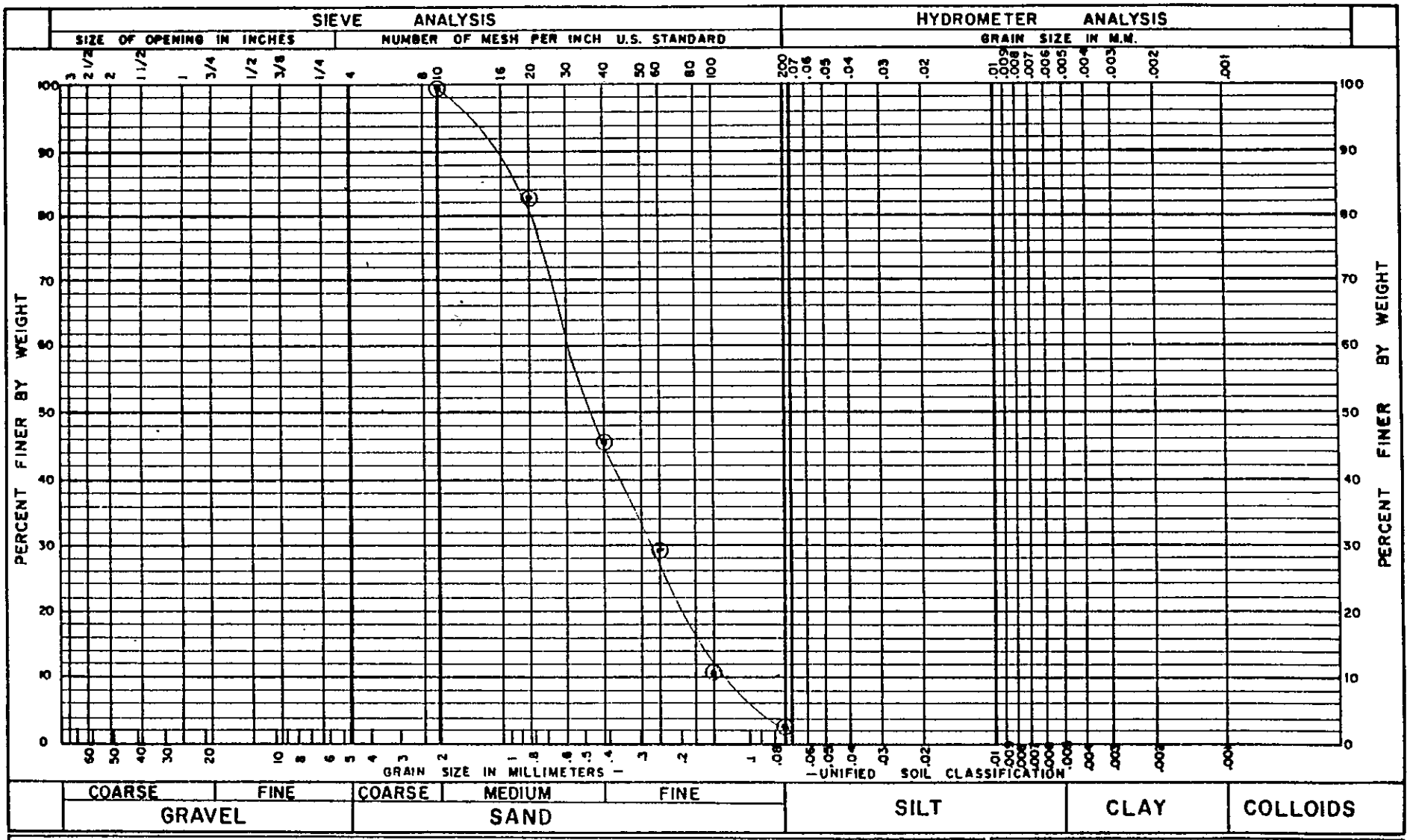
⊙ MECHANICAL
△ HYDROMETER

PROJECT: E.C. Co. - 7 MI

REMARKS:

DATE: 5/27/86

JOB NO: 4731.00



BORING NO. TB-45
SAMPLE NO. 2
DEPTH 10 FT.
ELEV. 886

GRAVEL
C. SAND 0.7 %
M. SAND 53.7 %

F. SAND 43.3
SILT } 2.5 %
CLAY

D_{60} .57
D_{30} .25
D_{10} .15

C_U 3.8
C_Z 0.73
UNIFIED CLASS SP

AYRES ASSOCIATES
Engineers / Architects / Planners / Surveyors

⊙ MECHANICAL
△ HYDROMETER

PROJECT: EAU CLAIRE CO. SEVEN MILE CK. L.F. SECTOR 2
REMARKS:
DATE:
JOB NO: 4731.00

August 2000 Existing Geotech Data / Hydraulic Conductivity

(From 2014 FR)

TABLE 3
EXISTING GEOTECHNICAL PROGRAM INFORMATION
TESTING
SUPERIOR SERVICES -- SEVEN MILE CREEK LANDFILL SECTOR 2
VERTICAL EXPANSION

Grain Size Analysis (5 samples from each major soil unit)

In Situ Hydraulic Conductivity Tests All wells

Boring	Sample Depth (feet)	Elevation (feet msl)	%Gravel	%Sand	%Fines	%Silts	%Clays	USCS	Hydraulic Conductivity (cm/sec)	Test Type
MW/DH-2	13	896	0	97	3			SP	--	--
MW/DH-3	7.5	897	1	8	92	86	6	ML	--	--
	17.5	887	0	60	40			SM	--	--
MW/DH-4	16	883	0	88	12			SM	--	--
MW/DH-20	5	905	0	71	29			SM	--	--
	15	895	0	88	12	3	9	SP-SM	--	--
MW/DH-20A	--	859-856	--	--	--	--	--	Sandstone	5.3 X 10-4	FF
MW/DH-22A	--	883-880	--	--	--	--	--	SP	2.6 X 10-2	FF
MW/DH-23	10	902	0	90	10			SP-SM	--	--
	15	897	0	97	3	1	2	SP	--	--
	--	890	--	--	--	--	--	SP-SM	1.3 X 10-3	FF
MW/DH-23A	--	841-838	--	--	--	--	--	Sandstone	6.8 X 10-4	FF
MW/DH-23B	--	860	--	--	--	--	--	Sandstone	6.4 X 10-3	LC
	--	821-818	--	--	--	--	--	Sandstone	1.4 X 10-4	FF
MW/DH-24	10	911	0	49	51			ML	--	--
	20	901	0	96	4	1	3	SP	--	--
TB-5	31	864	0	60	40	26	14	SM	--	--
	32	863	0	12	88	63	25	ML	--	--
TB-11	--	895	--	--	--	--	--	SM	8.9 X 10-5	FF
	4-7	894.5	0	70	30			SM	--	--
	15	885	0	66	34	23	11	SM	--	--
TB-13	7-10	892	0	63	37			SM	--	--
	10-13	888.5	0	85	15			SM	1.1 X 10-5	LRC
TB-14	11.5	895	0	33	67	57	10	ML	--	--
	--	885	--	--	--	--	--	ML	2.3 X 10-3	FF
	--	885	--	--	--	--	--	ML	2.5 X 10-7	LUF
	11-13	884-886	0	24	76	43	33	ML	--	--
TB-17	12-15	895	0	65	35			SM	--	--
TB-31	25	878	0	63	37			SM	--	--
	30	873	0	88	12			SW-SM	--	--
TB-33	5	905	0	79	21			SM	--	--
	15	901	0	99	1	0.4	0.6	SP	--	--
TB-39	10	904	0	93	7			SP-SM	--	--
TB-42	15	895	30	53	17			SM	--	--
	30	880	6	88	6			SP-SM	--	--
TB-45	10	886	0	97	3			SP	2.9 X 10-3	LRC
	--	869-866	--	--	--	--	--	SP	3.6 X 10-3	FF

L = Lab R = Remolded F = Falling Head (slug tests)
F = Field U = Undisturbed C = Constant Head

Laboratory Hydraulic Conductivity (2 undisturbed samples from each major fine grained unit)
Baseline Ground Water Monitoring 4 rounds according to 507.18
Ground Water Elevations Monthly for 6 months Quarterly for 1 year
Surface Water Elevations Monthly for 6 months Quarterly for 1 year

J:\sab\991109b1.xls

2003 Soil Test Data

(From 2014 FR)

Excerpted from 2003 Feasibility Report

TABLE 5 A
ONYX SEVEN MILE CREEK LANDFILL--SECTOR 2 HORIZONTAL AND VERTICAL EXPANSION
PHYSICAL SOILS TESTING RESULTS--SM SOIL TYPE

Boring or Well Number	Sample Depth (ft.bgs)	Grain-Size					Atterberg Limits		USCS Classification	Laboratory Permeability ASTM D5084 (cm/s)	Dry Density (lbs./ft^3)	Moisture Content (%)	Geologic Origin
		% Gravel (>4.75 mm)	% Sand (4.75 mm-0.075 mm)	% Silt (0.075 mm-0.005 mm)	% Clay (<0.005 mm)	% Silt and Clay (<P-200)	Liquid Limit (%)	Plasticity Index (%)					
DH-39	5-7'	0.1	76.8	NT	NT	23.1	NP	NP	SM	NT	NT	NT	Alluvium
DH-43	5-7'	0.0	86.2	NT	NT	13.8	NP	NP	SM	NT	NT	NT	
DH-46	34'	0.0	80.2	11.1	8.7	0.0	NP	NP	SM	NT	NT	NT	
DH-47	14-16'	11.2	53.3	NT	NT	35.5	NP	NP	SM	NT	NT	NT	
DH-48	19-21'	0.5	82.2	NT	NT	17.3	NP	NP	SM	NT	NT	NT	
DH-49	30-32'	2.7	78.9	NT	NT	18.4	NP	NP	SM	NT	NT	NT	
DH-50	15-17'	0.0	65.0	NT	NT	35.0	NP	NP	SM	NT	NT	NT	
TB-65	10-12'	0.0	79.1	NT	NT	20.9	NP	NP	SM	NT	NT	NT	
N=		8.0	8.0			8.0							
Min.		0.0	53.3			0.00							
Max.		11.2	86.2			35.5							
Mean		1.8	75.2			20.5							
Median		0.1	79.0			19.7							
Std. Deviation		3.9	10.8			11.5							

N = Number of Samples
NT = Not Tested--No hydrometer analysis performed
NP = Non-Plastic

TABLE 5 B
ONYX SEVEN MILE CREEK LANDFILL--SECTOR 2 HORIZONTAL AND VERTICAL EXPANSION
PHYSICAL SOILS TESTING RESULTS--SP SOIL TYPE

Boring or Well Number	Sample Depth (ft.bgs)	Grain-Size					Atterberg Limits		USCS Classification	Laboratory Permeability ASTM D5084 (cm/s)	Dry Density (lbs./ft^3)	Moisture Content (%)	Geologic Origin
		% Gravel (>4.75 mm)	% Sand (4.75 mm-0.075 mm)	% Silt (0.075 mm-0.005 mm)	% Clay (<0.005 mm)	% Silt and Clay (<P-200)	Liquid Limit (%)	Plasticity Index (%)					
DH-39	40-42'	0.0	98.2	NT	NT	1.8	NP	NP	SP	NT	NT	NT	Alluvium
DH-39	45-47'	0.2	95.1	NT	NT	4.7	NP	NP	SP	NT	NT	NT	
DH-41	40-42'	0.1	98.3	NT	NT	1.6	NP	NP	SP	NT	NT	NT	
DH-43	40-42'	0.7	94.8	NT	NT	4.5	NP	NP	SP	NT	NT	NT	
DH-43	45-47'	1.1	95.1	NT	NT	3.8	NP	NP	SP	NT	NT	NT	
DH-43A	65-67'	1.8	94.0	NT	NT	4.2	NP	NP	SP	NT	NT	NT	
DH-44	40-42'	0.0	97.9	NT	NT	2.1	NP	NP	SP	NT	NT	NT	
DH-44A	70-72'	0.0	95.1	NT	NT	4.9	NP	NP	SP	NT	NT	NT	
DH-45	4-6'	0.0	98.6	NT	NT	1.4	NP	NP	SP	NT	NT	NT	
DH-45	34-36'	0.2	97.7	NT	NT	2.1	NP	NP	SP	NT	NT	NT	
DH-45	39-41'	5.7	93.2	NT	NT	1.1	NP	NP	SP	NT	NT	NT	
D-47A	46-48'	0.0	98.7	NT	NT	1.3	NP	NP	SP	NT	NT	NT	
TB-71	24-26'	0.4	97.8	NT	NT	1.8	NP	NP	SP	NT	NT	NT	
N=		13.0	13.0			13.0							
Min.		0.0	93.2			1.1							
Max.		5.7	98.7			4.9							
Mean		0.8	96.5			2.7							
Median		0.2	97.7			2.1							
Std. Deviation		1.6	2.0			1.5							

N = Number of Samples
NT = Not Tested--No hydrometer analysis performed
NP = Non-Plastic

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TABLE 5 C
ONYX SEVEN MILE CREEK LANDFILL--SECTOR 2 HORIZONTAL AND VERTICAL EXPANSION
PHYSICAL SOILS TESTING RESULTS--SP-SM SOIL TYPE

Boring or Well Number	Sample Depth (ft.bgs)	Grain-Size					Atterberg Limits		USCS Classification	Laboratory Permeability ASTM D5084 (cm/s)	Dry Density (lbs./ft^3)	Moisture Content (%)	Geologic Origin
		% Gravel (>4.75 mm)	% Sand (4.75 mm-0.075 mm)	% Silt (0.075 mm-0.005 mm)	% Clay (<0.005 mm)	% Silt and Clay (<P-200)	Liquid Limit (%)	Plasticity Index (%)					
DH-41	35-37'	0.2	93.6	NT	NT	6.2	NP	NP	SP-SM	NT	NT	NT	Alluvium
DH-44	45-47'	0.0	93.6	NT	NT	6.4	NP	NP	SP-SM	NT	NT	NT	
DH-46	4-6'	0.5	93.8	NT	NT	5.7	NP	NP	SP-SM	NT	NT	NT	
DH-48	24-26'	3.7	86.8	NT	NT	9.5	NP	NP	SP-SM	NT	NT	NT	
DH-49	35-37'	1.6	87.7	NT	NT	10.7	NP	NP	SP-SM	NT	NT	NT	
DH-49A	55-57'	0.0	90.7	NT	NT	9.3	NP	NP	SP-SM	NT	NT	NT	
DH-50	20-22'	0.7	90.5	NT	NT	8.8	NP	NP	SP-SM	NT	NT	NT	
TB-62	14-16'	0.0	95.0	NT	NT	5.0	NP	NP	SP-SM	NT	NT	NT	
TB-75	9-11'	0.0	92.2	NT	NT	7.8	NP	NP	SP-SM	NT	NT	NT	
TB-78	20-22'	0.0	94.5	NT	NT	5.5	NP	NP	SP-SM	NT	NT	NT	
N=		10.0	10.0	10.0	10.0	10.0							
Min.		0.0	86.8	0.0	0.0	5.0							
Max.		3.7	95.0	0.0	0.0	10.7							
Mean		0.7	91.8	0.0	0.0	7.5							
Median		0.1	92.9	0.0	0.0	7.1							
Std. Deviation		1.2	2.8	0.0	0.0	2.0							

N = Number of Samples
NT = Not Tested--No hydrometer analysis performed
NP = Non-Plastic

TABLE 5 D
ONYX SEVEN MILE CREEK LANDFILL--SECTOR 2 HORIZONTAL AND VERTICAL EXPANSION
PHYSICAL SOILS TESTING RESULTS--REMAINING SOIL TYPE

Boring or Well Number	Sample Depth (ft.bgs)	Grain-Size					Atterberg Limits		USCS Classification	Laboratory Permeability ASTM D5084 (cm/s)	Dry Density (lbs./ft^3)	Moisture Content (%)	Geologic Origin
		% Gravel (>4.75 mm)	% Sand (4.75 mm-0.075 mm)	% Silt (0.075 mm-0.005 mm)	% Clay (<0.005 mm)	% Silt and Clay (<P-200)	Liquid Limit (%)	Plasticity Index (%)					
DH-44	6'	0.0	45.2	35.0	19.8	54.8	NP	NP	CL-ML	NT	NT	NT	Alluvium
DH-46	29-31'	0.0	17.0	35.8	47.2	83.0	NP	NP	CL	NT	NT	NT	
DH-47	6-8'	0.0	16.7	63.6	19.7	83.3	20	19	ML	5.4×10^{-9}	105	21.1	
DH-49	15'	0.0	18.0	37.9	44.1	82.0	47	20	CL	NT	NT	NT	
TB-61	4'	0.0	43.2	33.6	23.2	56.3	21	16	CL-ML	NT	NT	NT	
TB-63	15'	0.0	2.9	45.5	51.6	97.1	55	27	CH	NT	NT	NT	
TB-65	15'	0.0	21.3	64	14.7	78.7	19	19	ML	NT	NT	NT	
TB-74	15'	0.0	45.1	38.5	16.4	54.9	NP	NP	CL-ML	NT	NT	NT	
TB-76	10'	0.0	31.5	34.1	34.4	68.5	41	20	CL	NT	NT	NT	
N=			9.0	9.0	9.0	9.0	9.0	9.0		1.0	1.0	1.0	
Min.			2.9	33.6	14.7	0.0	19.0	16.0					
Max.			45.2	64.0	51.6	0.0	55.0	27.0					
Mean			26.8	43.1	30.1	0.0	33.8	20.2					
Median			21.3	37.9	23.2	0.0	31.0	19.5					
Std. Deviation			15.2	12.3	14.4	0.0	15.8	3.7					

N = Number of Samples
NT = Not Tested--No hydrometer analysis performed
NP = Non-Plastic

End of Table 5

APPENDIX H

SOIL TEST DATA (LAB)

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2002

REPORT OF
PLASTICITY INDEX OF SOILS

Client: Ayres Associates
Attn: Mr. Jim Anklam
P.O. Box 1590
Eau Claire, WI 54702-1590

Project No.: 3330804.5
Report No.: 208716
Date of Report: Dec 27, 2002

Project: **ONYX-SUPERIOR SEVEN MILE LANDFILL**
EAU CLAIRE, WISCONSIN

Services: Prepare Shelby Tube sample delivered to laboratory and perform Hydrometer, Hydraulic Conductivity, Density, Moisture Content, Liquid Limit, Plastic Limit and establish the Plasticity Index of the material.

TEST RESULTS

Sample #	Soil Description & Classification	Liquid Limit	Plastic Limit	Plasticity Index	Density Lbs/ft^3	Moisture Content (%)	Hydraulic Conductivity
DH-47, 6'-8'	Silt w/sand, brown	20	19	1	105.0	21.1	5.4×10^{-9}

REMARKS

A portion of the samples will be held for 30 days from the date of this report and then discarded, unless notified otherwise.

Technician: Tom Portman

Report Distribution:
(2) Ayres Associates

MAXIM TECHNOLOGIES, INC.®

Joel J. Guanella
CMT Department Manager

1837 County Highway J • Chippewa Falls, WI • Telephone: 715/832-0282 • Fax: 715/832-0541

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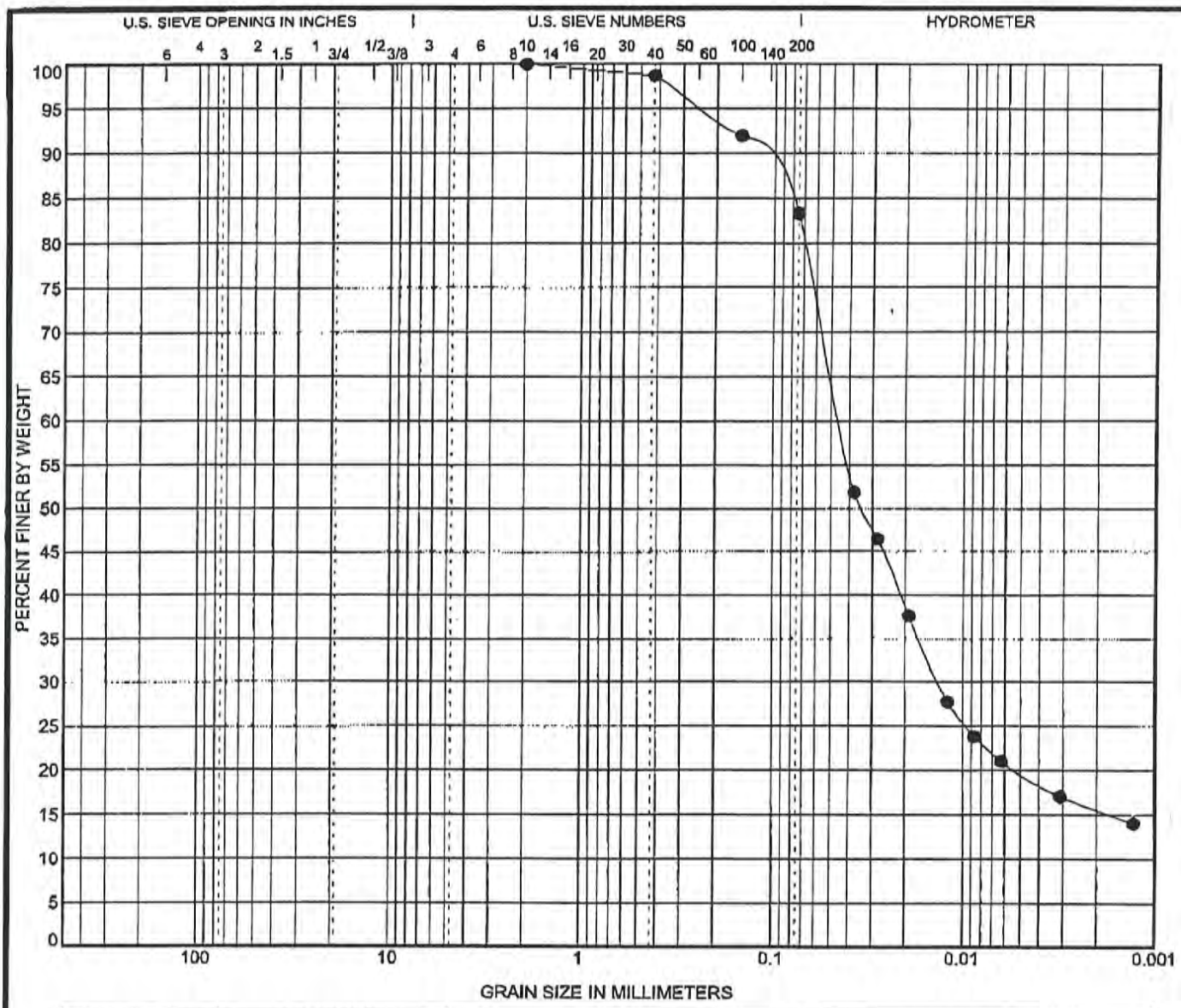

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	DH 47	6.0	SILT with SAND(ML)	20	19	1		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	DH 47	6.0	2	0.045	0.013		0.0	16.7	63.6	19.7

MAXIM TECHNOLOGIES, INC.
555 South 72nd Avenue
Wausau, WI 55401
Telephone: 715-845-4100
Fax: 715-842-0381

GRAIN SIZE DISTRIBUTION

Project: Onyx-Superior 7 mile Creek Landfill

Location:

Number:

US GRAIN SIZE ONYX7MI.GPJ US LAB.GDT 12/20/02

MAXIM
TECHNOLOGIES INC

December 20, 2002

RECEIVED
DEC 23 2002
AYRES ASSOCIATES

Ayres Associates
Attn: Mr. Jim Anklam
P.O. Box 1590
Eau Claire, WI 54702-1590

Subj: Hydrometers, Atterberg Limits and Hydraulic Conductivity
Onyx-Superior Seven Mile Creek Landfill
Eau Claire, Wisconsin
Report No. 208670
Maxim # 3330804.5

Dear Mr. Anklam:

Maxim Technologies, Inc.® is transmitting two copies of the report for the above reference project. The report includes the Hydrometer and Atterberg Limit Analysis, of the samples submitted to our laboratory on December 10, 2002, by Ayres Associates. Shelby Tube sample DH 47, 6'-8' is not complete and will be forwarded by December 27, 2002.

We appreciate the opportunity to have provided services for this project. If you have any questions regarding the information in this report or if we can be of additional service, please feel free to contact our office at (715) 832-0282.

Sincerely,

MAXIM TECHNOLOGIES, INC. ®

Joel J. Guanella
CMT Department Manager

JJG/mjg

Attachments

1837 County Highway J • Chippewa Falls, WI 54729 • Telephone: 715/832-0282 • Fax: 715/832-0541

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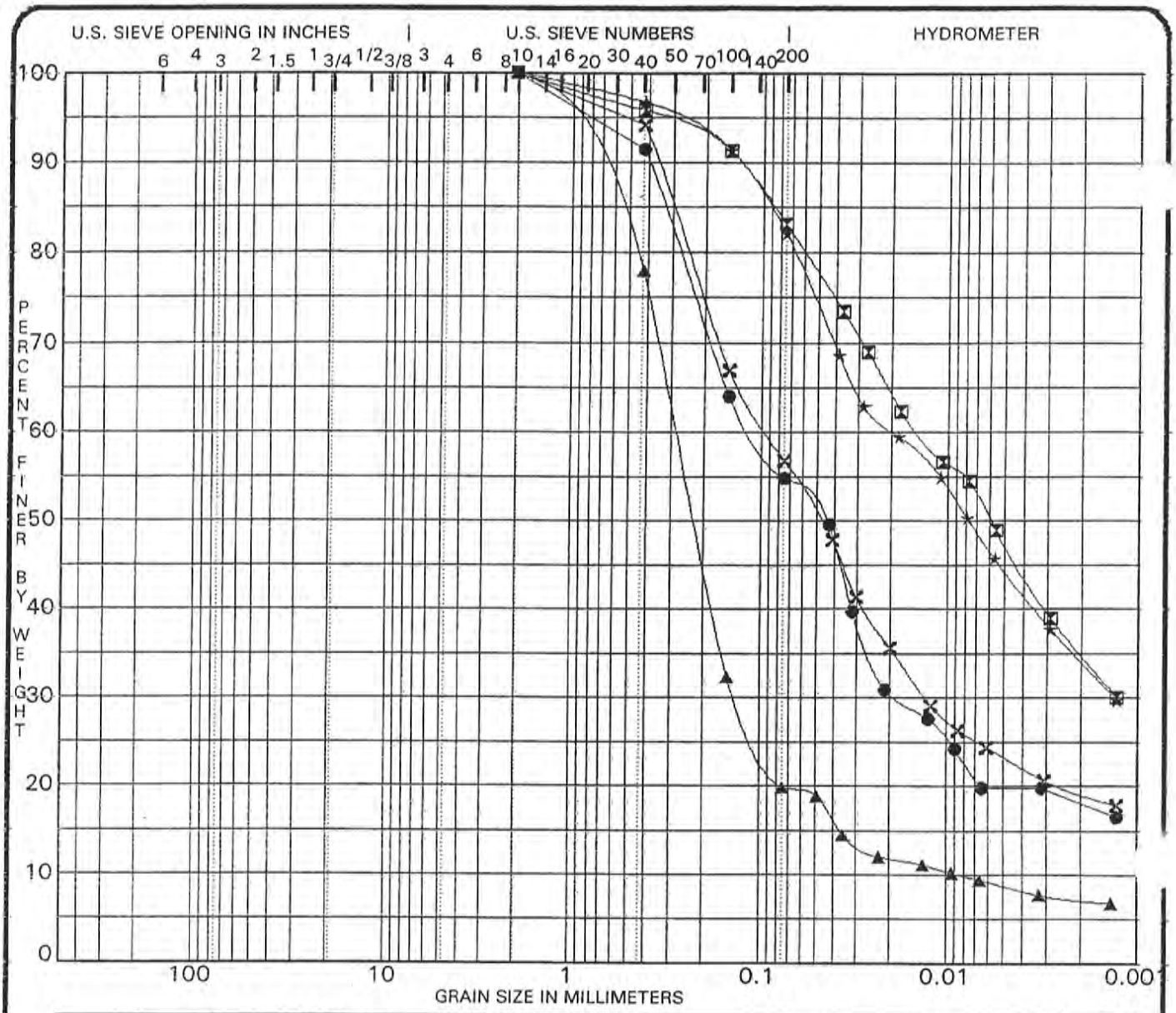


COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	MC%	LL	PL	PI	Cc	Cu
●	DH-44	6.0	Sandy Silty Clay CL-ML						
⊠	DH-46	~~20.0~~ 29-31	Lean Clay w/sand CL						
▲	DH-46-34	34.0	SILTY SAND SM		NP	NP	NP		
★	DH-49	15.0	LEAN CLAY with SAND CL		47	20	27		
✕	TB-61	4.0	SANDY SILTY CLAY CL-ML		21	16	5		

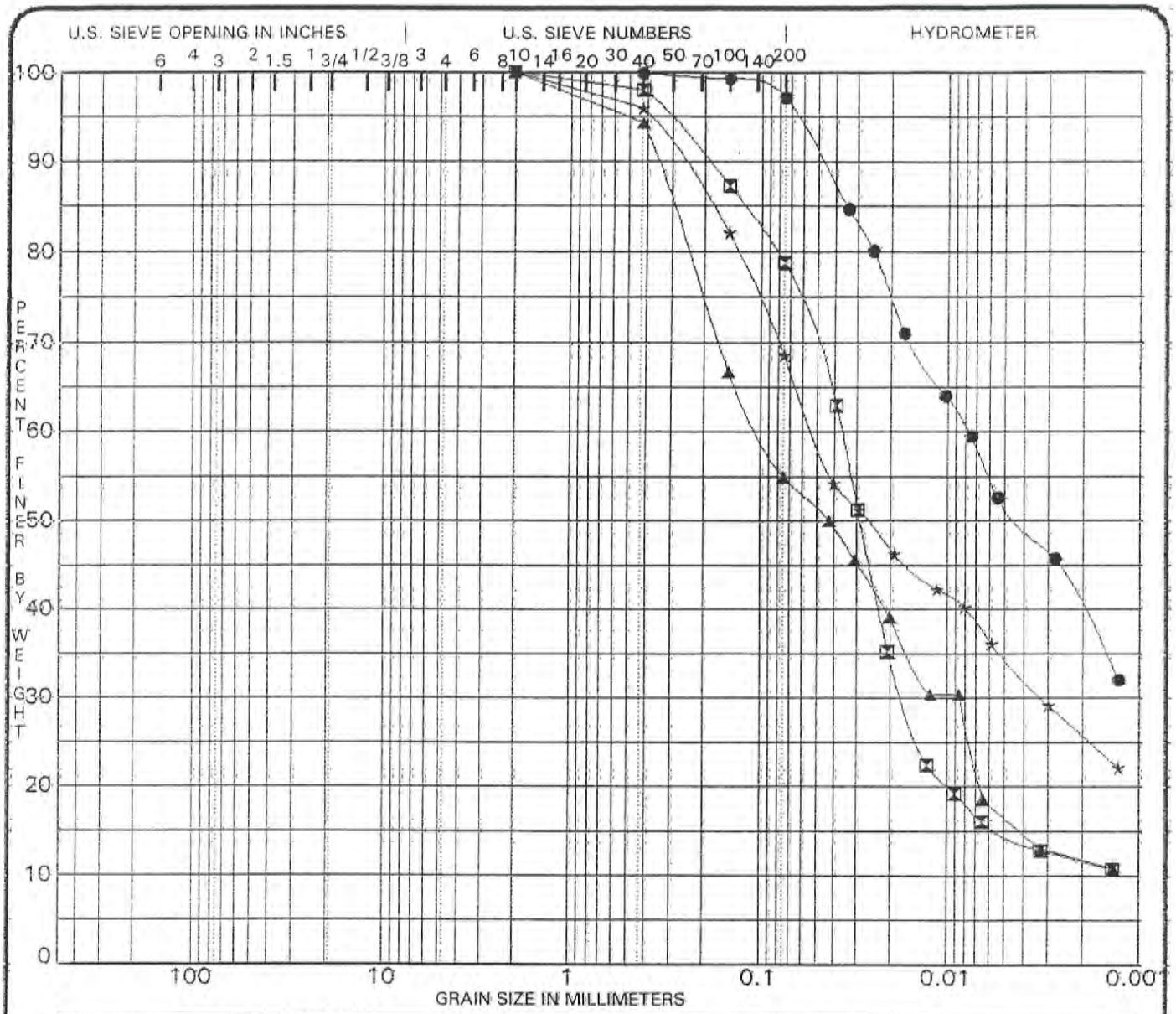
	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	DH-44	6.0	2.00	0.11	0.018		0.0	45.2	35.0	19.8
⊠	DH-46	~~20.0~~ 29-31	2.00	0.01	0.001		0.0	17.0	35.8	47.2
▲	DH-46-34	34.0	2.00	0.28	0.131	0.0086	0.0	80.2	11.1	8.7
★	DH-49	15.0	2.00	0.02	0.001		0.0	18.0	37.9	44.1
✕	TB-61	4.0	2.00	0.09	0.013		0.0	43.2	33.6	23.2

PROJECT ONYX - SUPERIOR 7 MILE CREEK LANDFILL; - EAU CLAIRE, WISCONSIN

JOB NO. 3330804.5
DATE 12/19/02

GRADATION CURVES

Maxim Technologies Inc.
Eau Claire, Wisconsin



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	MC%	LL	PL	PI	Cc	Cu
●	TB-63	15.0	**FAT CLAY CH**		55	27	28		
⊠	TB-65	15.0	**SILT with SAND ML**		19	19	NP		
▲	TB-74	15.0	Sandy Silty Clay CL-ML						
★	TB-76	10.0	**SANDY LEAN CLAY CL**		41	20	21		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	TB-63	15.0	2.00	0.01			0.0	2.9	45.5	51.6
⊠	TB-65	15.0	2.00	0.04	0.017		0.0	21.3	64.0	14.7
▲	TB-74	15.0	2.00	0.10	0.009		0.0	45.1	38.5	16.4
★	TB-76	10.0	2.00	0.05	0.003		0.0	31.5	34.1	34.4

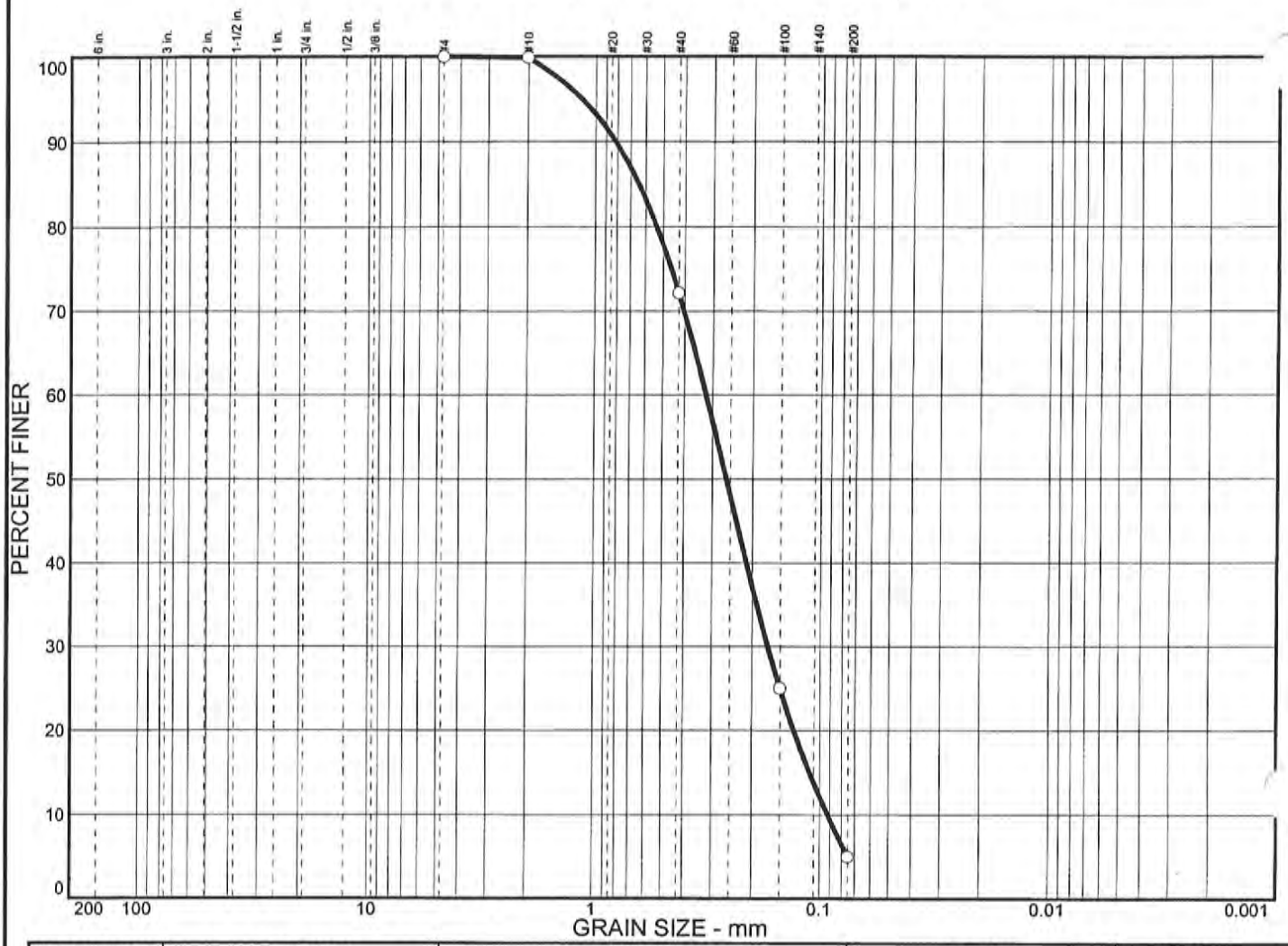
PROJECT ONYX - SUPERIOR 7 MILE CREEK LANDFILL; - EAU CLAIRE, WISCONSIN

JOB NO. 3330804.5
DATE 12/19/02

GRADATION CURVES

Maxim Technologies Inc.
Eau Claire, Wisconsin

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	95.0	5.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.642	0.320	0.260	0.170	0.111	0.0919	0.98	3.48

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, fine to medium grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** TB-62, 14'-16'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: TB-62, 14'-16'
Description: Sand with silt, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

		Initial
Dry sample and tare	=	169.00
Tare	=	0.00
Dry sample weight	=	169.00

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.20	99.9
40	47.00	72.2
# 100	126.70	25.0
# 200	160.50	5.0

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** **% SAND =** 95.0
% FINES = 5.0

D_{85}= 0.64 D_{60}= 0.32 D_{50}= 0.26
D_{30}= 0.17 D_{15}= 0.11 D_{10}= 0.09
C_c= 0.9784 C_u= 3.484

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	79.1	20.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.533	0.272	0.216	0.121				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Silty Sand, brown	SM	A-2-4(0)

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** TB-65, 10'-12'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth:
Sample Length(in./cm.):
Location: TB-65, 10'-12'
Description: Silty Sand, brown
Liquid Limit:
Plastic Limit:
USCS Classification: SM
AASHTO Classification: A-2-4(0)
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	155.40
Tare =	0.00
Dry sample weight =	155.40

Tare for cumulative weight retained= .00

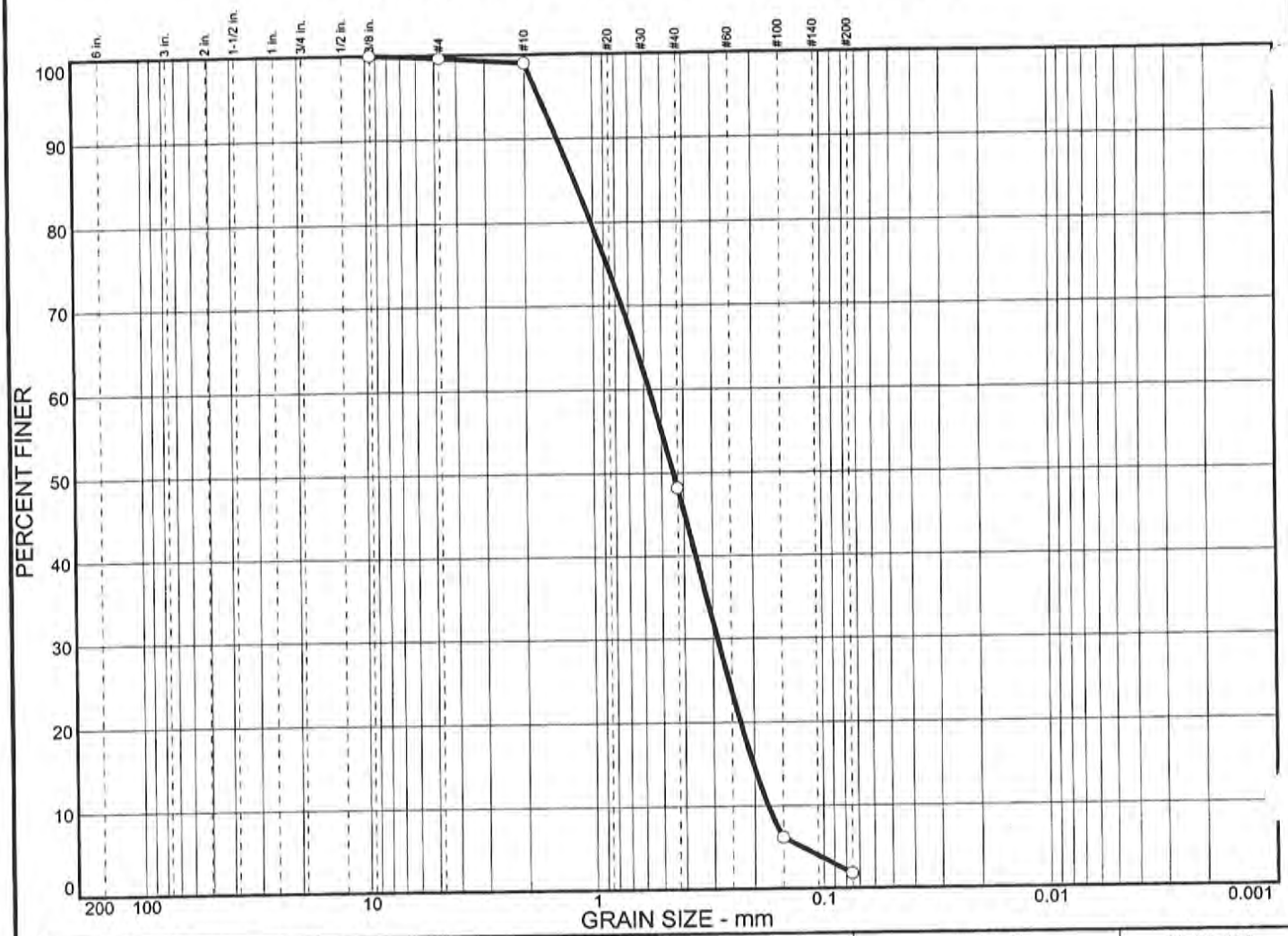
Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	1.00	99.4
40	34.10	78.1
# 100	99.50	36.0
# 200	122.90	20.9

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** **% SAND =** 79.1
% FINES = 20.9

D_{85}= 0.53 D_{60}= 0.27 D_{50}= 0.22
D_{30}= 0.12

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.4	97.8	1.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.21	0.566	0.443	0.287	0.201	0.174	0.84	3.26

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, trace gravel, fine to medium grained, brown	SP	A-1-b

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** TB-71, 24'-26'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: TB-71, 24'-26'
Description: Sand, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-1-b
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	165.30
Tare =	0.00
Dry sample weight =	165.30

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.60	99.6
10	1.60	99.0
# 40	85.60	48.2
# 100	155.00	6.2
# 200	162.40	1.8

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL** = 0.4 **% SAND** = 97.8
% FINES = 1.8

D_{85}= 1.21 D_{60}= 0.57 D_{50}= 0.44
D_{30}= 0.29 D_{15}= 0.20 D_{10}= 0.17
C_c= 0.8357 C_u= 3.26

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	92.2	7.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.455	0.203	0.162	0.110	0.0848	0.0779	0.77	2.61

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, fine grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** TB-75, 9'-11'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: TB-75, 9'-11'
Description: Sand with silt, fine grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	134.10
Tare =	0.00
Dry sample weight =	134.10

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 40	22.10	83.5
100	72.00	46.3
# 200	123.70	7.8

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = % GRAVEL = % SAND = 92.2
% FINES = 7.8

D_{85}= 0.45 D_{60}= 0.20 D_{50}= 0.16
D_{30}= 0.11 D_{15}= 0.08 D_{10}= 0.08
C_c= 0.7675 C_u= 2.6087

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	94.5	5.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.381	0.245	0.204	0.135	0.0951	0.0840	0.89	2.92

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, fine grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** TB-78, 20'-22'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: TB-78, 20'-22'
Description: Sand with silt, fine grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	156.70
Tare =	0.00
Dry sample weight =	156.70

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 40	13.50	91.4
100	102.40	34.7
# 200	148.10	5.5

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = % GRAVEL = % SAND = 94.5
% FINES = 5.5

D_{85}= 0.38 D_{60}= 0.25 D_{50}= 0.20
D_{30}= 0.14 D_{15}= 0.10 D_{10}= 0.08
C_c= 0.8904 C_u= 2.9198

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.1	76.8	23.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.396	0.253	0.206	0.114				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Silty Sand, trace gravel, brown	SM	A-2-4(0)

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-39, 5'-7'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-39, 5'-7'
Description: Silty Sand, trace gravel, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SM **AASHTO Classification:** A-2-4(0)
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	158.60
Tare =	0.00
Dry sample weight =	158.60

Tare for cumulative weight retained= .00

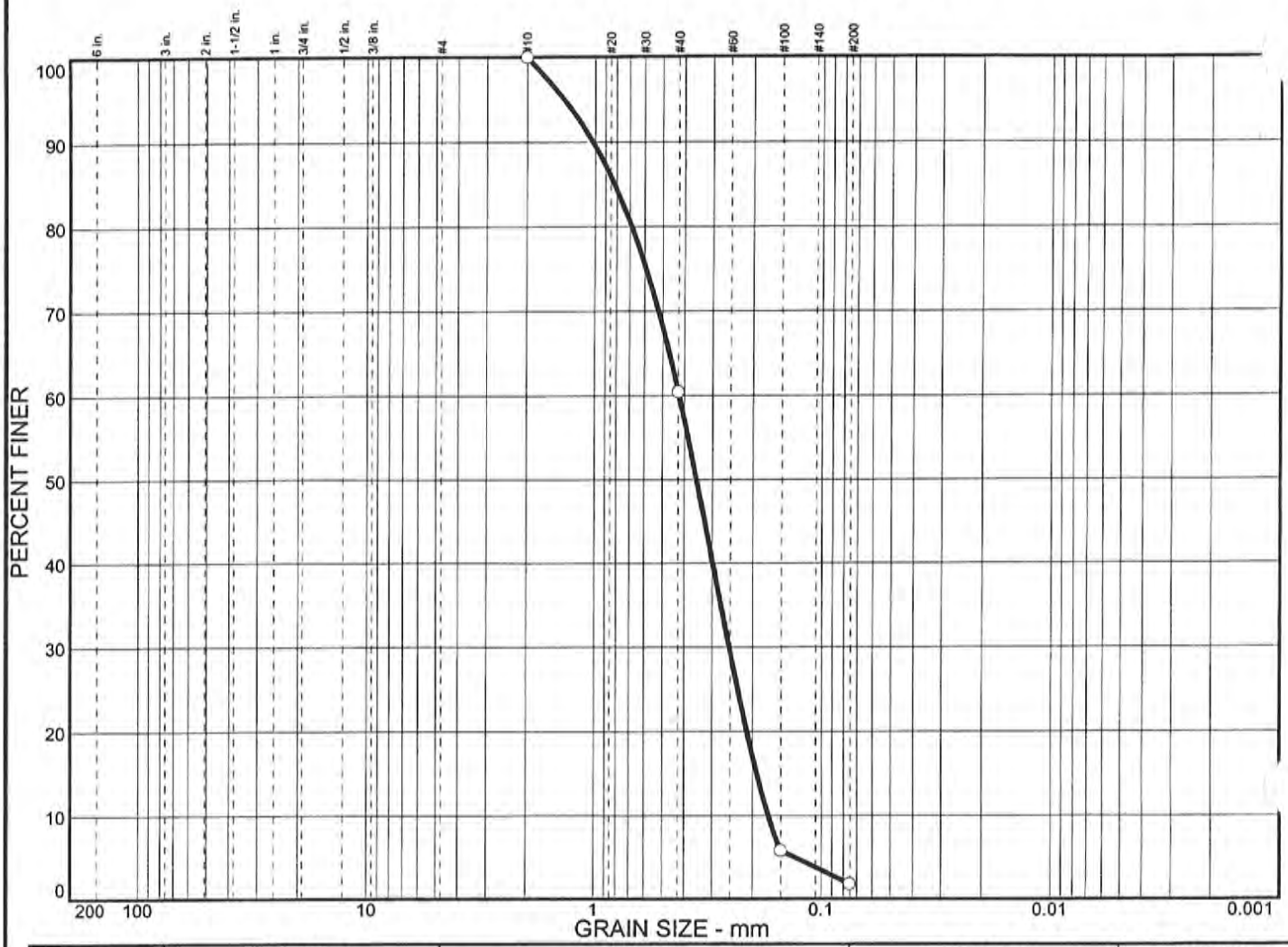
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.10	99.9
10	0.40	99.7
# 40	17.40	89.0
# 100	99.50	37.3
# 200	122.00	23.1

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 0.1 **% SAND =** 76.8
% FINES = 23.1

D_{85}= 0.40 D_{60}= 0.25 D_{50}= 0.21
D_{30}= 0.11

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	98.2	1.8	

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.818	0.421	0.352	0.252	0.191	0.170	0.89	2.48

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, fine to medium grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-39, 40'-42'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-39, 40'-42'
Description: Sand, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	191.00
Tare =	0.00
Dry sample weight =	191.00

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 40	75.40	60.5
100	179.90	5.8
# 200	187.50	1.8

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = % GRAVEL = % SAND = 98.2
% FINES = 1.8

D_{85}= 0.82 D_{60}= 0.42 D_{50}= 0.35
D_{30}= 0.25 D_{15}= 0.19 D_{10}= 0.17
C_c= 0.8889 C_u= 2.4764

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.2	95.1	4.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.705	0.367	0.305	0.213	0.150	0.124	0.99	2.96

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, trace gravel, fine to medium grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-39, 45'- 47'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-39, 45'- 47'
Description: Sand, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	158.10
Tare =	0.00
Dry sample weight =	158.10

Tare for cumulative weight retained= .00

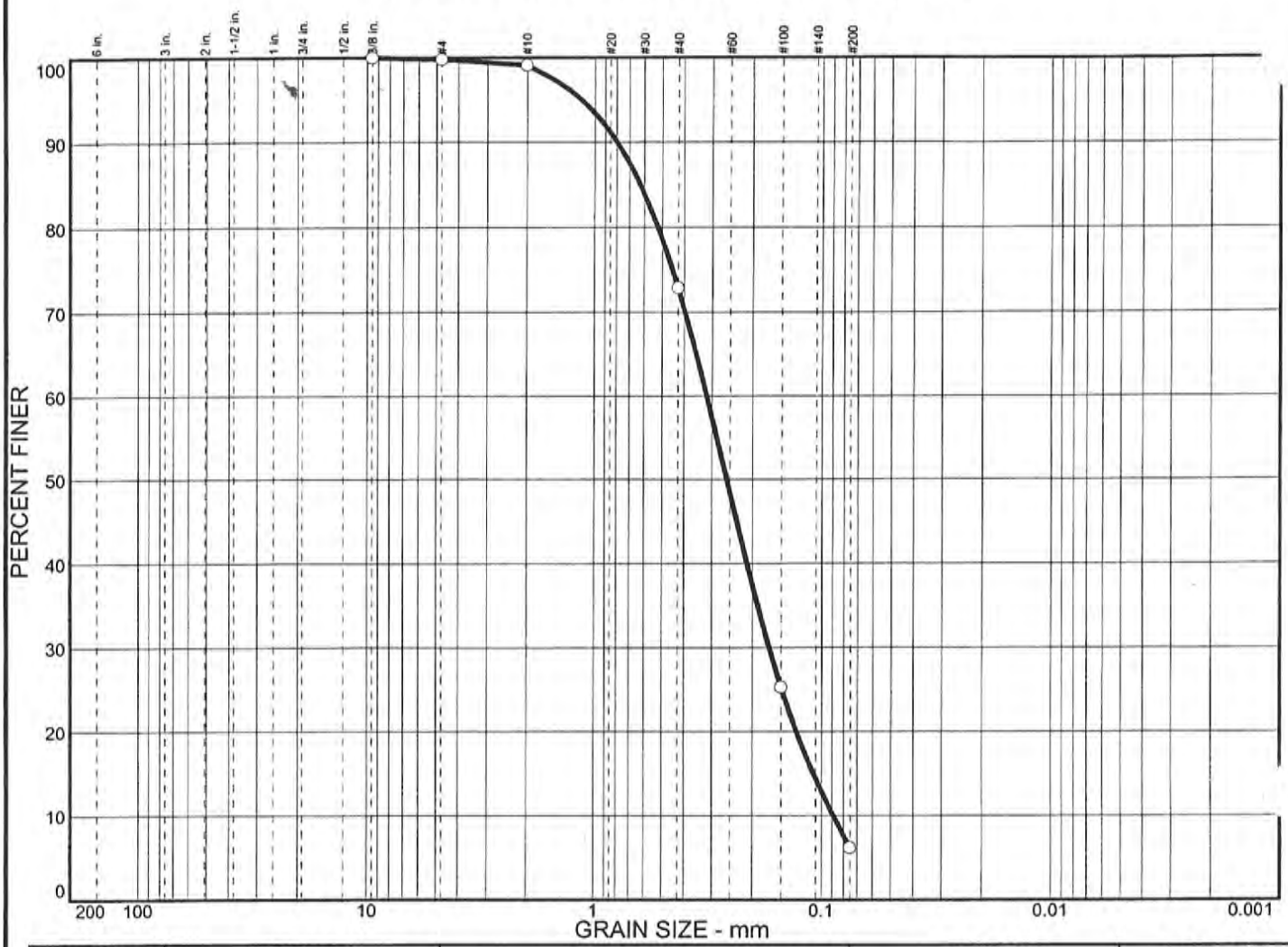
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.30	99.8
10	1.60	99.0
# 40	51.70	67.3
# 100	134.50	14.9
# 200	150.70	4.7

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 0.2 **% SAND =** 95.1
% FINES = 4.7

D_{85}= 0.70 D_{60}= 0.37 D_{50}= 0.31
D_{30}= 0.21 D_{15}= 0.15 D_{10}= 0.12
C_c= 0.9935 C_u= 2.9562

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.2	93.6	6.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.626	0.316	0.258	0.169	0.108	0.0886	1.01	3.57

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, trace gravel, fine to medium grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-41, 35'-37'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-41, 35'-37'
Description: Sand with silt, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	182.80
Tare =	0.00
Dry sample weight =	182.80

Tare for cumulative weight retained= .00

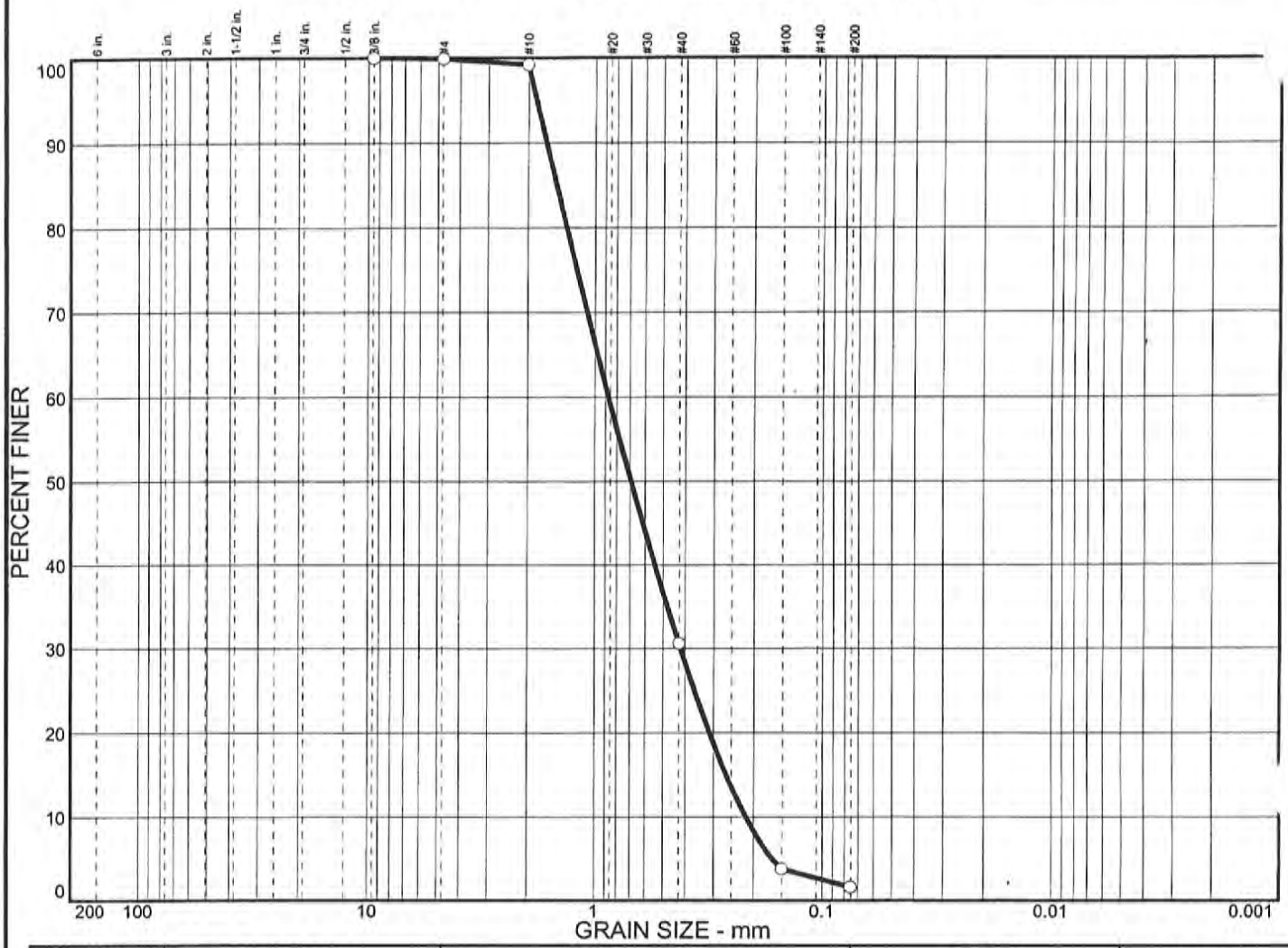
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.40	99.8
10	1.70	99.1
# 40	49.50	72.9
# 100	136.50	25.3
# 200	171.50	6.2

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL** = 0.2 **% SAND** = 93.6
% FINES = 6.2

D_{85}= 0.63 D_{60}= 0.32 D_{50}= 0.26
D_{30}= 0.17 D_{15}= 0.11 D_{10}= 0.09
C_c= 1.0141 C_u= 3.5702

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.1	98.3	1.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.49	0.868	0.691	0.418	0.263	0.216	0.93	4.02

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, trace gravel, fine to medium grained, brown	SP	A-1-b

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-41, 40'-42'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-41, 40'-42'
Description: Sand, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-1-b
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	135.20
Tare =	0.00
Dry sample weight =	135.20

Tare for cumulative weight retained= .00

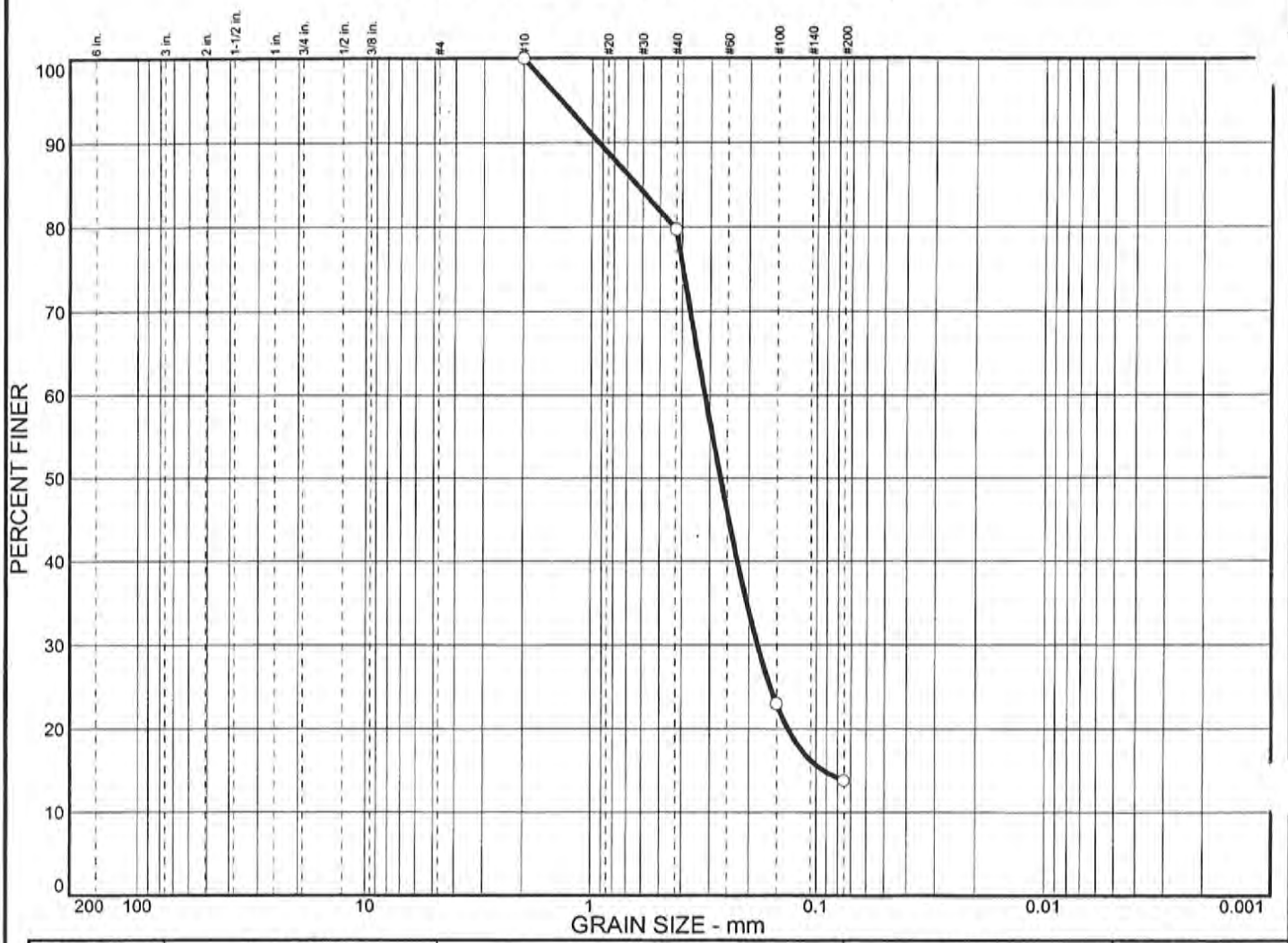
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.20	99.9
# 10	1.10	99.2
# 40	93.80	30.6
# 100	130.00	3.8
# 200	133.10	1.6

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 0.1 **% SAND =** 98.3
% FINES = 1.6

D_{85}= 1.49 D_{60}= 0.87 D_{50}= 0.69
D_{30}= 0.42 D_{15}= 0.26 D_{10}= 0.22
C_c= 0.9336 C_u= 4.0222

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	86.2	13.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.637	0.315	0.268	0.182	0.0923			

MATERIAL DESCRIPTION	USCS	AASHTO
○ Silty Sand, brown	SM	A-2-4(0)

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-43, 5'-7'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth:
Sample Length(in./cm.):
Location: DH-43, 5'-7'
Description: Silty Sand, brown
Liquid Limit:
Plastic Limit:
USCS Classification: SM
AASHTO Classification: A-2-4(0)
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	146.20
Tare =	0.00
Dry sample weight =	146.20

Tare for cumulative weight retained= .00

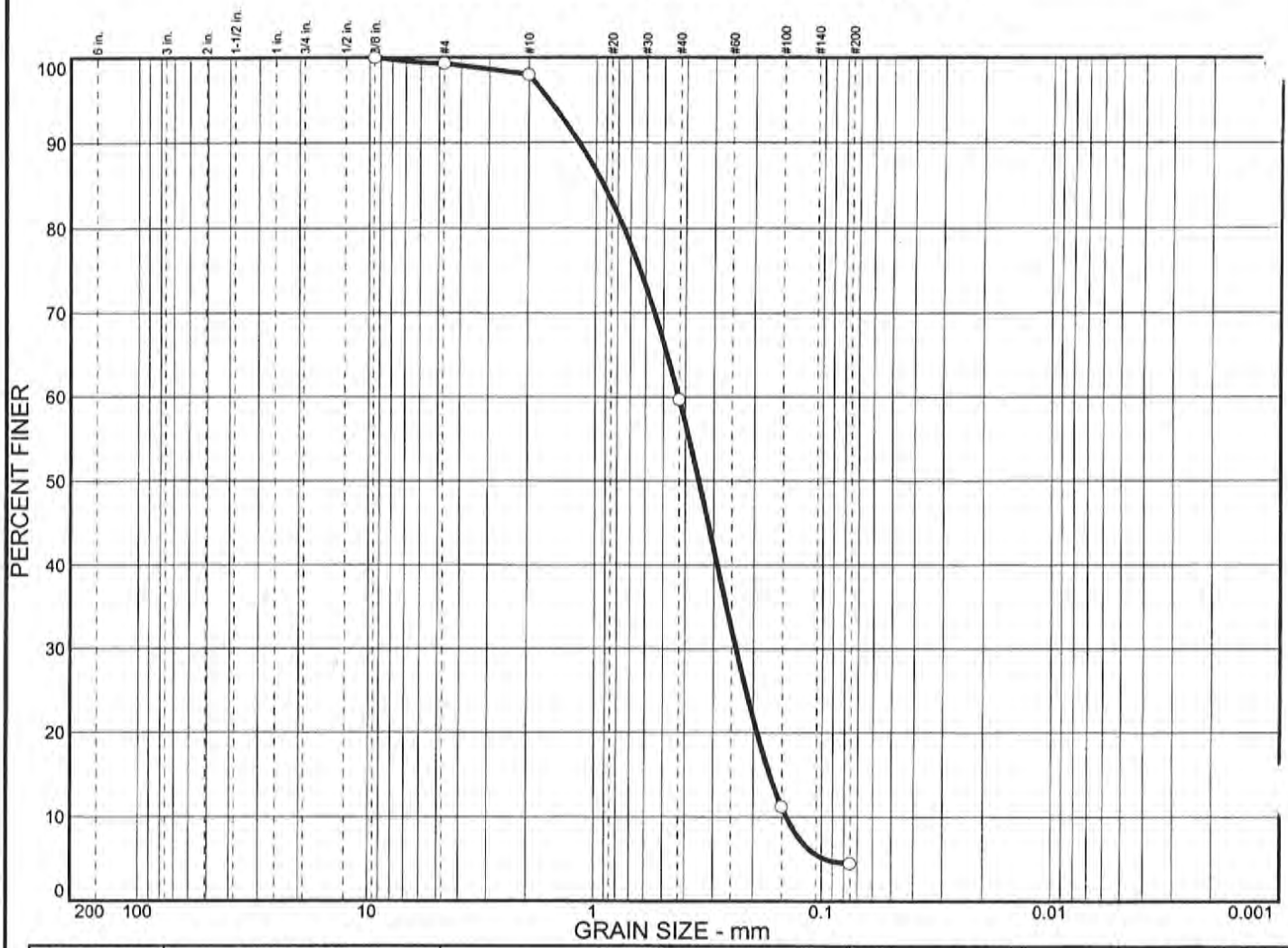
Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 40	29.70	79.7
100	112.60	23.0
# 200	126.00	13.8

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** **% SAND =** 86.2
% FINES = 13.8

D_{85}= 0.64 D_{60}= 0.32 D_{50}= 0.27
D_{30}= 0.18 D_{15}= 0.09

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.7	94.8	4.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.925	0.428	0.349	0.238	0.169	0.143	0.92	2.99

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, trace gravel, fine to medium grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-43, 40'-42'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-43, 40'-42'
Description: Sand, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	163.10
Tare =	0.00
Dry sample weight =	163.10

Tare for cumulative weight retained= .00

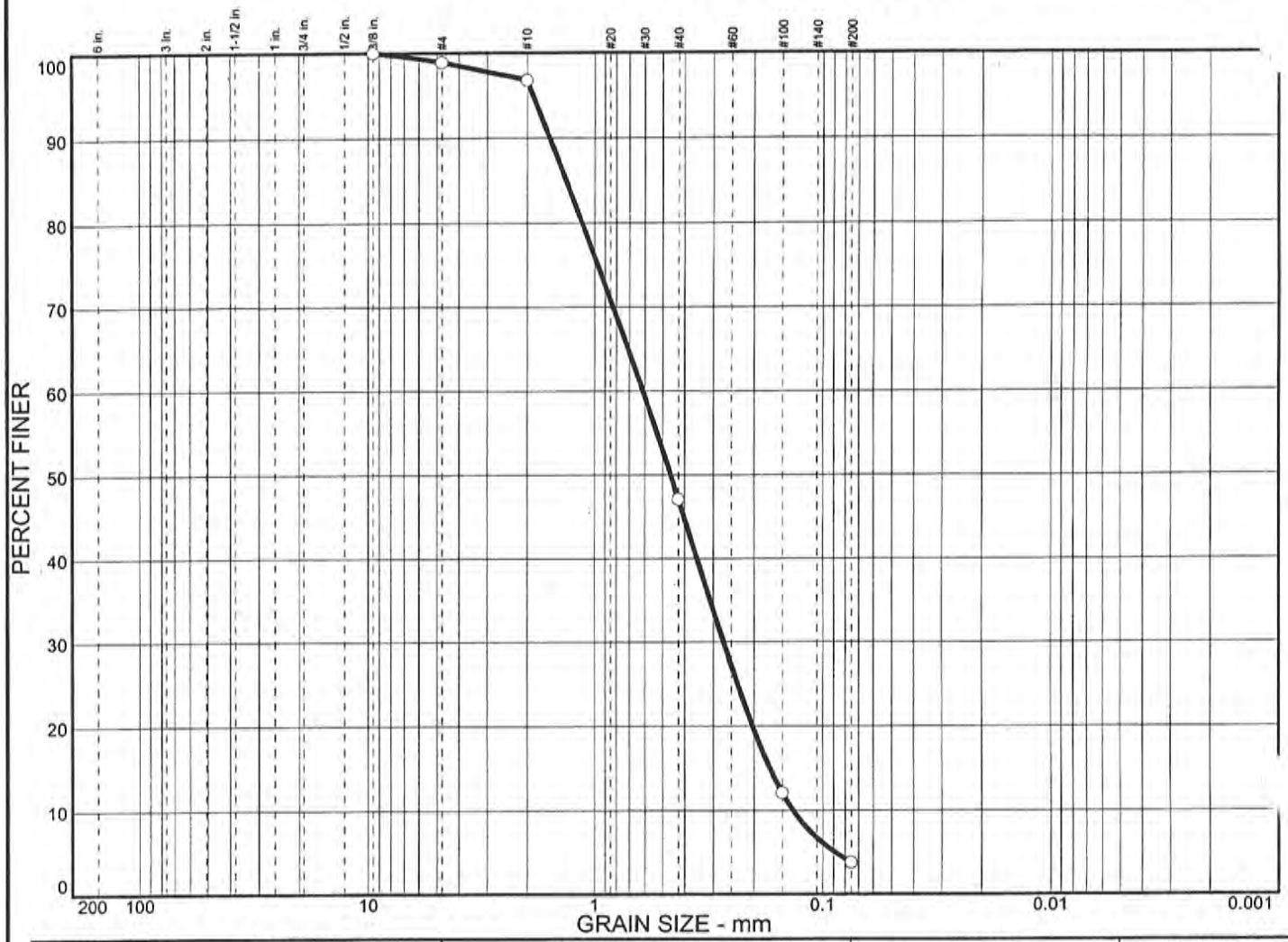
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	1.20	99.3
10	3.30	98.0
# 40	65.70	59.7
# 100	144.80	11.2
# 200	155.70	4.5

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 0.7 **% SAND =** 94.8
% FINES = 4.5

D_{85}= 0.92 D_{60}= 0.43 D_{50}= 0.35
D_{30}= 0.24 D_{15}= 0.17 D_{10}= 0.14
C_c= 0.9241 C_u= 2.9896

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.1	95.1	3.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.34	0.611	0.460	0.270	0.170	0.134	0.89	4.54

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, trace gravel, fine to medium grained, brown	SP	A-1-b

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-43, 45'-47'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-43, 45'-47'
Description: Sand, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-1-b
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	151.80
Tare =	0.00
Dry sample weight =	151.80

Tare for cumulative weight retained= .00

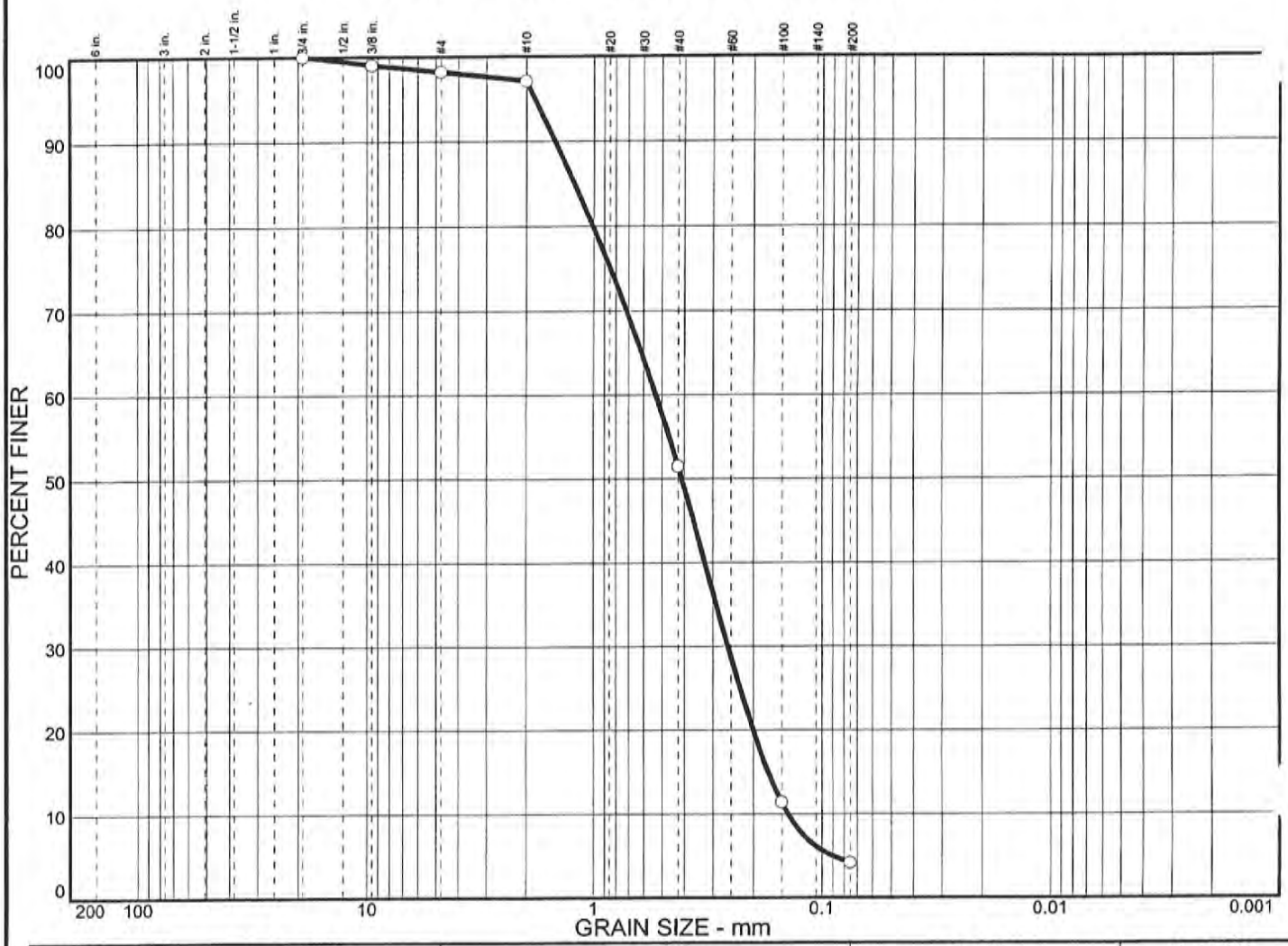
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	1.60	98.9
10	4.90	96.8
# 40	80.30	47.1
# 100	133.50	12.1
# 200	146.00	3.8

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 1.1 **% SAND =** 95.1
% FINES = 3.8

D_{85}= 1.34 D_{60}= 0.61 D_{50}= 0.46
D_{30}= 0.27 D_{15}= 0.17 D_{10}= 0.13
C_c= 0.889 C_u= 4.5439

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.8	94.0	4.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.22	0.531	0.410	0.257	0.172	0.140	0.89	3.78

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, trace gravel, fine to medium grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-43A, 65'-67'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-43A, 65'-67'
Description: Sand, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	158.70
Tare =	0.00
Dry sample weight =	158.70

Tare for cumulative weight retained= .00

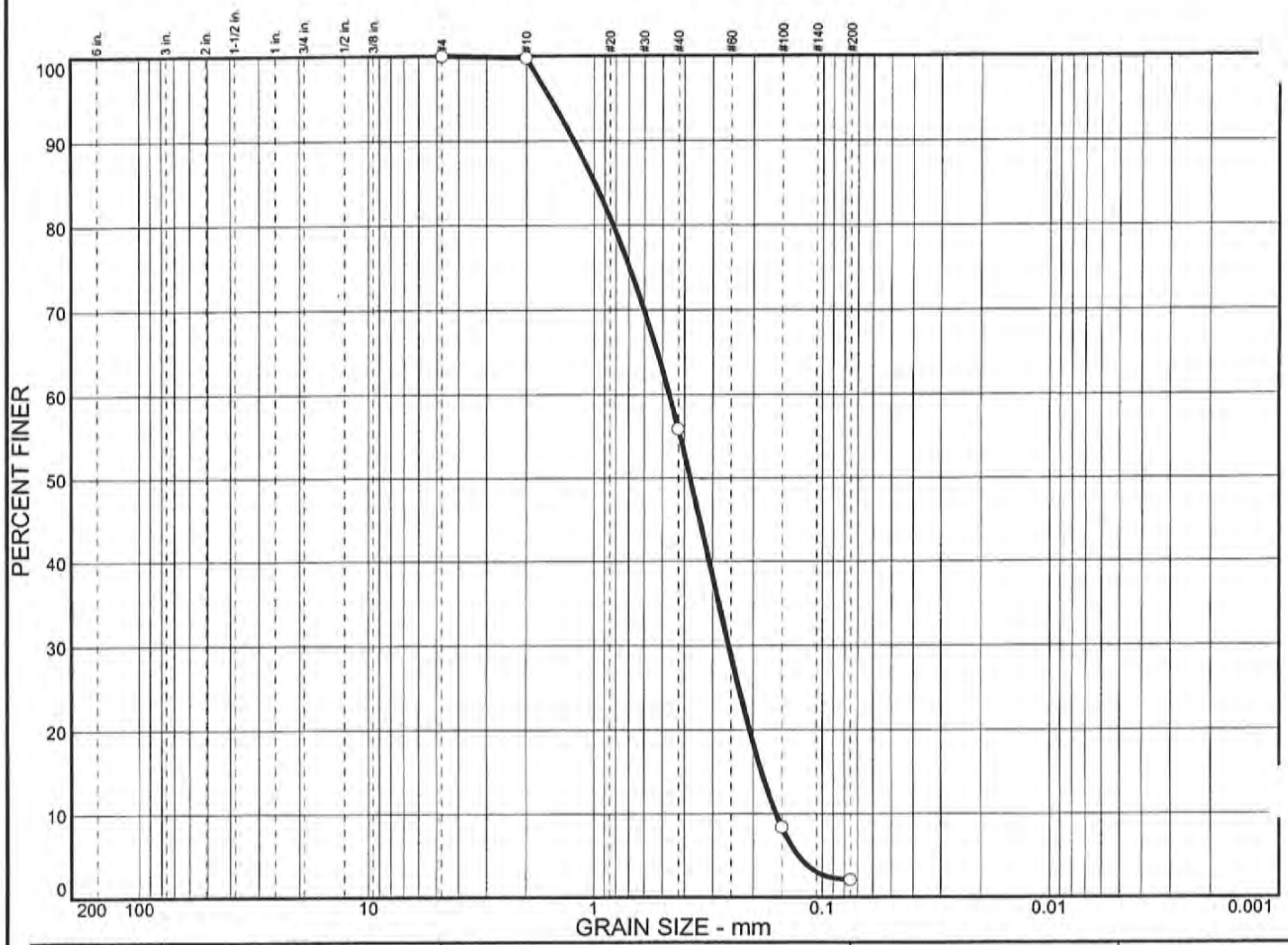
Sieve	Cumul. Wt. retained	Percent finer
.75 inch	0.00	100.0
.375 inch	1.60	99.0
4	2.80	98.2
# 10	4.60	97.1
# 40	76.90	51.5
# 100	140.60	11.4
# 200	152.10	4.2

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL** = 1.8 **% SAND** = 94.0
% FINES = 4.2

D_{85}= 1.22 D_{60}= 0.53 D_{50}= 0.41
D_{30}= 0.26 D_{15}= 0.17 D_{10}= 0.14
C_c= 0.8896 C_u= 3.7765

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	97.9	2.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.995	0.466	0.376	0.255	0.183	0.159	0.88	2.93

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, fine to medium grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-44, 40'-42'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-44, 40'-42'
Description: Sand, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	128.20
Tare =	0.00
Dry sample weight =	128.20

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.20	99.8
40	56.60	55.9
# 100	117.40	8.4
# 200	125.50	2.1

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = % GRAVEL = % SAND = 97.9
% FINES = 2.1

D_{85}= 0.99 D_{60}= 0.47 D_{50}= 0.38
D_{30}= 0.25 D_{15}= 0.18 D_{10}= 0.16
C_c= 0.8786 C_u= 2.9335

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	93.6	6.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.515	0.300	0.255	0.176	0.114	0.0911	1.13	3.29

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, fine to medium grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-44, 45'-47'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-44, 45'-47'
Description: Sand with silt, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	149.70
Tare =	0.00
Dry sample weight =	149.70

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.20	99.9
# 40	25.60	82.9
# 100	114.60	23.4
# 200	140.10	6.4

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** **% SAND =** 93.6
% FINES = 6.4

D_{85}= 0.51 D_{60}= 0.30 D_{50}= 0.26
D_{30}= 0.18 D_{15}= 0.11 D_{10}= 0.09
C_c= 1.1288 C_u= 3.2949

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	95.1	4.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.596	0.316	0.271	0.193	0.132	0.106	1.11	2.97

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, fine grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-44A, 70'-72'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth:
Sample Length(in./cm.):
Location: DH-44A, 70'-72'
Description: Sand, fine grained, brown
Liquid Limit:
Plastic Limit:
USCS Classification: SP
AASHTO Classification: A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	112.80
Tare =	0.00
Dry sample weight =	112.80

Tare for cumulative weight retained= .00

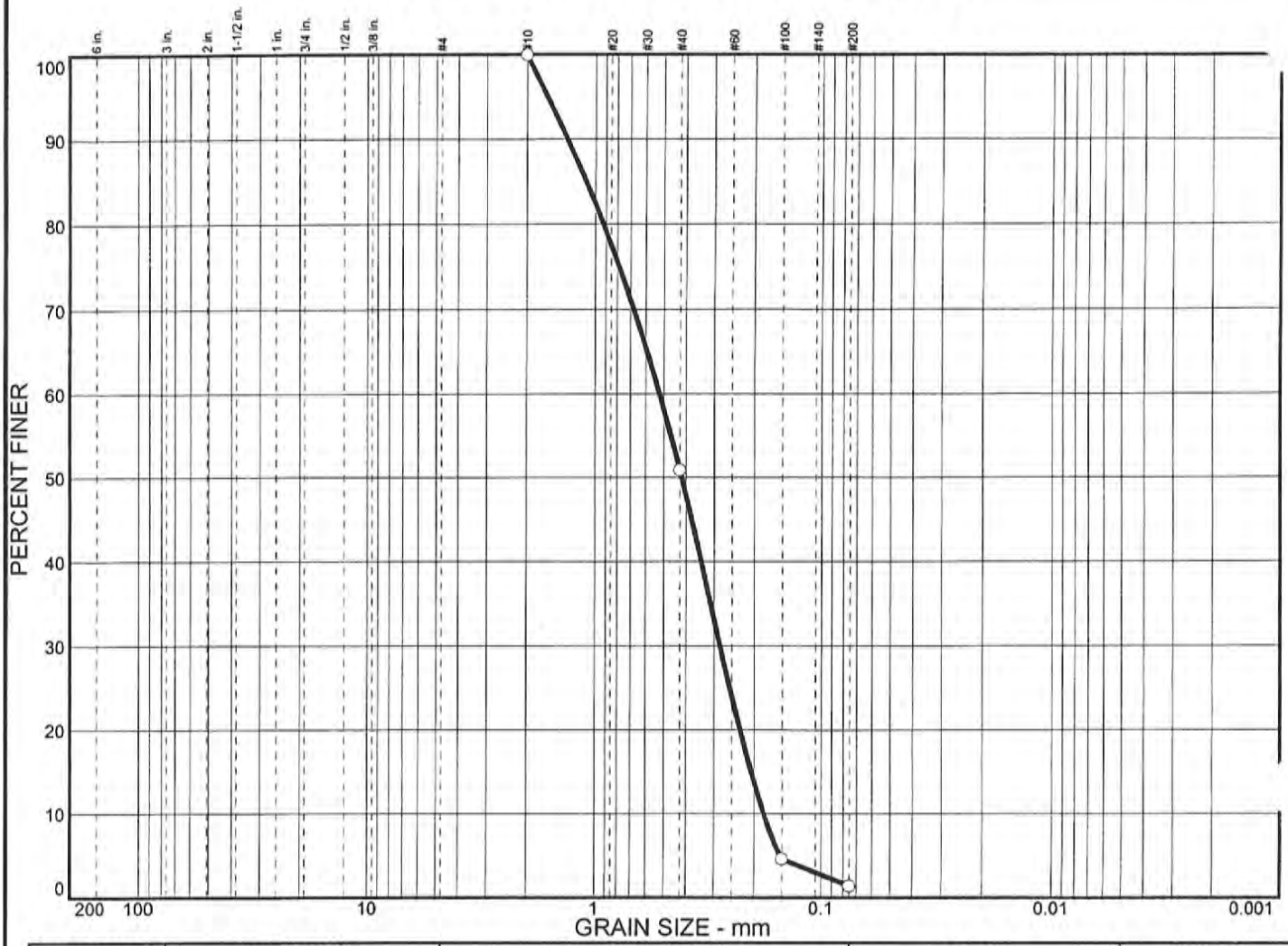
Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 40	21.70	80.8
100	91.30	19.1
# 200	107.30	4.9

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = % GRAVEL = % SAND = 95.1
% FINES = 4.9

D_{85}= 0.60 D_{60}= 0.32 D_{50}= 0.27
D_{30}= 0.19 D_{15}= 0.13 D_{10}= 0.11
C_c= 1.1063 C_u= 2.974

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	98.6	1.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.10	0.522	0.417	0.282	0.205	0.180	0.84	2.89

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, fine grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-45, 4'-6'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-45, 4'-6'
Description: Sand, fine grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	153.30
Tare =	0.00
Dry sample weight =	153.30

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 40	75.30	50.9
100	146.30	4.6
# 200	151.10	1.4

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** **% SAND =** 98.6
% FINES = 1.4

D_{85}= 1.10 D_{60}= 0.52 D_{50}= 0.42
D_{30}= 0.28 D_{15}= 0.21 D_{10}= 0.18
C_c= 0.8425 C_u= 2.8911

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.2	97.7	2.1	

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.818	0.383	0.310	0.206	0.140	0.116	0.95	3.30

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, trace gravel, fine grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-45, 34'-36'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-45, 34'-36'
Description: Sand, trace gravel, fine grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	125.20
Tare =	0.00
Dry sample weight =	125.20

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.20	99.8
10	0.60	99.5
# 40	44.50	64.5
# 100	103.80	17.1
# 200	122.60	2.1

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL** = 0.2 **% SAND** = 97.7
% FINES = 2.1

D_{85}= 0.82 D_{60}= 0.38 D_{50}= 0.31
D_{30}= 0.21 D_{15}= 0.14 D_{10}= 0.12
C_c= 0.9526 C_u= 3.2954

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	5.7	93.2	1.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.01	0.447	0.367	0.259	0.195	0.173	0.87	2.58

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, a little gravel, fine to medium grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-45, 39'-41'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
ɔject Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-45, 39'-41'
Description: Sand, a little gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	122.10
Tare =	0.00
Dry sample weight =	122.10

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.75 inch	0.00	100.0
.375 inch	5.80	95.2
' 4	6.90	94.3
# 10	7.30	94.0
# 40	51.80	57.6
# 100	115.80	5.2
# 200	120.80	1.1

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 5.7 **% SAND =** 93.2
% FINES = 1.1

D_{85}= 1.01 D_{60}= 0.45 D_{50}= 0.37
D_{30}= 0.26 D_{15}= 0.19 D_{10}= 0.17
C_c= 0.8666 C_u= 2.5785

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.5	93.8	5.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.828	0.381	0.307	0.200	0.130	0.101	1.04	3.77

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, trace gravel, fine to medium grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-46, 4'-6'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-46, 4'-6'
Description: Sand with silt, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	127.30
Tare =	0.00
Dry sample weight =	127.30

Tare for cumulative weight retained= .00

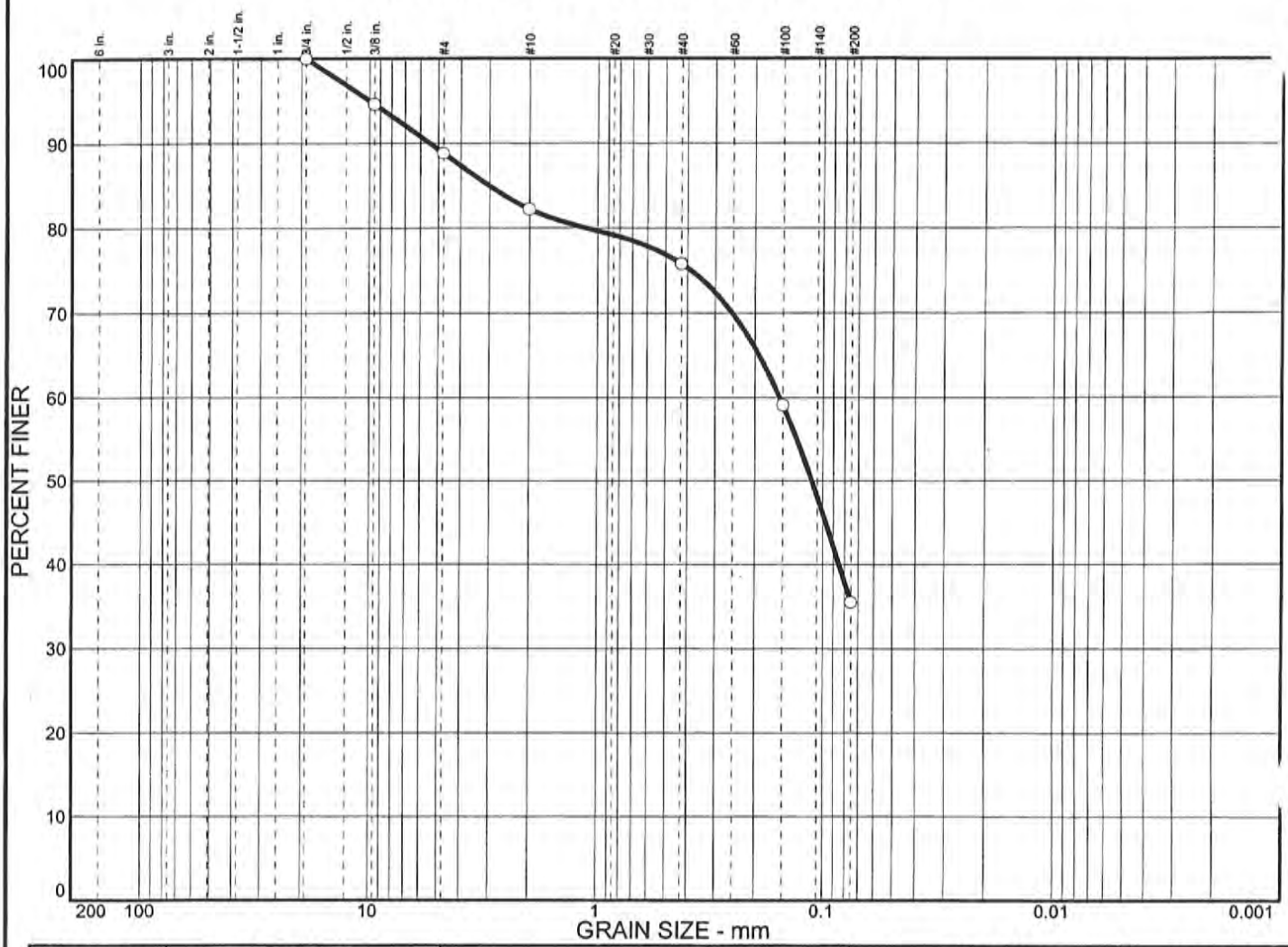
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.60	99.5
10	0.80	99.4
# 40	45.10	64.6
# 100	103.00	19.1
# 200	120.10	5.7

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 0.5 **% SAND =** 93.8
% FINES = 5.7

D_{85}= 0.83 D_{60}= 0.38 D_{50}= 0.31
D_{30}= 0.20 D_{15}= 0.13 D_{10}= 0.10
C_c= 1.0368 C_u= 3.7696

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	11.2	53.3	35.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.02	0.155	0.112					

MATERIAL DESCRIPTION	USCS	AASHTO
○ Silty Sand, a little gravel, brown	SM	A-4(0)

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-47, 14'-16'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-47, 14'-16'
Description: Silty Sand, a little gravel, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SM **AASHTO Classification:** A-4(0)
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	122.80
Tare =	0.00
Dry sample weight =	122.80

Tare for cumulative weight retained= .00

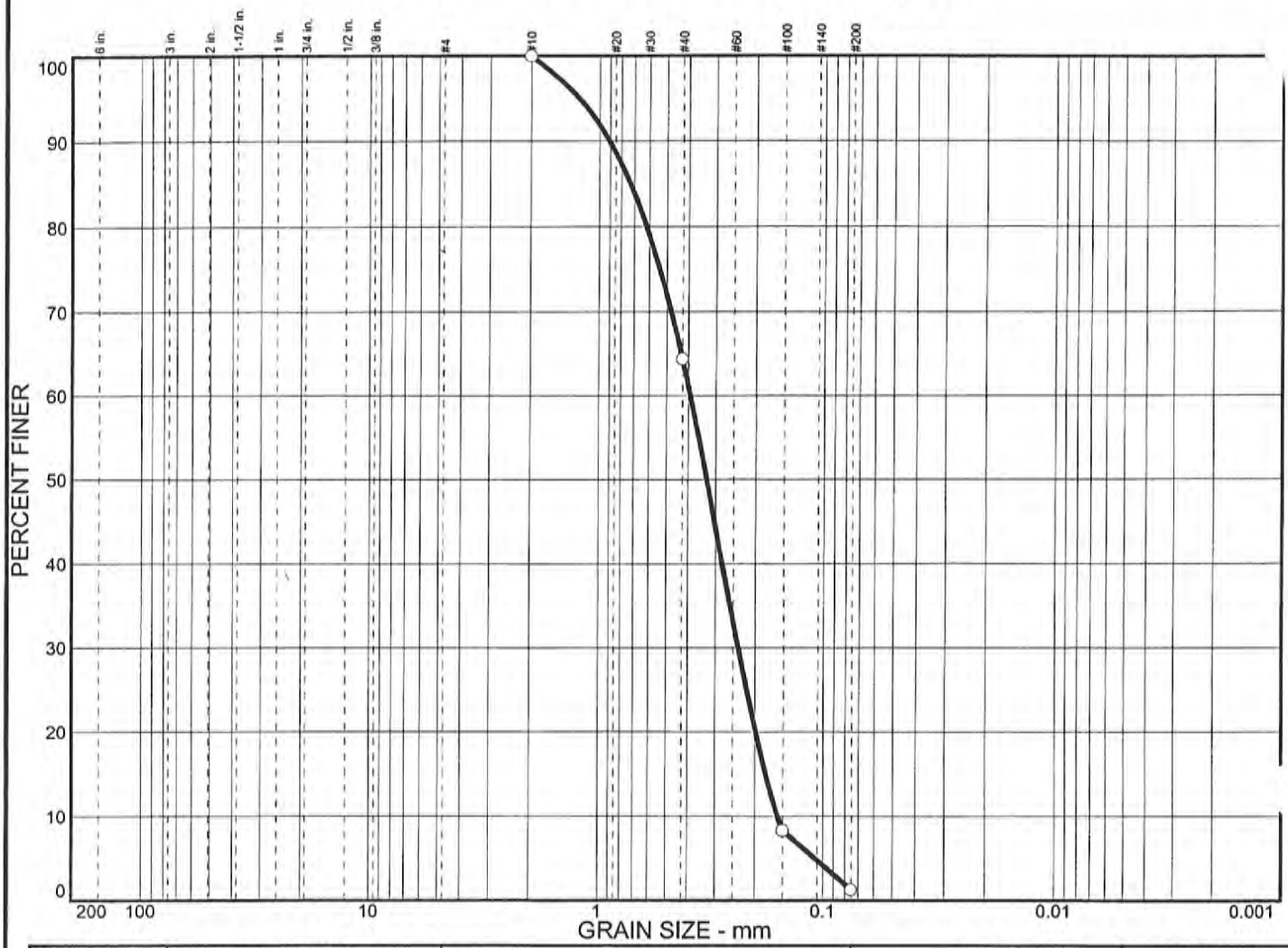
Sieve	Cumul. Wt. retained	Percent finer
.75 inch	0.00	100.0
.375 inch	6.60	94.6
# 4	13.70	88.8
# 10	21.90	82.2
# 40	29.70	75.8
# 100	50.20	59.1
# 200	79.20	35.5

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL** = 11.2 **% SAND** = 53.3
% FINES = 35.5

D_{85}= 3.02 D_{60}= 0.16 D_{50}= 0.11

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	98.7	1.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.731	0.391	0.329	0.237	0.178	0.158	0.91	2.48

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand, fine grained, brown	SP	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-47A, 46'-48'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
ject Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-47A, 46'-48'
Description: Sand, fine grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	82.40
Tare =	0.00
Dry sample weight =	82.40

Tare for cumulative weight retained= .00

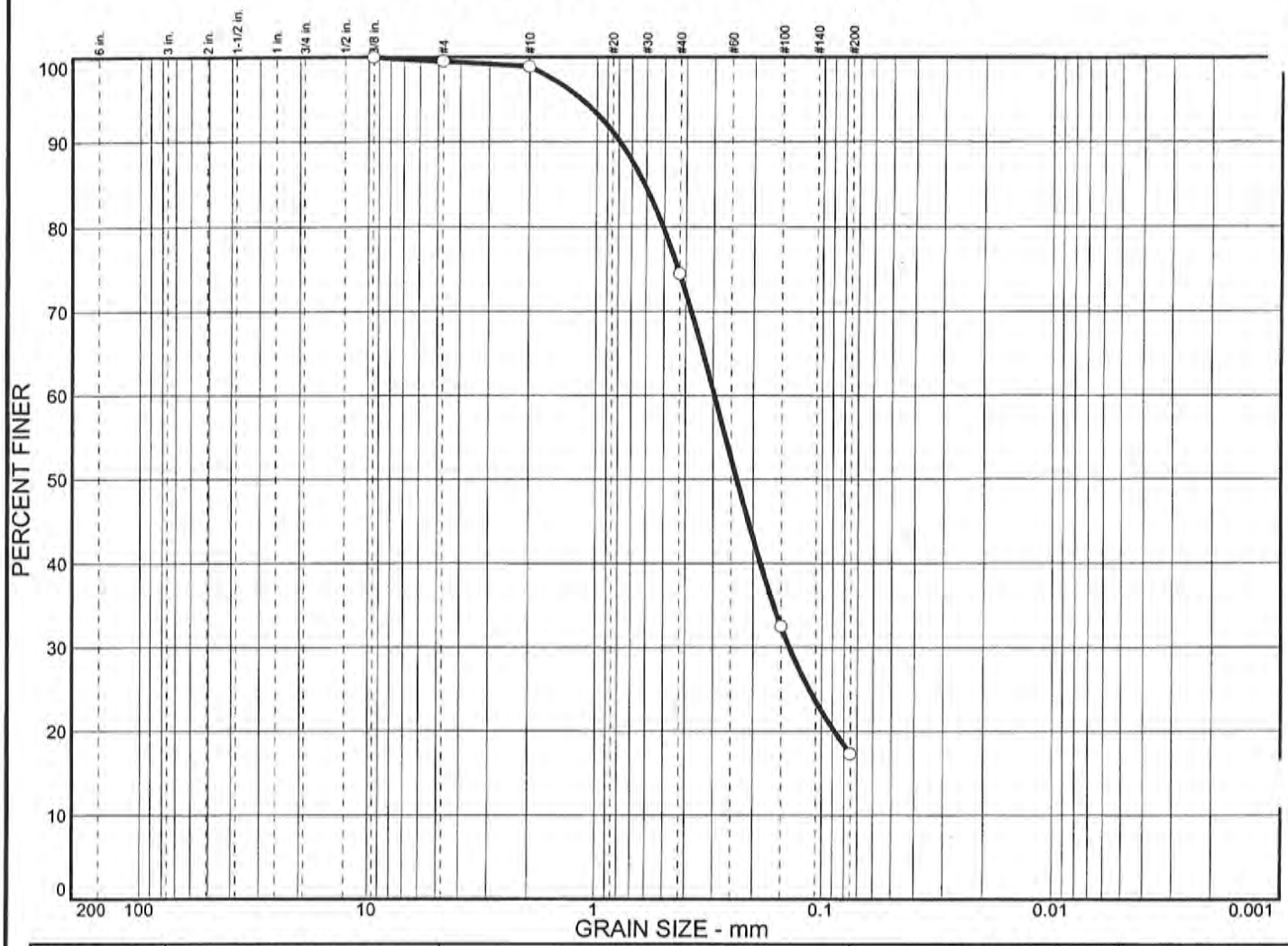
Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 40	29.30	64.4
100	75.60	8.3
200	81.30	1.3

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = % GRAVEL = % SAND = 98.7
% FINES = 1.3

D_{85}= 0.73 D_{60}= 0.39 D_{50}= 0.33
D_{30}= 0.24 D_{15}= 0.18 D_{10}= 0.16
C_c= 0.9093 C_u= 2.4794

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.5	82.2	17.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.613	0.296	0.235	0.138				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Silty Sand, trace gravel, brown	SM	A-2-4(0)

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-48, 19'-21'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
ject Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-48, 19'-21'
Description: Silty Sand, trace gravel, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SM **AASHTO Classification:** A-2-4(0)
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	115.20
Tare =	0.00
Dry sample weight =	115.20

Tare for cumulative weight retained= .00

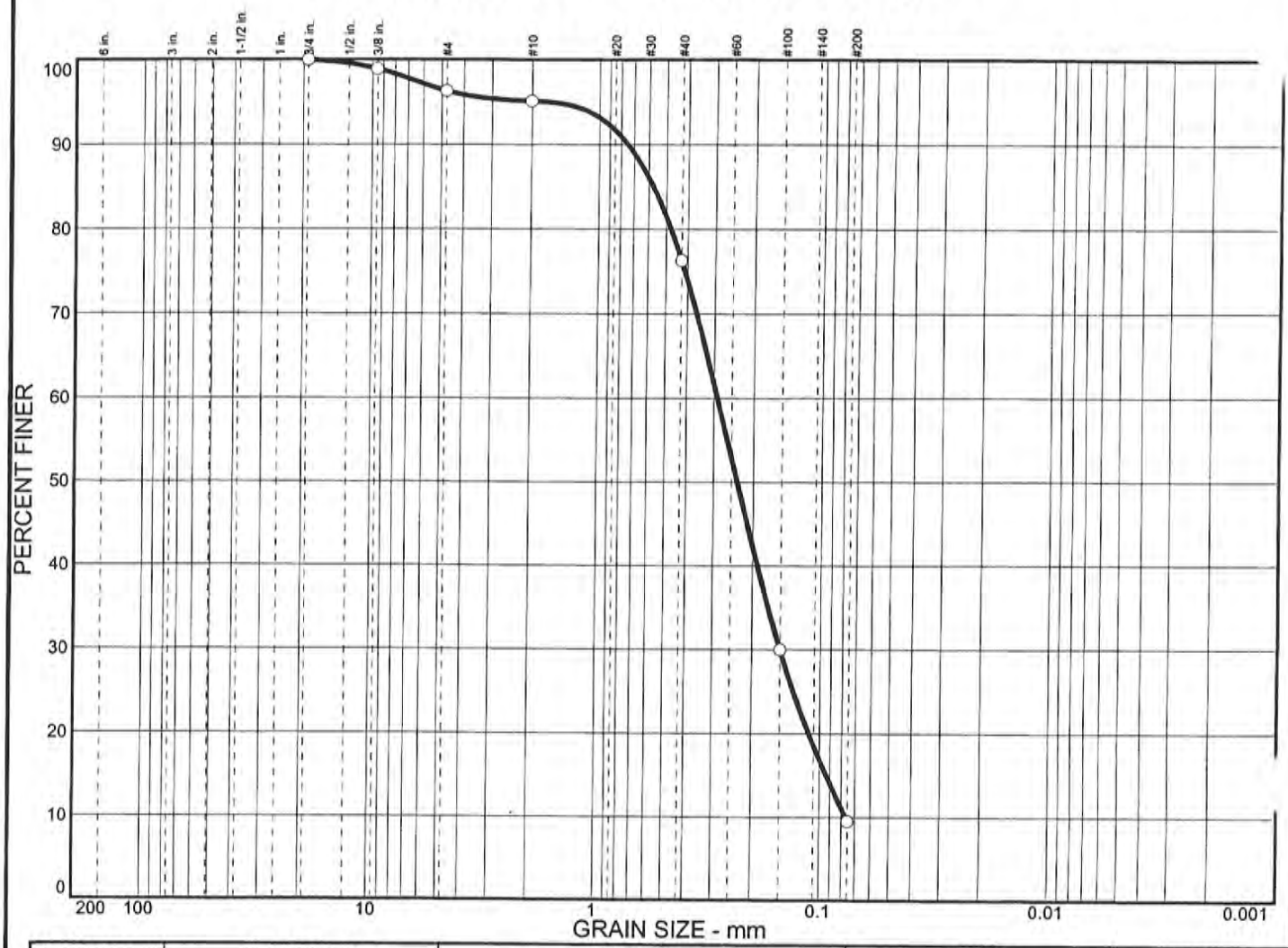
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.60	99.5
10	1.30	98.9
# 40	29.40	74.5
# 100	77.80	32.5
# 200	95.30	17.3

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 0.5 **% SAND =** 82.2
% FINES = 17.3

D_{85}= 0.61 D_{60}= 0.30 D_{50}= 0.24
D_{30}= 0.14

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	3.7	86.8	9.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.572	0.289	0.235	0.150	0.0931	0.0765	1.02	3.78

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, a little gravel, fine to medium grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-48, 24'-26'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-48, 24'-26'
Description: Sand with silt, a little gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	116.00
Tare =	0.00
Dry sample weight =	116.00

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.75 inch	0.00	100.0
.375 inch	1.30	98.9
# 4	4.30	96.3
# 10	5.70	95.1
# 40	27.50	76.3
# 100	81.20	30.0
# 200	105.00	9.5

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 3.7 **% SAND =** 86.8
% FINES = 9.5

D_{85}= 0.57 D_{60}= 0.29 D_{50}= 0.23
D_{30}= 0.15 D_{15}= 0.09 D_{10}= 0.08
C_c= 1.0175 C_u= 3.7772

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	2.7	78.9	18.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.520	0.221	0.170	0.101				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Silty Sand, a little gravel, brown	SM	A-2-4(0)

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-49, 30'-32'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-49, 30'-32'
Description: Silty Sand, a little gravel, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SM **AASHTO Classification:** A-2-4(0)
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	112.30
Tare =	0.00
Dry sample weight =	112.30

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.75 inch	0.00	100.0
.375 inch	0.80	99.3
# 4	3.00	97.3
# 10	4.80	95.7
# 40	21.80	80.6
# 100	61.50	45.2
# 200	91.60	18.4

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 2.7 **% SAND =** 78.9
% FINES = 18.4

D_{85}= 0.52 D_{60}= 0.22 D_{50}= 0.17
D_{30}= 0.10

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.6	87.7	10.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.453	0.288	0.242	0.161	0.0950			

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, trace gravel, fine to medium grained, brown	SP-SM	A-2-4(0)

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-49, 35'-37'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-49, 35'-37'
Description: Sand with silt, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-2-4(0)
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	124.70
Tare =	0.00
Dry sample weight =	124.70

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	2.00	98.4
10	3.50	97.2
# 40	19.70	84.2
# 100	90.80	27.2
# 200	111.30	10.7

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 1.6 **% SAND =** 87.7
% FINES = 10.7

D_{85}= 0.45 D_{60}= 0.29 D_{50}= 0.24
D_{30}= 0.16 D_{15}= 0.10

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	90.7	9.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.594	0.311	0.253	0.164	0.0995	0.0778	1.12	3.99

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, fine to medium grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-49A, 55'-57'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
. ,ject Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-49A, 55'-57'
Description: Sand with silt, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

		Initial
Dry sample and tare	=	121.00
Tare	=	0.00
Dry sample weight	=	121.00

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	1.00	99.2
40	31.40	74.0
# 100	88.90	26.5
# 200	109.80	9.3

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** **% SAND =** 90.7
% FINES = 9.3

D_{85}= 0.59 D_{60}= 0.31 D_{50}= 0.25
D_{30}= 0.16 D_{15}= 0.10 D_{10}= 0.08
C_c= 1.1192 C_u= 3.9922

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	65.0	35.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.373	0.176	0.127					

MATERIAL DESCRIPTION	USCS	AASHTO
○ Silty Sand, brown	SM	A-2-4(0)

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-50, 15'-17'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
ject Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth:
Sample Length(in./cm.):
Location: DH-50, 15'-17'
Description: Silty Sand, brown
Liquid Limit:
Plastic Limit:
USCS Classification: SM
AASHTO Classification: A-2-4(0)
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	130.00
Tare =	0.00
Dry sample weight =	130.00

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 40	13.70	89.5
100	58.50	55.0
200	84.50	35.0

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = % GRAVEL = % SAND = 65.0
% FINES = 35.0

D_{85}= 0.37 D_{60}= 0.18 D_{50}= 0.13

Particle Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.7	90.5	8.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.506	0.271	0.221	0.139	0.0909	0.0779	0.92	3.48

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sand with silt, trace gravel, fine to medium grained, brown	SP-SM	A-3

Project No. 3330804.5 **Client:** Ayres Associates

Project: Onyx-Superior 7 Mile Creek Landfill

Eau Claire, Wisconsin

○ **Location:** DH-50, 20'-22'

Remarks:

○ Sample Received 12-10-02

Particle Size Distribution Report

MAXIM TECHNOLOGIES

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Ayres Associates
Project: Onyx-Superior 7 Mile Creek Landfill
Eau Claire, Wisconsin
Project Number: 3330804.5

Sample Data

Source:
Sample No.:
Elev. or Depth: **Sample Length(in./cm.):**
Location: DH-50, 20'-22'
Description: Sand with silt, trace gravel, fine to medium grained, brown
Liquid Limit: **Plastic Limit:**
USCS Classification: SP-SM **AASHTO Classification:** A-3
Testing Remarks: Sample Received 12-10-02

Mechanical Analysis Data

	Initial
Dry sample and tare=	138.40
Tare =	0.00
Dry sample weight =	138.40

Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.90	99.3
# 10	2.40	98.3
# 40	24.50	82.3
# 100	92.90	32.9
# 200	126.20	8.8

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200
% COBBLES = **% GRAVEL =** 0.7 **% SAND =** 90.5
% FINES = 8.8

D_{85}= 0.51 D_{60}= 0.27 D_{50}= 0.22
D_{30}= 0.14 D_{15}= 0.09 D_{10}= 0.08
C_c= 0.9197 C_u= 3.4839

December 2018 Soil Test Data

CQM Soil Testing Laboratory Report (1/16/2019)

Terracon Soil Consolidation Testing Laboratory Report (1/25/2019)

CQM Laboratory Soil Testing Photographs

CQM, INC.

Engineering – Surveying – Material Testing

TRANSMITTAL

TO: John Oswald P.E.
Cornerstone Environmental

FROM: Bob Rouse
CQM, INC.
2679 Continental Drive
Green Bay, WI 54311
PHONE: (920) 465-3911
DATE: January 16, 2019

RE: Lab Test Result Reports

PROJECT: Seven Mile Creek - NE Expansion

WE ARE SENDING YOU:

- [x] ATTACHED
- [ ] UNDER SEPARATE COVER VIA
- [ ] DRAWINGS
- [ ] SPECIFICATIONS
- [ ] CD
- [ ] DOCUMENTS
- [ ] COPY OF LETTER
- [ ] _____

QUANTITY	DESCRIPTION
1	Lab Test Result Reports
	(Sieve, hydrometer, Atterberg Limits
1	Summary Table of Results
1	Chain of Custody Record

IF MATERIAL RECEIVED IS NOT AS LISTED, PLEASE NOTIFY US AT ONCE.

REMARKS: Will send the consolidation test results when they are completed.

COPY TO:

SUMMARY OF LABORATORY TEST RESULTS
FOR
SOIL BORING SUBGRADE MATERIAL (IN-PLACE)

CORNERSTONE ENVIRONMENTAL
SEVEN MILE CREEK NORTHEAST EXPANSION

JANUARY 2019

ASTM No.					D6913 / D7928			D4318			D2487	D2216
					Grain Size Analysis			Atterberg Limits				
Date Sampled	Sample Number	Sample Depth (ft)	Coordinates North	Coordinates East	<#4 (%)	%Fines <#200	%Clay <.005	Liquid Limit	Plastic Limit	Plasticity Index	U.S.C.S.	Sampled Water Content
12/11/18	DH-60	53-55			87.3	8.5	3.0			NP	SP-SM	15.2
12/13/18	DH-61	48-50			85.4	16.6	6.5			NP	SM	13.7
12/17/18	DH-62A	30-30.5			98.6	70.7	39.0	51.3	21.6	29.7	CH	20.8
12/19/18	DH-63	25-25.5			99.9	12.7	5.0			NP	SM	2.4
12/11/18	TB-81	50-50.5			96.5	7.6	3.5			NP	SP-SM	13.1
12/12/18	TB-83-1	19-21			98.3	9.5	6.0			NP	SP-SM	14.7
12/12/18	TB-83-2	22-24			98.0	48.3	18.5	34.9	17.6	17.4	SC	16.7
Minimum:					85.4	7.6	3.0	34.9	17.6	17.4		2.4
Maximum:					99.9	70.7	39.0	51.3	21.6	29.7		20.8
Average:					**94.9**	**24.8**	**11.6**	**43.1**	**19.6**	**23.5**		**13.8**
Project Requirements:												

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D6913)

GENERAL DATA:

Client:	**Cornerstone Environmental**
Project:	**Seven Mile Creek Northeast Expansion**
Location Sampled:	**DH-60 53' to 55'**
Sample No:	**DH-60**
Depth of Sample:	**53' - 55'**
Date Received:	**1/4/19**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**10YR 4/6**
Date Sampled:	**12/11/18**

LABORATORY DATA:

Date Tested:	January 8-10, 2019
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

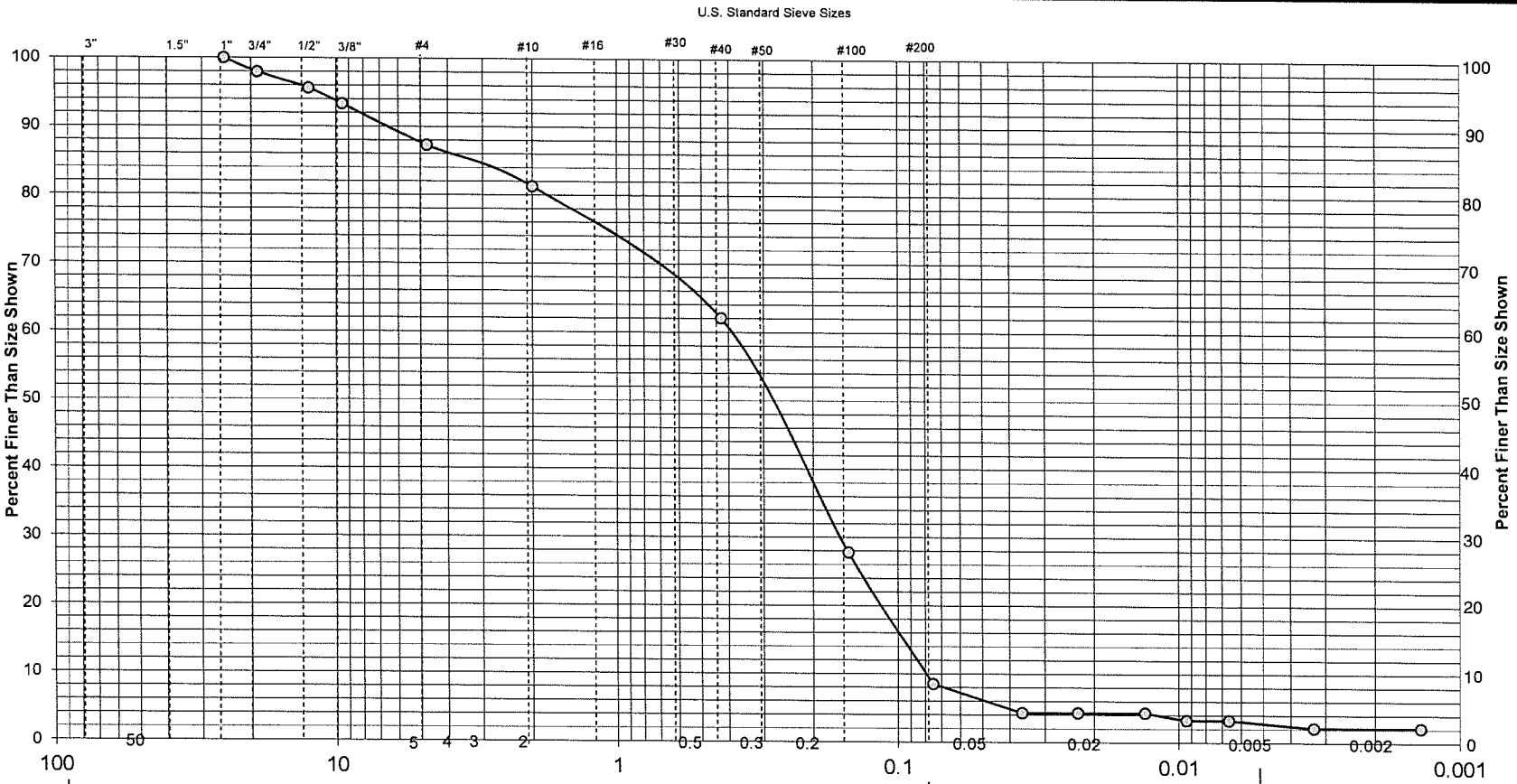
Dry Weight of Soil (gms): 434.8

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"	0.0	0.0	100.0		
3/4"	8.9	2.0	98.0		
1/2"	10.6	2.4	95.6		
3/8"	9.9	2.3	93.3		
#4	26.1	6.0	87.3		
#10	25.9	6.0	81.3		
#40	83.5	19.2	62.1		
#100	149.1	34.3	27.8		
#200	83.9	19.3	8.5		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	1/15/19

Remarks:

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand				
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
2.0%	10.7%	6.0%	19.2%	53.6%	5.5%	3.0%

Soil Classification: SAND W/SILT, fine to medium grained, a little gravel, dark yellowish brown (SP-SM)

Location Sampled: DH-60 53' to 55'	Elevation or Depth: 53' - 55'	Date Sampled:	12/11/18
Sample Number: DH-60	Sampled Moisture Content (%): 15.2	Report No.:	DH-60
Sample Source:	*CQM, INC.*		
Atterberg Limits: LL= PL= PI=	Client:	Cornerstone Environmental	
Munsell Color Code: 10YR 4/6	Project:	Seven Mile Creek Northeast Expansion	Page: 2
Date Received: 1/4/19	Prepared by:	Bob J. Peeters	Date: 1/11/19
Coefficients: Cc=0.93 Cu=4.88	Checked by:	Robert R Rose	Date: 1/15/19

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D6913)

GENERAL DATA:

Client:	**Cornerstone Environmental**
Project:	**Seven Mile Creek Northeast Expansion**
Location Sampled:	**DH-61 48'-50'**
Sample No:	**DH-61**
Depth of Sample:	**48' - 50'**
Date Received:	**1/4/19**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**10YR 5/4**
Date Sampled:	**12/13/18**

LABORATORY DATA:

Date Tested:	January 8-10, 2019
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

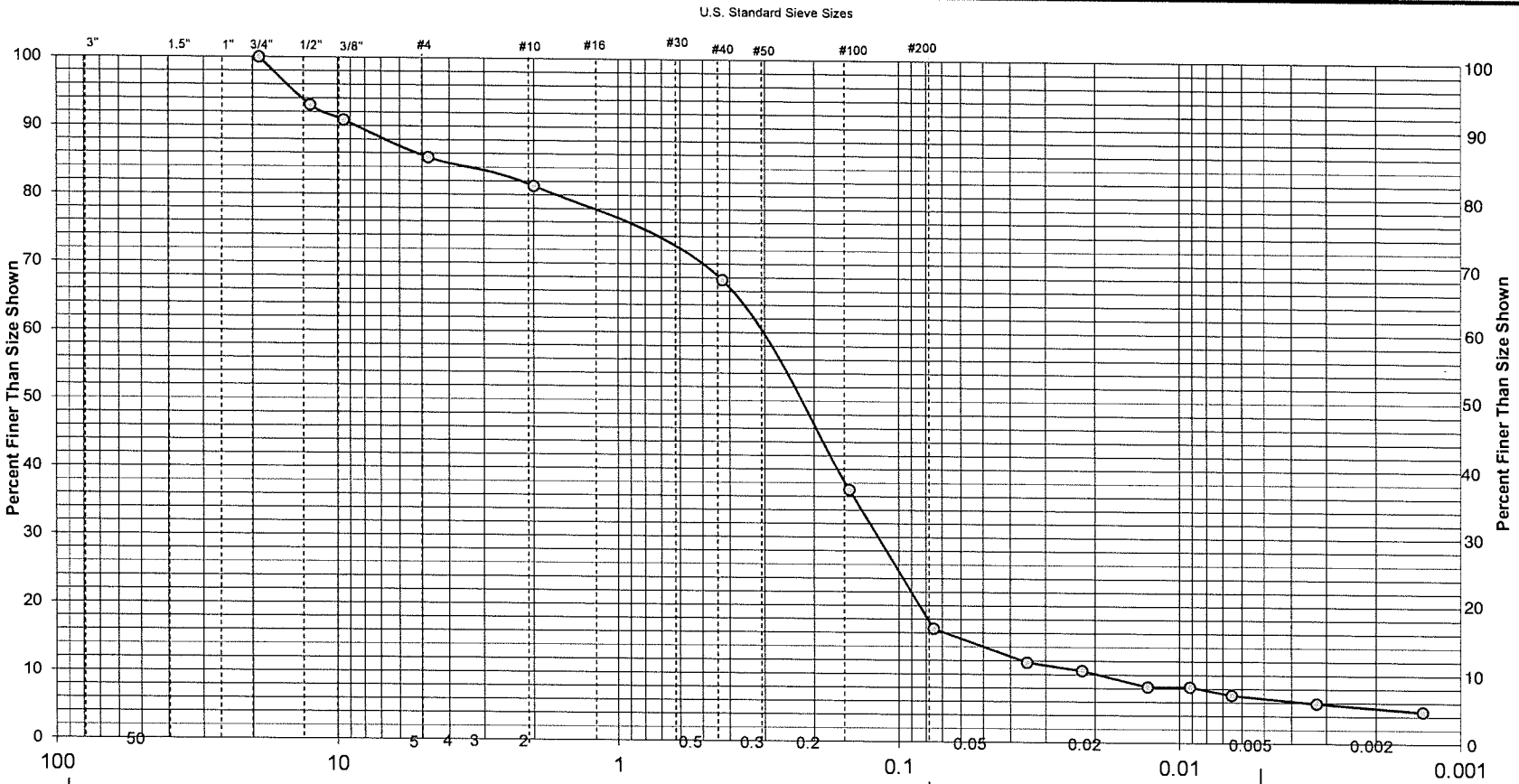
Dry Weight of Soil (gms): 319.4

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"	0.0	0.0	100.0		
1/2"	22.4	7.0	93.0		
3/8"	7.0	2.2	90.8		
#4	17.2	5.4	85.4		
#10	13.1	4.1	81.3		
#40	43.5	13.6	67.7		
#100	98.0	30.7	37.0		
#200	65.0	20.4	16.6		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	1/15/19

Remarks:

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand				
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
	14.6%	4.1%	13.6%	51.1%	10.1%	6.5%

Soil Classification: SILTY SAND, fine to medium grained, a little gravel, yellowish brown (SM)			
Location Sampled: DH-61 48'-50'	Elevation or Depth: 48' - 50'	Date Sampled:	12/13/18
Sample Number: DH-61	Sampled Moisture Content (%): 13.7	Report No.:	DH-61
Sample Source:	CQM, INC.		
Atterberg Limits: LL= PL= PI=	Client: Cornerstone Environmental		
Munsell Color Code: 10YR 5/4	Project: Seven Mile Creek Northeast Expansion	Page:	2
Date Received: 1/4/19	Prepared by: Bob J. Peeters	Date:	1/11/19
Coefficients: Cc= Cu=	Checked by: Robert R Rouse	Date:	1/15/19

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D6913)

GENERAL DATA:

Client:	**Cornerstone Environmental**
Project:	**Seven Mile Creek Northeast Expansion**
Location Sampled:	**DH-62A 30' to 30.5'**
Sample No:	**DH-62A**
Depth of Sample:	**30' - 30.5'**
Date Received:	**1/4/19**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**5Y 6/2**
Date Sampled:	**12/17/18**

LABORATORY DATA:

Date Tested:	January 8-10, 2019
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

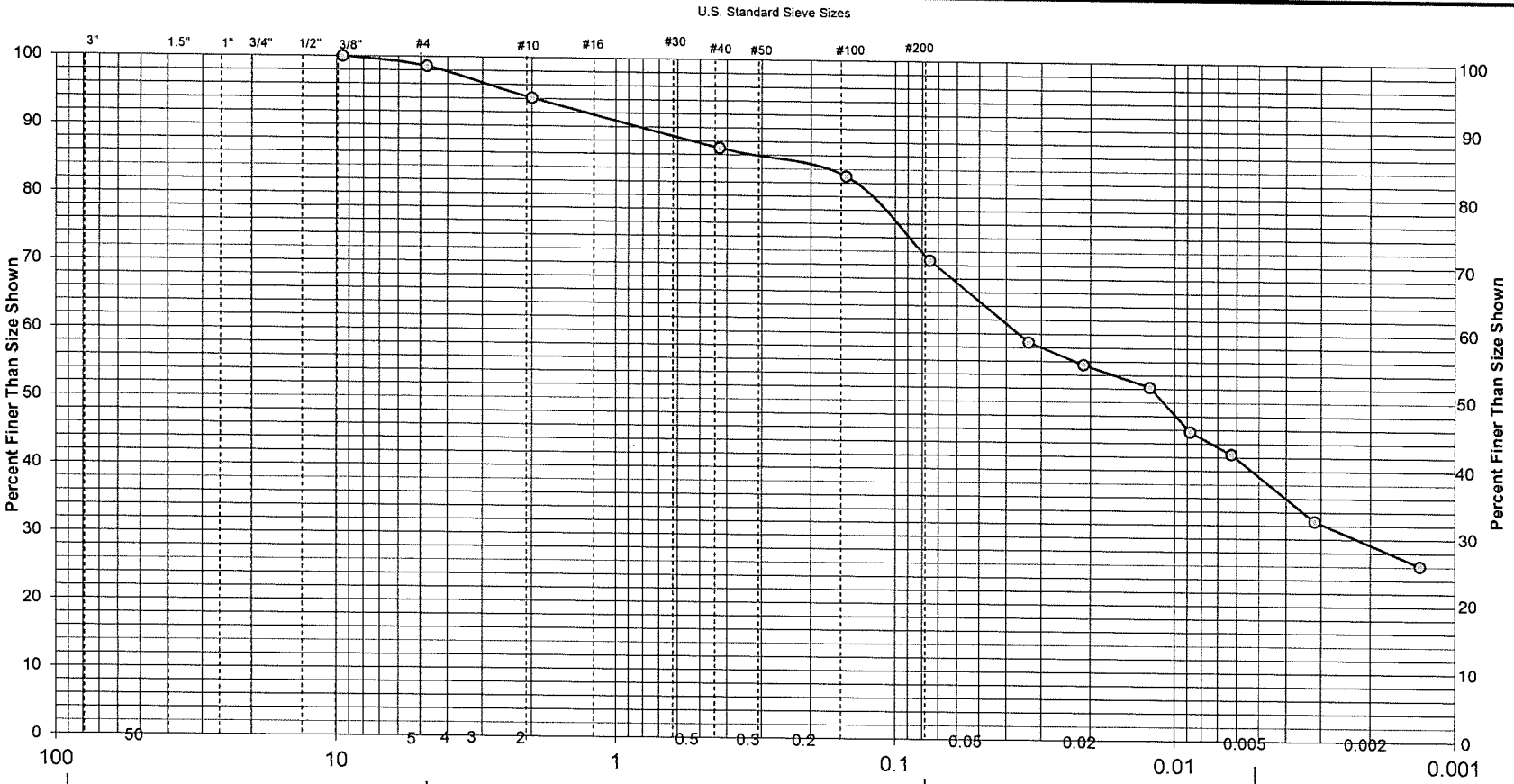
Dry Weight of Soil (gms): 77.0

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	1.1	1.4	98.6		
#10	3.5	4.5	94.1		
#40	5.5	7.1	87.0		
#100	3.1	4.0	83.0		
#200	9.5	12.3	70.7		

REVIEWED BY:	Robert R Rover
DATE REVIEWED:	1/16/19

Remarks:

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand				
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
	1.4%	4.5%	7.1%	16.4%	31.5%	39.0%

Soil Classification: FAT CLAY W/SAND, light olive brown (CH)			
Location Sampled: DH-62A 30' to 30.5'	Elevation or Depth: 30' - 30.5'	Date Sampled:	12/17/18
Sample Number: DH-62A	Sampled Moisture Content (%): 20.8	Report No.:	DH-62A
Sample Source:	CQM, INC.		
Atterberg Limits: LL= 51.3 / PL= 21.6 / PI= 29.7	Client: Cornerstone Environmental		
Munsell Color Code: 5Y 6/2	Project: Seven Mile Creek Northeast Expansion	Page:	2
Date Received: 1/4/19	Prepared by: Bob J. Peeters	Date:	1/15/19
Coefficients: Cc= / Cu=	Checked by: Robert R Rouse	Date:	1/16/19

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D6913)

GENERAL DATA:

Client:	**Cornerstone Environmental**
Project:	**Seven Mile Creek Northeast Expansion**
Location Sampled:	**DH-63 ST 25' to 25.5'**
Sample No:	**DH-63**
Depth of Sample:	**25' - 25.5'**
Date Received:	**1/4/19**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**10YR 6/8**
Date Sampled:	**12/19/18**

LABORATORY DATA:

Date Tested:	January 8-10, 2019
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

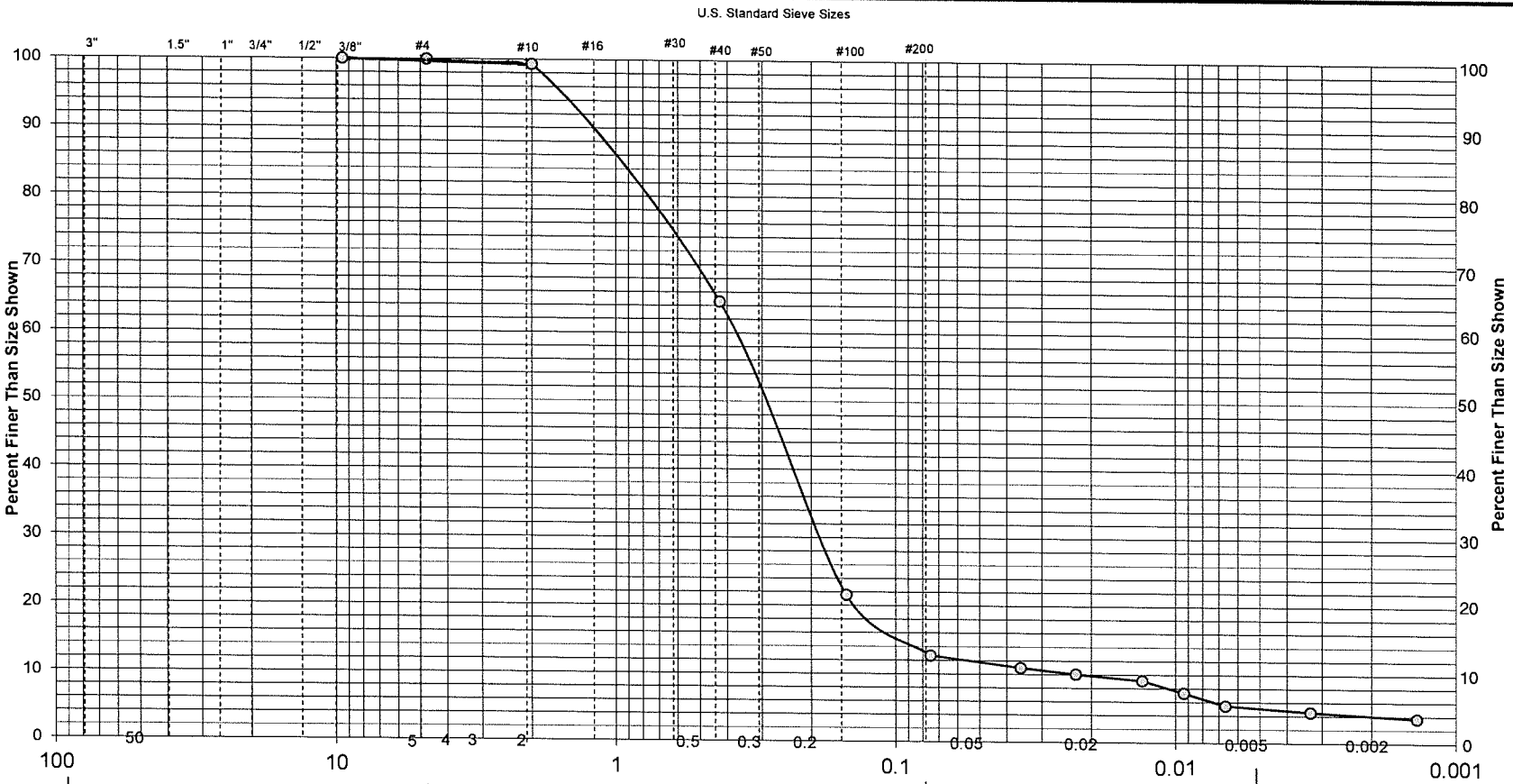
Dry Weight of Soil (gms): 323.7

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	0.2	0.1	99.9		
#10	1.9	0.6	99.3		
#40	112.4	34.7	64.6		
#100	139.5	43.1	21.5		
#200	28.6	8.8	12.7		

REVIEWED BY:	Robert R Reeve
DATE REVIEWED:	1/16/19

Remarks:

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand				
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
	0.1%	0.6%	34.7%	51.9%	7.7%	5.0%

Soil Classification: SILTY SAND, fine to medium grained, brownish yellow (SM)

Location Sampled: DH-63 ST 25' to 25.5'	Elevation or Depth: 25' - 25.5'	Date Sampled:	12/19/18
Sample Number: DH-63	Sampled Moisture Content (%): 2.4	Report No.:	DH-63
Sample Source:	CQM, INC.		
Atterberg Limits: LL= PL= PI=	Client: Cornerstone Environmental		
Munsell Color Code: 10YR 6/8	Project: Seven Mile Creek Northeast Expansion	Page:	2
Date Received: 1/4/19	Prepared by: Bob J. Peeters	Date:	1/11/19
Coefficients: Cc= Cu=	Checked by: Robert R Rouse	Date:	1/16/19

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D6913)

GENERAL DATA:

Client:	**Cornerstone Environmental**
Project:	**Seven Mile Creek Northeast Expansion**
Location Sampled:	**TB-81 50' to 50.5'**
Sample No:	**TB-81**
Depth of Sample:	**50' - 50.5'**
Date Received:	**1/4/19**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**10YR 6/6**
Date Sampled:	**12/11/18**

LABORATORY DATA:

Date Tested:	January 8-10, 2019
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

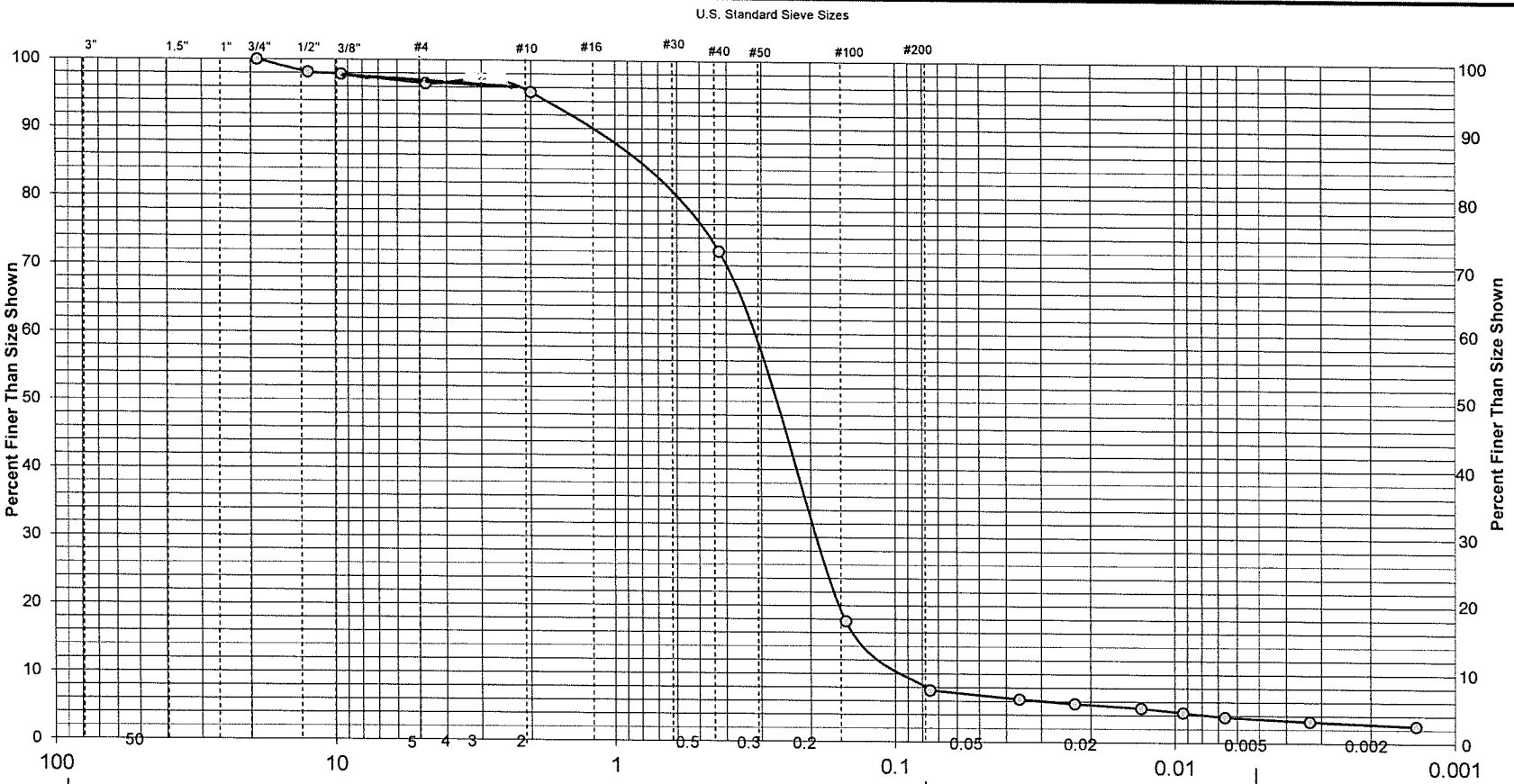
Dry Weight of Soil (gms): 451.3

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"	0.0	0.0	100.0		
1/2"	8.4	1.9	98.1		
3/8"	1.4	0.3	97.8		
#4	5.9	1.3	96.5		
#10	5.2	1.2	95.3		
#40	104.5	23.2	72.1		
#100	245.7	54.4	17.7		
#200	45.6	10.1	7.6		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	1/16/19

Remarks:

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand				
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
	3.5%	1.2%	23.2%	64.5%	4.1%	3.5%

Soil Classification: SAND W/SILT, fine to medium grained, a little gravel, brownish yellow (SP-SM)

Location Sampled: TB-81 50' to 50.5'	Elevation or Depth: 50' - 50.5'	Date Sampled:	12/11/18
Sample Number: TB-81	Sampled Moisture Content (%): 13.1	Report No.:	TB-81
Sample Source:	CQM, INC.		
Atterberg Limits: LL= PL= PI=	Client:	Cornerstone Environmental	
Munsell Color Code: 10YR 6/6	Project:	Seven Mile Creek Northeast Expansion	Page: 2
Date Received: 1/4/19	Prepared by:	Bob J. Peeters	Date: 1/11/19
Coefficients: Cc=1.09 Cu=3.51	Checked by:	Robert R. Rouse	Date: 1/16/19

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D6913)

GENERAL DATA:

Client:	**Cornerstone Environmental**
Project:	**Seven Mile Creek Northeast Expansion**
Location Sampled:	**TB-83 (B) 19' to 21'**
Sample No:	**TB-83-1**
Depth of Sample:	**19' - 21'**
Date Received:	**1/4/19**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**2.5Y 7/6**
Date Sampled:	**12/12/18**

LABORATORY DATA:

Date Tested:	January 8-10, 2019
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

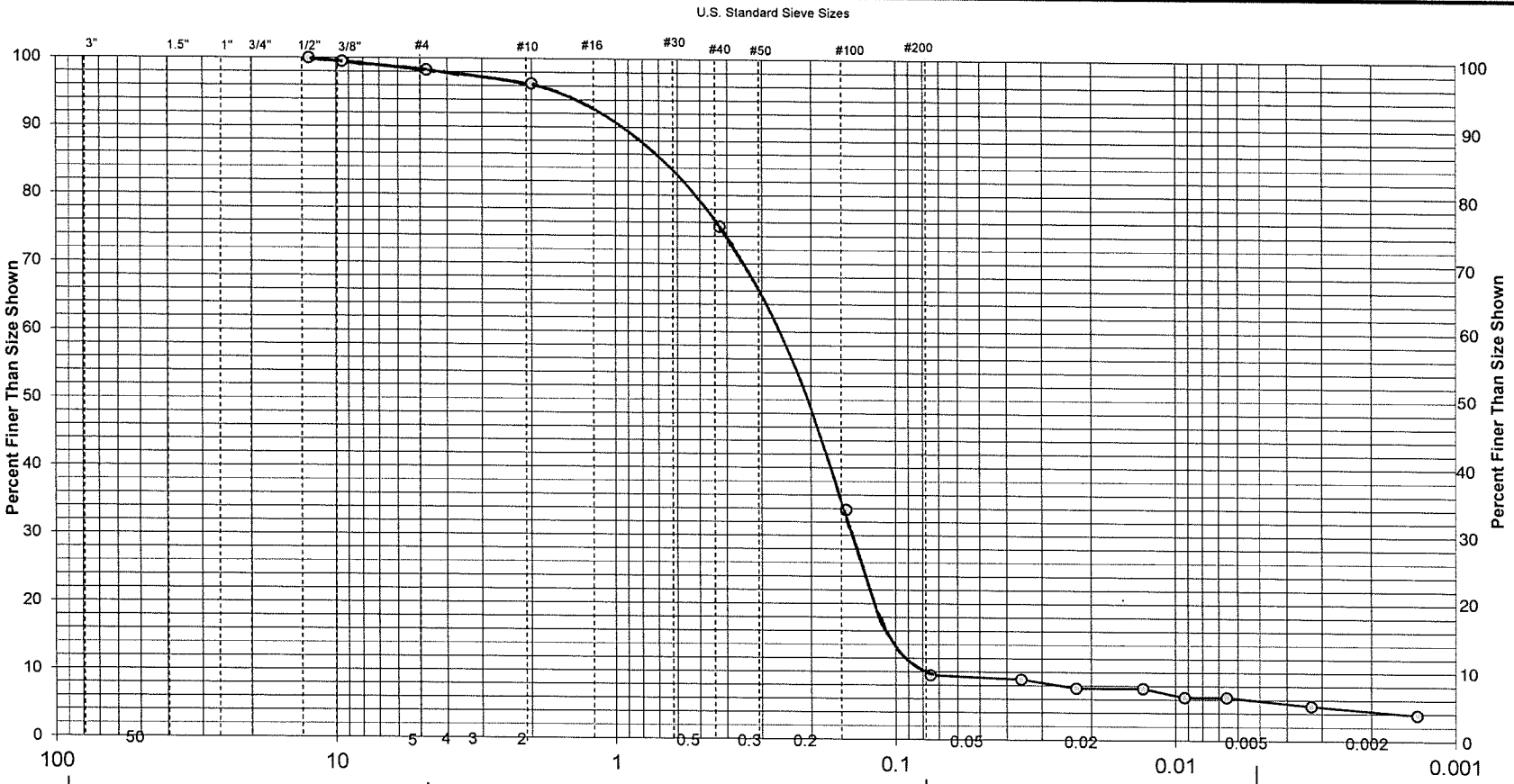
Dry Weight of Soil (gms): 382.8

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	1.9	0.5	99.5		
#4	4.7	1.2	98.3		
#10	7.3	1.9	96.4		
#40	80.2	21.0	75.4		
#100	159.3	41.6	33.8		
#200	93.1	24.3	9.5		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	1/16/19

Remarks:

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt	Clay
Coarse	Fine	Coarse	Medium	Fine		
	1.7%	1.9%	21.0%	65.9%	3.5%	6.0%

Soil Classification: SAND W/SILT, fine to medium grained, yellow (SP-SM)

Location Sampled: TB-83 (B) 19' to 21'	Elevation or Depth: 19' - 21'	Date Sampled: 12/12/18
Sample Number: TB-83-1	Sampled Moisture Content (%): 14.7	Report No.: TB-83 19-21
Sample Source:	CQM, INC.	
Atterberg Limits: LL= PL= PI=	Client: Cornerstone Environmental	
Munsell Color Code: 2.5Y 7/6	Project: Seven Mile Creek Northeast Expansion	Page: 2
Date Received: 1/4/19	Prepared by: Bob J. Peeters	Date: 1/11/19
Coefficients: Cc=1.03 Cu=3.59	Checked by: Robert R Rouse	Date: 1/16/19

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D6913)

GENERAL DATA:

Client:	**Cornerstone Environmental**
Project:	**Seven Mile Creek Northeast Expansion**
Location Sampled:	**TB-83 (B) 22' to 24'**
Sample No:	**TB-83-2**
Depth of Sample:	**22' - 24'**
Date Received:	**1/4/19**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**2.5Y 5/4**
Date Sampled:	**12/12/18**

LABORATORY DATA:

Date Tested:	January 8-10, 2019
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

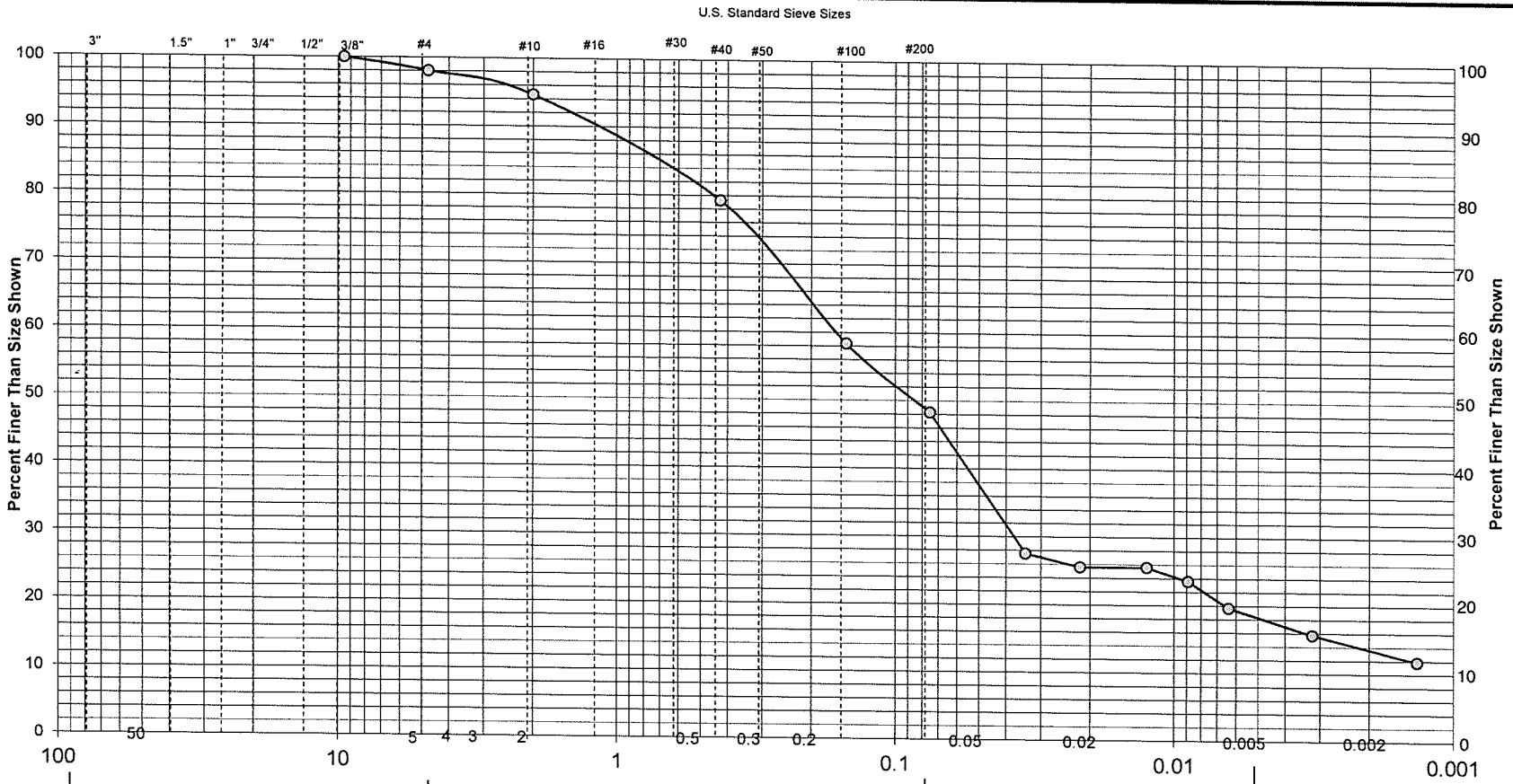
Dry Weight of Soil (gms): 381.9

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	7.5	2.0	98.0		
#10	13.1	3.4	94.6		
#40	58.5	15.3	79.3		
#100	80.0	20.9	58.4		
#200	38.5	10.1	48.3		

REVIEWED BY:	Robert Alowee
DATE REVIEWED:	1/16/19

Remarks:

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand				
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
	2.0%	3.4%	15.3%	31.0%	29.8%	18.5%

Soil Classification: CLAYEY SAND, fine to medium grained, light olive brown (SC)

Location Sampled: TB-83 (B) 22' to 24'		Elevation or Depth: 22' - 24'	Date Sampled: 12/12/18
Sample Number: TB-83-2		Sampled Moisture Content (%): 16.7	Report No.: TB-83 22-24
Sample Source:		CQM, INC.	
Atterberg Limits: LL= 34.9	PL= 17.6	PI= 17.4	Client: Cornerstone Environmental
Munsell Color Code: 2.5Y 5/4		Project: Seven Mile Creek Northeast Expansion	Page: 2
Date Received: 1/4/19		Prepared by: Bob J. Peeters	Date: 1/15/19
Coefficients: Cc=	Cu=	Checked by: Robert R Rouse	Date: 1/16/19

Chain Of Custody

CQM, INC.
2679 Continental Drive
Green Bay, WI 54311
920-465-3911

Company Name: Cornerstone
Branch or Location: Madison, WI
Project Contact: John Oswald
Telephone: 1 (630) 410-7224
Project Number: 180720
Project Name: SMCL NE Expansion
Project Location: Eau Claire, WI
Sampled By (Print): Teri Daigle & Luke Specketer

Mail Report To:
john.oswald@cornerstoneeg.com
Company: Cornerstone
Address: 8413 Excelsior Drive, Suite 160
Madison, WI 53717

Invoice To: john.oswald@cornerstoneeg.com
Company: Cornerstone
Address: 8413 Excelsior Drive, Suite 160
Madison, WI 53717

Sample Description	Collection Date	Analysis Requested								
		D6913 C136 Sieve Analysis	D7928 Hydro	D4318 Atterberg Limits	D2216 Water Content	D2937 D7263 Dry Density	D5084 Permeability Clay	D2434 Permeability Sand	D2487 USCS Classification	D2435 Consolidation Test
DH-60 53' to 55'	12/11/18	X	X	X	X				X	
DH-61 48' to 50'	12/13/18	X	X	X	X				X	
TB-83 (B) ST 22' to 24'	12/12/18	X	X	X	X				X	X
TB-83 (B) ST 19' to 21'	12/12/18	X	X	X	X				X	X
TB-81 ST 50' To 50.5'	12/11/18	X	X	X	X				X	X
DH-63 ST 25' to 25.5'	12/19/18	X	X	X	X				X	X
DH-62A ST 30' to 30.5'	12/17/18								X	X

Relinquished By:	Date/Time: 1/3/18 12:00	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

Terracon

January 25,2019

Mr. Bob Peeters
CQM, Inc.
2679 Continental Dr.
Green Bay, WI 54311

RE: Laboratory Testing Program for the SMCL NE Expansion Project CQM Project No. 180720
Terracon Project No. 11195005

Dear Mr. Peeters,

We are pleased to submit our report pertaining to geotechnical laboratory testing of two (2) Shelby tube samples received January 11, 2019. The samples were in reference to the SMCL NE Expansion Project CQM Project No. 180720, located in Madison, WI. As per your instructions, Terracon performed the following test on each of samples:

- One-Dimensional Consolidation Test – ASTM D 2435

The test data included in this report, only represent the samples tested and may not reflect actual site materials and/or conditions. Values of Pc, Cc and Ccr were determined following the ASTM standard and/or acceptable standards of practice. CQM, Inc. may wish to use its own methods to determine these values. The scope of services provided by Terracon did not include interpretation of the laboratory test data, and therefore, we are not liable for any interpretation performed by others. If you wish us to provide you with this service, we would be happy to discuss this matter with you at your convenience. Any reproduction of this report must be done in its entirety.

We are pleased to have the opportunity to provide you with our testing services. Should you have any questions, or require additional assistance, please feel free to contact us at any time.

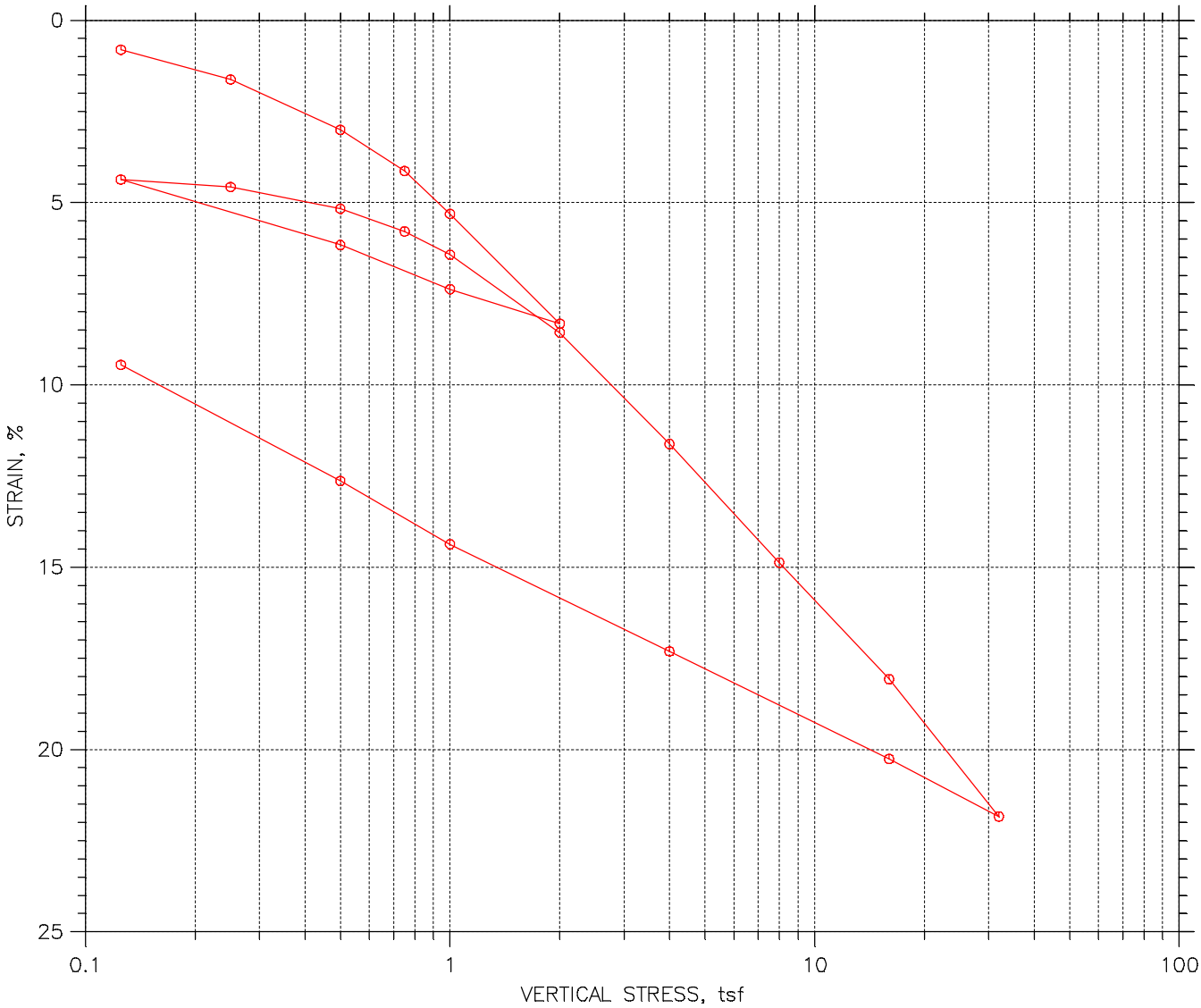
Sincerely,
Terracon Consultants, Inc.

William P. Quinn
Department Manager – Laboratory Services

Attachments:

One Dimensional Consolidation Properties of Soils Using Incremental Loading
ASTM D2435

ONE DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS
USING INCREMENTAL LOADING
ASTM D2435

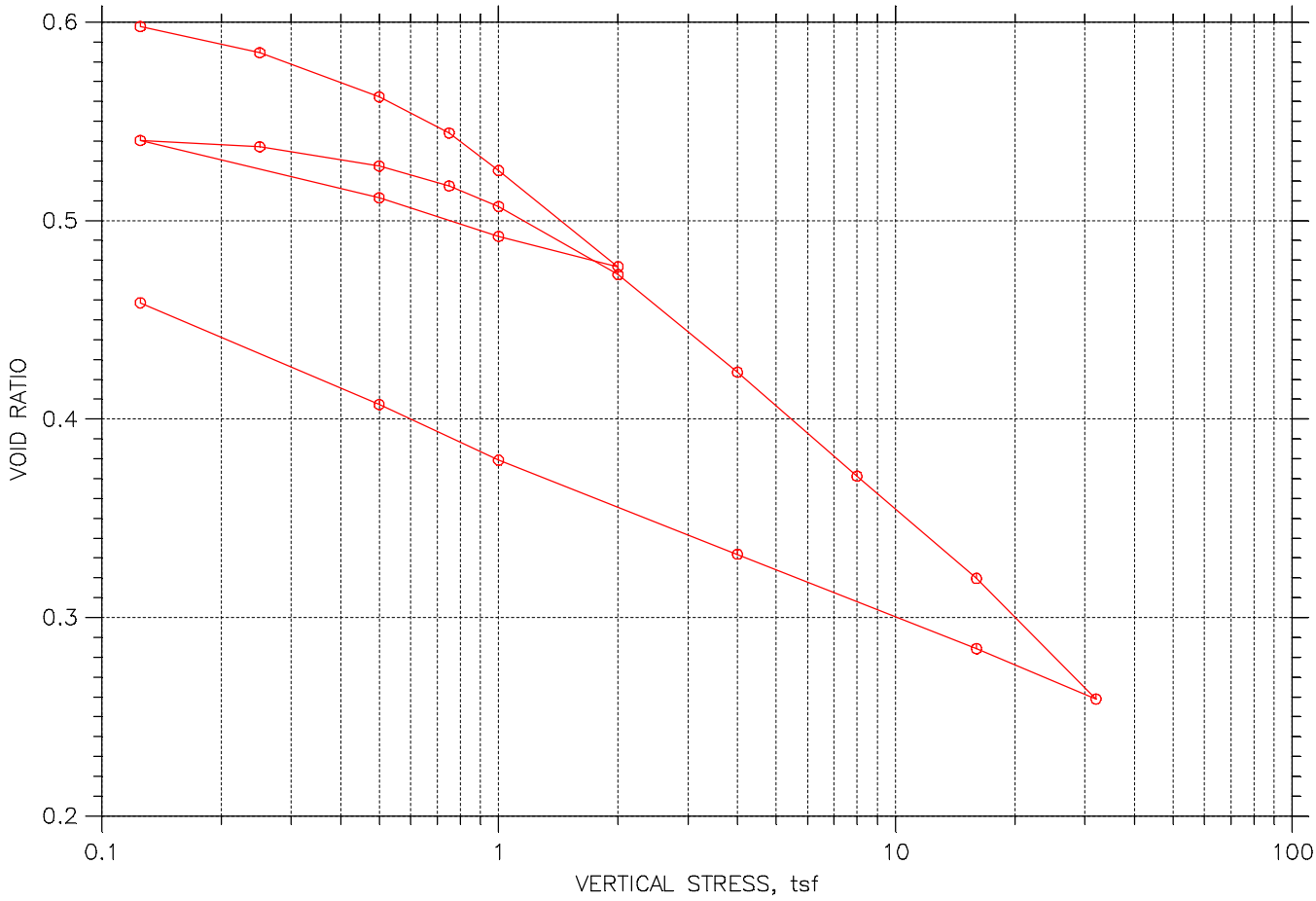


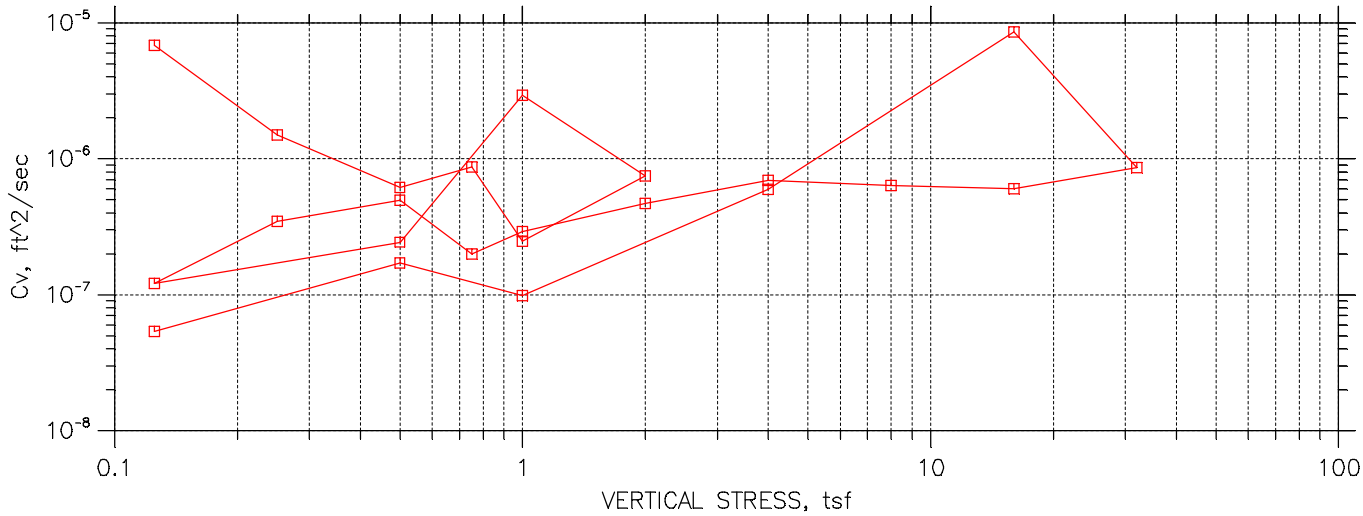
					Before Test	After Test
				Water Content, %	18.18	17.58
Preconsolidation Pressure: 1.1 tsf				Dry Unit Weight, pcf	105.4	116.4
Compression Index: 0.202				Saturation, %	80.98	104.30
Diameter: 2.5 in		Height: 0.7488 in		Void Ratio	0.61	0.46
LL: ---	PL: ---	PI: ---	GS: 2.72			

Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

Mon, 28-JAN-2019 12:41:20

ONE DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS
USING INCREMENTAL LOADING
ASTM D2435





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

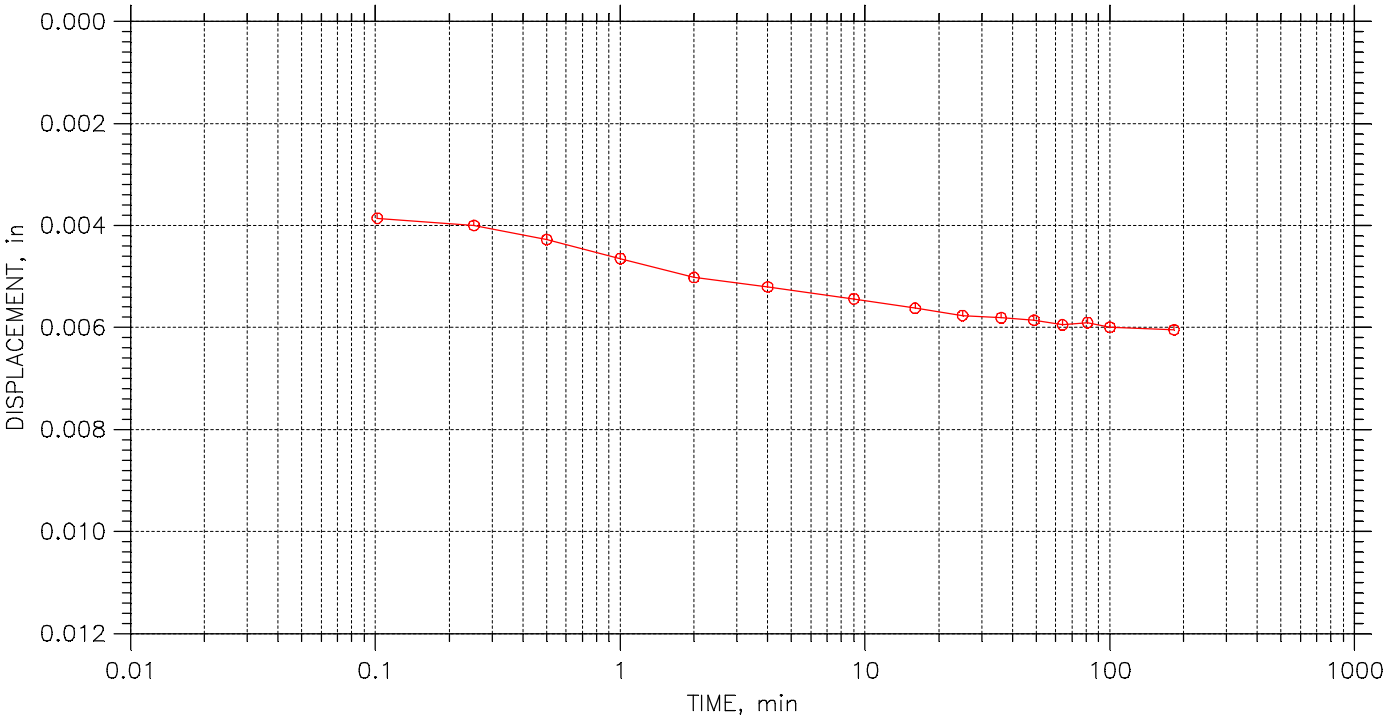
Mon, 28-JAN-2019 12:40:06

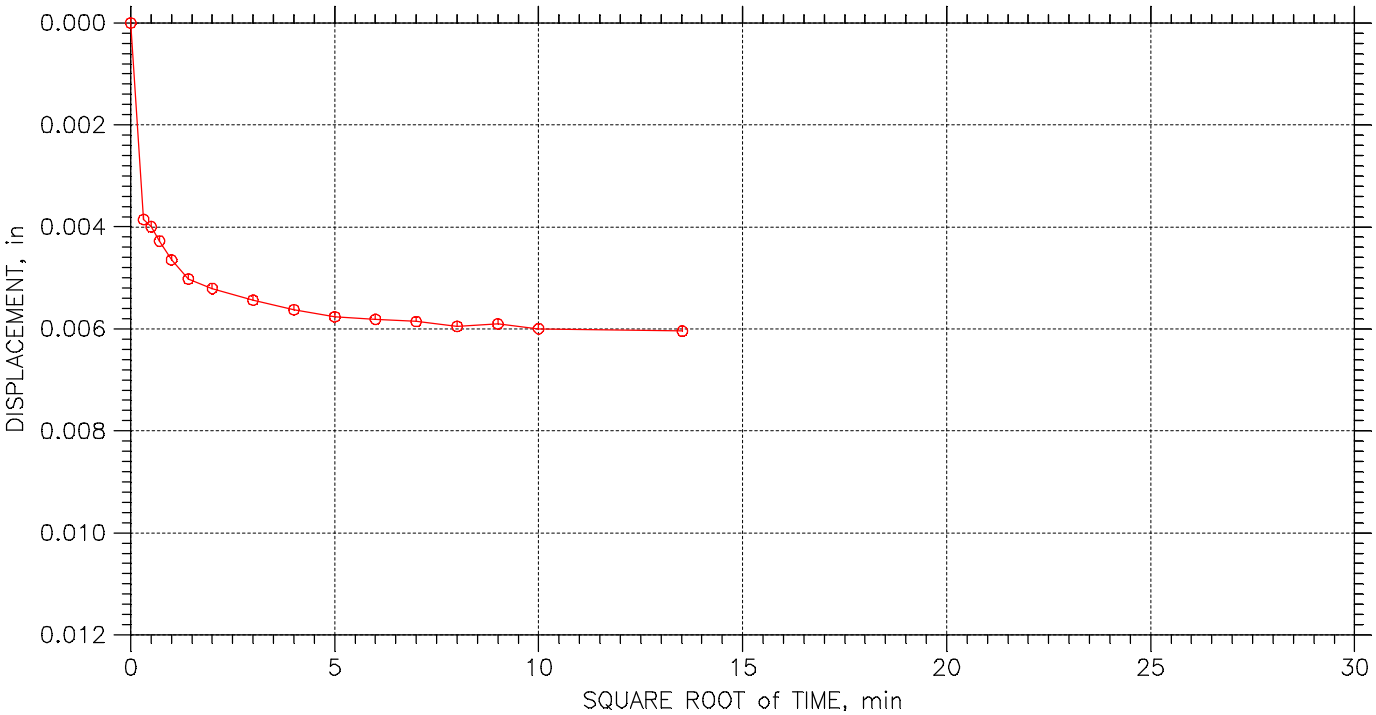
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 23

Stress: 0.125 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

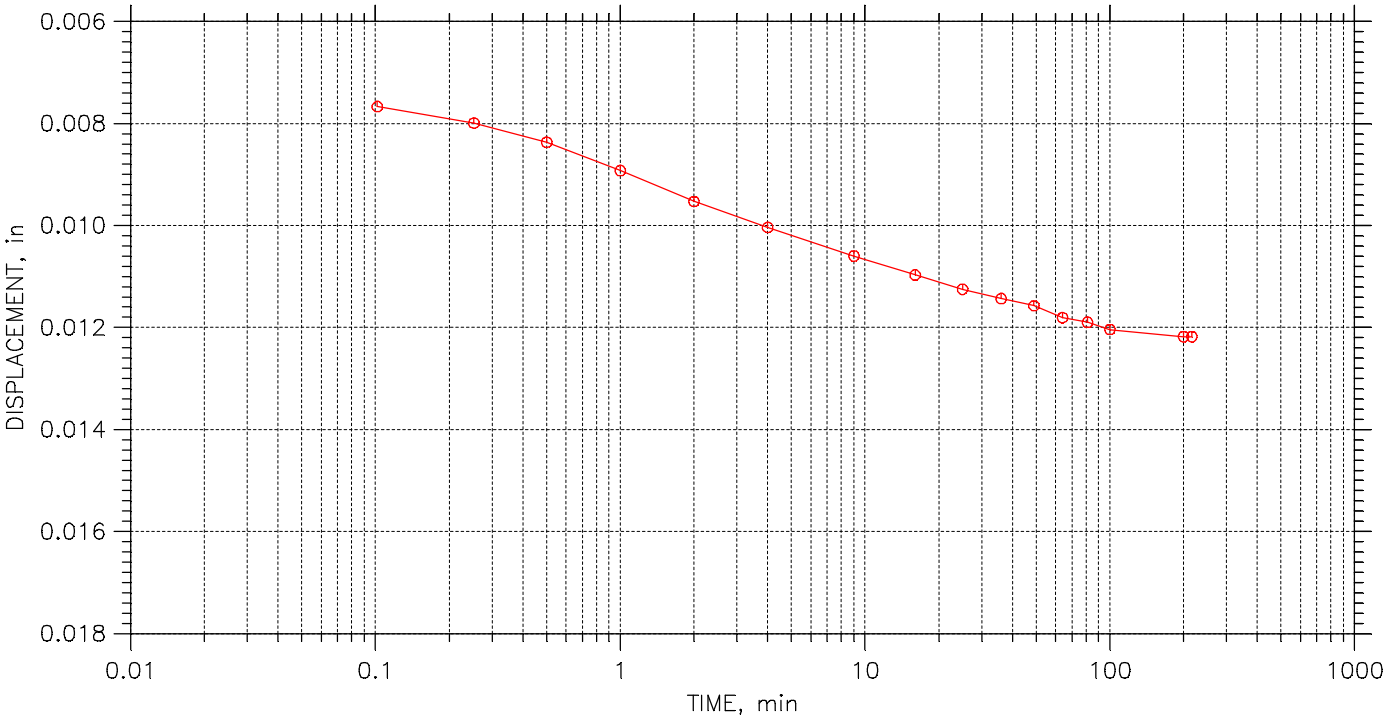
Mon, 28-JAN-2019 12:41:51

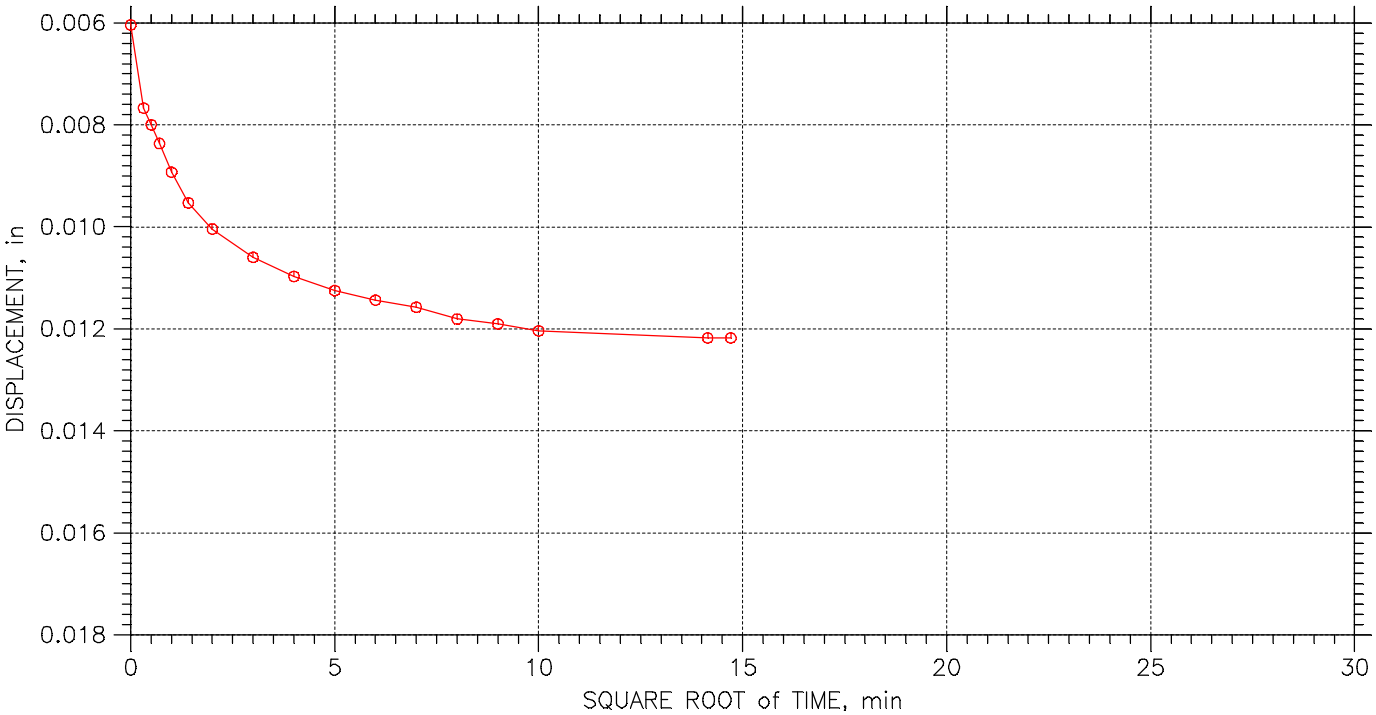
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 23

Stress: 0.25 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

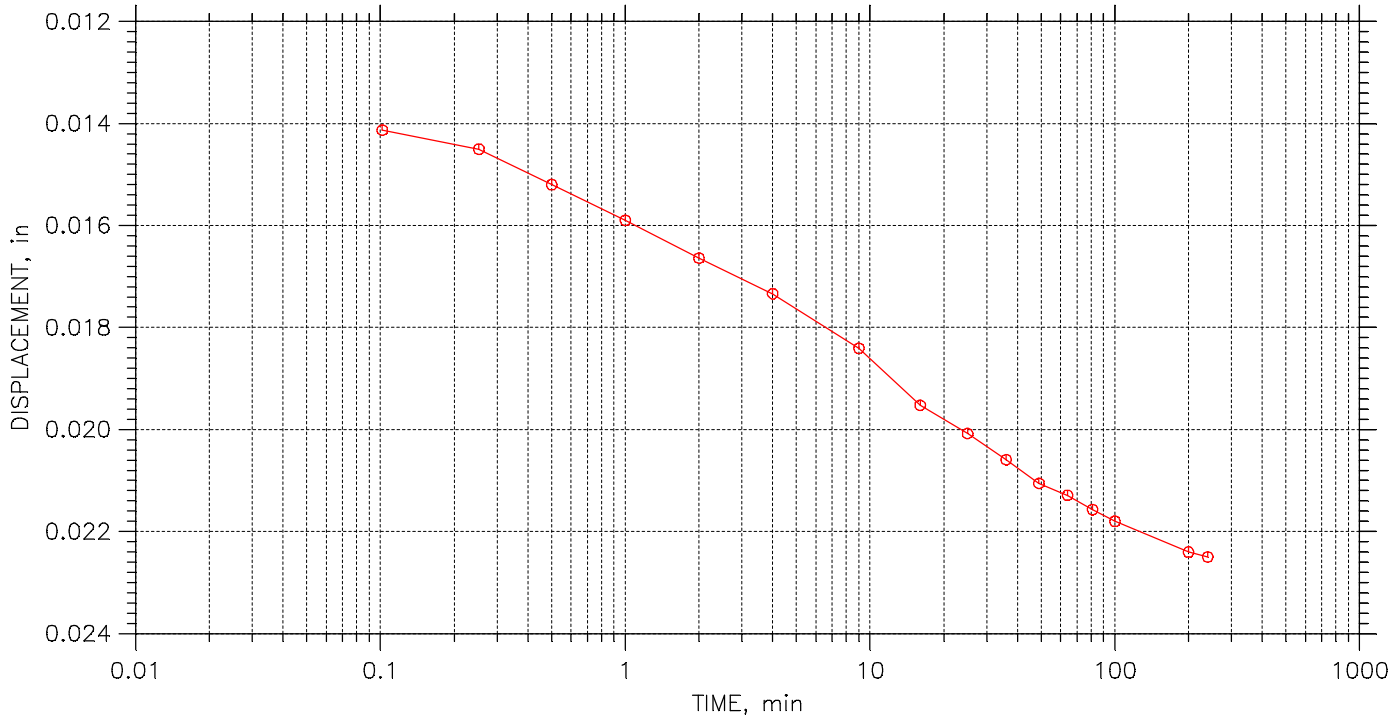
Mon, 28-JAN-2019 12:41:52

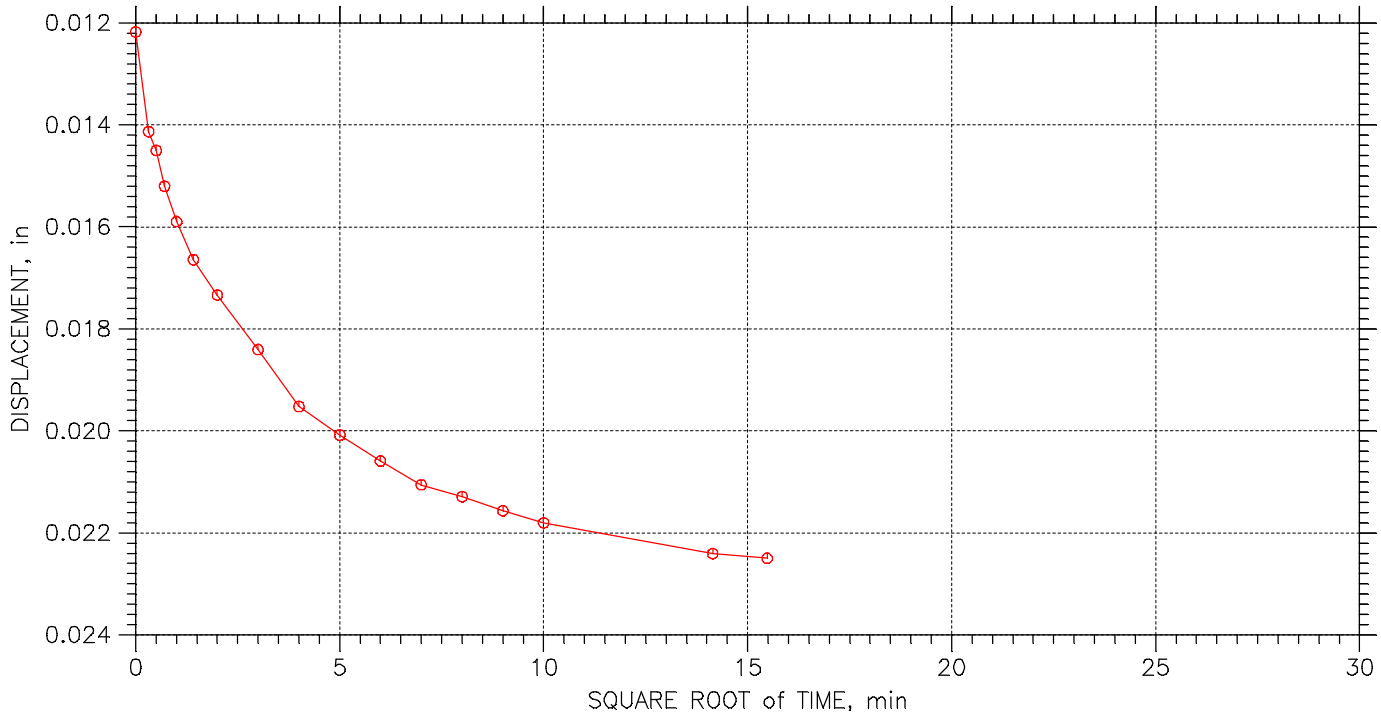
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 23

Stress: 0.5 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

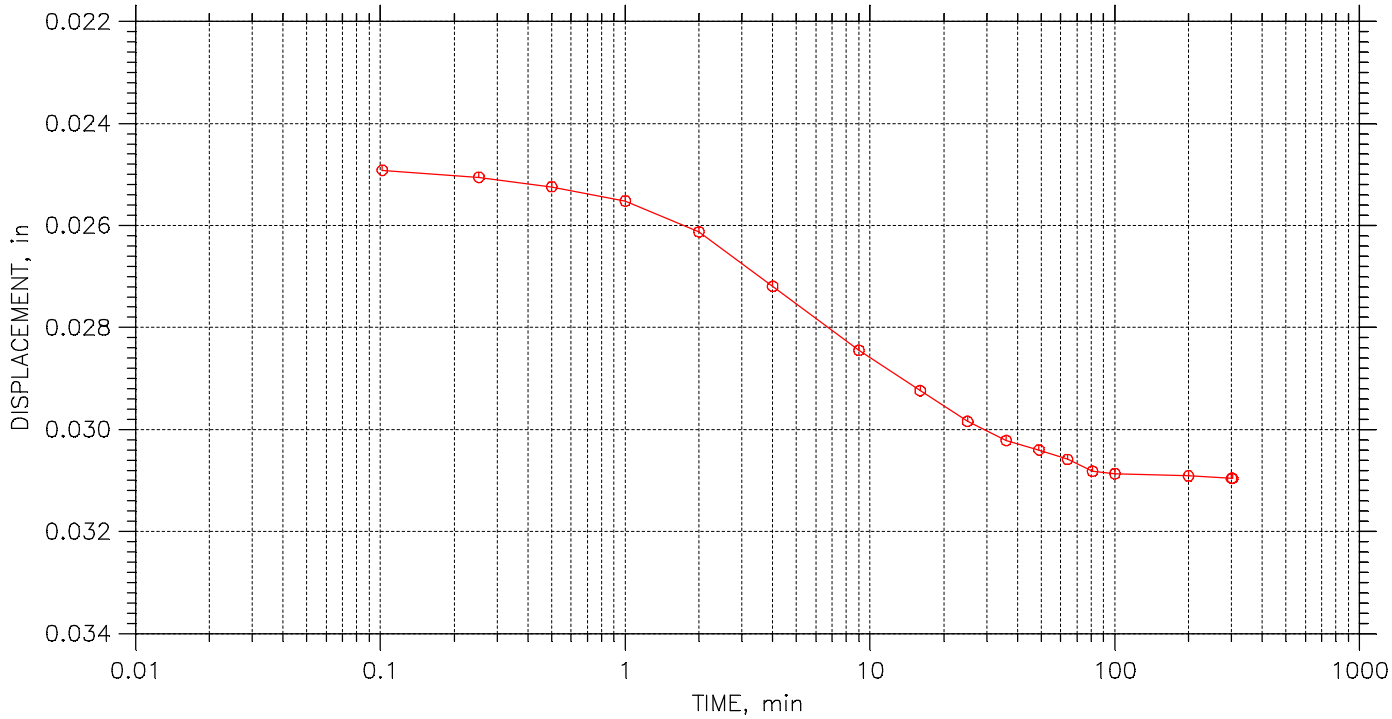
Mon, 28-JAN-2019 12:41:54

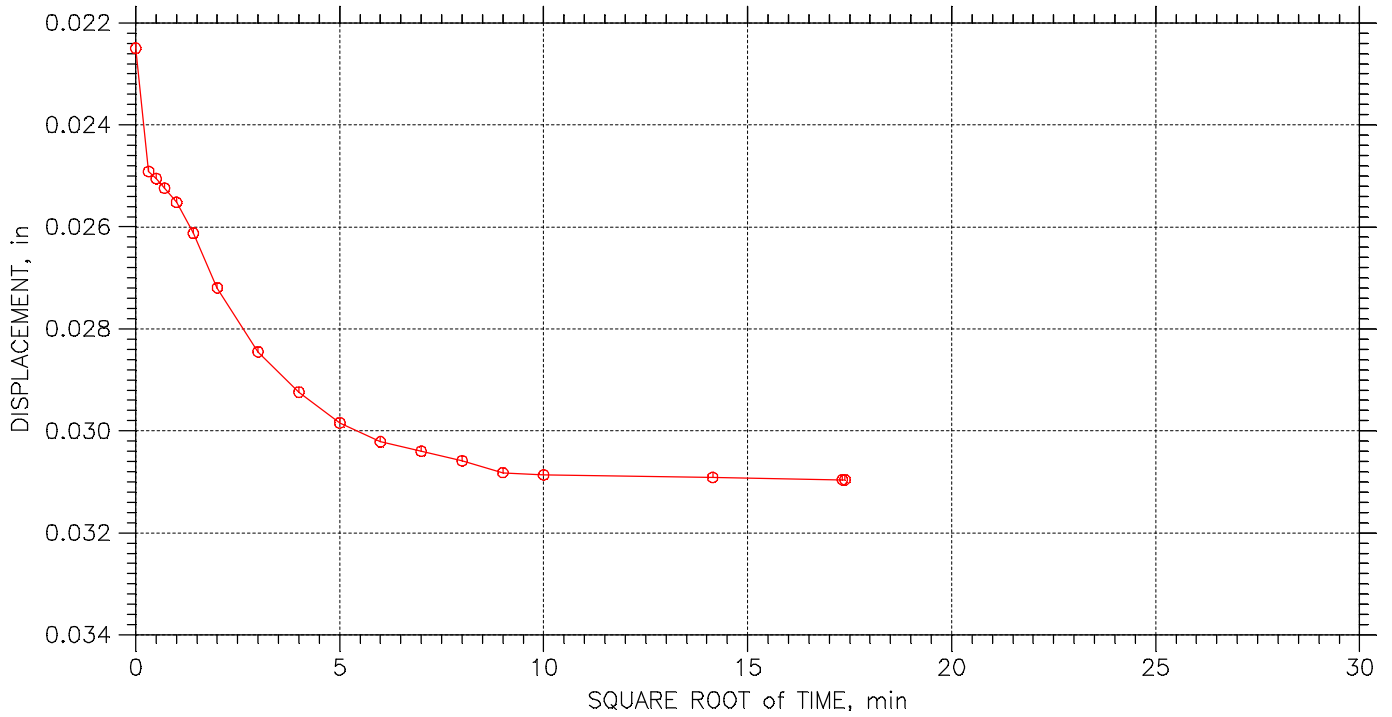
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 23

Stress: 0.75 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

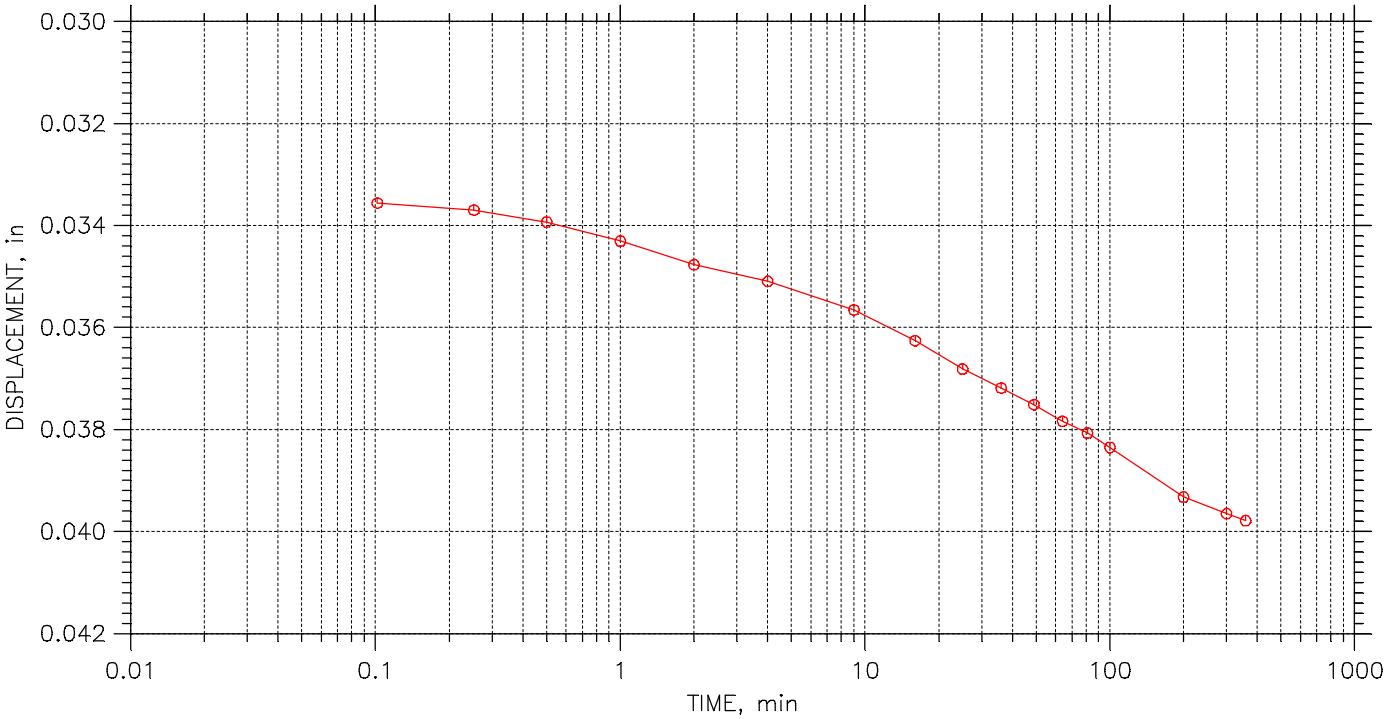
Mon, 28-JAN-2019 12:41:55

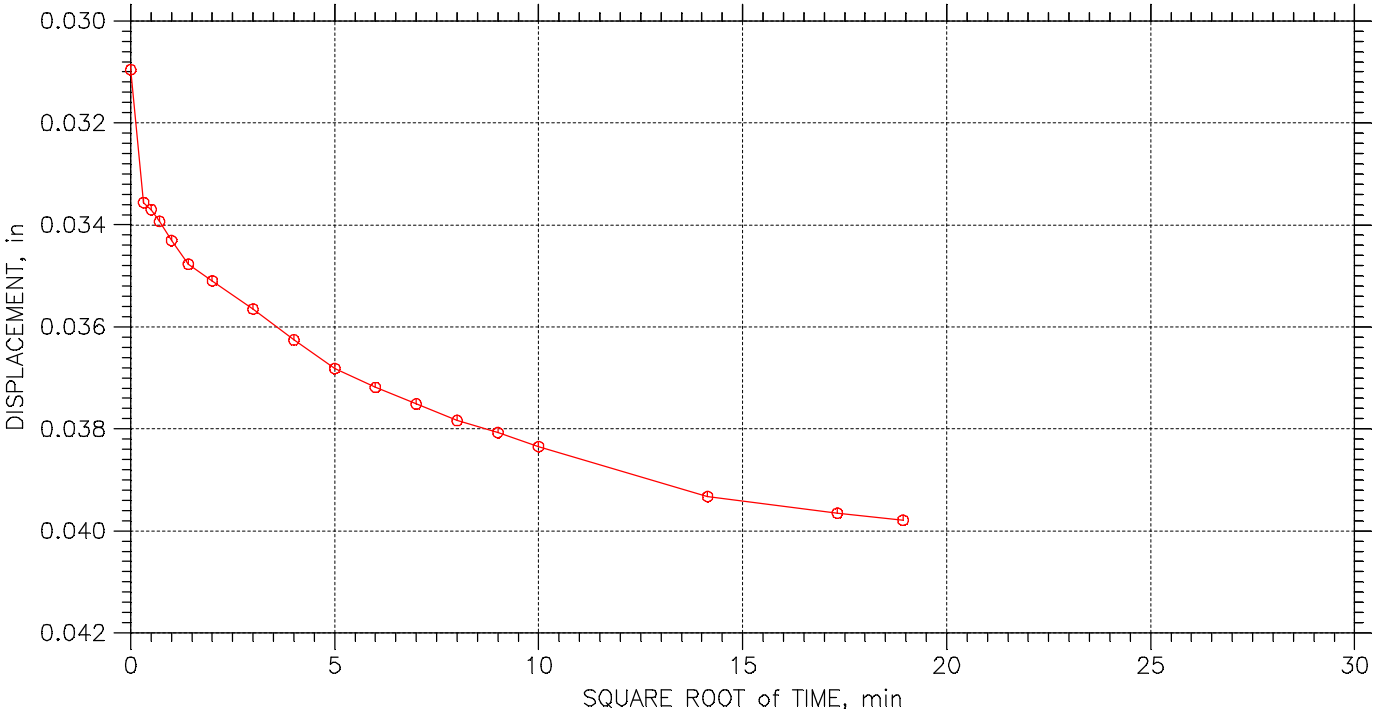
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 23

Stress: 1. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

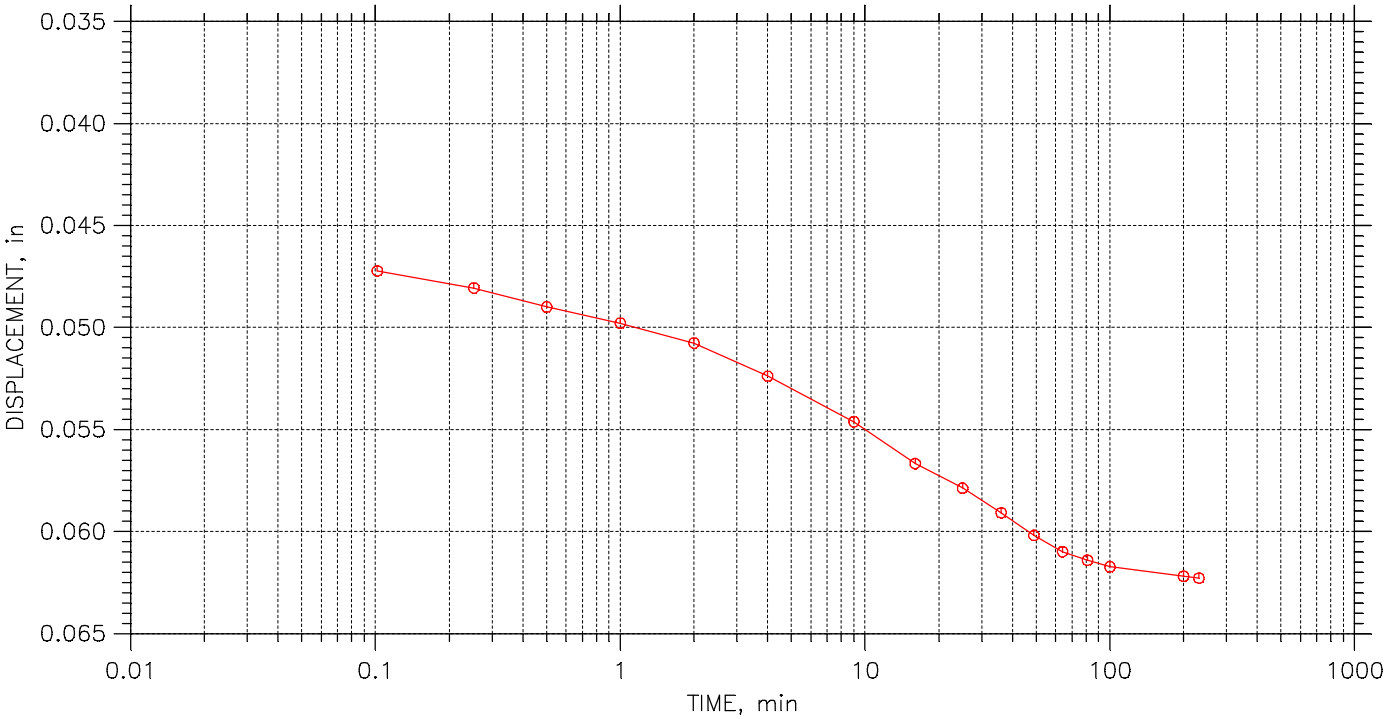
Mon, 28-JAN-2019 12:41:56

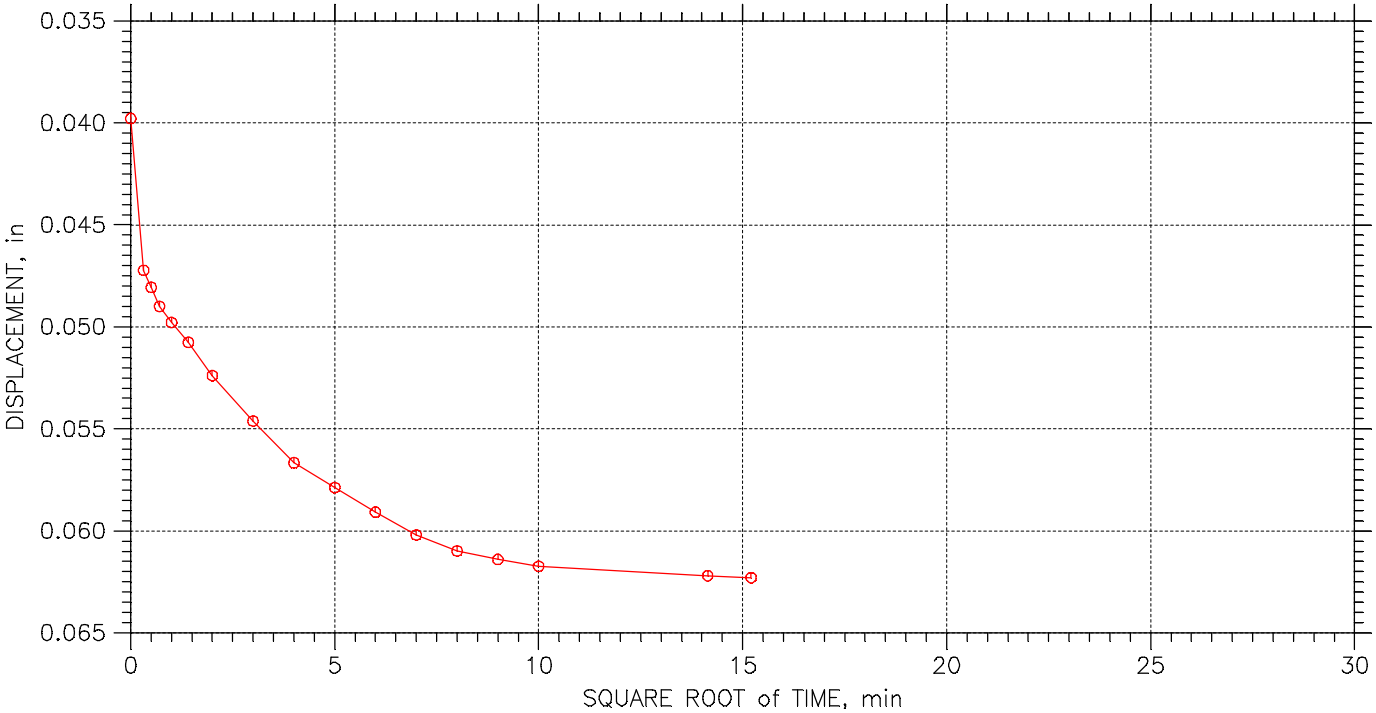
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 23

Stress: 2. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

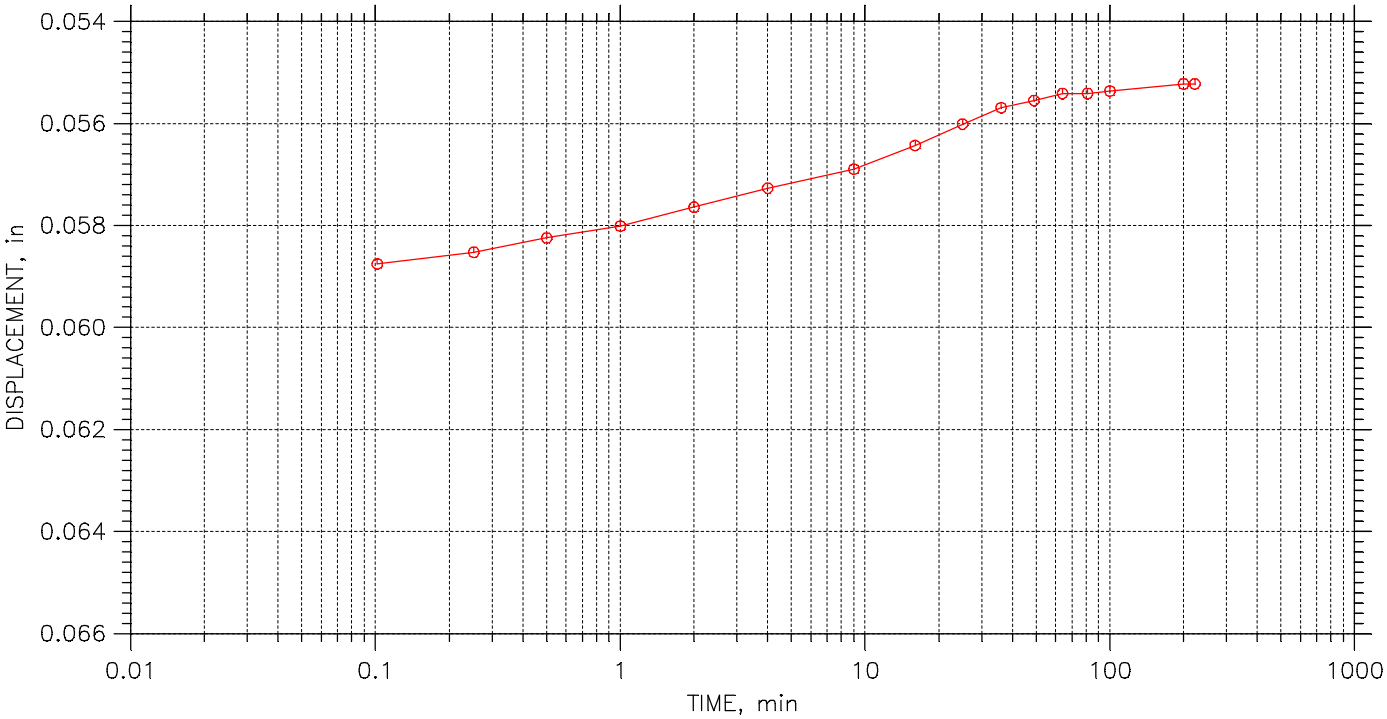
Mon, 28-JAN-2019 12:41:58

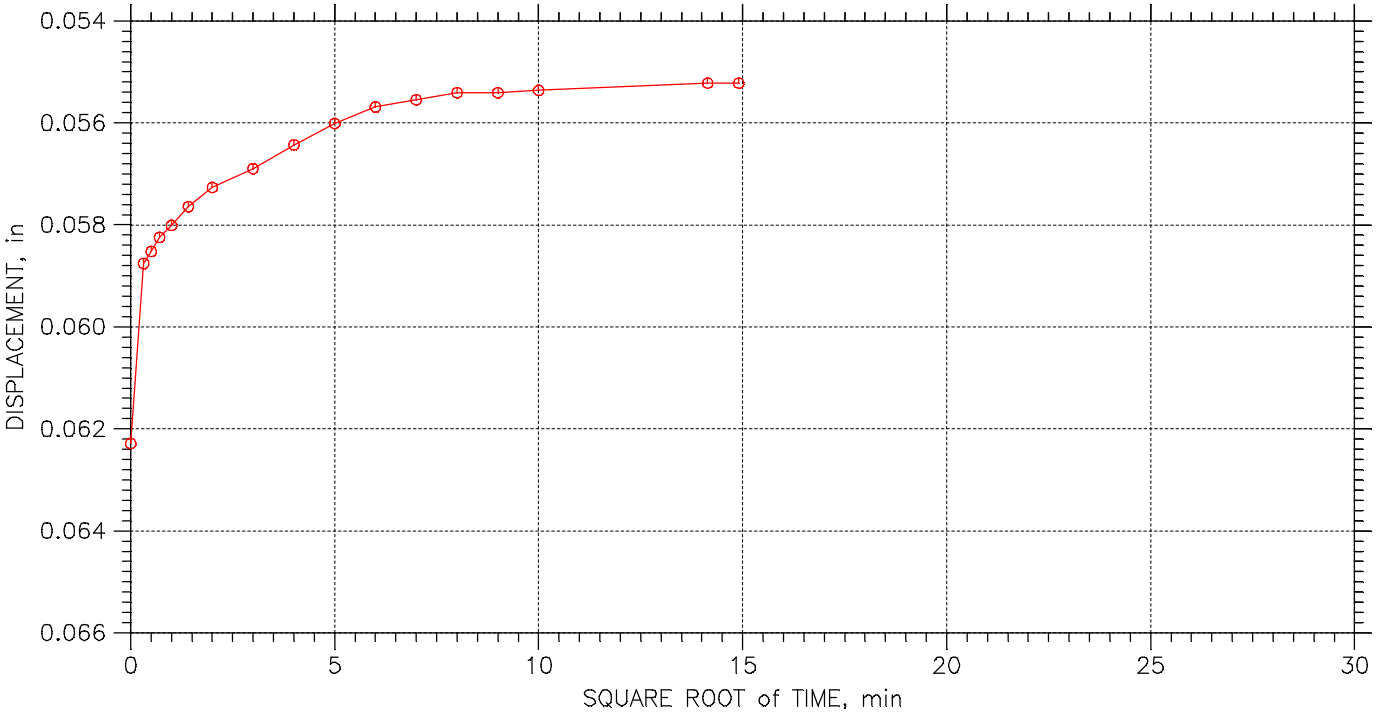
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 23

Stress: 1. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

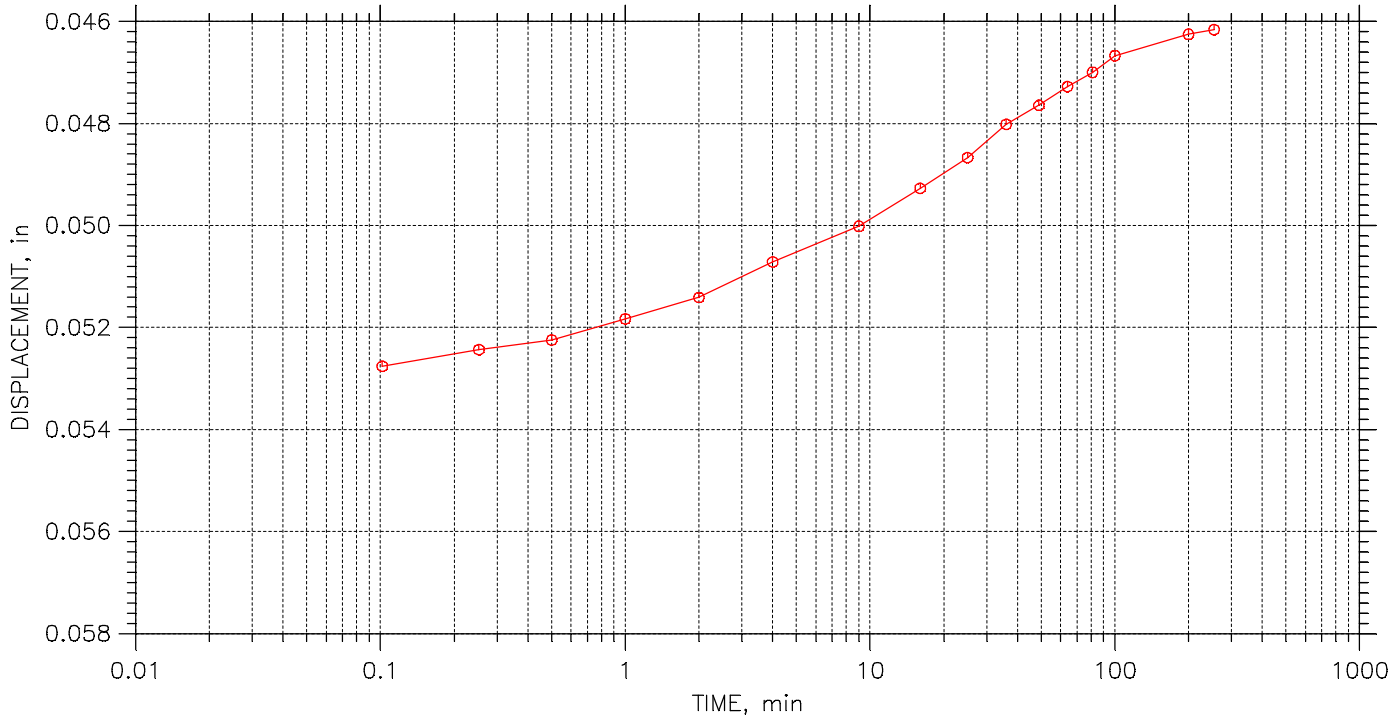
Mon, 28-JAN-2019 12:41:59

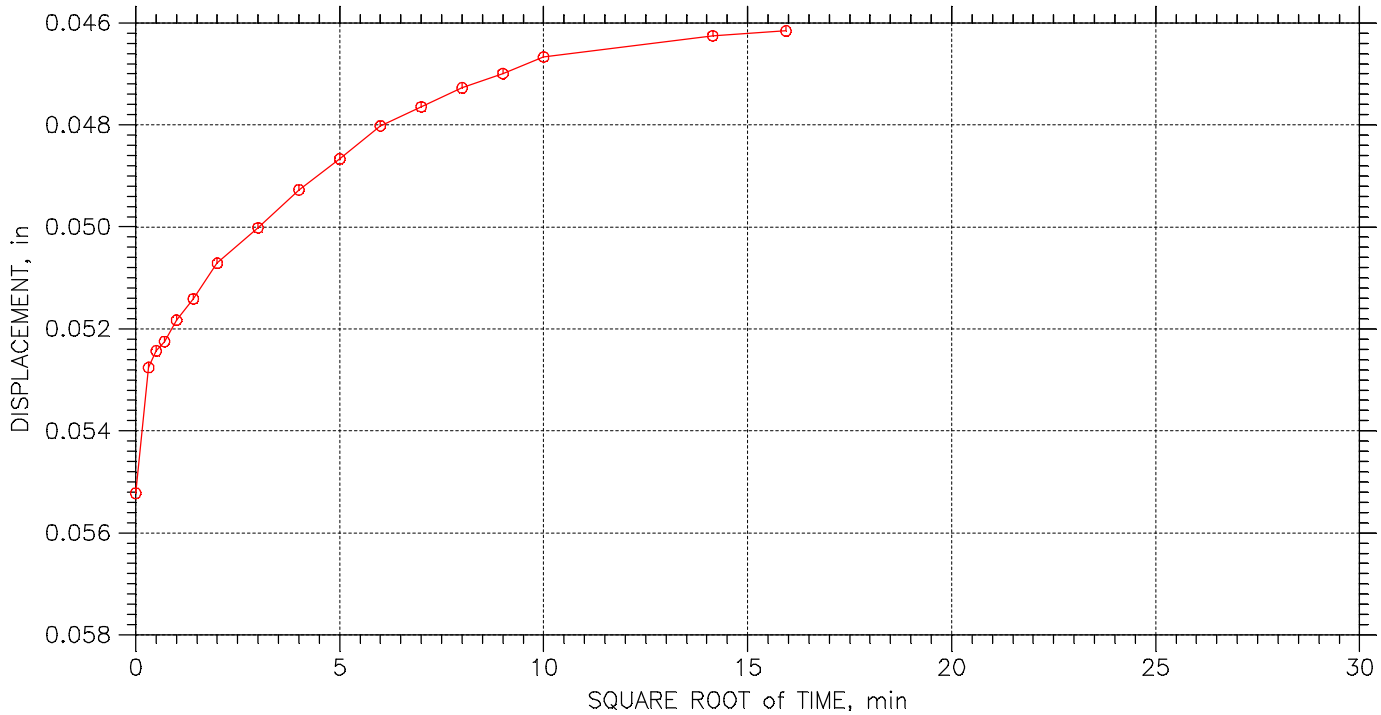
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 23

Stress: 0.5 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

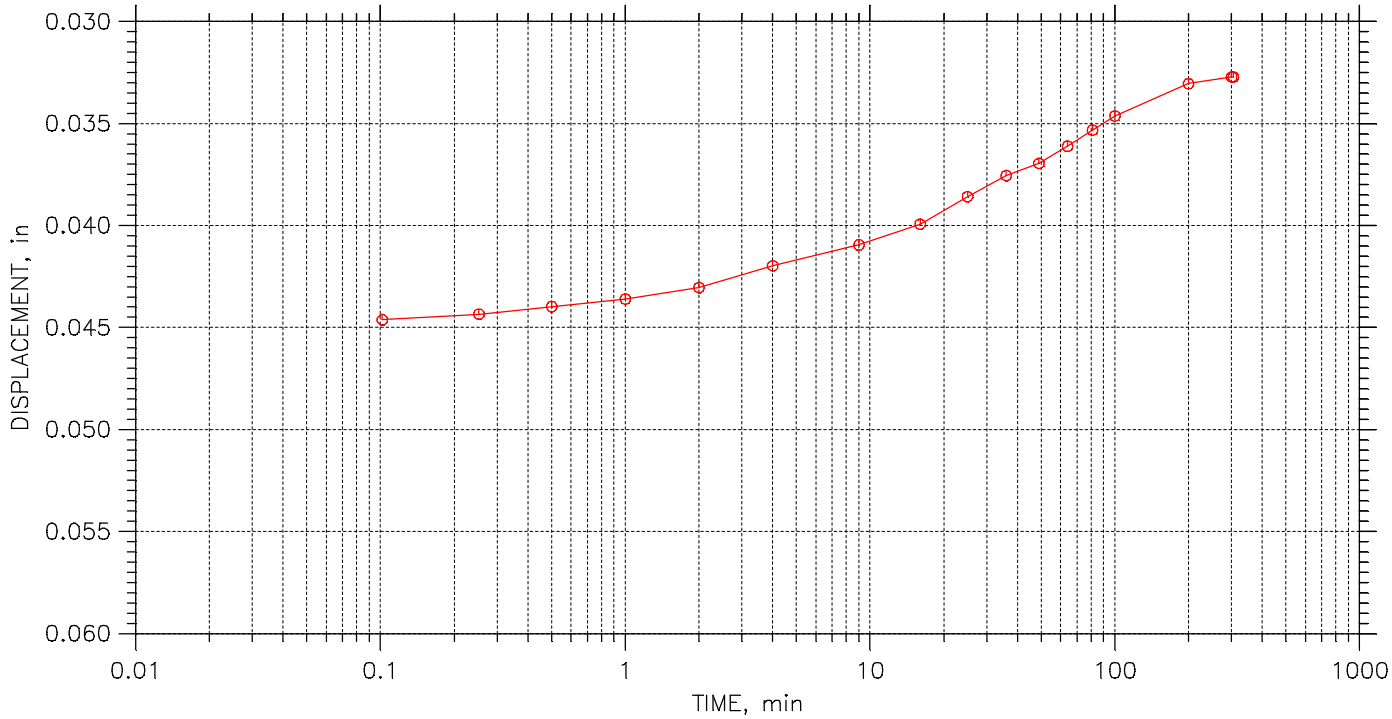
Mon, 28-JAN-2019 12:42:01

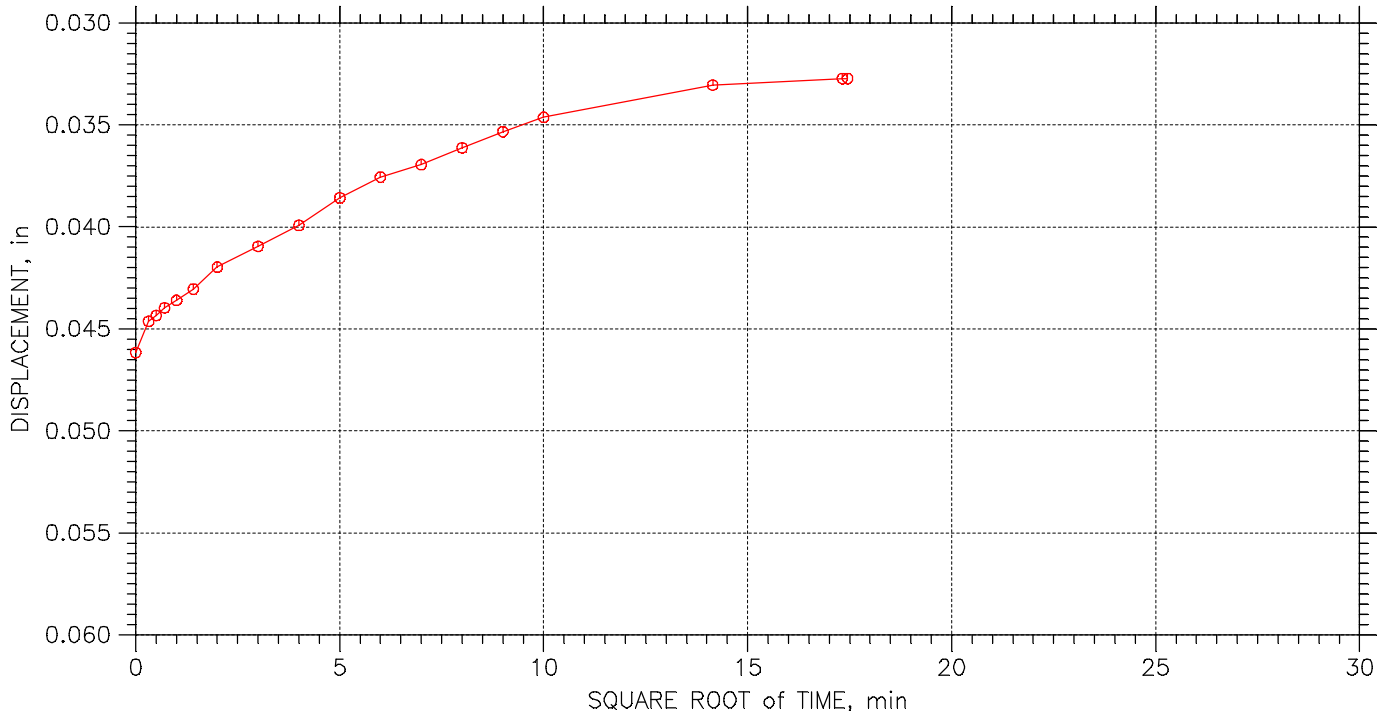
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 23

Stress: 0.125 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

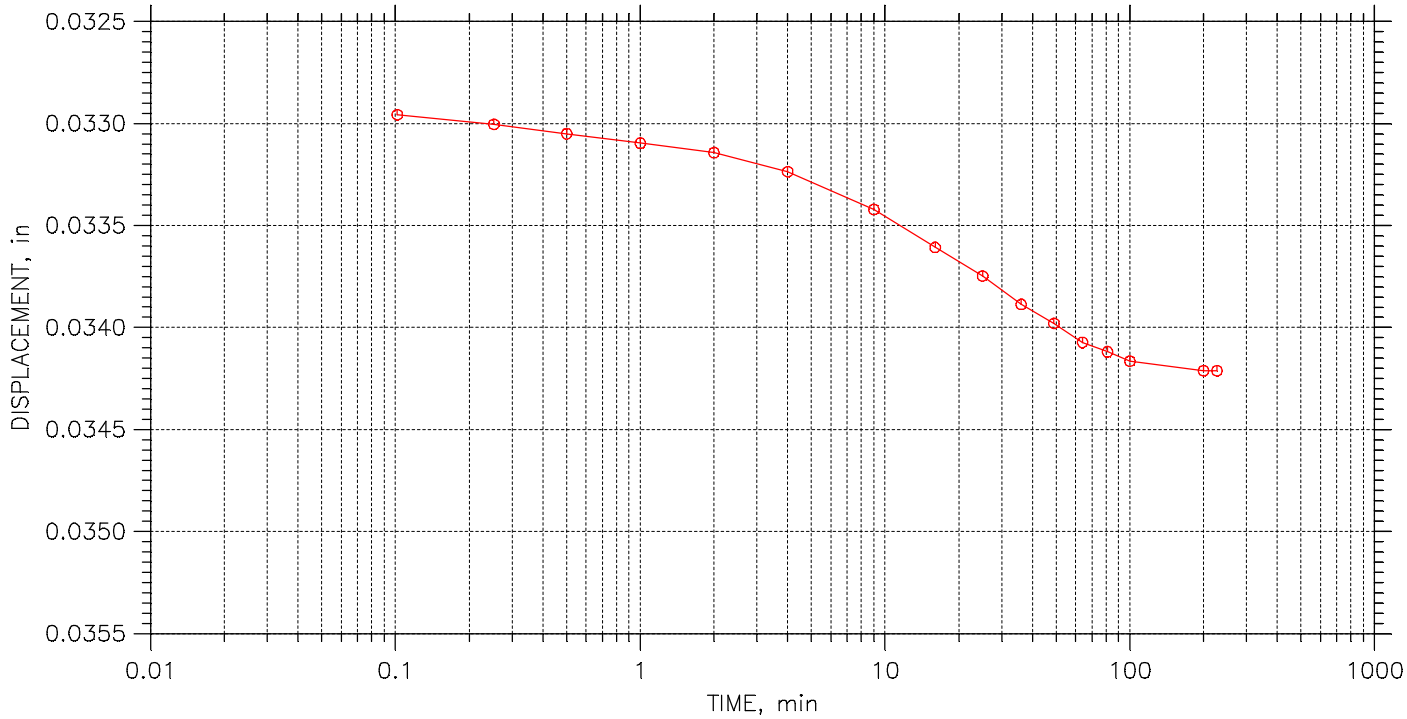
Mon, 28-JAN-2019 12:42:02

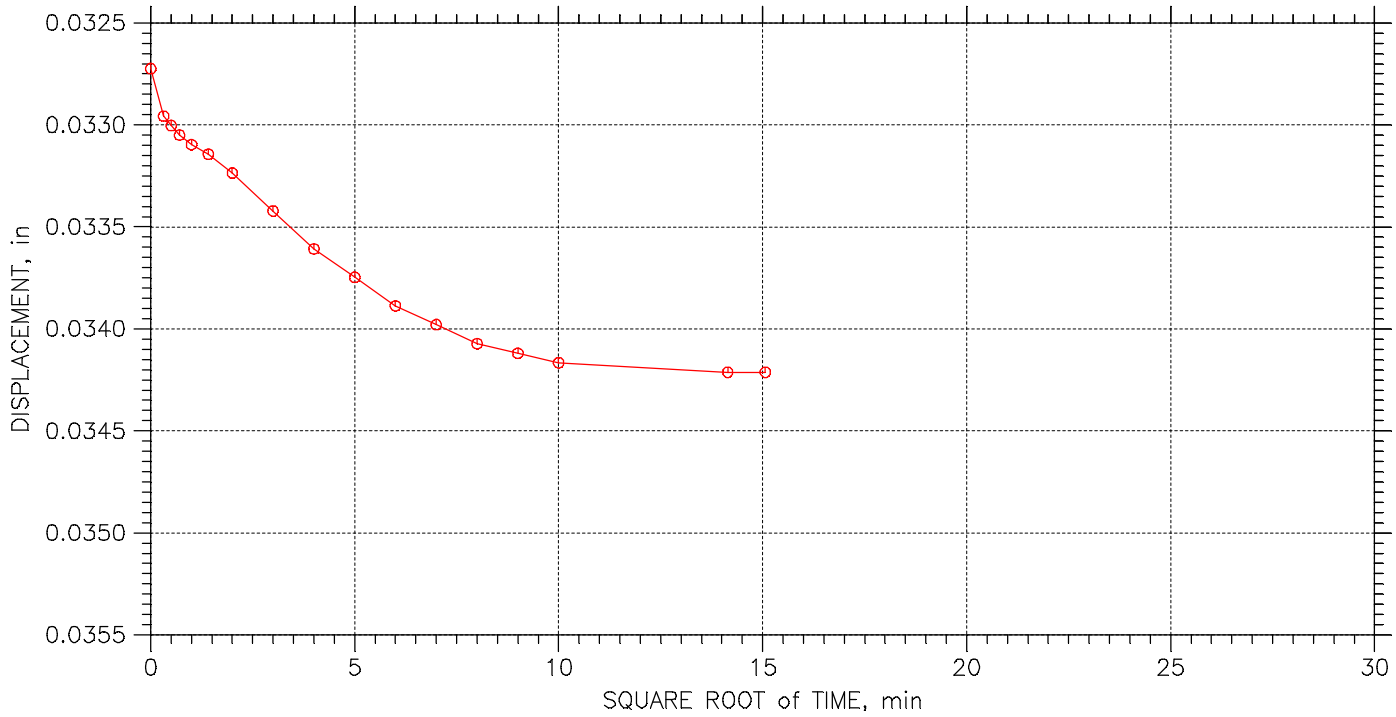
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 23

Stress: 0.25 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

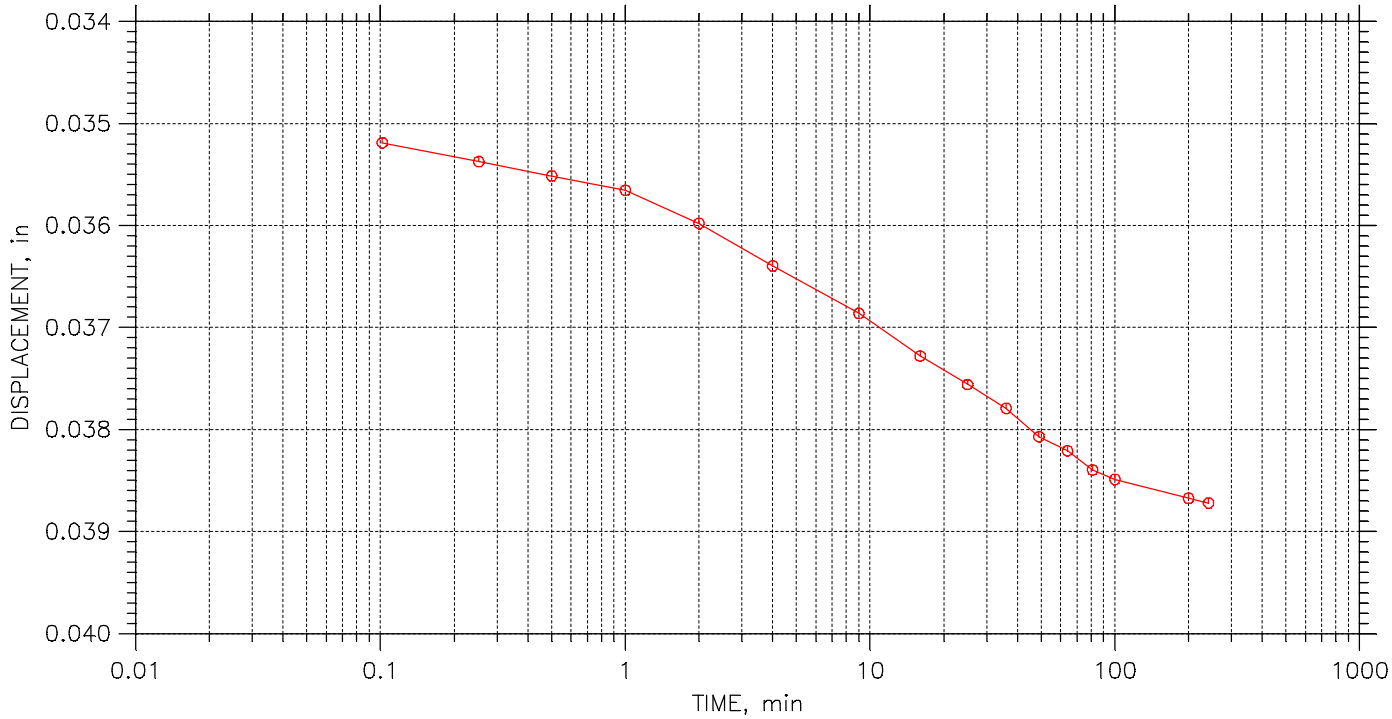
Mon, 28-JAN-2019 12:42:04

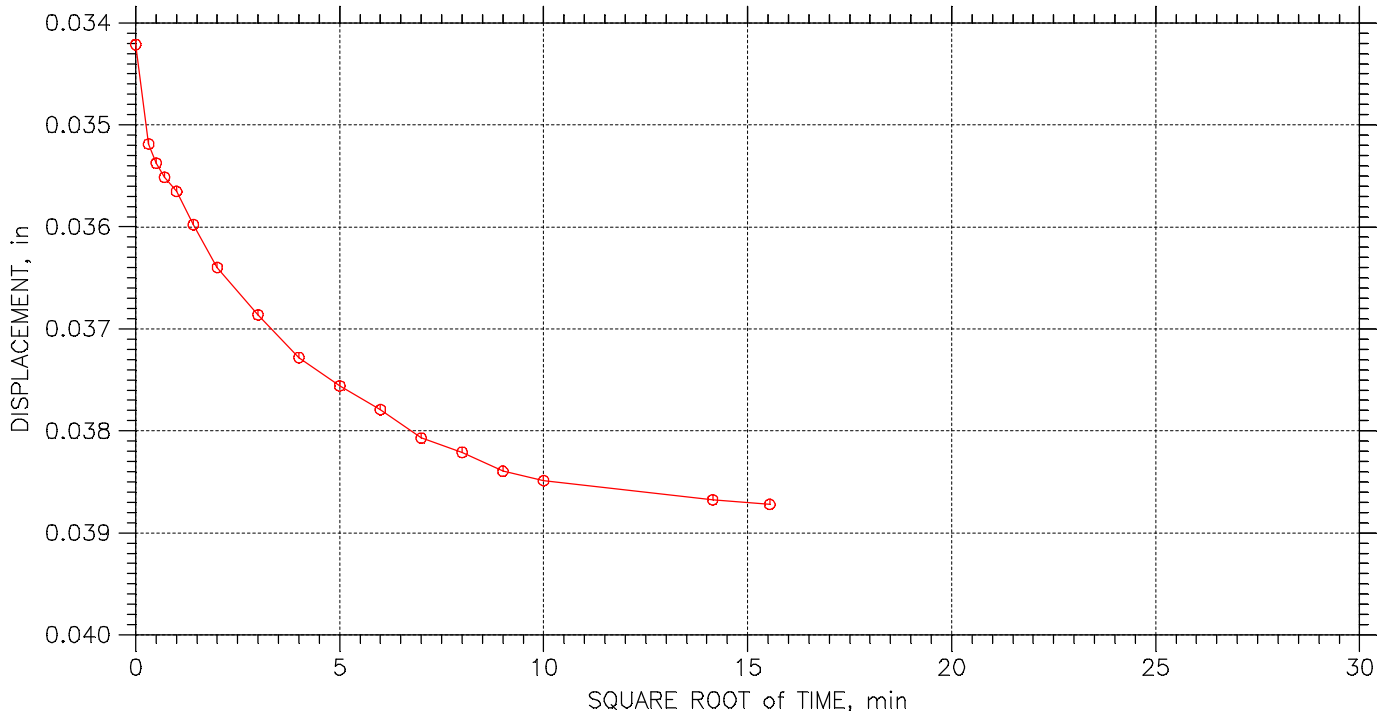
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 23

Stress: 0.5 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

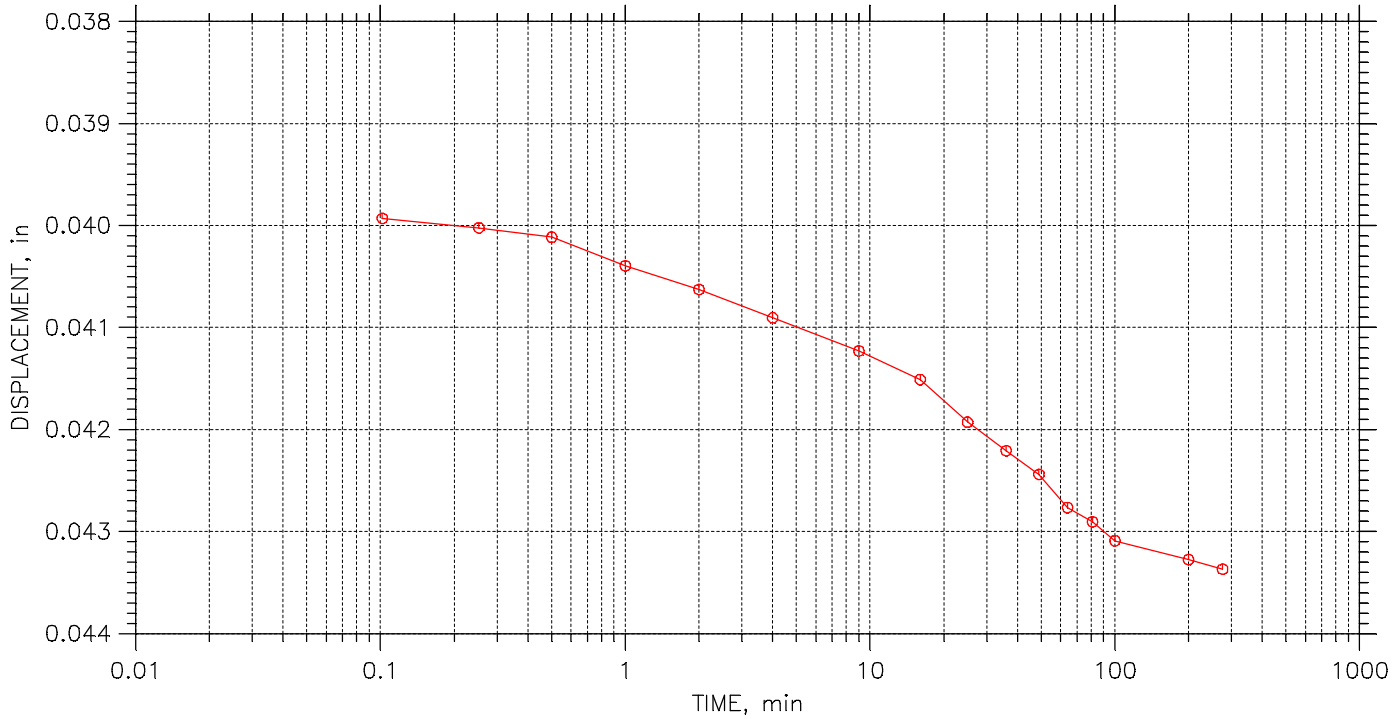
Mon, 28-JAN-2019 12:42:05

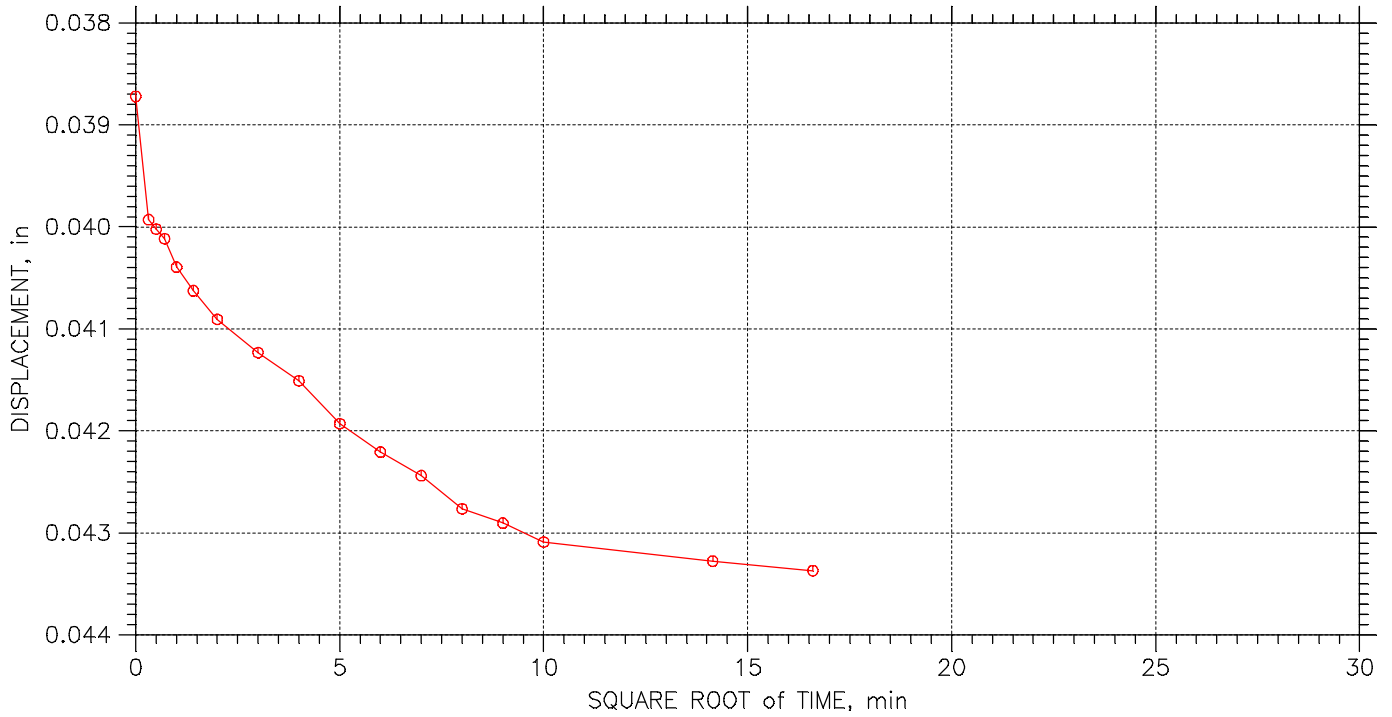
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 23

Stress: 0.75 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

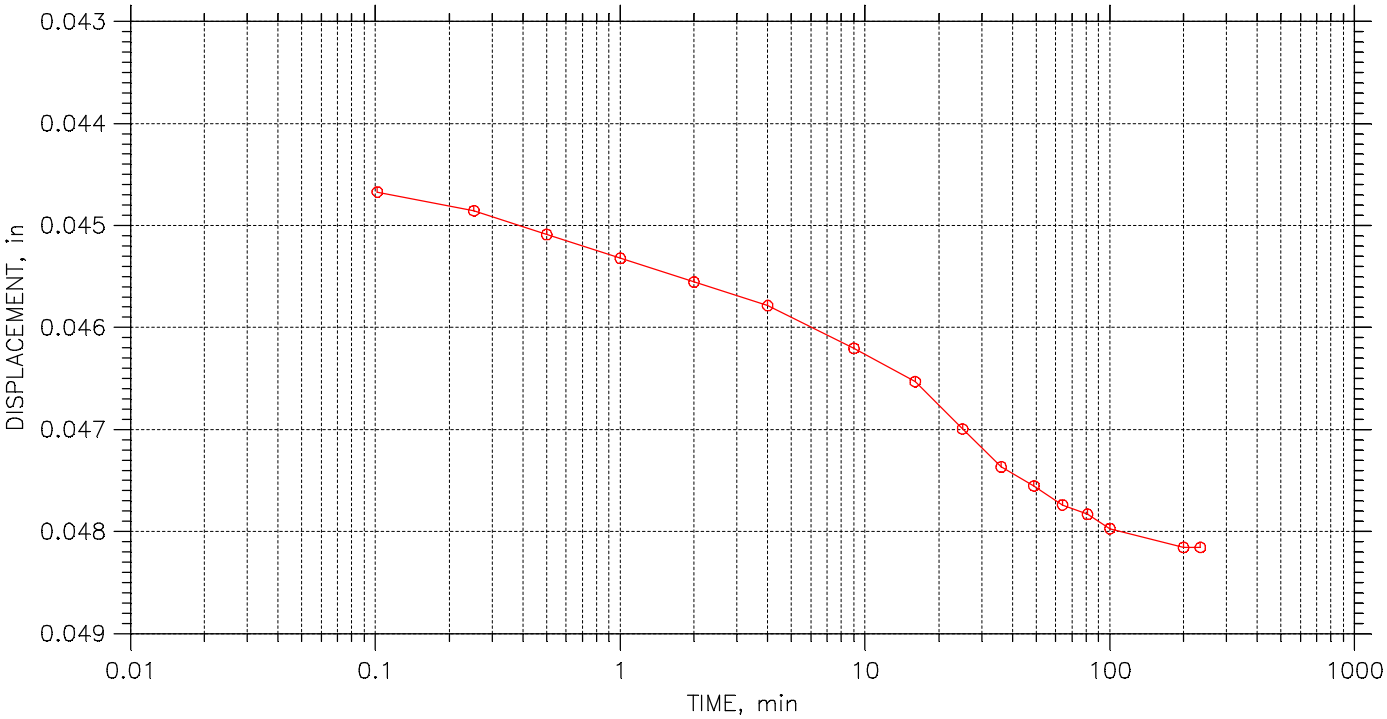
Mon, 28-JAN-2019 12:42:06

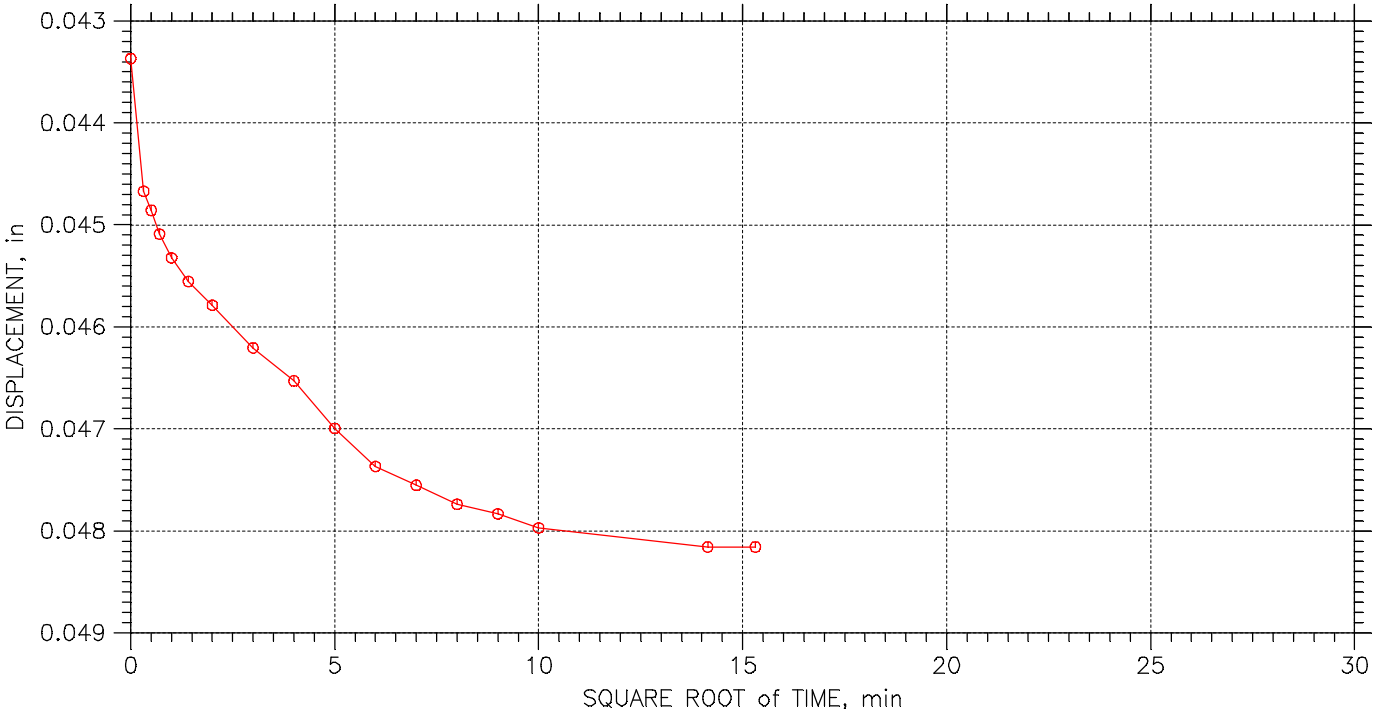
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 23

Stress: 1. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

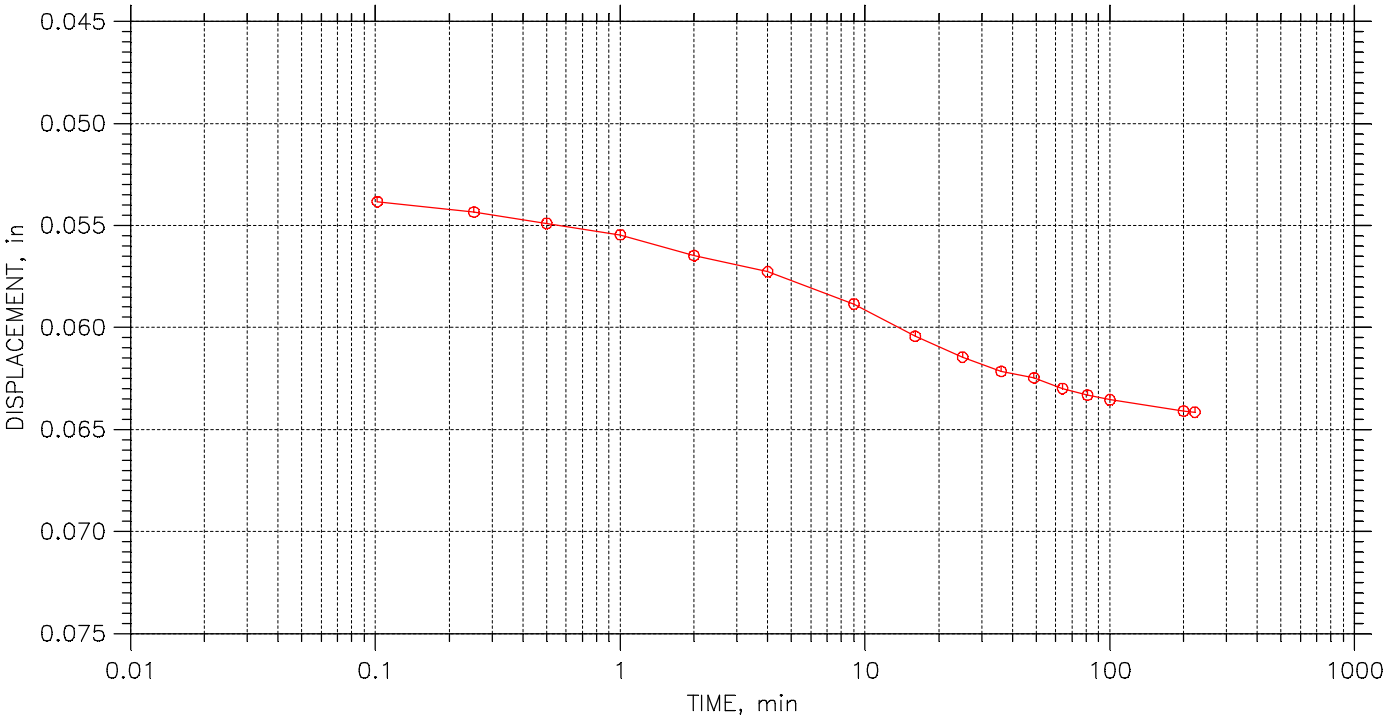
Mon, 28-JAN-2019 12:42:08

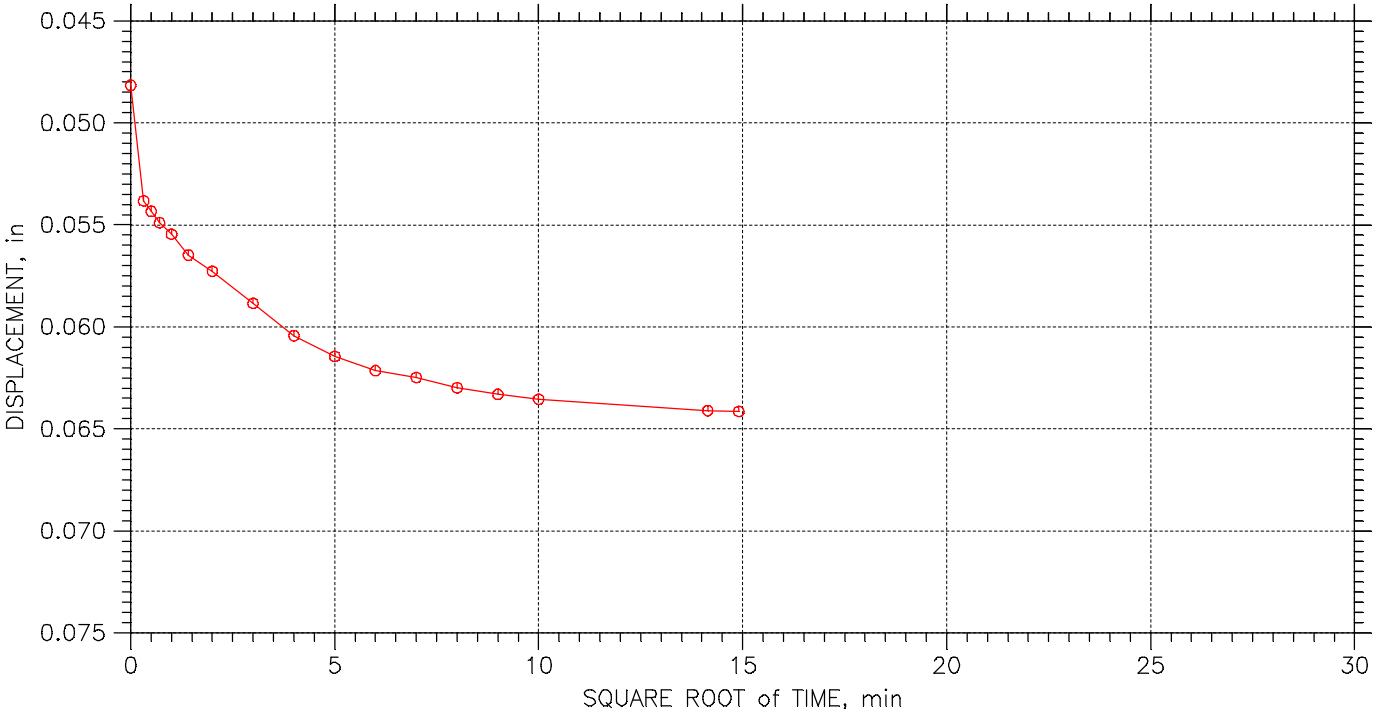
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 23

Stress: 2. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

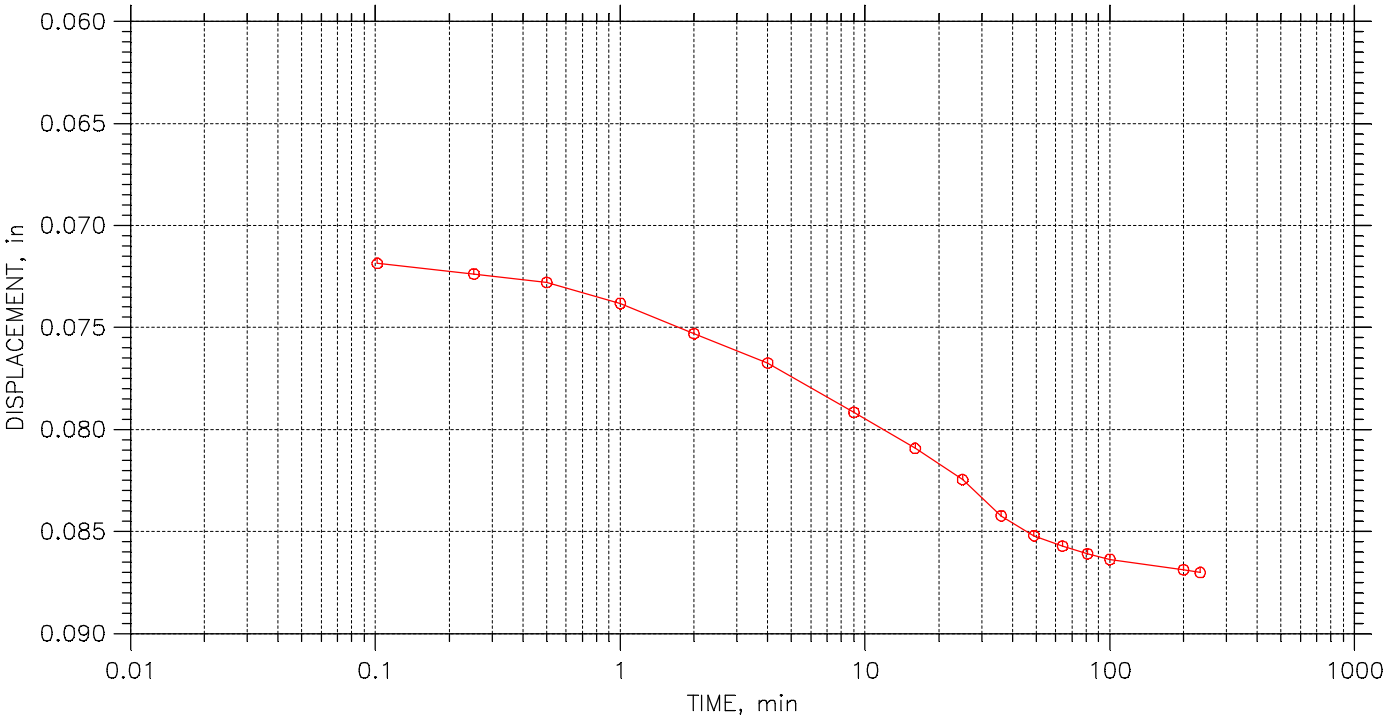
Mon, 28-JAN-2019 12:42:09

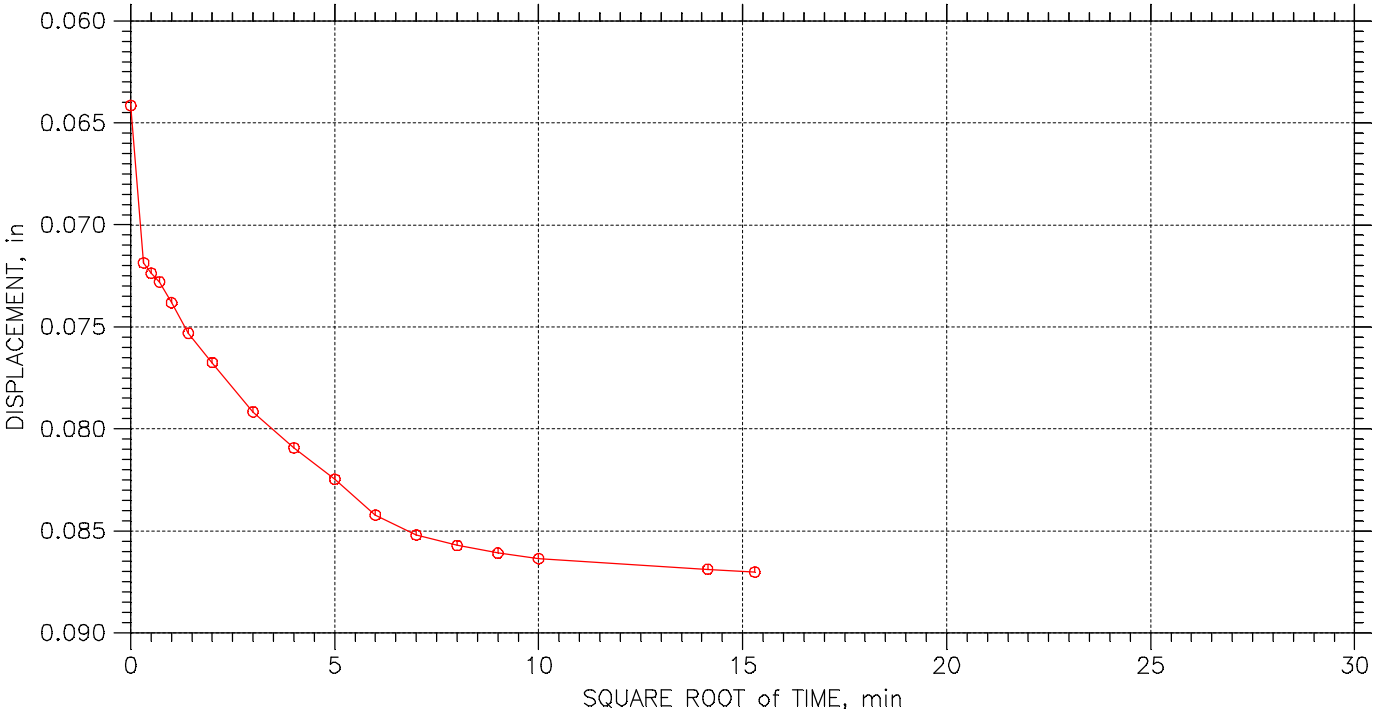
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 23

Stress: 4. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

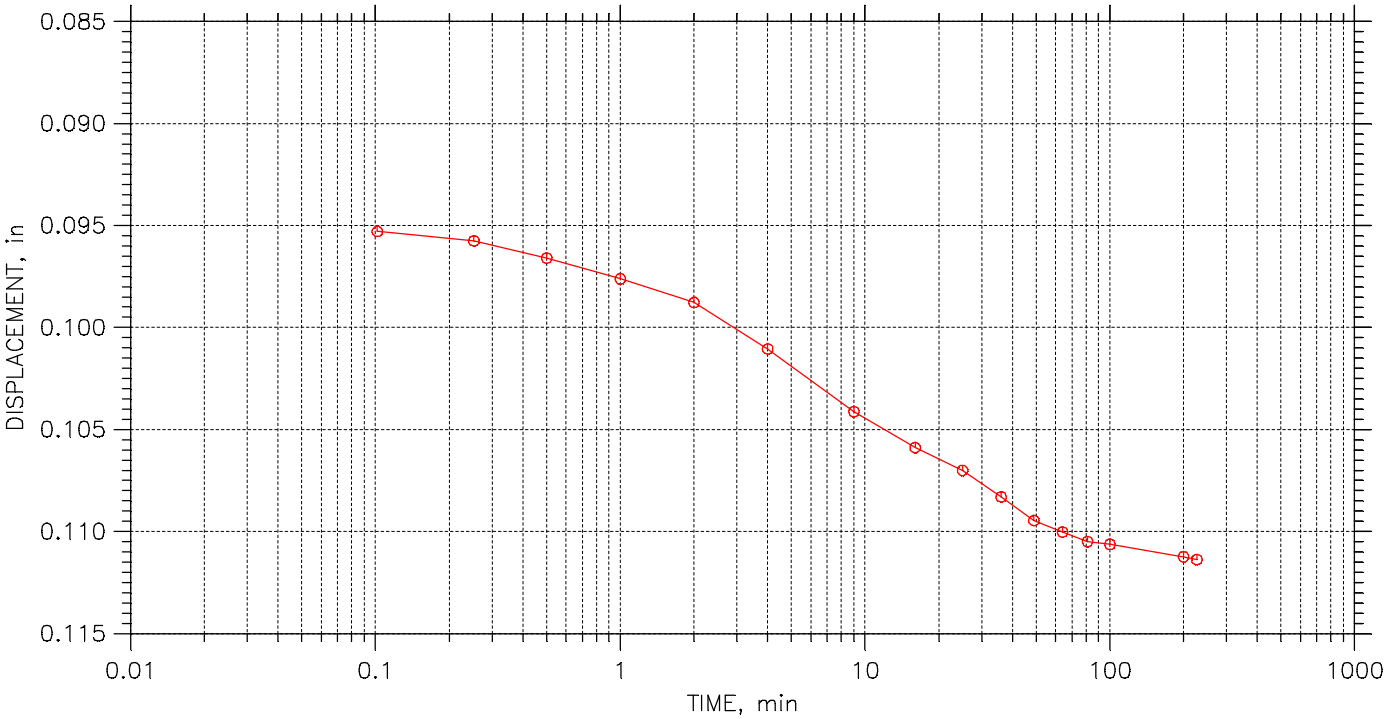
Mon, 28-JAN-2019 12:42:10

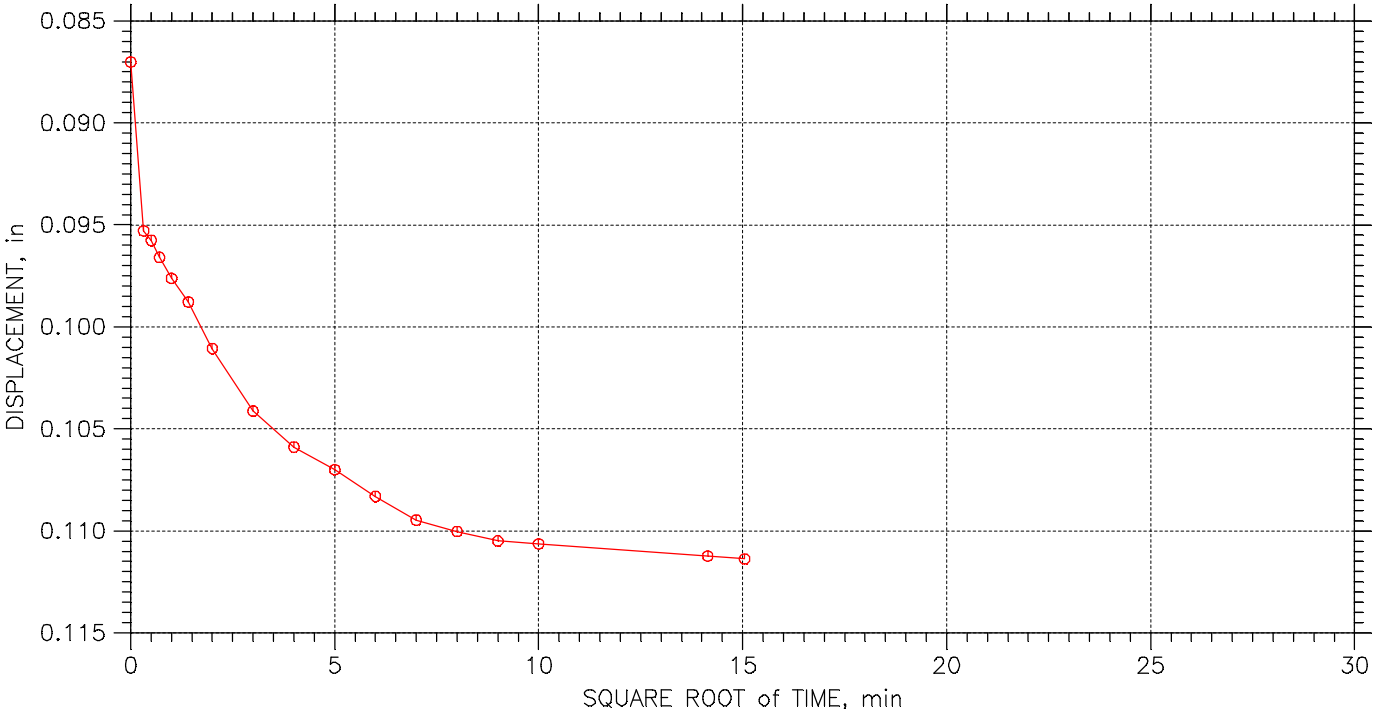
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 23

Stress: 8. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

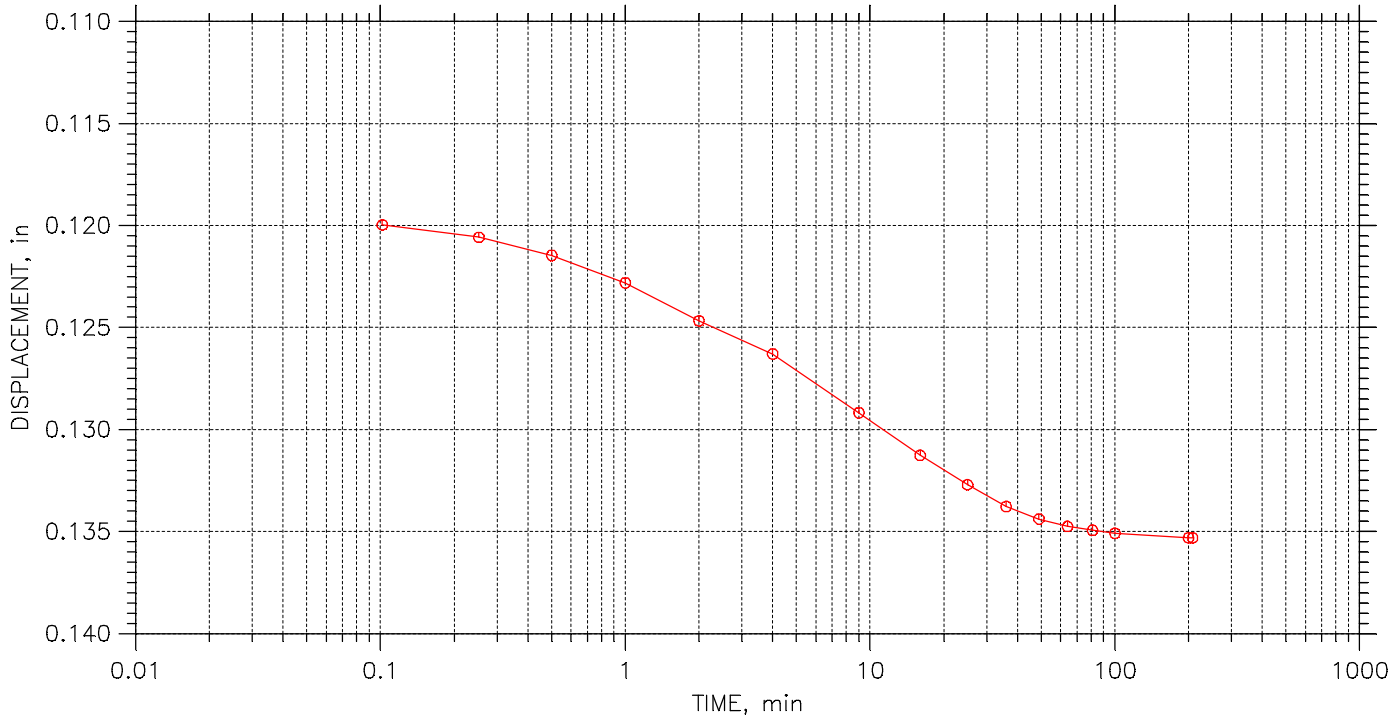
Mon, 28-JAN-2019 12:42:12

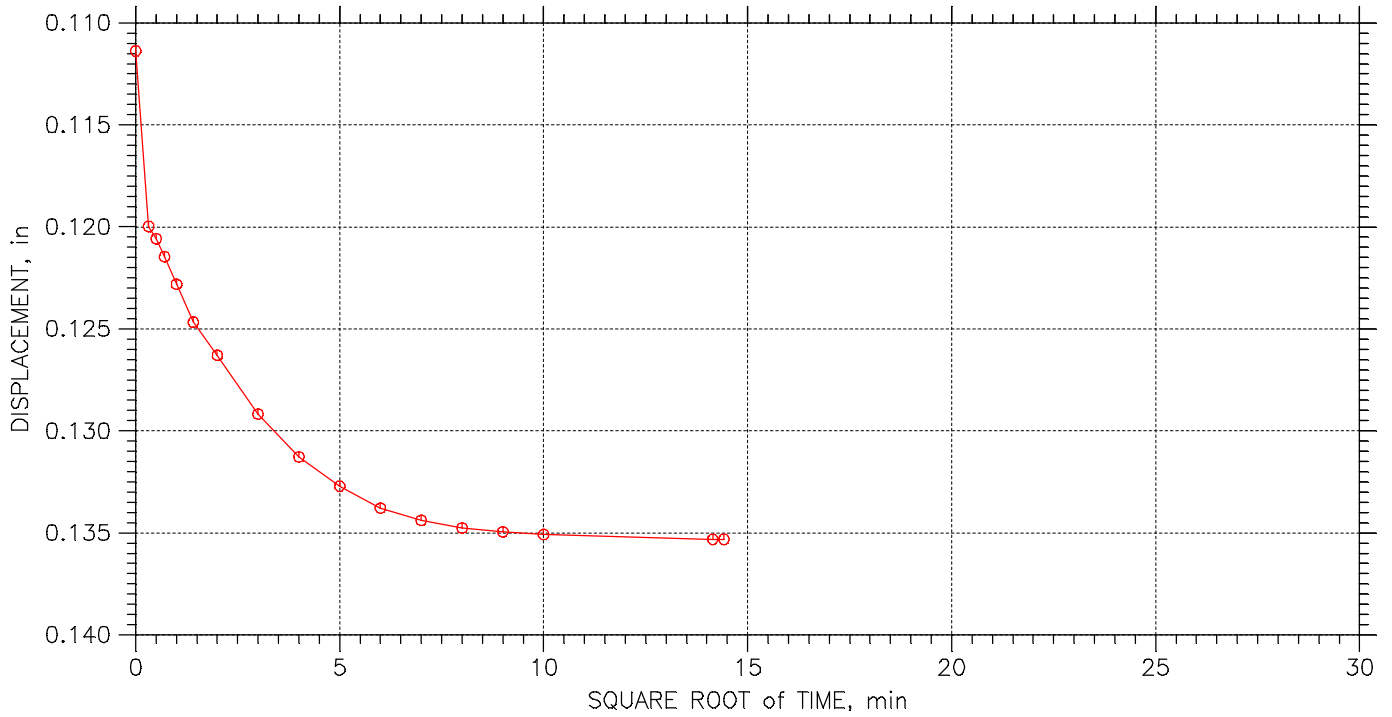
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 23

Stress: 16. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

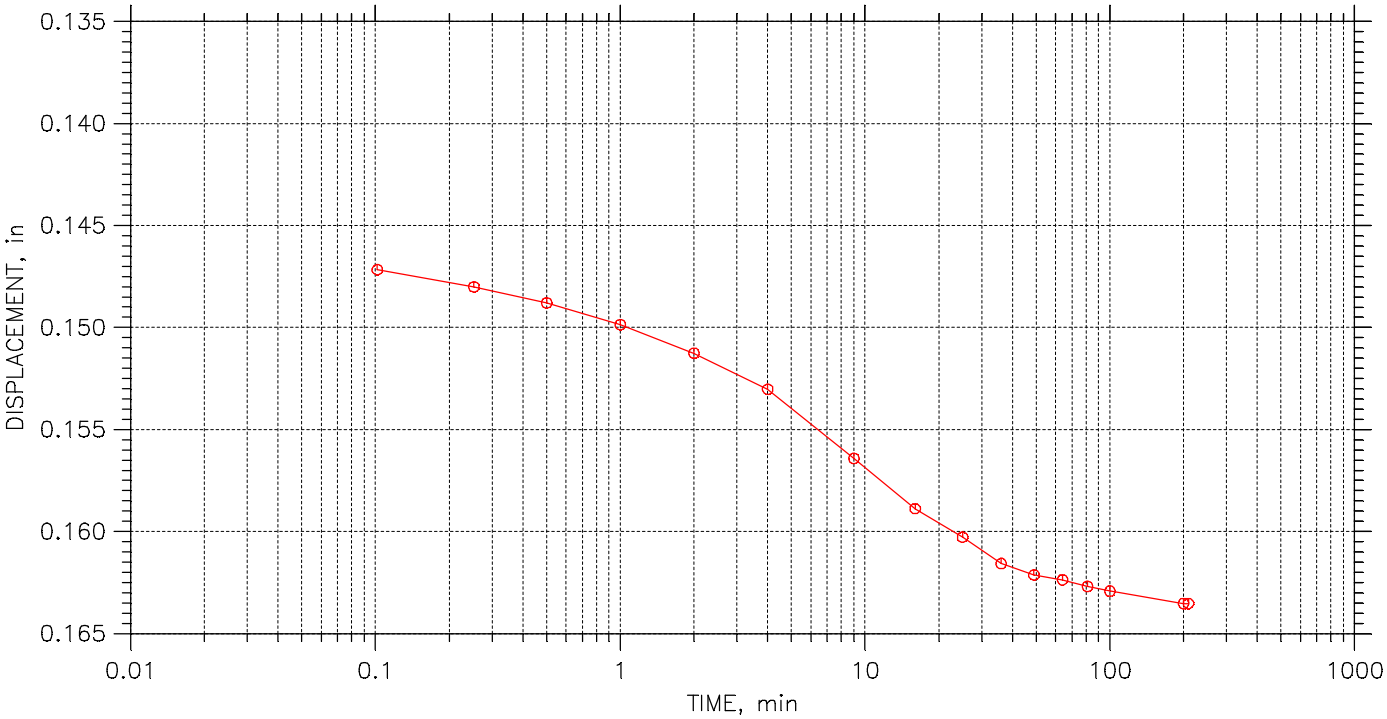
Mon, 28-JAN-2019 12:42:13

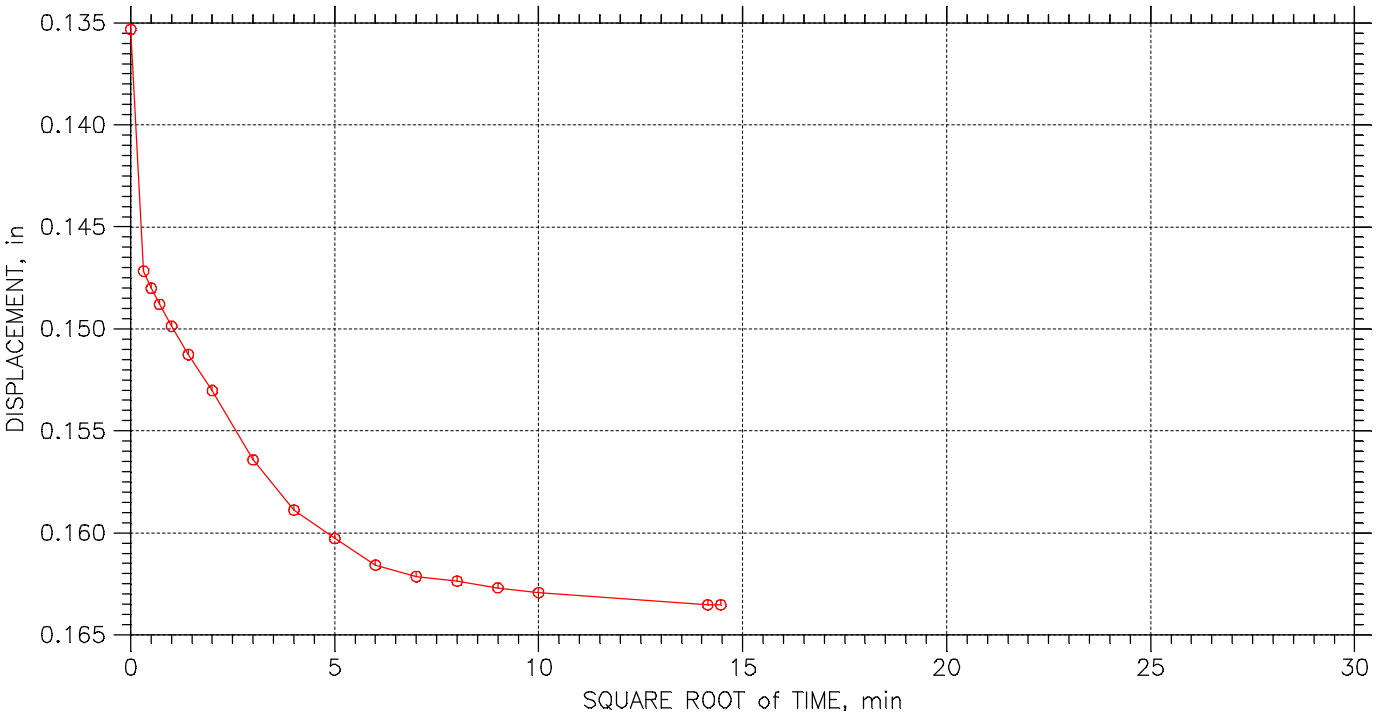
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 23

Stress: 32. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

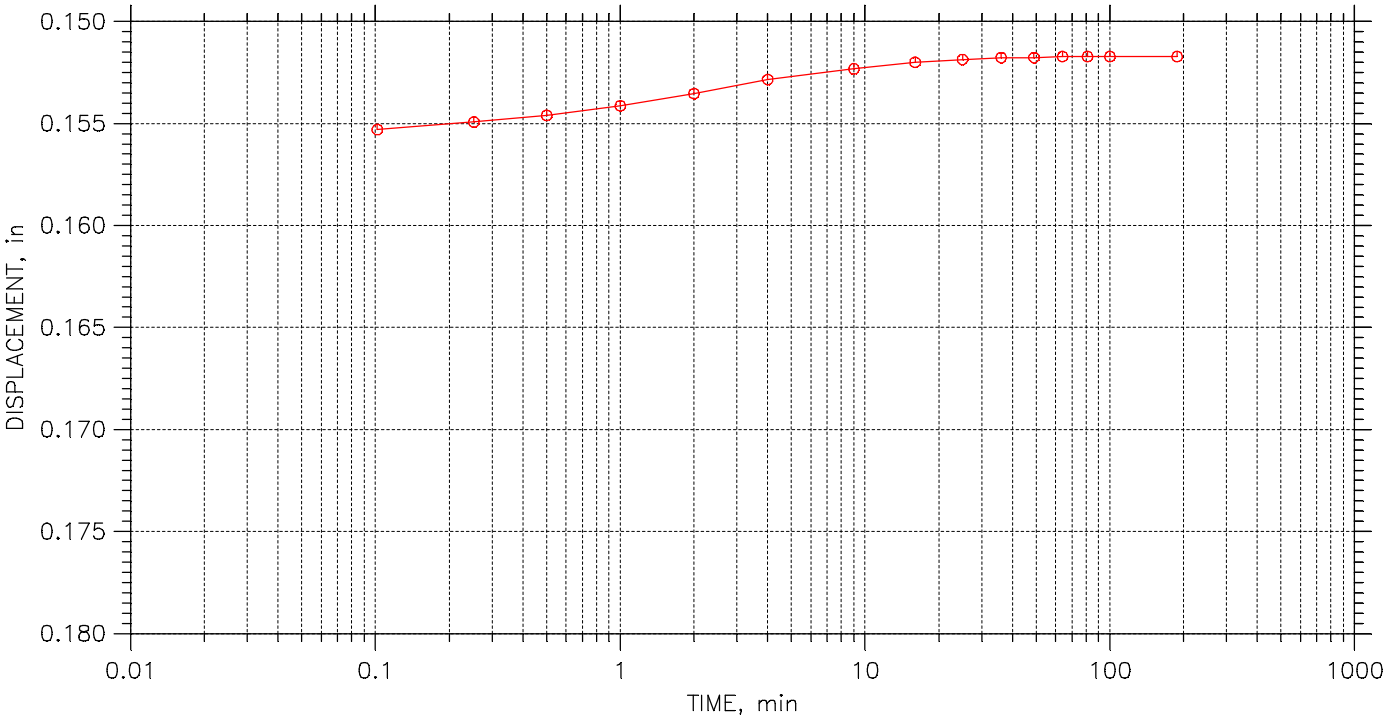
Mon, 28-JAN-2019 12:42:14

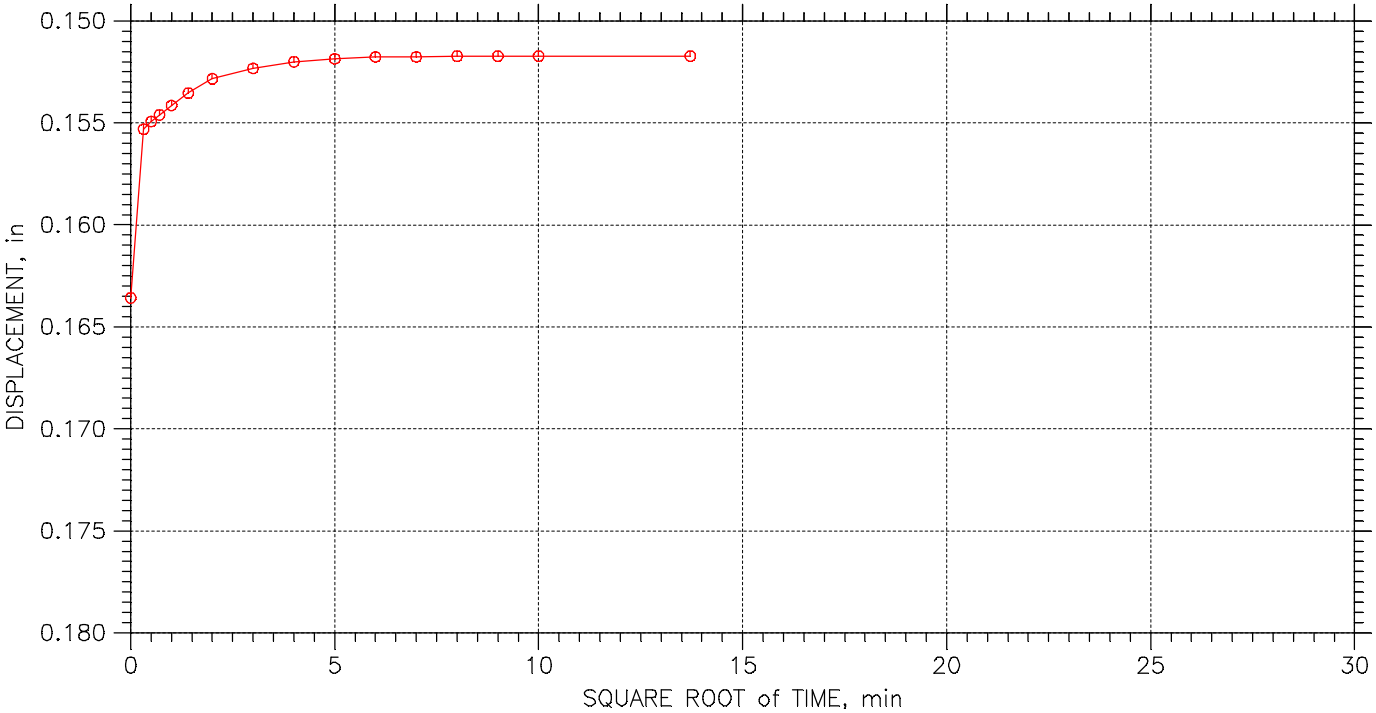
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 23

Stress: 16. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

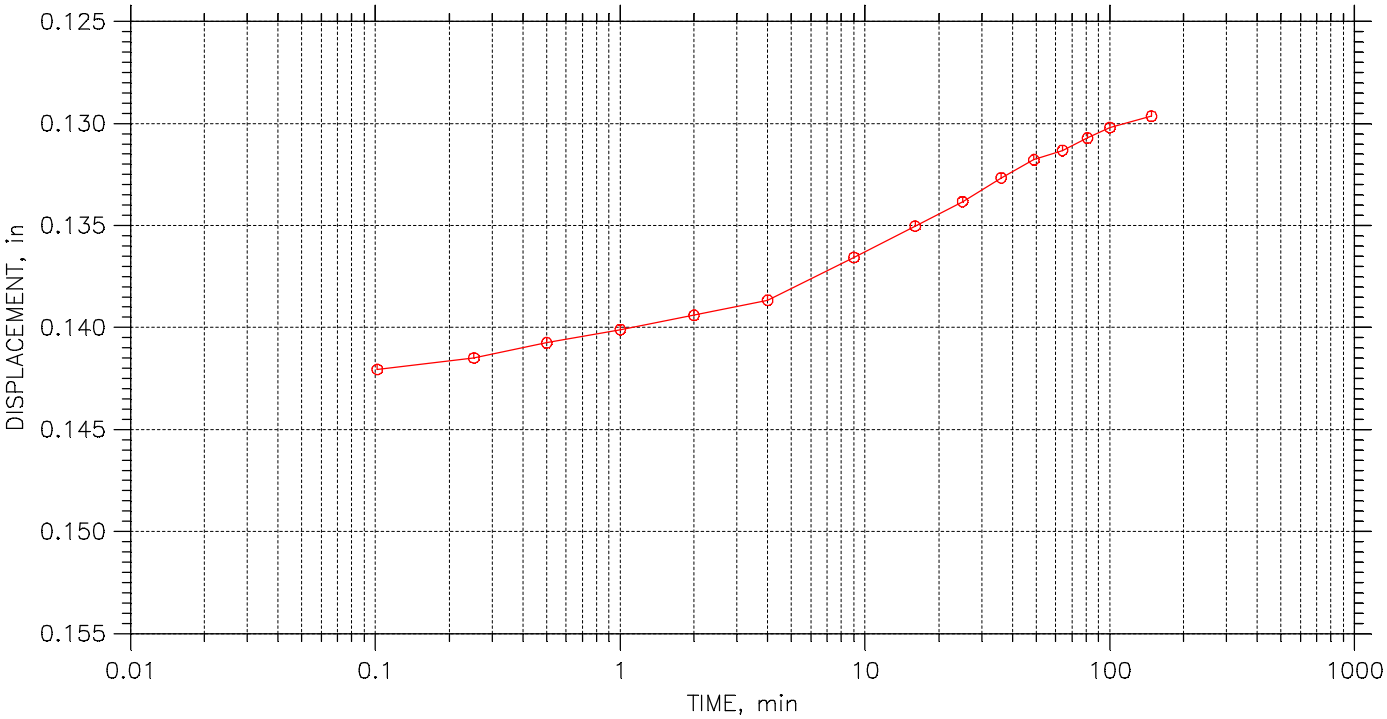
Mon, 28-JAN-2019 12:42:16

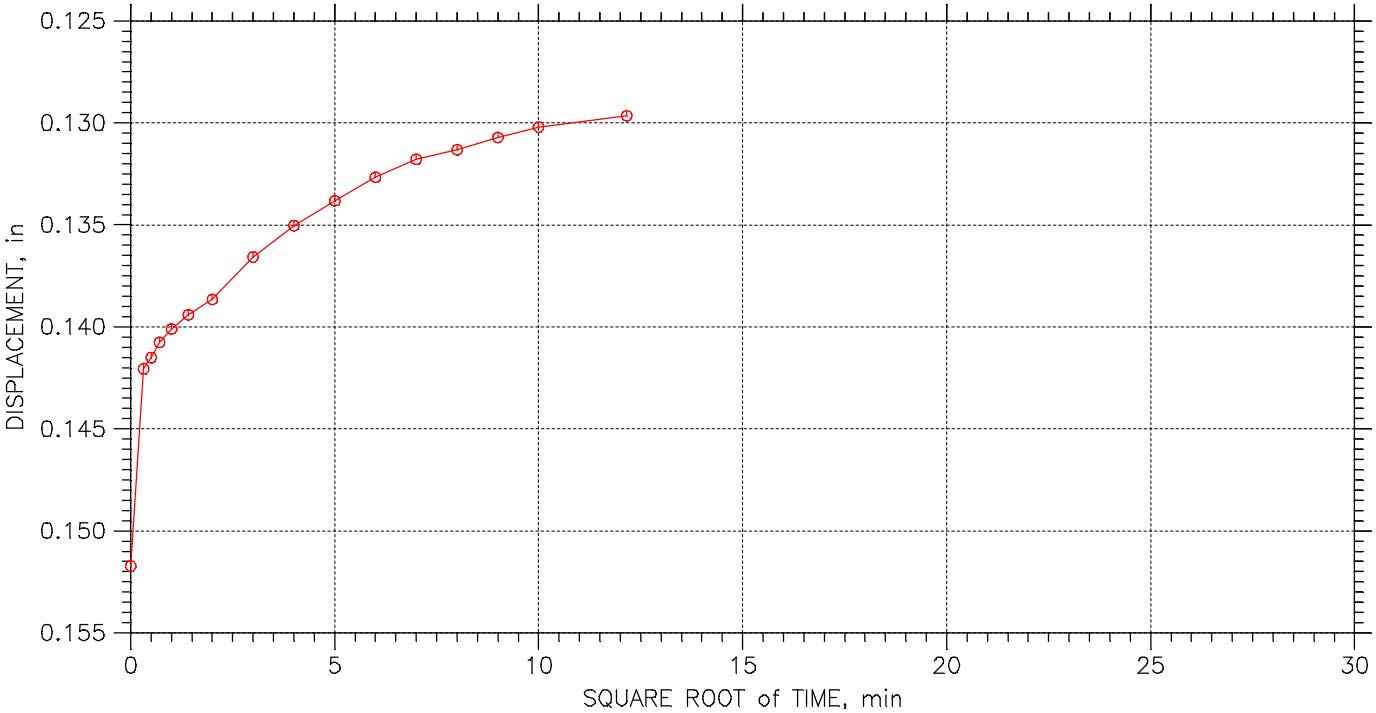
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 23

Stress: 4. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

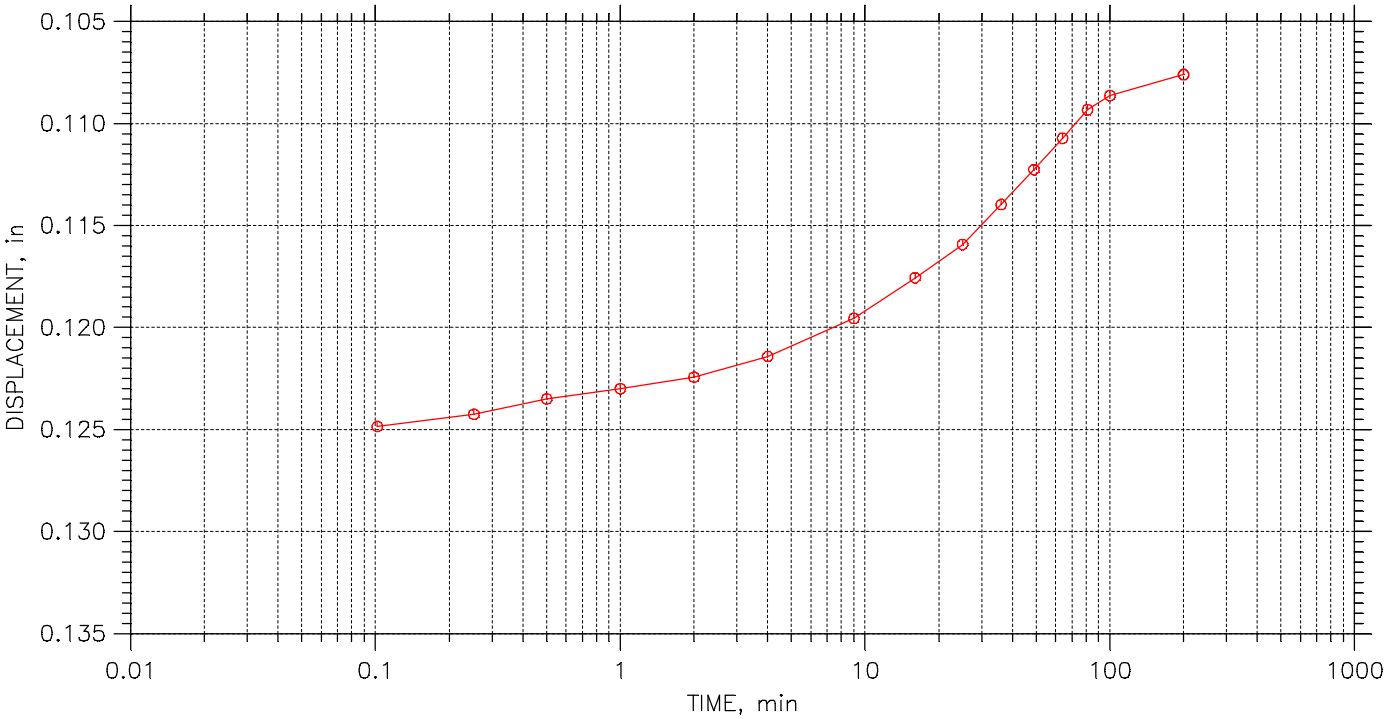
Mon, 28-JAN-2019 12:42:17

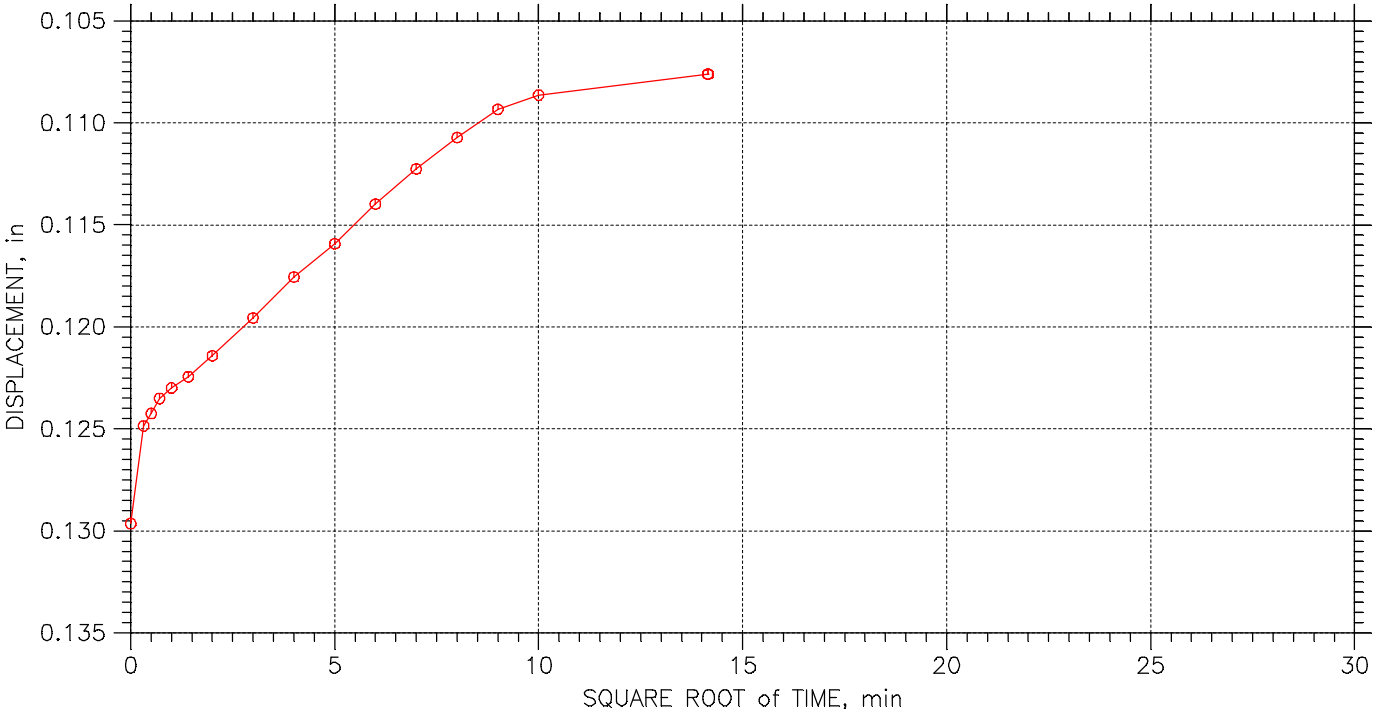
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 23

Stress: 1. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0'' ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

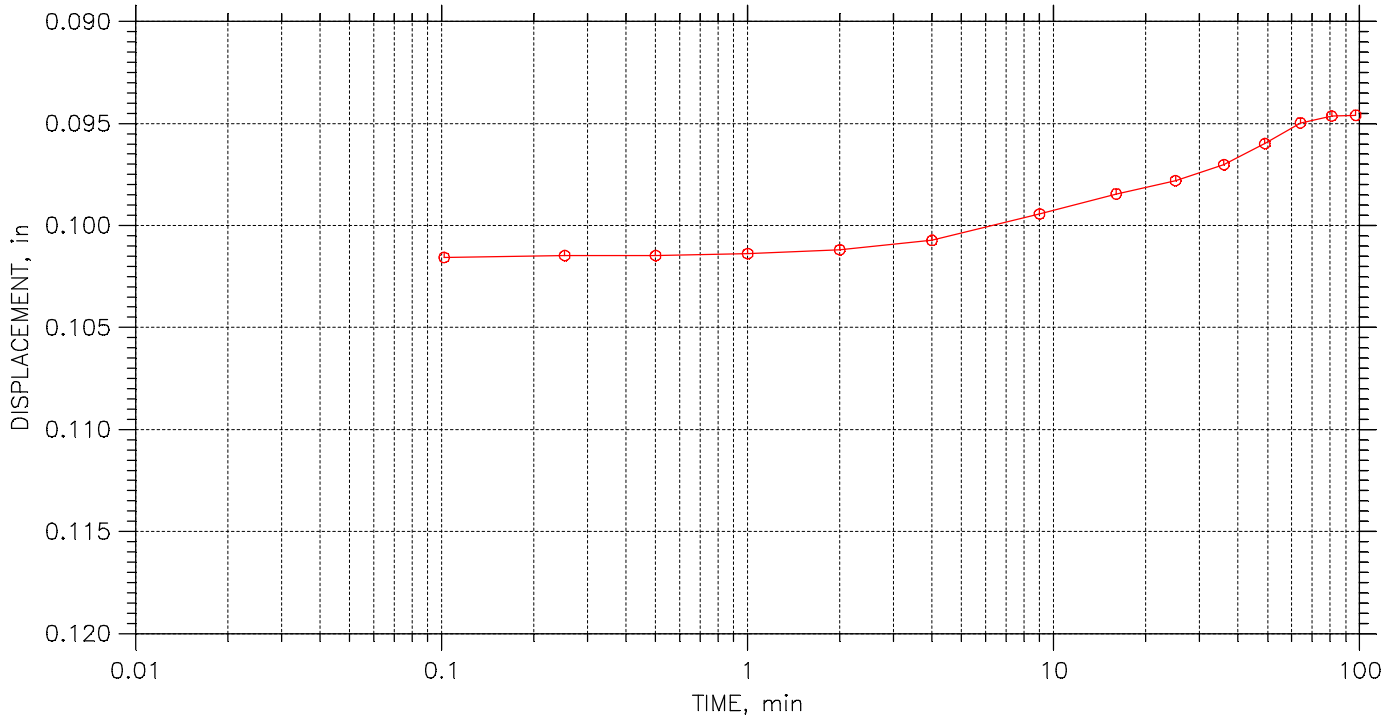
Mon, 28-JAN-2019 12:42:18

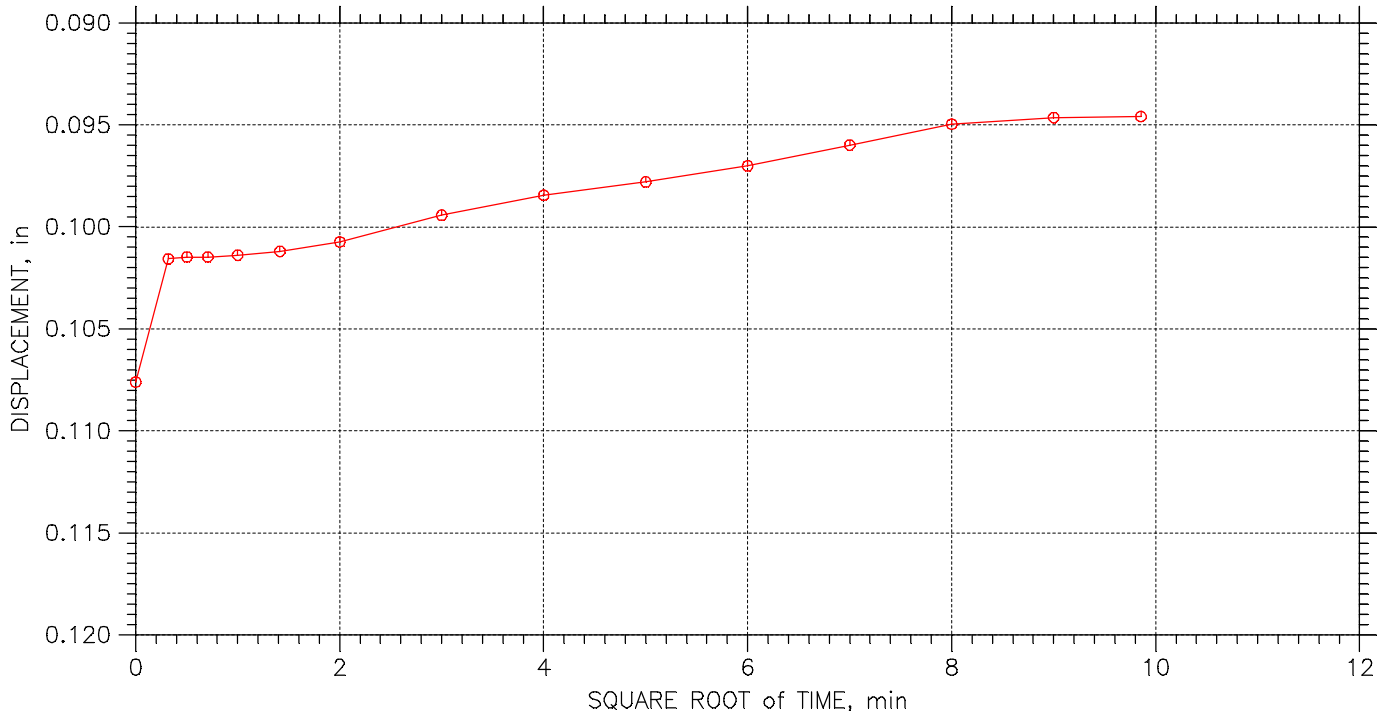
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 23

Stress: 0.5 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

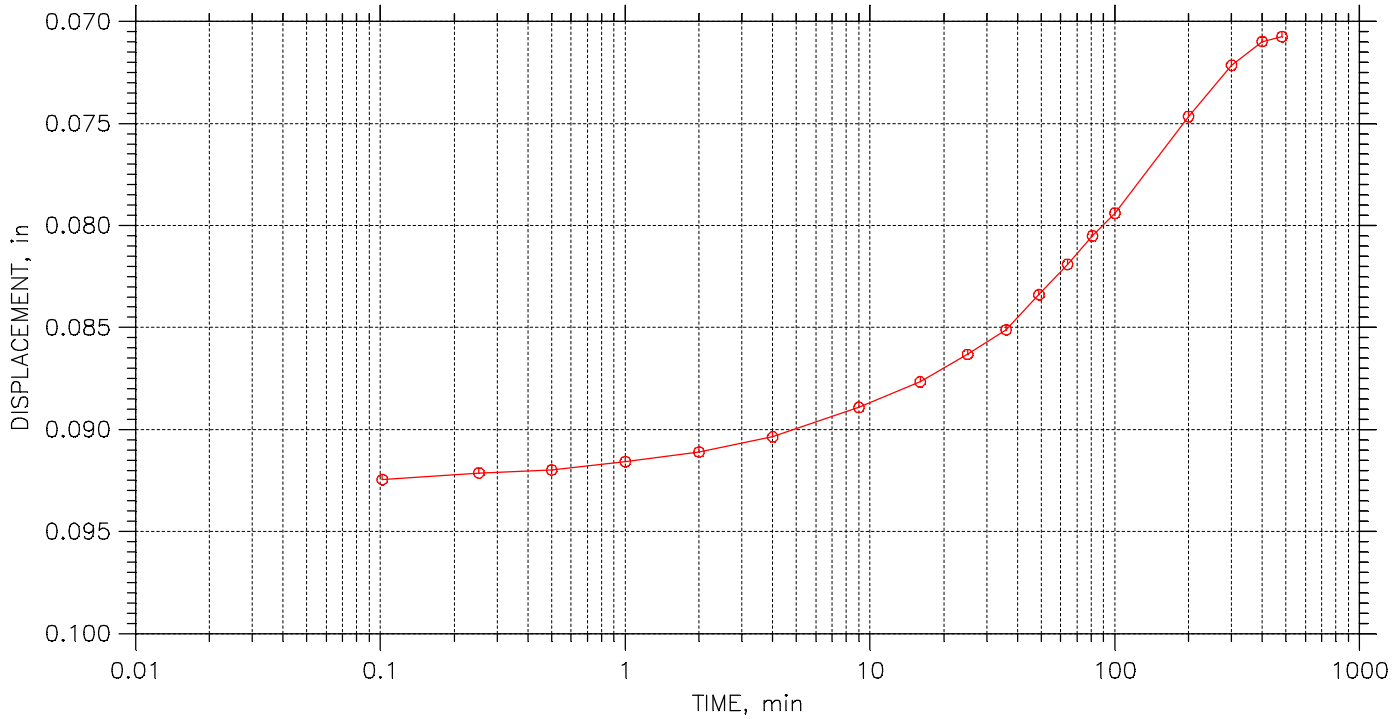
Mon, 28-JAN-2019 12:42:20

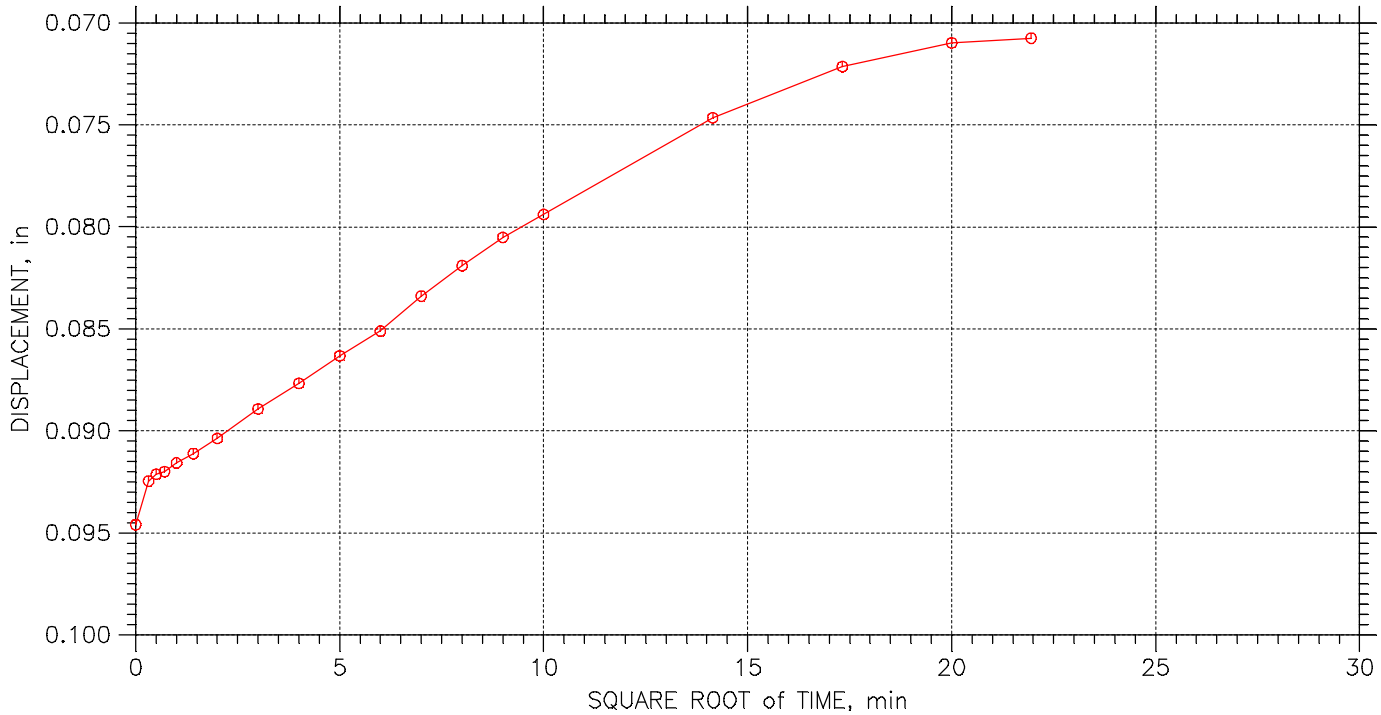
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 23

Stress: 0.125 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11195005
	Boring No.: DH-62A	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/19	Depth: 30.0'-30.5'
	Test No.: DH62ACON	Sample Type: 3.0" ST	Elevation: -----
	Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED		
	Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435		

Mon, 28-JAN-2019 12:42:21

CONSOLIDATION TEST DATA

Terracon
Consulting Engineers & Scientists

Project: SMCL NE EXPANSION
Boring No.: DH-62A
Sample No.: N/A
Test No.: DH62ACON

Location: EAU CLAIRE, WI
Tested By: BCM
Test Date: 1/21/19
Sample Type: 3.0" ST

Project No.: 11195005
Checked By: WPQ
Depth: 30.0'-30.5'
Elevation: -----

Soil Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED
Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.72
Initial Void Ratio: 0.61
Final Void Ratio: 0.46

Liquid Limit: ---
Plastic Limit: ---
Plasticity Index: ---

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	X-9	RING	RING	X-3
Wt. Container + Wet Soil, gm	231.26	194.53	193.92	162
Wt. Container + Dry Soil, gm	201.14	176.03	176.03	144.16
Wt. Container, gm	43.6	74.28	74.28	42.7
Wt. Dry Soil, gm	157.54	101.75	101.75	101.46
Water Content, %	19.12	18.18	17.58	17.58
Void Ratio	---	0.61	0.46	---
Degree of Saturation, %	---	80.98	104.30	---
Dry Unit Weight, pcf	---	105.42	116.42	---

CONSOLIDATION TEST DATA

Terracon
Consulting Engineers & Scientists

Project: SMCL NE EXPANSION
Boring No.: DH-62A
Sample No.: N/A
Test No.: DH62ACON

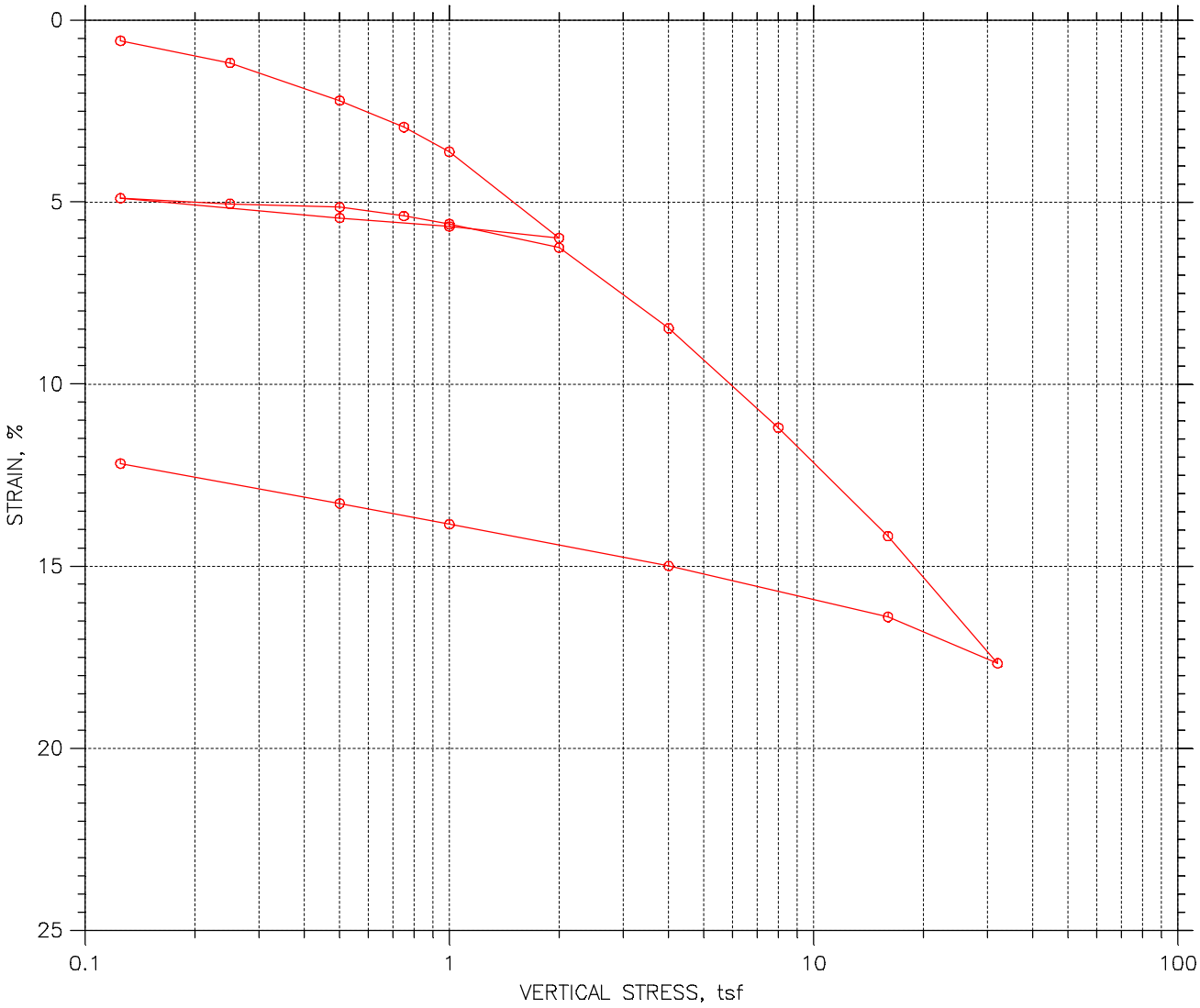
Location: EAU CLAIRE, WI
Tested By: BCM
Test Date: 1/21/19
Sample Type: 3.0" ST

Project No.: 11195005
Checked By: WPQ
Depth: 30.0'-30.5'
Elevation: -----

Soil Description: GREENISH GRAY AND BROWN LEAN CLAY WITH SAND SAND POCKETS AND GRAVEL NOTED
Remarks: Pc = 1.1 Cc = 0.202 Ccr = 0.052 TEST PERFORMED AS PER ASTM D2435

	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. ft^2/sec	Coefficient of Consolidation Log ft^2/sec	Coefficient of Consolidation Ave. ft^2/sec
1	0.125	0.006043	0.598	0.81	0.5	0.0	6.80e-006	0.00e+000	6.80e-006
2	0.25	0.01218	0.585	1.63	2.1	0.0	1.49e-006	0.00e+000	1.49e-006
3	0.5	0.0225	0.562	3.00	5.7	4.3	5.34e-007	7.15e-007	6.12e-007
4	0.75	0.03096	0.544	4.13	3.8	3.0	7.80e-007	9.92e-007	8.73e-007
5	1	0.03979	0.525	5.31	11.8	0.0	2.47e-007	0.00e+000	2.47e-007
6	2	0.06229	0.477	8.32	3.7	0.0	7.44e-007	0.00e+000	7.44e-007
7	1	0.05522	0.492	7.37	0.9	0.0	2.94e-006	0.00e+000	2.94e-006
8	0.5	0.04616	0.511	6.16	11.4	0.0	2.43e-007	0.00e+000	2.43e-007
9	0.125	0.03272	0.540	4.37	23.7	0.0	1.21e-007	0.00e+000	1.21e-007
10	0.25	0.03421	0.537	4.57	8.4	0.0	3.48e-007	0.00e+000	3.48e-007
11	0.5	0.03872	0.527	5.17	5.8	0.0	4.96e-007	0.00e+000	4.96e-007
12	0.75	0.04337	0.517	5.79	14.4	0.0	1.98e-007	0.00e+000	1.98e-007
13	1	0.04816	0.507	6.43	9.7	0.0	2.91e-007	0.00e+000	2.91e-007
14	2	0.06415	0.473	8.57	5.8	0.0	4.69e-007	0.00e+000	4.69e-007
15	4	0.08702	0.424	11.62	3.7	0.0	6.93e-007	0.00e+000	6.93e-007
16	8	0.1114	0.371	14.87	3.8	0.0	6.36e-007	0.00e+000	6.36e-007
17	16	0.1353	0.320	18.07	3.7	0.0	6.00e-007	0.00e+000	6.00e-007
18	32	0.1635	0.259	21.84	2.4	0.0	8.58e-007	0.00e+000	8.58e-007
19	16	0.1517	0.284	20.26	0.2	0.0	8.55e-006	0.00e+000	8.55e-006
20	4	0.1296	0.332	17.31	3.6	0.0	5.92e-007	0.00e+000	5.92e-007
21	1	0.1076	0.379	14.37	23.0	0.0	9.85e-008	0.00e+000	9.85e-008
22	0.5	0.0946	0.407	12.63	14.0	0.0	1.71e-007	0.00e+000	1.71e-007
23	0.125	0.07075	0.459	9.45	47.0	0.0	5.39e-008	0.00e+000	5.39e-008

ONE DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS
USING INCREMENTAL LOADING
ASTM D2435

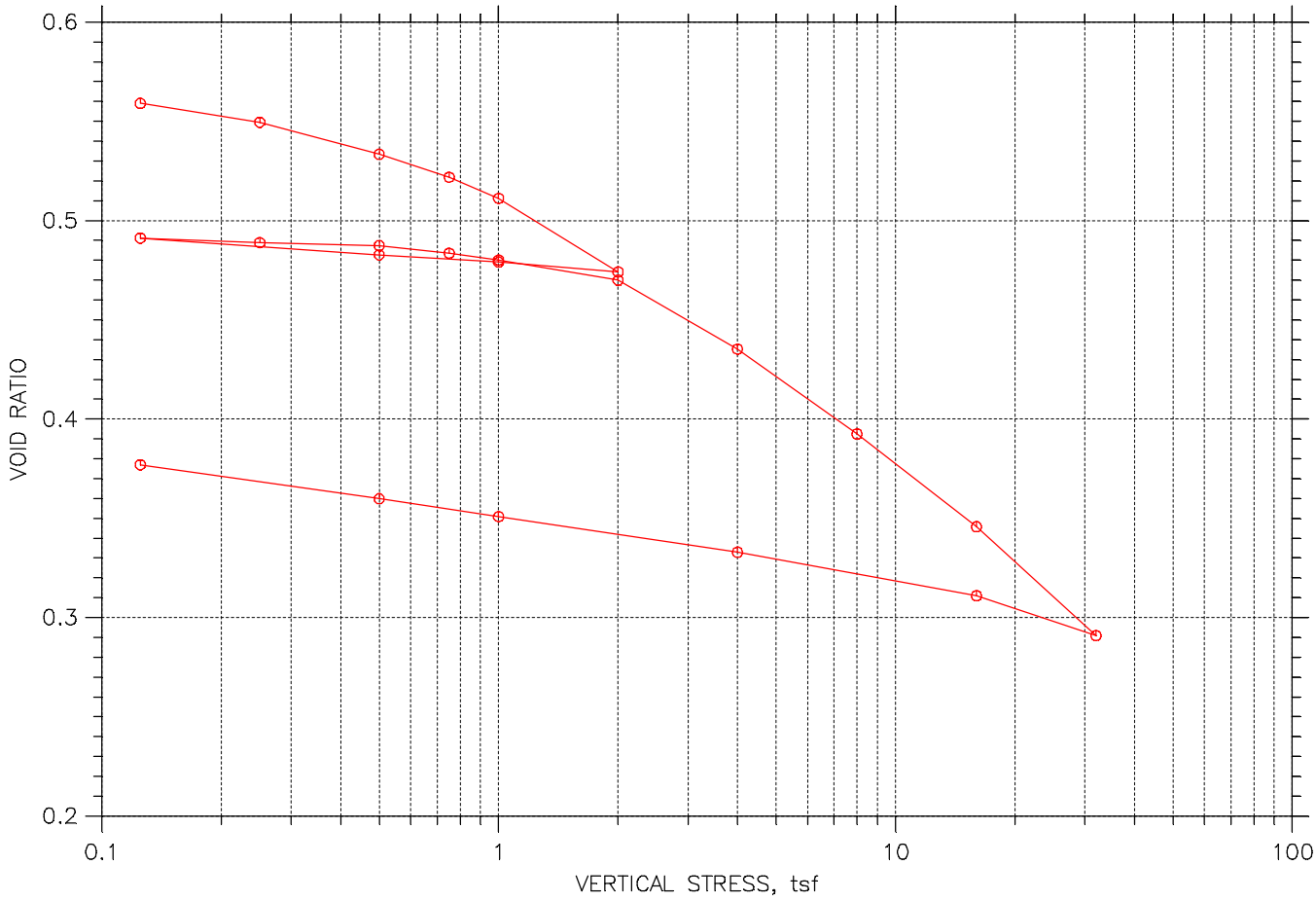


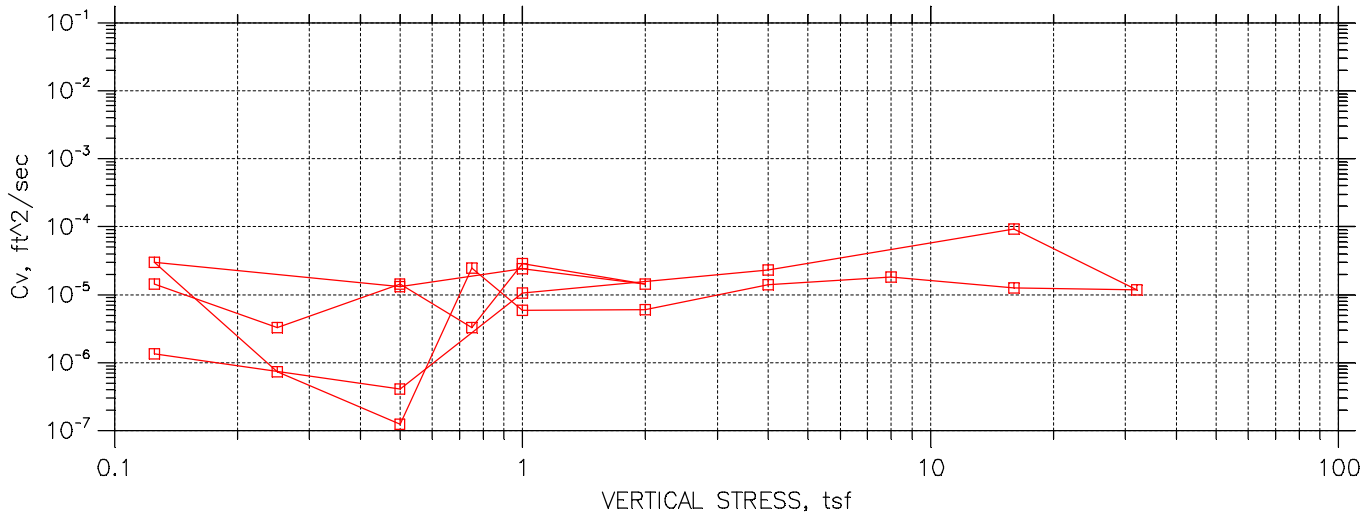
					Before Test	After Test
				Water Content, %	15.75	14.10
Preconsolidation Pressure: 1.9 tsf				Dry Unit Weight, pcf	108.3	123.3
Compression Index: 0.183				Saturation, %	75.43	101.71
Diameter: 2.501 in		Height: 0.7484 in		Void Ratio	0.57	0.38
LL: ---	PL: ---	PI: ---	GS: 2.72			

Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

Mon, 28-JAN-2019 12:54:15

ONE DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS
USING INCREMENTAL LOADING
ASTM D2435





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0'' ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

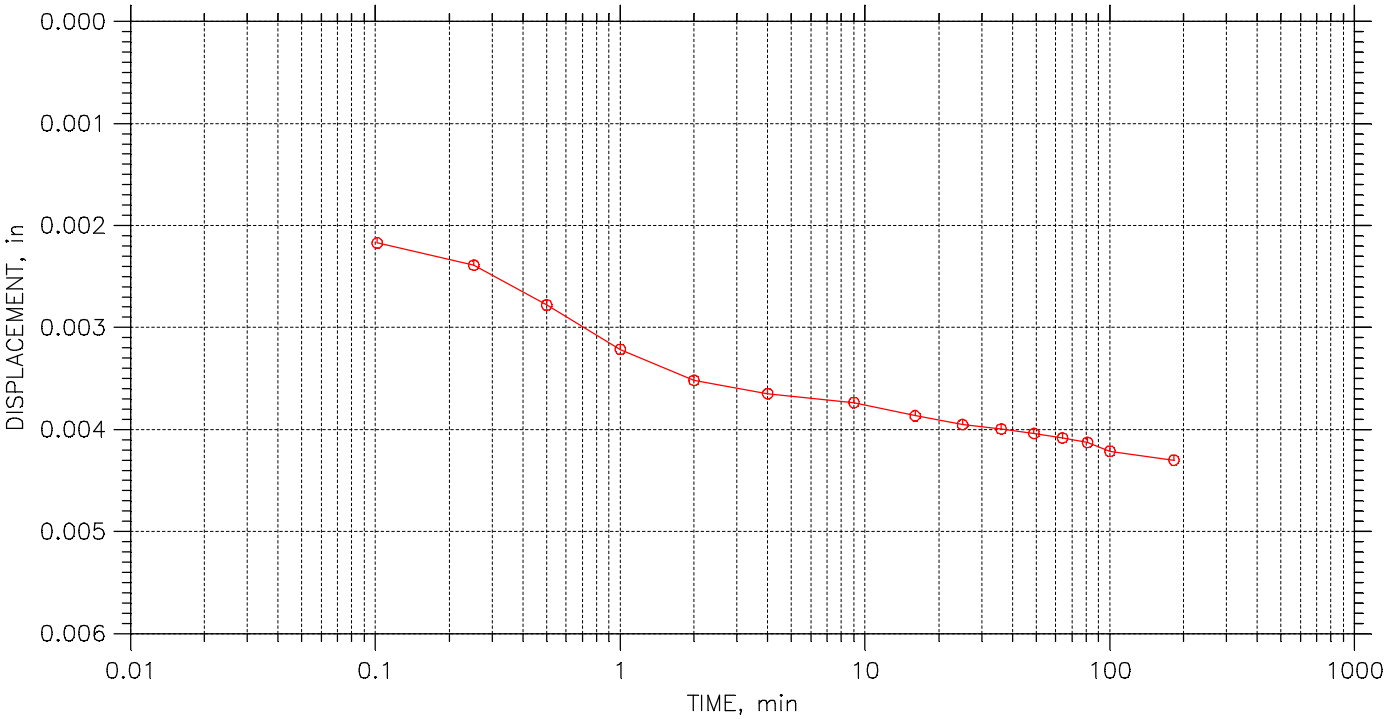
Mon, 28-JAN-2019 12:54:55

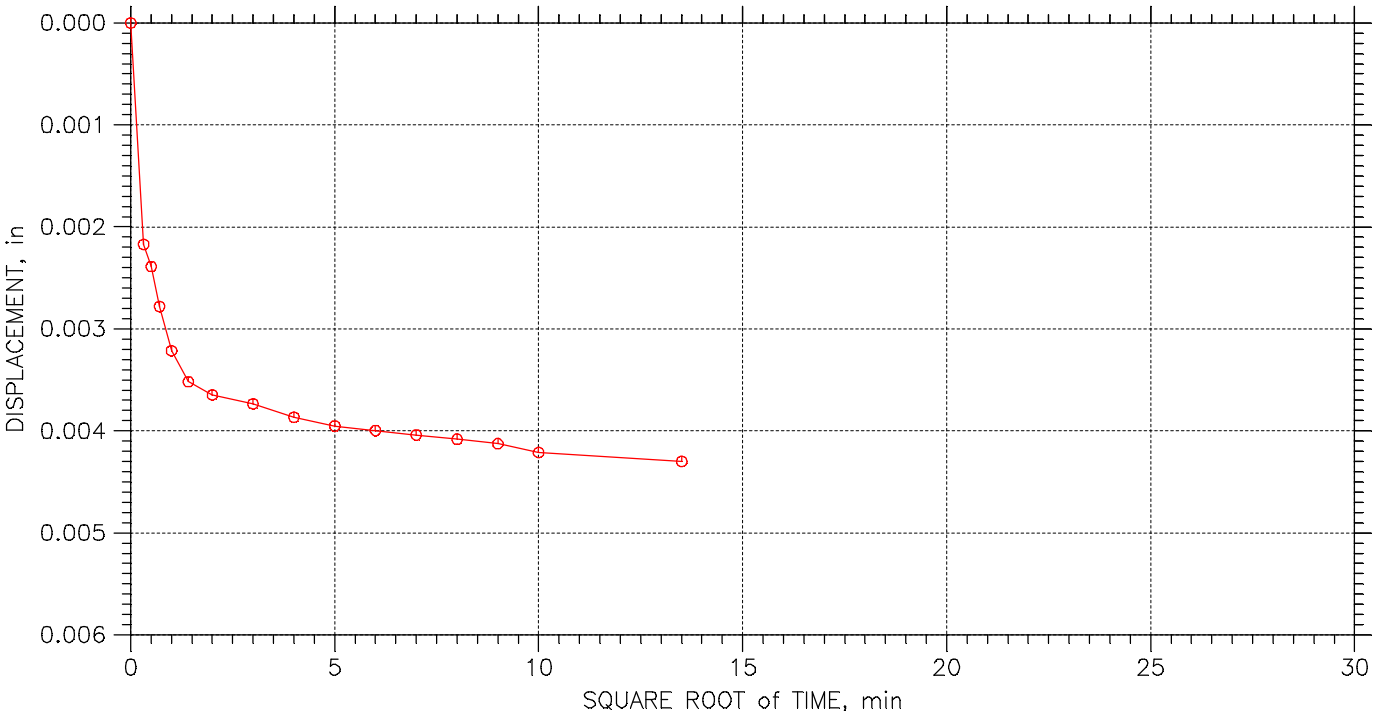
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 23

Stress: 0.125 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

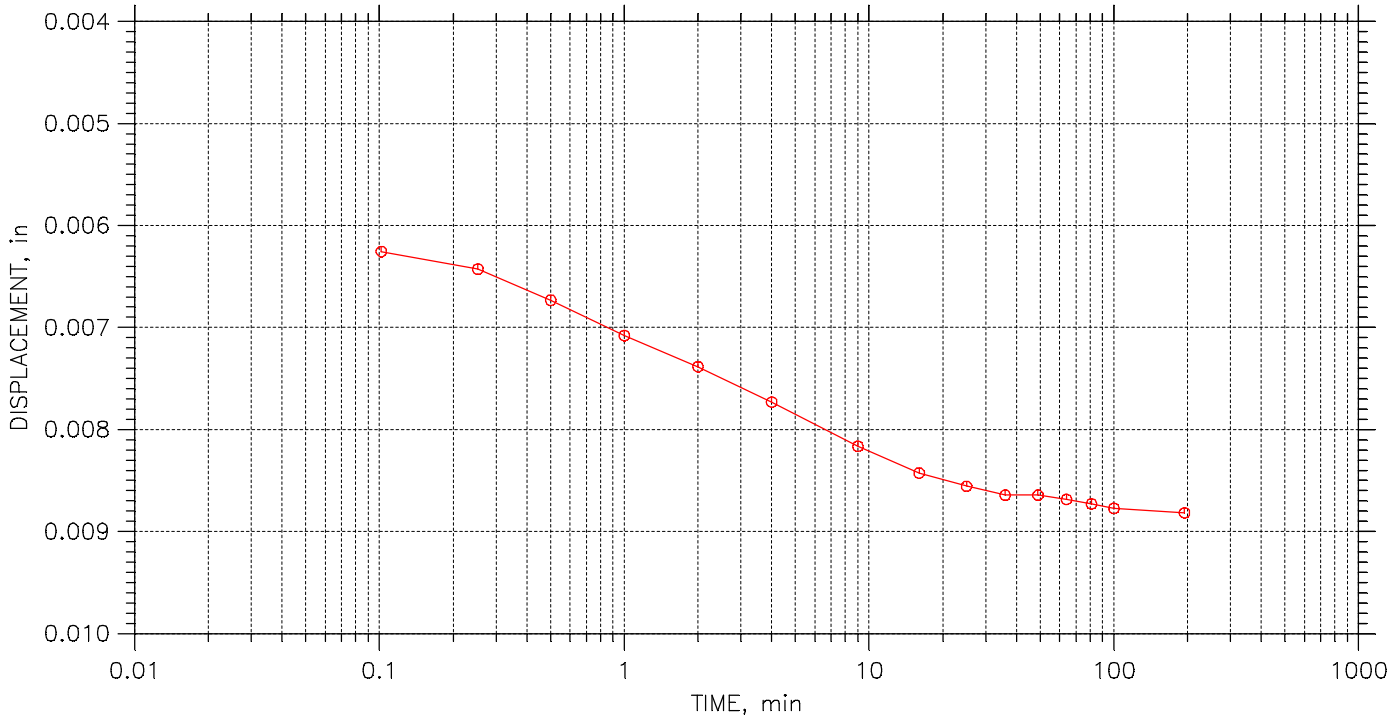
Mon, 28-JAN-2019 12:55:29

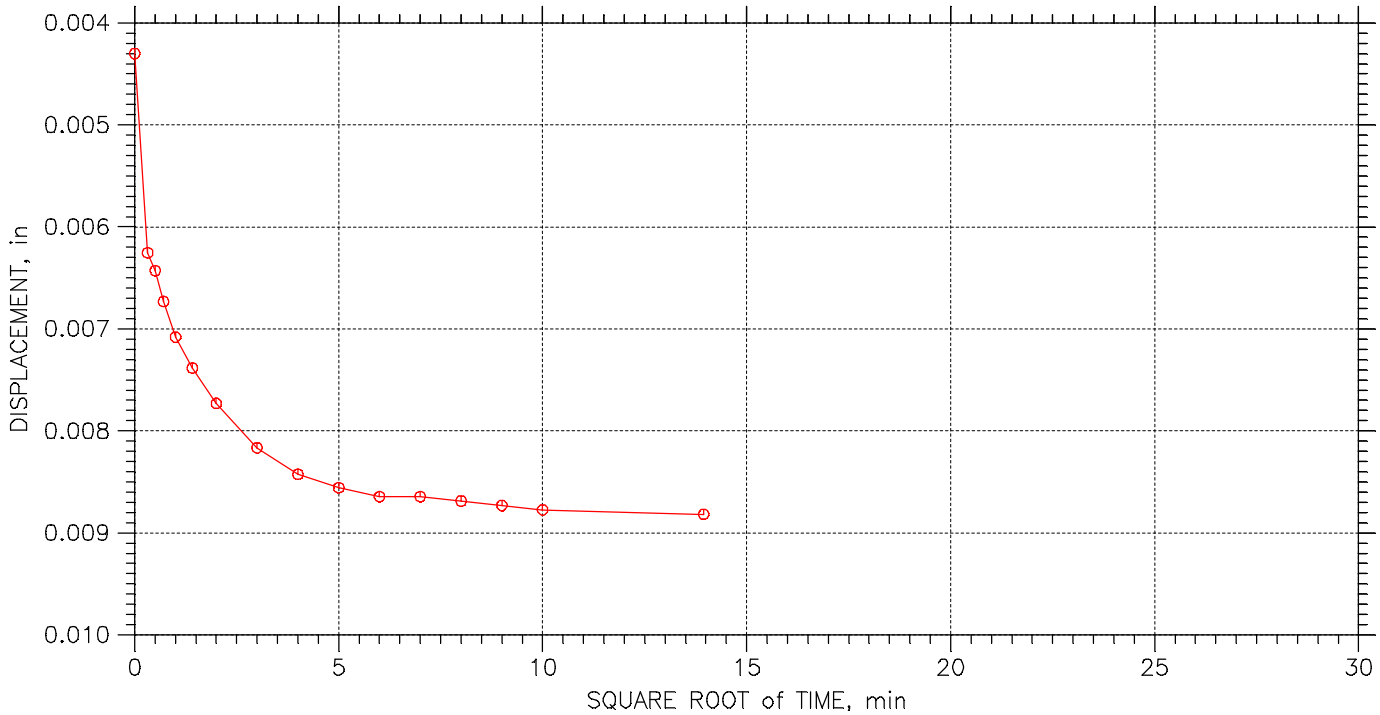
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 23

Stress: 0.25 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

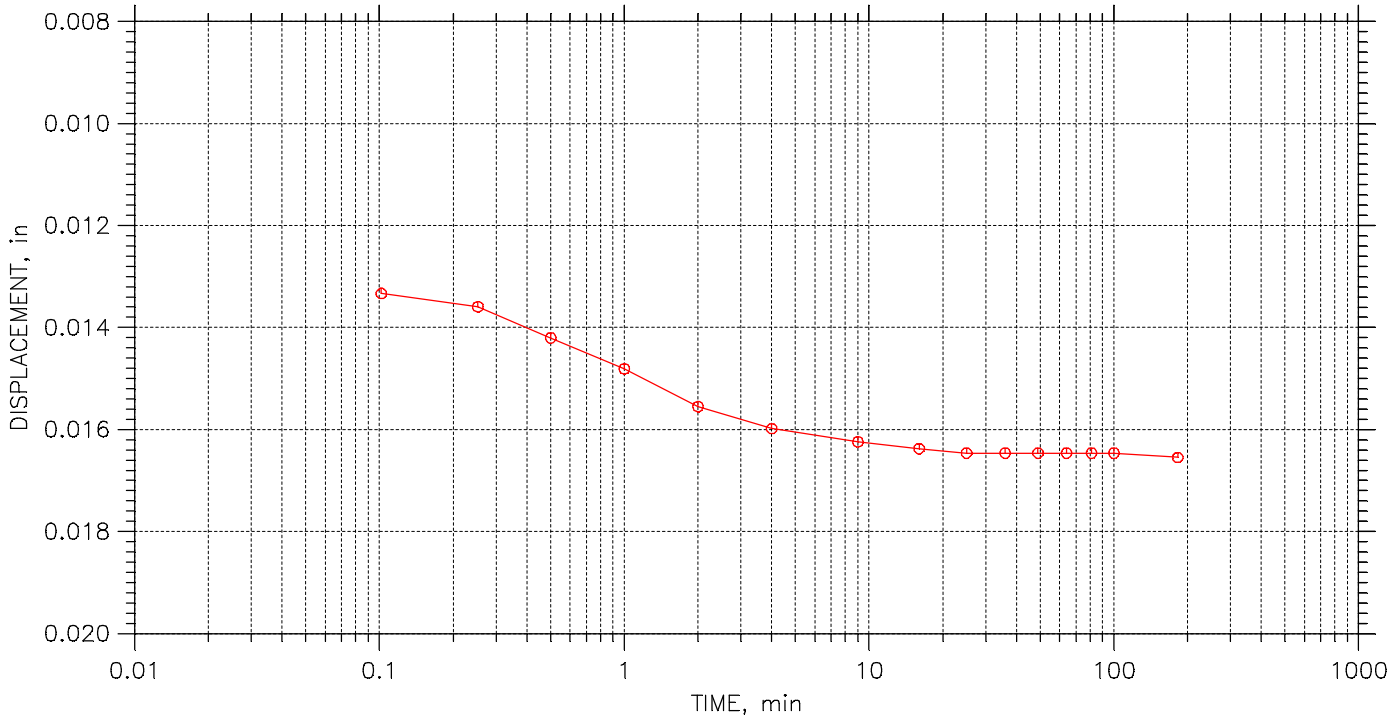
Mon, 28-JAN-2019 12:55:30

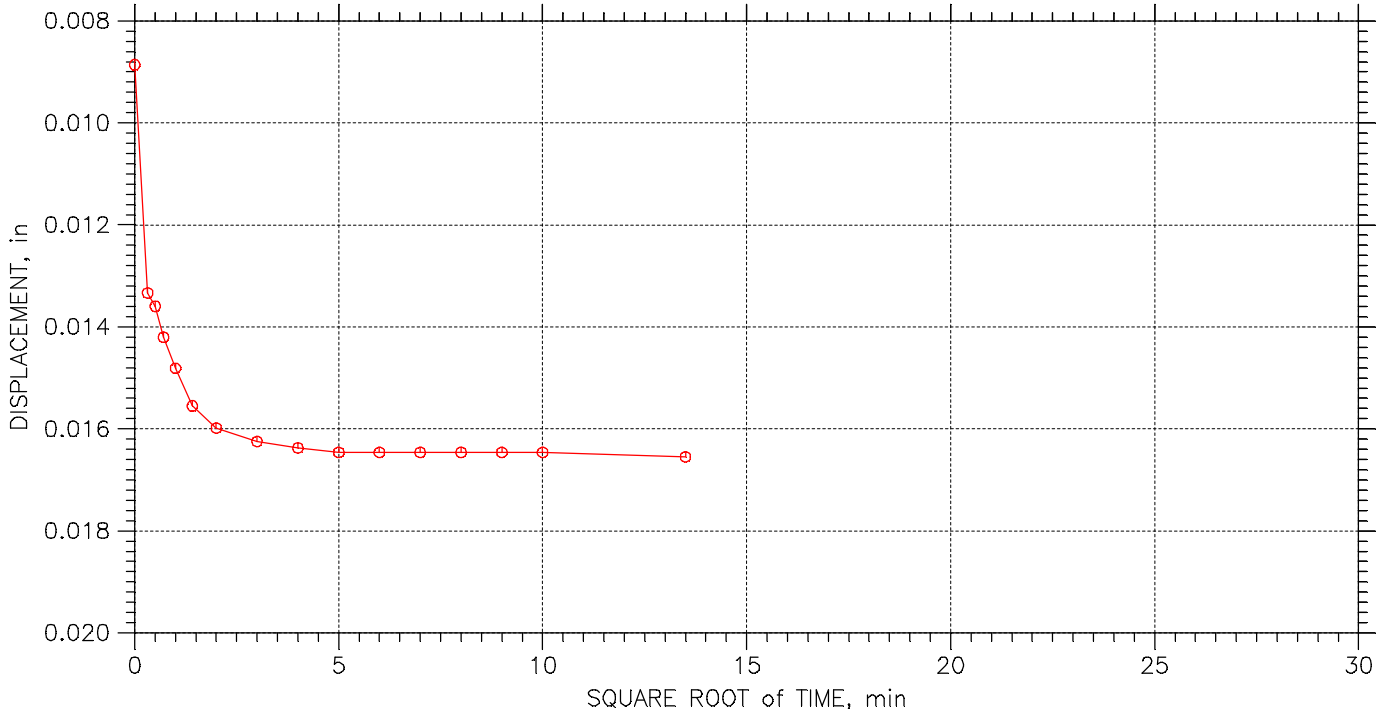
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 23

Stress: 0.5 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

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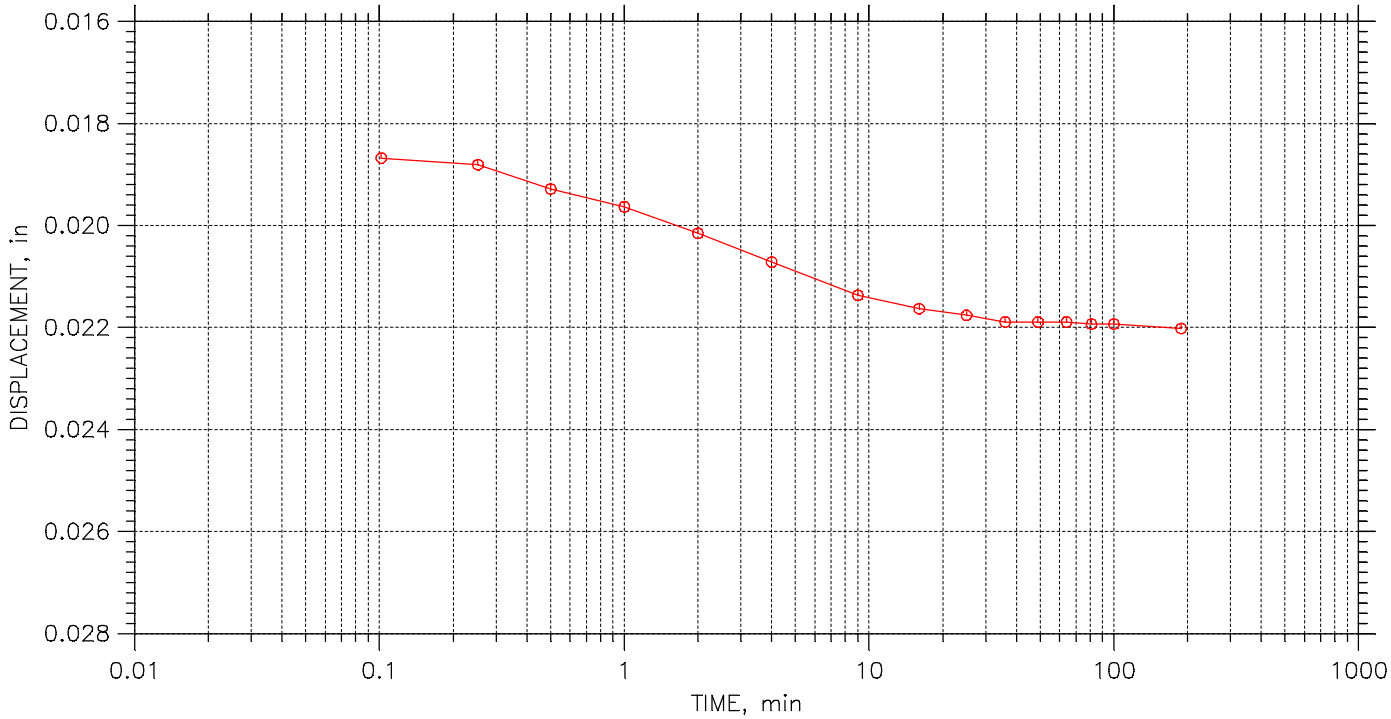
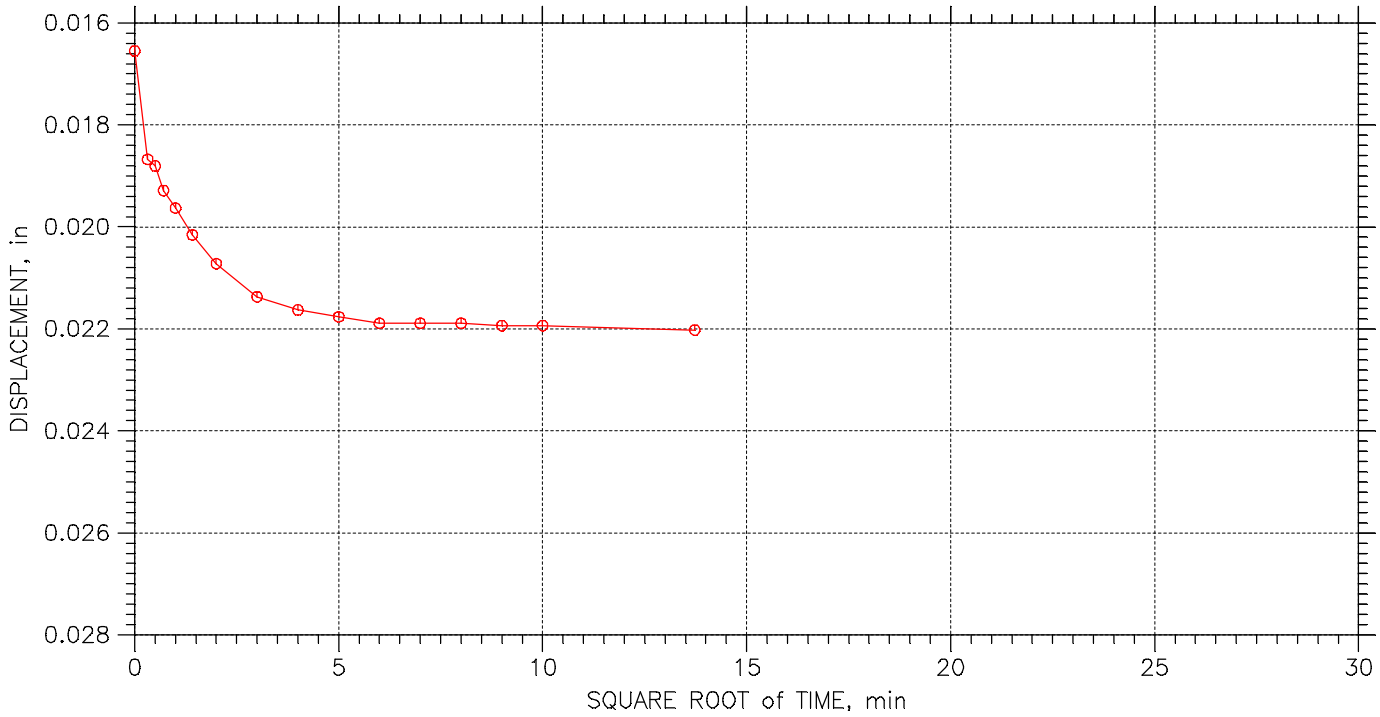
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 23

Stress: 0.75 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

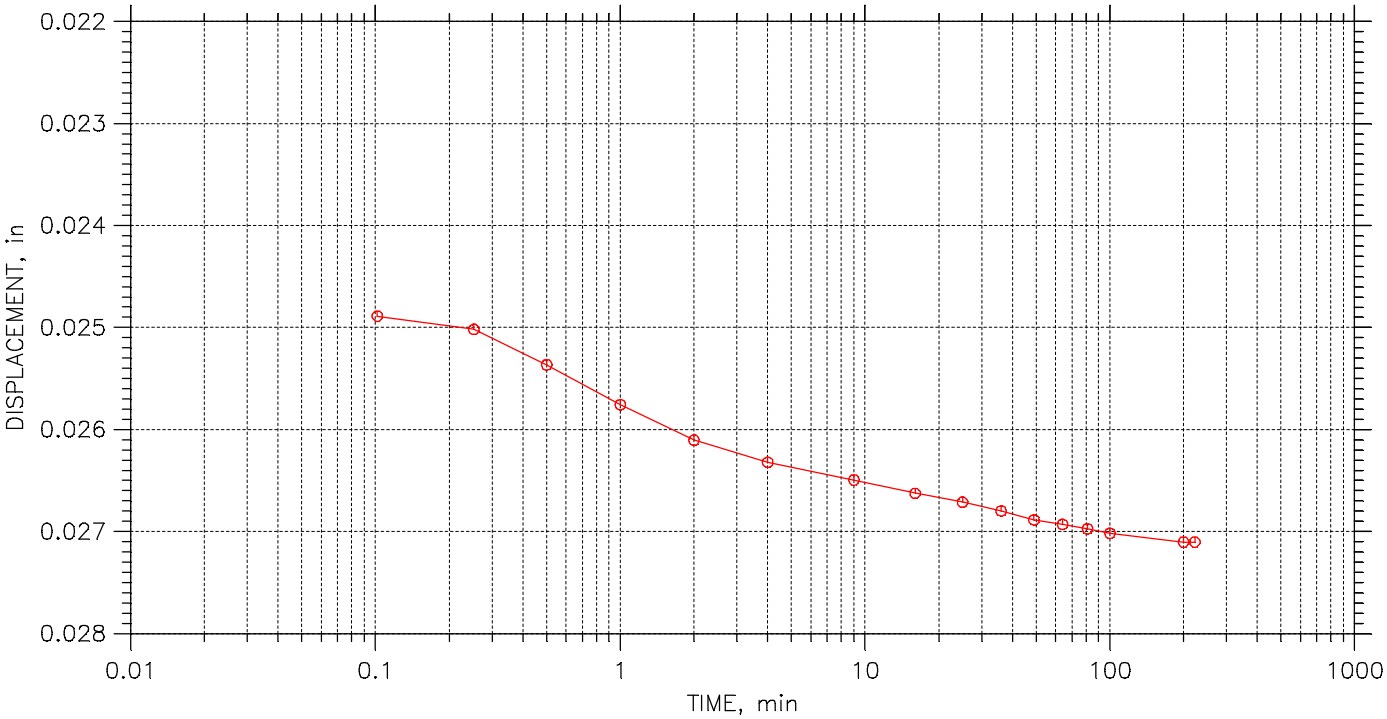
Mon, 28-JAN-2019 12:55:33

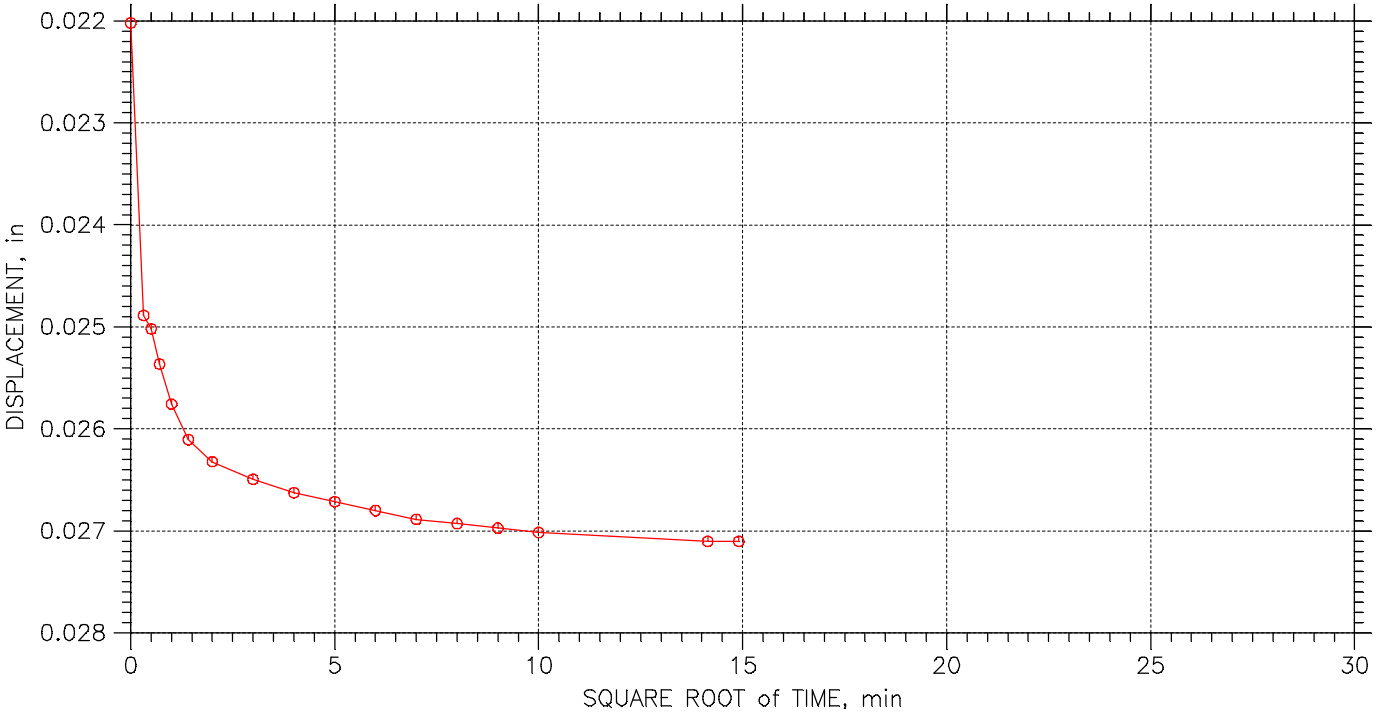
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 23

Stress: 1. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

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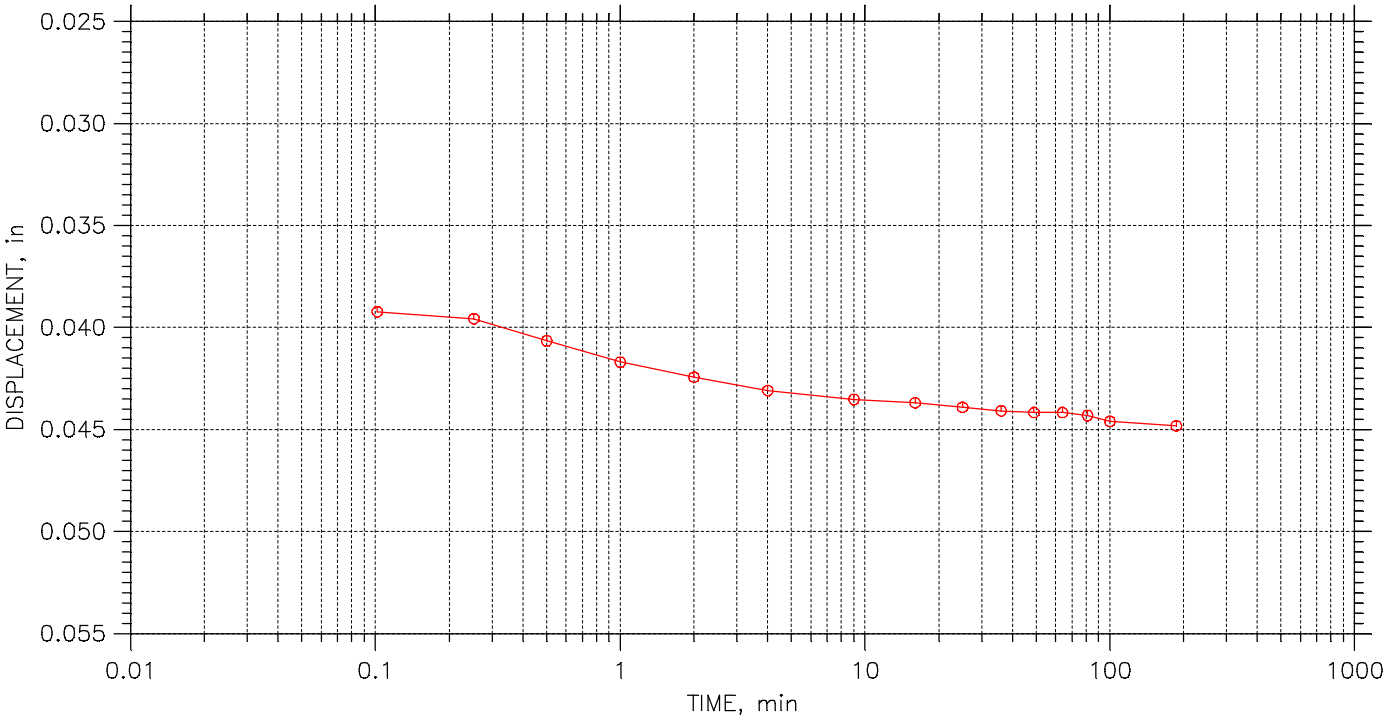
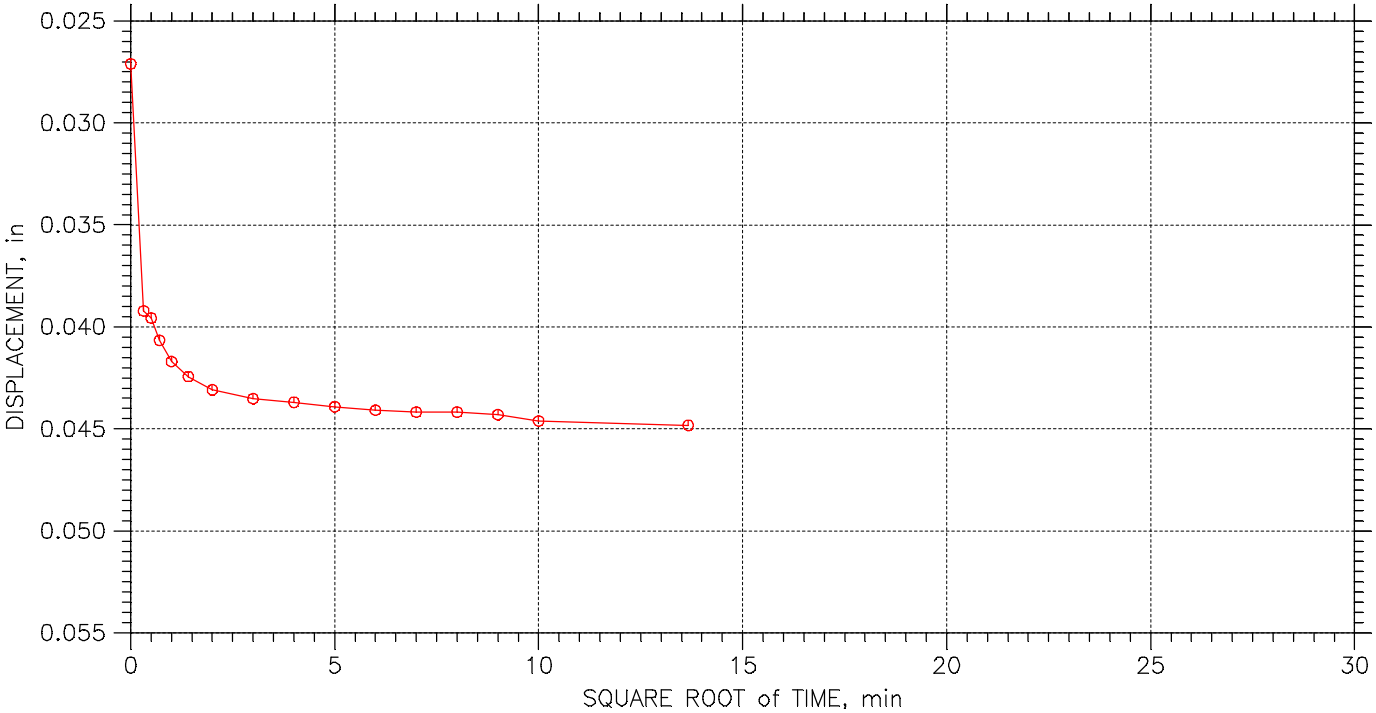
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 23

Stress: 2. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

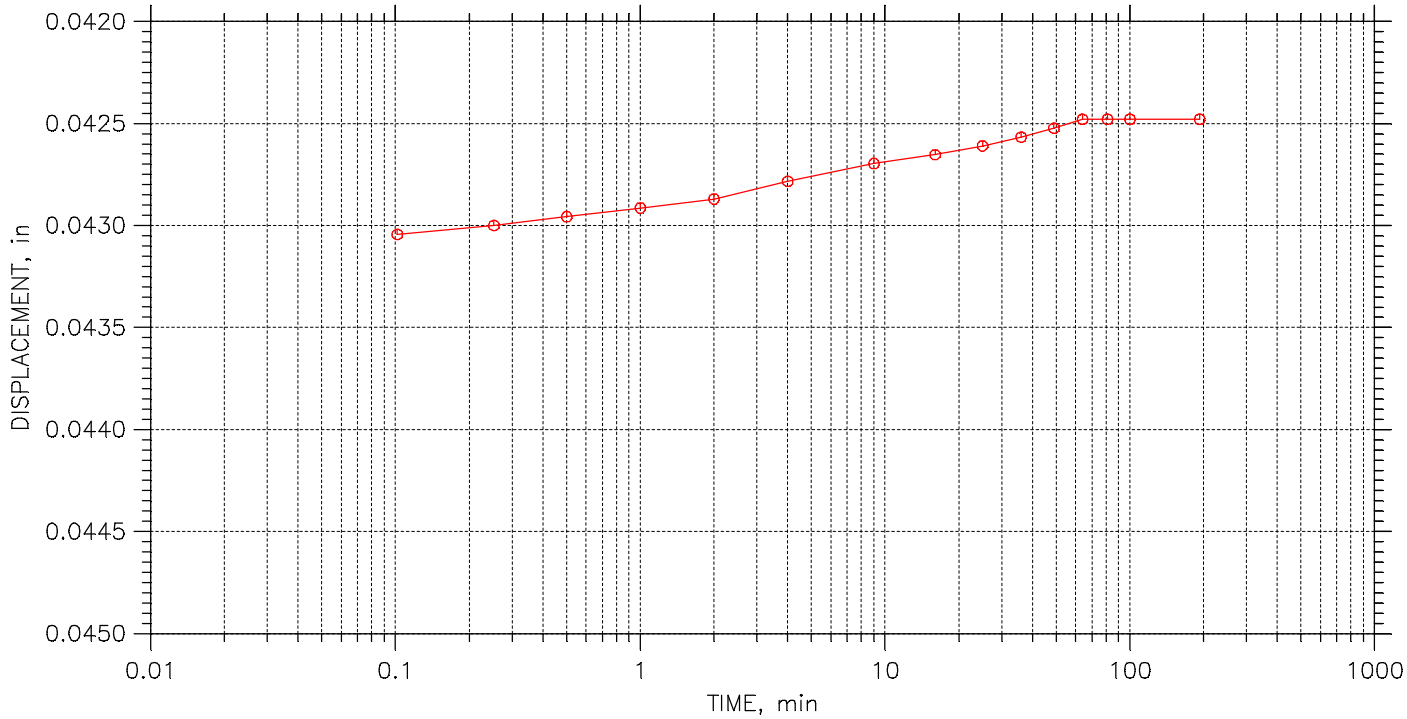
Mon, 28-JAN-2019 12:55:36

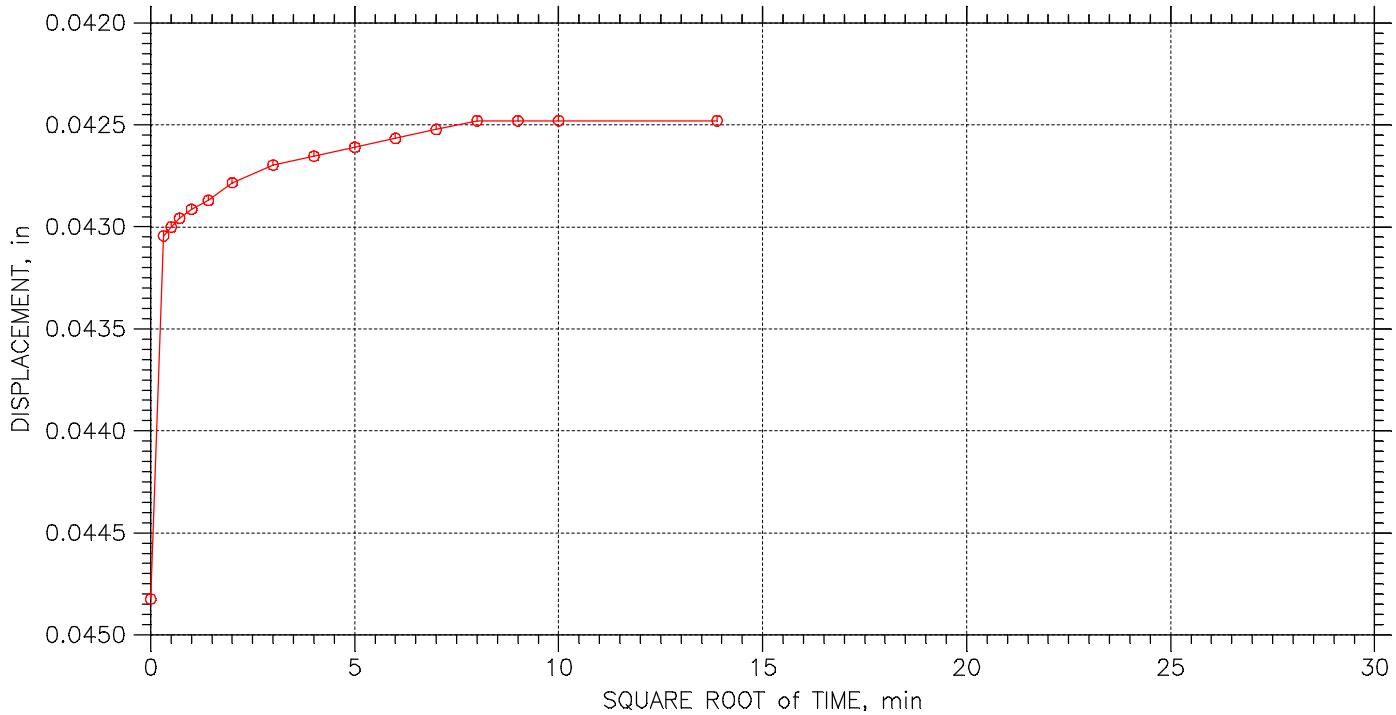
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 23

Stress: 1. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

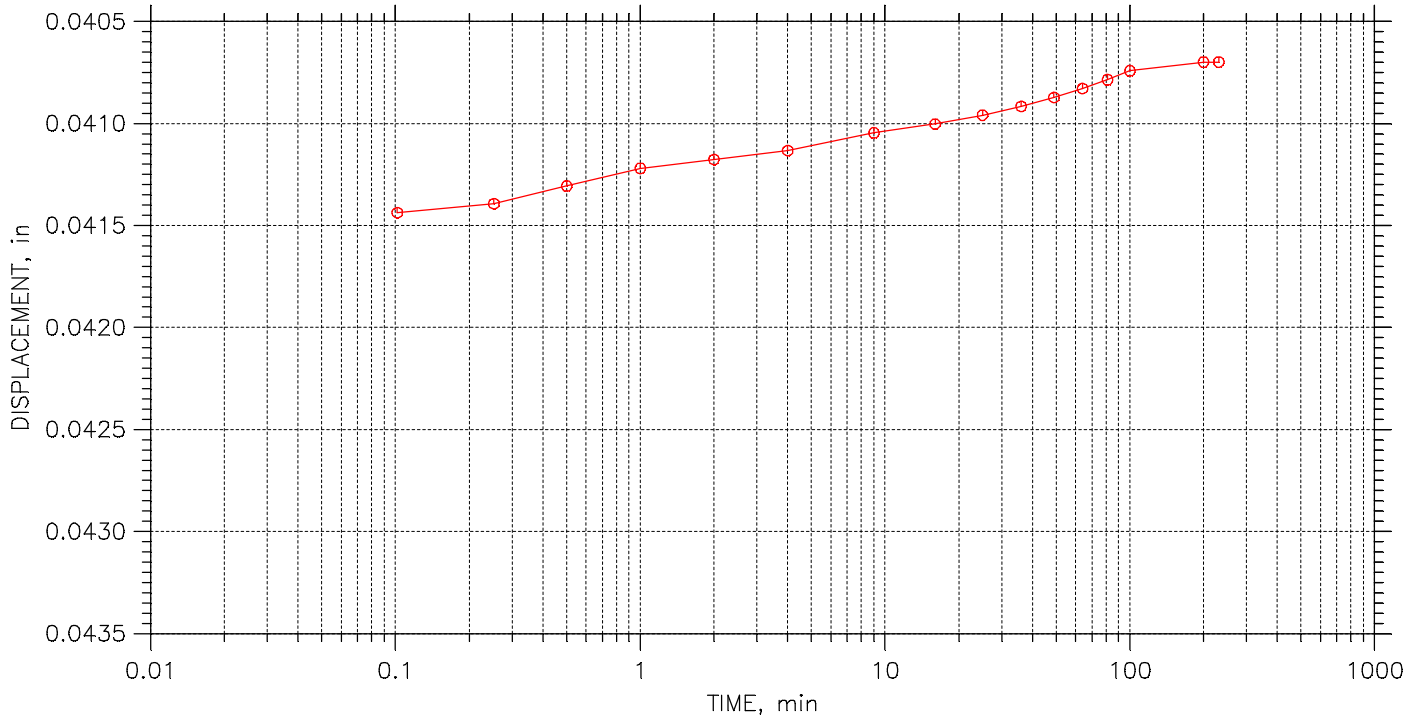
Mon, 28-JAN-2019 12:55:37

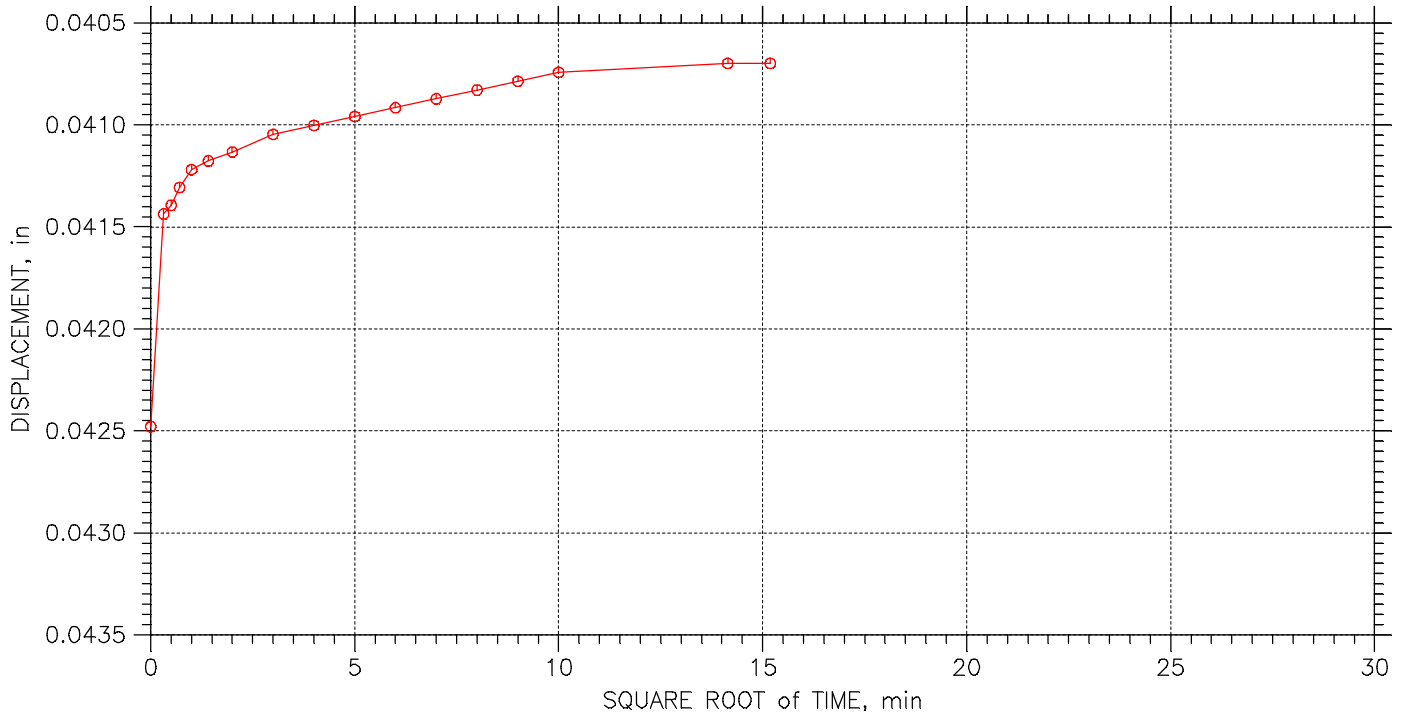
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 23

Stress: 0.5 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

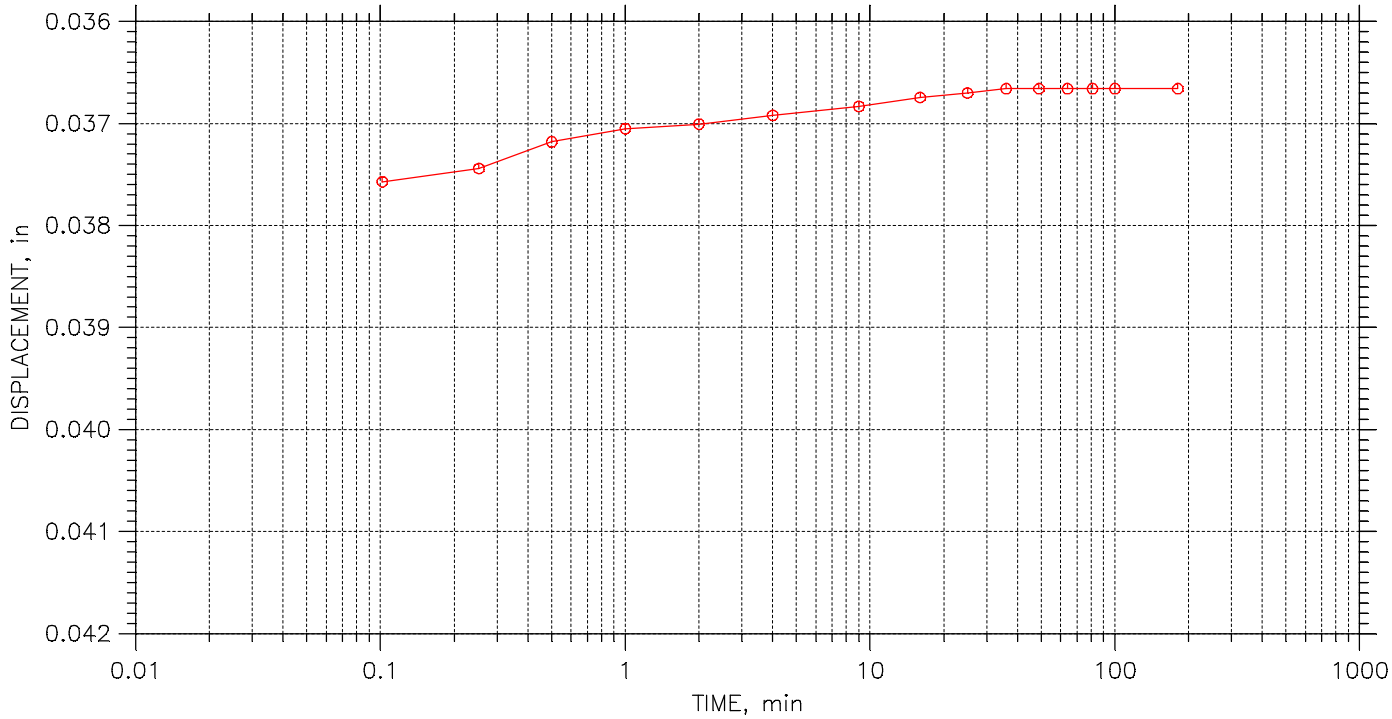
Mon, 28-JAN-2019 12:55:38

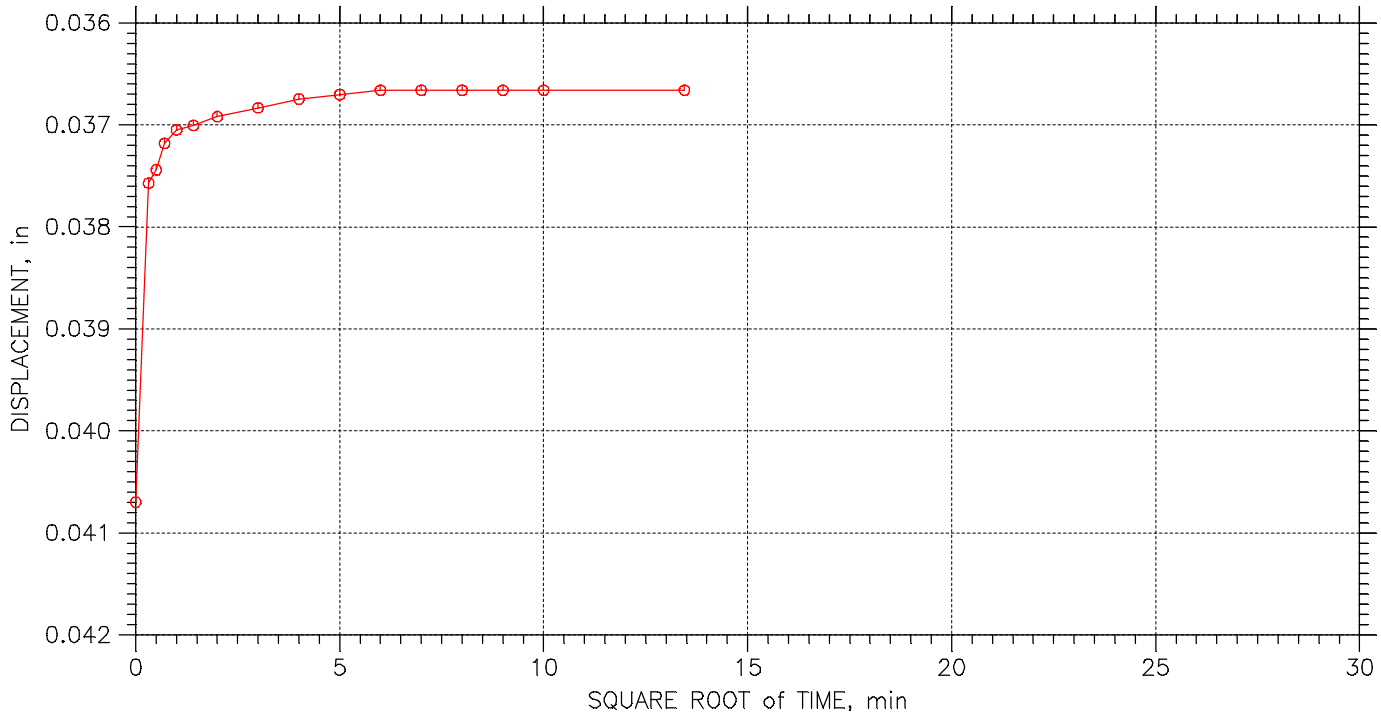
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 23

Stress: 0.125 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

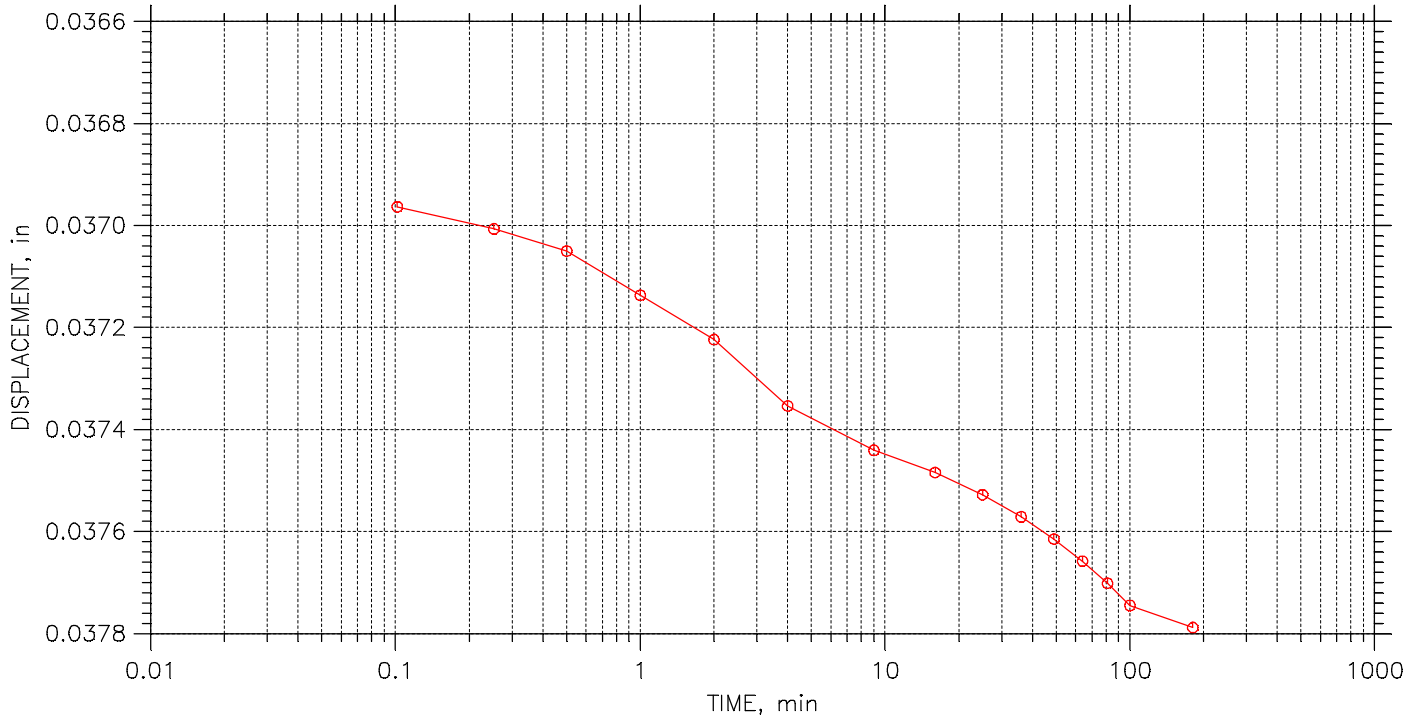
Mon, 28-JAN-2019 12:55:40

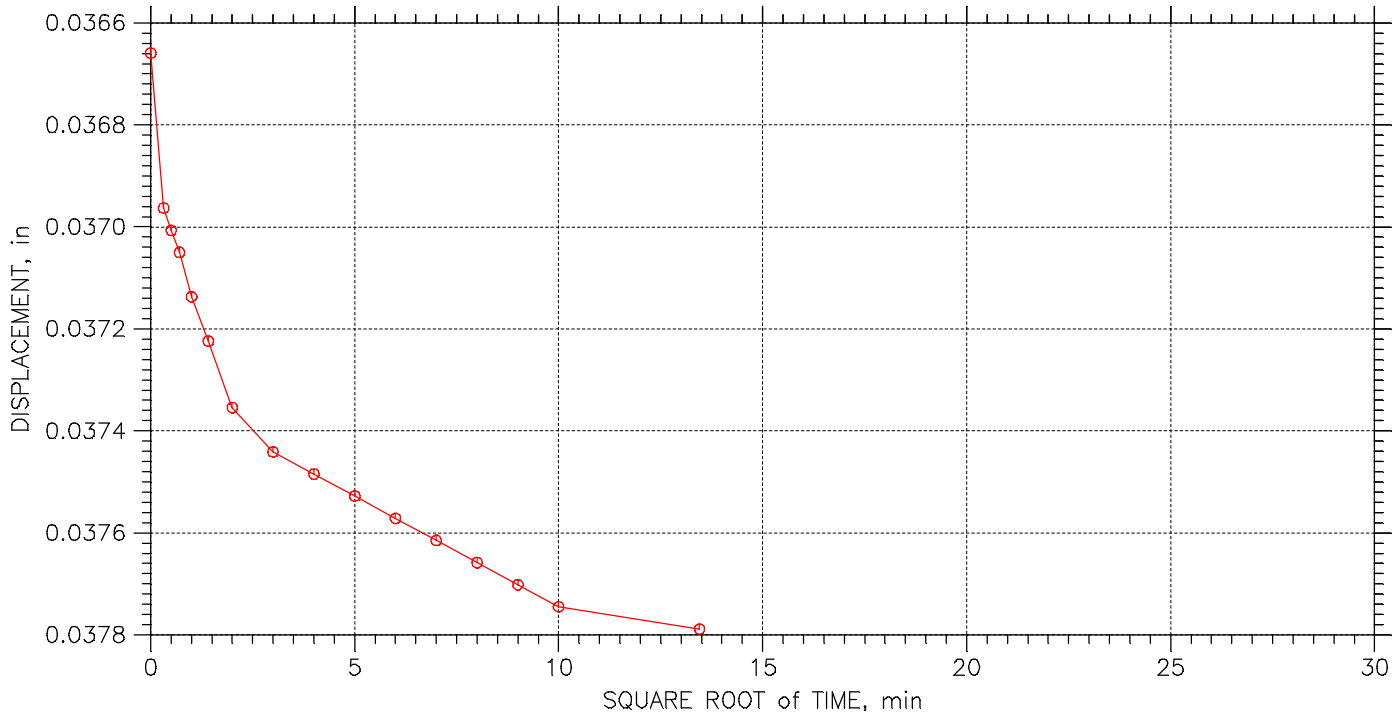
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 23

Stress: 0.25 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

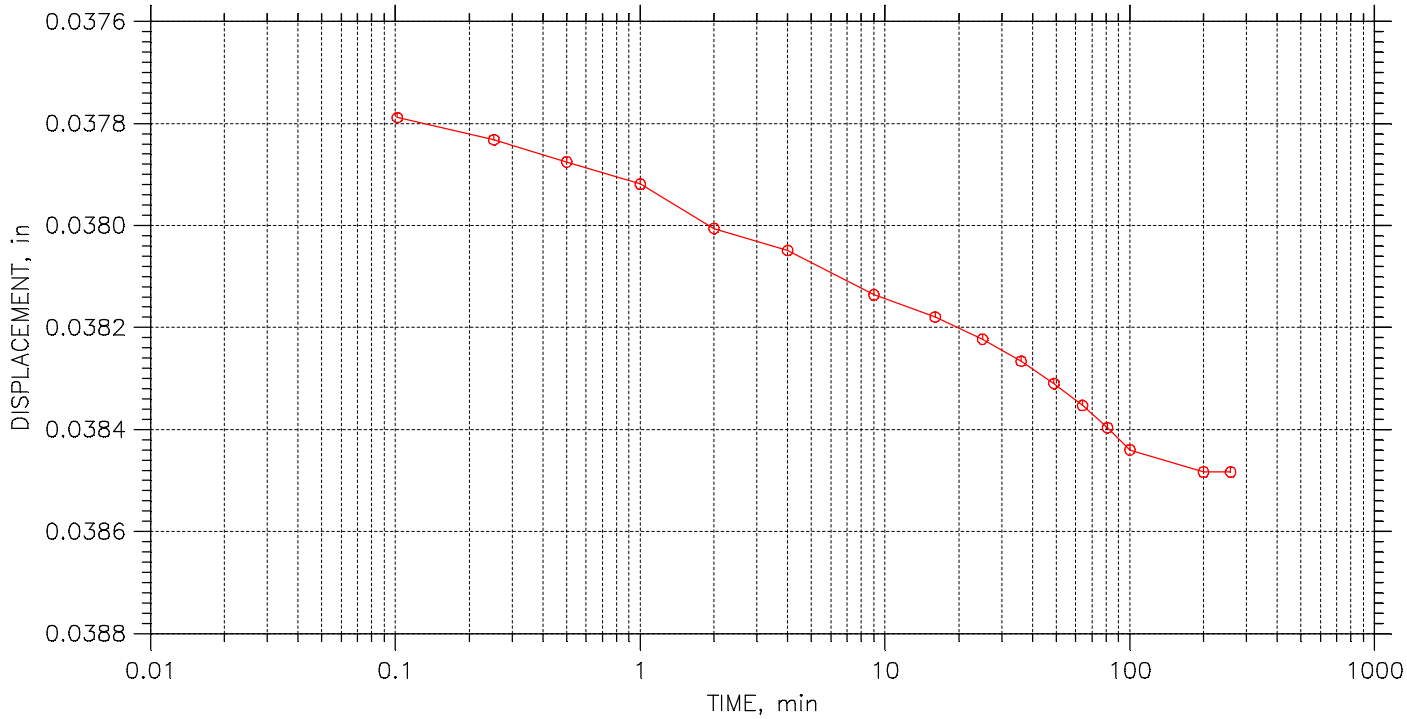
Mon, 28-JAN-2019 12:55:41

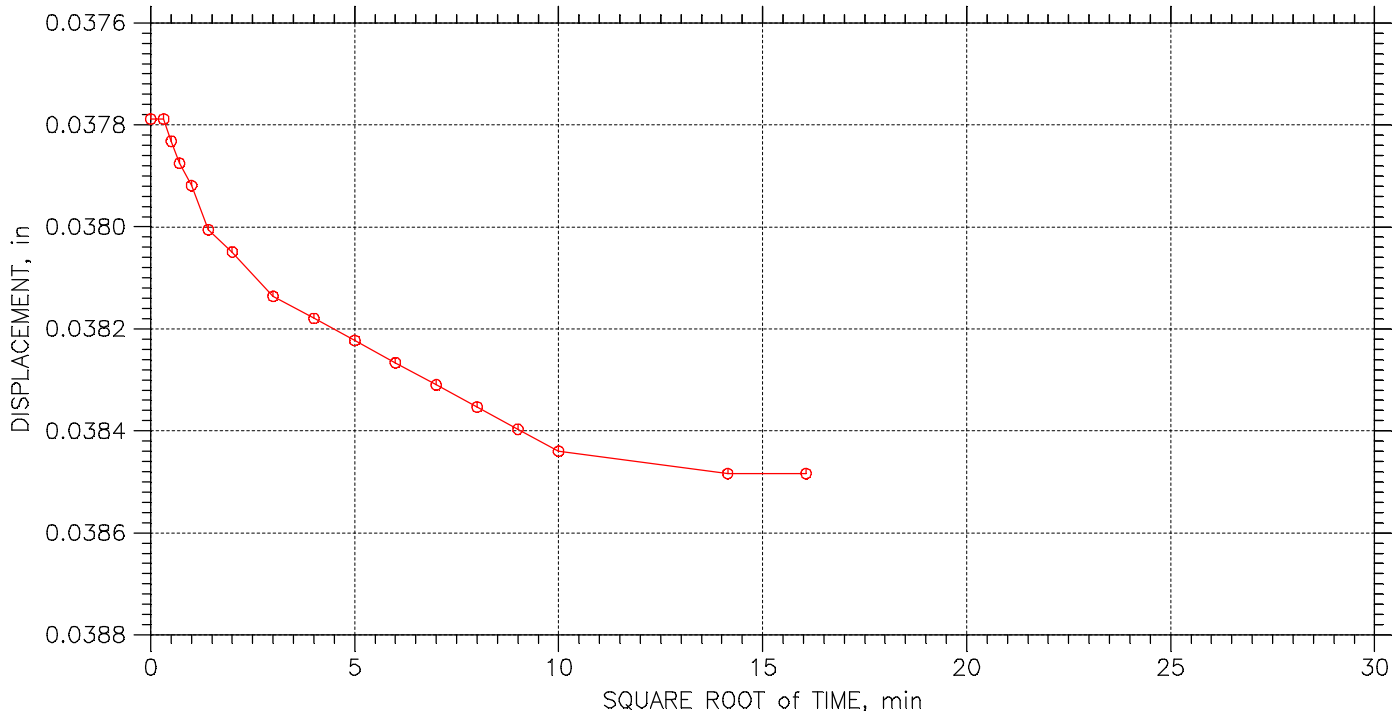
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 23

Stress: 0.5 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

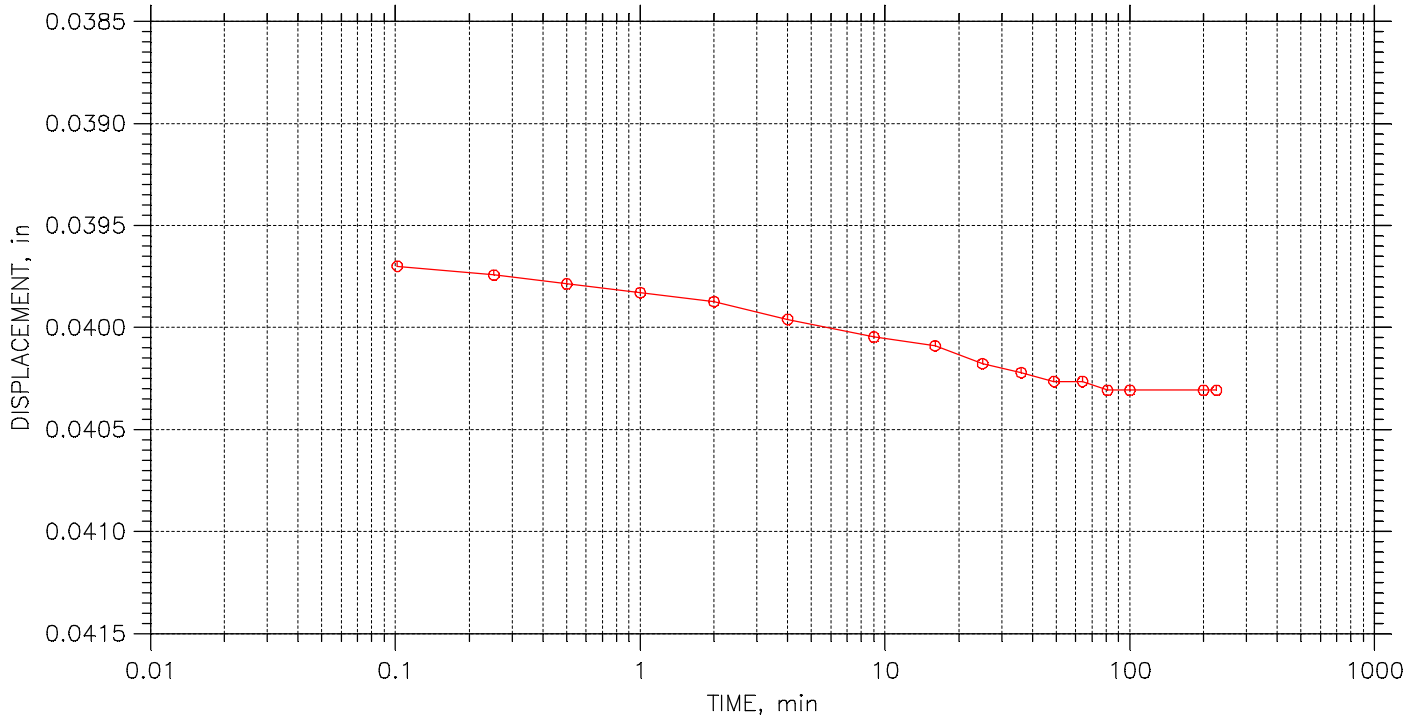
Mon, 28-JAN-2019 12:55:42

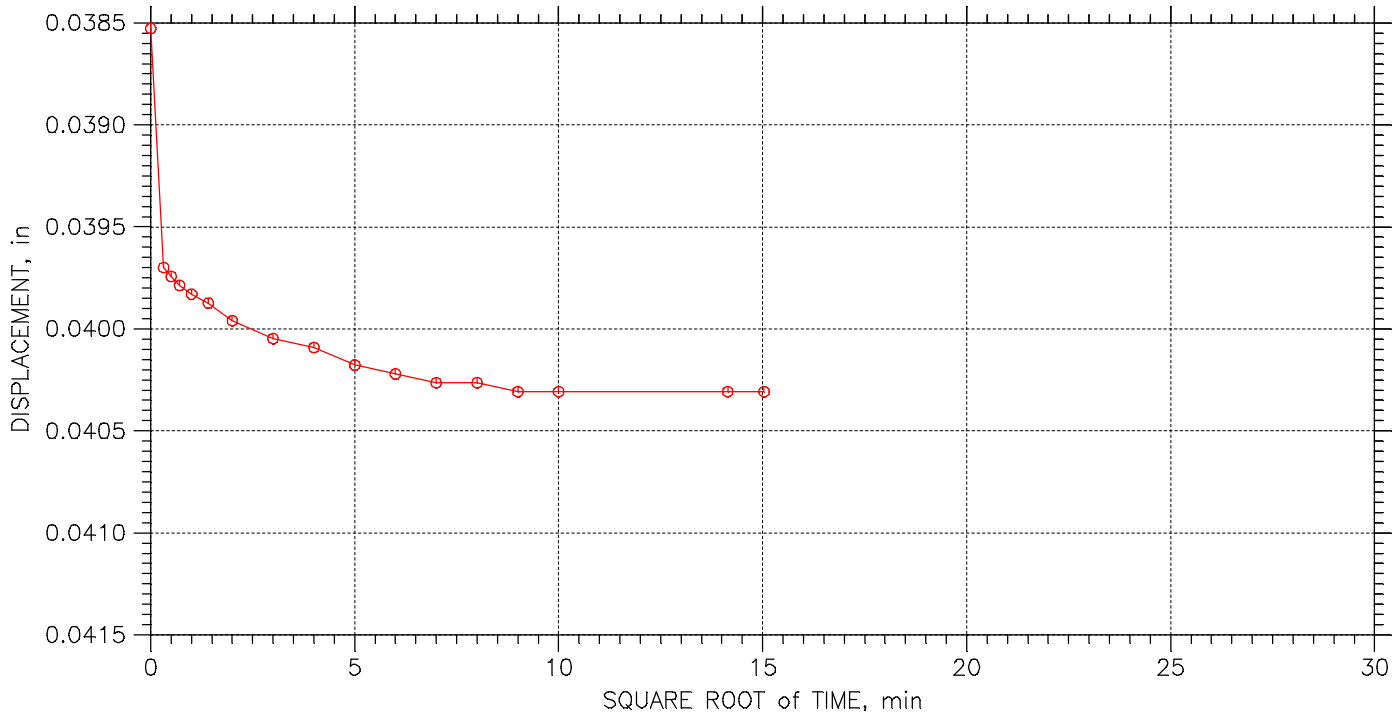
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 23

Stress: 0.75 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

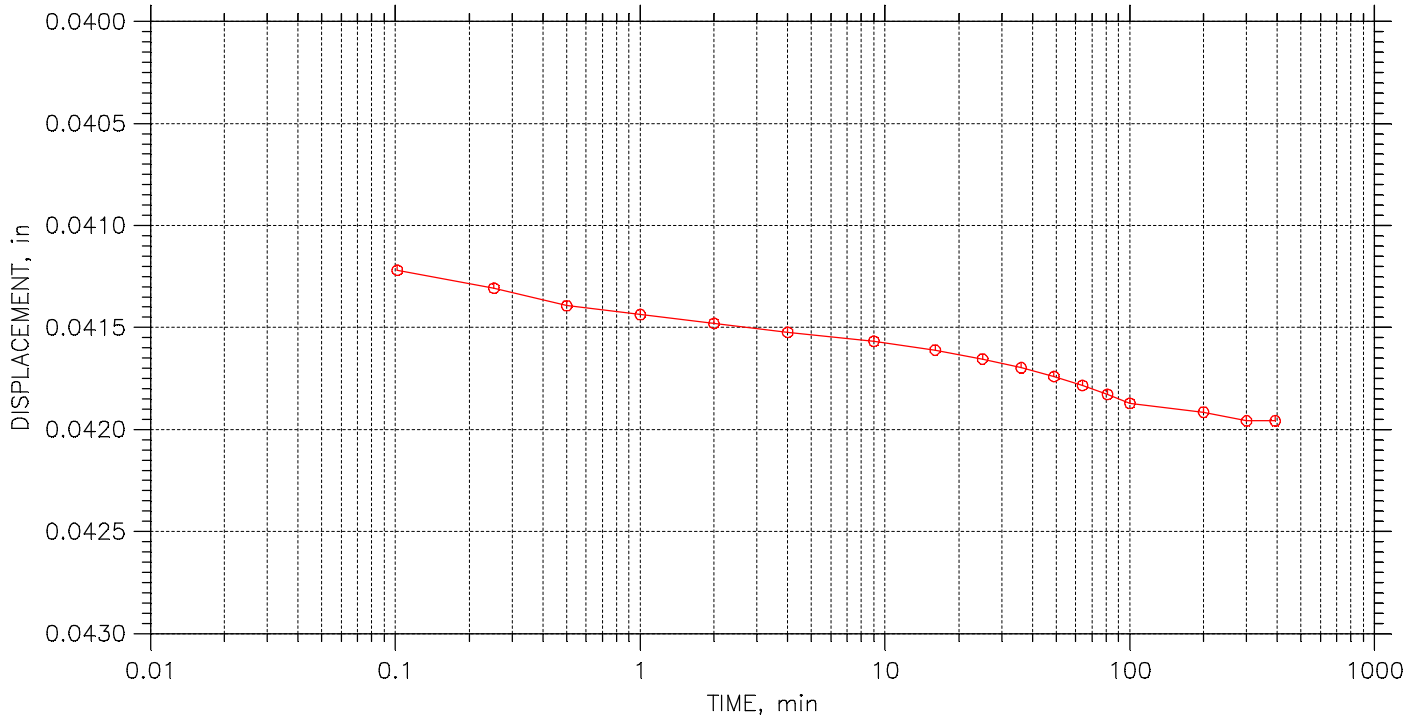
Mon, 28-JAN-2019 12:55:44

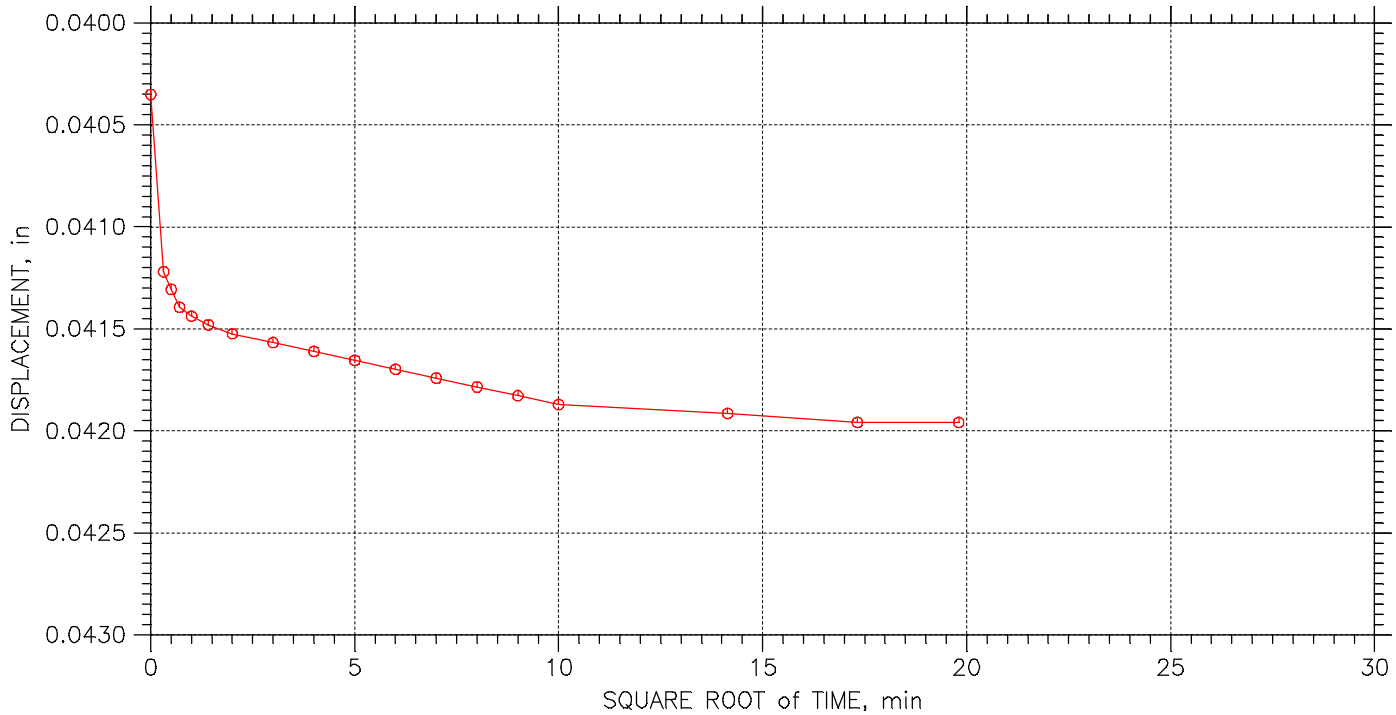
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 23

Stress: 1. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0'' ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

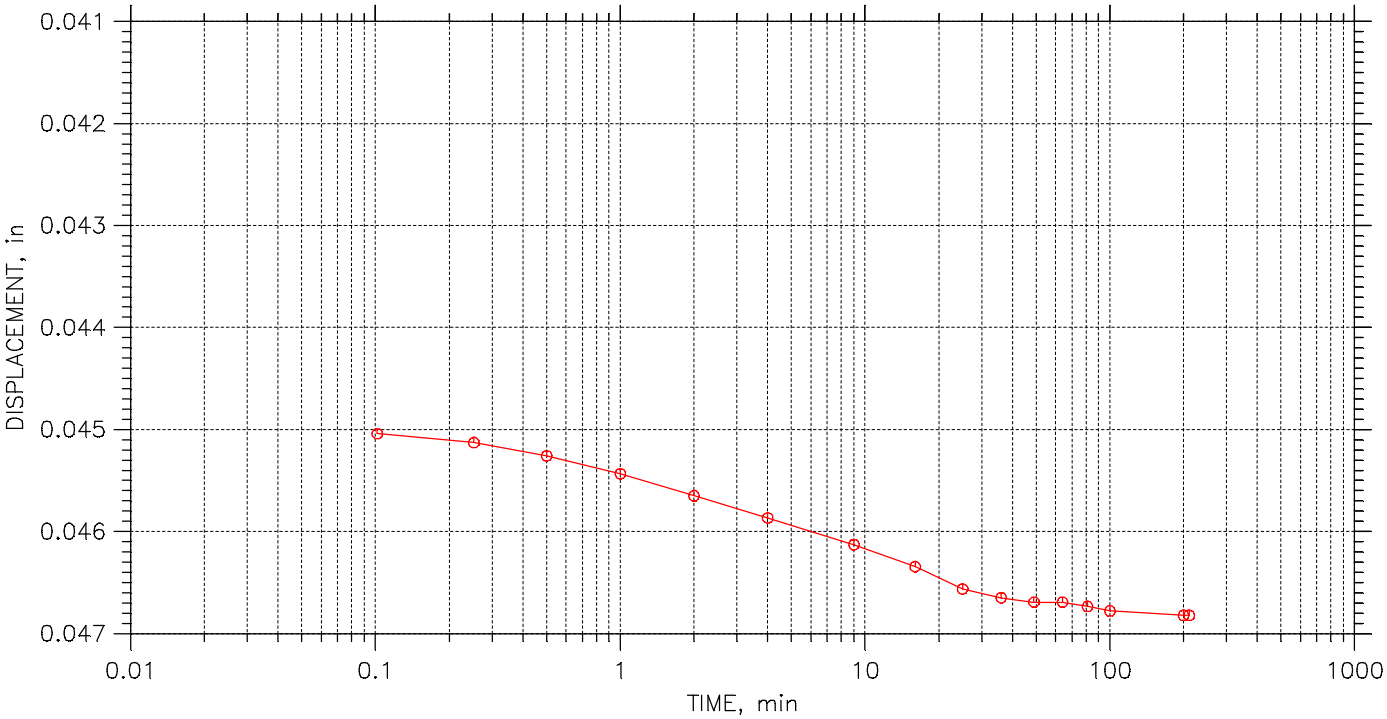
Mon, 28-JAN-2019 12:55:45

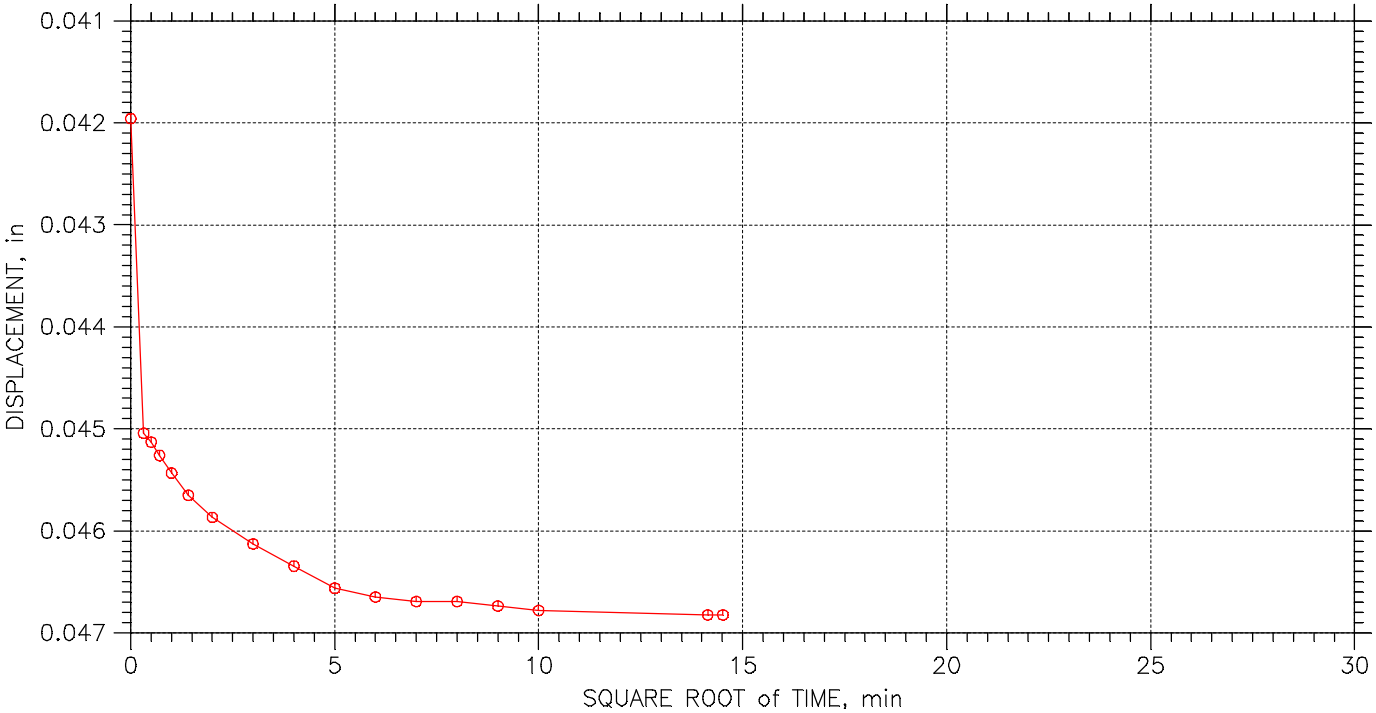
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 23

Stress: 2. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0'' ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

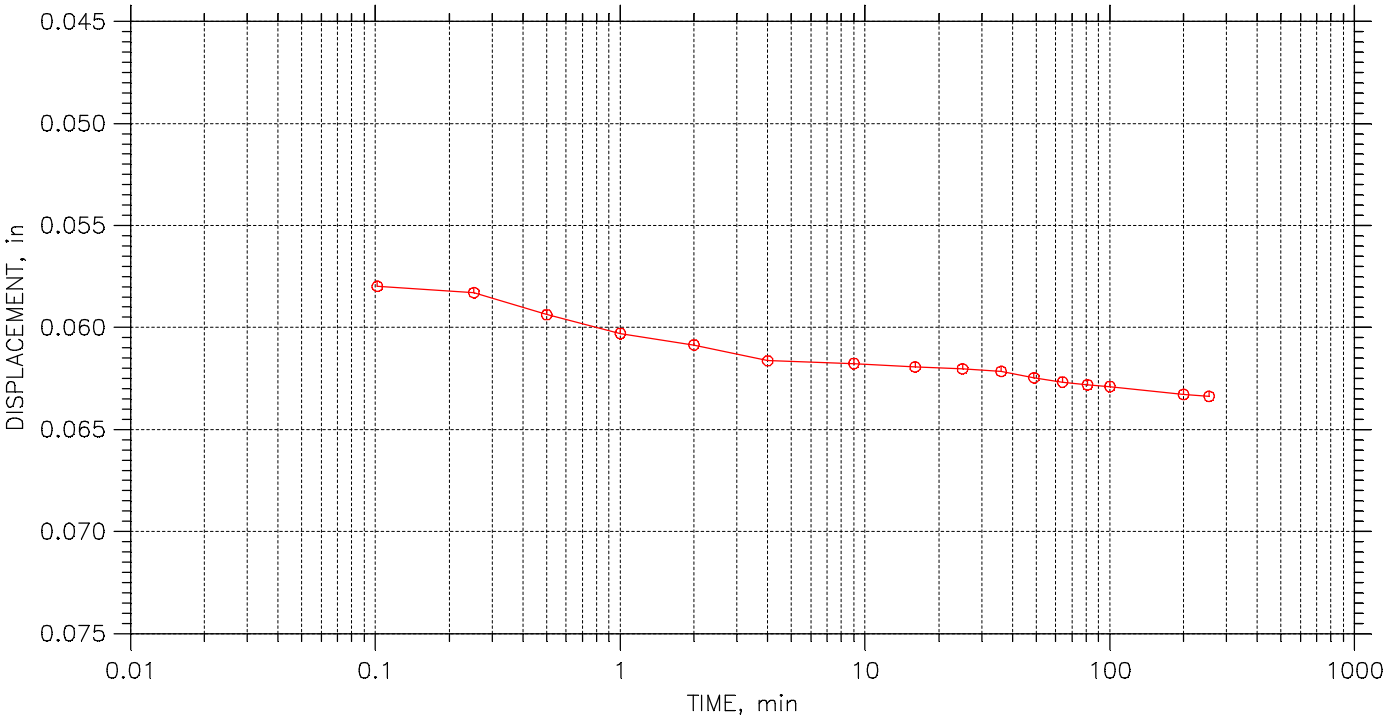
Mon, 28-JAN-2019 12:55:46

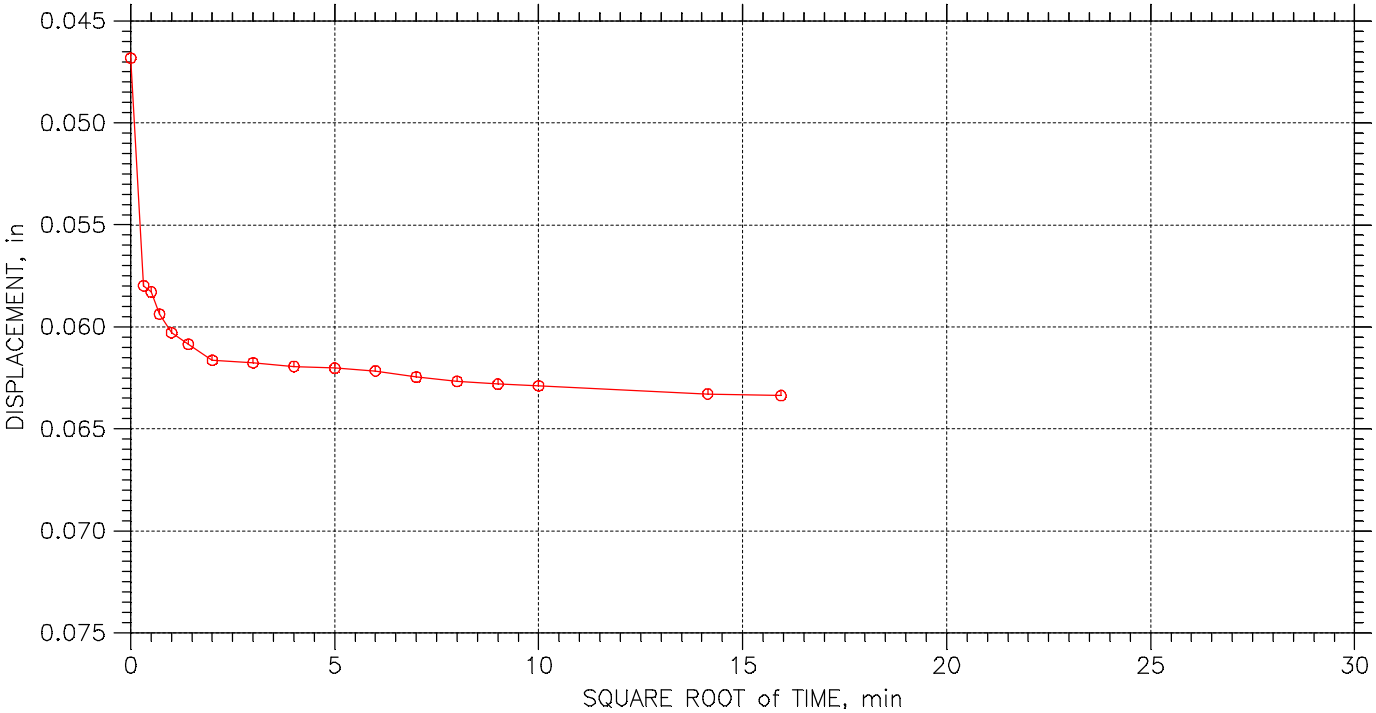
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 23

Stress: 4. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

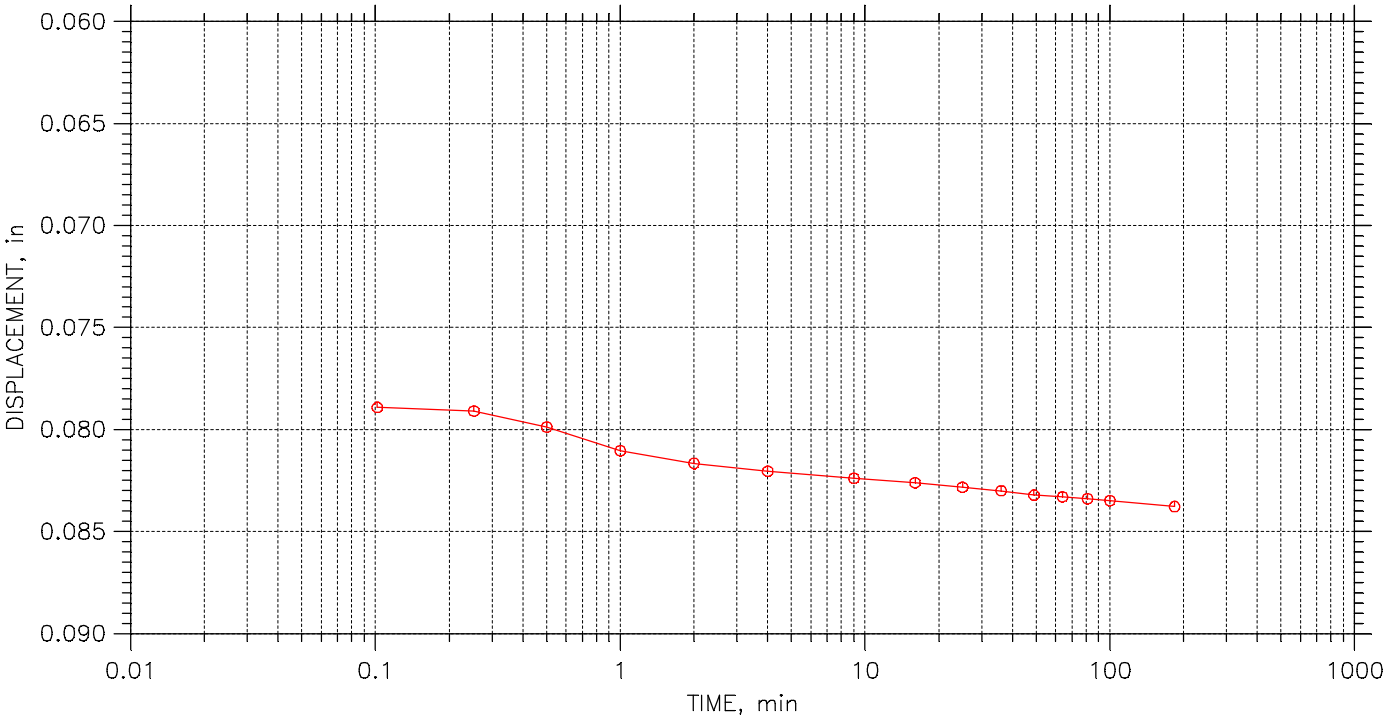
Mon, 28-JAN-2019 12:55:48

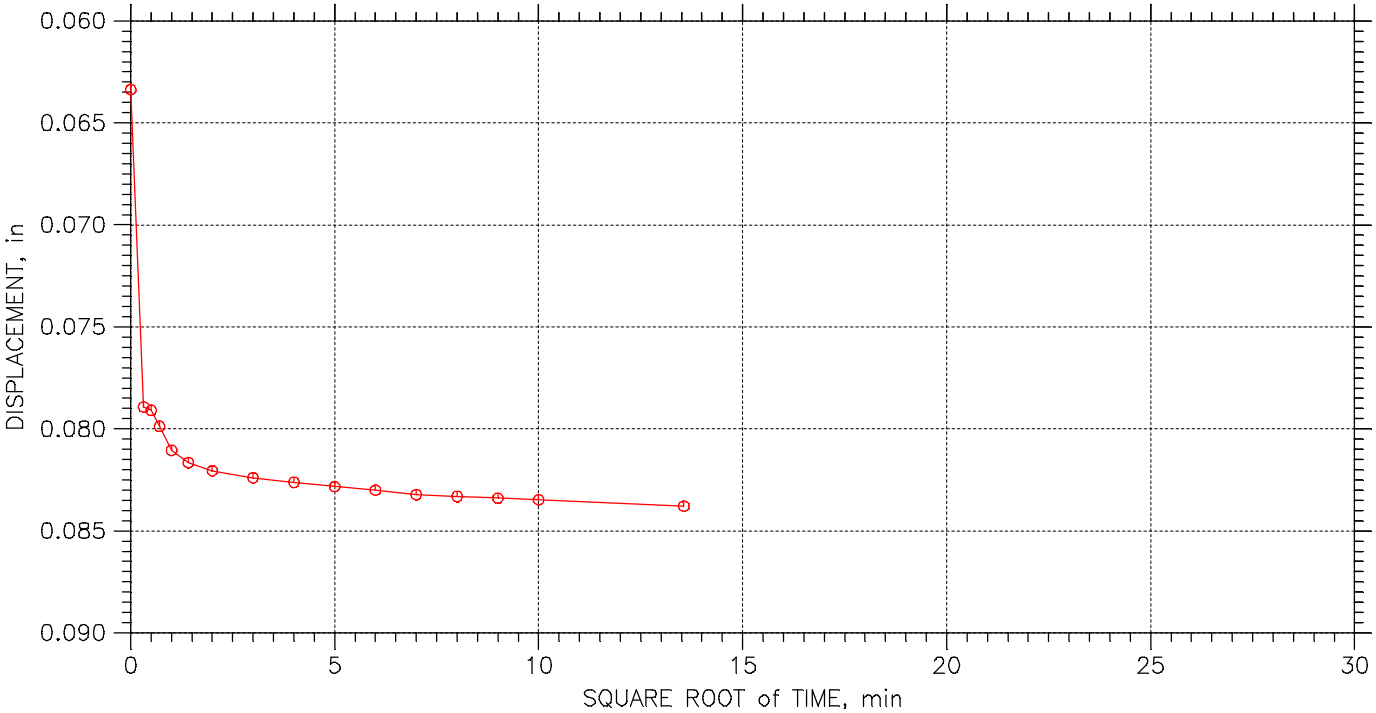
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 23

Stress: 8. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

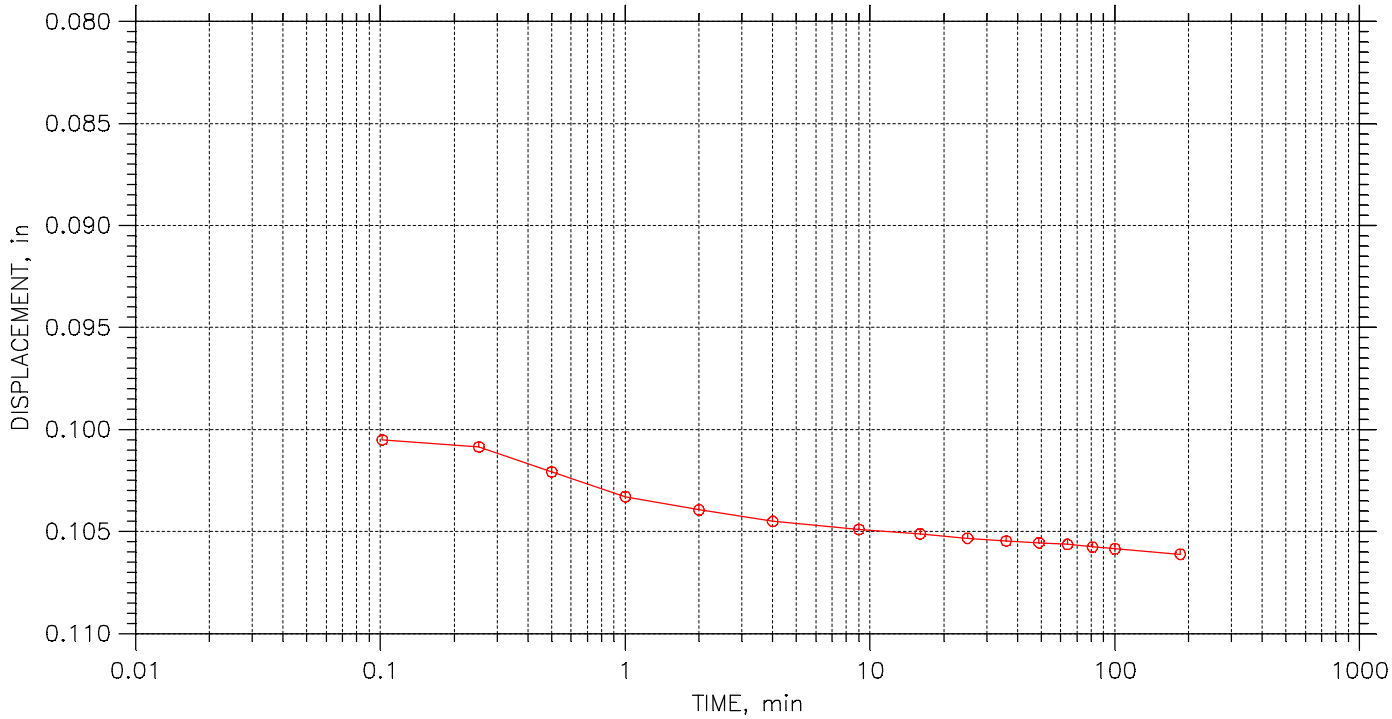
Mon, 28-JAN-2019 12:55:49

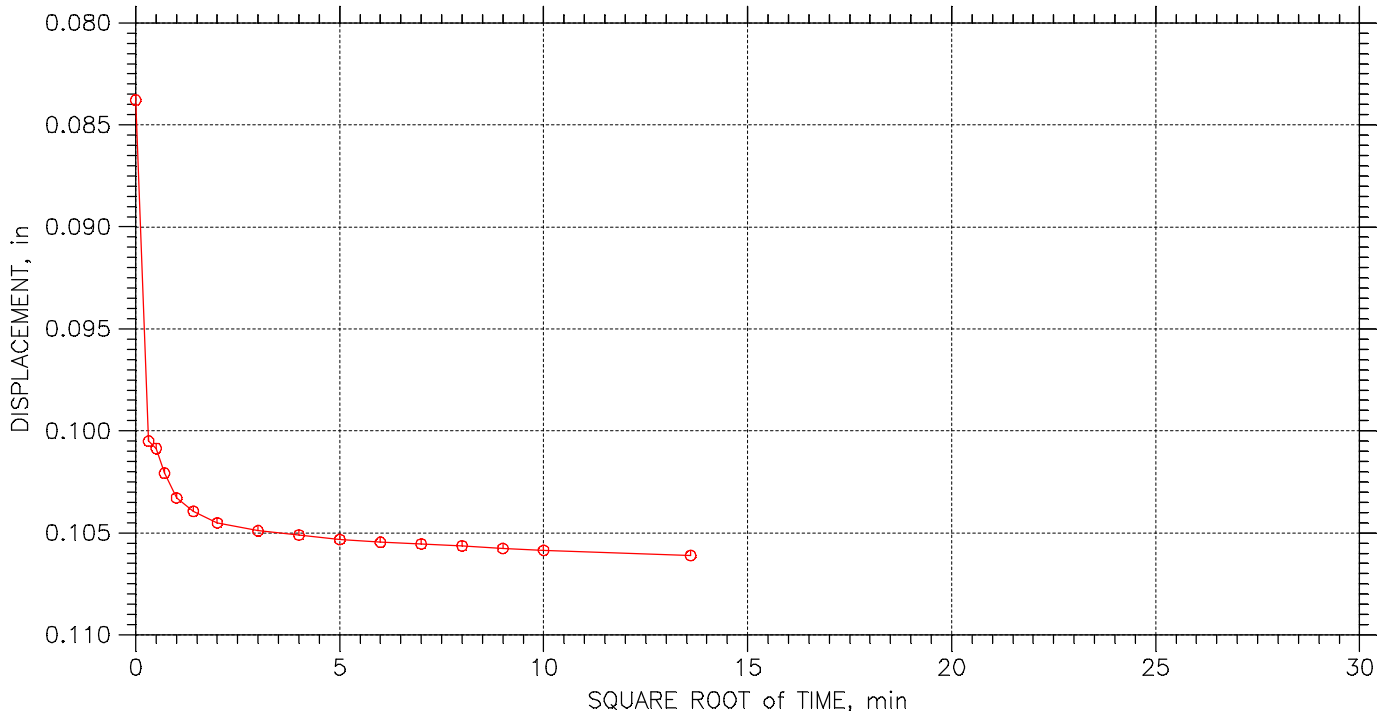
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 23

Stress: 16. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0'' ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

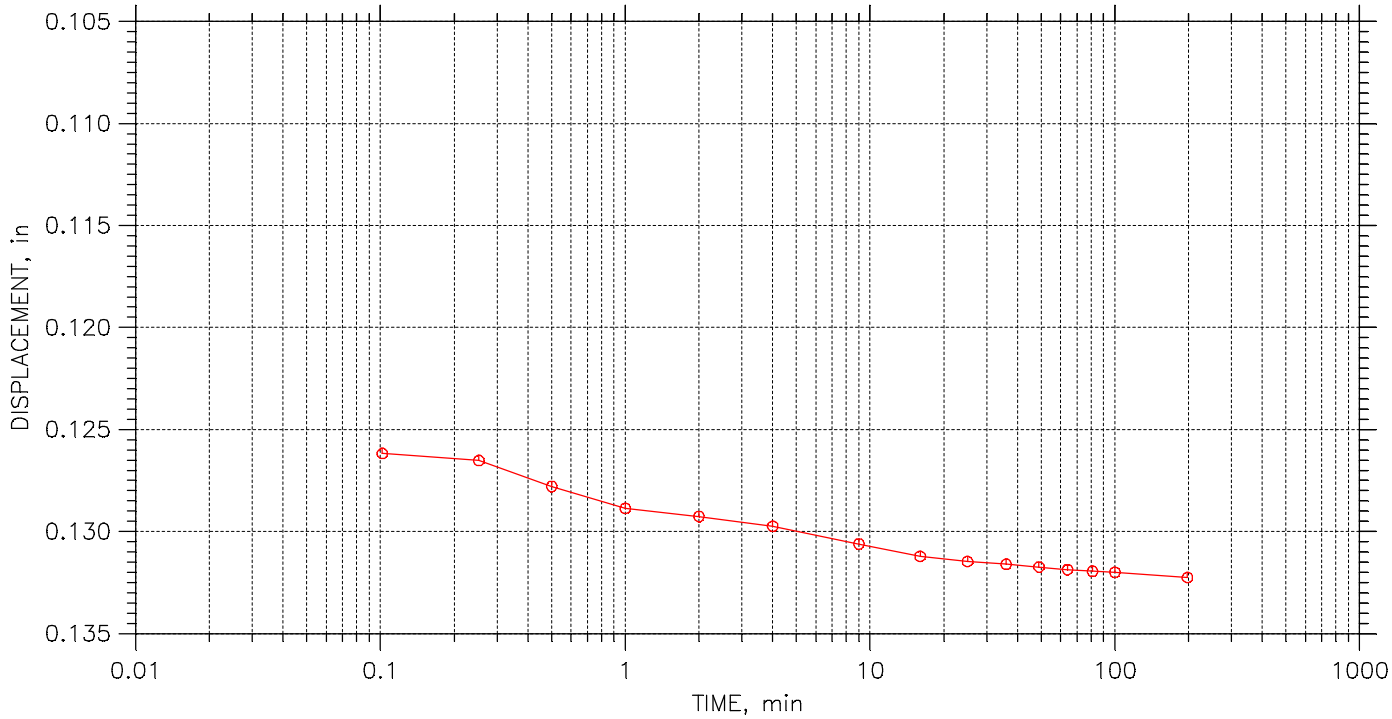
Mon, 28-JAN-2019 12:55:50

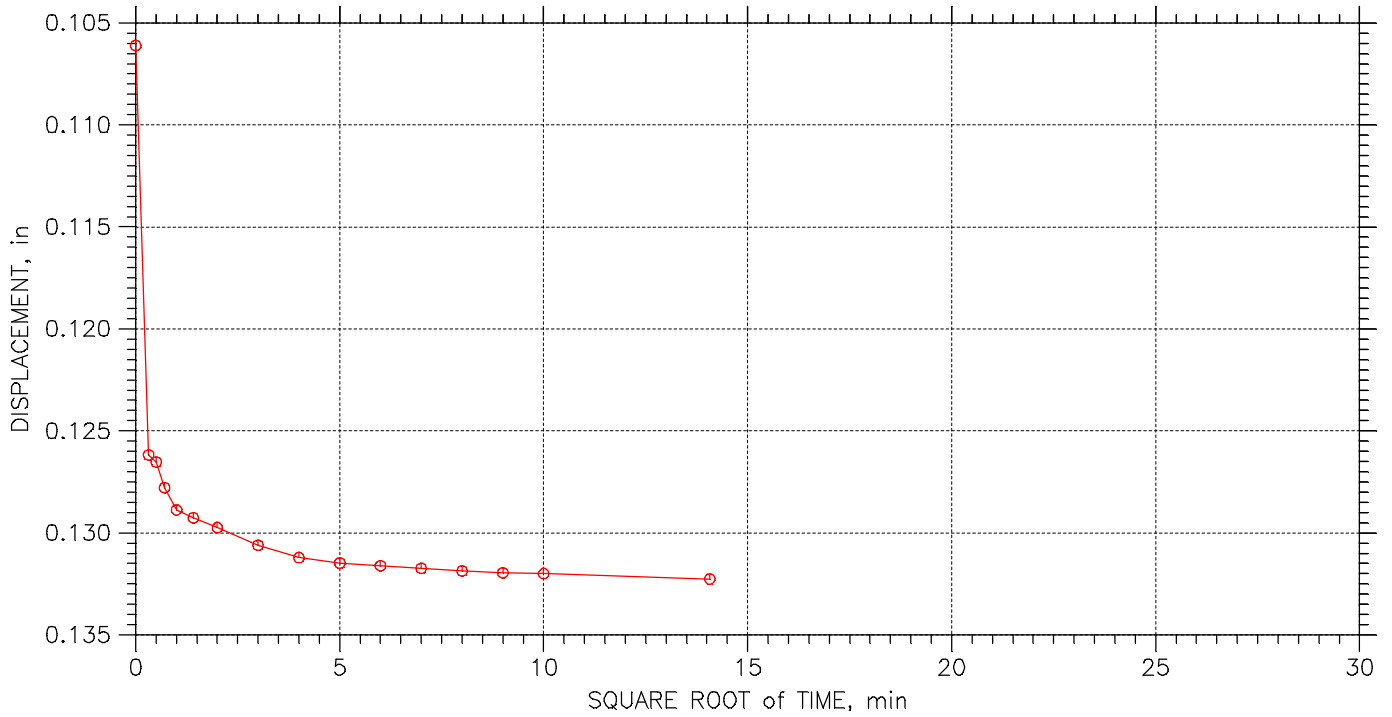
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 23

Stress: 32. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

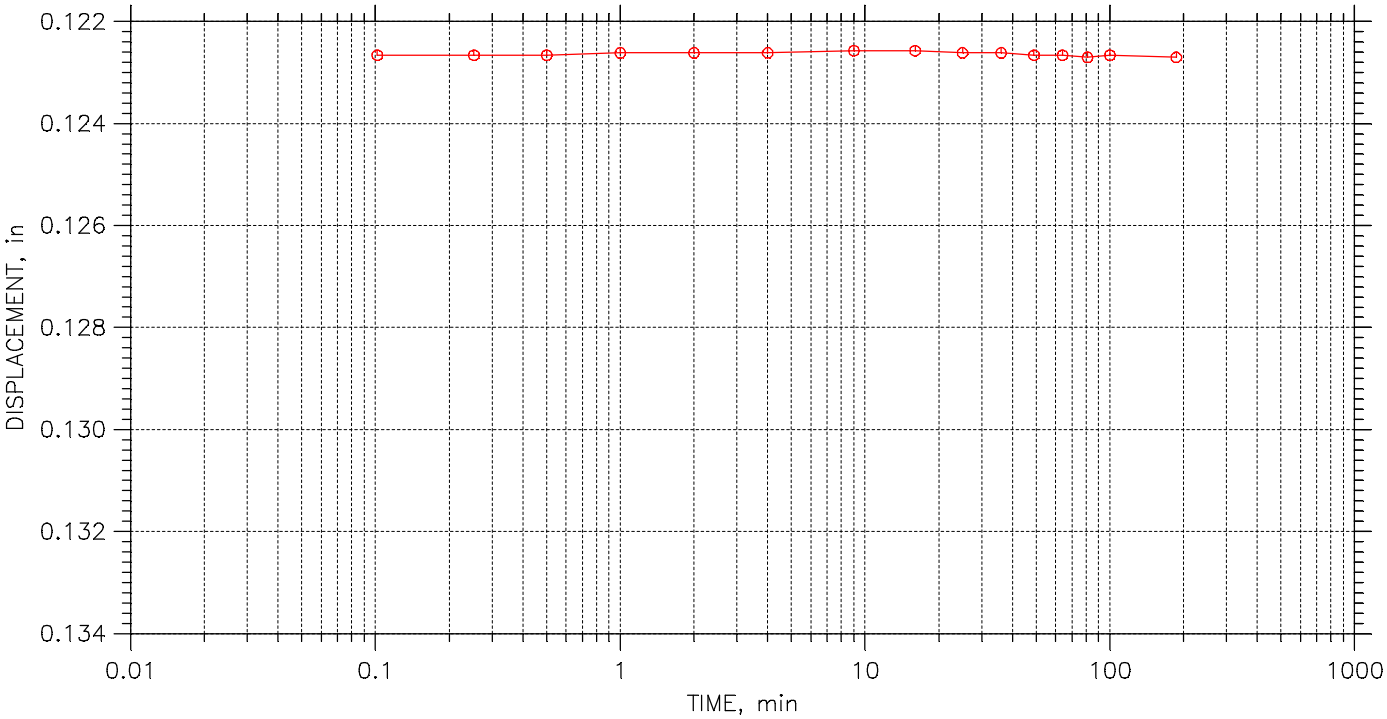
Mon, 28-JAN-2019 12:55:52

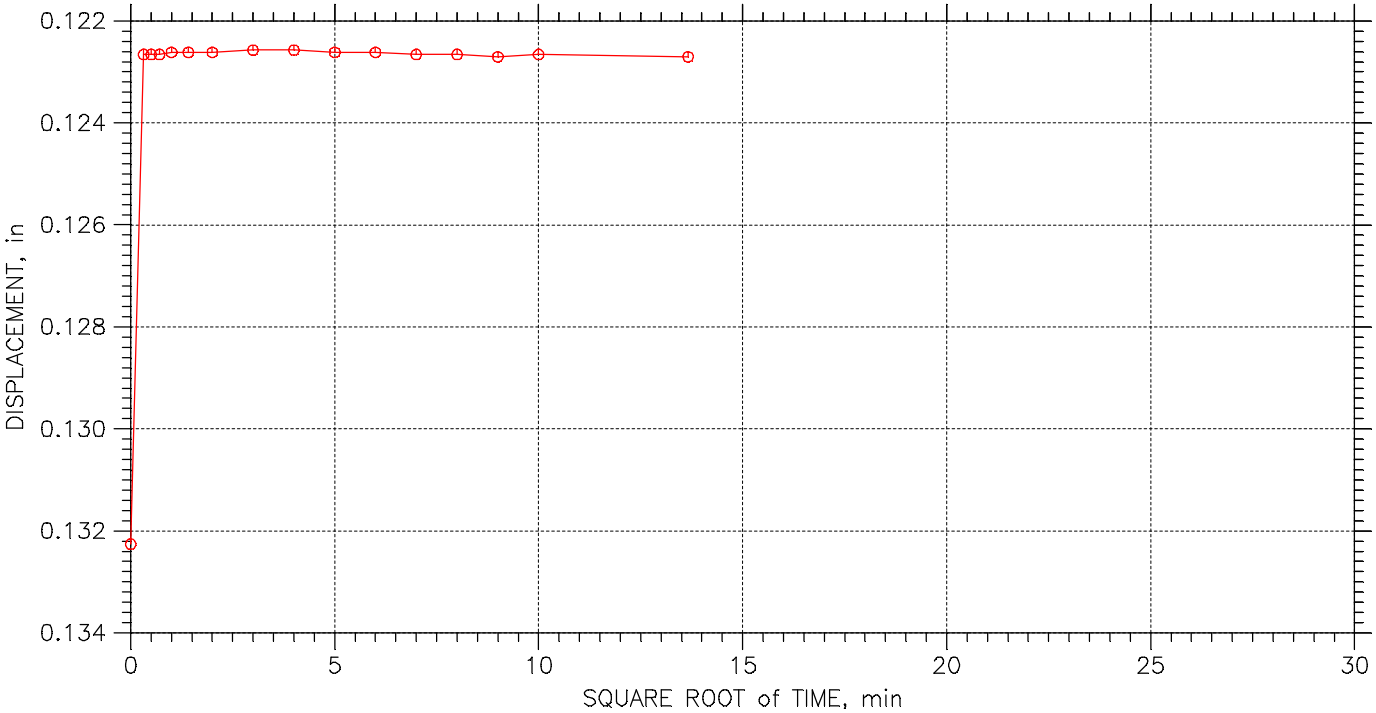
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 23

Stress: 16. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0'' ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

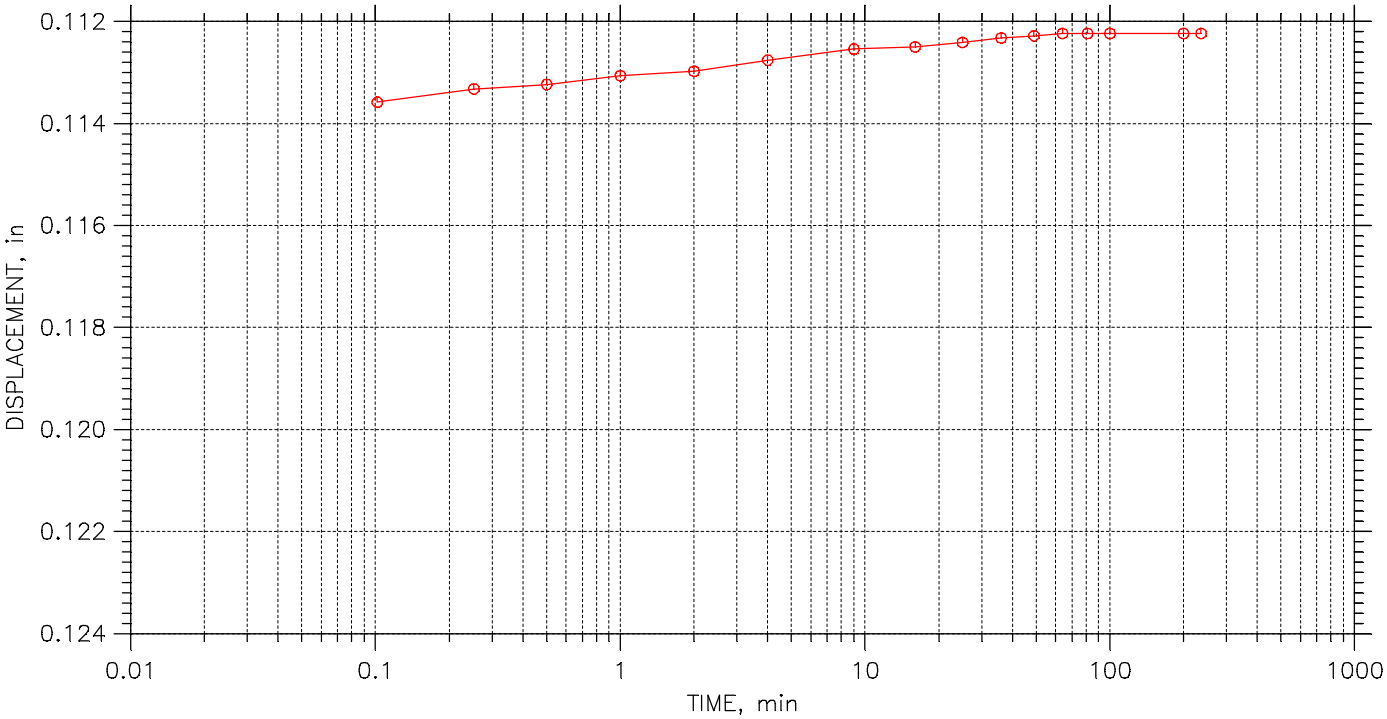
Mon, 28-JAN-2019 12:55:53

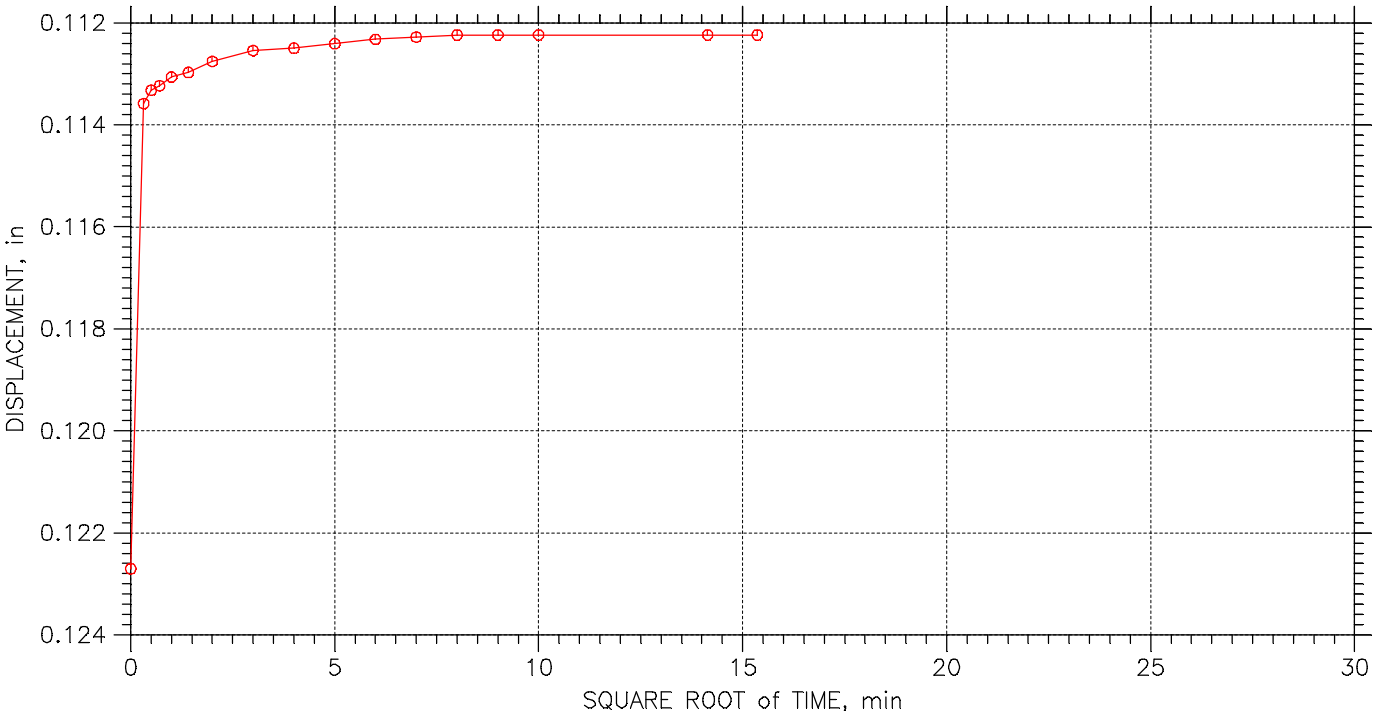
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 23

Stress: 4. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0'' ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

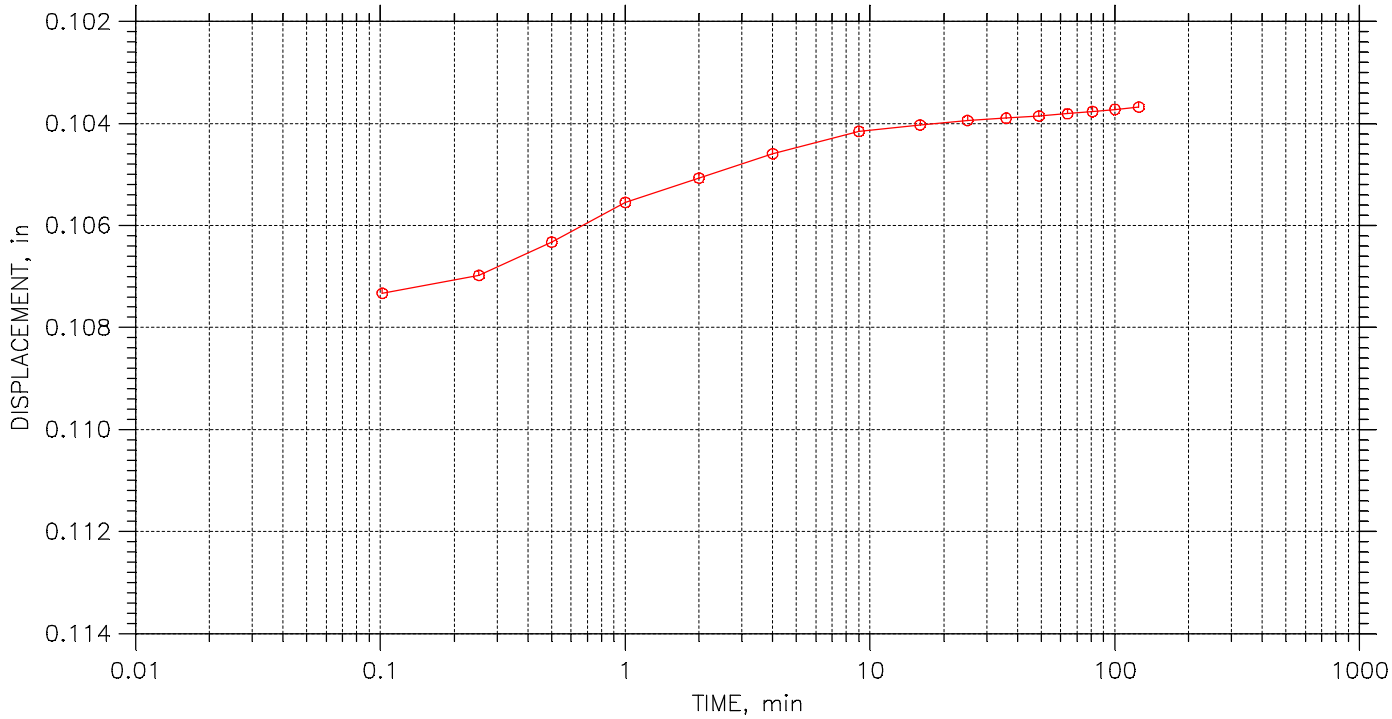
Mon, 28-JAN-2019 12:55:54

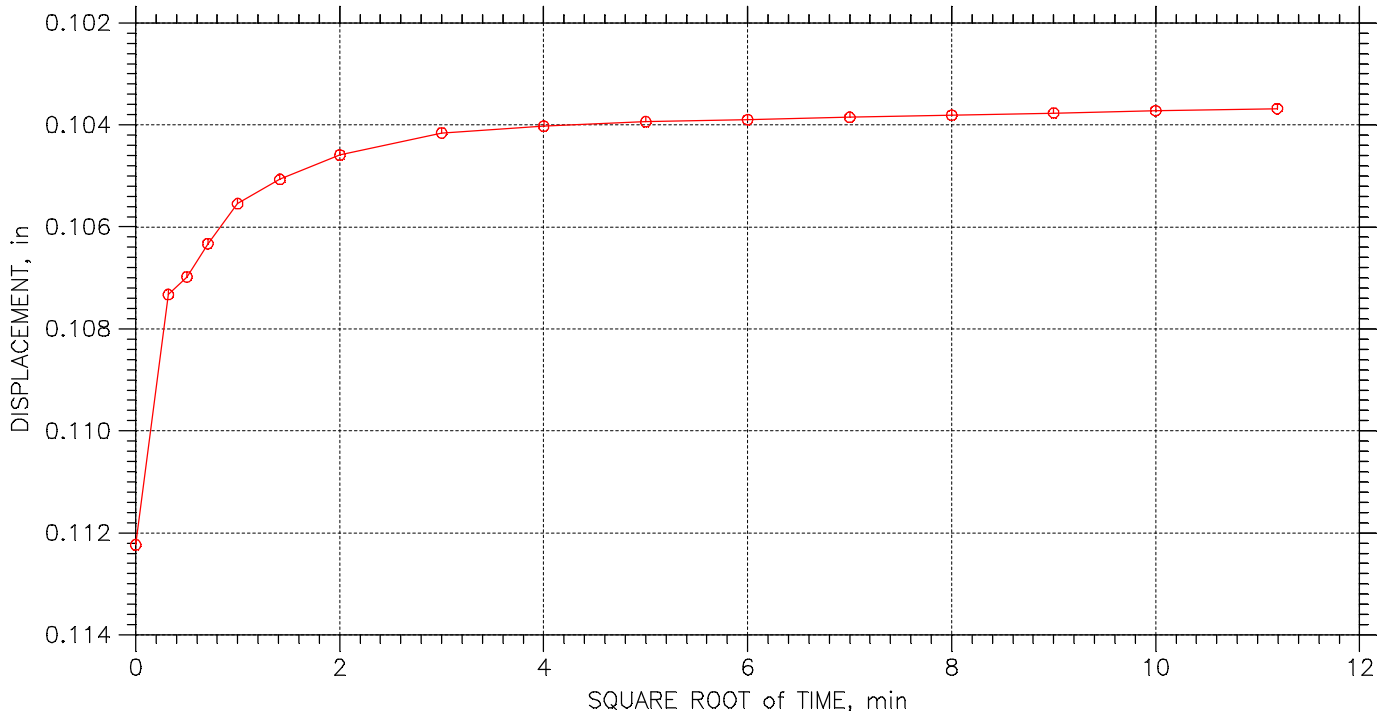
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 23

Stress: 1. tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0'' ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

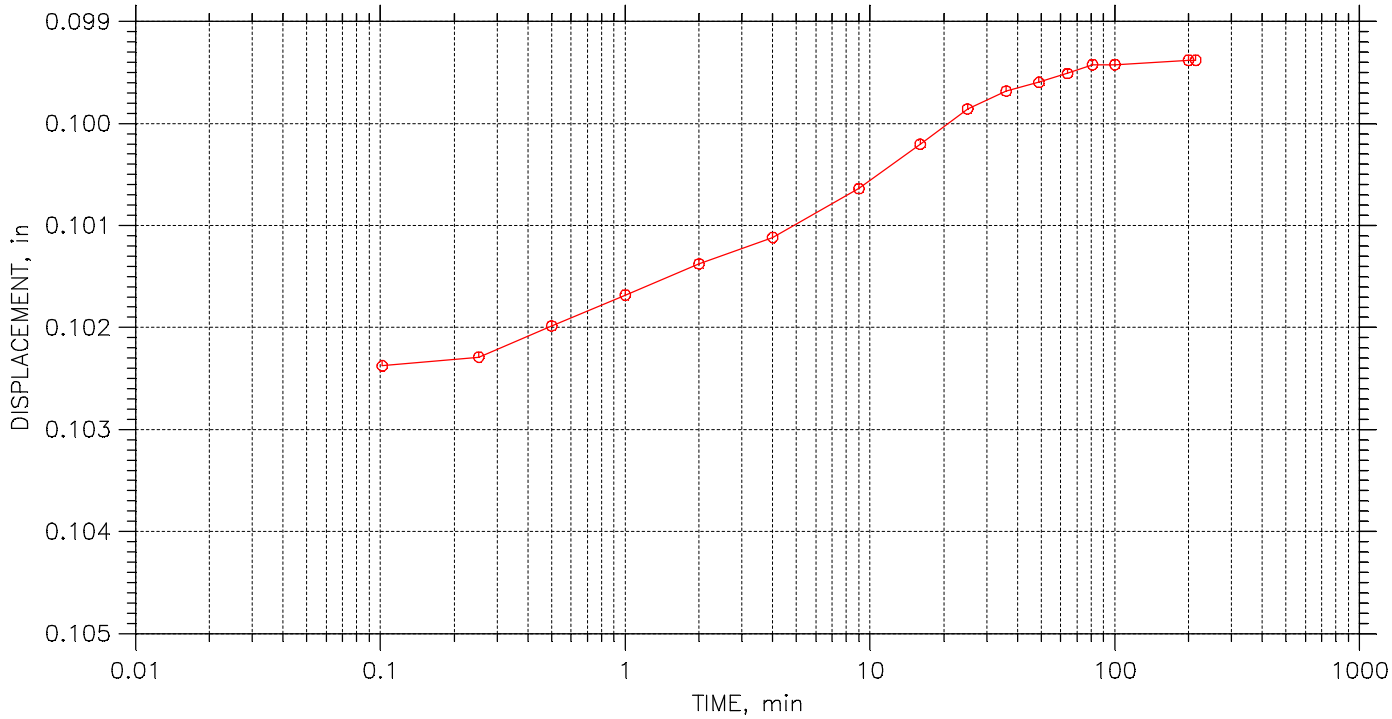
Mon, 28-JAN-2019 12:55:56

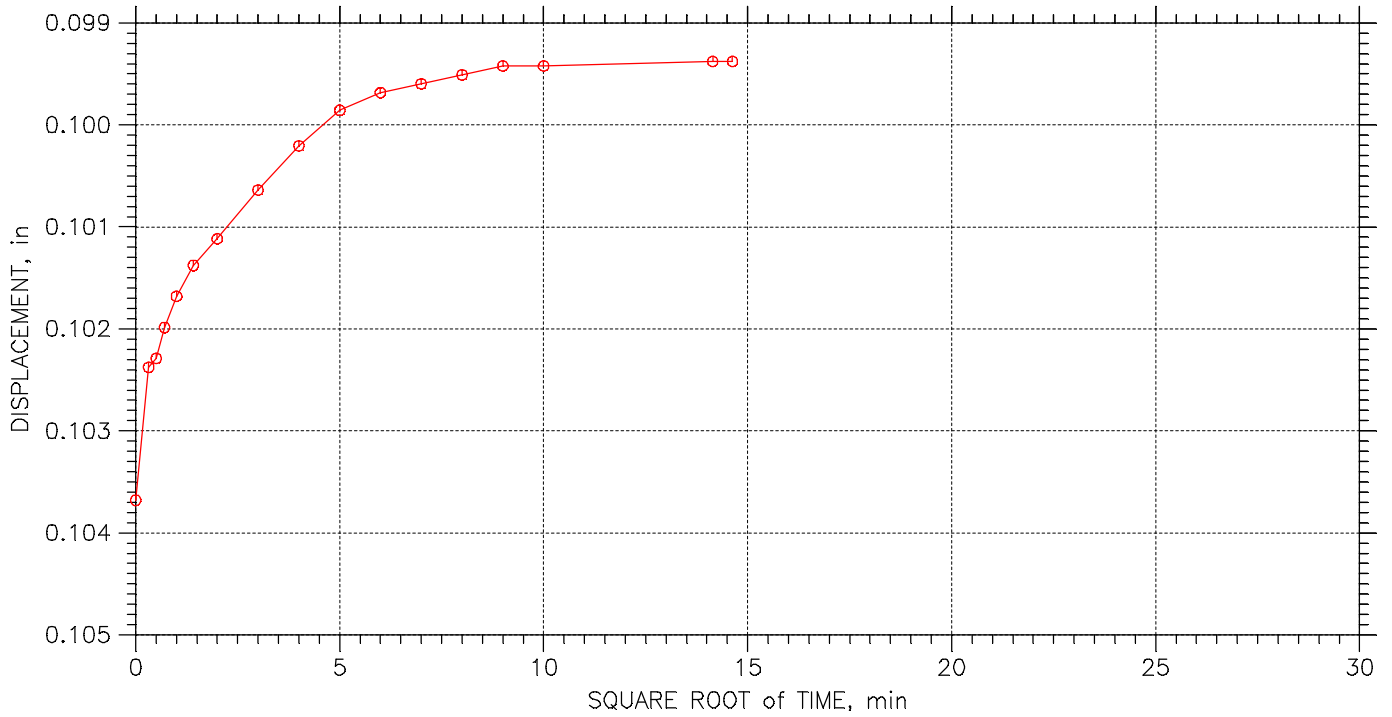
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 23

Stress: 0.5 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

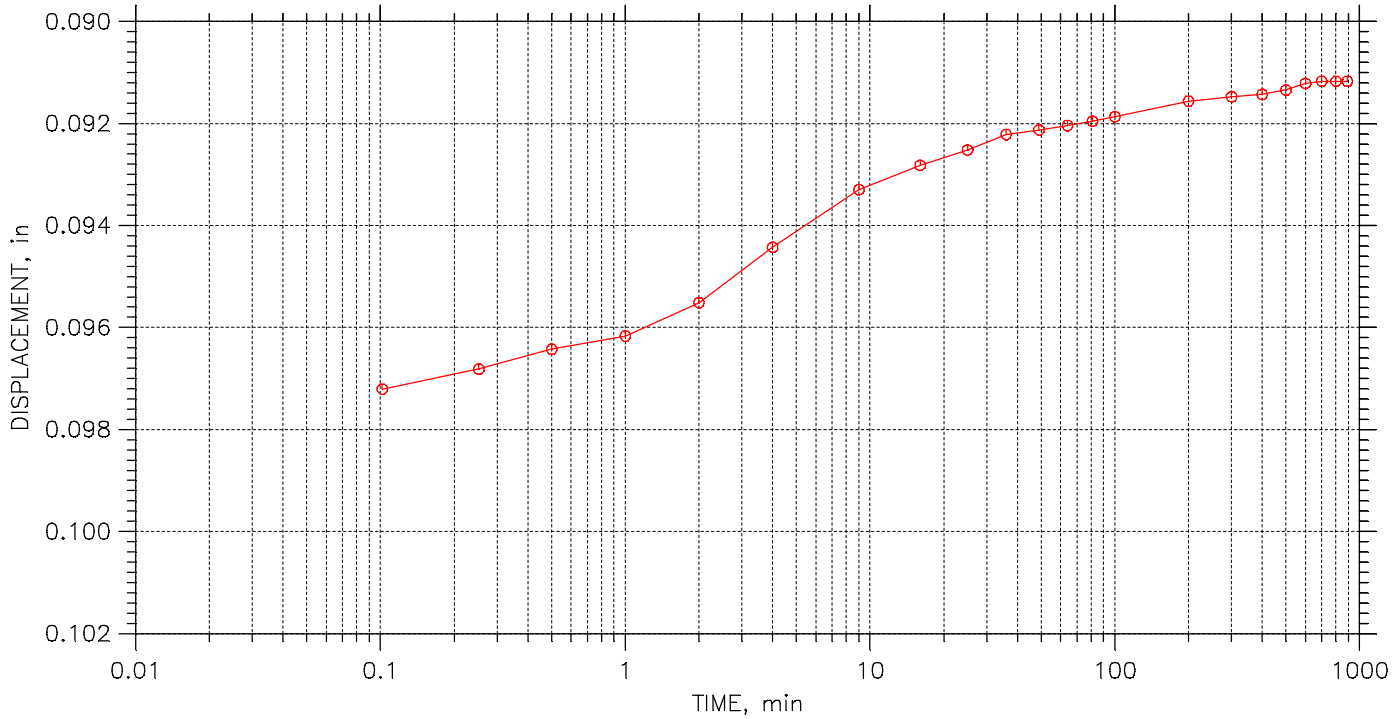
Mon, 28-JAN-2019 12:55:57

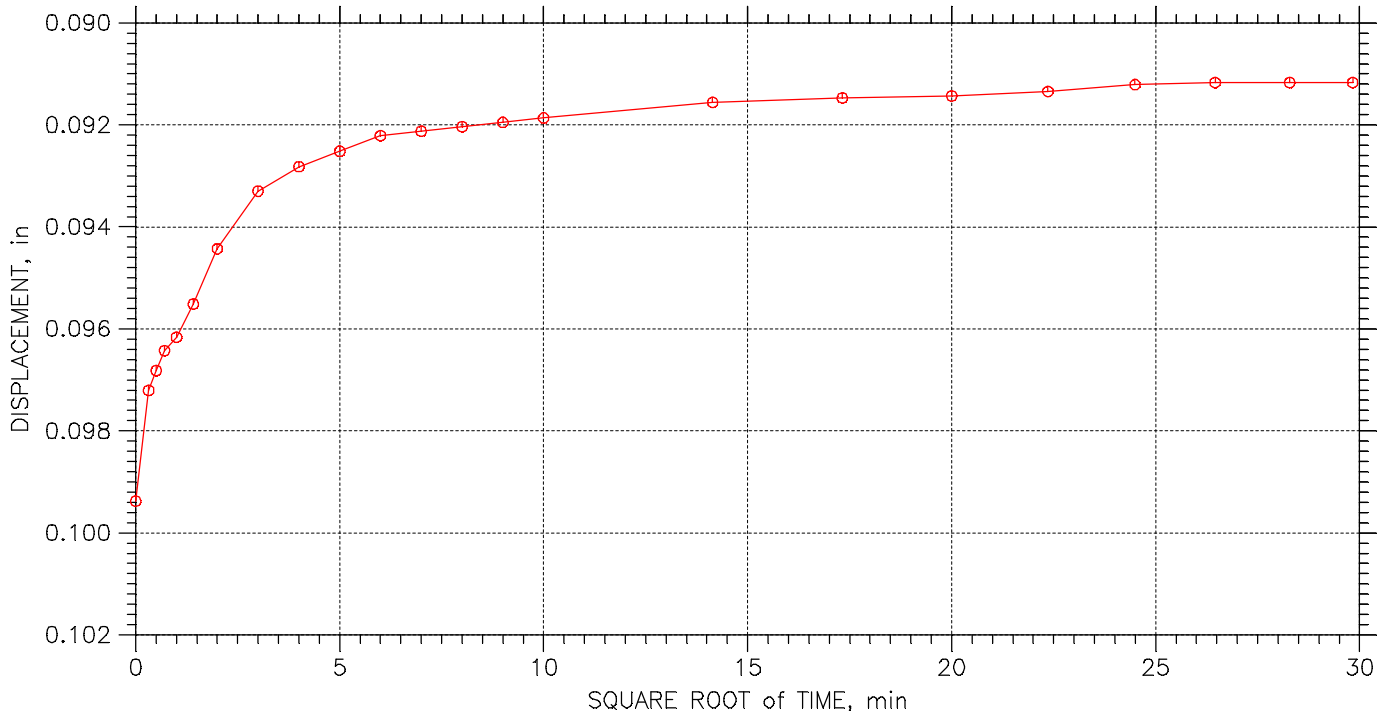
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 23

Stress: 0.125 tsf





Terracon Consulting Engineers & Scientists	Project: SMCL NE EXPANSION	Location: EAU CLAIRE, WI	Project No.: 11185006
	Boring No.: TB-83	Tested By: BCM	Checked By: WPQ
	Sample No.: N/A	Test Date: 1/21/18	Depth: 19.0'-21.0'
	Test No.: TB831921CON	Sample Type: 3.0" ST	Elevation: ----
	Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED		
	Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435		

Mon, 28-JAN-2019 12:55:58

CONSOLIDATION TEST DATA

Terracon
Consulting Engineers & Scientists

Project: SMCL NE EXPANSION
Boring No.: TB-83
Sample No.: N/A
Test No.: TB831921CON

Location: EAU CLAIRE, WI
Tested By: BCM
Test Date: 1/21/18
Sample Type: 3.0" ST

Project No.: 11185006
Checked By: WPQ
Depth: 19.0'-21.0'
Elevation: ----

Soil Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED
Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.72
Initial Void Ratio: 0.57
Final Void Ratio: 0.38

Liquid Limit: ---
Plastic Limit: ---
Plasticity Index: ---

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	X-5
Wt. Container + Wet Soil, gm	188.8	197.1	195.37	161.72
Wt. Container + Dry Soil, gm	168.91	180.64	180.64	147.18
Wt. Container, gm	44.34	76.14	76.14	44.04
Wt. Dry Soil, gm	124.57	104.5	104.5	103.14
Water Content, %	15.97	15.75	14.10	14.10
Void Ratio	---	0.57	0.38	---
Degree of Saturation, %	---	75.43	101.71	---
Dry Unit Weight, pcf	---	108.29	123.31	---

CONSOLIDATION TEST DATA

Terracon
Consulting Engineers & Scientists

Project: SMCL NE EXPANSION
Boring No.: TB-83
Sample No.: N/A
Test No.: TB831921CON

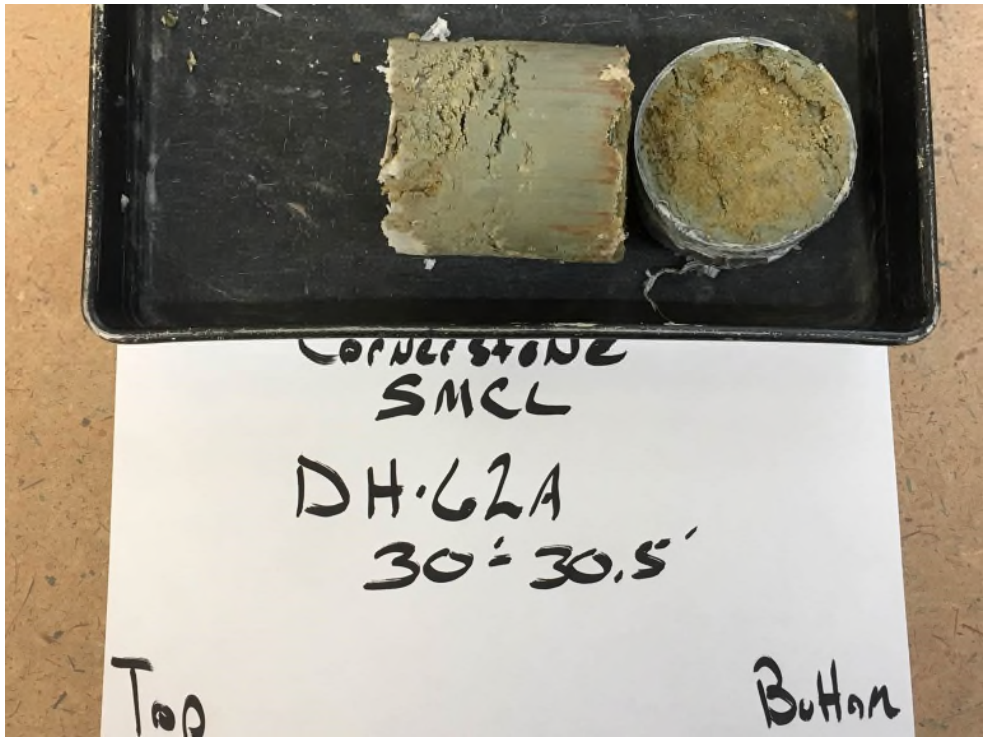
Location: EAU CLAIRE, WI
Tested By: BCM
Test Date: 1/21/18
Sample Type: 3.0" ST

Project No.: 11185006
Checked By: WPQ
Depth: 19.0'-21.0'
Elevation: ----

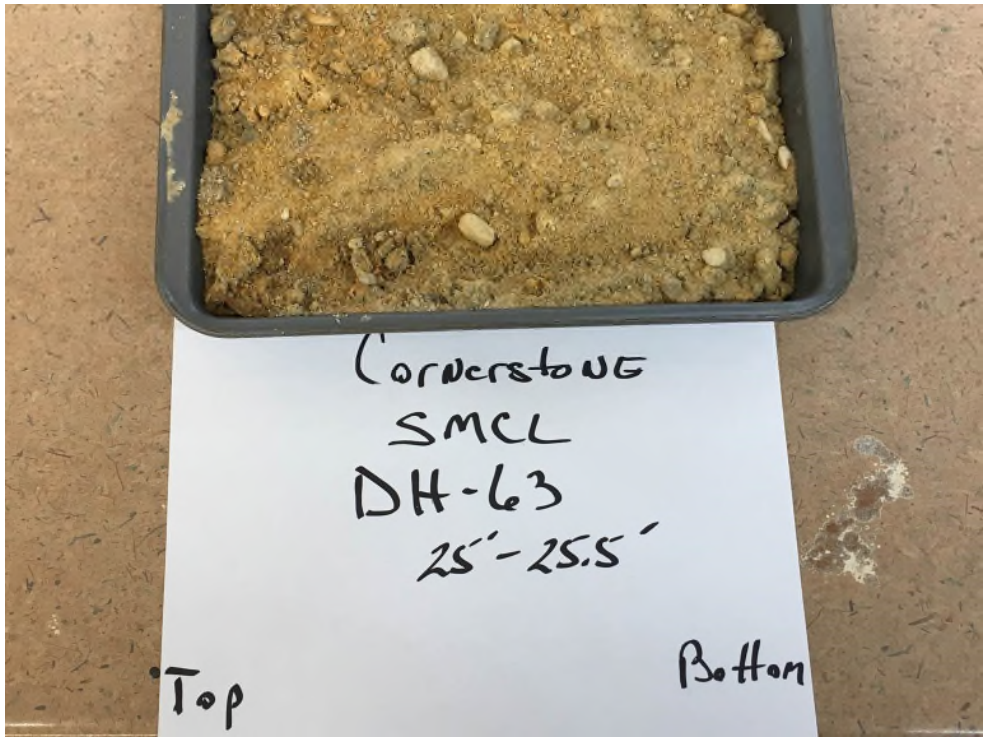
Soil Description: BROWN GREENISH GRAY CLAYEY SAND GRAVEL NOTED SAND POCKETS NOTED
Remarks: Pc = 1.9 tsf Cc = 0.183 Ccr = 0.014 TEST PERFORMED AS PER ASTM D2435

	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. ft^2/sec	Coefficient of Consolidation Log ft^2/sec	Coefficient of Consolidation Ave. ft^2/sec
1	0.125	0.0043	0.559	0.57	0.2	0.0	1.43e-005	0.00e+000	1.43e-005
2	0.25	0.008817	0.550	1.18	1.0	0.0	3.28e-006	0.00e+000	3.28e-006
3	0.5	0.01655	0.533	2.21	0.2	0.0	1.45e-005	0.00e+000	1.45e-005
4	0.75	0.02202	0.522	2.94	0.9	0.0	3.26e-006	0.00e+000	3.26e-006
5	1	0.0271	0.511	3.62	0.2	0.0	1.44e-005	2.30e-002	2.87e-005
6	2	0.04483	0.474	5.99	0.2	0.0	1.44e-005	0.00e+000	1.44e-005
7	1	0.04248	0.479	5.68	0.1	0.0	2.43e-005	0.00e+000	2.43e-005
8	0.5	0.0407	0.483	5.44	0.2	0.0	1.30e-005	0.00e+000	1.30e-005
9	0.125	0.03666	0.491	4.90	0.1	0.0	2.96e-005	0.00e+000	2.96e-005
10	0.25	0.03779	0.489	5.05	3.9	0.0	7.41e-007	0.00e+000	7.41e-007
11	0.5	0.03848	0.487	5.14	23.3	0.0	1.23e-007	0.00e+000	1.23e-007
12	0.75	0.04031	0.484	5.39	0.1	0.0	2.46e-005	0.00e+000	2.46e-005
13	1	0.04196	0.480	5.61	0.5	0.0	5.85e-006	0.00e+000	5.85e-006
14	2	0.04682	0.470	6.26	0.5	0.0	6.06e-006	0.00e+000	6.06e-006
15	4	0.06337	0.435	8.47	0.2	0.0	1.41e-005	0.00e+000	1.41e-005
16	8	0.08379	0.392	11.20	0.1	0.0	1.81e-005	0.00e+000	1.81e-005
17	16	0.1061	0.346	14.18	0.2	0.0	1.25e-005	0.00e+000	1.25e-005
18	32	0.1323	0.291	17.67	0.2	0.0	1.17e-005	0.00e+000	1.17e-005
19	16	0.1227	0.311	16.39	0.0	0.0	9.27e-005	0.00e+000	9.27e-005
20	4	0.1122	0.333	15.00	0.1	0.0	2.29e-005	0.00e+000	2.29e-005
21	1	0.1037	0.351	13.85	0.2	0.0	1.06e-005	0.00e+000	1.06e-005
22	0.5	0.09938	0.360	13.28	5.8	0.0	4.09e-007	0.00e+000	4.09e-007
23	0.125	0.09117	0.377	12.18	2.2	1.4	1.09e-006	1.73e-006	1.34e-006

LABORATORY SOIL TESTING PHOTOGRAPHS CQM, INC.
SEVEN MILE CREEK - SECTOR 2 NE EXPANSION FEASIBILITY REPORT
WDNR LICENSE NO. 3097, EAU CLAIRE, WI



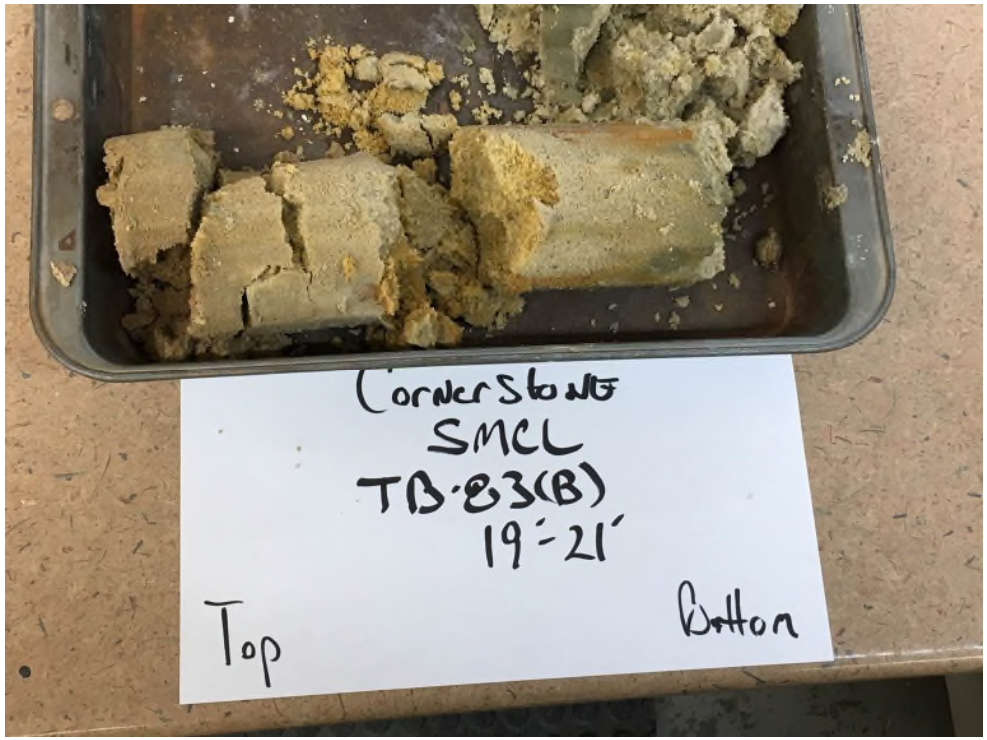
Boring DH-62A 30-30.5 ft BGS



Boring DH-63 25-25.5 ft BGS

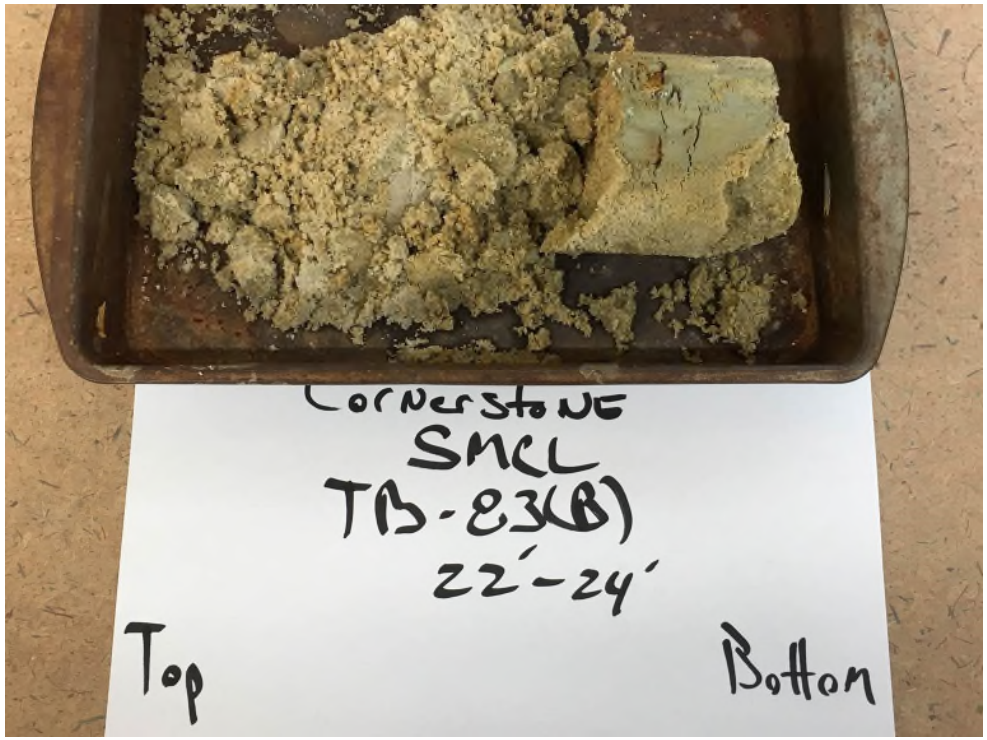
LABORATORY SOIL TESTING PHOTOGRAPHS CQM, INC.
SEVEN MILE CREEK - SECTOR 2 NE EXPANSION FEASIBILITY REPORT
WDNR LICENSE NO. 3097, EAU CLAIRE, WI

Boring TB-81 50-50.5 ft BGS



Boring TB-83B 19-21 ft BGS

LABORATORY SOIL TESTING PHOTOGRAPHS CQM, INC.
SEVEN MILE CREEK - SECTOR 2 NE EXPANSION FEASIBILITY REPORT
WDNR LICENSE NO. 3097, EAU CLAIRE, WI



Boring TB-83B 22-24 ft BGS