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Geotechnical Test Report

January 19, 2009

GTX-8790
Old Amherst Landfill CSA Project

Amherst, MA

Prepared for:

Consulting Engineers • Environmental Specialists Tighe&Bond

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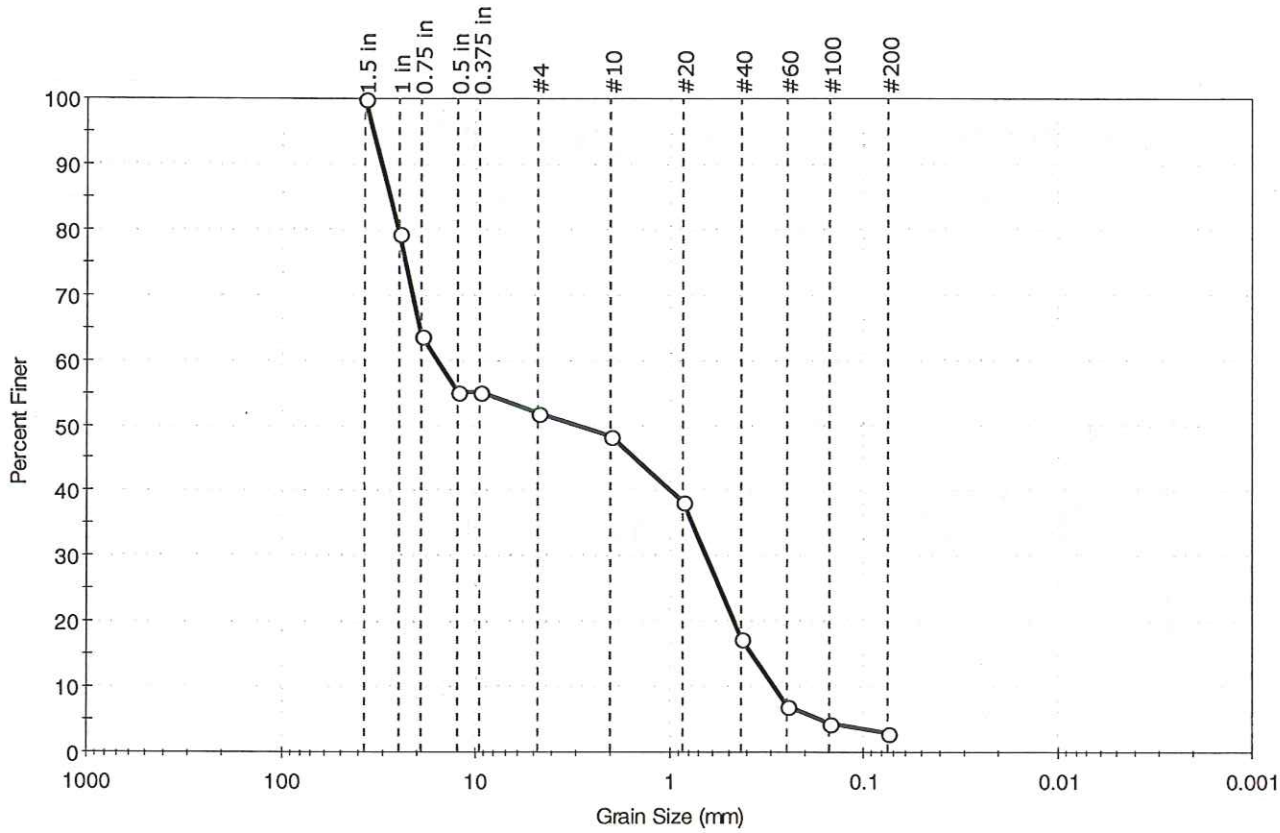
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID:Well #1-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 15-17 ft	Test Id: 145113		
Test Comment:	Less than 10% fines, Hydrometer not performed		
Sample Description:	Moist, yellowsih brown sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	48.0	48.9	3.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	79		
0.75 in	19.00	64		
0.5 in	12.50	55		
0.375 in	9.50	55		
#4	4.75	52		
#10	2.00	48		
#20	0.85	38		
#40	0.42	17		
#60	0.25	7		
#100	0.15	5		
#200	0.075	3		

Coefficients

D_{85} = 27.9135 mm	D_{30} = 0.6450 mm
D_{60} = 15.8785 mm	D_{15} = 0.3740 mm
D_{50} = 2.9951 mm	D_{10} = 0.2895 mm
C_u = 54.848	C_c = 0.091

Classification

ASTM Poorly graded sand with gravel (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Dispersion Device :

Dispersion Period : 1 minute

Specific Gravity : 2.65

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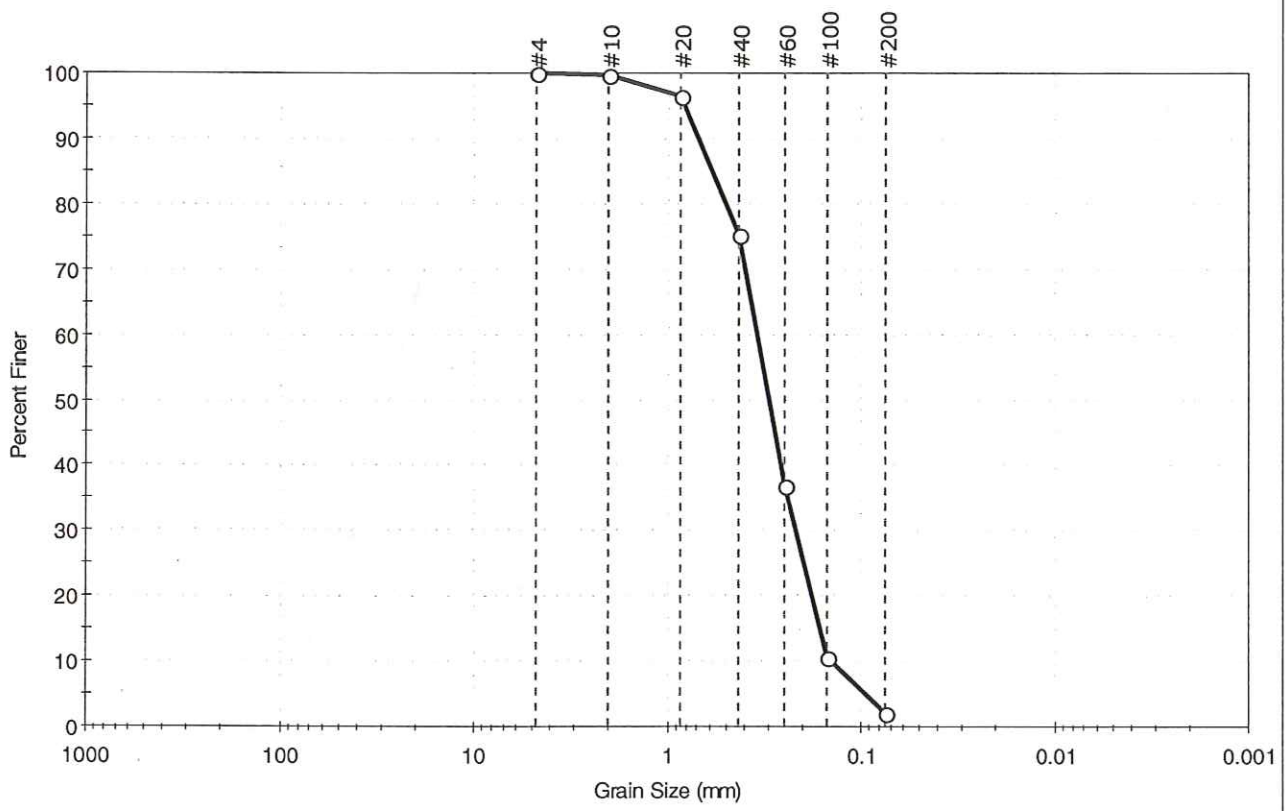
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #2-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 80-82 ft	Test Id: 145114		
Test Comment:	Less than 10% fines, Hydrometer not performed.		
Sample Description:	Moist, grayish brown sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	—	97.9	2.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	96		
#40	0.42	75		
#60	0.25	37		
#100	0.15	11		
#200	0.075	2		

Coefficients

D_{85} = 0.5856 mm	D_{30} = 0.2183 mm
D_{60} = 0.3442 mm	D_{15} = 0.1631 mm
D_{50} = 0.2996 mm	D_{10} = 0.1419 mm
C_u = 2.426	C_c = 0.976

Classification

ASTM Poorly graded sand (SP)

AASHTO Fine Sand (A-3 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device :

Dispersion Period : 1 minute

Specific Gravity : 2.65

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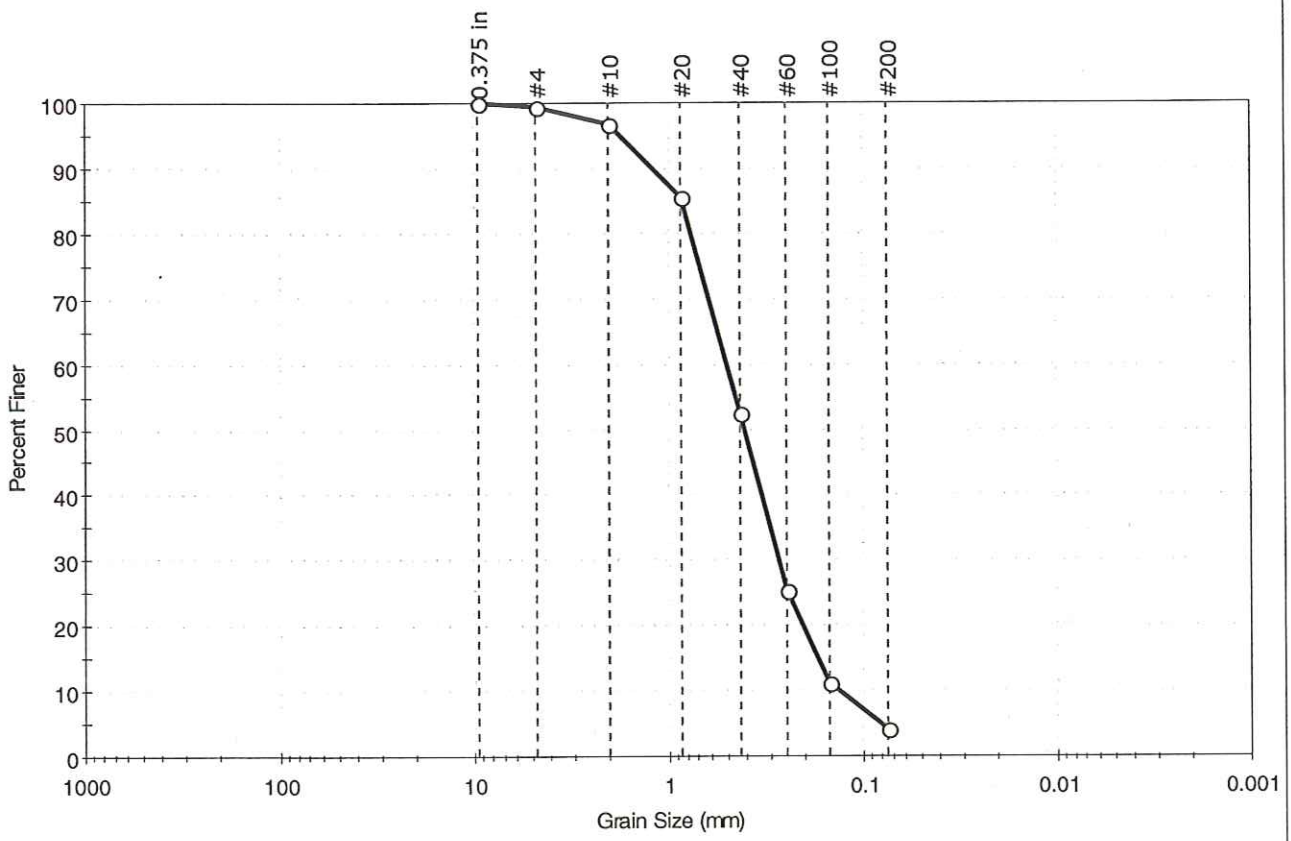
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #3-08	Test Date: 01/14/09	Checked By:	jdt
Depth : 80-82 ft	Test Id: 145115		
Test Comment:	Less than 10% fines, Hydrometer not performed		
Sample Description:	Moist, yellowish brown sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.4	95.4	4.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	100		
#10	2.00	97		
#20	0.85	86		
#40	0.42	52		
#60	0.25	25		
#100	0.15	11		
#200	0.075	4		

Coefficients

D_{85} = 0.8392 mm	D_{30} = 0.2740 mm
D_{60} = 0.4973 mm	D_{15} = 0.1722 mm
D_{50} = 0.4049 mm	D_{10} = 0.1335 mm
C_u = 3.725	C_c = 1.131

Classification

ASTM Poorly graded sand (SP)

AASHTO Fine Sand (A-3 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device :

Dispersion Period : 1 minute

Specific Gravity : 2.65

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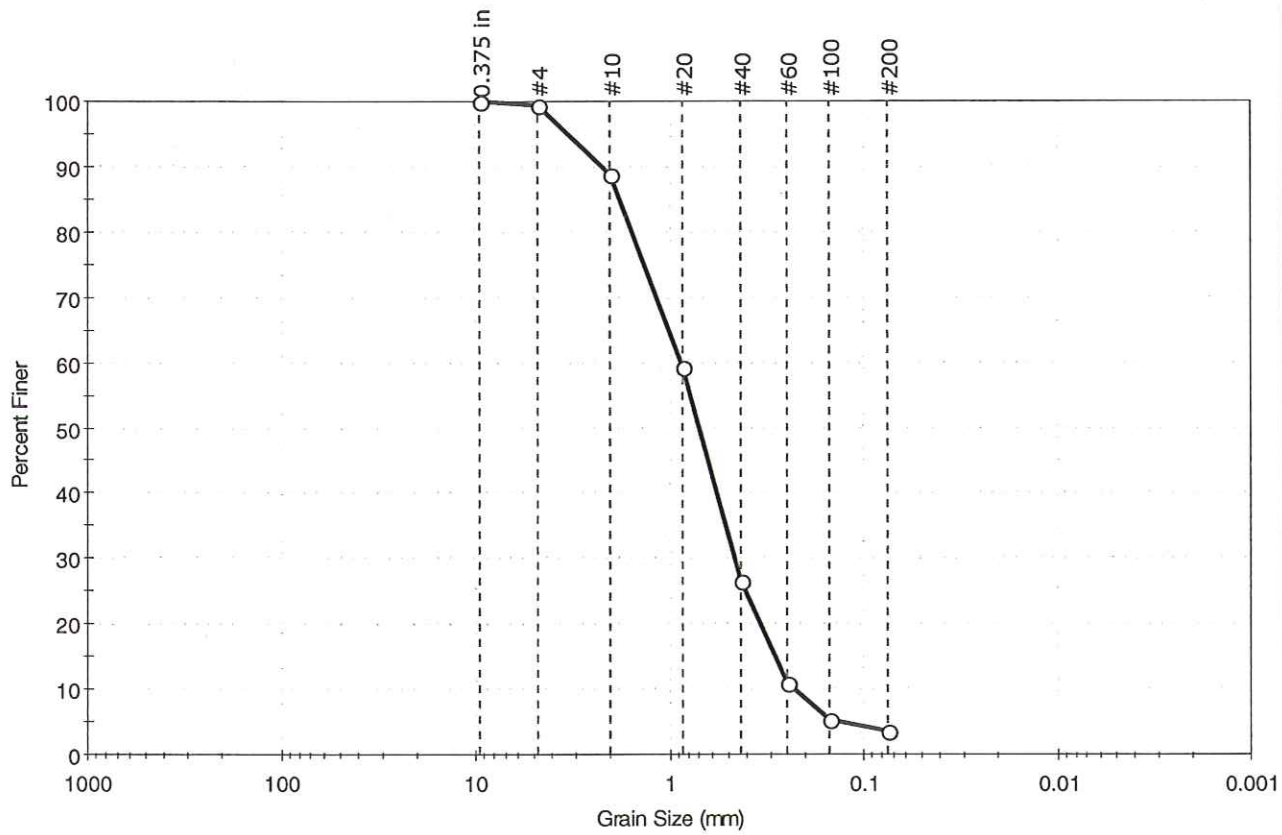
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID:Well #4-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 48-50 ft	Test Id: 145116		
Test Comment:	Less than 10% fines, Hydrometer not performed.		
Sample Description:	Moist, yellowish red sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.5	96.0	3.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	100		
#10	2.00	89		
#20	0.85	59		
#40	0.42	27		
#60	0.25	11		
#100	0.15	5		
#200	0.075	4		

Coefficients

D_{85} = 1.7966 mm D_{30} = 0.4563 mm
D_{60} = 0.8707 mm D_{15} = 0.2879 mm
D_{50} = 0.6990 mm D_{10} = 0.2321 mm
C_u = 3.751 C_c = 1.030

Classification

ASTM Poorly graded sand (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD
Dispersion Device :
Dispersion Period : 1 minute
Specific Gravity : 2.65

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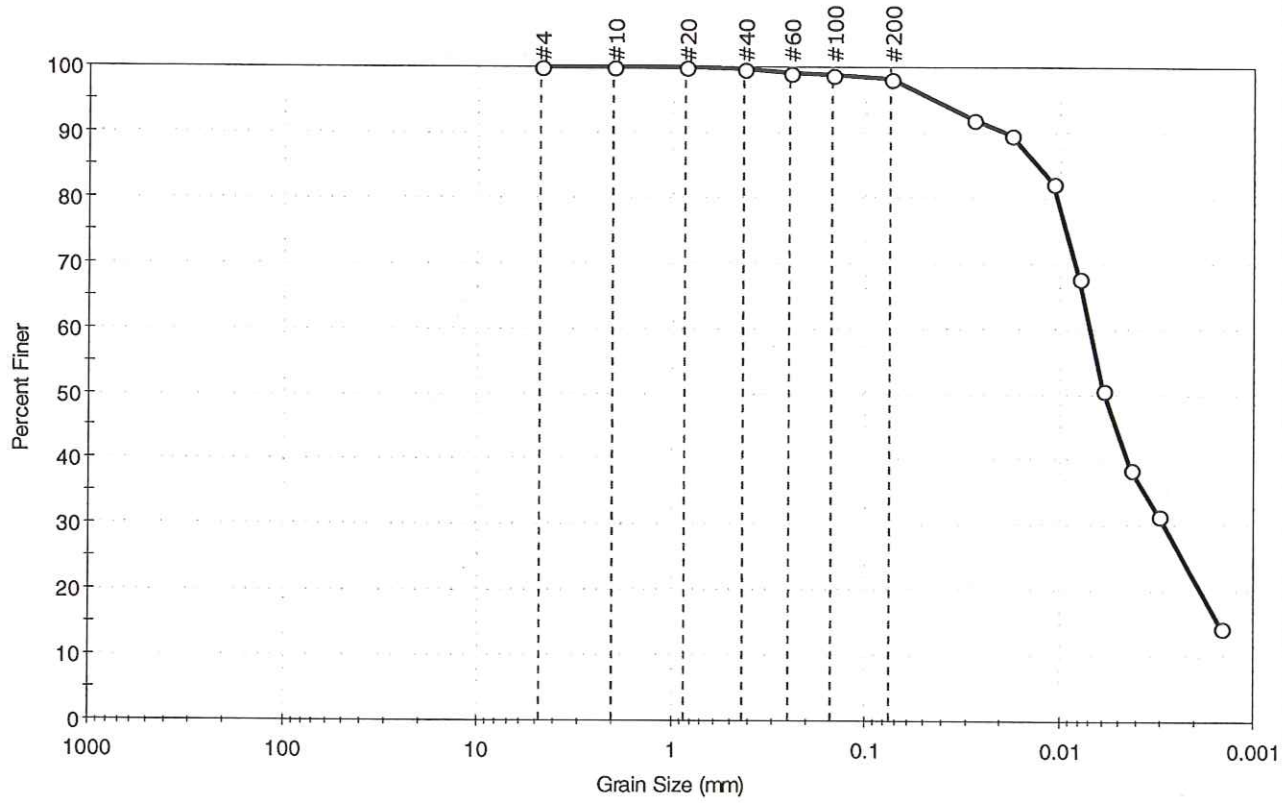
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #6-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 25-27 ft	Test Id: 145117		
Test Comment: ---			
Sample Description: Moist, gray silty clay			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.9	98.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.075	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0283	92		
---	0.0180	90		
---	0.0108	82		
---	0.0080	68		
---	0.0059	51		
---	0.0043	39		
---	0.0031	31		
---	0.0015	15		

Coefficients

D_{85} = 0.0130 mm	D_{30} = 0.0029 mm
D_{60} = 0.0069 mm	D_{15} = 0.0015 mm
D_{50} = 0.0058 mm	D_{10} = 0.0012 mm
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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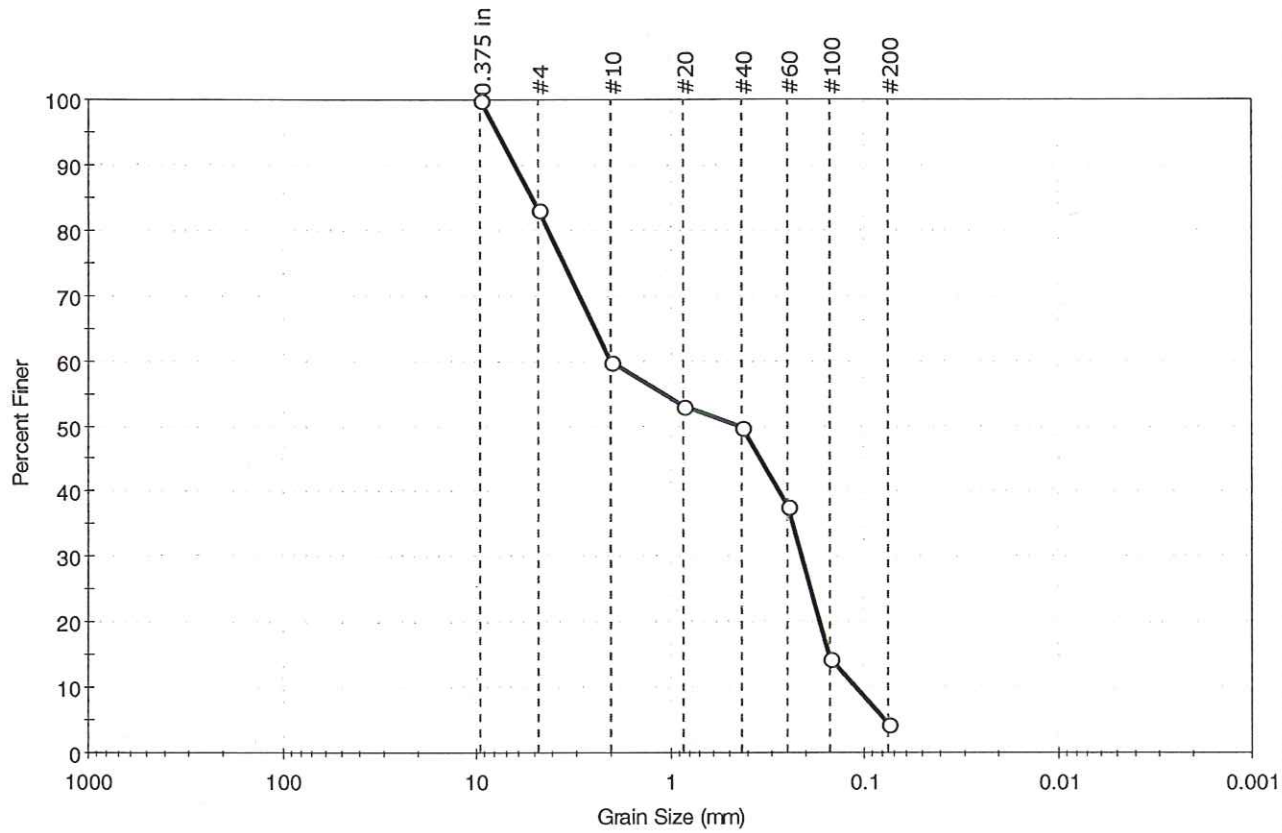
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #6-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 45-47 ft	Test Id: 145118		
Test Comment:	Less than 10% fines, Hydrometer not performed		
Sample Description:	Moist, dark olive brown sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	16.7	78.7	4.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	83		
#10	2.00	60		
#20	0.85	53		
#40	0.42	50		
#60	0.25	38		
#100	0.15	15		
#200	0.075	5		

Coefficients

D_{85} = 5.0979 mm	D_{30} = 0.2104 mm
D_{60} = 2.0082 mm	D_{15} = 0.1515 mm
D_{50} = 0.4301 mm	D_{10} = 0.1094 mm
C_u = 18.356	C_c = 0.201

Classification

ASTM Poorly graded sand with gravel (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Dispersion Device :

Dispersion Period : 1 minute

Specific Gravity : 2.65

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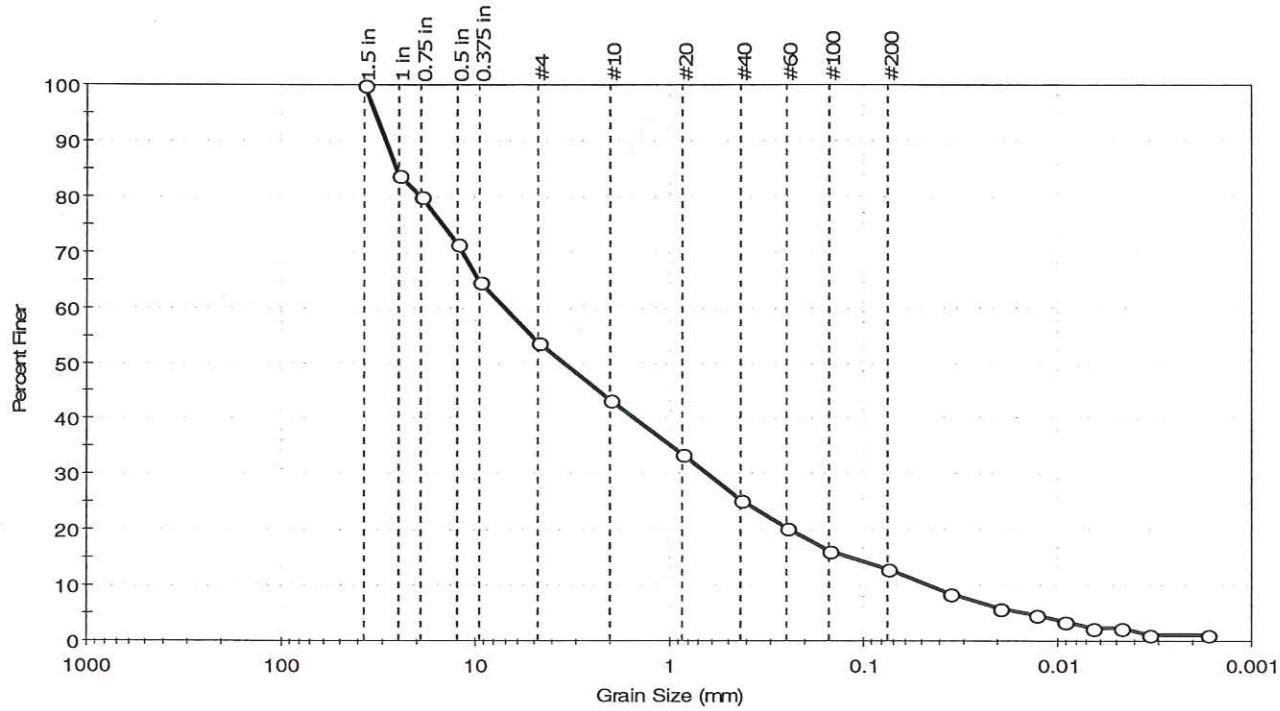
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #6-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 51-53 ft	Test Id: 145119		
Test Comment:	---		
Sample Description:	Moist, reddish brown silty gravel with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	46.2	40.8	13.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	84		
0.75 in	19.00	80		
0.5 in	12.50	71		
0.375 in	9.50	65		
#4	4.75	54		
#10	2.00	43		
#20	0.85	34		
#40	0.42	25		
#60	0.25	20		
#100	0.15	16		
#200	0.075	13		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0358	8		
---	0.0199	6		
---	0.0128	5		
---	0.0093	4		
---	0.0066	2		
---	0.0047	2		
---	0.0034	1		
---	0.0017	1		

Coefficients

D_{85} = 25.7162 mm D_{30} = 0.6280 mm
D_{60} = 7.0369 mm D_{15} = 0.1129 mm
D_{50} = 3.4507 mm D_{10} = 0.0460 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

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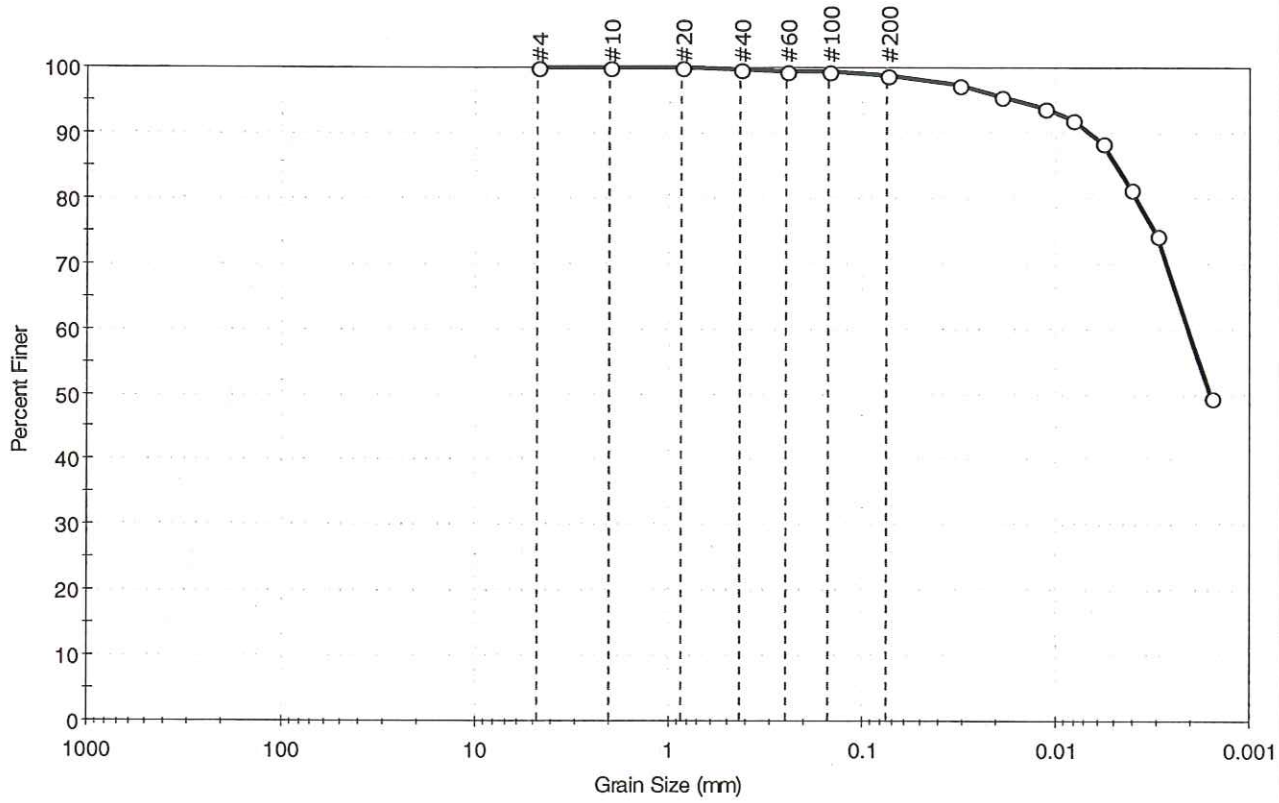
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #7-08	Test Date: 01/14/09	Checked By:	jdt
Depth : 10-12 ft	Test Id: 145120		
Test Comment: ---			
Sample Description: Moist, olive gray clay			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.3	98.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	97		
---	0.0194	96		
---	0.0113	94		
---	0.0081	92		
---	0.0057	88		
---	0.0041	81		
---	0.0030	74		
---	0.0016	50		

Coefficients

D_{85} = 0.0049 mm D_{30} = N/A
D_{60} = 0.0020 mm D_{15} = N/A
D_{50} = 0.0016 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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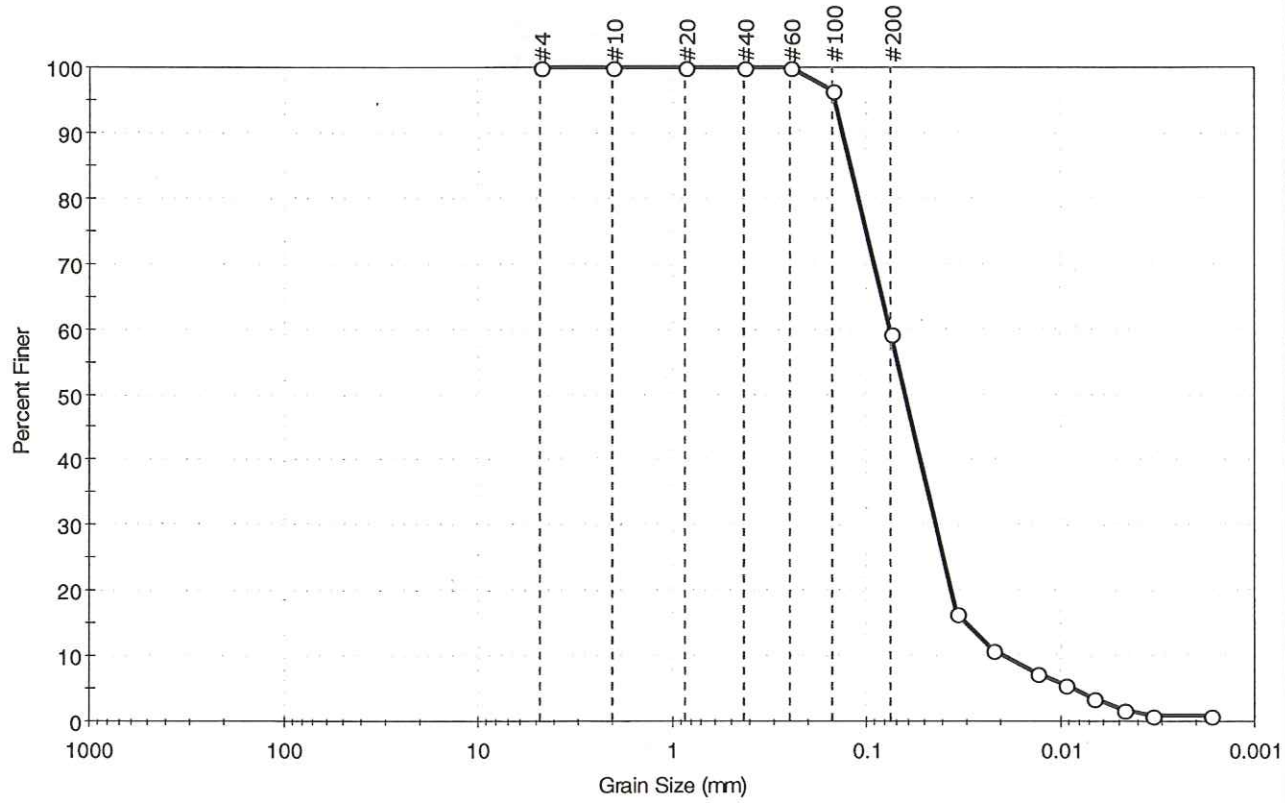
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID:Well #8-08	Test Date: 01/14/09	Checked By:	jdt
Depth : 10-12 ft	Test Id: 145121		
Test Comment:	---		
Sample Description:	Moist, light yellowish brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	40.6	59.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	96		
#200	0.075	59		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0345	16		
---	0.0223	11		
---	0.0132	7		
---	0.0094	5		
---	0.0067	4		
---	0.0047	2		
---	0.0034	1		
---	0.0017	1		

Coefficients

D_{85} = 0.1212 mm D_{30} = 0.0441 mm
D_{60} = 0.0759 mm D_{15} = 0.0308 mm
D_{50} = 0.0633 mm D_{10} = 0.0194 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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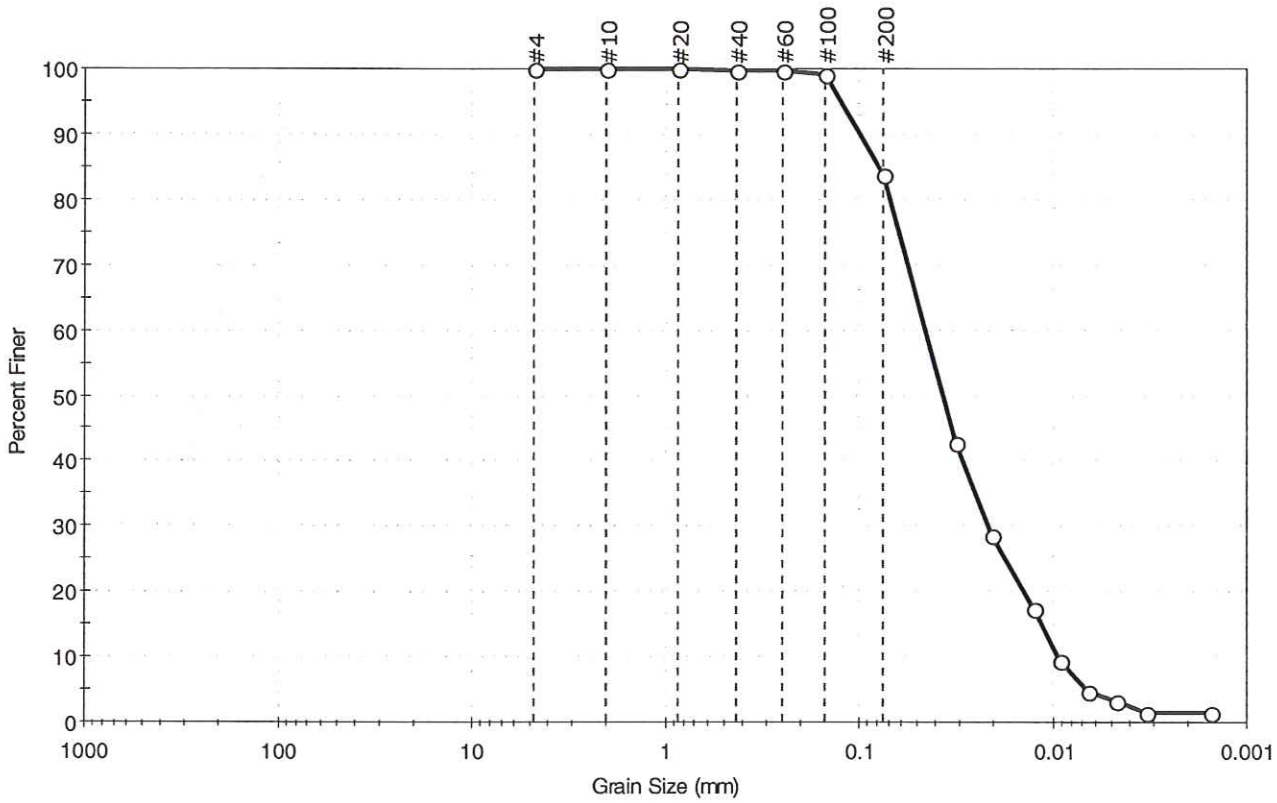
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #9-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 95-97 ft	Test Id: 145122		
Test Comment: ---			
Sample Description: Moist, gray silt with sand			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	16.1	83.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.075	84		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0316	43		
---	0.0209	29		
---	0.0126	17		
---	0.0092	10		
---	0.0066	5		
---	0.0047	3		
---	0.0033	2		
---	0.0015	2		

Coefficients

D_{85} = 0.0789 mm D_{30} = 0.0217 mm
D_{60} = 0.0453 mm D_{15} = 0.0114 mm
D_{50} = 0.0367 mm D_{10} = 0.0093 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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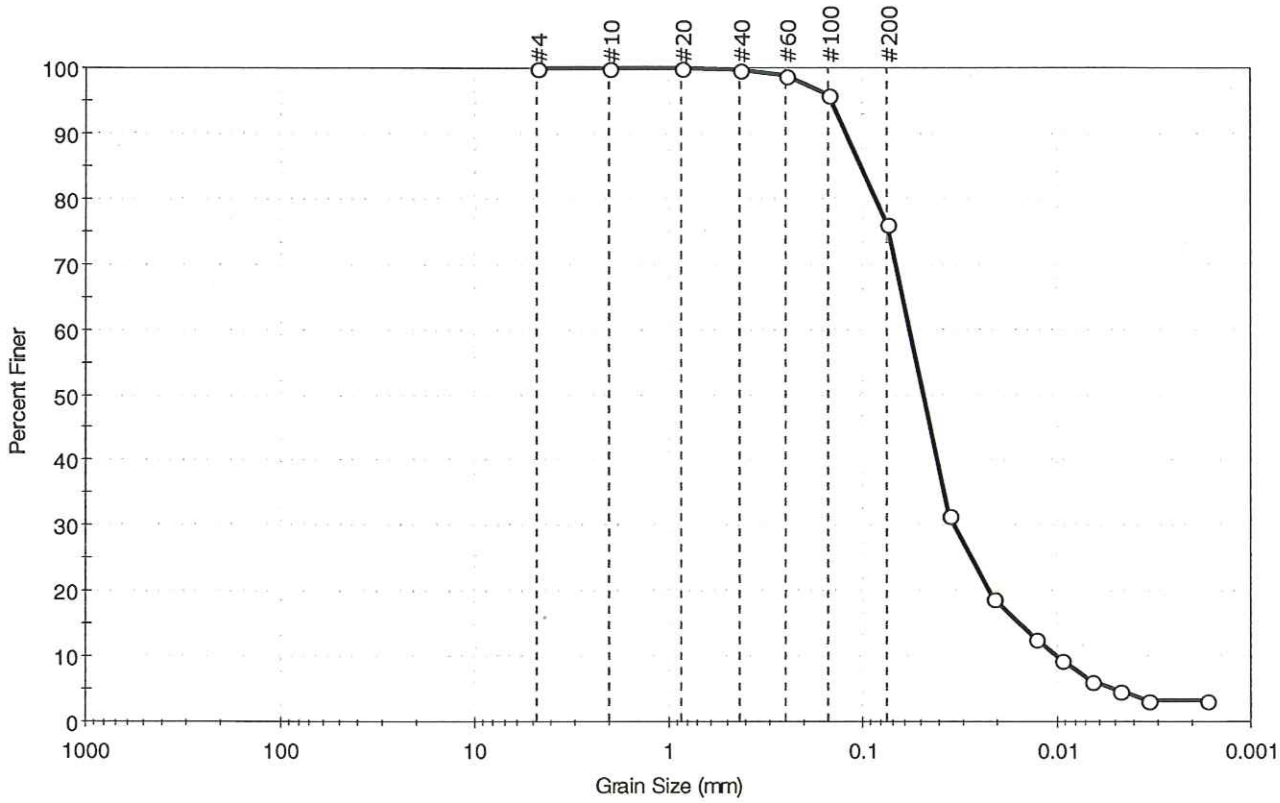
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #9-08	Test Date: 01/14/09	Checked By:	jdt
Depth : 125-127 ft	Test Id: 145123		
Test Comment:	---		
Sample Description:	Moist, olive brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	23.8	76.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	96		
#200	0.075	76		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0355	32		
---	0.0212	19		
---	0.0130	13		
---	0.0094	9		
---	0.0066	6		
---	0.0047	5		
---	0.0034	3		
---	0.0017	3		

Coefficients

D_{85} = 0.1020 mm D_{30} = 0.0333 mm
D_{60} = 0.0571 mm D_{15} = 0.0156 mm
D_{50} = 0.0483 mm D_{10} = 0.0100 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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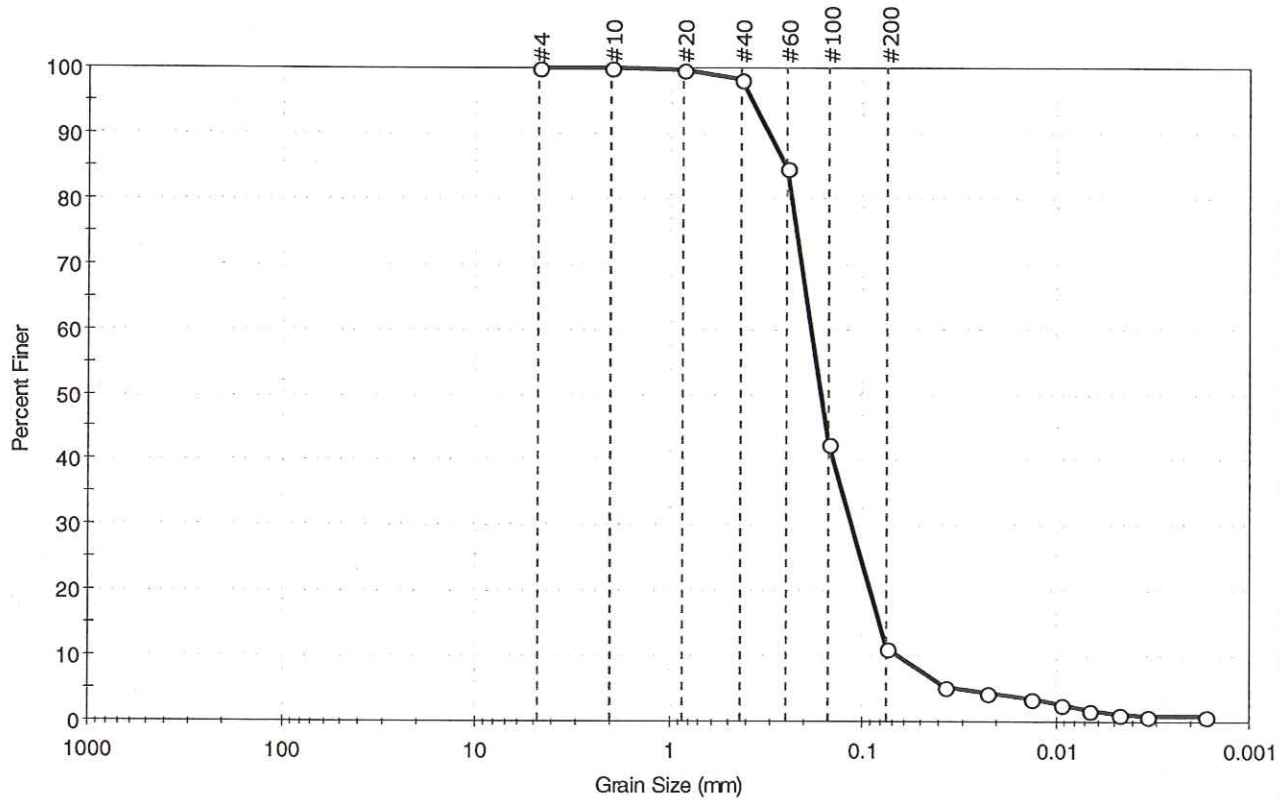
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #10-08	Test Date: 01/14/09	Checked By:	jdt
Depth : 10-12 ft	Test Id: 145124		
Test Comment:	---		
Sample Description:	Moist, dark yellowish brown sand with silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	—	88.9	11.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	98		
#60	0.25	85		
#100	0.15	43		
#200	0.075	11		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0377	5		
---	0.0226	4		
---	0.0134	3		
---	0.0094	3		
---	0.0067	2		
---	0.0048	1		
---	0.0034	1		
---	0.0017	1		

Coefficients

D_{85} = 0.2526 mm D_{30} = 0.1138 mm
D_{60} = 0.1853 mm D_{15} = 0.0817 mm
D_{50} = 0.1642 mm D_{10} = 0.0659 mm
C_u = 2.812 C_c = 1.061

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

printed 1/16/2009 11:11:02 AM

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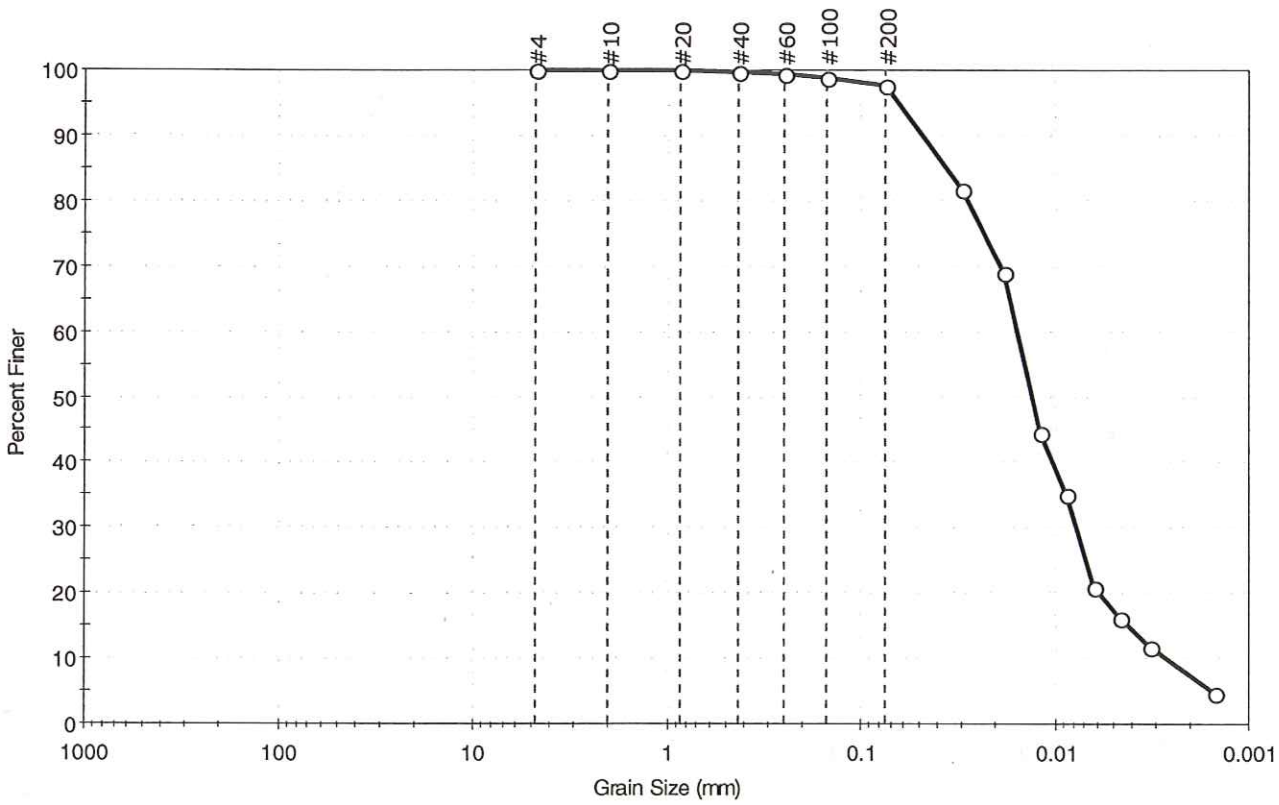
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID:Well #10-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 45-47 ft	Test Id: 145125		
Test Comment: ---			
Sample Description: Moist, dark gray silt			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.4	97.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.075	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0300	82		
---	0.0185	69		
---	0.0120	44		
---	0.0087	35		
---	0.0064	21		
---	0.0046	16		
---	0.0032	12		
---	0.0015	5		

Coefficients

D_{85} = 0.0361 mm D_{30} = 0.0078 mm
D_{60} = 0.0158 mm D_{15} = 0.0041 mm
D_{50} = 0.0132 mm D_{10} = 0.0027 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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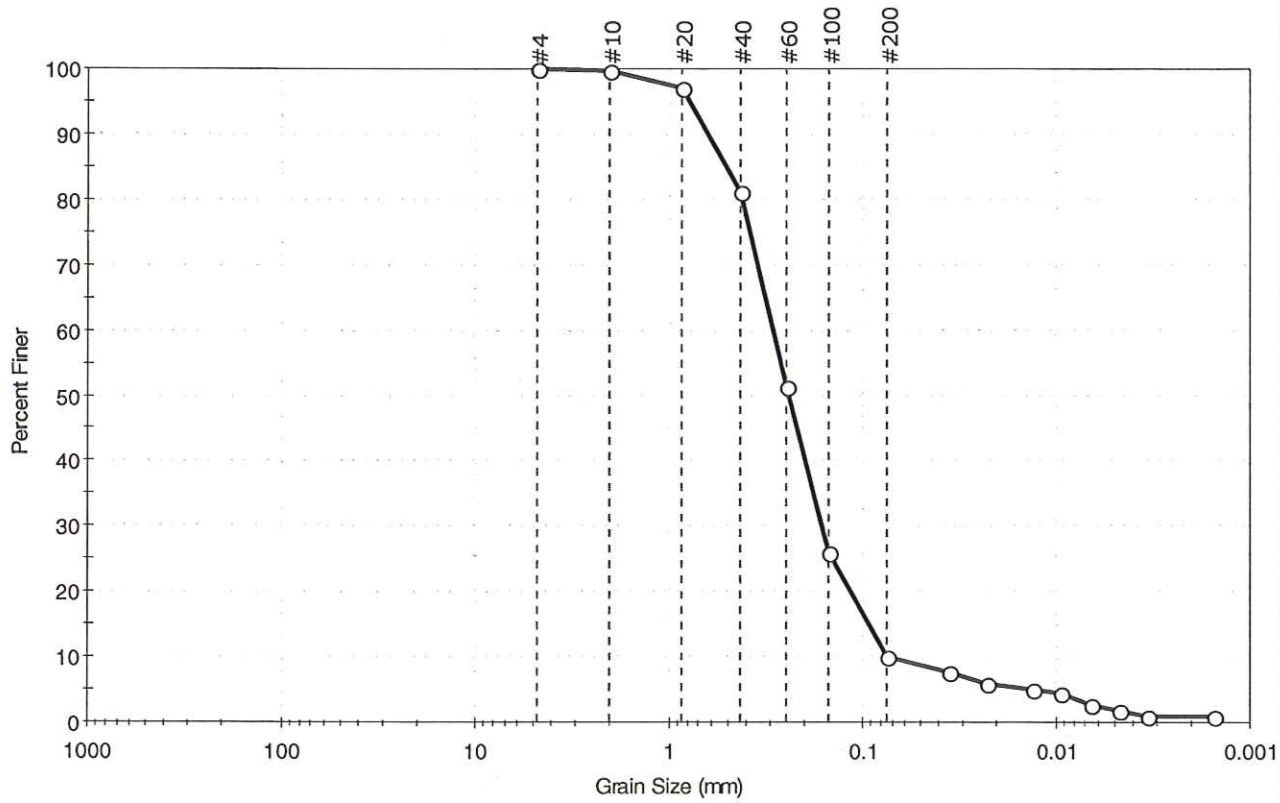
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #10-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 85-87 ft	Test Id: 145126		
Test Comment:	---		
Sample Description:	Moist, dark gray sand with silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	90.1	9.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	97		
#40	0.42	81		
#60	0.25	51		
#100	0.15	26		
#200	0.075	10		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0361	8		
---	0.0229	6		
---	0.0133	5		
---	0.0094	4		
---	0.0066	3		
---	0.0048	2		
---	0.0034	1		
---	0.0015	1		

Coefficients

D_{85} = 0.5054 mm	D_{30} = 0.1622 mm
D_{60} = 0.2915 mm	D_{15} = 0.0932 mm
D_{50} = 0.2428 mm	D_{10} = 0.0752 mm
C_u = 3.876	C_c = 1.200

Classification

ASTM N/A

AASHTO Fine Sand (A-3 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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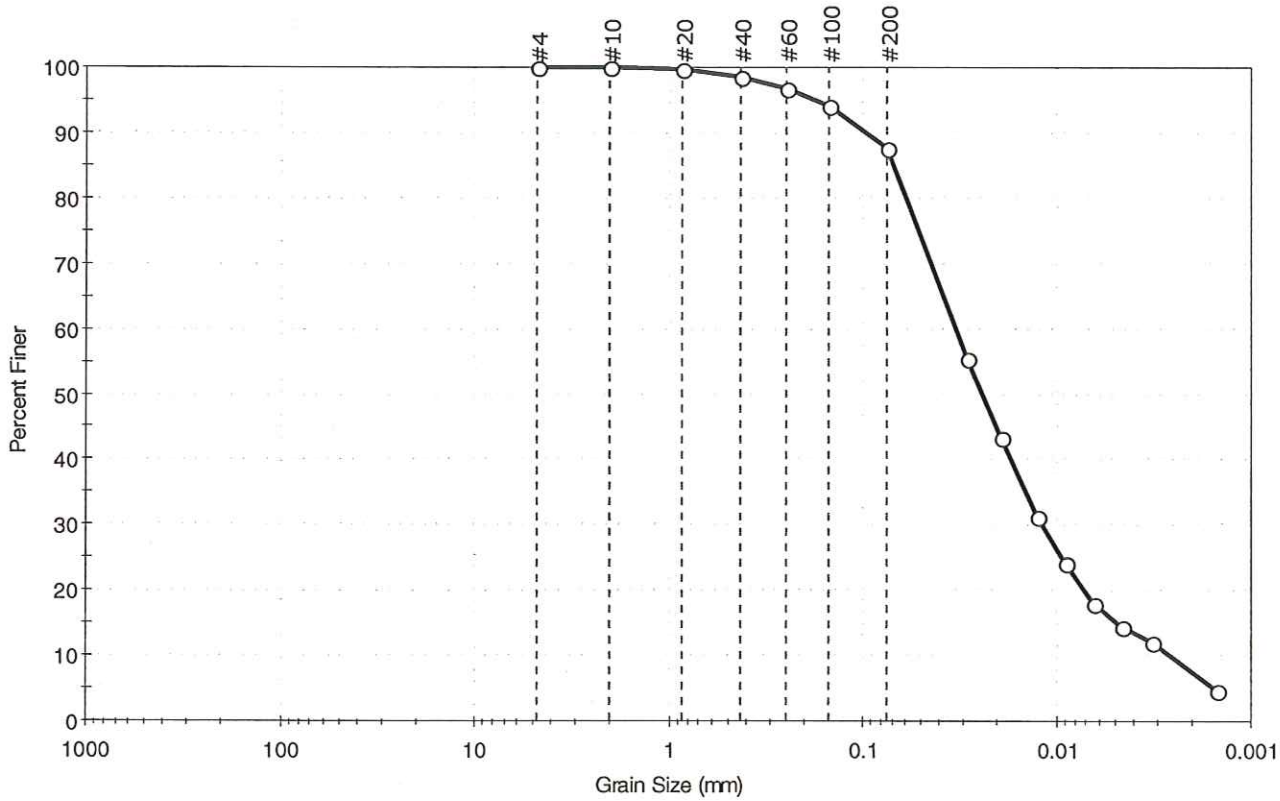
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID: Well #12-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 10-12 ft	Test Id: 145127		
Test Comment: ---			
Sample Description:	Moist, light olive brown silt		
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	12.4	87.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	99		
#60	0.25	97		
#100	0.15	94		
#200	0.075	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0292	55		
---	0.0193	43		
---	0.0124	31		
---	0.0090	24		
---	0.0064	18		
---	0.0046	14		
---	0.0032	12		
---	0.0015	5		

Coefficients

D_{85} = 0.0696 mm D_{30} = 0.0117 mm
D_{60} = 0.0335 mm D_{15} = 0.0048 mm
D_{50} = 0.0243 mm D_{10} = 0.0026 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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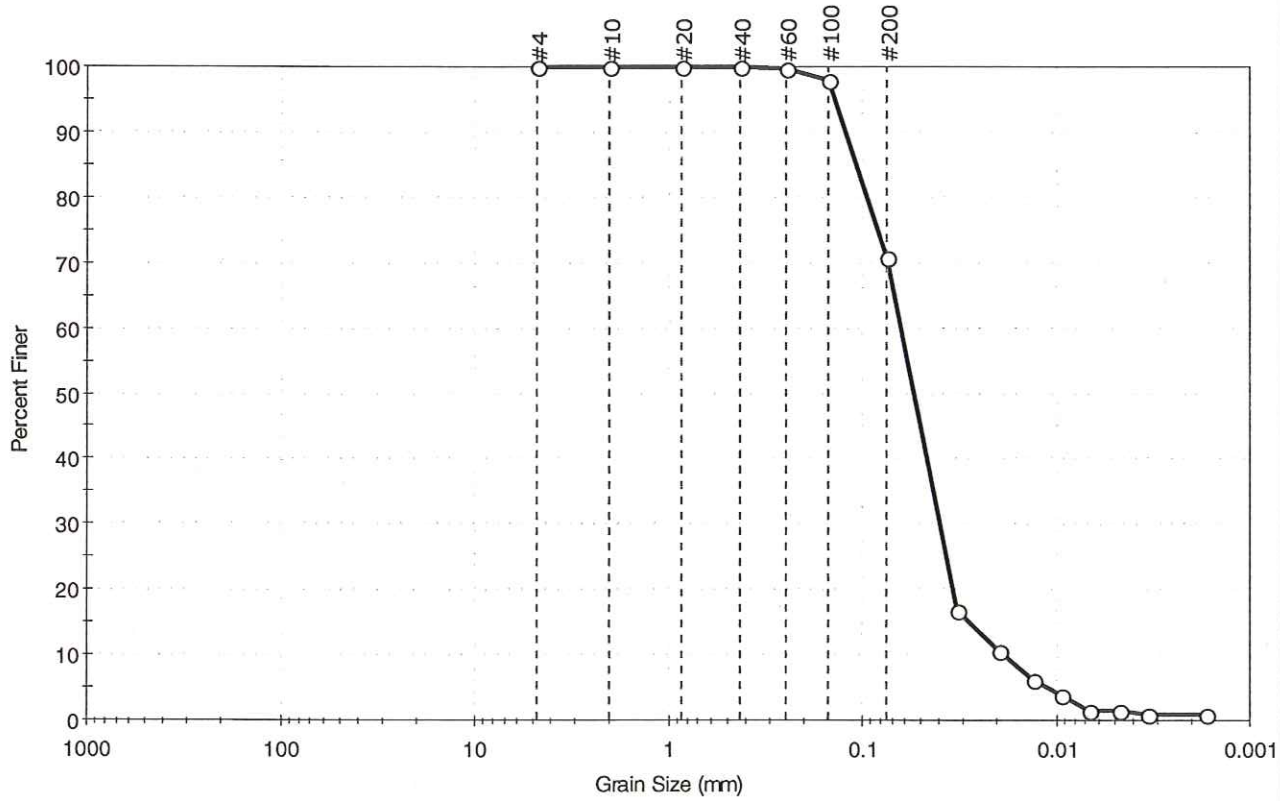
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID:Well #12-08	Test Date: 01/14/09	Checked By:	jdt
Depth : 45-47 ft	Test Id: 145128		
Test Comment:	---		
Sample Description:	Moist, grayish brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	29.3	70.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	98		
#200	0.075	71		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0323	17		
---	0.0199	11		
---	0.0133	6		
---	0.0094	4		
---	0.0067	2		
---	0.0047	2		
---	0.0034	1		
---	0.0017	1		

Coefficients

D_{85} = 0.1080 mm D_{30} = 0.0397 mm
D_{60} = 0.0635 mm D_{15} = 0.0280 mm
D_{50} = 0.0543 mm D_{10} = 0.0187 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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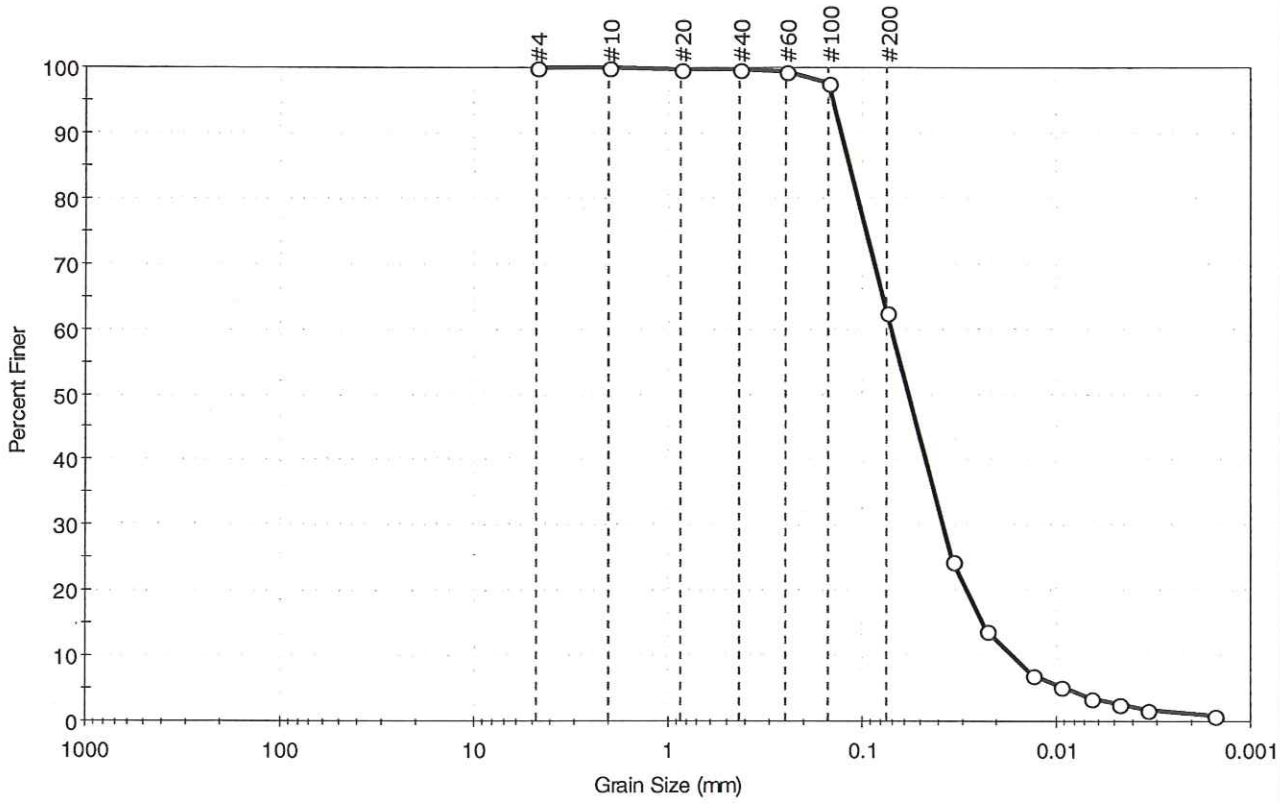
Client:	Tighe & Bond		
Project:	Old Amherst Landfill CSA		
Location:	Amherst, MA	Project No:	GTX-8790
Boring ID: ---	Sample Type: jar	Tested By:	ap
Sample ID:Well #12-08	Test Date: 01/12/09	Checked By:	jdt
Depth : 55-57 ft	Test Id: 145129		
Test Comment:	---		
Sample Description:	Moist, gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	37.4	62.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	98		
#200	0.075	63		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0338	24		
---	0.0226	14		
---	0.0132	7		
---	0.0094	5		
---	0.0067	3		
---	0.0047	3		
---	0.0033	2		
---	0.0015	1		

Coefficients

D_{85} = 0.1168 mm D_{30} = 0.0379 mm
D_{60} = 0.0710 mm D_{15} = 0.0235 mm
D_{50} = 0.0576 mm D_{10} = 0.0166 mm
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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1145 Massachusetts Avenue
Boxborough, MA 01719
978-635-0424 Phone
978-635-0266 Fax

CHAIN OF CUSTODY

2662 Holcomb Bridge Road Suite 310
Alpharetta, GA 30022
770-645-6575 Phone
770-645-6570 Fax

Sales Order No.: SO# 0066320
GTX No.:

Company Name: Tighe & Bond, Inc.
Address: 130 Southampton Road
Westfield, MA 01085
Contact: Jason M. Perry
e-mail: jmperry@tighebond.com
Phone Number: 413-572-3271
Fax Number: 413-568-9764
Project Name: Old Amherst Landfill CSA
Project Number: A-0308
Project Location: Amherst, MA

Sample Type	Container Type
1. Soil	1. Bucket
2. Geosynthetic	2. Bag
3. Rock	3. Jar
4. Concrete	4. Tube
5. Other	5. Roll

Analysis

Sample Identification	Container Size	Container Type	Sampling Date	Sampling Time	Sample Type	Grain size sieve and hydrometer						Comments
Well#1-08 (15'-17')	8oz	Jar	6-16 2008	0900	soil	✓						
Well#2-08 (80'-82')	8oz	Jar	6-16 2008	1600	soil	✓						
Well#3-08 (80'-82')	8oz	Jar	6-17 2008	1300	soil	✓						
Well#4-08 (48'-50')	8oz	Jar	6-18 2008	1600	soil	✓						
Well#6-08 (25'-27')	8oz	Jar	8-11 2008	1100	soil	✓						
Well#6-08 (45'-47')	8oz	Jar	8-11 2008	0800	soil	✓						
Well#6-08 (51'-53')	8oz	Jar	8-11 2008	0900	soil	✓						
Well#7-08 (10'-12')	8oz	Jar	8-12 2008	1100	soil	✓						
Well#8-08 (10'-12')	8oz	Jar	8-12 2008	1300	soil	✓						

Relinquished By:	Date: 1-7-09 Time: 1653	**Received By:**	Date: 01/09/09 Time:
Relinquished By:	Date: Time:	**Received By:**	Date: Time:
Relinquished By:	Date: Time:	**Received By:**	Date: Time:
SHIPPED VIA:			

Turn-Around Time Requested:
No. of Business Days: _____

Special Instructions:
SO# 0066320

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CHAIN OF CUSTODY

1145 Massachusetts Avenue
Boxborough, MA 01719
978-635-0424 Phone
978-635-0266 Fax

2662 Holcomb Bridge Road Suite 310
Alpharetta, GA 30022
770-645-6575 Phone
770-645-6570 Fax

Sales Order No.: SO#0066320
GTX No.:

Company Name: Tighe & Bond, Inc.
Address: 130 Southampton Road
Westfield, MA 01085
Contact: Jason M. Perry
e-mail: jmperry@tighebond.com
Phone Number: 413-572-3271
Fax Number: 413-568-9764
Project Name: Old Amherst Landfill CSA
Project Number: A-0308
Project Location: Amherst, MA

Sample Type	Container Type
1. Soil	1. Bucket
2. Geosynthetic	2. Bag
3. Rock	3. Jar
4. Concrete	4. Tube
5. Other	5. Roll

Analysis

Sample Identification	Container Size	Container Type	Sampling Date	Sampling Time	Sample Type	Grain size sieve and hydrometer						Comments
well#9-08(95'-97')	802	Jar	8-14 2008	0900	Soil	✓						
Well#9-08(125'-127')	802	Jar	8-15 2008	1600	Soil	✓						
Well#10-08(10'-12')	802	Jar	8-18 2008	1800	Soil	✓						
Well#10-08(45'-47')	802	Jar	8-19 2008	1200	Soil	✓						
Well#10-08(85'-87')	802	Jar	8-19 2008	1000	Soil	✓						
well#12-08(10'-12')	802	Jar	8-21 2008	1400	Soil	✓						
Well#12-08(45'-47')	802	Jar	8-22 2008	1700	Soil	✓						
well#12-08(55'-57')	802	Jar	8-22 2008	1800	Soil	✓						

Relinquished By:	Date: 1-7-09 Time: 1653	Received By:	Date: 01/09/09 Time:
Relinquished By:	Date: Time:	Received By:	Date: Time:
Relinquished By:	Date: Time:	Received By:	Date: Time:
SHIPPED VIA:	www.geotesting.com		

Turn-Around Time Requested:
No. of Business Days: _____
Special Instructions:
SO#0066320

GeoTesting
express

WARRANTY and LIABILITY

GeoTesting Express (GTX) warrants that all tests it performs are run in general accordance with the specified test procedures and accepted industry practice. GTX will correct or repeat any test that does not comply with this warranty. GTX has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

GTX may report engineering parameters that require us to interpret the test data. Such parameters are determined using accepted engineering procedures. However, GTX does not warrant that these parameters accurately reflect the true engineering properties of the *in situ* material. Responsibility for interpretation and use of the test data and these parameters for engineering and/or construction purposes rests solely with the user and not with GTX or any of its employees.

GTX's liability will be limited to correcting or repeating a test which fails our warranty. GTX's liability for damages to the Purchaser of testing services for any cause whatsoever shall be limited to the amount GTX received for the testing services. GTX will not be liable for any damages, or for any lost benefits or other consequential damages resulting from the use of these test results, even if GTX has been advised of the possibility of such damages. GTX will not be responsible for any liability of the Purchaser to any third party.

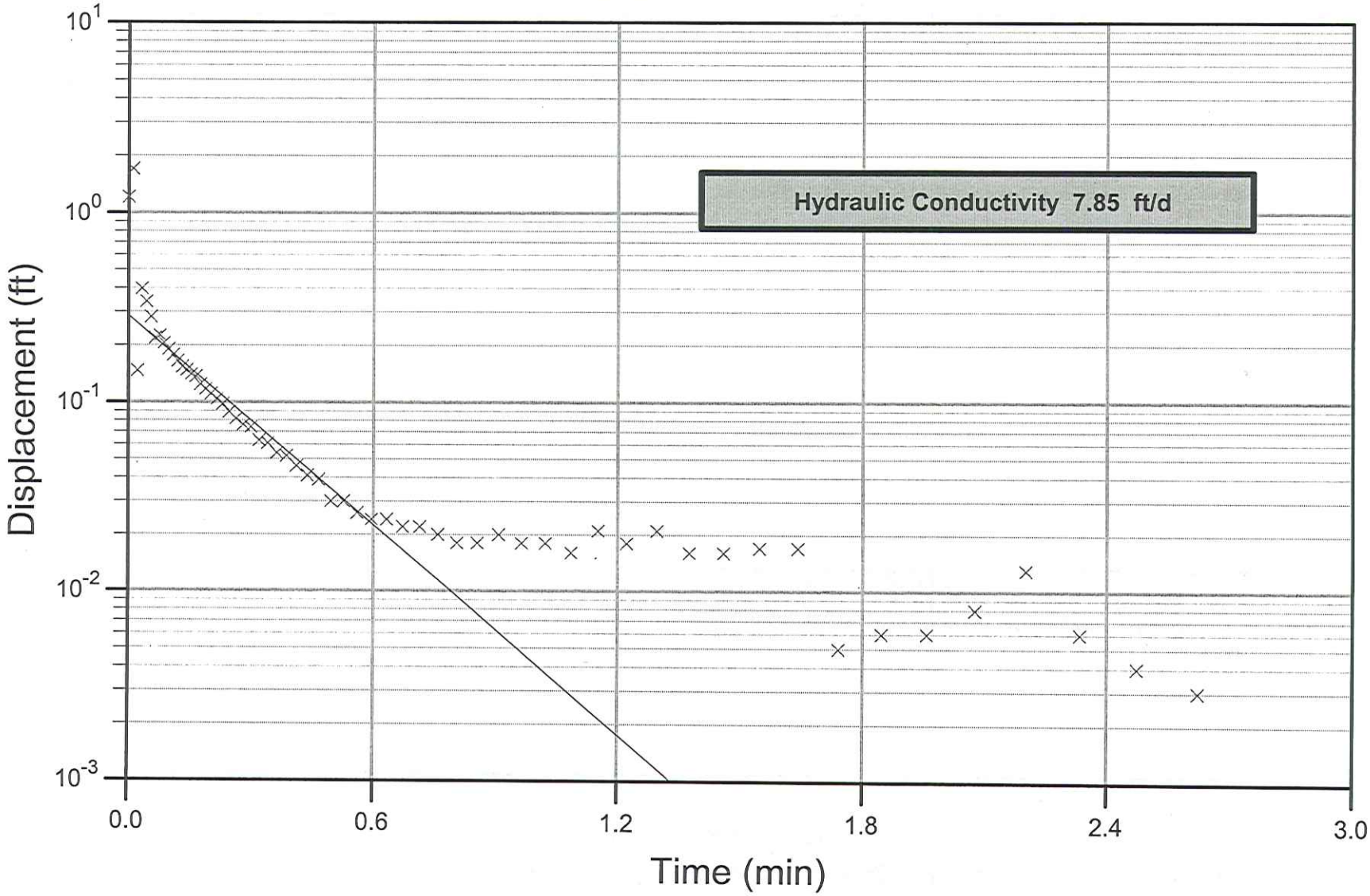
Commonly Used Symbols

A	pore pressure parameter for $\Delta\sigma_1 - \Delta\sigma_3$
B	pore pressure parameter for $\Delta\sigma_3$
CIU	isotropically consolidated undrained triaxial shear test
CR	compression ratio for one dimensional consolidation
C_c	coefficient of curvature, $(D_{30})^2 / (D_{10} \times D_{60})$
C_u	coefficient of uniformity, D_{60}/D_{10}
C_c	compression index for one dimensional consolidation
C_α	coefficient of secondary compression
c_v	coefficient of consolidation
c	cohesion intercept for total stresses
c'	cohesion intercept for effective stresses
D	diameter of specimen
D_{10}	diameter at which 10% of soil is finer
D_{15}	diameter at which 15% of soil is finer
D_{30}	diameter at which 30% of soil is finer
D_{50}	diameter at which 50% of soil is finer
D_{60}	diameter at which 60% of soil is finer
D_{85}	diameter at which 85% of soil is finer
d_{50}	displacement for 50% consolidation
d_{90}	displacement for 90% consolidation
d_{100}	displacement for 100% consolidation
E	Young's modulus
e	void ratio
e_c	void ratio after consolidation
e_o	initial void ratio
G	shear modulus
G_s	specific gravity of soil particles
H	height of specimen
PI	plasticity index
i	gradient
K_o	lateral stress ratio for one dimensional strain
k	permeability
LI	Liquidity Index
m_v	coefficient of volume change
n	porosity
PI	plasticity index
P_c	preconsolidation pressure
p	$(\sigma_1 + \sigma_3) / 2$, $(\sigma_v + \sigma_h) / 2$
p'	$(\sigma'_1 + \sigma'_3) / 2$, $(\sigma'_v + \sigma'_h) / 2$
p'_c	p' at consolidation
Q	quantity of flow
q	$(\sigma_1 - \sigma_3) / 2$
q_f	q at failure
q_o, q_i	initial q
q_c	q at consolidation
S	degree of saturation
SL	shrinkage limit
s_u	undrained shear strength
T	time factor for consolidation
T	temperature
t	time
U, UC	unconfined compression test
UU, Q	unconsolidated undrained triaxial test
u_a	pore gas pressure
u_e	excess pore water pressure
u, u_w	pore water pressure
V	total volume
V_g	volume of gas
V_s	volume of solids
V_v	volume of voids
V_w	volume of water
V_o	initial volume
v	velocity
W	total weight
W_s	weight of solids
W_w	weight of water
w	water content
w_c	water content at consolidation
w_f	final water content
w_l	liquid limit
w_n	natural water content
w_p	plastic limit
w_s	shrinkage limit
w_o, w_i	initial water content
α	slope of q_f versus p_f
α'	slope of q_f versus p_f'
γ_t	total unit weight
γ_d	dry unit weight
γ_s	unit weight of solids
γ_w	unit weight of water
ε	strain
ε_{vol}	volume strain
ε_h, ε_v	horizontal strain, vertical strain
μ	Poisson's ratio, also viscosity
σ	normal stress
σ'	effective normal stress
σ_c, σ'_c	consolidation stress in isotropic stress system
σ_h, σ'_h	horizontal normal stress
σ_v, σ'_v	vertical normal stress
σ_1	major principal stress
σ_2	intermediate principal stress
σ_3	minor principal stress
τ	shear stress
φ	friction angle based on total stresses
φ'	friction angle based on effective stresses
φ'_r	residual friction angle
φ_{ult}	φ for ultimate strength

1-08 Falling Head Slug Test

Tighe & Bond

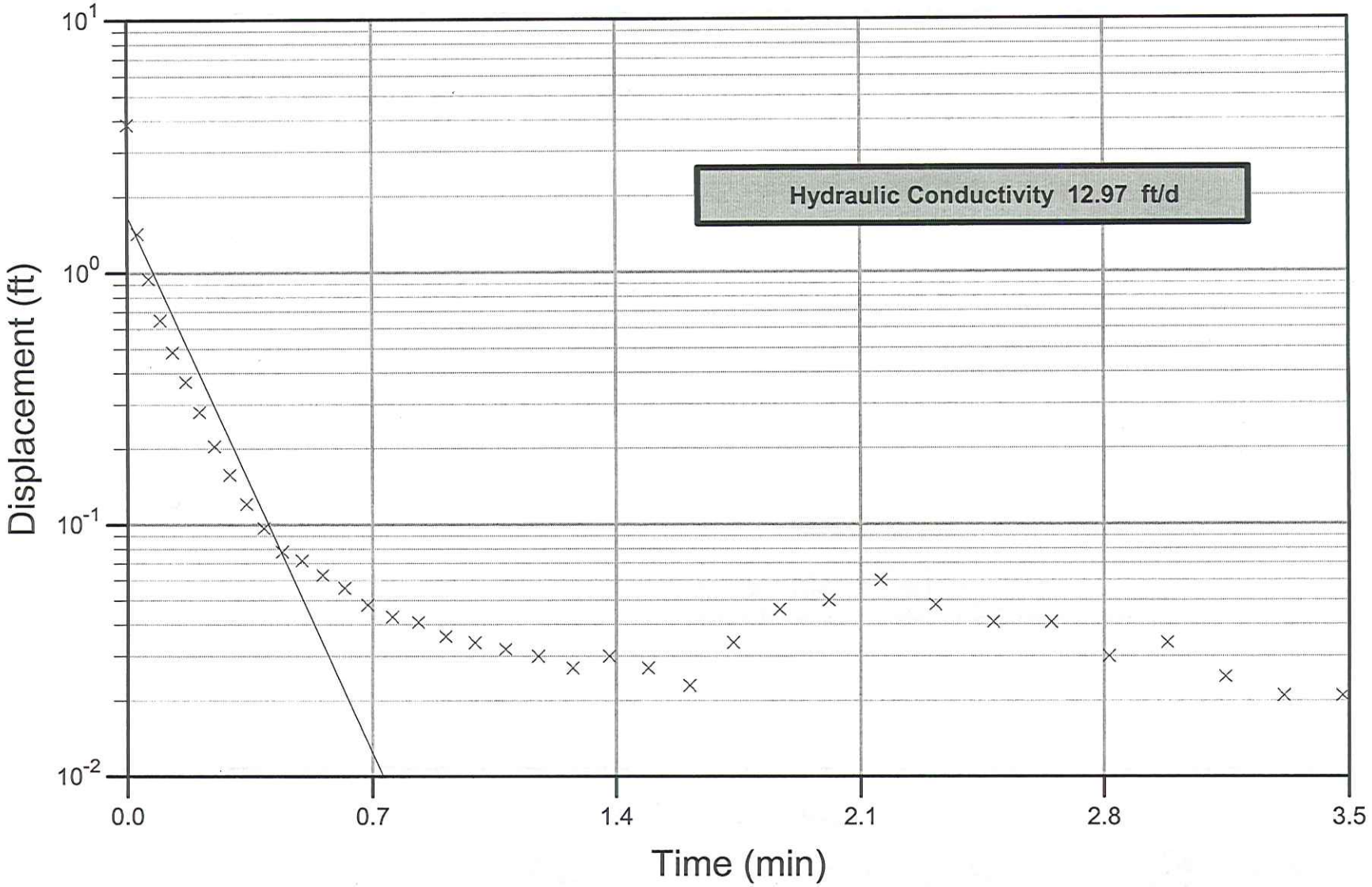
Bouwer & Rice



1-08 Rising Head Slug Test

Tighe & Bond

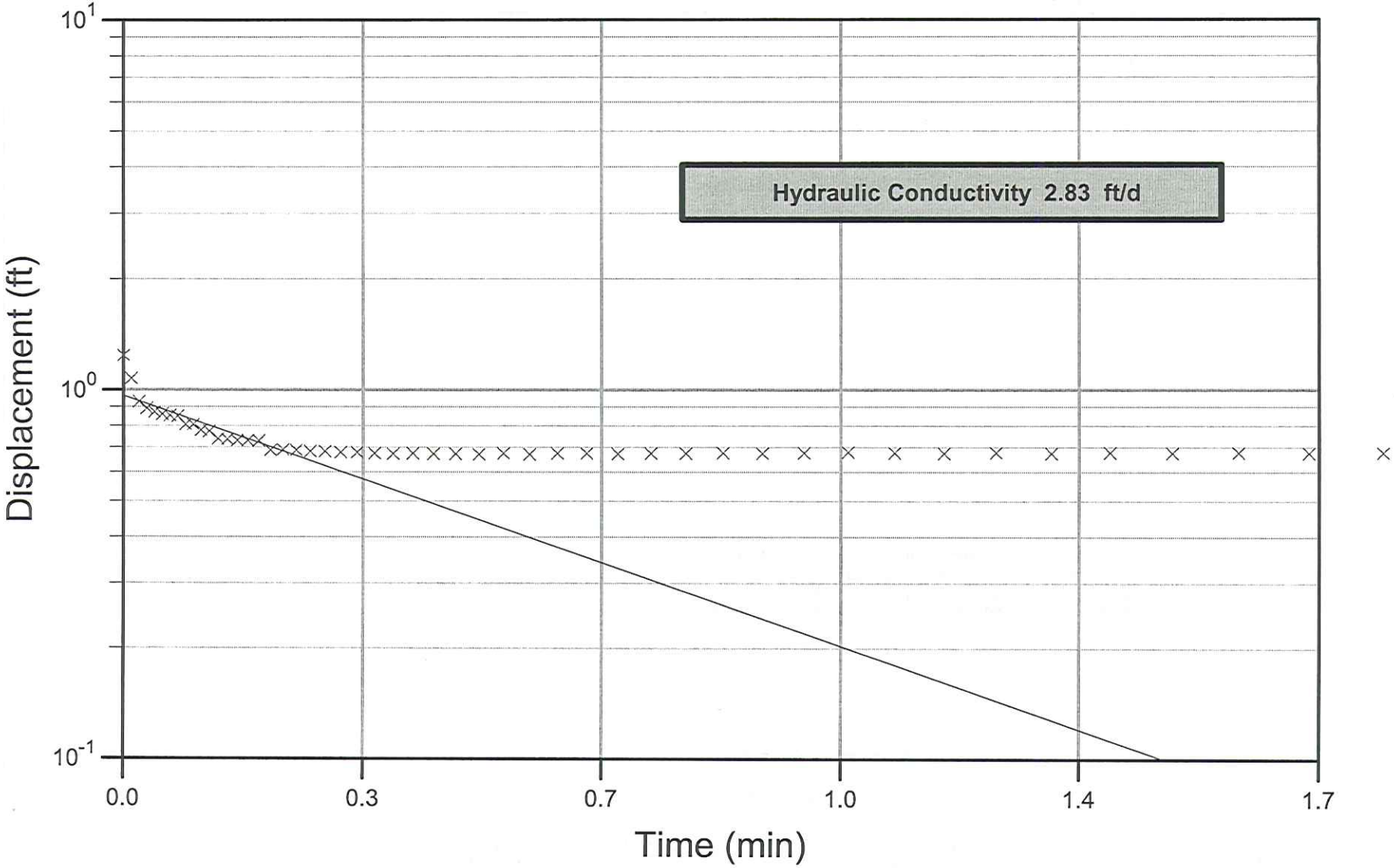
Bouwer & Rice



2-08 Falling Head Slug Test

Tighe & Bond

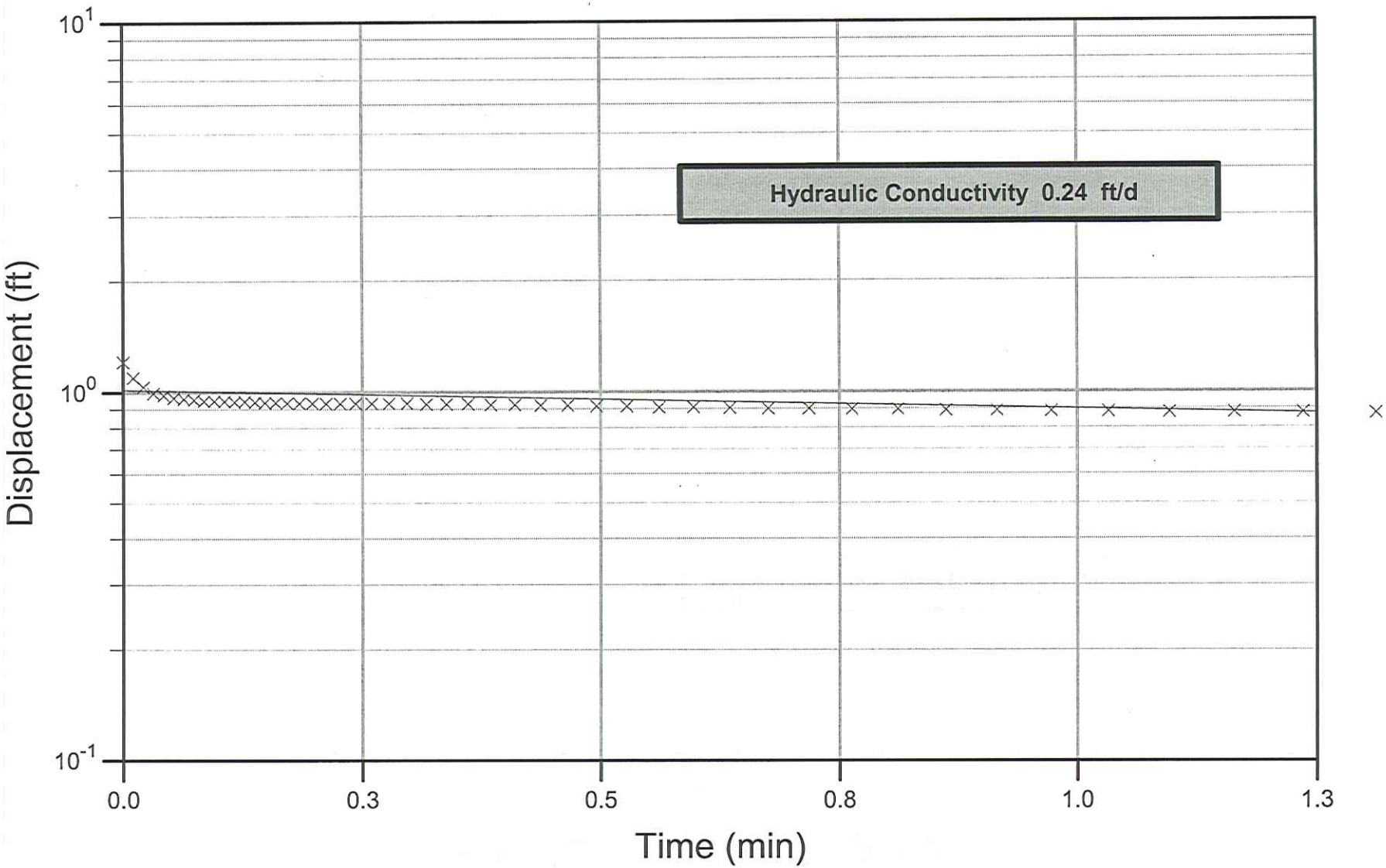
Bouwer & Rice



2-08 Rising Head Slug Test

Tighe & Bond

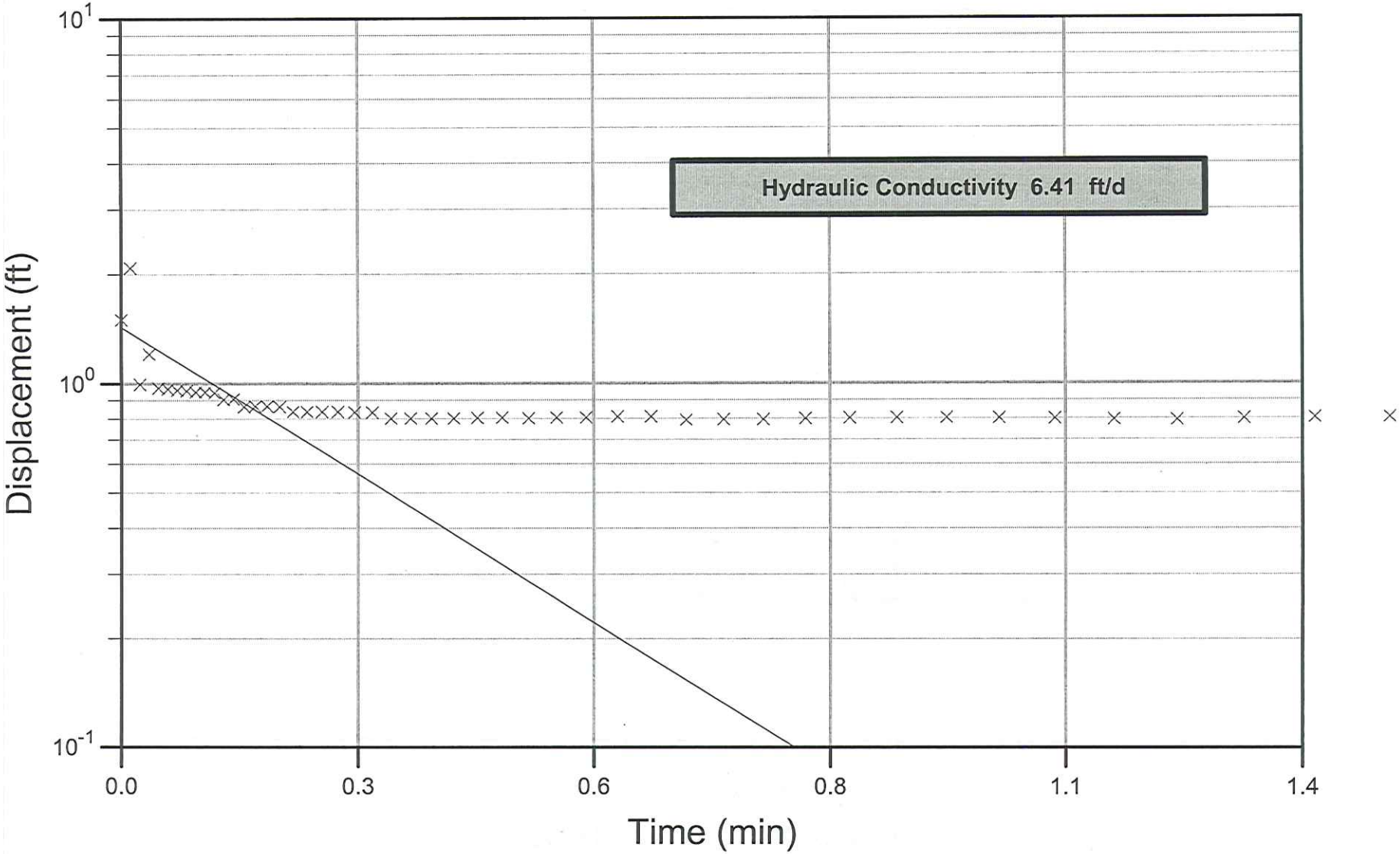
Bouwer & Rice



3-08 Falling Head Slug Test

Tighe & Bond

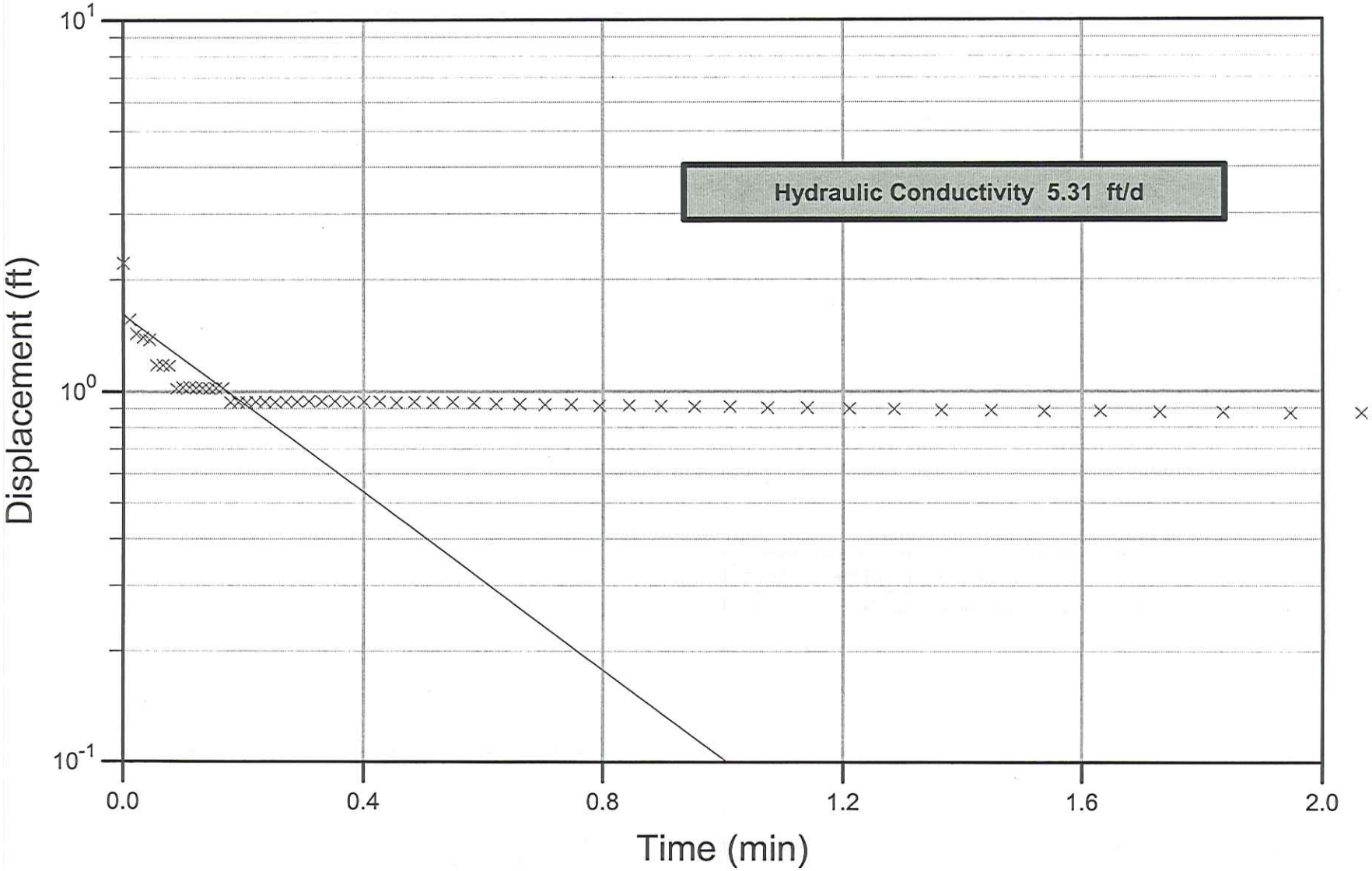
Bouwer & Rice



3-08 Rising Head Slug Test

Bouwer & Rice

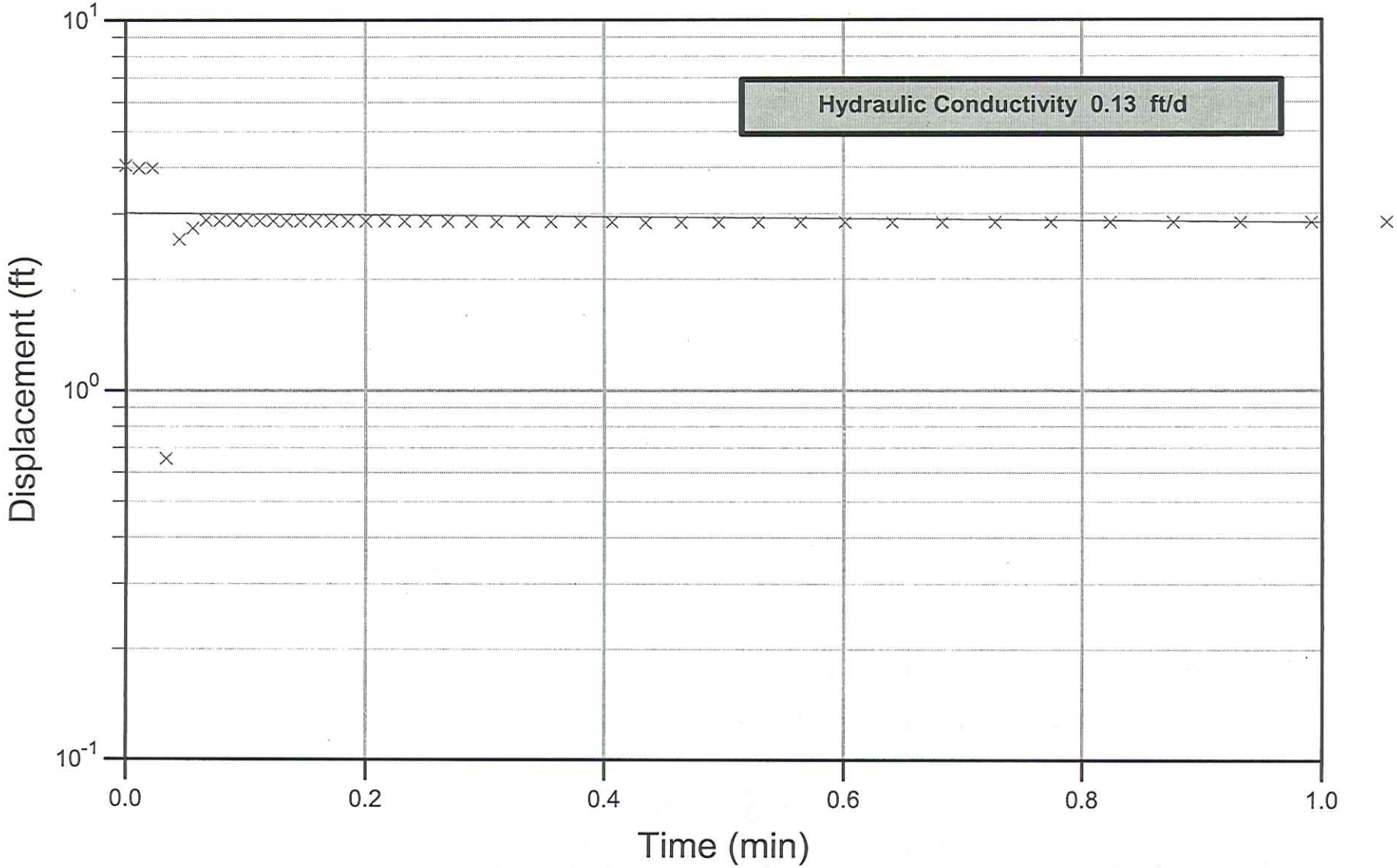
Tighe & Bond



4-08 Falling Head Slug Test

Tighe & Bond

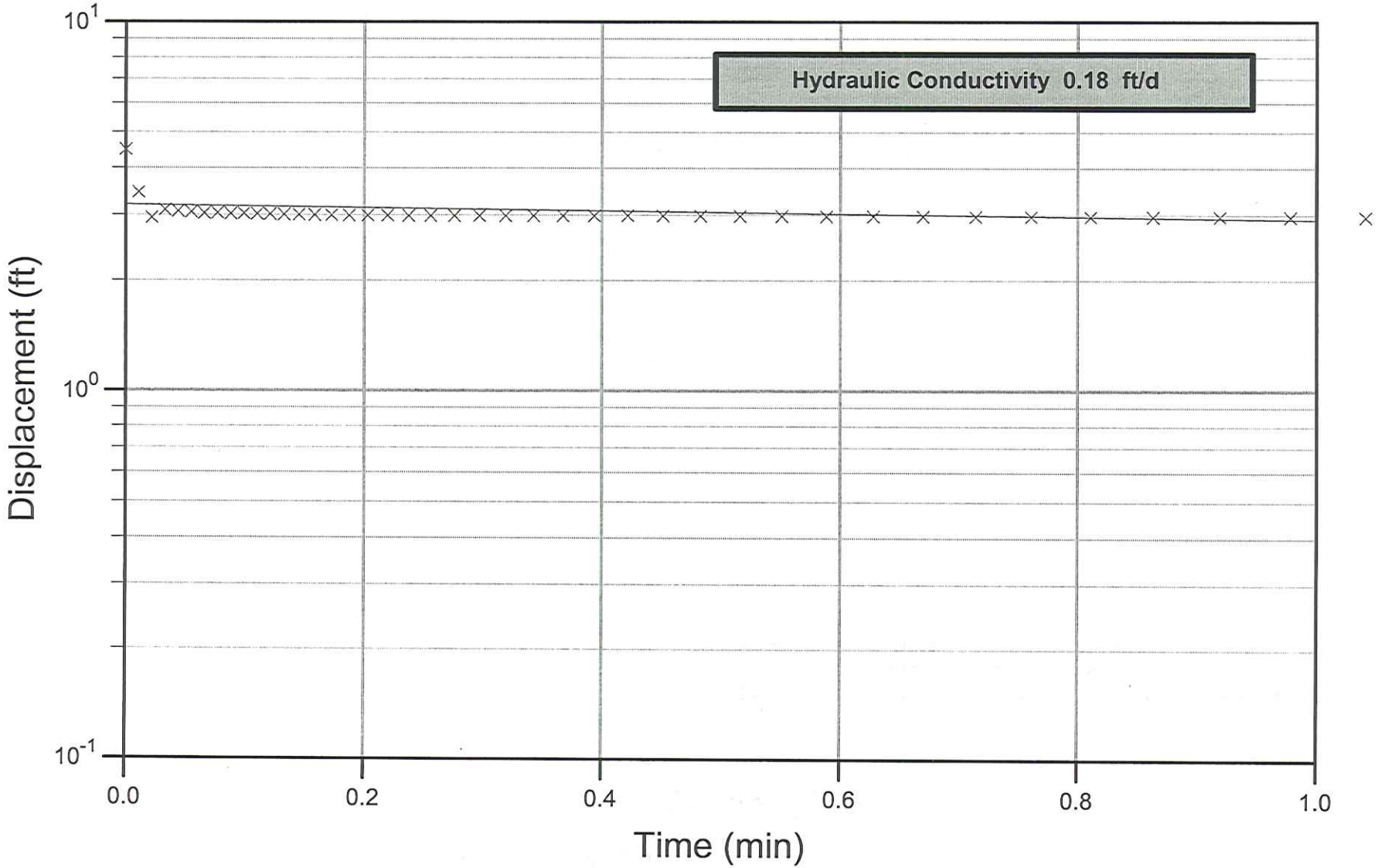
Bouwer & Rice



4-08 Rising Head Slug Test

Tighe & Bond

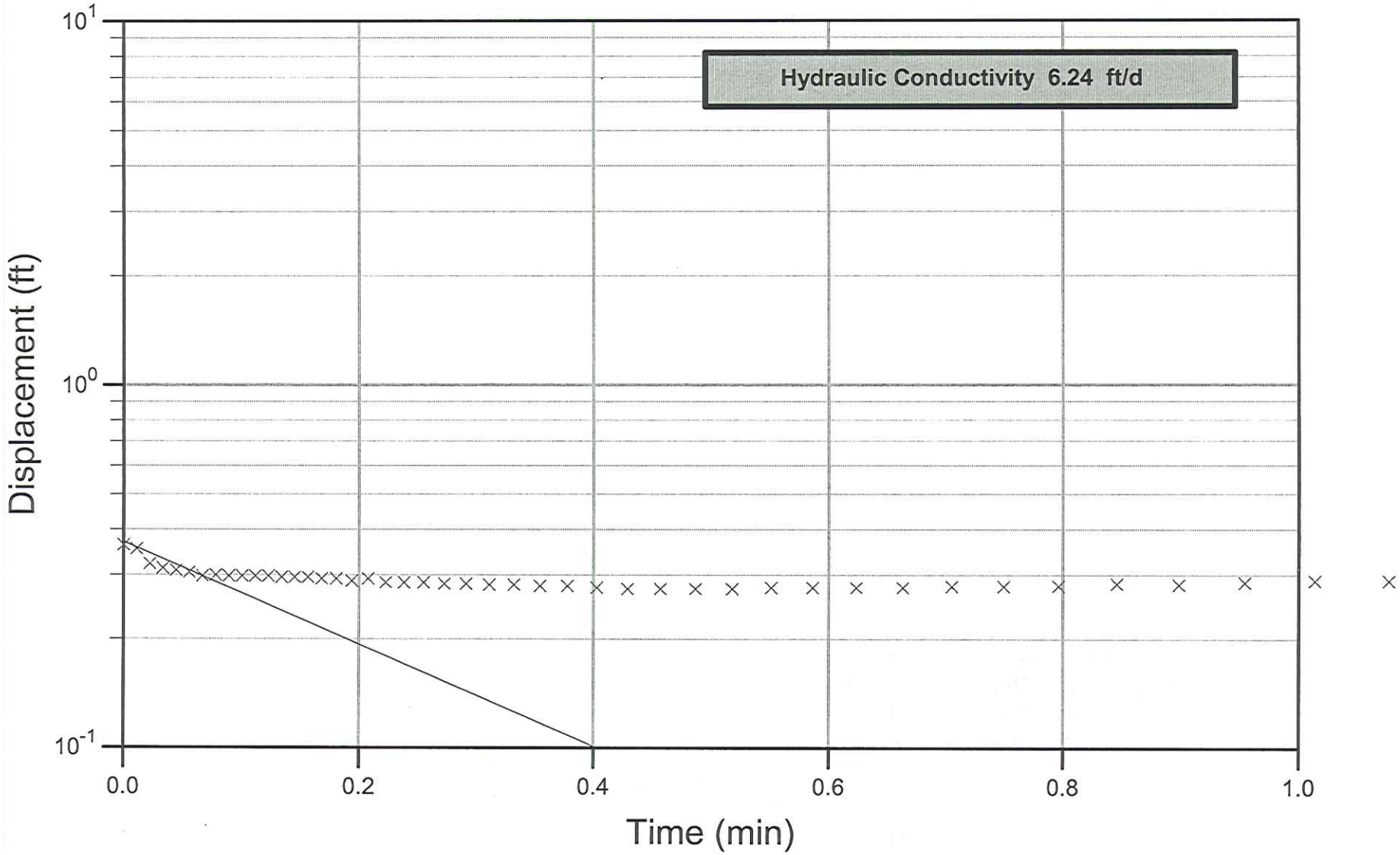
Bouwer & Rice



5-08 Falling Head Slug Test

Tighe & Bond

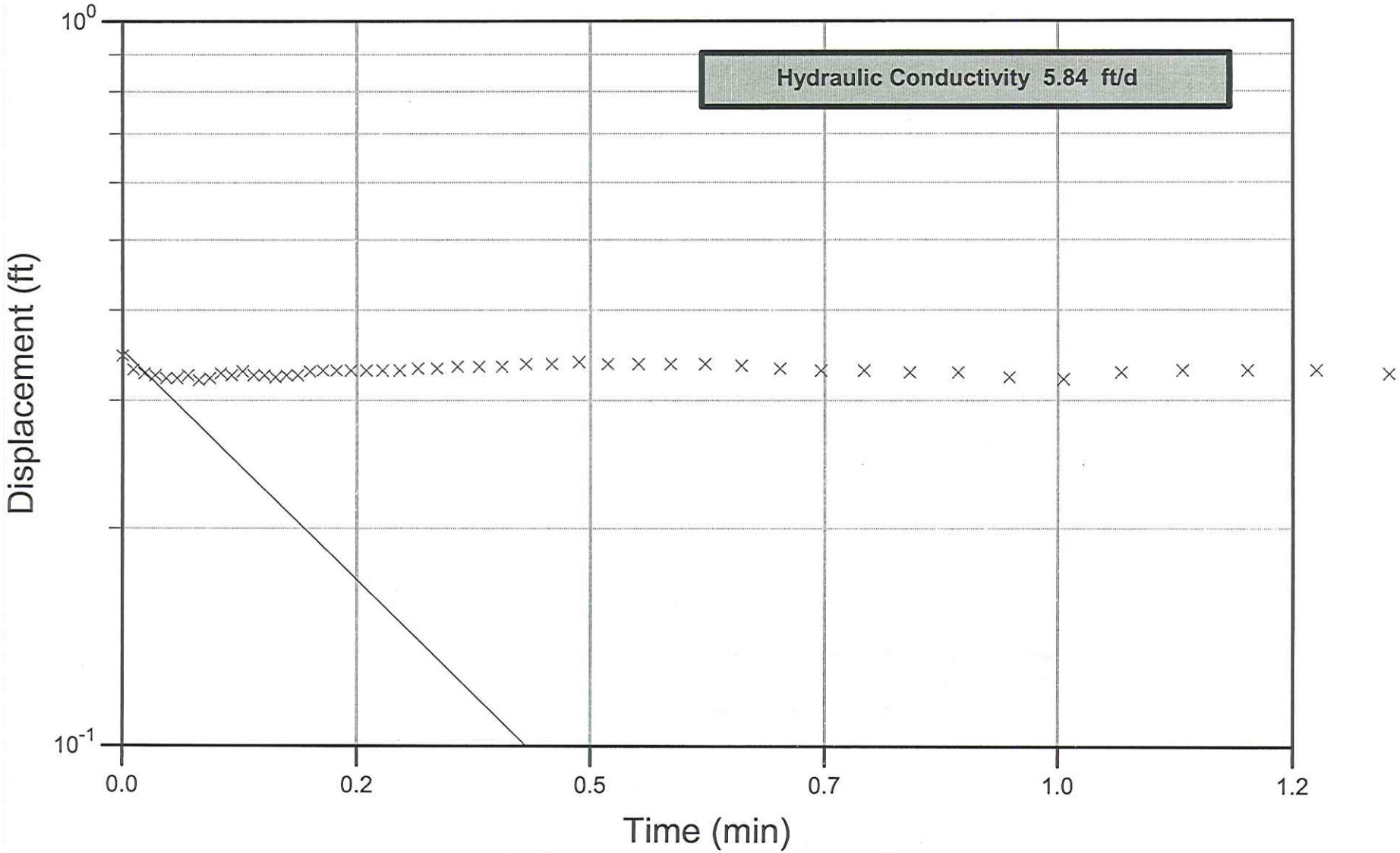
Bouwer & Rice



5-08 Rising Head Slug Test

Tighe & Bond

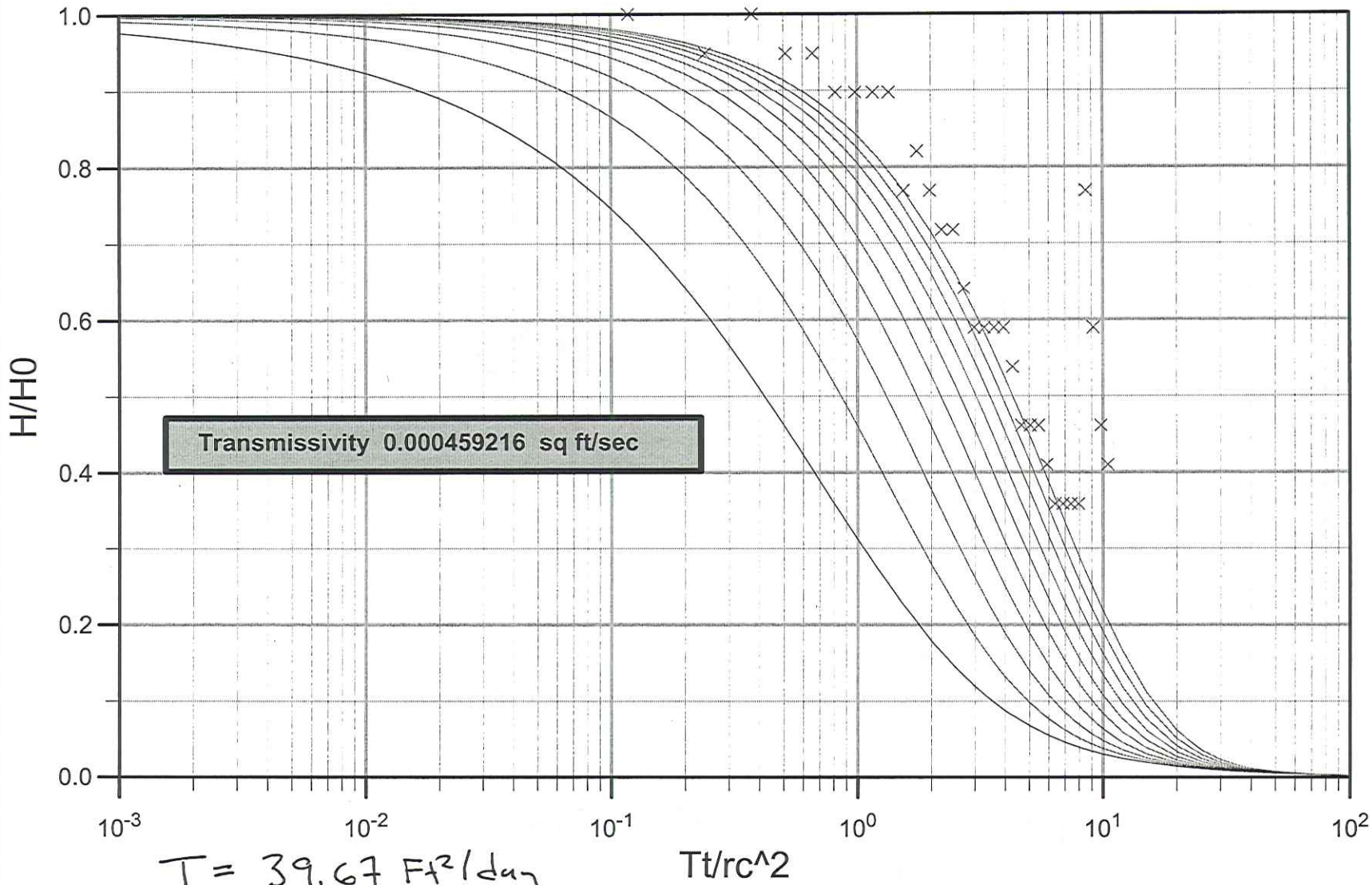
Bouwer & Rice



6-08 Falling Head Slug Test

Tighe & Bond

Cooper, Bredehoeft, and Papadopulos



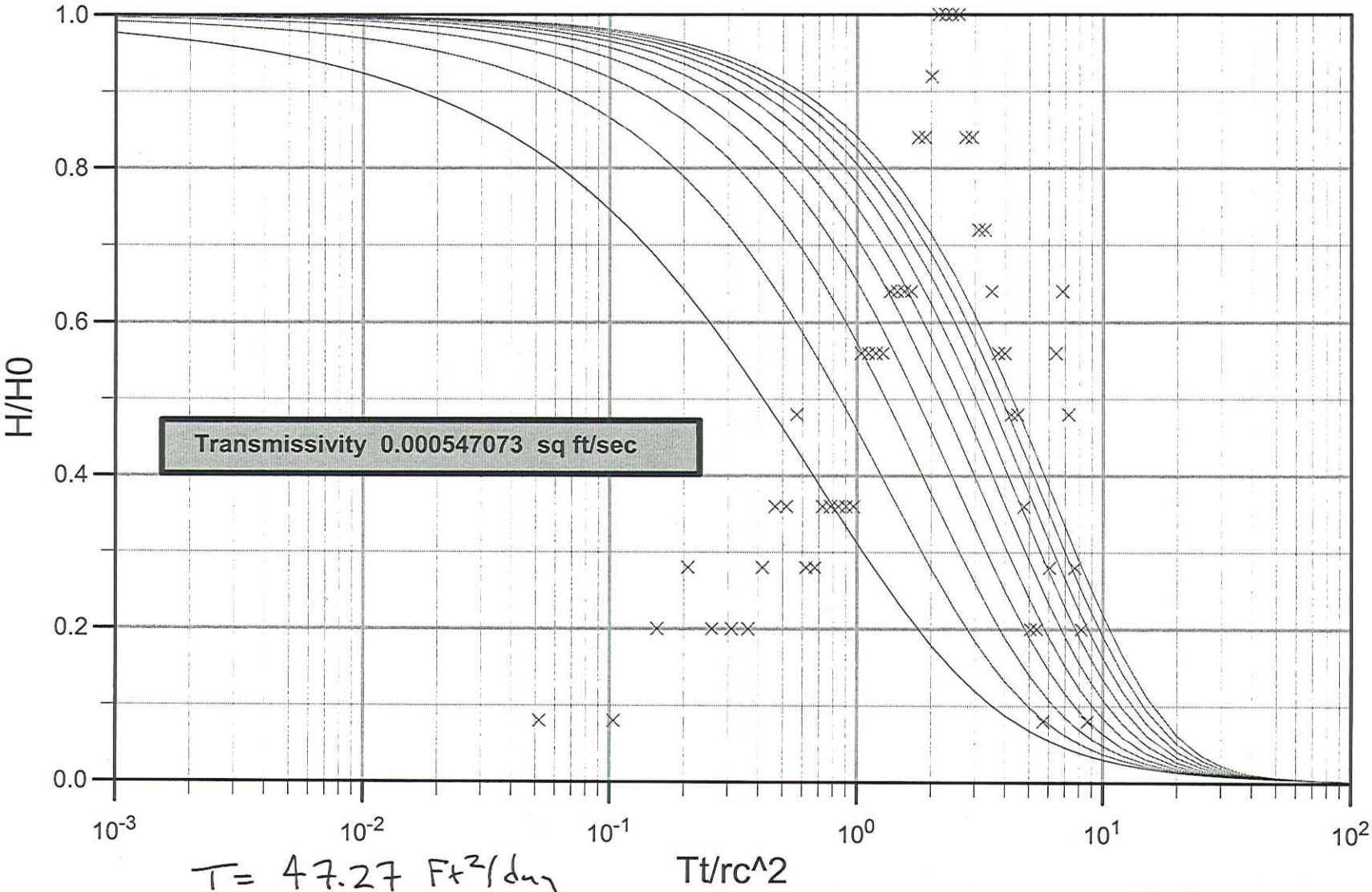
T = 39.67 Ft²/day

K = 4.96 Ft/day

6-08 Rising Head Slug Test

Tighe & Bond

Cooper, Bredehoeft, and Papadopulos



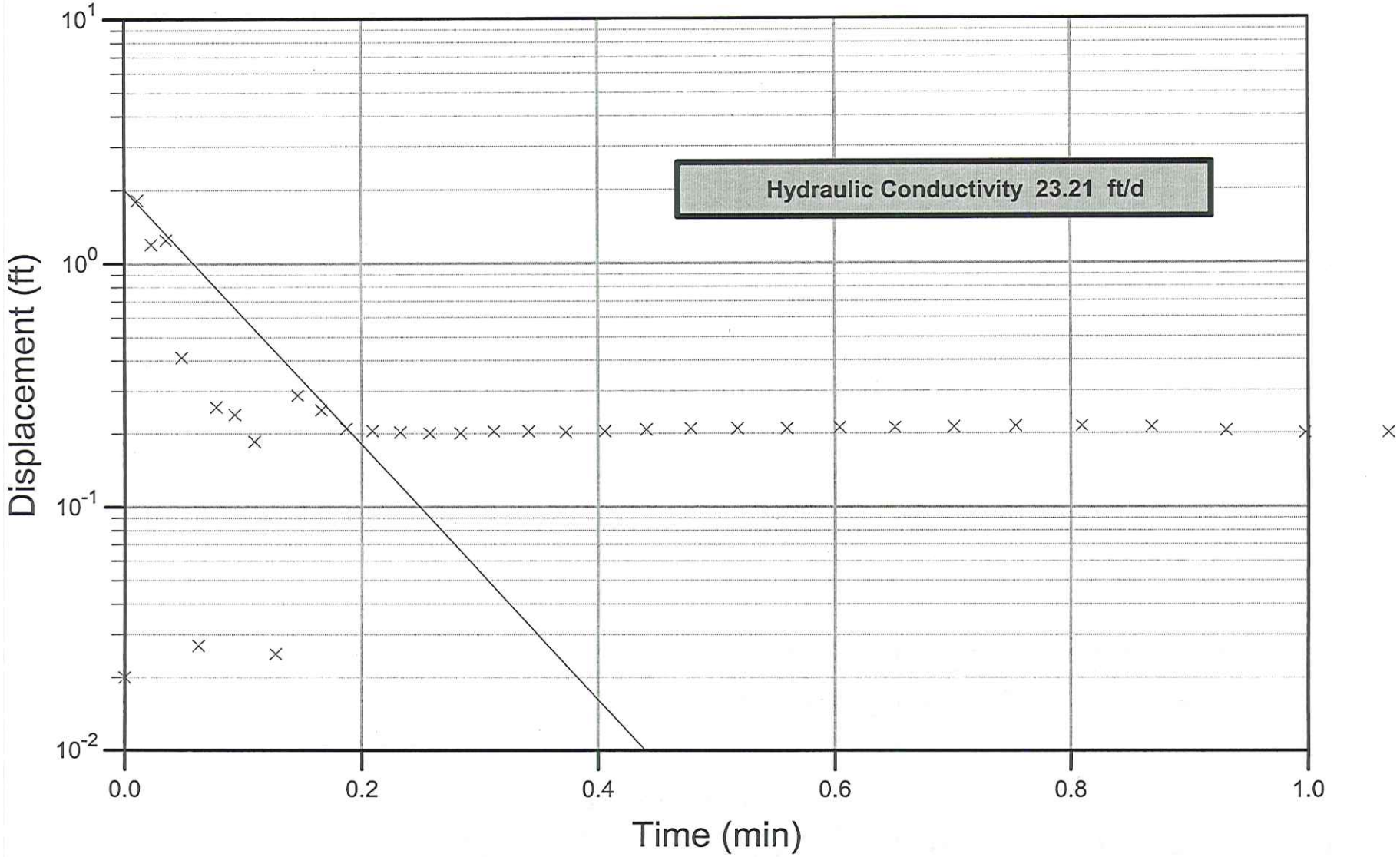
T= 47.27 Ft²/day

K= 5.91 ft/day

7-08 Falling Head Slug Test B

Tighe & Bond

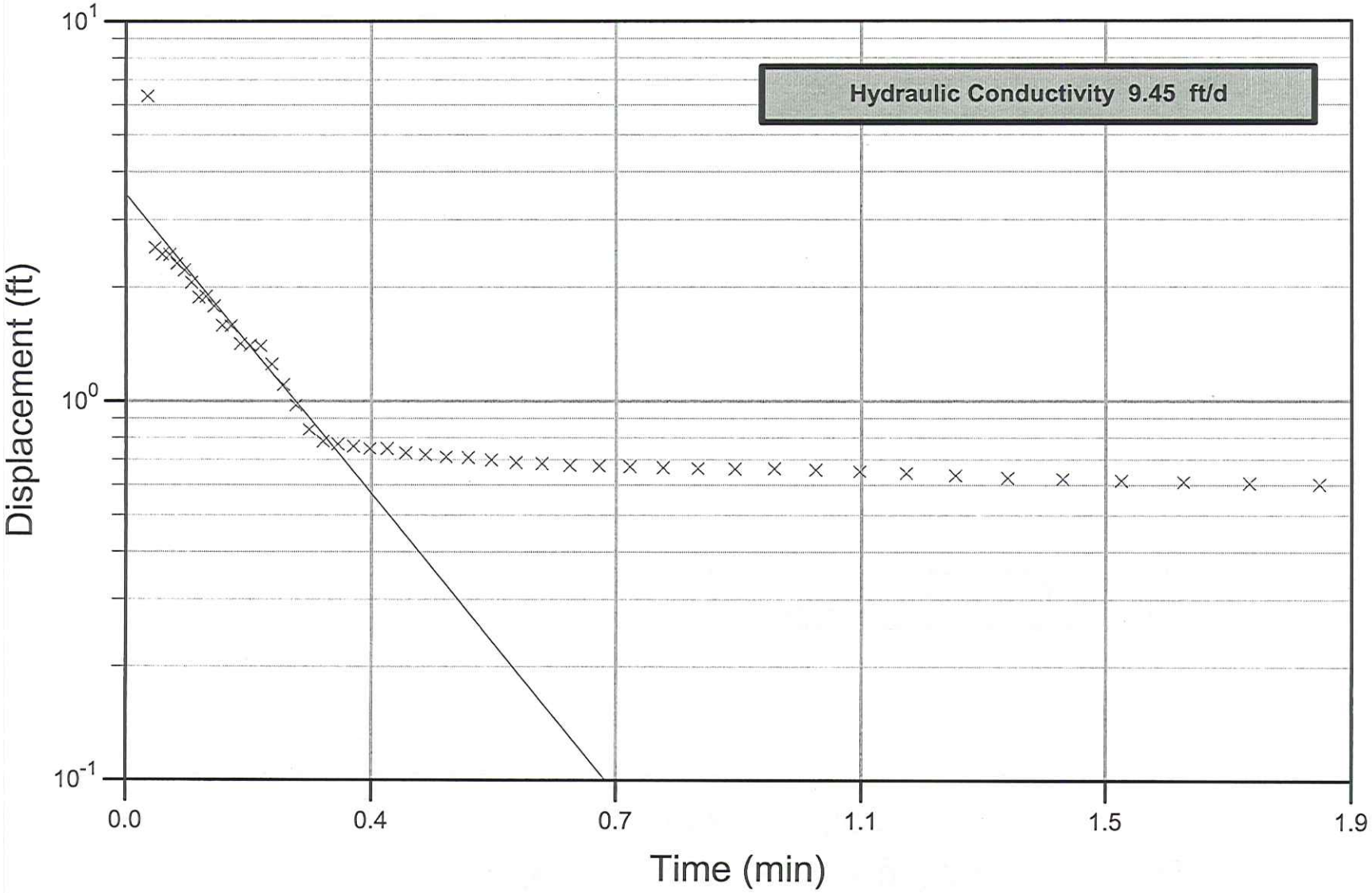
Bouwer & Rice



7-08 Rising Head Slug Test

Bouwer & Rice

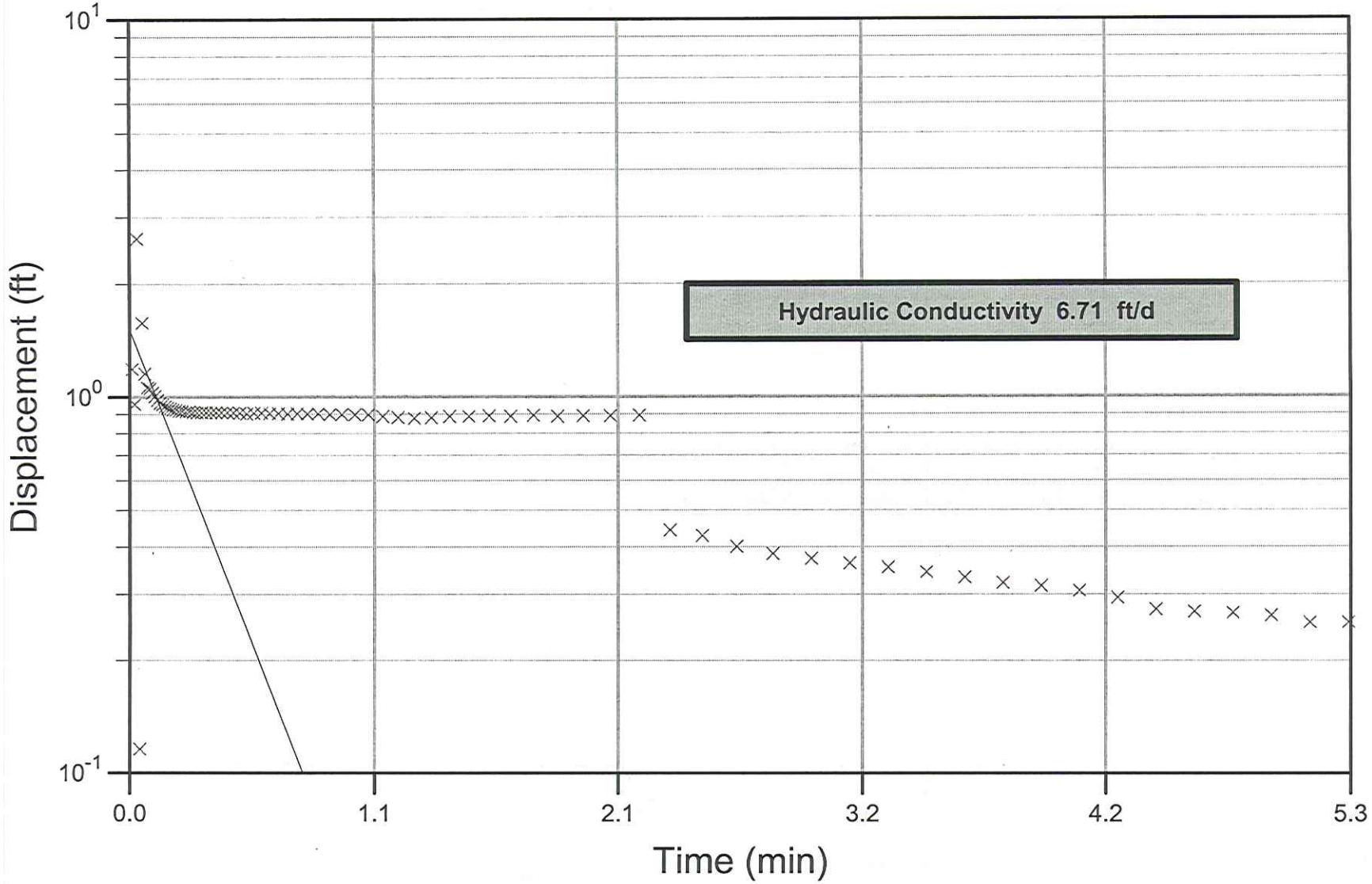
Tighe & Bond



8-08 Falling Head Slug Test

Tighe & Bond

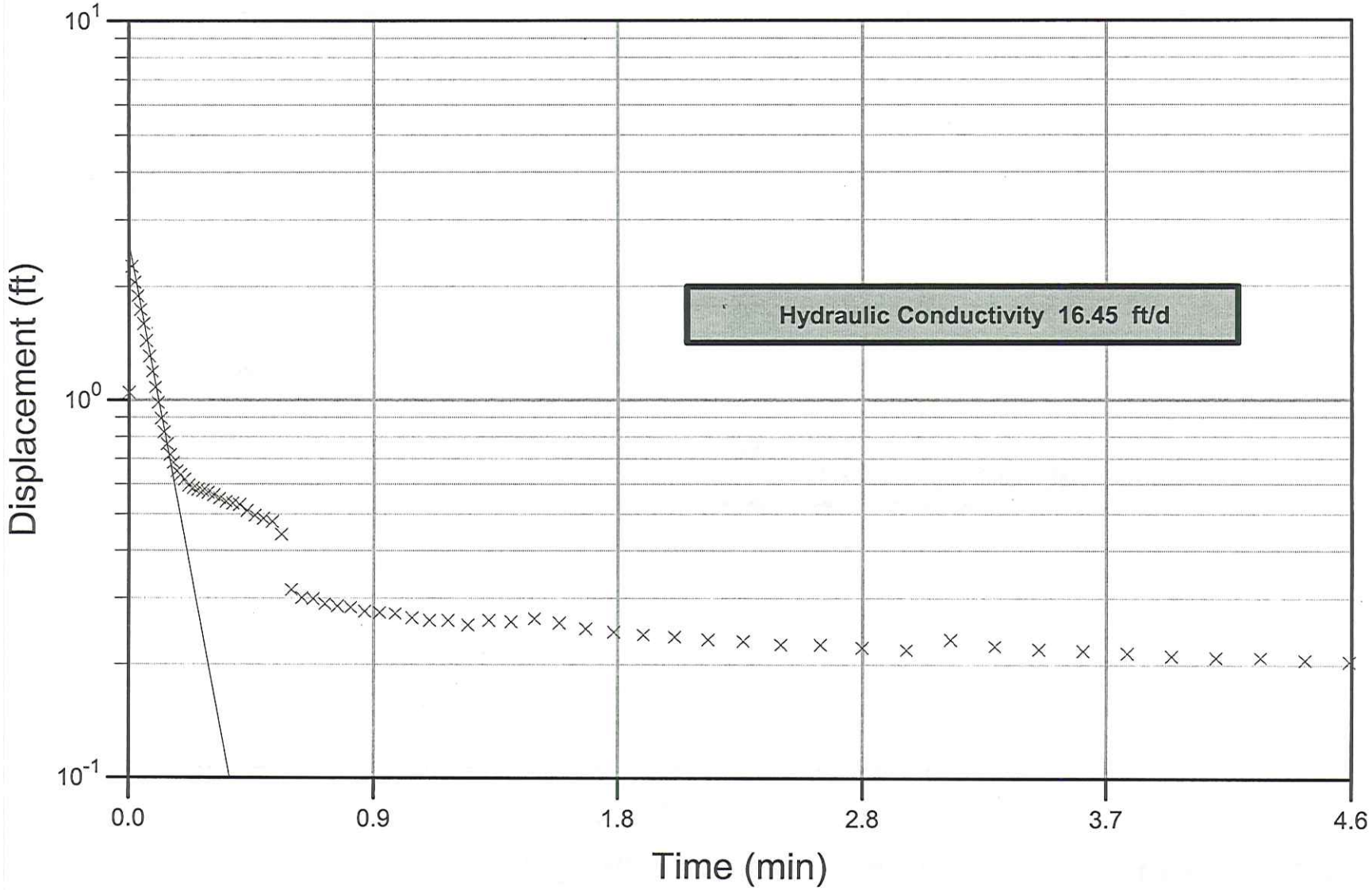
Bouwer & Rice



8-08 Rising Head Slug Test

Tighe & Bond

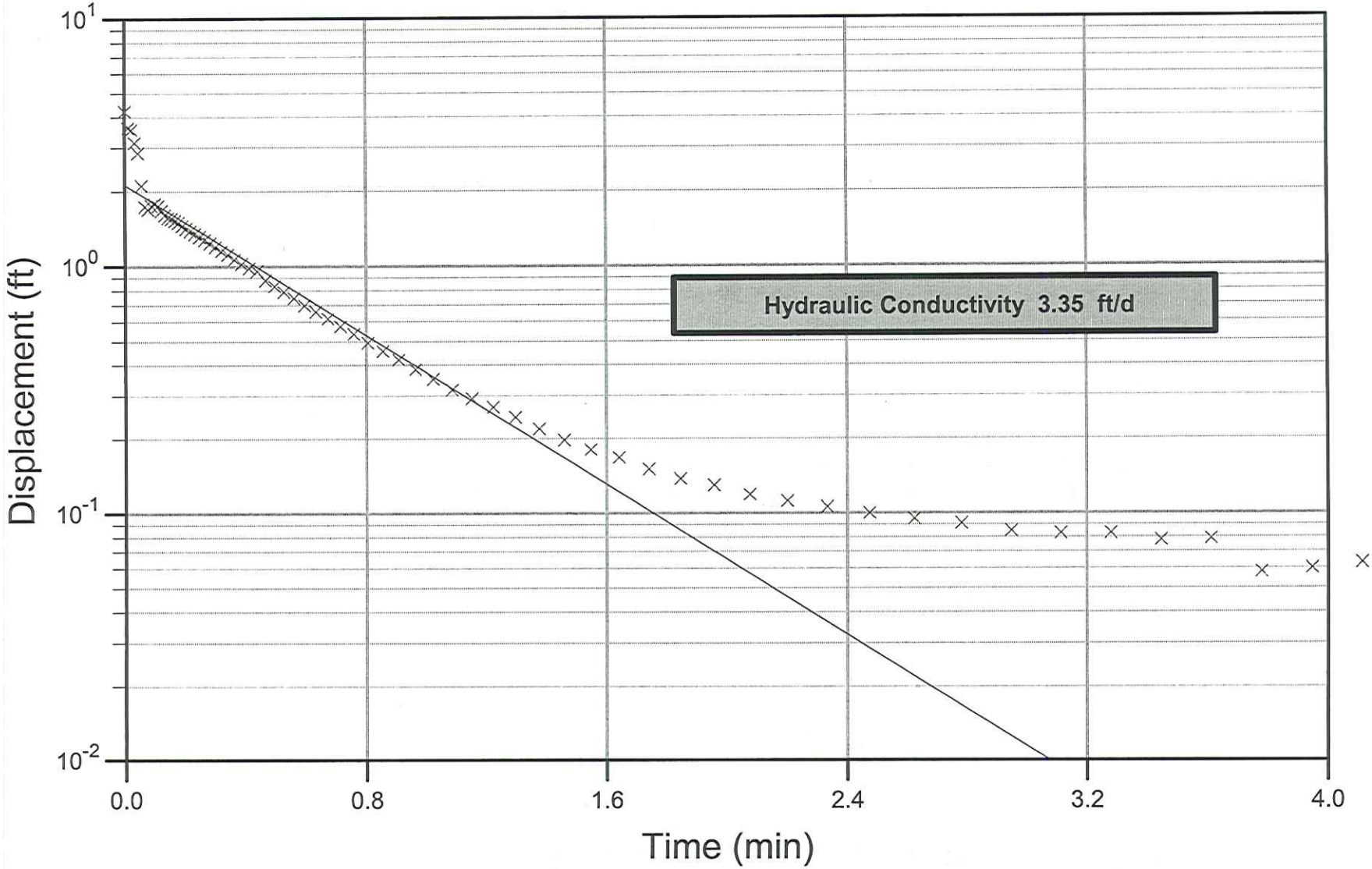
Bouwer & Rice



9-08 Falling Head Slug Test

Tighe & Bond

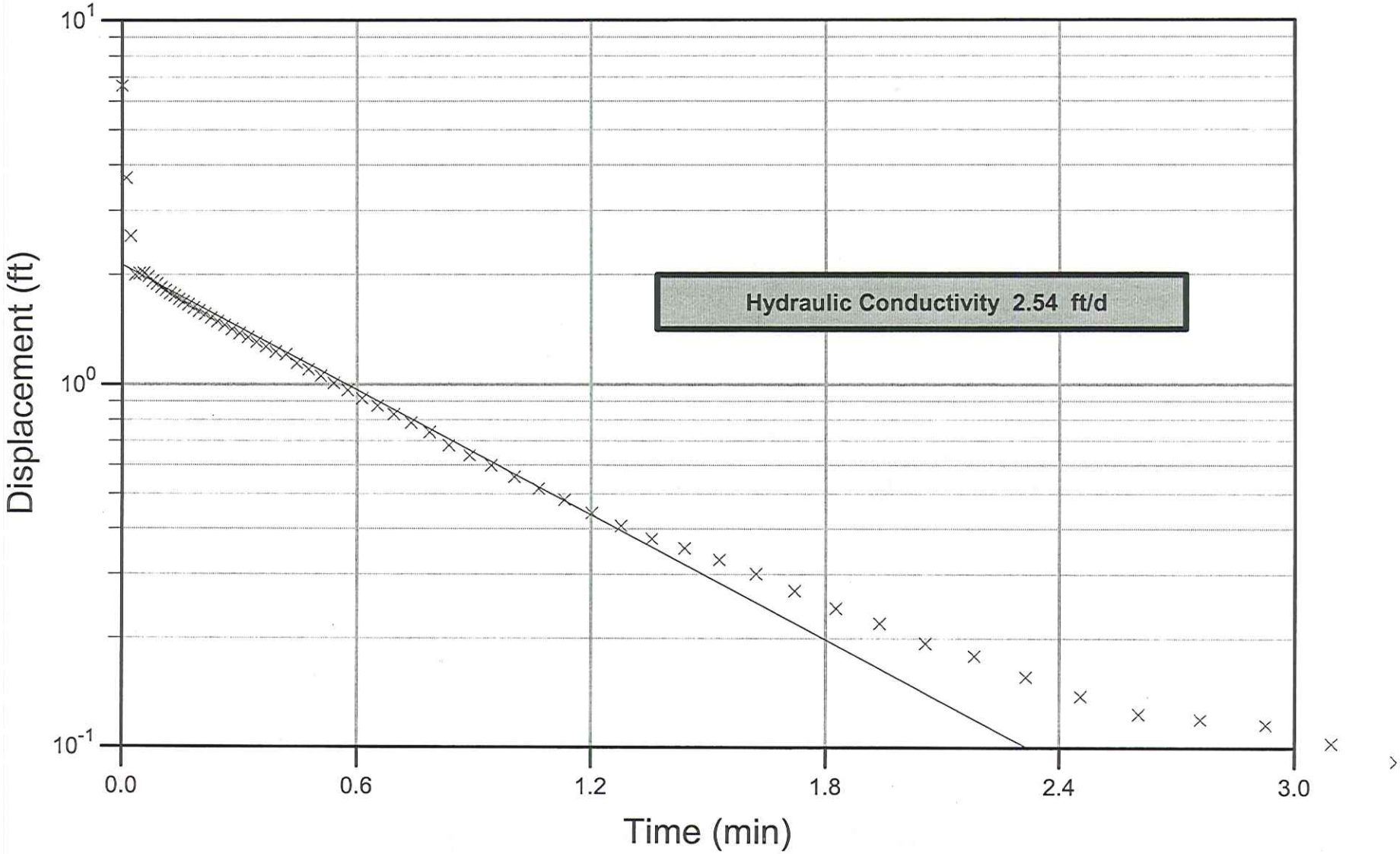
Bouwer & Rice



9-08 Rising Head Slug Test

Tighe & Bond

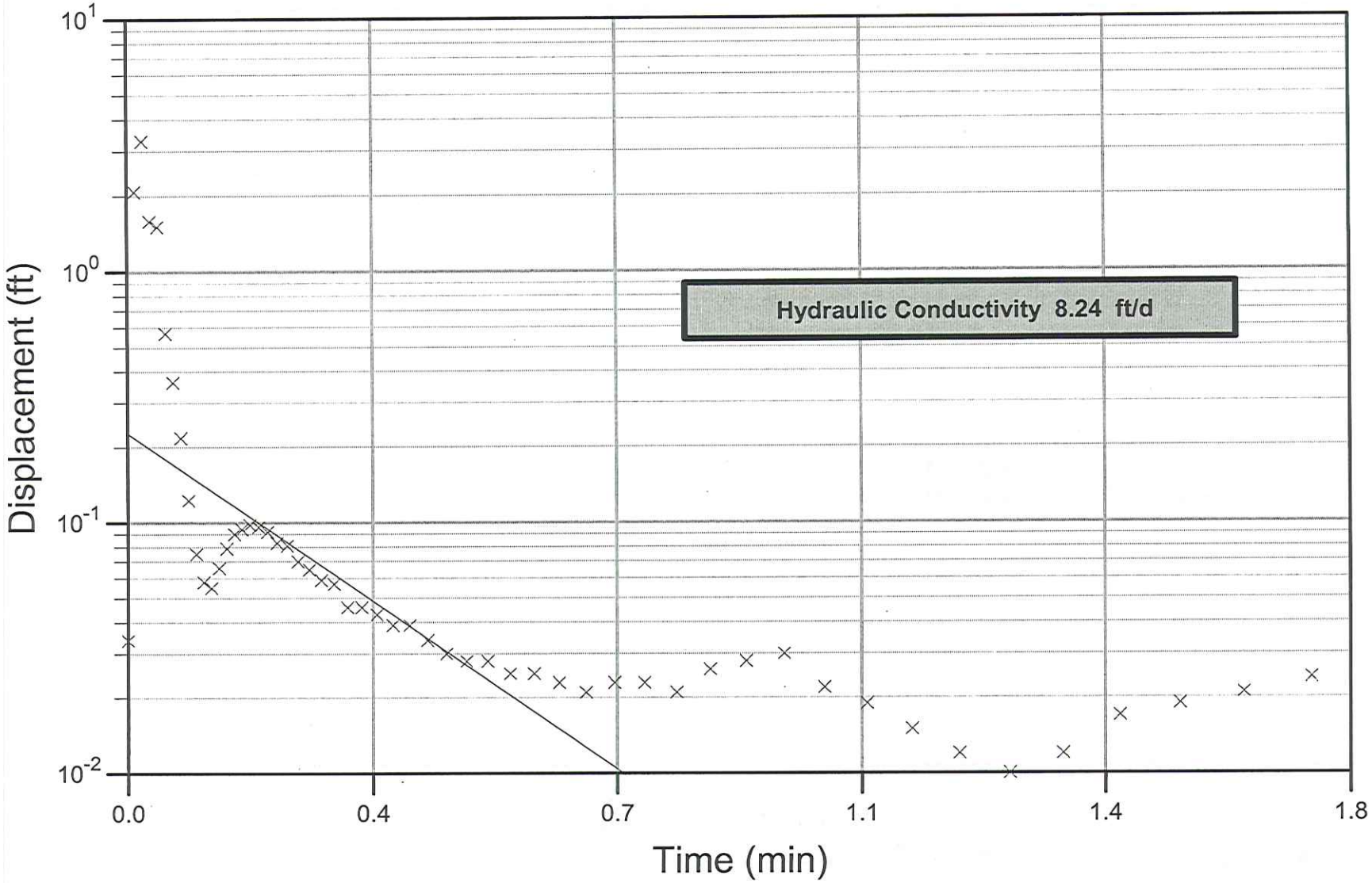
Bouwer & Rice



10-08 Falling Head Slug Test

Tighe & Bond

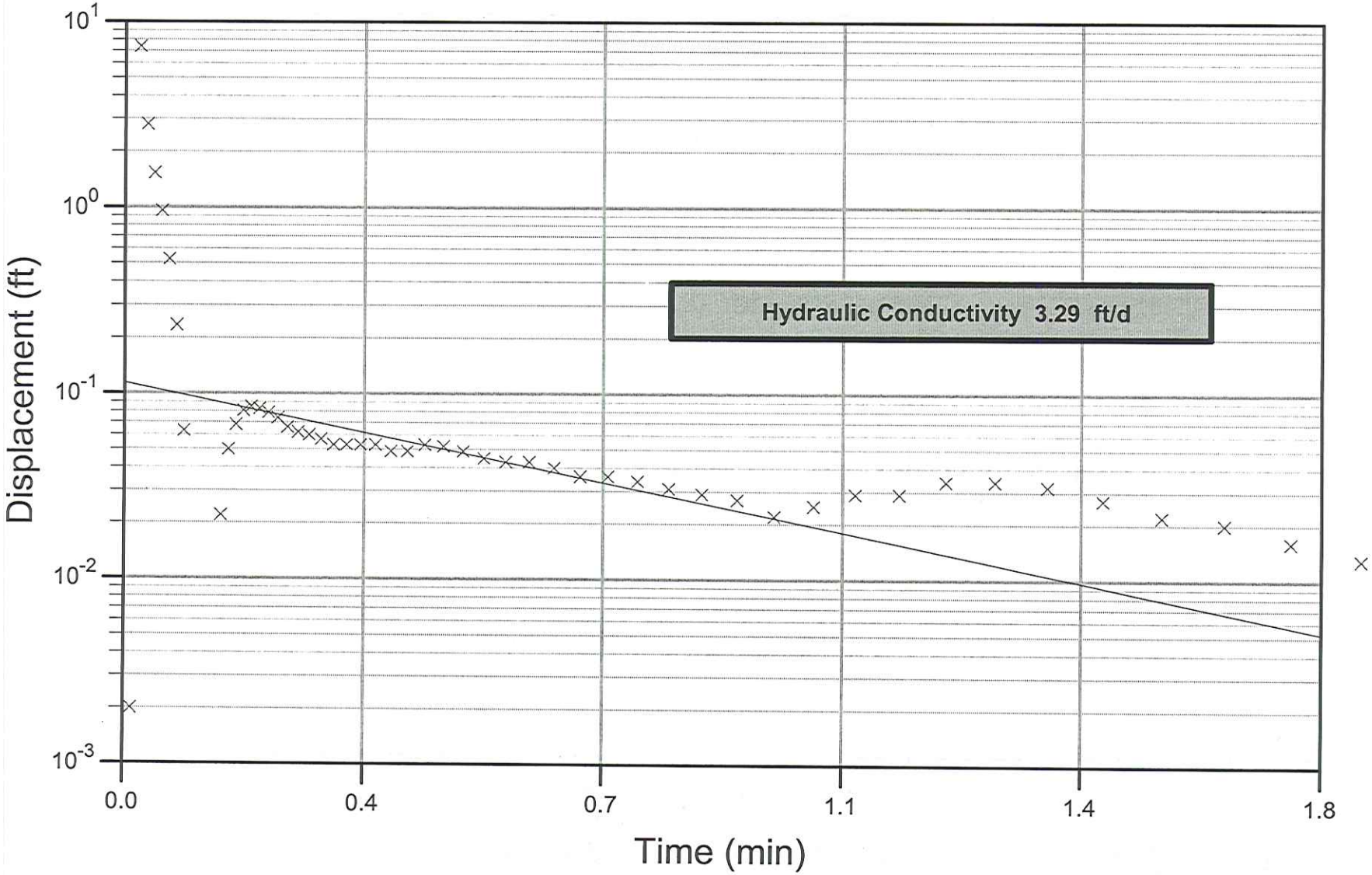
Bouwer & Rice



10-08 Rising Head Slug Test

Tighe & Bond

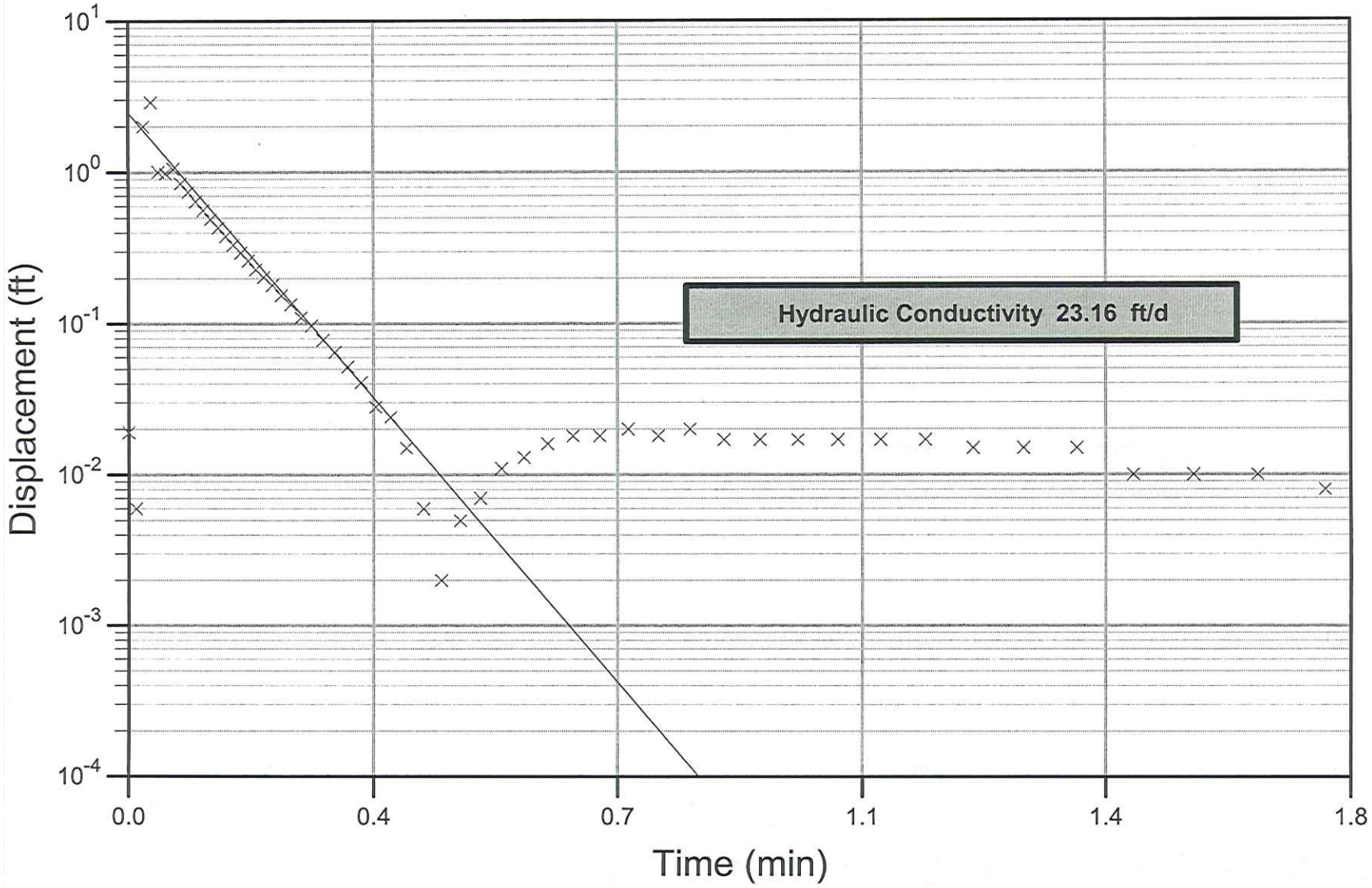
Bouwer & Rice



11-08 Falling Head Slug Test

Tighe & Bond

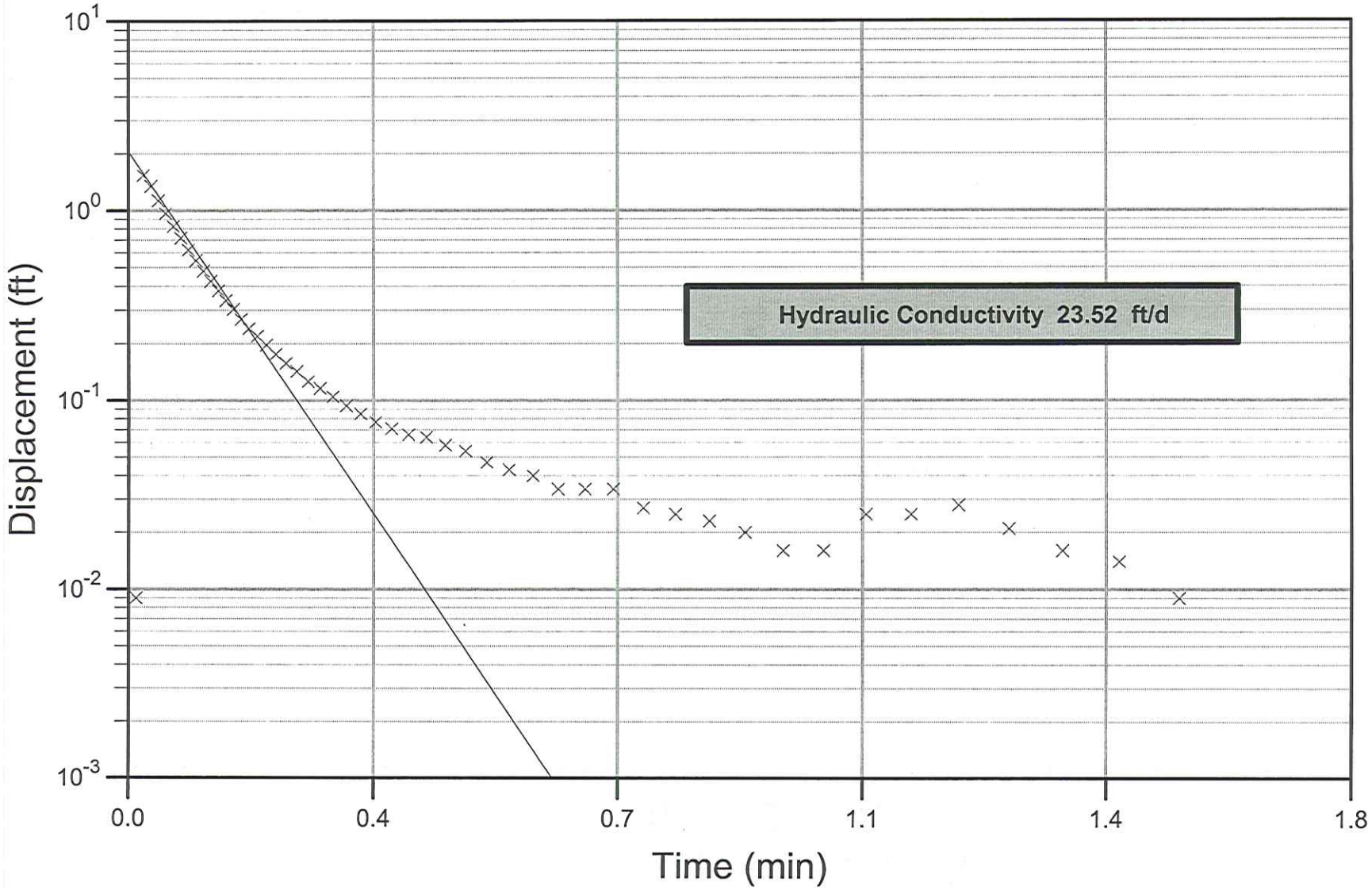
Bouwer & Rice



11-08 Rising Head Slug Test

Tighe & Bond

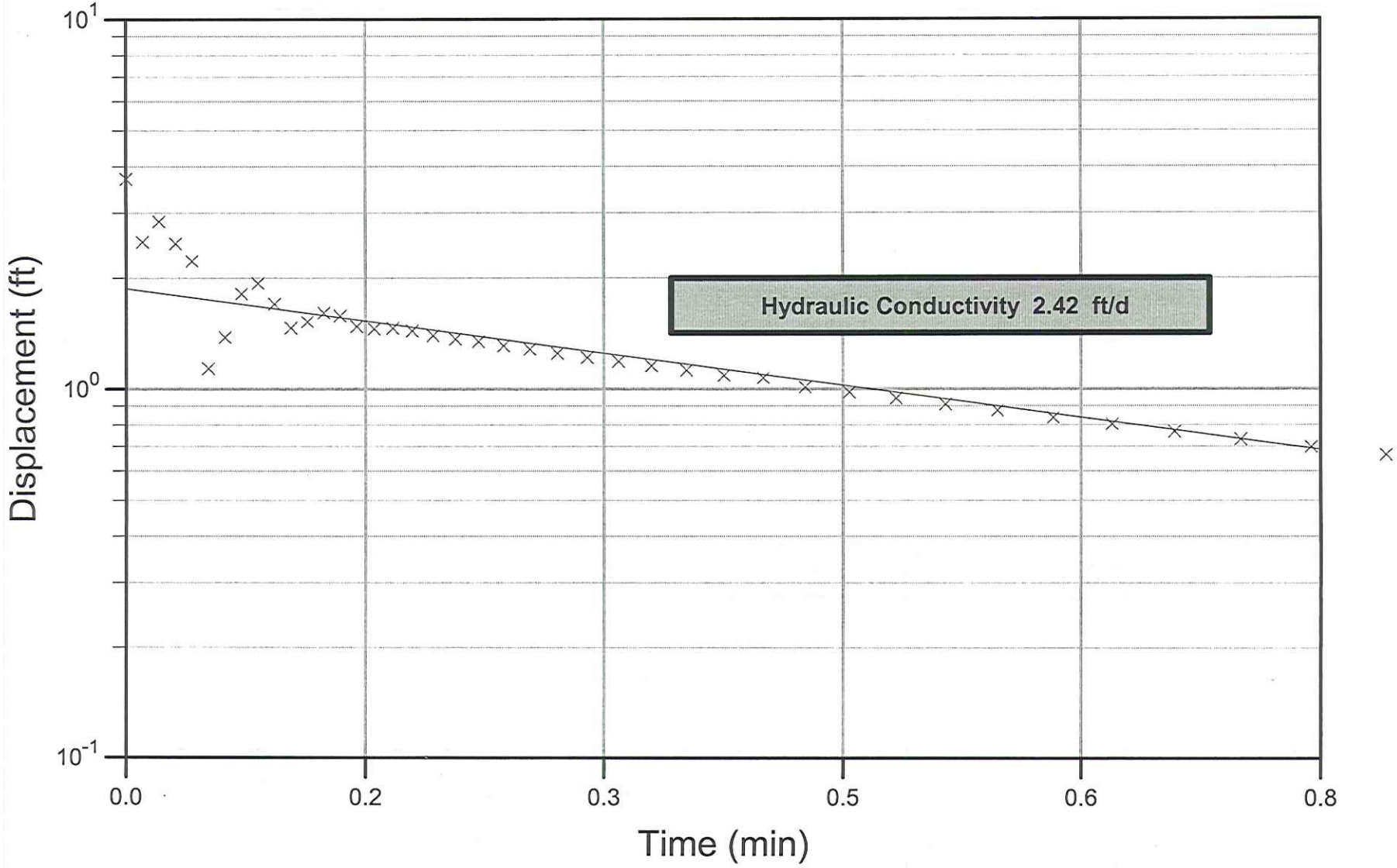
Bouwer & Rice



12-08 Falling Head Slug Test

Tighe & Bond

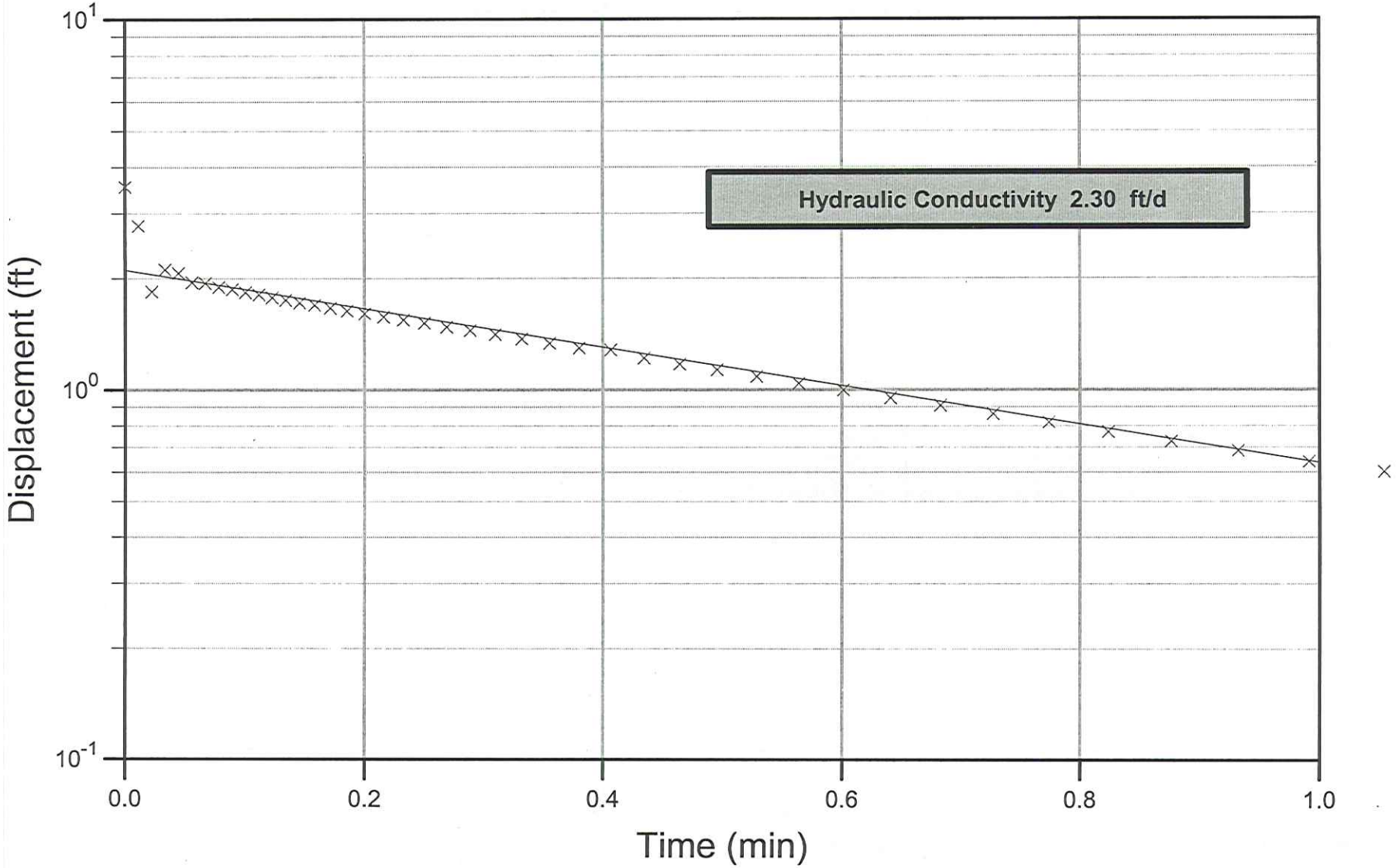
Bouwer & Rice



12-08 Rising Head Slug Test

Tighe & Bond

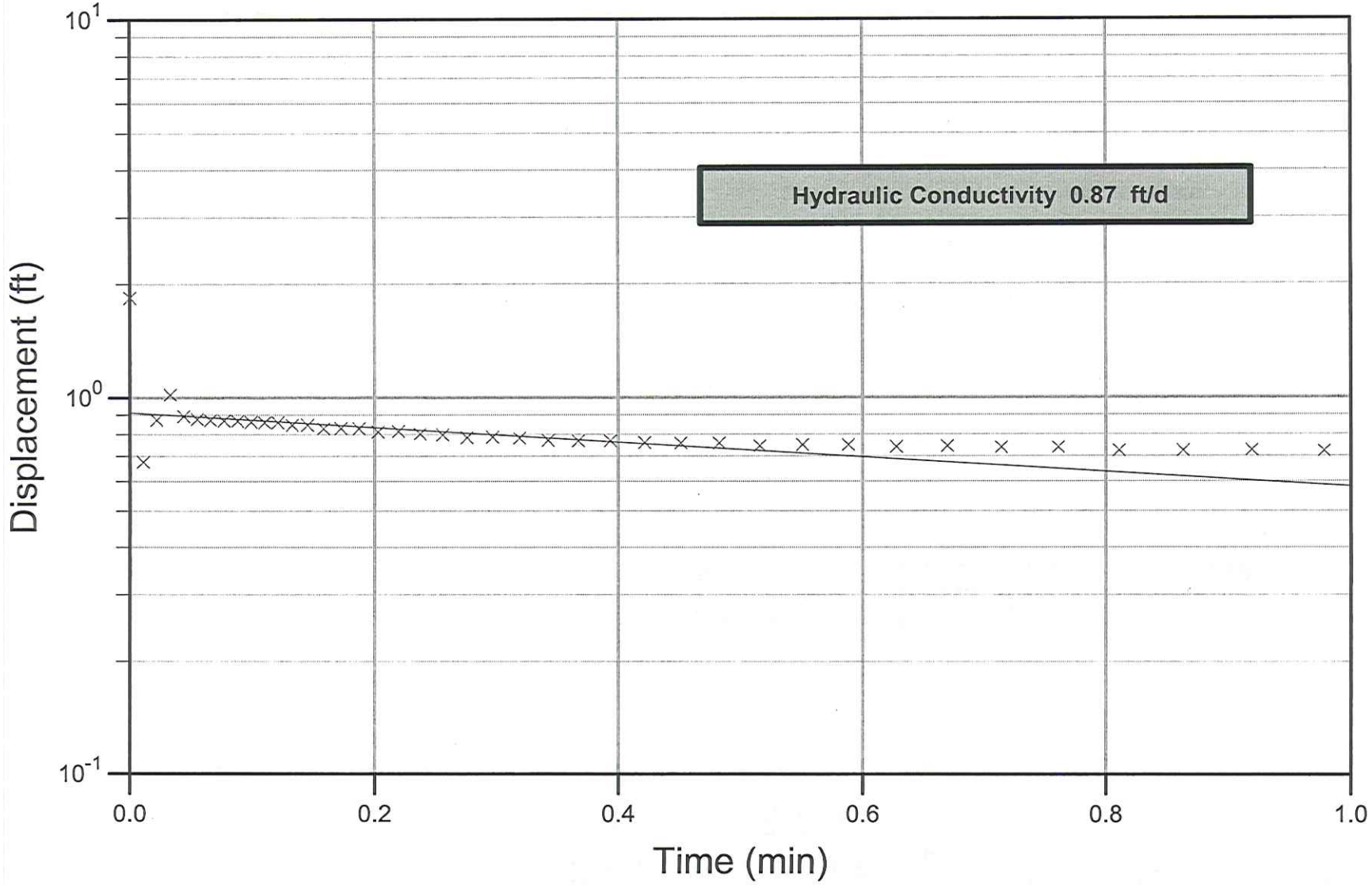
Bouwer & Rice



PGW-3 Falling Head Slug Test

Tighe & Bond

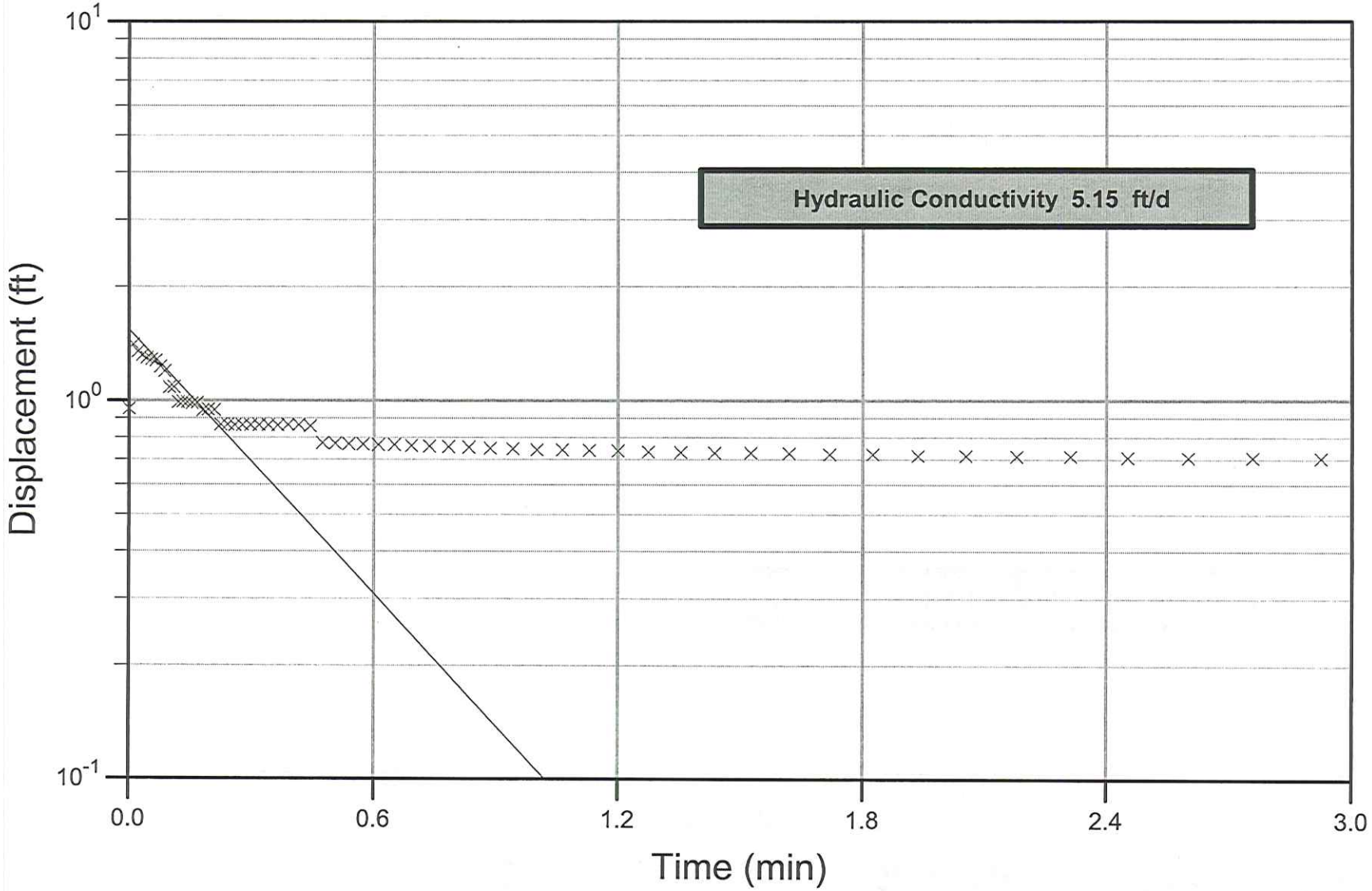
Bouwer & Rice



PGW-3 Rising Head Slug Test

Tighe & Bond

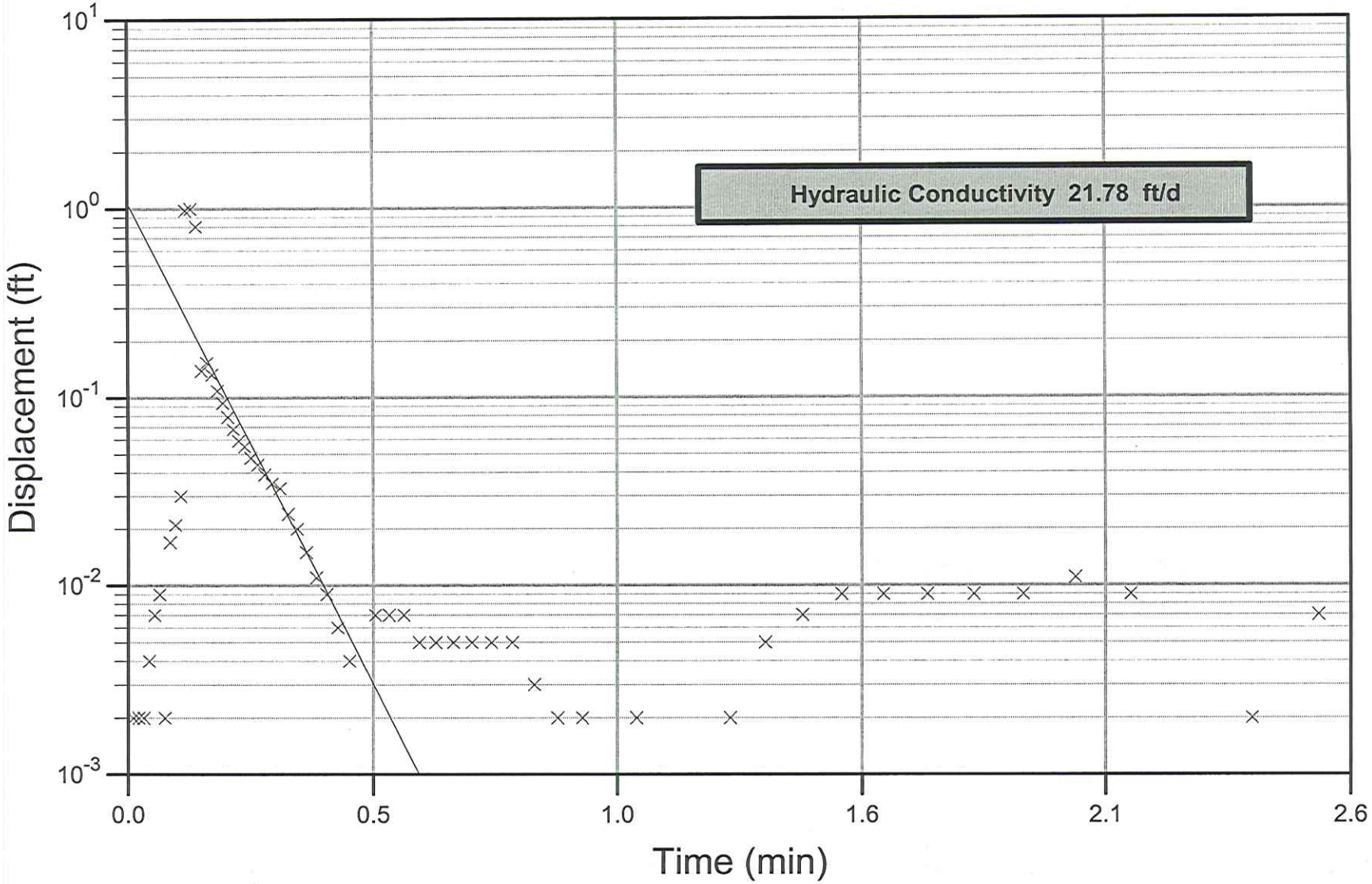
Bouwer & Rice



PGW-4 Falling Head Slug Test

Tighe & Bond

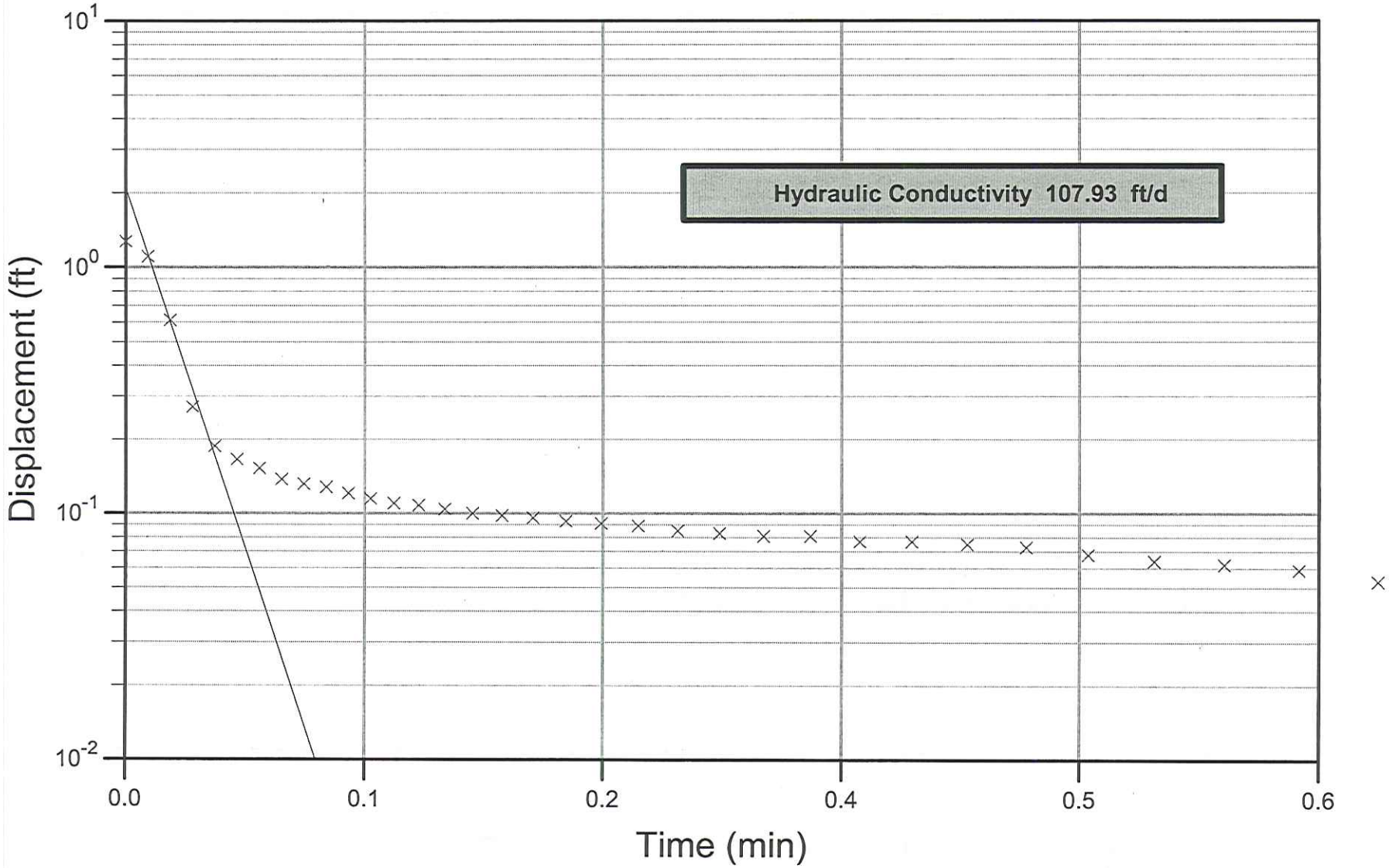
Bouwer & Rice



PGW-4 Rising Head Slug Test

Tighe & Bond

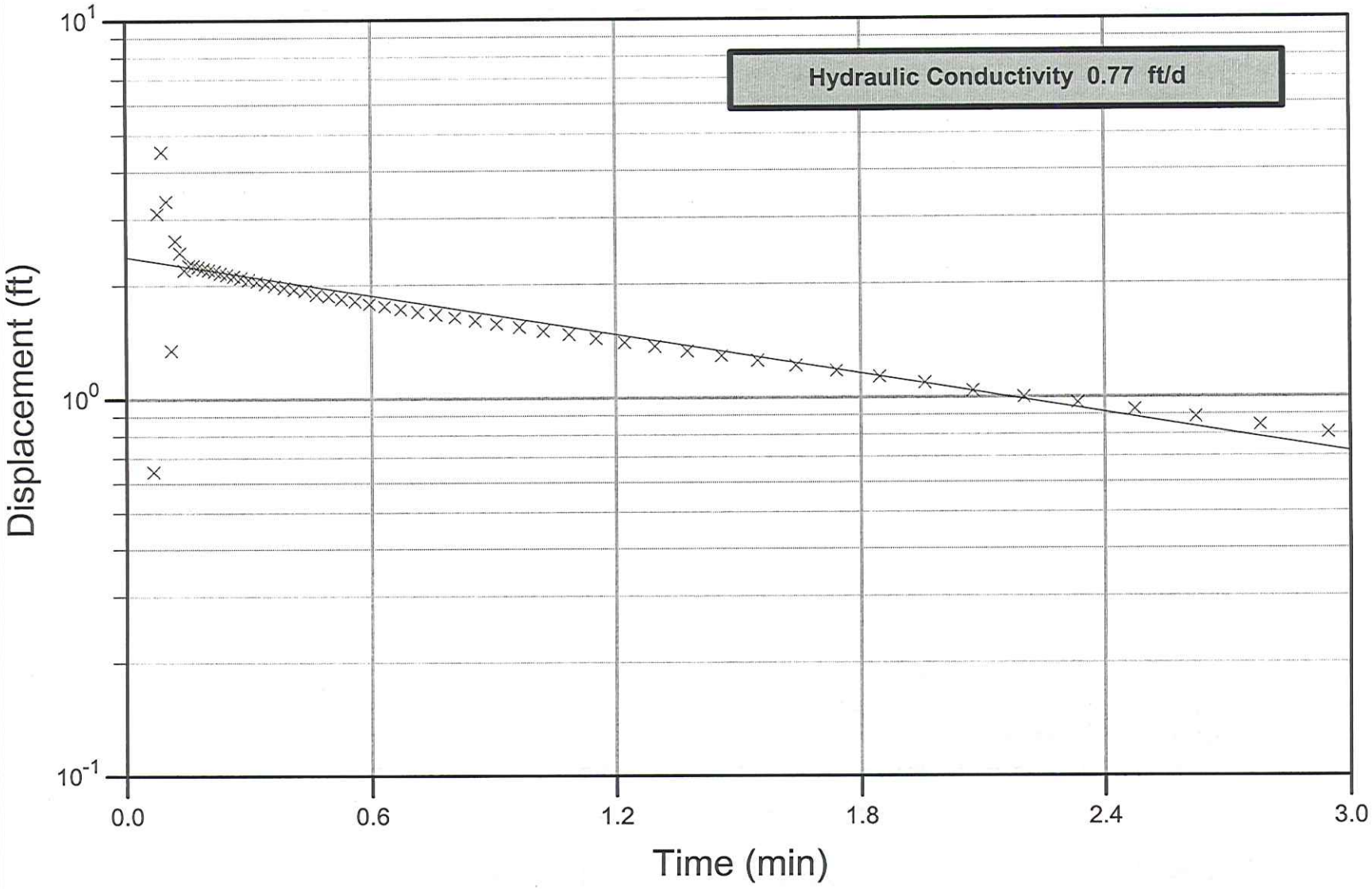
Bouwer & Rice



1-03 Falling Head Slug Test

Tighe & Bond

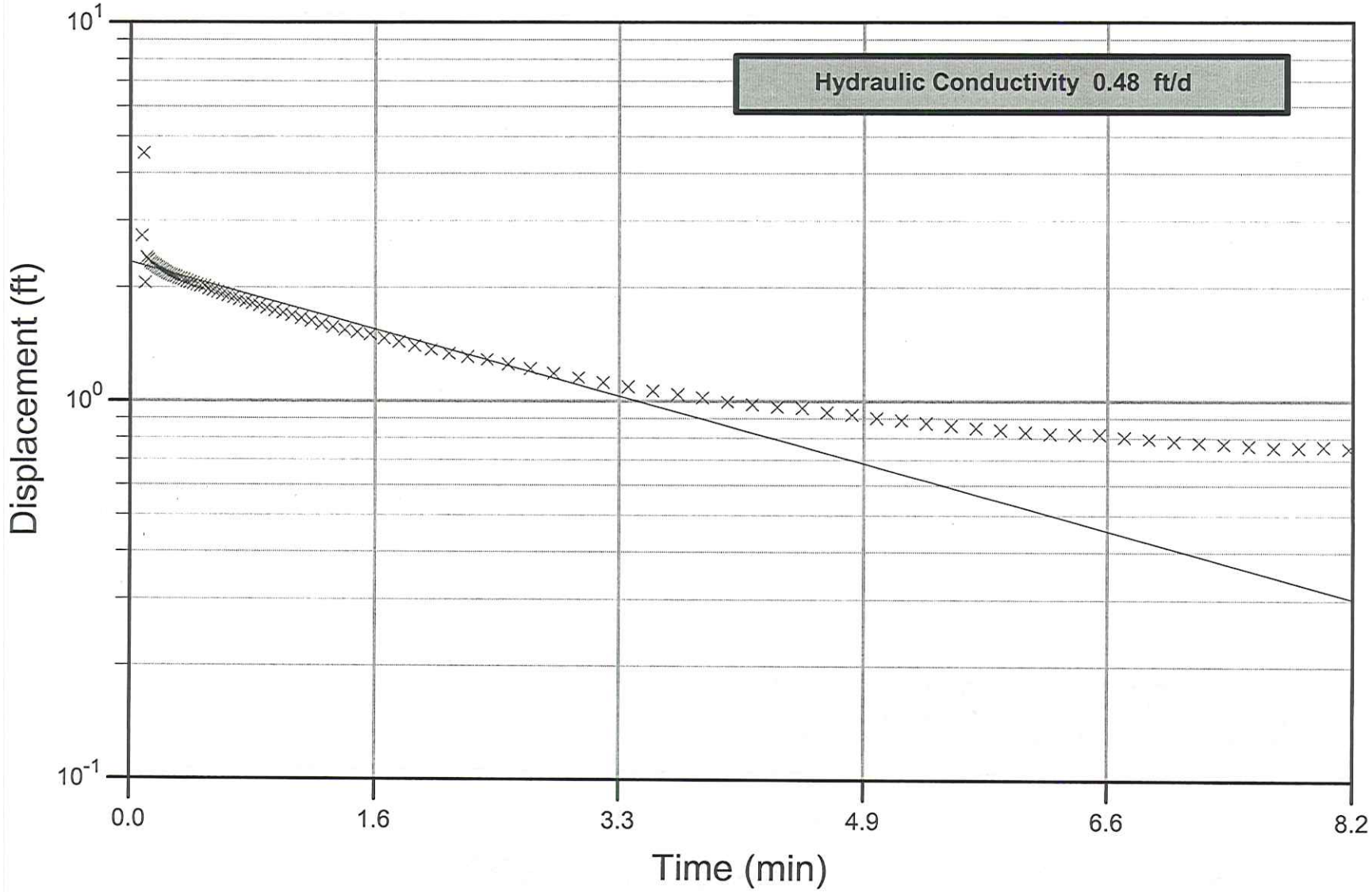
Bouwer & Rice



1-03 Rising Head Slug Test

Tighe & Bond

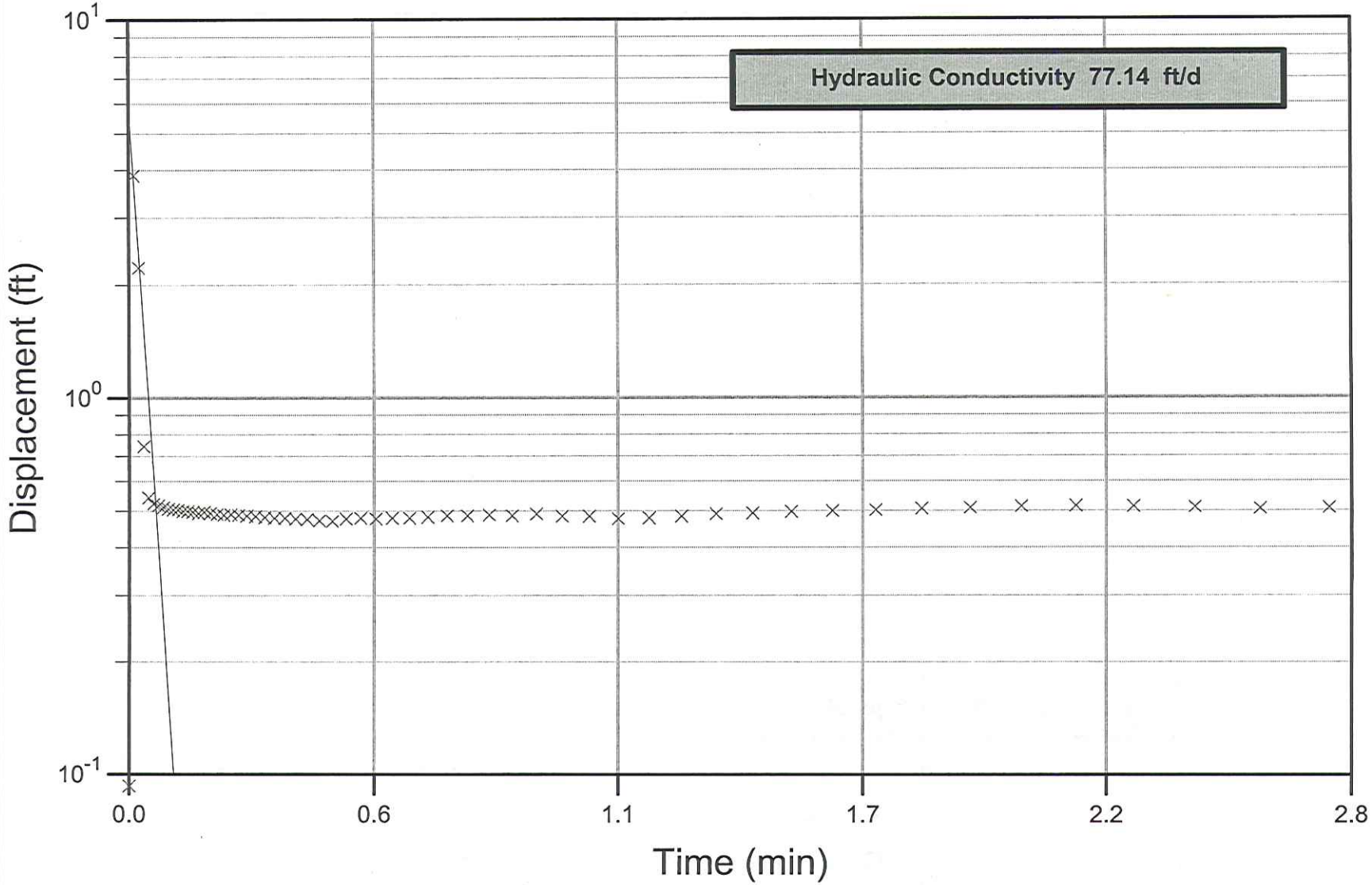
Bouwer & Rice



2-03 Falling Head Slug Test

Tighe & Bond

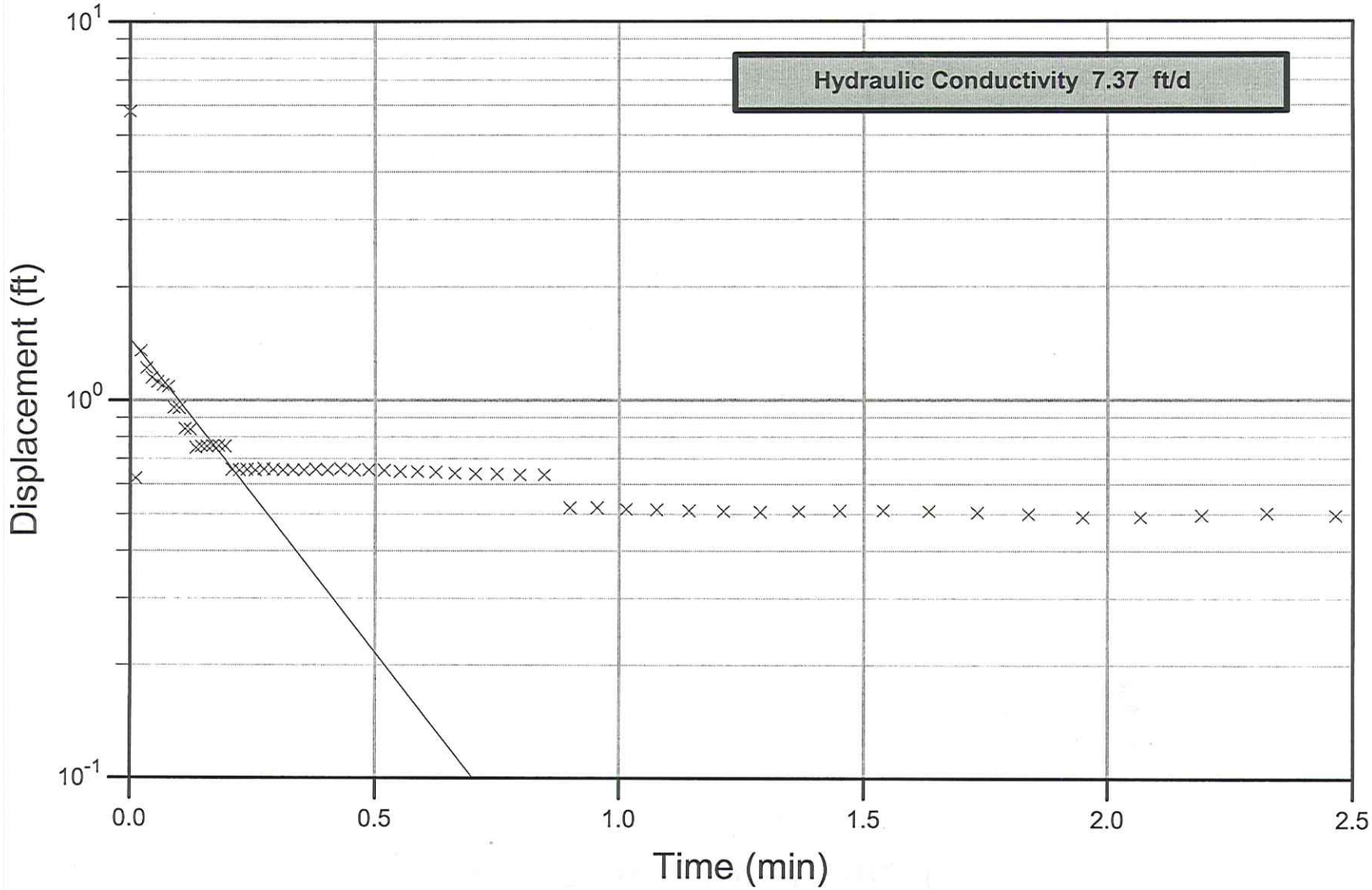
Bouwer & Rice



2-03 Rising Head Slug Test

Tighe & Bond

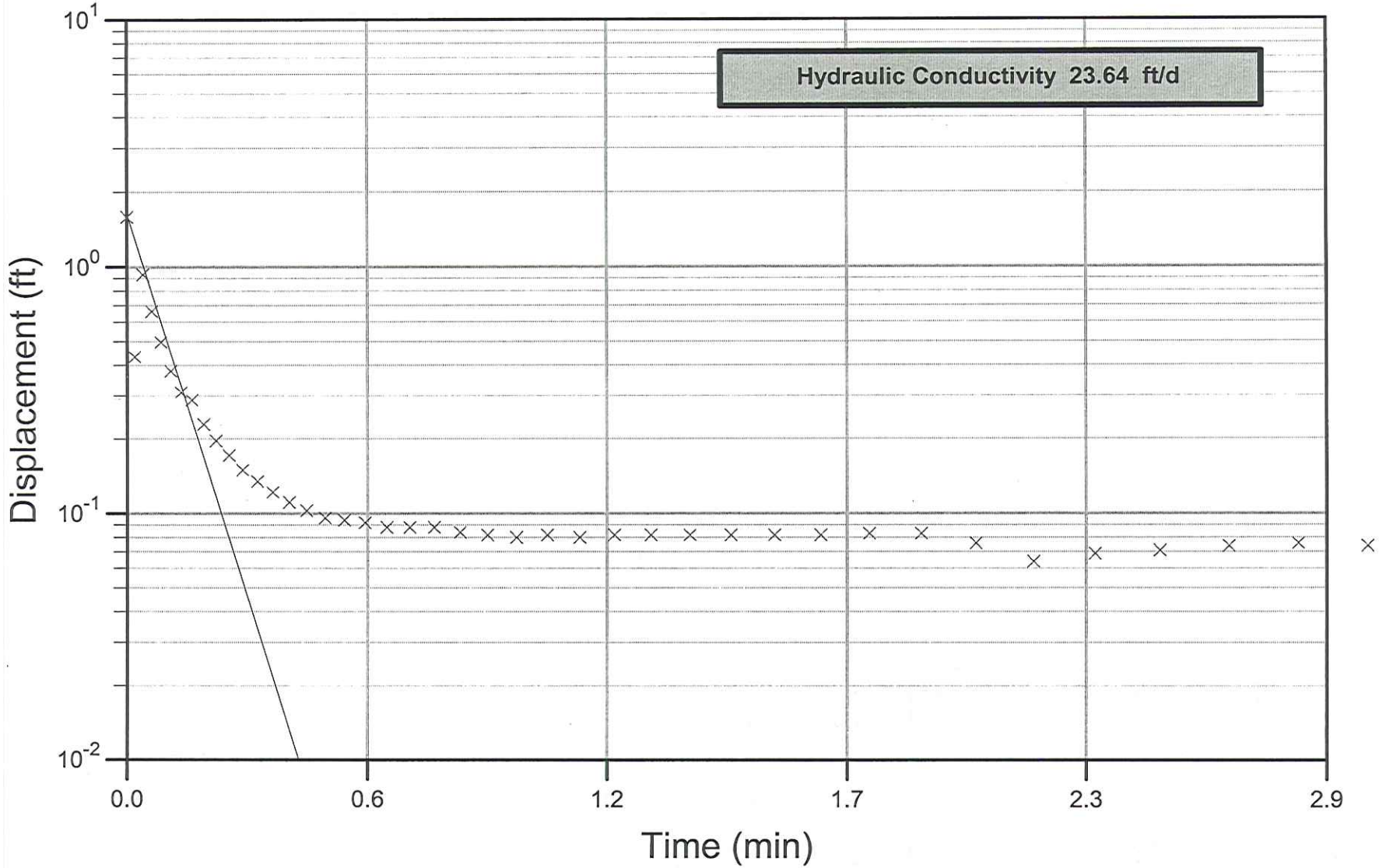
Bouwer & Rice



5-89 Falling Head Slug Test

Tighe & Bond

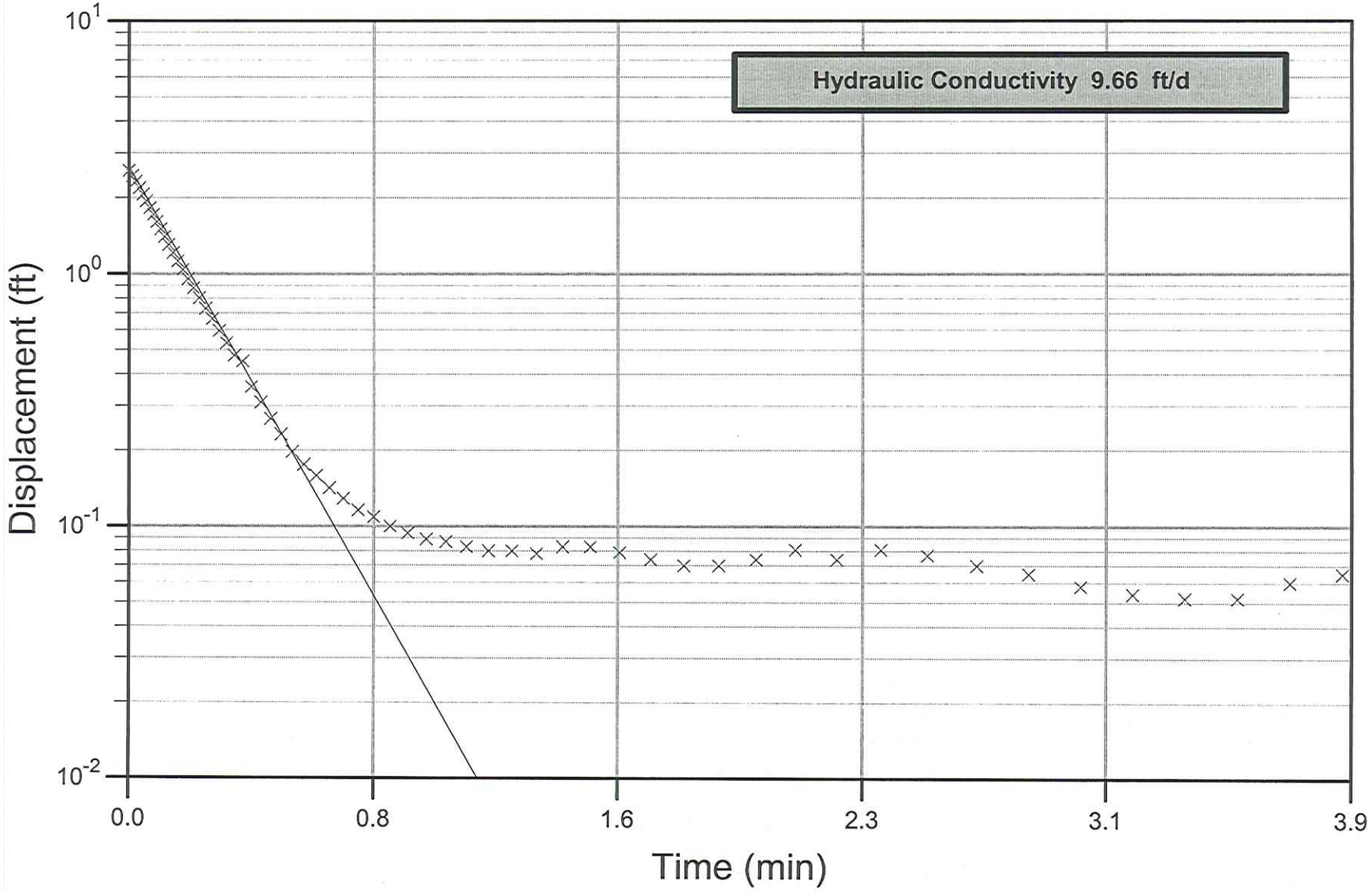
Bouwer & Rice



5-89 Rising Head Slug Test

Tighe & Bond

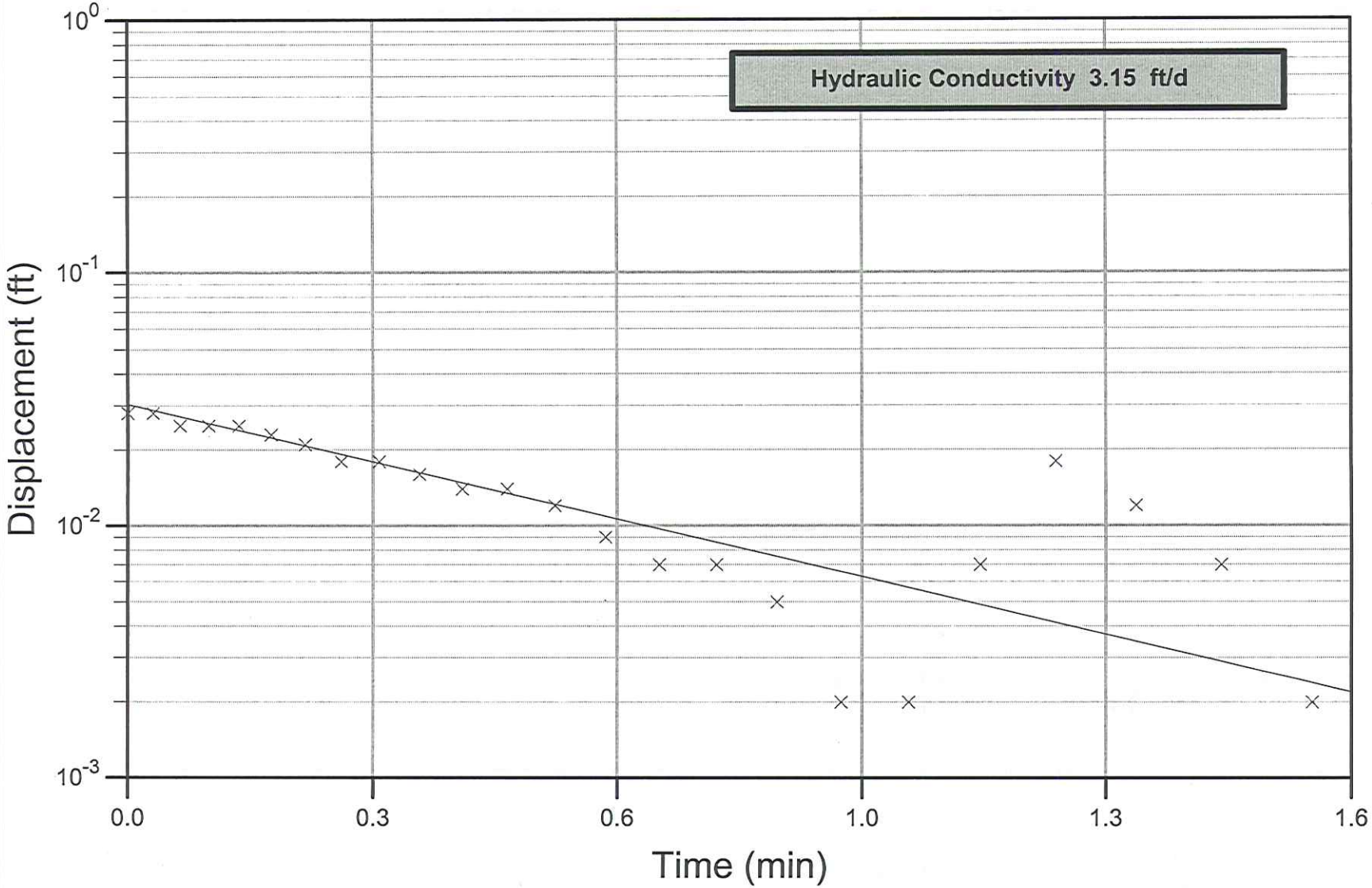
Bouwer & Rice



6-89 Falling Head Slug Test

Tighe & Bond

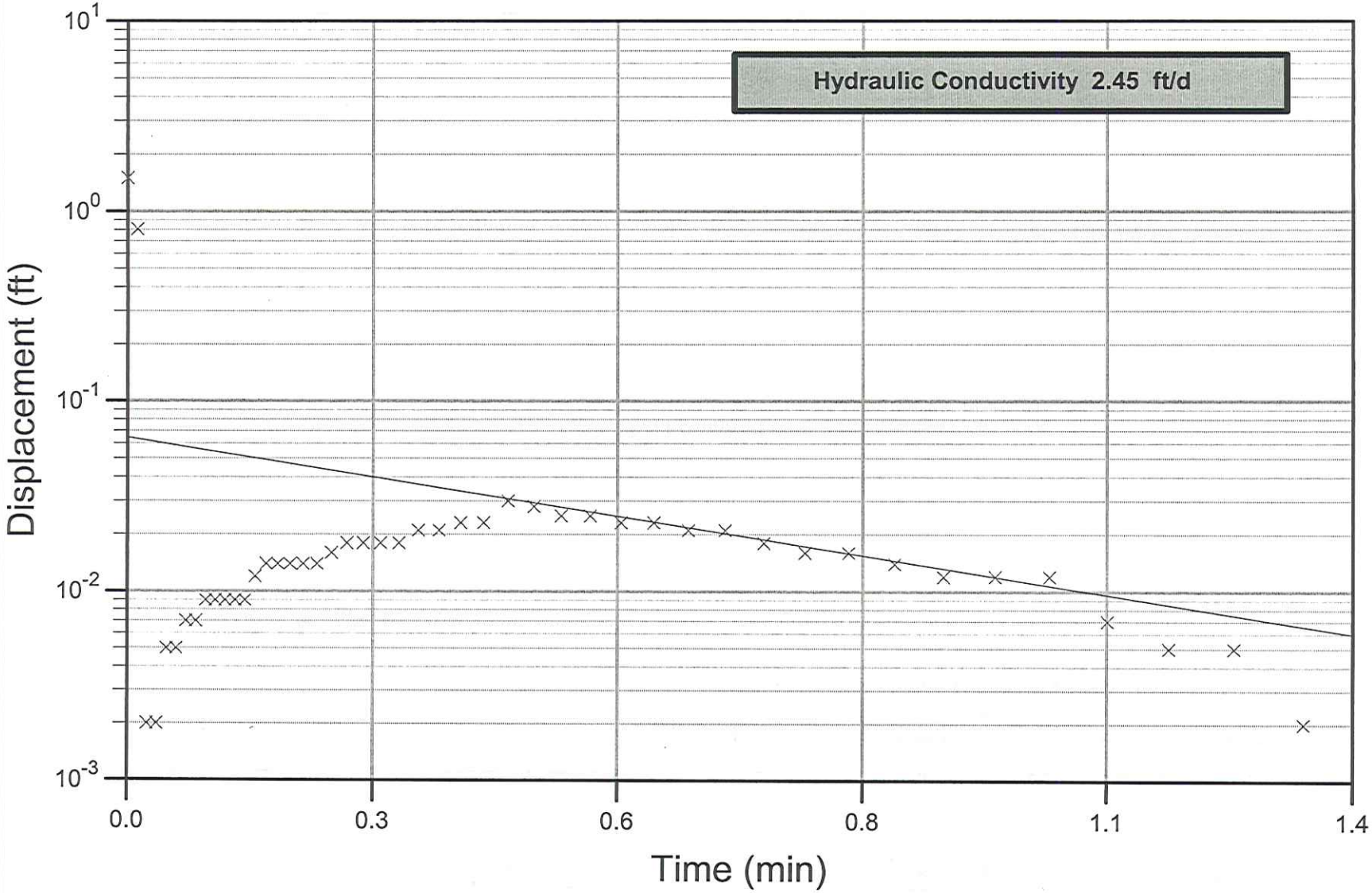
Bouwer & Rice



6-89 Rising Head Slug Test

Tighe & Bond

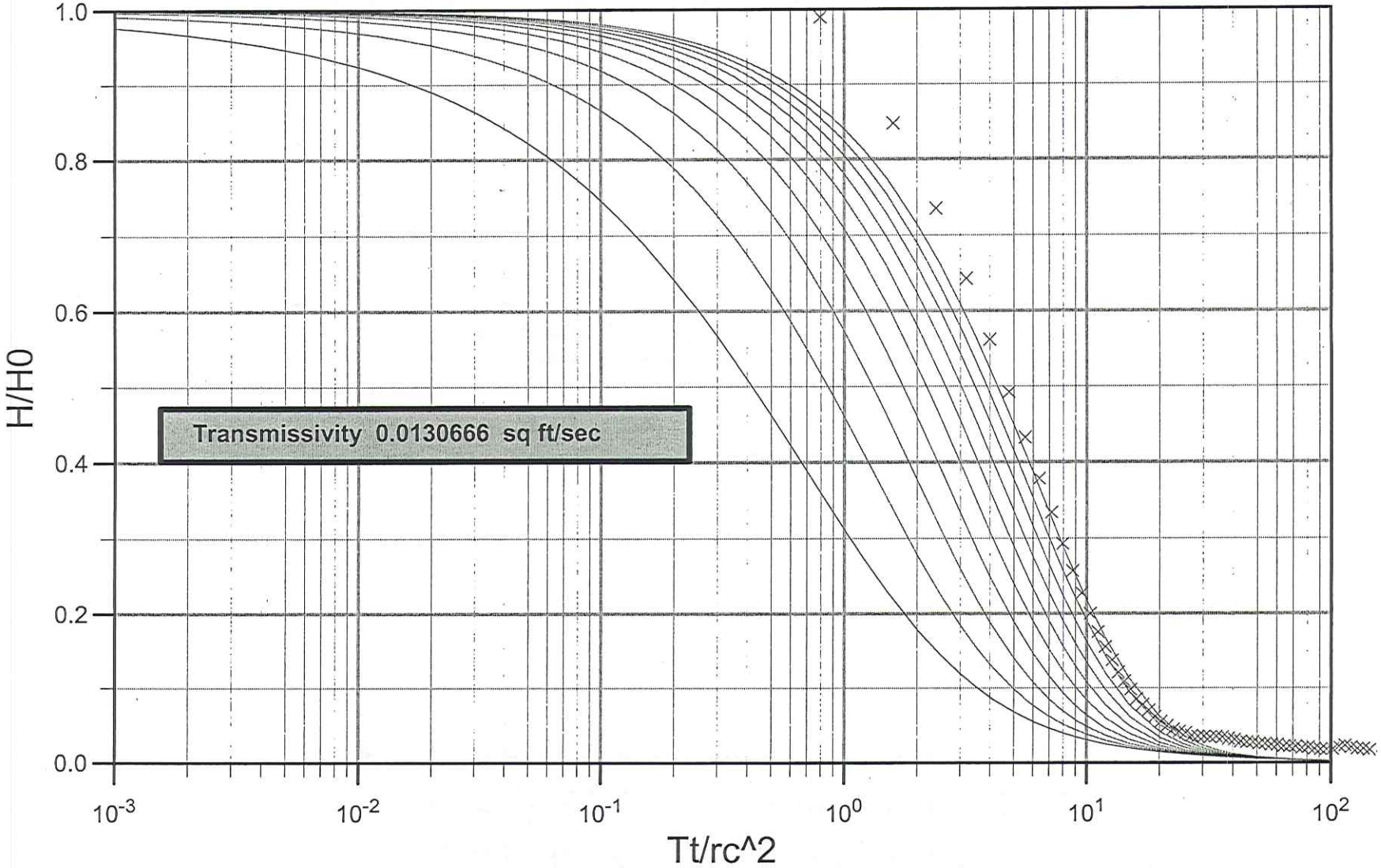
Bouwer & Rice



3-68 Rising Head Slug Test

Tighe & Bond

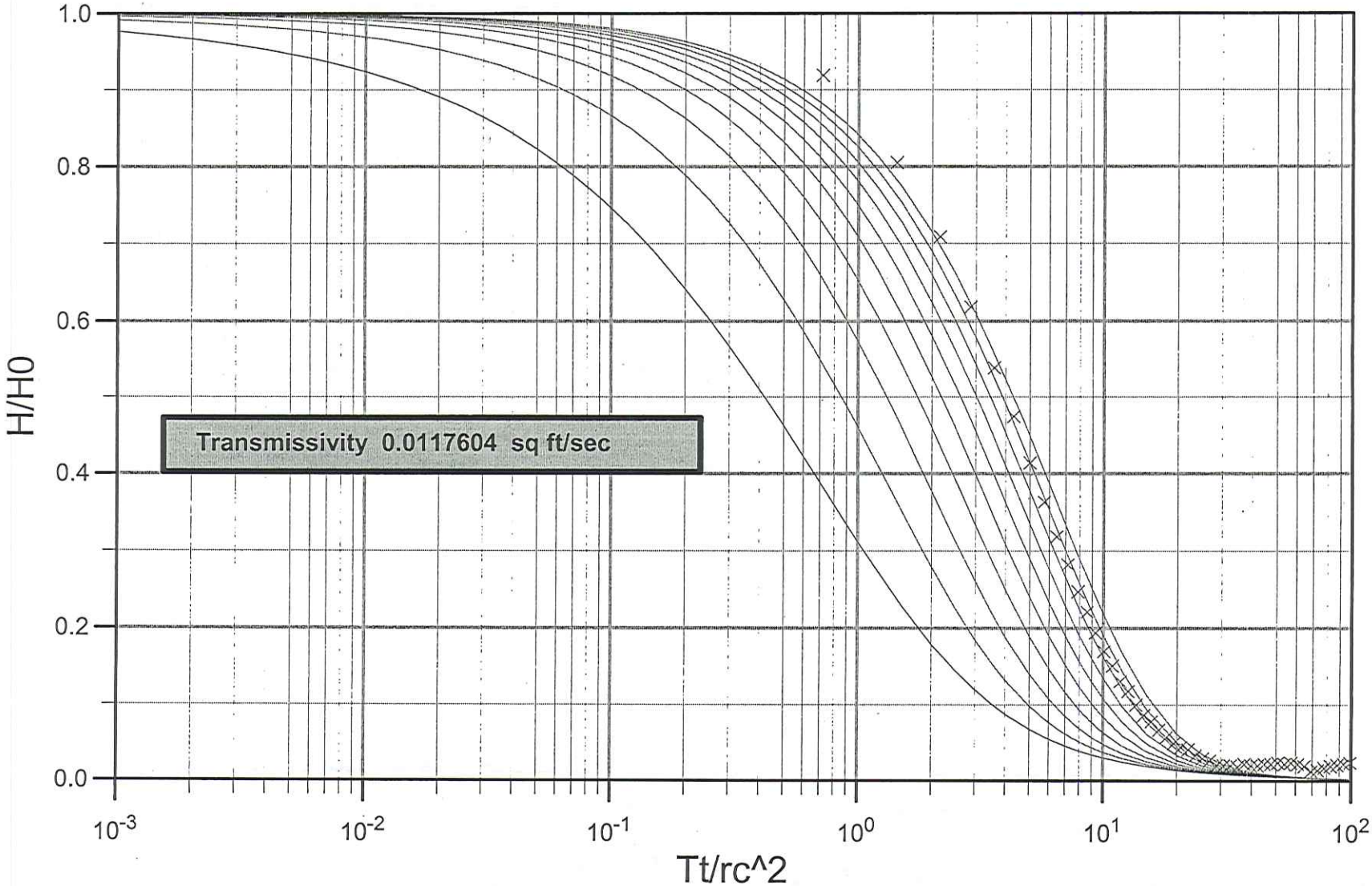
Cooper, Bredehoeft, and Papadopulos



3-68 Falling Head Slug Test

Tighe & Bond

Cooper, Bredehoeft, and Papadopulos



3-68

falling: $T = 0.0117604 \text{ ft}^2/\text{sec} = 1{,}016.10 \text{ ft}^2/\text{day}$

$$HC = \frac{1{,}016.10 \text{ ft}^2/d}{31} = 32.78 \text{ ft/day}$$

rising: $T = 0.0130666 \text{ ft}^2/d = 1{,}128.95 \text{ ft}^2/\text{day}$

$$HC = \frac{1{,}128.95}{31} = 36.42 \text{ ft/day}$$

SW-3
SW-7
✓

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

RECEIVED
JUN 09 2008
TIGHE & BOND

ANALYTICAL REPORT

Job Number: 360-16740-1

Job Description: A-0308

For:
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Attention: Jeffery Thelen

Joseph A. Chiesa Jr.

Designee for
Lisa A Worthington
Project Manager II
lisa.worthington@testamericainc.com
06/09/2008

The test results in this report meet all NELAC requirements for accredited parameters. Any exceptions to NELAC requirements are noted in this report. Pursuant to NELAC, this report may not be reproduced except in full, and with written approval from the laboratory. TestAmerica Westfield Certifications and Approvals: MADEP MA014, RIDOH57, CTDPH 0494, VT DECWSD, NH DES 253903-A, NELAP FL E87912 TOX, NELAP NJ MA008 TOX, NELAP NY 10843, NY DOH 10843.

TestAmerica Laboratories, Inc.
TestAmerica Westfield Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085
Tel (413) 572-4000 Fax (413) 572-3707 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Job Narrative
360-J16740-1

Method 6010B: The method blank for batch 32444 contained Barium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

METHOD SUMMARY

Client: Tighe & Bond

Job Number: 360-16740-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL WFD	SW846 8260B	
Purge-and-Trap	TAL WFD		SW846 5030B
Semivolatile Organic Compounds by GCMS - Low Levels	TAL WFD	SW846 8270C	
Separatory Funnel Liquid-Liquid Extraction	TAL WFD		SW846 3510C
Inductively Coupled Plasma - Atomic Emission Spectrometry	TAL WFD	SW846 6010B	
Sample Filtration performed in the Field	TAL WFD		FIELD_FLTRD
Inductively Coupled Plasma - Mass Spectrometry	TAL WFD	SW846 6020	
Sample Filtration performed in the Field	TAL WFD		FIELD_FLTRD
Mercury in Liquid Waste (Manual Cold Vapor Technique)	TAL WFD	SW846 7470A	
Sample Filtration performed in the Field	TAL WFD		FIELD_FLTRD
Mercury in Liquid Waste (Manual Cold Vapor	TAL WFD		SW846 7470A
Turbidity, Nephelometric	TAL WFD	MCAWW 180.1	
Anions by Ion Chromatography	TAL WFD	MCAWW 300.0	
Anions by Ion Chromatography	TAL WFD	MCAWW 300.0	
Chemical Oxygen Demand (Colorimetric, Automated; Manual)	TAL WFD	MCAWW 410.4	
Total Cyanide (Automated Colorimetric]	TAL WFD	SW846 9012A	
Total and Amenable Cyanide (Auto. Colorimetric	TAL WFD		SW846 9012A
Alkalinity, Titration Method	TAL WFD	SM SM 2320B	
Total Dissolved Solids (Dried at 180 °C)	TAL WFD	SM SM 2540C	

Lab References:

TAL WFD = TestAmerica Westfield

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Tighe & Bond

Job Number: 360-16740-1

Method	Analyst	Analyst ID
SW846 8260B	Rouleau, Catherine M	CMR
SW846 8260B	Weigel, Brian	BW
SW846 8270C	Sullivan, Pat J	PJS
SW846 6010B	Balicki, Charles W	CWB
SW846 6020	Balicki, Charles W	CWB
SW846 7470A	Balicki, Charles W	CWB
MCAWW 180.1	Emerich, Rich W	RWE
MCAWW 300.0	Emerich, Rich W	RWE
MCAWW 300.0	Lalashius, Andrew L	ALL
MCAWW 410.4	Sadowski, Scott	SS
SW846 9012A	Lalashius, Andrew L	ALL
SM SM 2320B	Emerich, Rich W	RWE
SM SM 2540C	Sadowski, Scott	SS

SAMPLE SUMMARY

Client: Tighe & Bond

Job Number: 360-16740-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-16740-1	SW-3	Water	05/27/2008 0930	05/27/2008 1420
360-16740-2	SW-7	Water	05/27/2008 1040	05/27/2008 1420
360-16740-3TB	Trip Blank	Water	05/27/2008 0930	05/27/2008 1420

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: SW-3
Lab Sample ID: 360-16740-1

Date Sampled: 05/27/2008 0930
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 8260B		Date Analyzed:	05/31/2008 0334		
Prep Method: 5030B		Date Prepared:	05/31/2008 0334		
Acetone	ND	ug/L	20	50	1.0
Bromobenzene	ND	ug/L	0.64	1.0	1.0
Benzene	ND	ug/L	0.74	1.0	1.0
Bromodichloromethane	ND	ug/L	0.63	1.0	1.0
Bromochloromethane	ND	ug/L	0.78	1.0	1.0
Bromoform	ND	ug/L	0.60	1.0	1.0
Bromomethane	ND	ug/L	0.28	2.0	1.0
Methyl Ethyl Ketone	ND	ug/L	10	10	1.0
Carbon tetrachloride	ND	ug/L	0.71	1.0	1.0
Chlorobenzene	ND	ug/L	0.65	1.0	1.0
Chlorodibromomethane	ND	ug/L	0.50	0.50	1.0
Chloroethane	ND	ug/L	0.40	2.0	1.0
Chloroform	ND	ug/L	0.66	1.0	1.0
Chloromethane	ND	ug/L	0.30	2.0	1.0
2-Chlorotoluene	ND	ug/L	0.65	1.0	1.0
4-Chlorotoluene	ND	ug/L	0.62	1.0	1.0
cis-1,2-Dichloroethene	ND	ug/L	0.65	1.0	1.0
trans-1,2-Dichloroethene	ND	ug/L	0.60	1.0	1.0
Dibromomethane	ND	ug/L	0.65	1.0	1.0
1,2-Dibromo-3-Chloropropane	ND	ug/L	0.58	5.0	1.0
1,2-Dichlorobenzene	ND	ug/L	0.62	1.0	1.0
1,3-Dichlorobenzene	ND	ug/L	0.64	1.0	1.0
1,4-Dichlorobenzene	ND	ug/L	0.62	1.0	1.0
1,1-Dichloroethane	ND	ug/L	0.67	1.0	1.0
1,1-Dichloroethene	ND	ug/L	0.64	1.0	1.0
1,2-Dichloroethane	ND	ug/L	0.62	1.0	1.0
1,2-Dichloropropane	ND	ug/L	0.51	1.0	1.0
1,3-Dichloropropane	ND	ug/L	0.57	1.0	1.0
2,2-Dichloropropane	ND	ug/L	0.60	1.0	1.0
1,1-Dichloropropene	ND	ug/L	0.68	1.0	1.0
cis-1,3-Dichloropropene	ND	ug/L	0.40	0.40	1.0
trans-1,3-Dichloropropene	ND	ug/L	0.40	0.40	1.0
Ethylbenzene	ND	ug/L	0.67	1.0	1.0
Ethylene Dibromide	ND	ug/L	0.54	1.0	1.0
Trichlorofluoromethane	ND	ug/L	0.31	1.0	1.0
1,4-Dioxane	ND *	ug/L	7.7	50	1.0
2-Hexanone	ND	ug/L	7.3	10	1.0
Hexachlorobutadiene	ND	ug/L	0.40	0.40	1.0
Isopropylbenzene	ND	ug/L	0.57	1.0	1.0

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: SW-3
Lab Sample ID: 360-16740-1

Date Sampled: 05/27/2008 0930
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
methyl isobutyl ketone	ND	ug/L	8.5	10	1.0
Methylene Chloride	ND	ug/L	1.0	2.0	1.0
n-Butylbenzene	ND	ug/L	0.59	1.0	1.0
N-Propylbenzene	ND	ug/L	0.70	1.0	1.0
Naphthalene	ND	ug/L	2.0	5.0	1.0
m-Xylene & p-Xylene	ND	ug/L	1.4	2.0	1.0
p-Isopropyltoluene	ND	ug/L	0.59	1.0	1.0
o-Xylene	ND	ug/L	0.54	1.0	1.0
sec-Butylbenzene	ND	ug/L	0.67	1.0	1.0
Styrene	ND	ug/L	0.60	1.0	1.0
tert-Butylbenzene	ND	ug/L	0.61	1.0	1.0
Tetrachloroethene	ND	ug/L	0.48	1.0	1.0
1,1,1,2-Tetrachloroethane	ND	ug/L	0.61	1.0	1.0
1,1,2,2-Tetrachloroethane	ND	ug/L	0.58	0.50	1.0
Toluene	ND	ug/L	0.56	1.0	1.0
1,2,3-Trichlorobenzene	ND	ug/L	0.42	1.0	1.0
1,2,4-Trichlorobenzene	ND	ug/L	0.34	1.0	1.0
1,1,1-Trichloroethane	ND	ug/L	0.70	1.0	1.0
1,1,2-Trichloroethane	ND	ug/L	0.72	1.0	1.0
Trichloroethene	ND	ug/L	0.59	1.0	1.0
1,2,3-Trichloropropane	ND	ug/L	0.65	1.0	1.0
1,2,4-Trimethylbenzene	ND	ug/L	0.70	1.0	1.0
1,3,5-Trimethylbenzene	ND	ug/L	0.66	1.0	1.0
Vinyl chloride	ND	ug/L	0.46	0.50	1.0
Methyl tert-butyl ether	ND	ug/L	0.63	1.0	1.0

Surrogate			Acceptance Limits
Dibromofluoromethane	108	%	70 - 130
Toluene-d8 (Surr)	94	%	70 - 130
4-Bromofluorobenzene	104	%	70 - 130

Tentatively Identified Compounds			Cas Number	RT	
Tentatively Identified Compound	None	ug/L		0.00	1.0

Method: 8270C Date Analyzed: 06/02/2008 2049
Prep Method: 3510C Date Prepared: 05/29/2008 1215

1,4-Dioxane	ND	ug/L	0.11	3.0	1.0

Surrogate			Acceptance Limits
2,4,6-Tribromophenol	71	%	15 - 110
2-Fluorobiphenyl	67	%	30 - 130
2-Fluorophenol	30	%	15 - 110
Nitrobenzene-d5	67	%	30 - 130

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: SW-3
Lab Sample ID: 360-16740-1

Date Sampled: 05/27/2008 0930
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Surrogate					Acceptance Limits	
Phenol-d5	15		%		15 - 110	
Terphenyl-d14	103		%		30 - 130	
Method: Dissolved-6010B			Date Analyzed:		05/28/2008 1210	
Silver	ND		ug/L	0.86	5.0	1.0
Barium	50	B	ug/L	0.25	10	1.0
Cadmium	ND		ug/L	0.18	1.0	1.0
Chromium	ND		ug/L	0.17	5.0	1.0
Copper	ND		ug/L	1.6	10	1.0
Iron	93	J	ug/L	16	100	1.0
Manganese	20		ug/L	0.33	10	1.0
Selenium	ND		ug/L	2.2	10	1.0
Zinc	8.1	J	ug/L	2.9	50	1.0
Method: Dissolved-6020			Date Analyzed:		05/28/2008 1245	
Arsenic	0.53	J	ug/L	0.40	1.0	1.0
Lead	ND		ug/L	0.29	1.0	1.0
Method: Dissolved-7470A			Date Analyzed:		05/29/2008 1438	
Prep Method: 7470A			Date Prepared:		05/29/2008 1000	
Mercury	ND		ug/L	0.13	0.20	1.0

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: SW-3
Lab Sample ID: 360-16740-1

Date Sampled: 05/27/2008 0930
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 180.1		Date Analyzed:		05/27/2008 1627	
Turbidity	0.54	NTU	0.10	0.10	1.0
Method: 300.0		Date Analyzed:		05/27/2008 2316	
Nitrate as N	ND	mg/L	0.050	0.050	1.0
Sulfate	7.2	mg/L	2.0	2.0	1.0
Method: 300.0		Date Analyzed:		05/28/2008 2050	
Chloride	59	mg/L	5.0	5.0	5.0
Method: 410.4		Date Analyzed:		06/04/2008 0829	
Chemical Oxygen Demand	ND	mg/L	20	20	1.0
Method: 9012A		Date Analyzed:		06/04/2008 1113	
Prep Method: 9012A		Date Prepared:		06/03/2008 1415	
Cyanide, Total	ND	mg/L	0.0060	0.0060	1.0
Method: SM 2320B		Date Analyzed:		05/27/2008 1710	
Alkalinity	10	mg/L	1.0	1.0	1.0
Method: SM 2540C		Date Analyzed:		06/02/2008 1425	
Total Dissolved Solids	130	mg/L	5.0	5.0	1.0

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: SW-7
Lab Sample ID: 360-16740-2

Date Sampled: 05/27/2008 1040
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 8260B		Date Analyzed:	05/31/2008 0402		
Prep Method: 5030B		Date Prepared:	05/31/2008 0402		
Acetone	ND	ug/L	20	50	1.0
Bromobenzene	ND	ug/L	0.64	1.0	1.0
Benzene	ND	ug/L	0.74	1.0	1.0
Bromodichloromethane	ND	ug/L	0.63	1.0	1.0
Bromochloromethane	ND	ug/L	0.78	1.0	1.0
Bromoform	ND	ug/L	0.60	1.0	1.0
Bromomethane	ND	ug/L	0.28	2.0	1.0
Methyl Ethyl Ketone	ND	ug/L	10	10	1.0
Carbon tetrachloride	ND	ug/L	0.71	1.0	1.0
Chlorobenzene	ND	ug/L	0.65	1.0	1.0
Chlorodibromomethane	ND	ug/L	0.50	0.50	1.0
Chloroethane	ND	ug/L	0.40	2.0	1.0
Chloroform	ND	ug/L	0.66	1.0	1.0
Chloromethane	ND	ug/L	0.30	2.0	1.0
2-Chlorotoluene	ND	ug/L	0.65	1.0	1.0
4-Chlorotoluene	ND	ug/L	0.62	1.0	1.0
cis-1,2-Dichloroethene	ND	ug/L	0.65	1.0	1.0
trans-1,2-Dichloroethene	ND	ug/L	0.60	1.0	1.0
Dibromomethane	ND	ug/L	0.65	1.0	1.0
1,2-Dibromo-3-Chloropropane	ND	ug/L	0.58	5.0	1.0
1,2-Dichlorobenzene	ND	ug/L	0.62	1.0	1.0
1,3-Dichlorobenzene	ND	ug/L	0.64	1.0	1.0
1,4-Dichlorobenzene	ND	ug/L	0.62	1.0	1.0
1,1-Dichloroethane	ND	ug/L	0.67	1.0	1.0
1,1-Dichloroethene	ND	ug/L	0.64	1.0	1.0
1,2-Dichloroethane	ND	ug/L	0.62	1.0	1.0
1,2-Dichloropropane	ND	ug/L	0.51	1.0	1.0
1,3-Dichloropropane	ND	ug/L	0.57	1.0	1.0
2,2-Dichloropropane	ND	ug/L	0.60	1.0	1.0
1,1-Dichloropropene	ND	ug/L	0.68	1.0	1.0
cis-1,3-Dichloropropene	ND	ug/L	0.40	0.40	1.0
trans-1,3-Dichloropropene	ND	ug/L	0.40	0.40	1.0
Ethylbenzene	ND	ug/L	0.67	1.0	1.0
Ethylene Dibromide	ND	ug/L	0.54	1.0	1.0
Trichlorofluoromethane	ND	ug/L	0.31	1.0	1.0
1,4-Dioxane	ND *	ug/L	7.7	50	1.0
2-Hexanone	ND	ug/L	7.3	10	1.0
Hexachlorobutadiene	ND	ug/L	0.40	0.40	1.0
Isopropylbenzene	ND	ug/L	0.57	1.0	1.0

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: SW-7
Lab Sample ID: 360-16740-2

Date Sampled: 05/27/2008 1040
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
methyl isobutyl ketone	ND		ug/L	8.5	10	1.0
Methylene Chloride	ND		ug/L	1.0	2.0	1.0
n-Butylbenzene	ND		ug/L	0.59	1.0	1.0
N-Propylbenzene	ND		ug/L	0.70	1.0	1.0
Naphthalene	ND		ug/L	2.0	5.0	1.0
m-Xylene & p-Xylene	ND		ug/L	1.4	2.0	1.0
p-Isopropyltoluene	ND		ug/L	0.59	1.0	1.0
o-Xylene	ND		ug/L	0.54	1.0	1.0
sec-Butylbenzene	ND		ug/L	0.67	1.0	1.0
Styrene	ND		ug/L	0.60	1.0	1.0
tert-Butylbenzene	ND		ug/L	0.61	1.0	1.0
Tetrachloroethene	ND		ug/L	0.48	1.0	1.0
1,1,1,2-Tetrachloroethane	ND		ug/L	0.61	1.0	1.0
1,1,2,2-Tetrachloroethane	ND		ug/L	0.58	0.50	1.0
Toluene	ND		ug/L	0.56	1.0	1.0
1,2,3-Trichlorobenzene	ND		ug/L	0.42	1.0	1.0
1,2,4-Trichlorobenzene	ND		ug/L	0.34	1.0	1.0
1,1,1-Trichloroethane	ND		ug/L	0.70	1.0	1.0
1,1,2-Trichloroethane	ND		ug/L	0.72	1.0	1.0
Trichloroethene	ND		ug/L	0.59	1.0	1.0
1,2,3-Trichloropropane	ND		ug/L	0.65	1.0	1.0
1,2,4-Trimethylbenzene	ND		ug/L	0.70	1.0	1.0
1,3,5-Trimethylbenzene	ND		ug/L	0.66	1.0	1.0
Vinyl chloride	ND		ug/L	0.46	0.50	1.0
Methyl tert-butyl ether	ND		ug/L	0.63	1.0	1.0

Surrogate			Acceptance Limits
Dibromofluoromethane	107	%	70 - 130
Toluene-d8 (Surr)	96	%	70 - 130
4-Bromofluorobenzene	103	%	70 - 130

Tentatively Identified Compounds				Cas Number	RT	
Carbon disulfide	2.9	J	ug/L	75-15-0	2.89	1.0
Tentatively Identified Compound	None		ug/L		0.00	1.0

Method: 8270C Date Analyzed: 06/02/2008 2117
Prep Method: 3510C Date Prepared: 05/29/2008 1215

1,4-Dioxane	ND	ug/L	0.11	3.0	1.0

Surrogate			Acceptance Limits
2,4,6-Tribromophenol	78	%	15 - 110
2-Fluorobiphenyl	70	%	30 - 130
2-Fluorophenol	27	%	15 - 110

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: SW-7
Lab Sample ID: 360-16740-2

Date Sampled: 05/27/2008 1040
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Surrogate					Acceptance Limits	
Nitrobenzene-d5	68		%		30 - 130	
Phenol-d5	15		%		15 - 110	
Terphenyl-d14	96		%		30 - 130	
Method: Dissolved-6010B			Date Analyzed:		05/28/2008 1213	
Silver	ND		ug/L	0.86	5.0	1.0
Barium	50	B	ug/L	0.25	10	1.0
Cadmium	ND		ug/L	0.18	1.0	1.0
Chromium	ND		ug/L	0.17	5.0	1.0
Copper	ND		ug/L	1.6	10	1.0
Iron	120		ug/L	16	100	1.0
Manganese	25		ug/L	0.33	10	1.0
Selenium	ND		ug/L	2.2	10	1.0
Zinc	6.8	J	ug/L	2.9	50	1.0
Method: Dissolved-6020			Date Analyzed:		05/28/2008 1252	
Arsenic	0.55	J	ug/L	0.40	1.0	1.0
Lead	ND		ug/L	0.29	1.0	1.0
Method: Dissolved-7470A			Date Analyzed:		05/29/2008 1440	
Prep Method: 7470A			Date Prepared:		05/29/2008 1000	
Mercury	ND		ug/L	0.13	0.20	1.0

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: SW-7
Lab Sample ID: 360-16740-2

Date Sampled: 05/27/2008 1040
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 180.1		Date Analyzed:	05/27/2008 1628		
Turbidity	4.5	NTU	0.10	0.10	1.0
Method: 300.0		Date Analyzed:	05/27/2008 2331		
Nitrate as N	ND	mg/L	0.050	0.050	1.0
Sulfate	7.1	mg/L	2.0	2.0	1.0
Method: 300.0		Date Analyzed:	05/28/2008 2105		
Chloride	59	mg/L	5.0	5.0	5.0
Method: 410.4		Date Analyzed:	06/04/2008 0829		
Chemical Oxygen Demand	30	mg/L	20	20	1.0
Method: 9012A		Date Analyzed:	06/05/2008 1514		
Prep Method: 9012A		Date Prepared:	06/05/2008 1303		
Cyanide, Total	ND	mg/L	0.0060	0.0060	1.0
Method: SM 2320B		Date Analyzed:	05/27/2008 1715		
Alkalinity	10	mg/L	1.0	1.0	1.0
Method: SM 2540C		Date Analyzed:	06/02/2008 1425		
Total Dissolved Solids	140	mg/L	5.0	5.0	1.0

Jeffery Thelen
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53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: Trip Blank
Lab Sample ID: 360-16740-3

Date Sampled: 05/27/2008 0930
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 8260B		Date Analyzed:	05/31/2008 1751		
Prep Method: 5030B		Date Prepared:	05/31/2008 1751		
Acetone	ND	ug/L	20	50	1.0
Bromobenzene	ND	ug/L	0.64	1.0	1.0
Benzene	ND	ug/L	0.74	1.0	1.0
Bromodichloromethane	ND	ug/L	0.63	1.0	1.0
Bromochloromethane	ND	ug/L	0.78	1.0	1.0
Bromoform	ND	ug/L	0.60	1.0	1.0
Bromomethane	ND	ug/L	0.28	2.0	1.0
Methyl Ethyl Ketone	ND	ug/L	10	10	1.0
Carbon tetrachloride	ND	ug/L	0.71	1.0	1.0
Chlorobenzene	ND	ug/L	0.65	1.0	1.0
Chlorodibromomethane	ND	ug/L	0.50	0.50	1.0
Chloroethane	ND	ug/L	0.40	2.0	1.0
Chloroform	ND	ug/L	0.66	1.0	1.0
Chloromethane	ND	ug/L	0.30	2.0	1.0
2-Chlorotoluene	ND	ug/L	0.65	1.0	1.0
4-Chlorotoluene	ND	ug/L	0.62	1.0	1.0
cis-1,2-Dichloroethene	ND	ug/L	0.65	1.0	1.0
trans-1,2-Dichloroethene	ND	ug/L	0.60	1.0	1.0
Dibromomethane	ND	ug/L	0.65	1.0	1.0
1,2-Dibromo-3-Chloropropane	ND	ug/L	0.58	5.0	1.0
1,2-Dichlorobenzene	ND	ug/L	0.62	1.0	1.0
1,3-Dichlorobenzene	ND	ug/L	0.64	1.0	1.0
1,4-Dichlorobenzene	ND	ug/L	0.62	1.0	1.0
1,1-Dichloroethane	ND	ug/L	0.67	1.0	1.0
1,1-Dichloroethene	ND	ug/L	0.64	1.0	1.0
1,2-Dichloroethane	ND	ug/L	0.62	1.0	1.0
1,2-Dichloropropane	ND	ug/L	0.51	1.0	1.0
1,3-Dichloropropane	ND	ug/L	0.57	1.0	1.0
2,2-Dichloropropane	ND	ug/L	0.60	1.0	1.0
1,1-Dichloropropene	ND	ug/L	0.68	1.0	1.0
cis-1,3-Dichloropropene	ND	ug/L	0.40	0.40	1.0
trans-1,3-Dichloropropene	ND	ug/L	0.40	0.40	1.0
Ethylbenzene	ND	ug/L	0.67	1.0	1.0
Ethylene Dibromide	ND	ug/L	0.54	1.0	1.0
Trichlorofluoromethane	ND	ug/L	0.31	1.0	1.0
1,4-Dioxane	ND *	ug/L	7.7	50	1.0
2-Hexanone	ND	ug/L	7.3	10	1.0
Hexachlorobutadiene	ND	ug/L	0.40	0.40	1.0
Isopropylbenzene	ND	ug/L	0.57	1.0	1.0

Jeffery Thelen
Tighe & Bond
53 Southampton Road
Westfield, MA 01085

Job Number: 360-16740-1

Client Sample ID: Trip Blank
Lab Sample ID: 360-16740-3

Date Sampled: 05/27/2008 0930
Date Received: 05/27/2008 1420
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
methyl isobutyl ketone	ND	ug/L	8.5	10	1.0
Methylene Chloride	ND	ug/L	1.0	2.0	1.0
n-Butylbenzene	ND	ug/L	0.59	1.0	1.0
N-Propylbenzene	ND	ug/L	0.70	1.0	1.0
Naphthalene	ND	ug/L	2.0	5.0	1.0
m-Xylene & p-Xylene	ND	ug/L	1.4	2.0	1.0
p-Isopropyltoluene	ND	ug/L	0.59	1.0	1.0
o-Xylene	ND	ug/L	0.54	1.0	1.0
sec-Butylbenzene	ND	ug/L	0.67	1.0	1.0
Styrene	ND	ug/L	0.60	1.0	1.0
tert-Butylbenzene	ND	ug/L	0.61	1.0	1.0
Tetrachloroethene	ND	ug/L	0.48	1.0	1.0
1,1,1,2-Tetrachloroethane	ND	ug/L	0.61	1.0	1.0
1,1,2,2-Tetrachloroethane	ND	ug/L	0.58	0.50	1.0
Toluene	ND	ug/L	0.56	1.0	1.0
1,2,3-Trichlorobenzene	ND	ug/L	0.42	1.0	1.0
1,2,4-Trichlorobenzene	ND	ug/L	0.34	1.0	1.0
1,1,1-Trichloroethane	ND	ug/L	0.70	1.0	1.0
1,1,2-Trichloroethane	ND	ug/L	0.72	1.0	1.0
Trichloroethene	ND	ug/L	0.59	1.0	1.0
1,2,3-Trichloropropane	ND	ug/L	0.65	1.0	1.0
1,2,4-Trimethylbenzene	ND	ug/L	0.70	1.0	1.0
1,3,5-Trimethylbenzene	ND	ug/L	0.66	1.0	1.0
Vinyl chloride	ND	ug/L	0.46	0.50	1.0
Methyl tert-butyl ether	ND	ug/L	0.63	1.0	1.0

Surrogate			Acceptance Limits
Dibromofluoromethane	108	%	70 - 130
Toluene-d8 (Surr)	94	%	70 - 130
4-Bromofluorobenzene	103	%	70 - 130

Tentatively Identified Compounds			Cas Number	RT	
Tentatively Identified Compound	None	ug/L		0.00	1.0

DATA REPORTING QUALIFIERS

Client: Tighe & Bond

Job Number: 360-16740-1

Lab Section	Qualifier	Description
GC/MS VOA		
	*	LCS or LCSD exceeds the control limits
	*	RPD of the LCS and LCSD exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Metals		
	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Login Sample Receipt Check List

Client: Tighe & Bond

Job Number: 360-16740-1

Login Number: 16740
Creator: Rinard, Kimberley A
List Number: 1

List Source: TestAmerica Westfield

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	3.5 C
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

SAMPLE COLLECTION DATA SURFACE WATER

Client: Tighe Bond
53 Southampton Rd
Westfield, Ma

Job Number: A-0308
Sampling Location: SW-3

Contact: JST
Collected By: AM
Date: 5/21/08
Time Collected: 0930

Weather: Sunny 70°F.

Sampling Method:

Surface: ✓
Stainless Steel Bucket:
Bottle: ✓
Other:

Sample Type: Grab: ✓
Composite: if so describe

FIELD DATA

pH	Dissolved Oxygen mg/L	Specific Conductance µmhos/cm @25°C	Temperature °C	Residual Chloride mg/L		Time Analyzed
6.80	7.32	252.8	20.3 °C	–	–	0945

CONTAINERS & PRESERVATIVES

Type of Container	Number of Containers	Preservative Type/Amount	Analysis Required	Field pH
pl. Liter	1	4.0°	Alk, NO3, TDS, Cl, SO4, Turb	–
250ml pl.	1	HNO3 / 1ml	Diss. Metals	<2
250ml pl.	1	H2SO4 / 1ml	COD	<2
250ml pl.	1	NAOH / 1ml	T. CW	>12
40ml vial	4	HCL / 0.5ml	VOA 8260	<2
Amber Liter	2	4.0°	1,4-Dioxane	–

If sample was taken for dissolved metals, were these samples field filtered? Yes

Date: 5/21/08 Time: 0945 By: AM Filter Pore Size & Type: .45µm Lilmen

General Notes:

Hach pH meter calibrated 4.0/7.0/10.0 w/buffers
YSI 85 calibrated to 96.5% for D.O.
YSI 85 calibrated to 1413 µmhos/cm³ @25°C for Spec. Cond.

BL-Field-007 72
7/18/06

STL-WESTFIELD

SAMPLE COLLECTION DATA SURFACE WATER

Client: Tighe Bond
53 Southampton Rd
Westfield, Ma

Job Number: A-0308
Sampling Location: SW-7

Contact: JJT
Collected By: AM
Date: 5/21/08
Time Collected: 1040

Weather: Sunny 70°F

Sampling Method:

Surface: ✓
Stainless Steel Bucket:
Bottle: ✓
Other:

Sample Type:
Grab: ✓
Composite: if so describe

FIELD DATA

pH	Dissolved Oxygen mg/L	Specific Conductance µmhos/cm @25°C	Temperature °C	Residual Chloride mg/L	?	Time Analyzed
6.71	6.12	238.1	22.3 °C	—	✓	1055

CONTAINERS & PRESERVATIVES

Type of Container	Number of Containers	Preservative Type/Amount	Analysis Required	Field pH
pl 1 liter	1	4.0°	See page 72 for analysis	–
250ml/pl	1	HNO3		<2
250ml/pl	1	H2SO4		<2
250ml/pl	1	NaOH		>12
40ml/vial	4	HCL		<2
Amber 1 liter	2	4.0°		–

If sample was taken for dissolved metals, were these samples field filtered? Yes

Date: 5/21/08 Time: 1055 By: AM Filter Pore Size & Type: .45µm b/web

General Notes:

See page 72 for calibrations

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Form

•53 Southampton Road
Westfield, MA 01085
(P) 413-572-4000
(F) 413-572-3707
Westfield

•148 Rangeway Road
N. Billerica, MA 01862
(P) 978-667-1400
(F) 978-667-7871
Boston - Service Center

Client: Tighe & Bond
Address: 53 Southampton Rd. Westfield, MA
Phone: 413-562-1600 Fax:

Client Project #: A-0308
Site ID & State: Amherst, MA
Reports Sent To: JThelen@tyngbond.com
Email: Email Rpt: ☐

Job# 360-16740 Quote# PO#

Shaded areas for office use
Invoice same as Report to? ☐
If Invoice contact or address different, note in *Comments*

Comments (Special Instructions)

Please print legibly. If the analytical requests are not clearly defined on the chain-of-custody, the turnaround time will begin after all questions have been satisfactorily answered.

Requested Turnaround Time (PLEASE SPECIFY)
STANDARD ✓ RUSH _____ (Lab Approval Required)

Regulatory Programs/Presumptive Certainty/QC Forms
MADEP MCP ☐ GW1/S1 ☐ PWS DEP Forms ☐
CTDEP RCP ☐ CT RSR ☐ EDD Required ☐
QA Rpt: No QC ☐ Std QC Rpt ☐ CLP QC Rpt: ☐

500-series for drinking water
600-series for waste water, NPDES
6000-series for groundwater, soil, waste
8000-series for groundwater, soil, waste
Use comments section to further define.

Sample Type Codes: WW-Wastewater, DW-Drinking Water, SW-Surface Water, GW-Groundwater, LW Lab Water, A-Air, "Z"-Other (please specify)

Sample I.D.	Sample Type	Sampler's Initials	Date Time Collected	Grab	Comp.	# Containers	Plastic(P) or Glass(G)	NaHSO4/MeOH	HNO3 to pH <2	H2SO4 to pH <2	HCl to pH <2	NaOH to pH >12	Na2S2O3	None / 4° C	524 / 624 / 8260	525 / 625 / 8270	PCB / Pest / Herbicide	EPH / VPH	DRO / GRO / ETPH	Metals (Please Specify)	Mercury	General Chemistry	Bacteriological	Toxicity
SW-3	SW	AM	5/27/08 0930	✓		10	P/G		X	X	X	X		X	✓	✓				✓		✓		
SW-7	SW	AM	5/27/08 1040	✓		10	P/G		X	X	X	X		X	✓	✓				✓		✓		

Comments:
- pH, Ed, Temp. Ed, D.O. Ed, Spec. Cond. Ed.
- Alk, NO^3, TDS, Cl, SO^4, Turb
- Diss: As, Ba, Cd, Cr, Cu, Fe, Mn, Pb, Hg, Se, Zn, As, ~~Hardness~~ LAW 5/28/08
- COD
- T.CN
- 8260 + acetone, MEK, MIBK, MTBE, Xylenes
- 1,4 Dioxane

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Sampled by (print): Adam Marshall
Signature:

Relinquished by: Date: 5/27/08 Time: 1420
Received by: KAM Date: 5/27/08 Time: 1420
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:

Cooler? (Y) / N
MADEP Requirement Samples Iced? (Y) / N
Temp @ receipt: 3.5°C
Preservation / pH checked? (Y) / N
By: KAM Date: 5/27/08

WESTFIELD

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White = Lab file Yellow = Report copy Pink = Customer copy

TAL-8245(1007)