

Advanced Technologies & Testing Laboratories, Inc.



RESULT OF ANALYSIS

APPENDIX C

**PARTICAL SIZE DISTRIBUTION
SETTLING RATE DATA
PERCENT SOLIDS AND SPECIFIC GRAVITY**

MACTEC

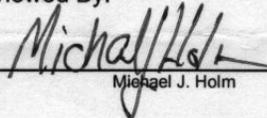
Project: Material Testing - Advanced Technologies & Testing Laboratories, Inc. Project Number: 6738-03-4393
 Client: Advanced Technologies & Testing Laboratories, Inc. Date: 8/11/2003

As requested by Mr. Chand Jotshi of Advanced Technologies & Testing Laboratories, Inc., MACTEC Engineering and Consulting Inc. has completed Grain Size Analysis, Moisture Content, Settling Rate, Specific Gravity, Atterberg Limits and Percent Solid testing of the sixteen samples delivered to our Jacksonville office on August 1, 2003. The results are outlined below and on the attached sheets.

Sample Number	Moisture Content (%)	Percent Solids (%)	Specific Gravity	Atterberg Limits		
				Liquid Limit	Plastic Limit	Plasticity Index
307160	31.0	76.4	2.680	34	19	15
307161	31.0	76.3	2.673	Non-Plastic		
307162	19.4	83.7	2.678	Non-Plastic		
307163	24.5	80.3	2.656	Non-Plastic		
307164	20.5	83.0	2.664	Non-Plastic		
307165	35.3	73.9	2.633	Non-Plastic		
307166	39.8	71.5	2.576	27	24	4
307167	100.1	50.0	2.461	52	36	16
307168	17.7	85.0	2.675	Non-Plastic		
307169	20.4	82.8	2.660	Non-Plastic		
307172	20.6	82.9	2.610	Non-Plastic		
307173	32.2	75.6	2.585	Non-Plastic		
307174	31.6	76.0	2.667	29	20	9
307175	46.3	68.4	2.623	Non-Plastic		
307176	21.7	82.2	2.698	Non-Plastic		
307177	24.0	80.6	2.665	52	42	10

Note: Sample #307177 was originally tested for moisture, % solids, specific gravity, grain size, and settling rate. Additional material had to be delivered in order to perform the atterberg test.

Reviewed By:


 Michael J. Holm

MACTEC Engineering and Consulting Inc.
 3901 Carmichael Avenue
 Jacksonville, Florida 32207



REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-1

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

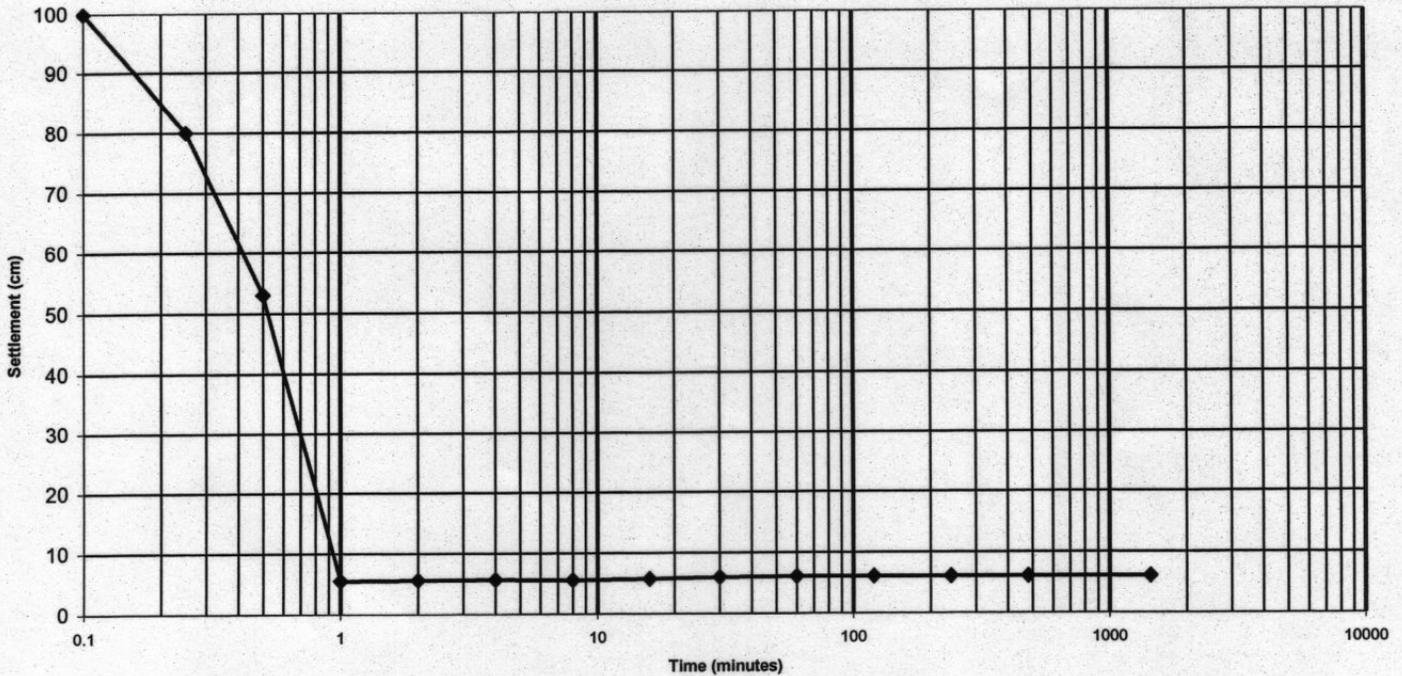
SAMPLE NO:

307169

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	5.8
0.25	80.0	30	6.0
0.5	53.0	60	6.1
1	5.5	120	6.1
2	5.6	240	6.1
4	5.7	480	6.1
8	5.6	1440	6.1

Final Concentration: 1639.3 g/L

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 (904) 396-5173



REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-2

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

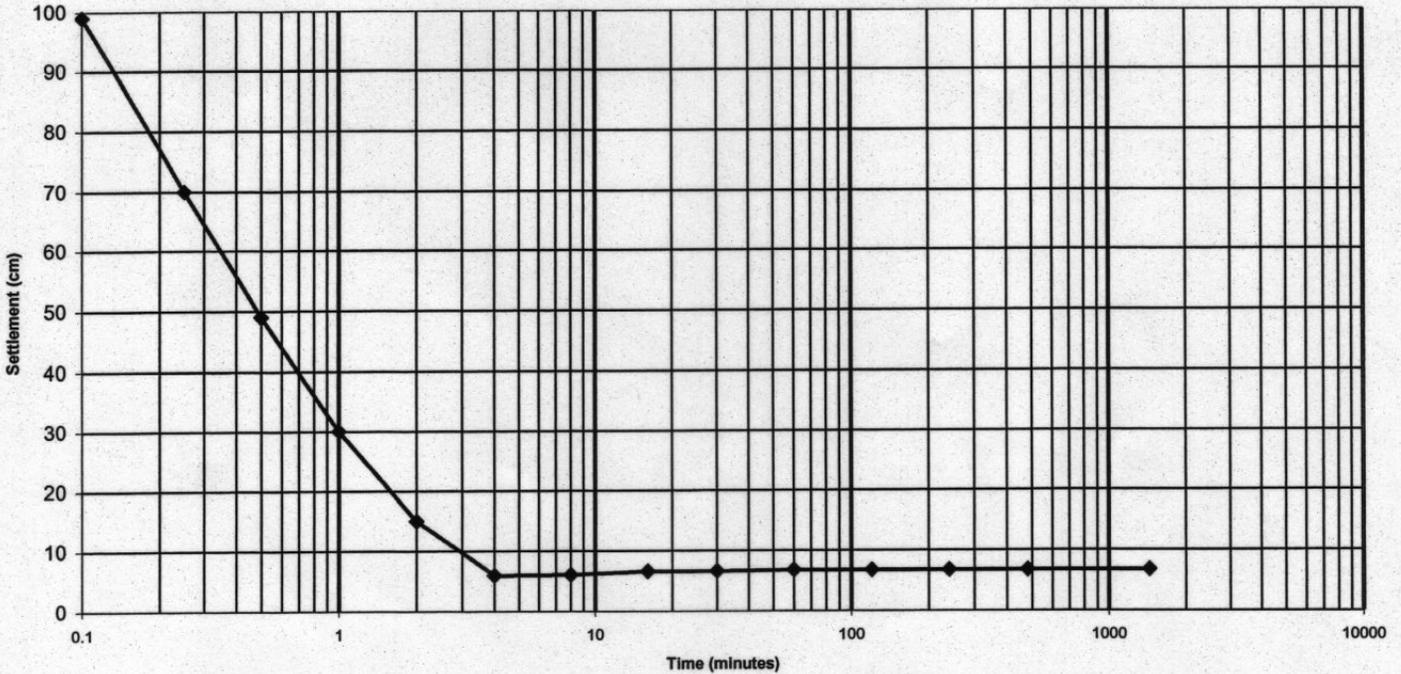
SAMPLE NO:

307168

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.0	16	6.6
0.25	70.0	30	6.6
0.5	49.0	60	6.8
1	30.0	120	6.8
2	15.0	240	6.8
4	6.0	480	6.8
8	6.1	1440	6.8

Final Concentration: 1470.6 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-3

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

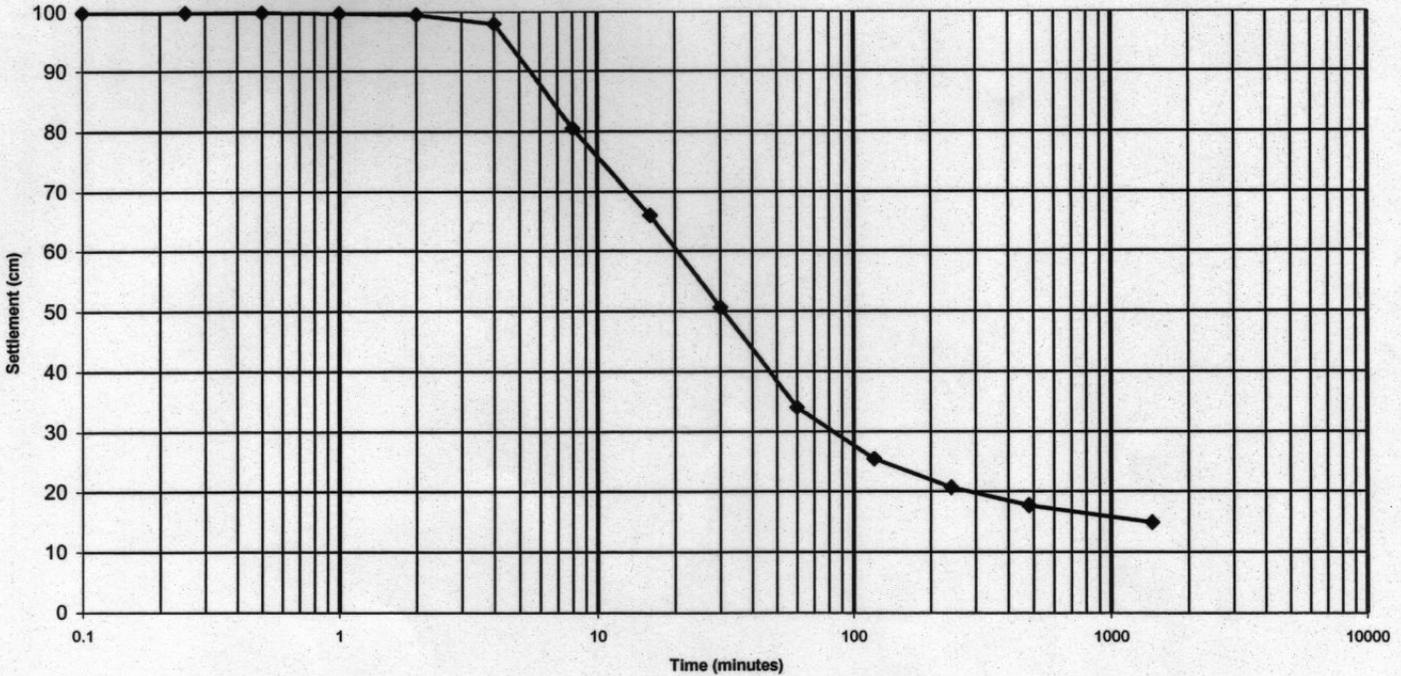
SAMPLE NO:

307167

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	66.0
0.25	99.9	30	50.6
0.5	99.9	60	34.0
1	99.8	120	25.4
2	99.5	240	20.6
4	98.0	480	17.7
8	80.5	1440	14.9

Final Concentration: 671.14 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-4

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

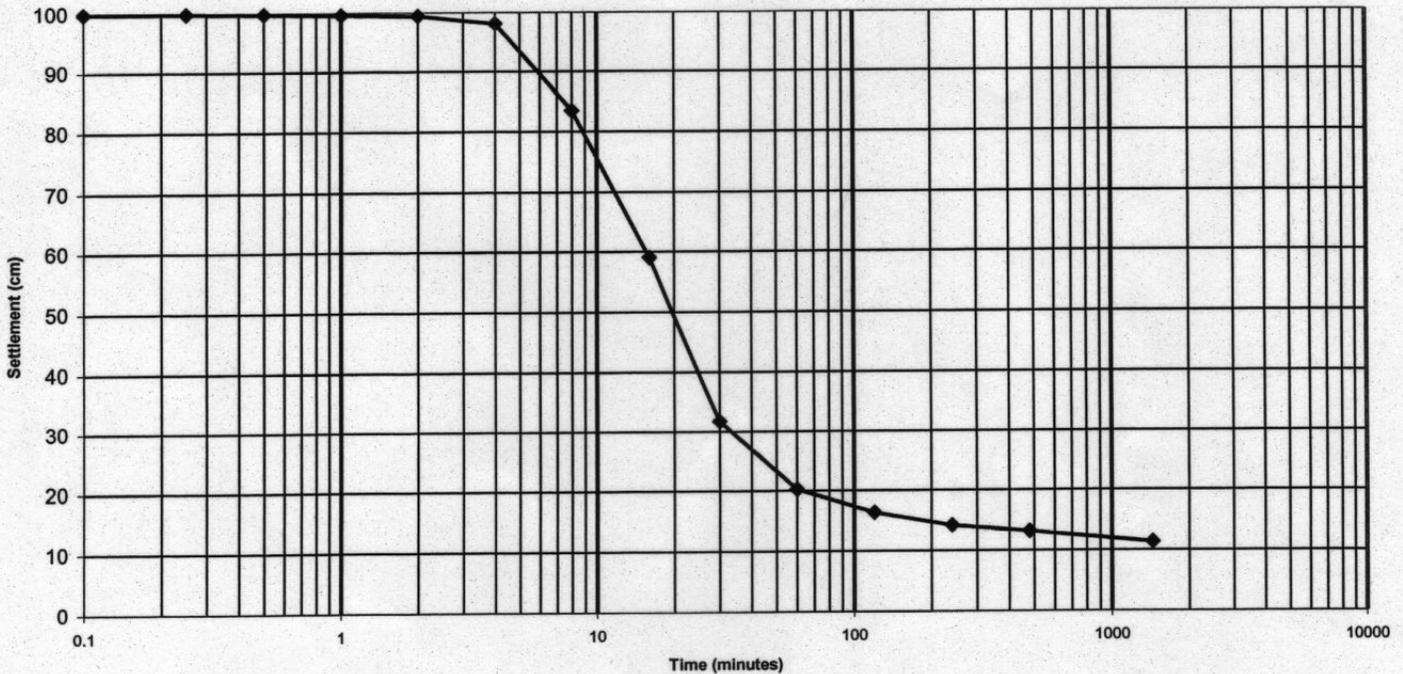
SAMPLE NO:

307166

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	59.0
0.25	99.9	30	31.7
0.5	99.8	60	20.2
1	99.6	120	16.4
2	99.4	240	14.2
4	98.1	480	13.2
8	83.5	1440	11.4

Final Concentration: 877.19 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-5

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

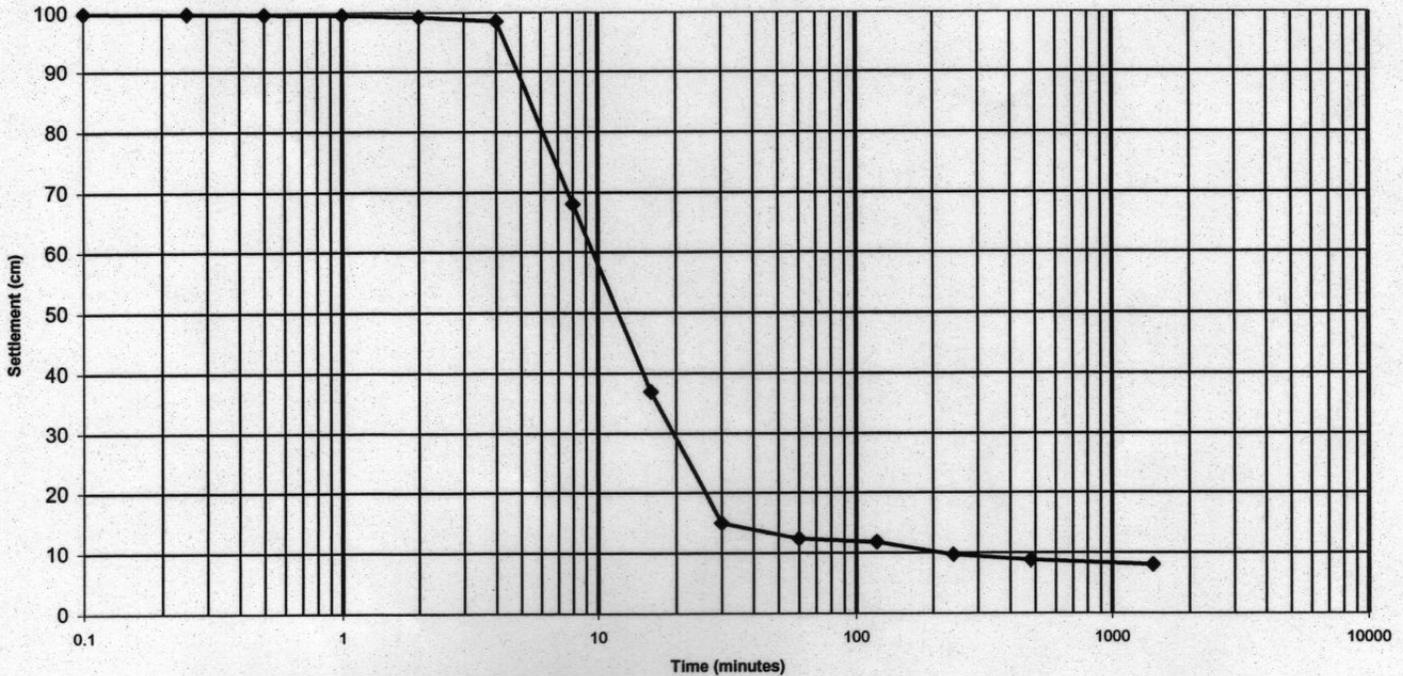
SAMPLE NO:

307165

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	37.0
0.25	99.8	30	15.0
0.5	99.7	60	12.4
1	99.5	120	11.8
2	99.2	240	9.7
4	98.5	480	8.8
8	68.0	1440	8.0

Final Concentration: 1250 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-6

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

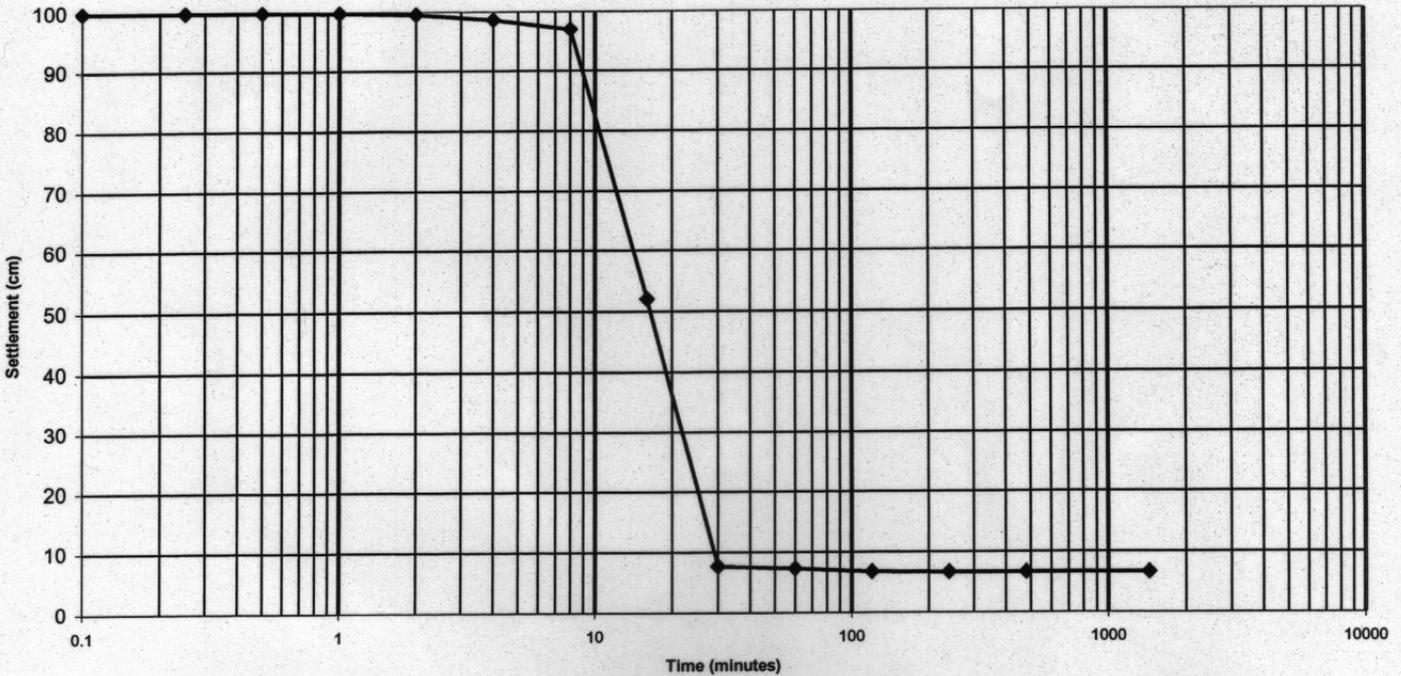
SAMPLE NO:

307164

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	52.0
0.25	99.9	30	7.7
0.5	99.9	60	7.3
1	99.8	120	6.8
2	99.5	240	6.7
4	98.6	480	6.7
8	97.0	1440	6.7

Final Concentration: 1492.5 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-7

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

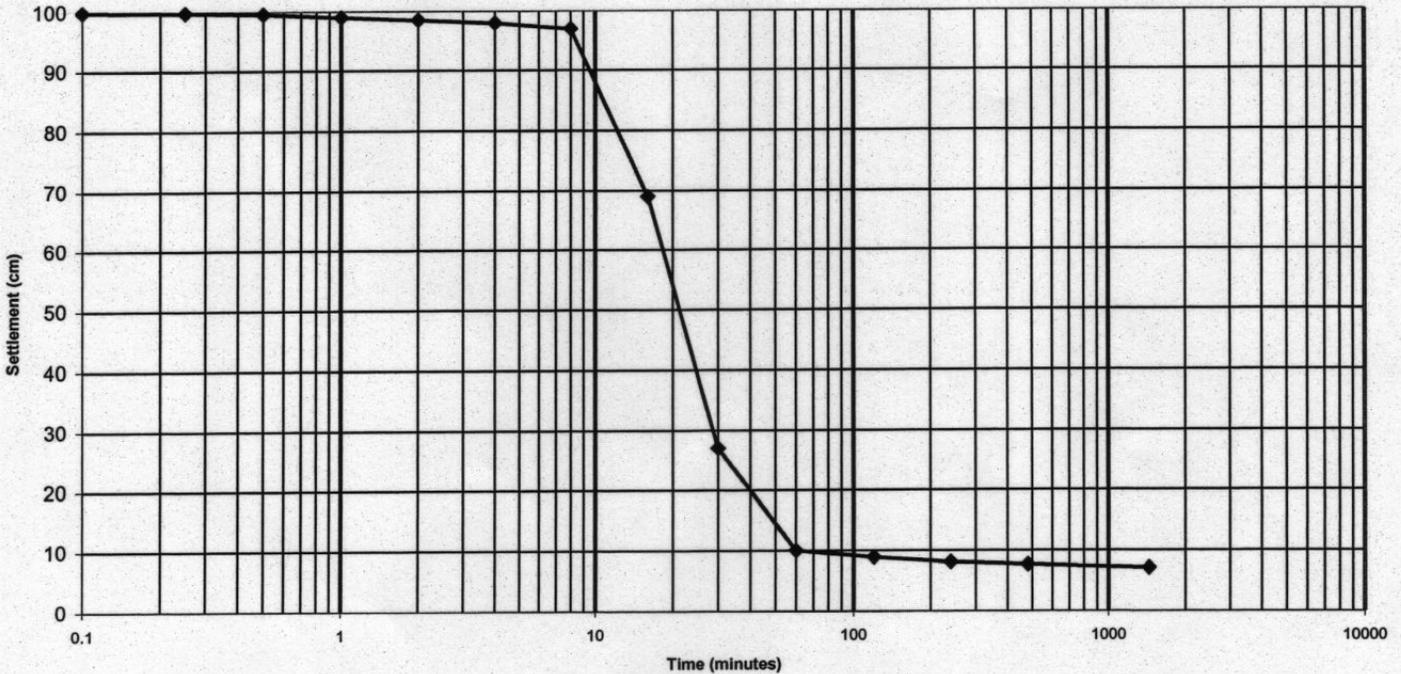
SAMPLE NO:

307163

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	69.0
0.25	99.8	30	27.0
0.5	99.6	60	10.0
1	99.0	120	8.9
2	98.5	240	8.1
4	98.0	480	7.7
8	97.0	1440	7.1

Final Concentration: 1408.5 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-8

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

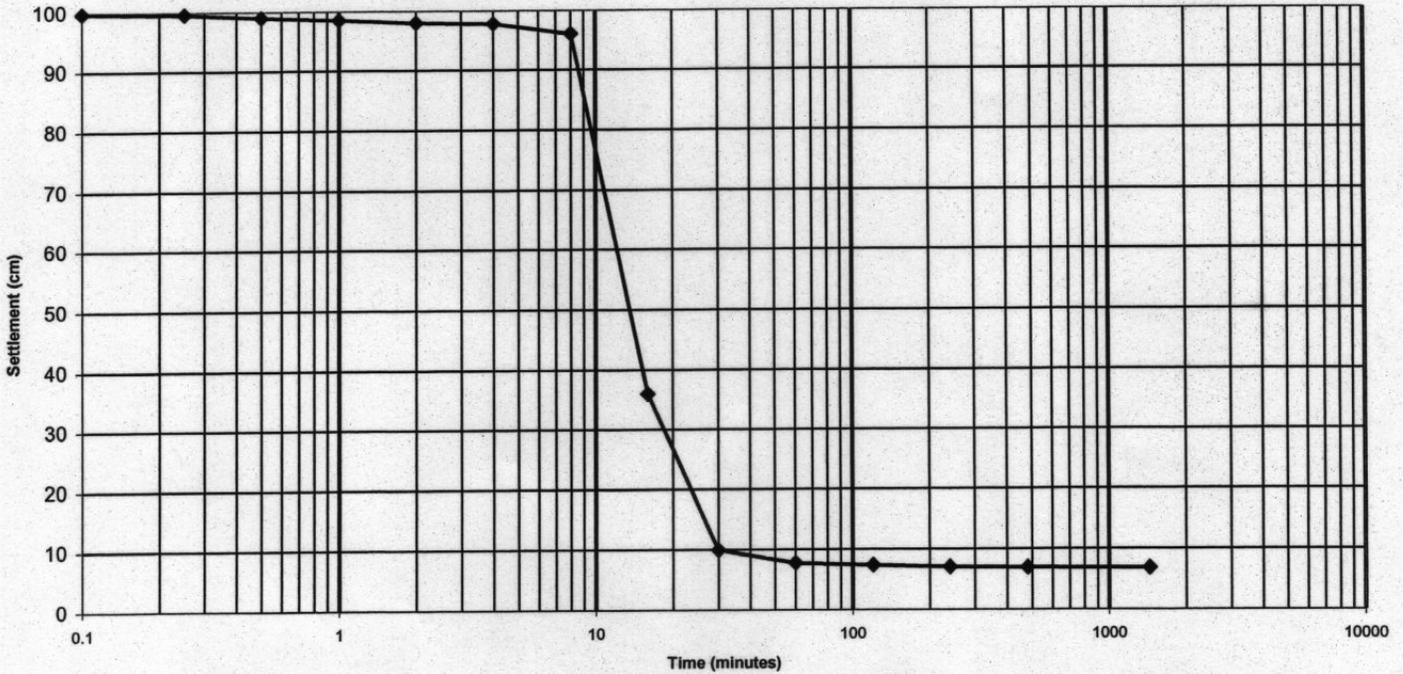
SAMPLE NO:

307162

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.8	16	36.0
0.25	99.6	30	9.9
0.5	99.0	60	7.8
1	98.5	120	7.4
2	98.0	240	7.1
4	97.8	480	7.0
8	96.0	1440	6.9

Final Concentration: 1449.3 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-9

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

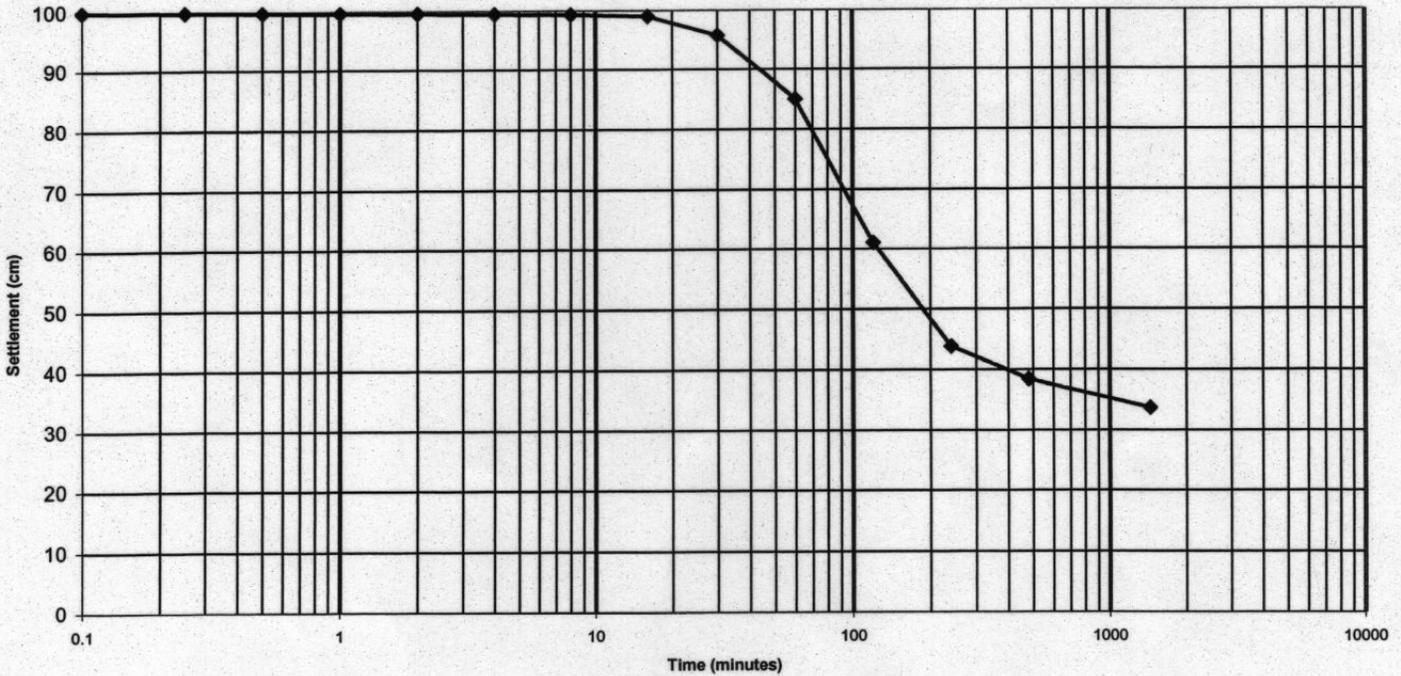
SAMPLE NO:

307161

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	99.0
0.25	99.8	30	95.7
0.5	99.7	60	85.0
1	99.6	120	61.0
2	99.5	240	43.8
4	99.4	480	38.5
8	99.3	1440	33.7

Final Concentration: 296.74 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC03-10

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

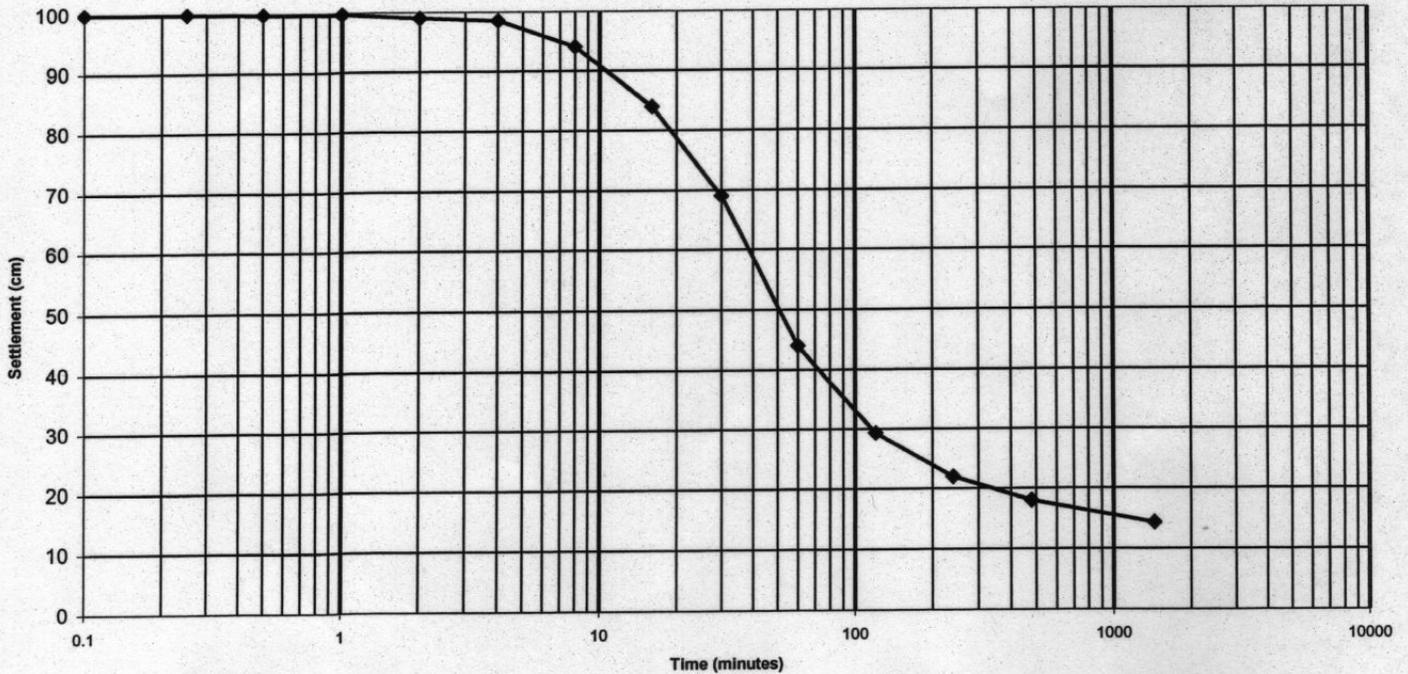
SAMPLE NO:

307160

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	84.0
0.25	99.9	30	69.0
0.5	99.8	60	44.0
1	99.7	120	29.3
2	99.0	240	21.9
4	98.5	480	18.0
8	94.0	1440	14.3

Final Concentration: 699.3 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WCD03-1

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

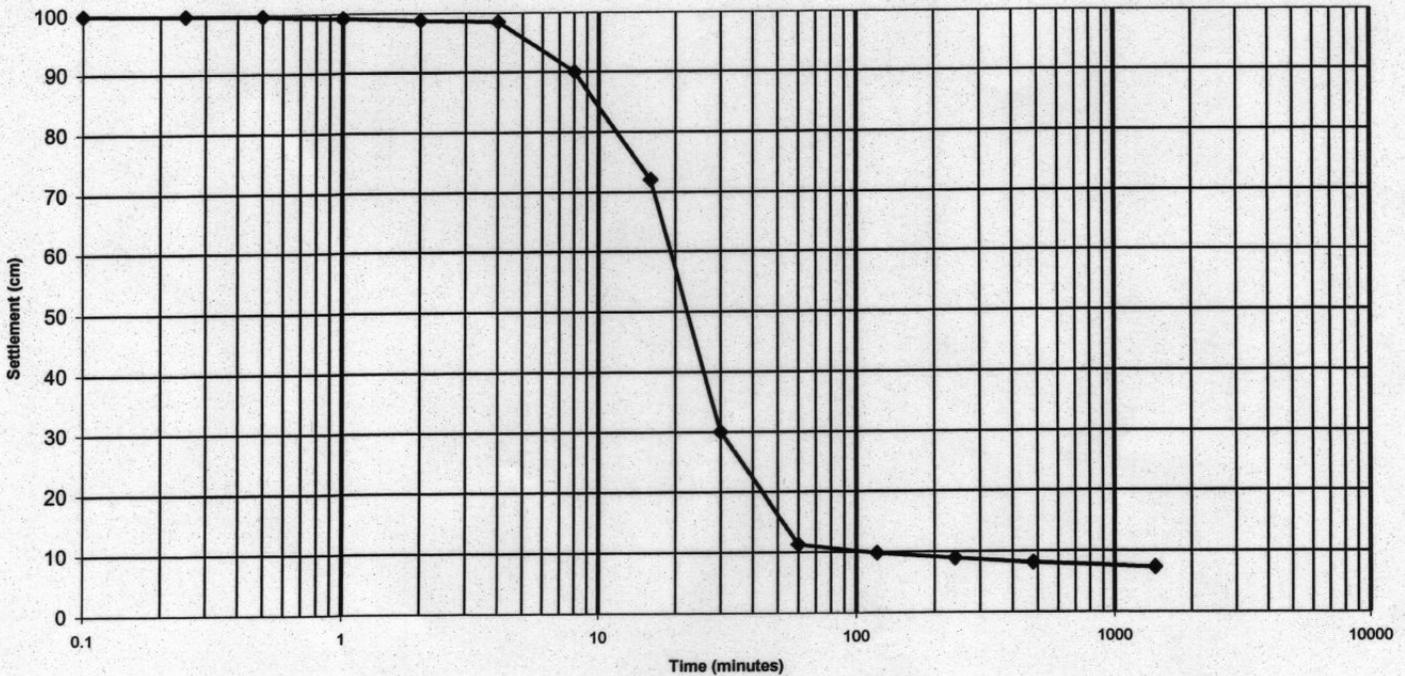
SAMPLE NO:

307172

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	72.0
0.25	99.8	30	30.0
0.5	99.7	60	11.3
1	99.2	120	9.8
2	98.8	240	8.9
4	98.5	480	8.1
8	90.0	1440	7.3

Final Concentration: 1369.9 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC D03-2

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

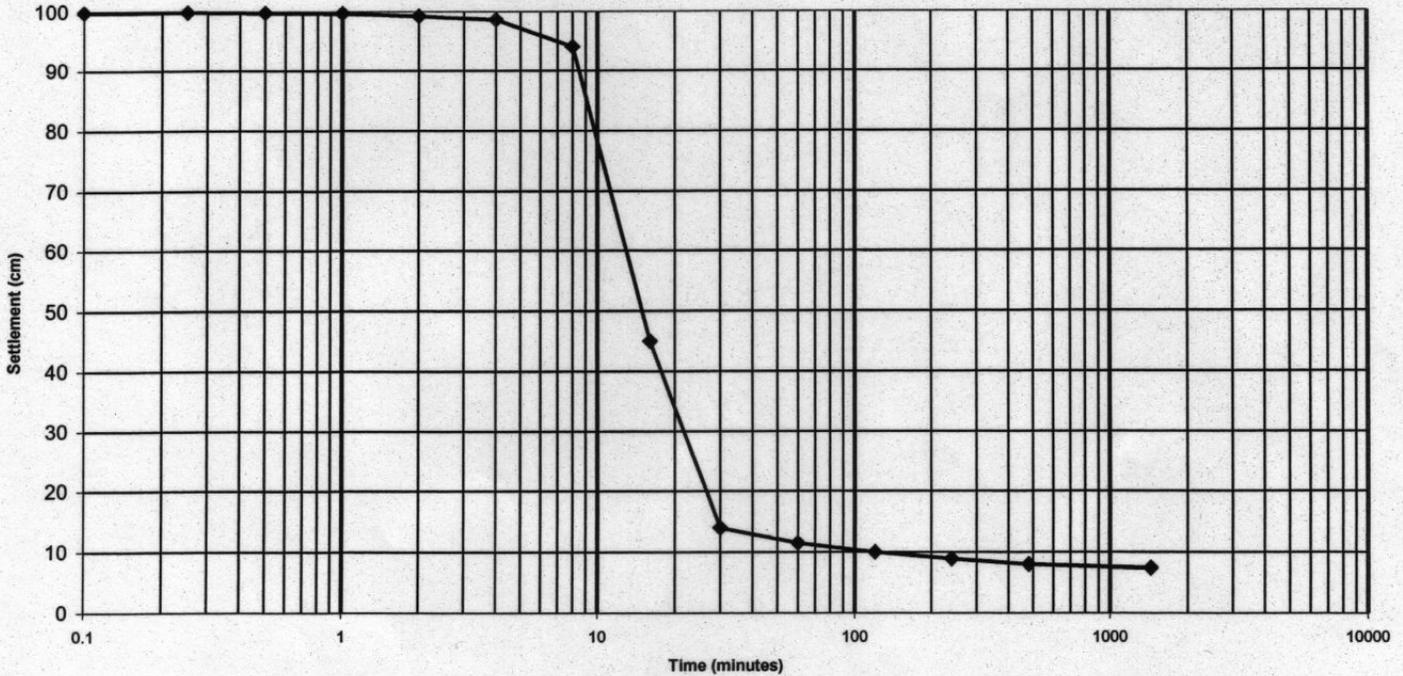
SAMPLE NO:

307173

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	45.0
0.25	99.9	30	14.0
0.5	99.8	60	11.5
1	99.7	120	10.0
2	99.2	240	8.9
4	98.6	480	8.0
8	94.0	1440	7.4

Final Concentration: 1351.4 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WCD03-3

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

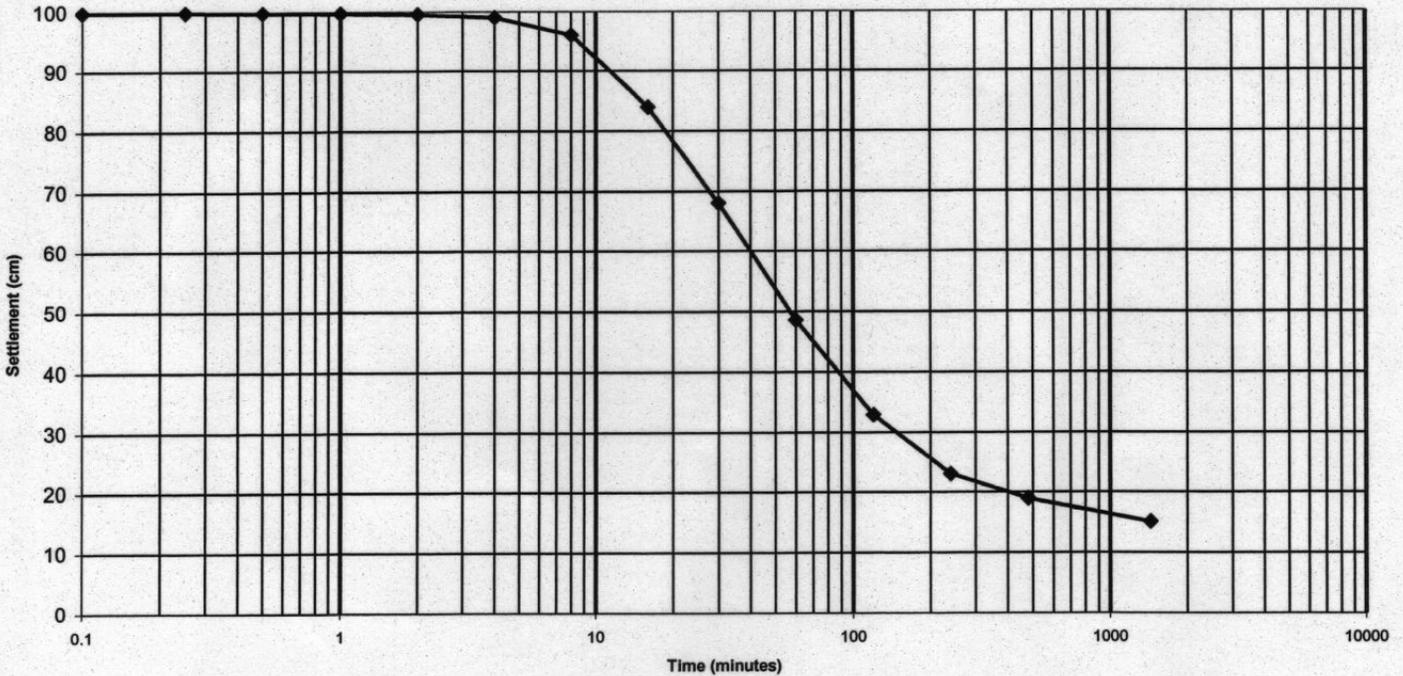
SAMPLE NO:

307174

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	84.0
0.25	99.9	30	68.0
0.5	99.8	60	48.6
1	99.7	120	32.9
2	99.5	240	23.0
4	99.0	480	18.9
8	96.0	1440	15.1

Final Concentration: 662.25 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WC D03-4

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

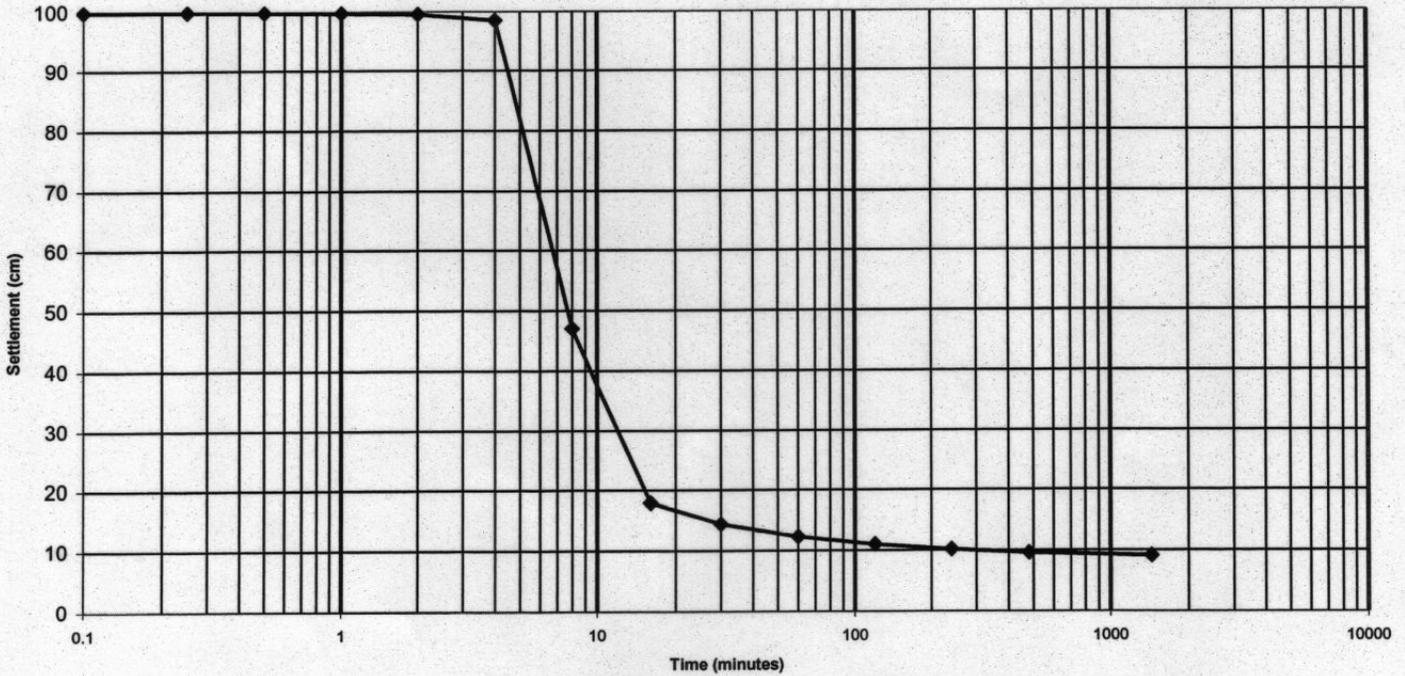
SAMPLE NO:

307175

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	17.9
0.25	99.9	30	14.4
0.5	99.8	60	12.3
1	99.7	120	11.0
2	99.5	240	10.2
4	98.5	480	9.6
8	47.0	1440	9.1

Final Concentration: 1098.9 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WCD03-5

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

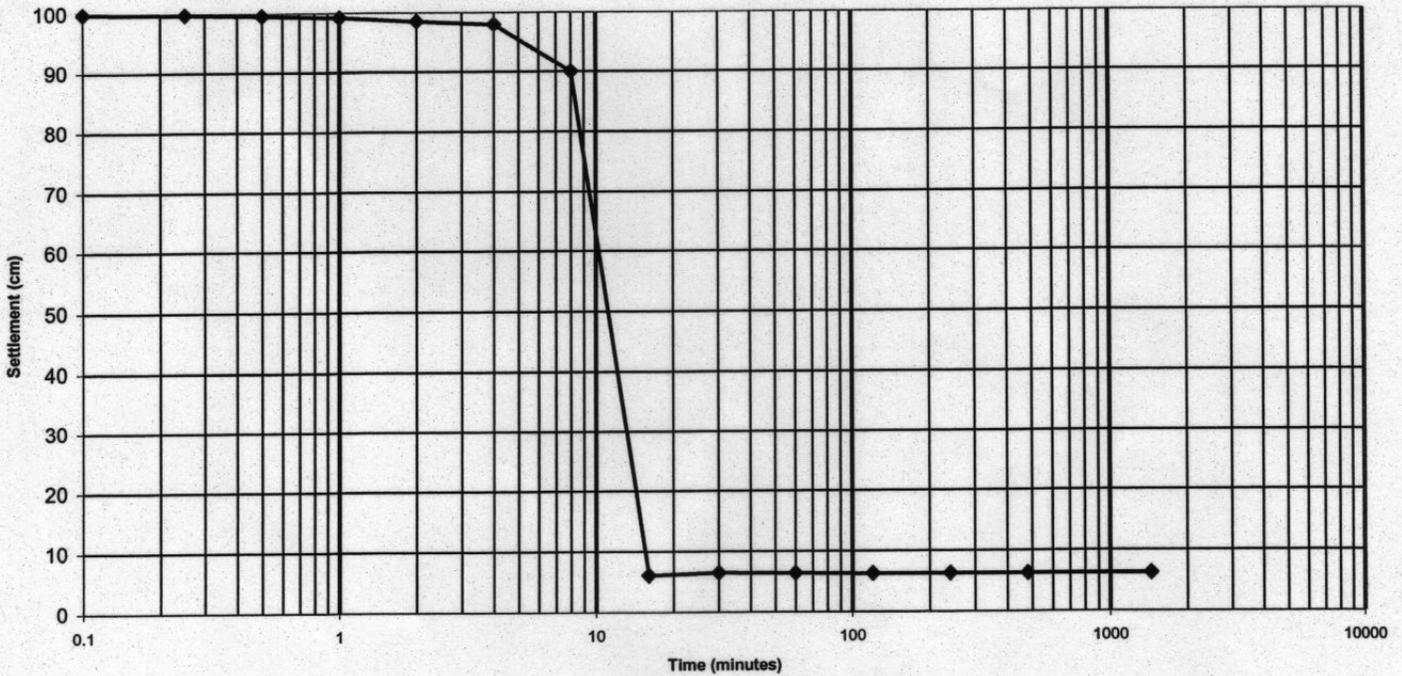
SAMPLE NO:

307176

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	6.1
0.25	99.8	30	6.5
0.5	99.6	60	6.4
1	99.2	120	6.3
2	98.5	240	6.3
4	98.0	480	6.3
8	90.0	1440	6.3

Final Concentration: 1587.3 g/L

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REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6738-03-4393

STATION ID

WCDD3-6

PROJECT: Material Testing Advanced Technologies & Testing Laboratories, Inc.

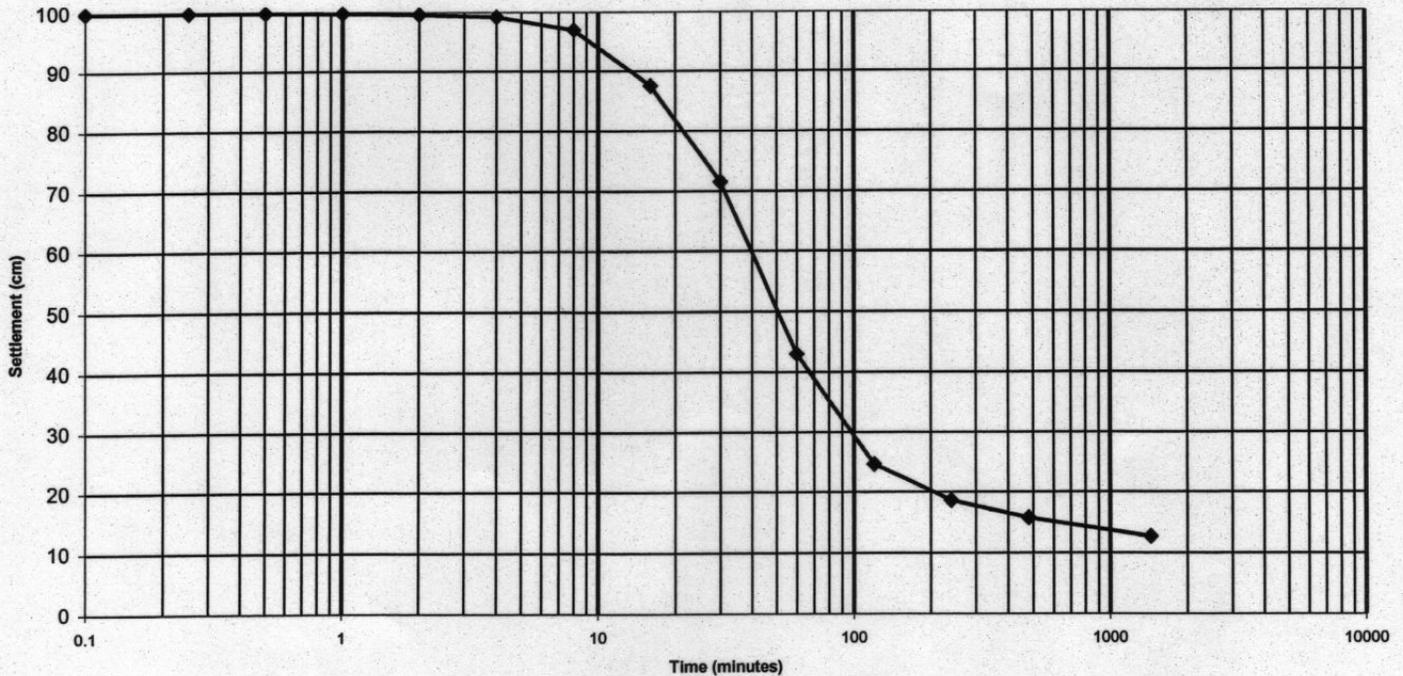
SAMPLE NO:

307177

CLIENT: Advanced Technologies & Testing Laboratories, Inc.

CONCENTRATION:

100 g/L

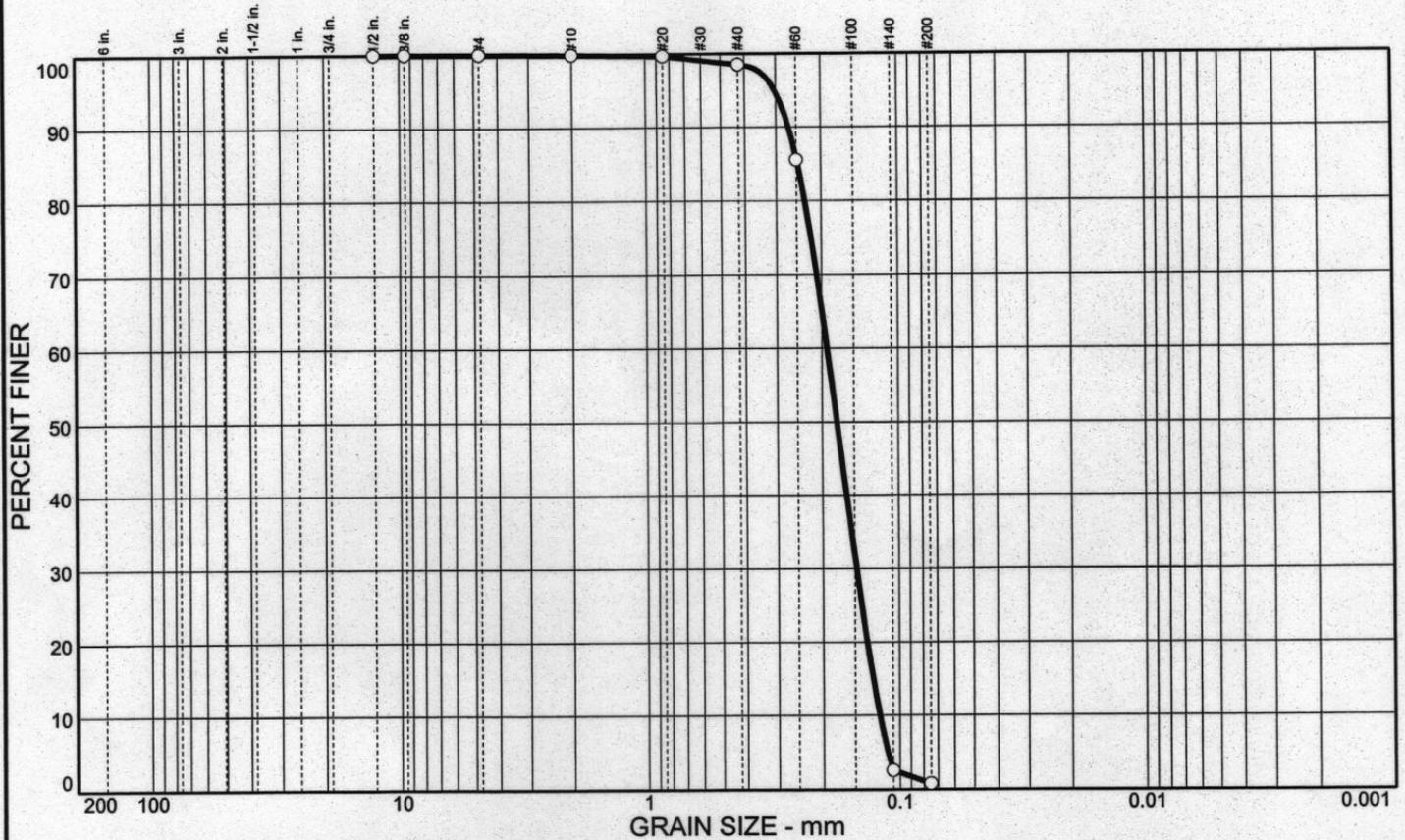


TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	16	87.5
0.25	99.9	30	71.5
0.5	99.9	60	43.0
1	99.8	120	24.6
2	99.6	240	18.6
4	99.2	480	15.8
8	97.0	1440	12.7

Final Concentration: 787.4 g/L

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Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			99.2		0.8	SP	A-3		

SIEVE inches size	PERCENT FINER		
	○		
.5	100.0		
.375	100.0		
X	GRAIN SIZE		
D60	0.191		
D30	0.148		
D10	0.120		
X	COEFFICIENTS		
C _c	0.95		
C _u	1.59		

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.5		
#60	85.6		
#140	2.6		
#200	0.8		

SOIL DESCRIPTION
○ SAND, mostly fine sand size quartz, light tan

REMARKS:
○

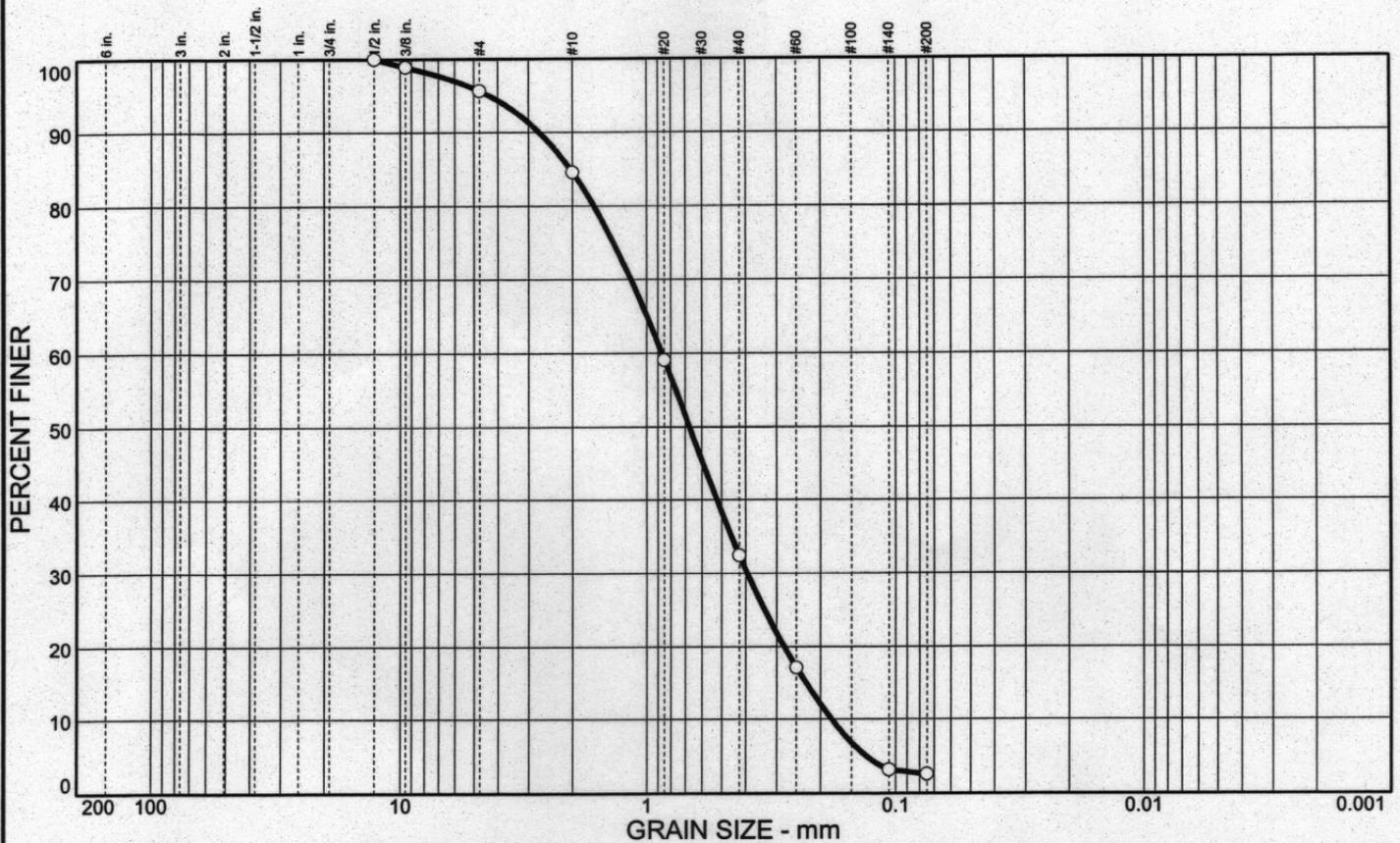
○ Source:

Sample No.: 307169
station ID: WC03-1

Law Engineering and Environmental Services, Inc.	Client: Advanced Technology and Testing Laboratories, INC Project: Material Testing-ATTL Project No.: 6738-03-4393
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Plate
Michael J. Holm
Michael J. Holm

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		4.4	93.0	2.6		SP	A-1-b		

SIEVE inches size	PERCENT FINER		
	○		
.5	100.0		
.375	98.9		
GRAIN SIZE			
D ₆₀	0.871		
D ₃₀	0.396		
D ₁₀	0.181		
COEFFICIENTS			
C _c	0.99		
C _u	4.82		

SIEVE number size	PERCENT FINER		
	○		
#4	95.6		
#10	84.6		
#20	59.1		
#40	32.4		
#60	17.1		
#140	3.2		
#200	2.6		

SOIL DESCRIPTION
 ○ SAND, Mostly medium sand size shell fragments, some fine sand size quartz, few coarse sand sized shell fragments, trace fine gravel size shell fragments, trace silt, light brown and dark gray

REMARKS:
 ○

○ Source:

Sample No.: 307168

Station ID: WC03-2

**Law Engineering and
Environmental Services, Inc.**

Client: Advanced Technology and Testing Laboratories, INC
 Project: Material Testing-ATTL

Project No.: 6738-03-4393

Plate

Michael J. Holm
 Michael J. Holm

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		84.8		15.2	SM	A-2-7(0)	36	52

SIEVE inches size	PERCENT FINER	
	○	
.5	100.0	
.375	100.0	
GRAIN SIZE		
D ₆₀	0.170	
D ₃₀	0.114	
D ₁₀		
COEFFICIENTS		
C _c		
C _u		

SIEVE number size	PERCENT FINER	
	○	
#4	100.0	
#10	98.9	
#20	97.3	
#40	93.7	
#60	85.8	
#140	25.9	
#200	15.2	

SOIL DESCRIPTION
 ○ SAND, mostly fine sand size quartz, little silt, few medium sand sized shell fragments, dark brown

REMARKS:
 ○

○ Source:

Sample No.: 307167

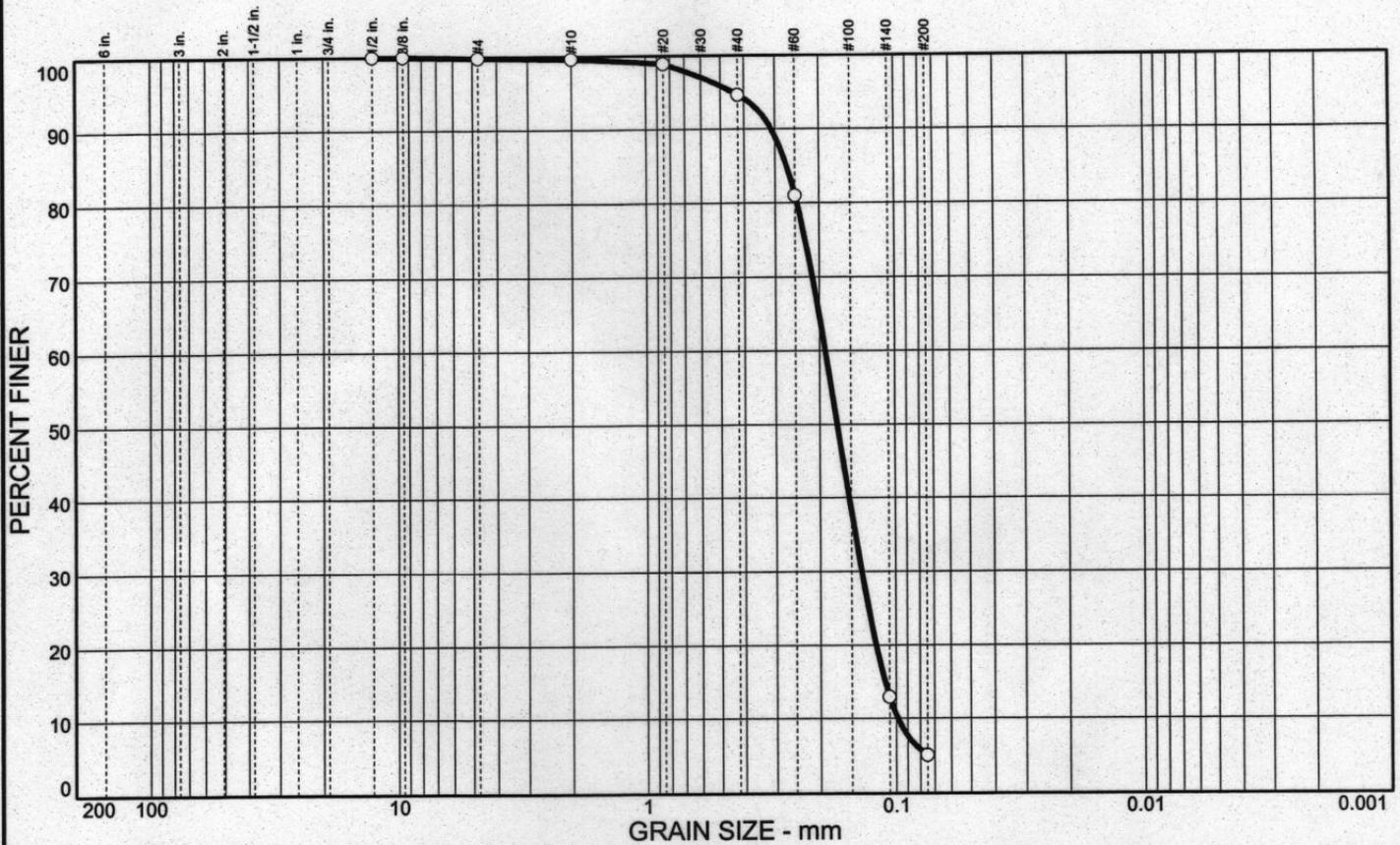
Station ID: WCO3-3

Law Engineering and Environmental Services, Inc.	Client: Advanced Technology and Testing Laboratories, INC Project: Material Testing-ATTL Project No.: 6738-03-4393
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Plate

Michael J. Holm
 Michael J. Holm

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.2	94.7	5.1		SP-SM	A-2-4(0)	24	27

SIEVE inches size	PERCENT FINER	
	○	
.5	100.0	
.375	100.0	
GRAIN SIZE		
D ₆₀	0.190	
D ₃₀	0.137	
D ₁₀	0.0984	
COEFFICIENTS		
C _c	1.00	
C _u	1.93	

SIEVE number size	PERCENT FINER	
	○	
#4	99.8	
#10	99.6	
#20	98.9	
#40	94.6	
#60	81.0	
#140	12.9	
#200	5.1	

SOIL DESCRIPTION
 ○ SAND, mostly fine sand size quartz, few silt, few medium sand size shell fragments, trace organics, dark brown

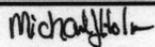
REMARKS:
 ○

○ Source:

Sample No.: 307166

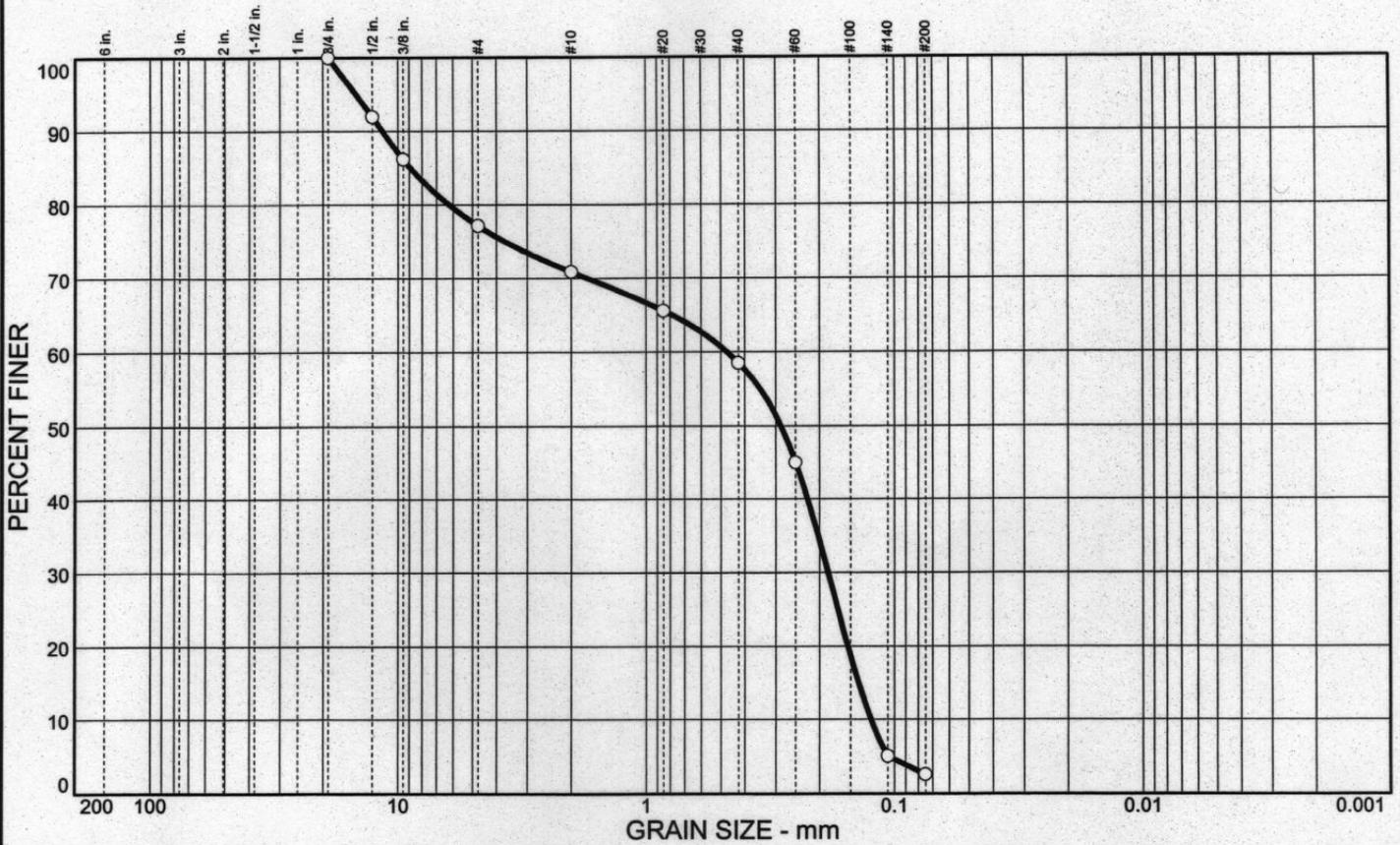
Station ID: WC03-4

Law Engineering and Environmental Services, Inc.	Client: Advanced Technology and Testing Laboratories, INC Project: Material Testing-ATTL Project No.: 6738-03-4393
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Michael J. Holm

Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	22.8	74.6	2.6		SP-SM	A-3		

SIEVE	PERCENT FINER		SIEVE	PERCENT FINER		SOIL DESCRIPTION
inches size	○		number size	○		
.75	100.0		#4	77.2		○ SAND, mostly fine sand size quartz, little fine gravel sized limestone fragments, few medium sand sized shell fragments, few coarse sand size limestone fragments, trace silt, dark brown
.5	91.9		#10	70.9		
.375	86.2		#20	65.5		
			#40	58.5		
			#60	45.0		
			#140	5.1		
			#200	2.6		
GRAIN SIZE						
D60	0.473					REMARKS: ○
D30	0.185					
D10	0.124					
COEFFICIENTS						
C _c	0.58					
C _u	3.81					

○ Source:

Sample No.: 307165

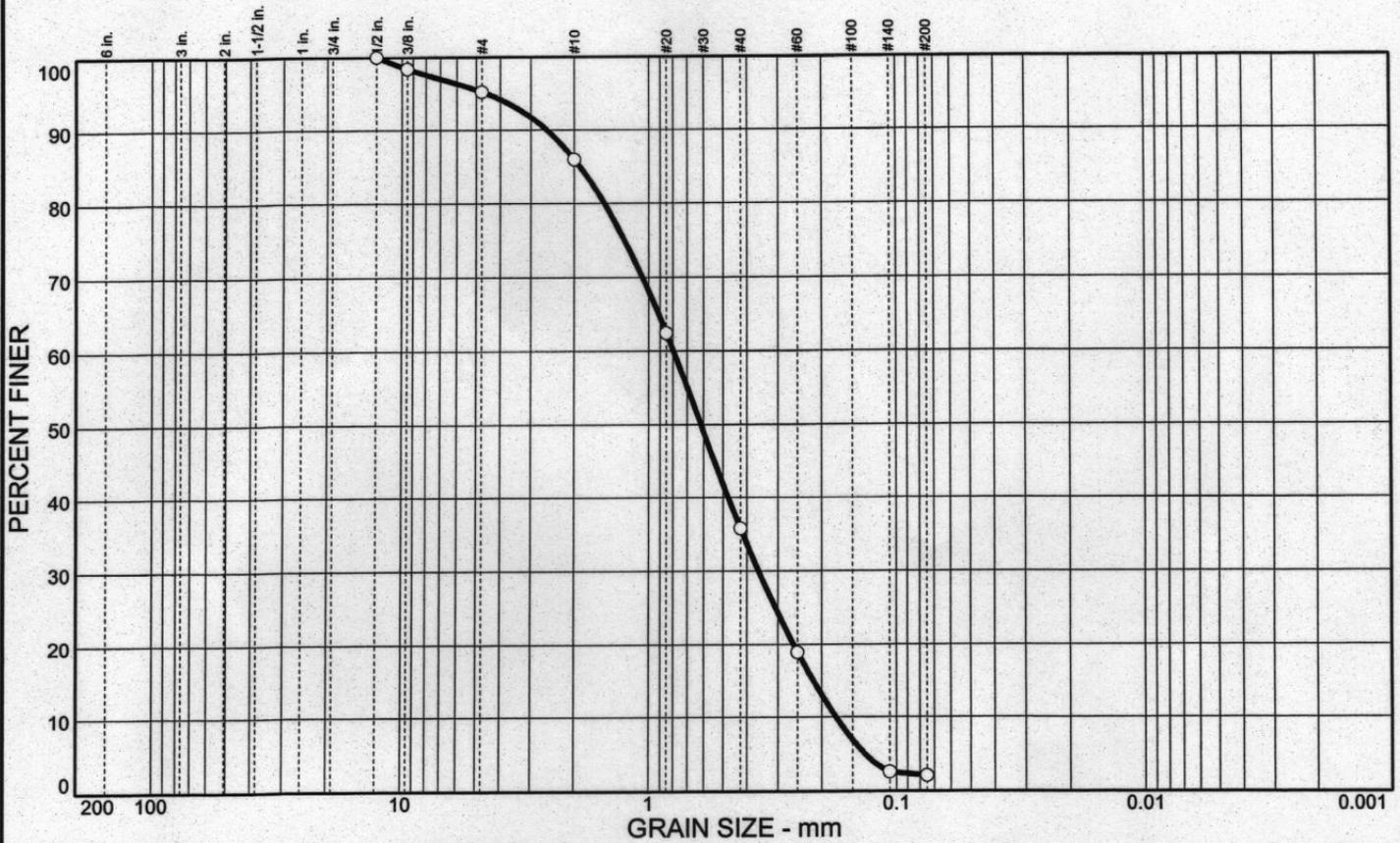
Station ID: WC03-5

Law Engineering and Environmental Services, Inc.	Client: Advanced Technology and Testing Laboratories, INC Project: Material Testing-ATTL Project No.: 6738-03-4393
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Plate

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	4.8	93.1	2.1		SP	A-1-b		

SIEVE inches size	PERCENT FINER	
	○	
.5	100.0	
.375	98.4	
GRAIN SIZE		
D60	0.797	
D30	0.360	
D10	0.176	
COEFFICIENTS		
C _c	0.93	
C _u	4.53	

SIEVE number size	PERCENT FINER	
	○	
#4	95.2	
#10	86.0	
#20	62.4	
#40	35.7	
#60	18.9	
#140	2.6	
#200	2.1	

SOIL DESCRIPTION
 ○ SHELL, Mostly medium sand size shell fragments, some fine sand size quartz, few coarse sand size shell fragments, trace fine gravel size shell fragments, dark gray

REMARKS:
 ○

○ Source:

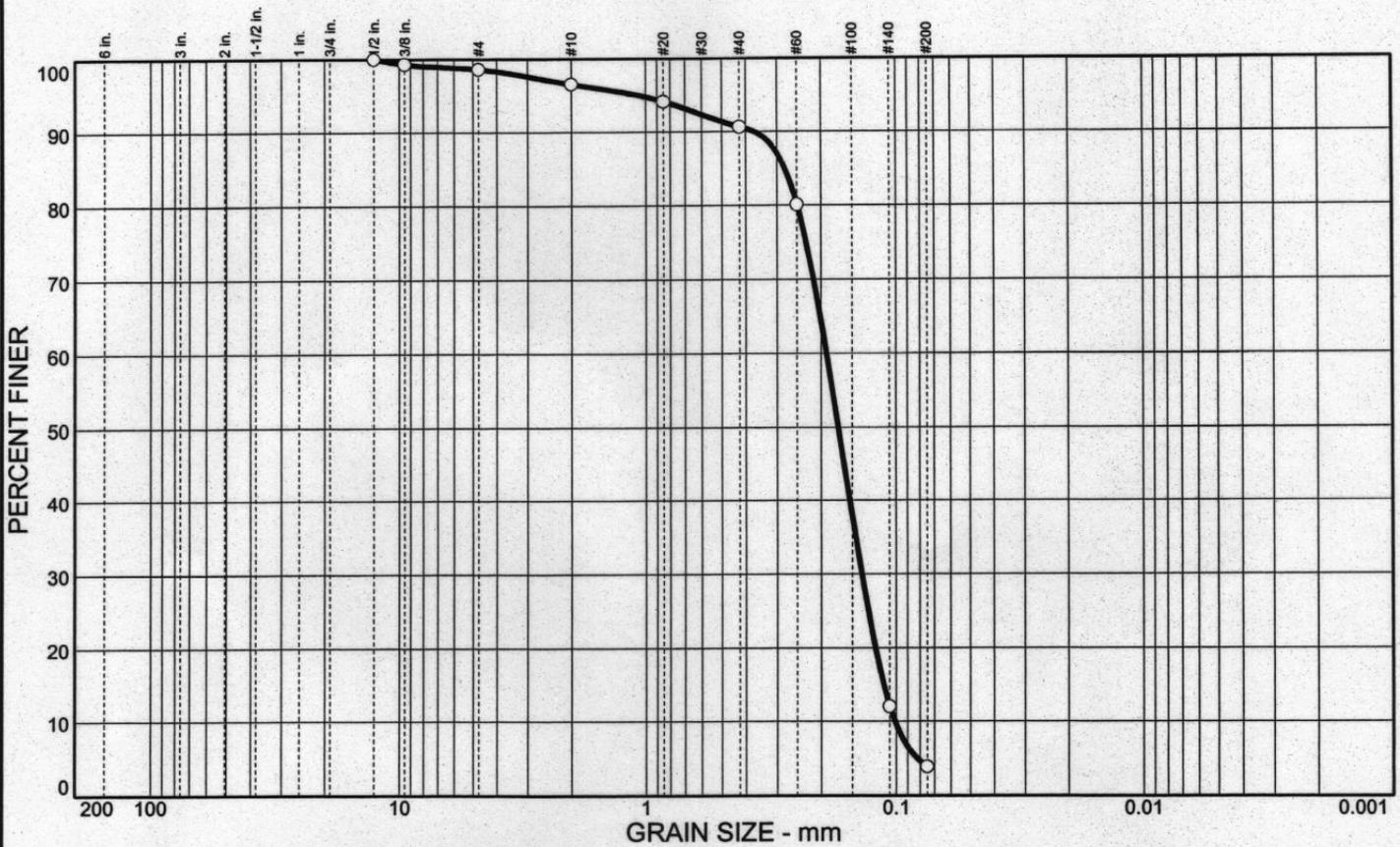
Sample No.: 307164
 Station ID: WCO3-6

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Particle Size Distribution Report



%	COBBLES	GRAVEL	SAND	SILT	CLAY	USCS	AASHTO	PL	LL
○		1.4	94.7		3.9	SP	A-3		

SIEVE inches size	PERCENT FINER	
	○	
.5	100.0	
.375	99.3	
GRAIN SIZE		
D60	0.191	
D30	0.137	
D10	0.101	
COEFFICIENTS		
C _c	0.98	
C _u	1.88	

SIEVE number size	PERCENT FINER	
	○	
#4	98.6	
#10	96.5	
#20	94.1	
#40	90.6	
#60	80.1	
#140	12.0	
#200	3.9	

SOIL DESCRIPTION
 ○ SAND, mostly fine sand size quartz, few medium sand sized shell fragments, trace silt, gray-brown

REMARKS:
 ○

○ Source:

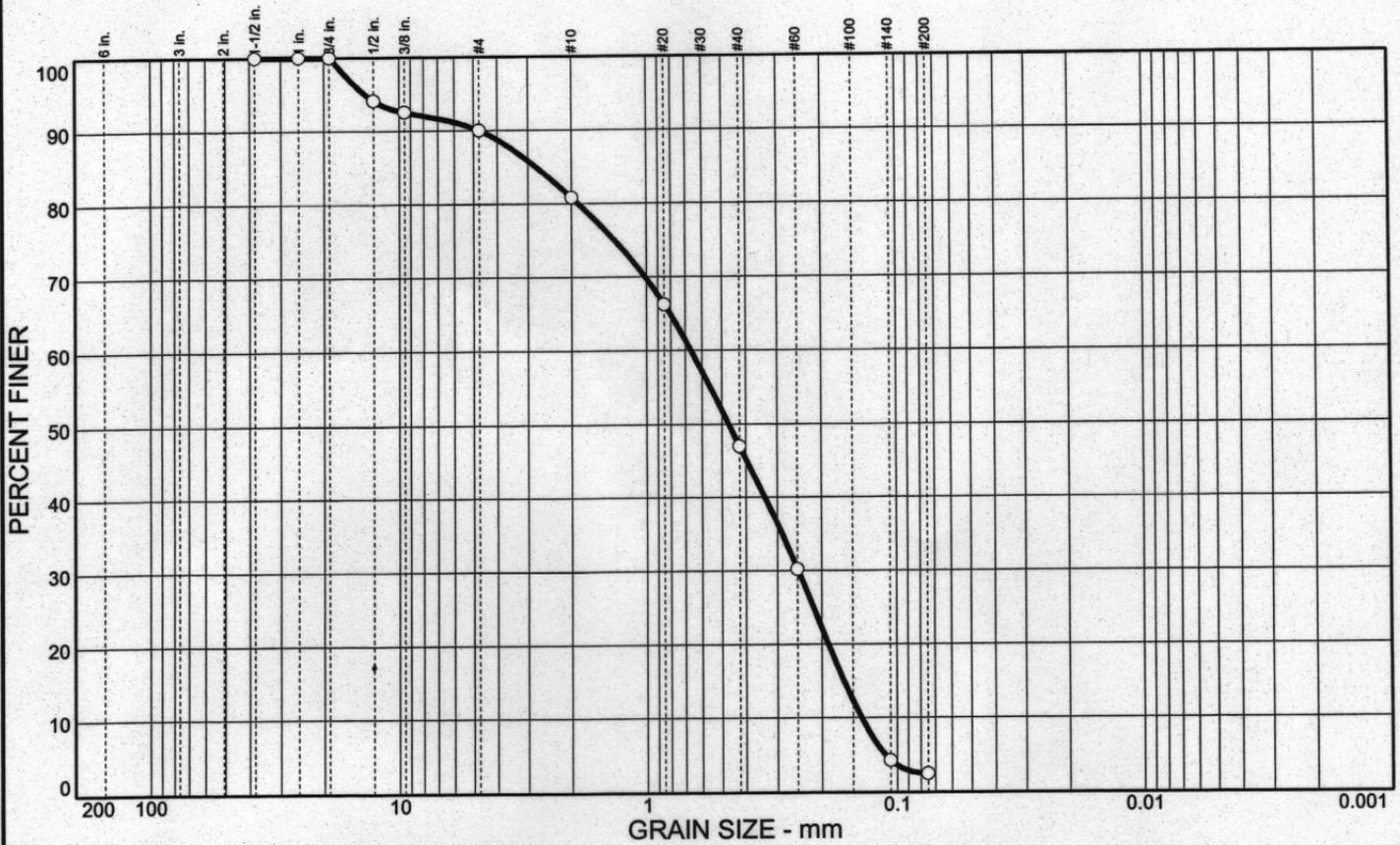
Sample No.: 307163

Station ID: WC03-7

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	10.0	87.5	2.5		SP	A-1-b		

SIEVE inches size	PERCENT FINER	
	○	
1.5	100.0	
1	100.0	
.75	100.0	
.5	94.1	
.375	92.5	
GRAIN SIZE		
D ₆₀	0.665	
D ₃₀	0.249	
D ₁₀	0.139	
COEFFICIENTS		
C _c	0.67	
C _u	4.79	

SIEVE number size	PERCENT FINER	
	○	
#4	90.0	
#10	80.8	
#20	66.2	
#40	47.0	
#60	30.2	
#140	4.3	
#200	2.5	

SOIL DESCRIPTION
 ○ SAND, some fine sand size quartz, some medium sand size shell fragments, few fine gravel size shell fragments, few coarse sand size shell fragments, trace silt, dark gray

REMARKS:
 ○

○ Source:

Sample No.: 307162

Station ID: WC03-8

**Law Engineering and
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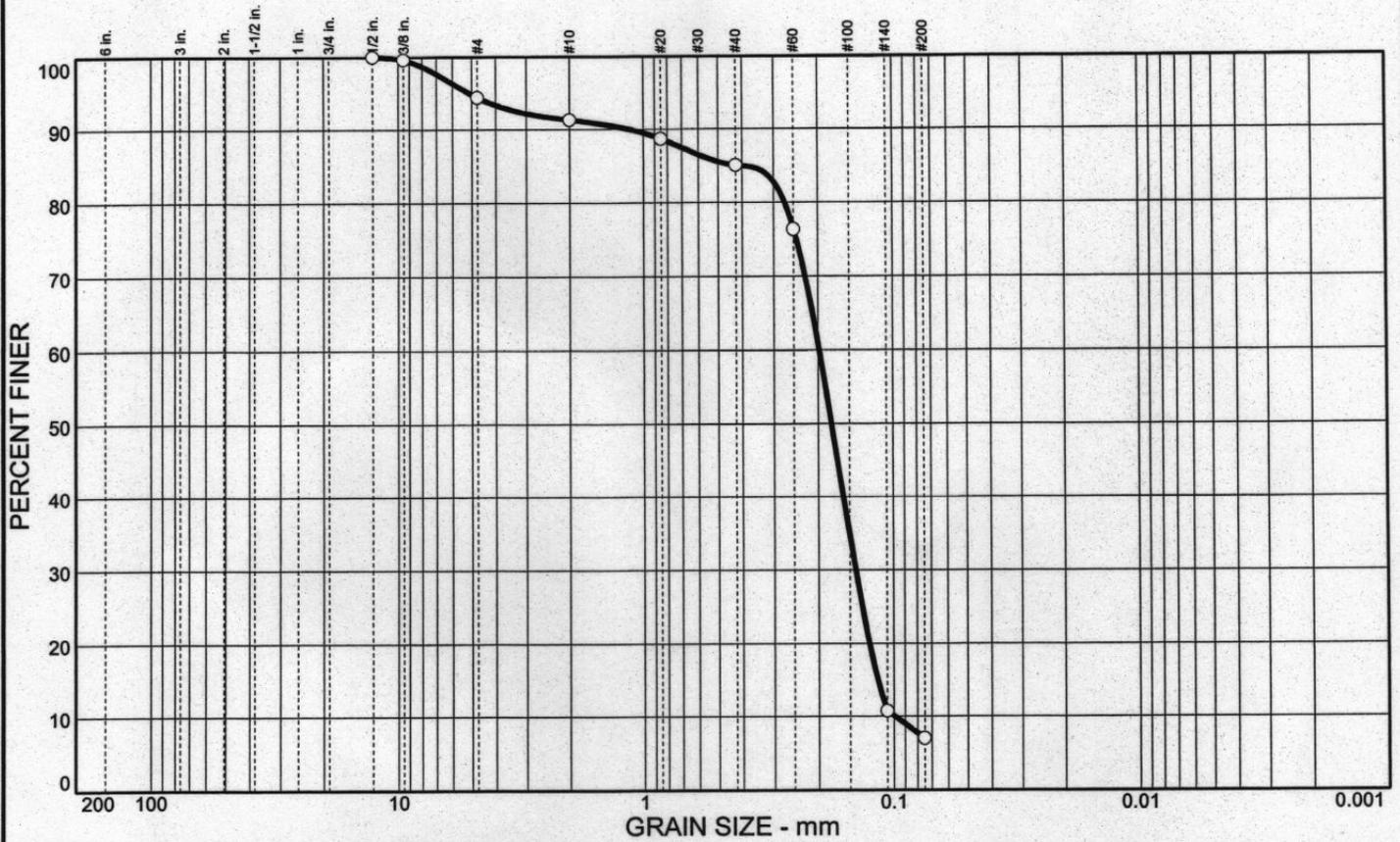
Client: Advanced Technology and Testing Laboratories, INC
 Project: Material Testing-ATTL

Project No.: 6738-03-4393

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	5.6	87.4	7.0	7.0	SP-SM	A-3		

SIEVE inches size	PERCENT FINER	
	○	
.5	100.0	
.375	99.6	
GRAIN SIZE		
D ₆₀	0.198	
D ₃₀	0.142	
D ₁₀	0.0993	
COEFFICIENTS		
C _c	1.03	
C _u	2.00	

SIEVE number size	PERCENT FINER	
	○	
#4	94.4	
#10	91.3	
#20	88.7	
#40	85.1	
#60	76.4	
#140	10.7	
#200	7.0	

SOIL DESCRIPTION
 ○ SAND, few silt, few medium sand sized shell fragments, few fine gravel size shell fragments, trace coarse sand size shell fragments, gray-brown

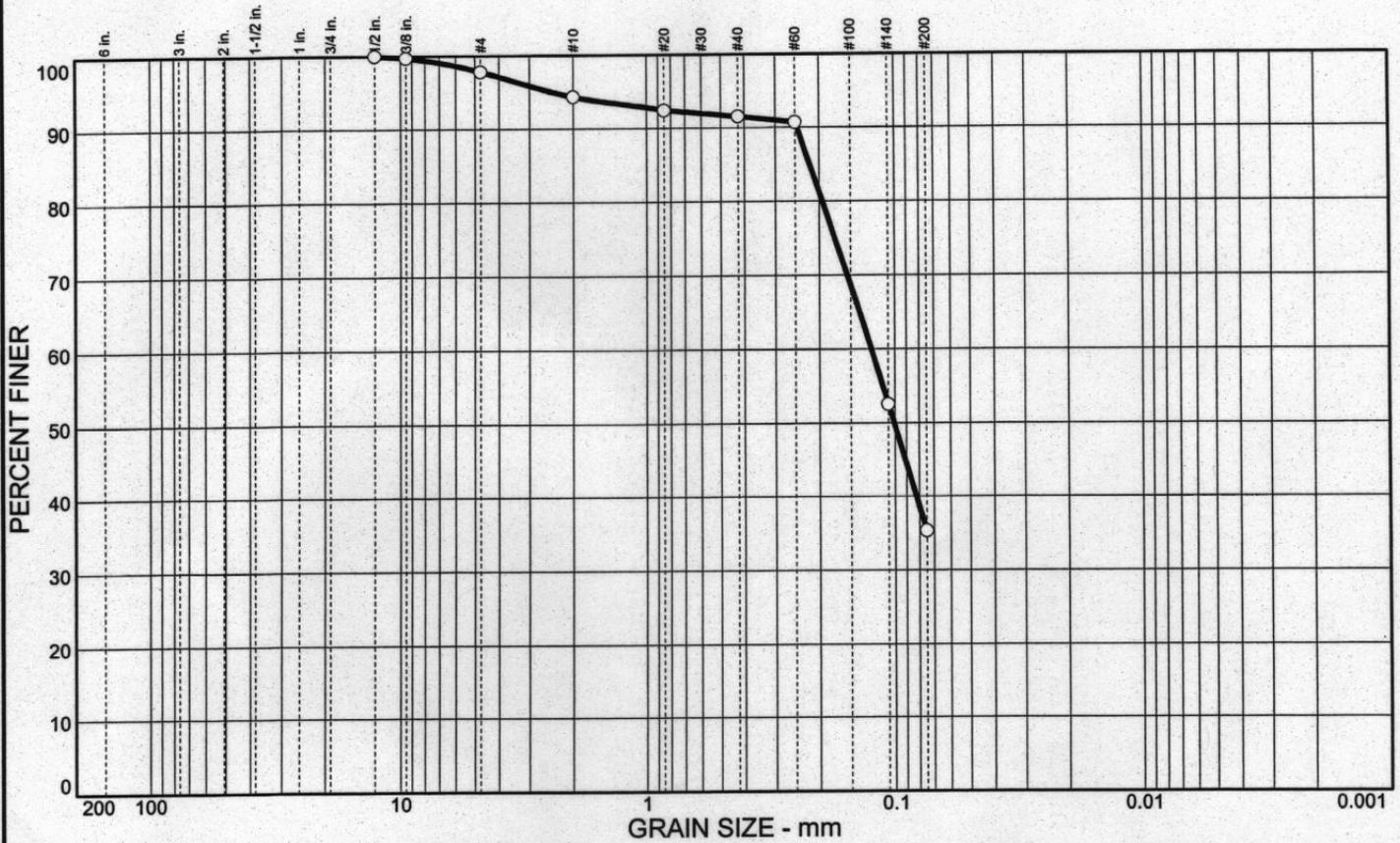
REMARKS:
 ○

○ Source: Sample No.: 307161
Station ID: WCO3-9

Law Engineering and Environmental Services, Inc.	Client: Advanced Technology and Testing Laboratories, INC Project: Material Testing-ATTL Project No.: 6738-03-4393
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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	2.2	62.6	35.2		CL	A-6(7)	19	34

SIEVE inches size	PERCENT FINER	
	○	
.5	100.0	
.375	99.7	
GRAIN SIZE		
D ₆₀	0.124	
D ₃₀		
D ₁₀		
COEFFICIENTS		
C _c		
C _u		

SIEVE number size	PERCENT FINER	
	○	
#4	97.8	
#10	94.3	
#20	92.4	
#40	91.5	
#60	90.7	
#140	52.5	
#200	35.2	

SOIL DESCRIPTION
 ○ CLAY, some fine sand size quartz, trace coarse to medium sand sized shell fragments, gray

REMARKS:
 ○ Date Tested: 8/6/03

○ Source:

Sample No.: 307160

Station ID: WC03-10

**Law Engineering and
Environmental Services, Inc.**

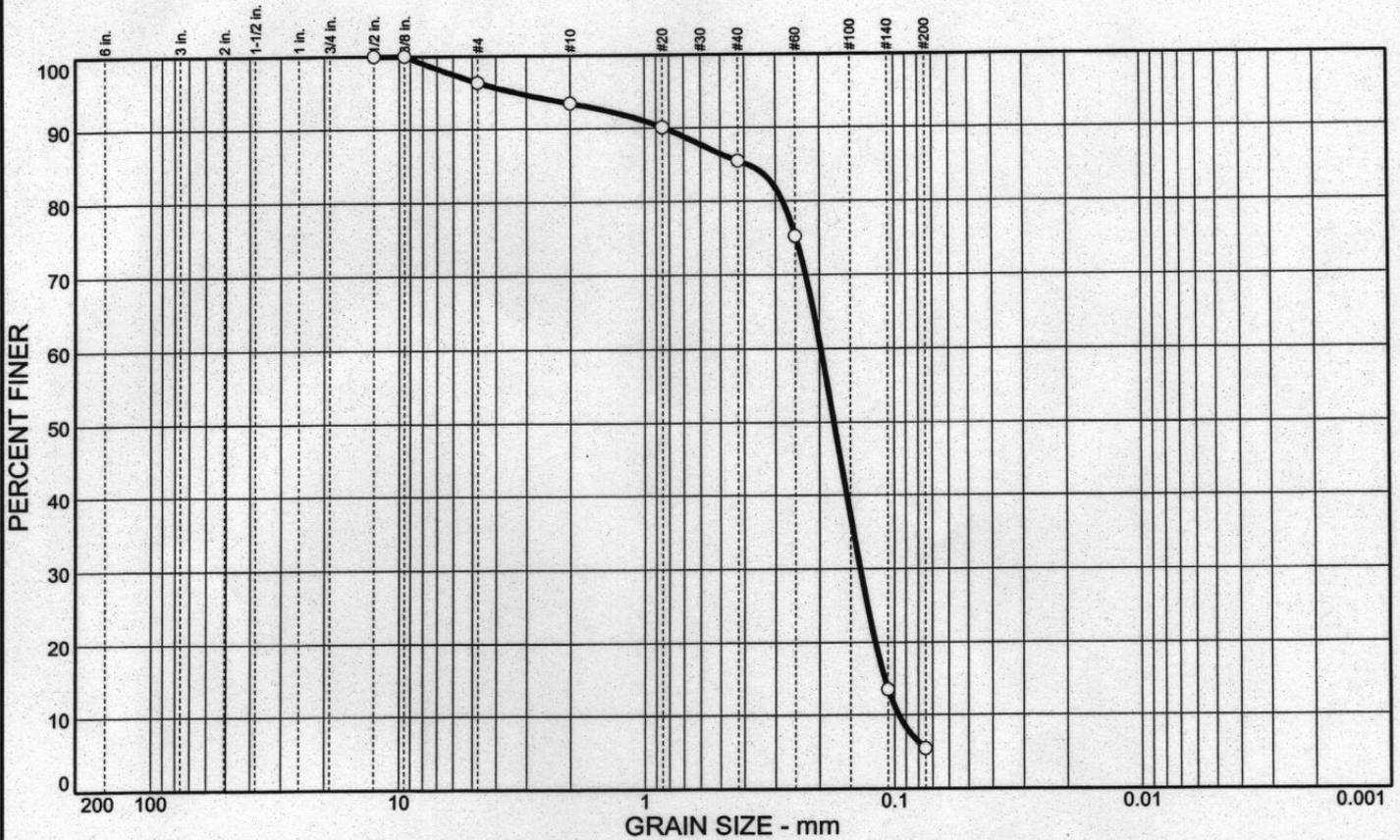
Client: Advanced Technology and Testing Laboratories, INC
 Project: Material Testing-ATTL

Project No.: 6738-03-4393

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	3.7	90.8	5.5		SP-SM	A-3		

SIEVE inches size	PERCENT FINER	
.5	○	
.375	100.0	
GRAIN SIZE		
D60	0.198	
D30	0.137	
D10	0.0962	
COEFFICIENTS		
C _c	0.99	
C _u	2.06	

SIEVE number size	PERCENT FINER	
#4	○	
#10	96.3	
#20	93.4	
#40	90.1	
#60	85.5	
#140	75.3	
#200	13.5	
	5.5	

SOIL DESCRIPTION
 ○ SAND, mostly fine sand size quartz, few medium sand sized shell fragments, few silt, trace fine gravel to coarse sand size shell fragments, trace organics, brown and gray

REMARKS:
 ○

○ Source:

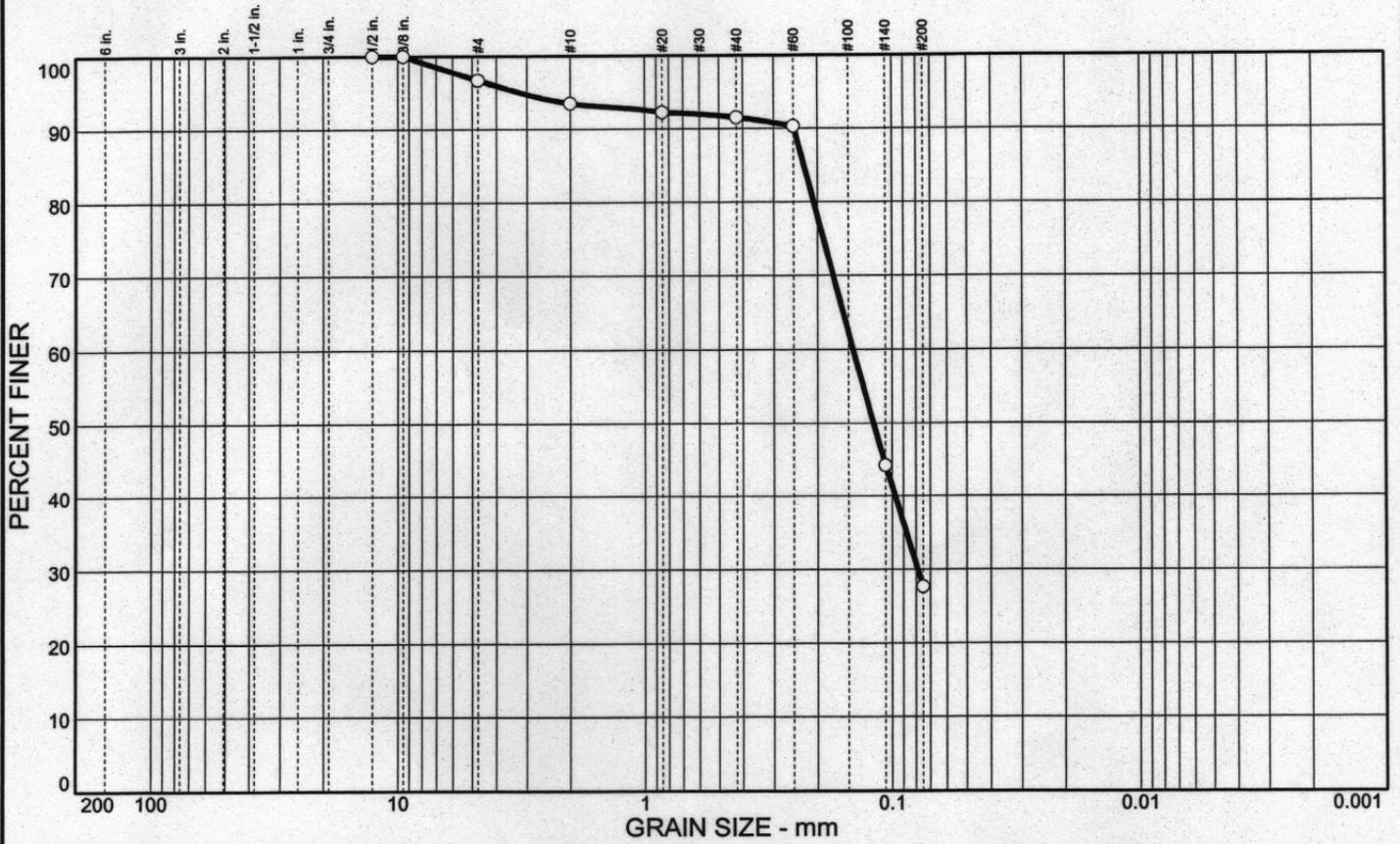
Sample No.: 307173
 Station ID: WCD03-2

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Particle Size Distribution Report



%	COBBLES	GRAVEL	SAND	SILT	CLAY	USCS	AASHTO	PL	LL
○		3.3	69.1		27.6	SC	A-2-4(0)	20	29

SIEVE inches size	PERCENT FINER	
	○	
.5	100.0	
.375	100.0	
GRAIN SIZE		
D60	0.144	
D30	0.0789	
D10		
COEFFICIENTS		
C _c		
C _u		

SIEVE number size	PERCENT FINER	
	○	
#4	96.7	
#10	93.5	
#20	92.2	
#40	91.5	
#60	90.3	
#140	44.2	
#200	27.6	

SOIL DESCRIPTION
 ○ SAND, mostly fine sand size quartz, some clay, trace fine gravel sized shell fragments, trace coarse sand to medium sand size shell fragments, gray

REMARKS:
 ○

○ Source:

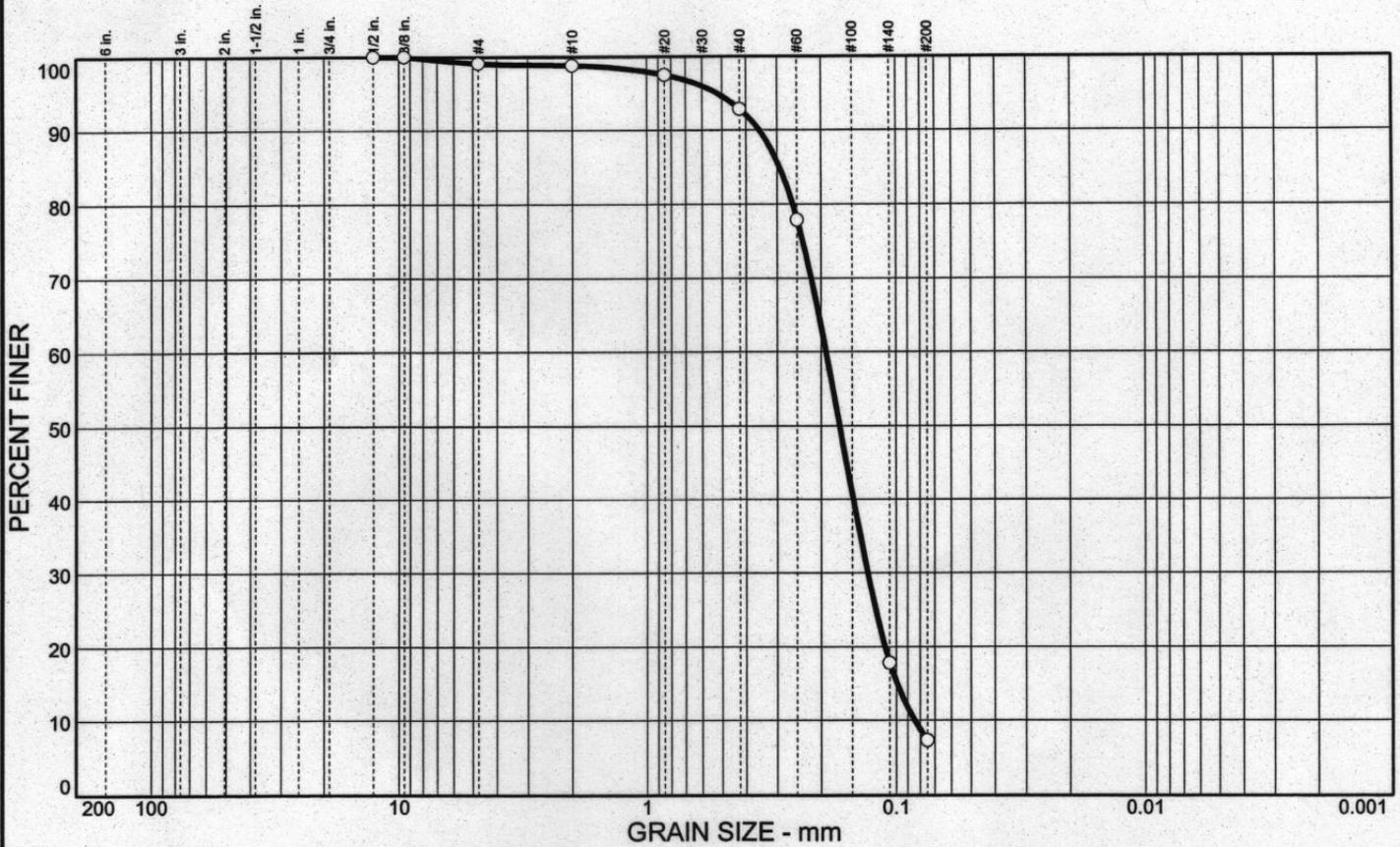
Sample No.: 307174
 Station ID: WCD03-3

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.9	91.8	7.3		SP-SM	A-3		

SIEVE inches size	PERCENT FINER	
	○	
.5	100.0	
.375	100.0	
GRAIN SIZE		
D ₆₀	0.191	
D ₃₀	0.130	
D ₁₀	0.0844	
COEFFICIENTS		
C _c	1.05	
C _u	2.27	

SIEVE number size	PERCENT FINER	
	○	
#4	99.1	
#10	98.8	
#20	97.5	
#40	92.8	
#60	77.9	
#140	17.8	
#200	7.3	

SOIL DESCRIPTION
 ○ SAND, mostly fine sand size quartz, few silt, few medium sand sized shell fragments, brown

REMARKS:
 ○

○ Source:

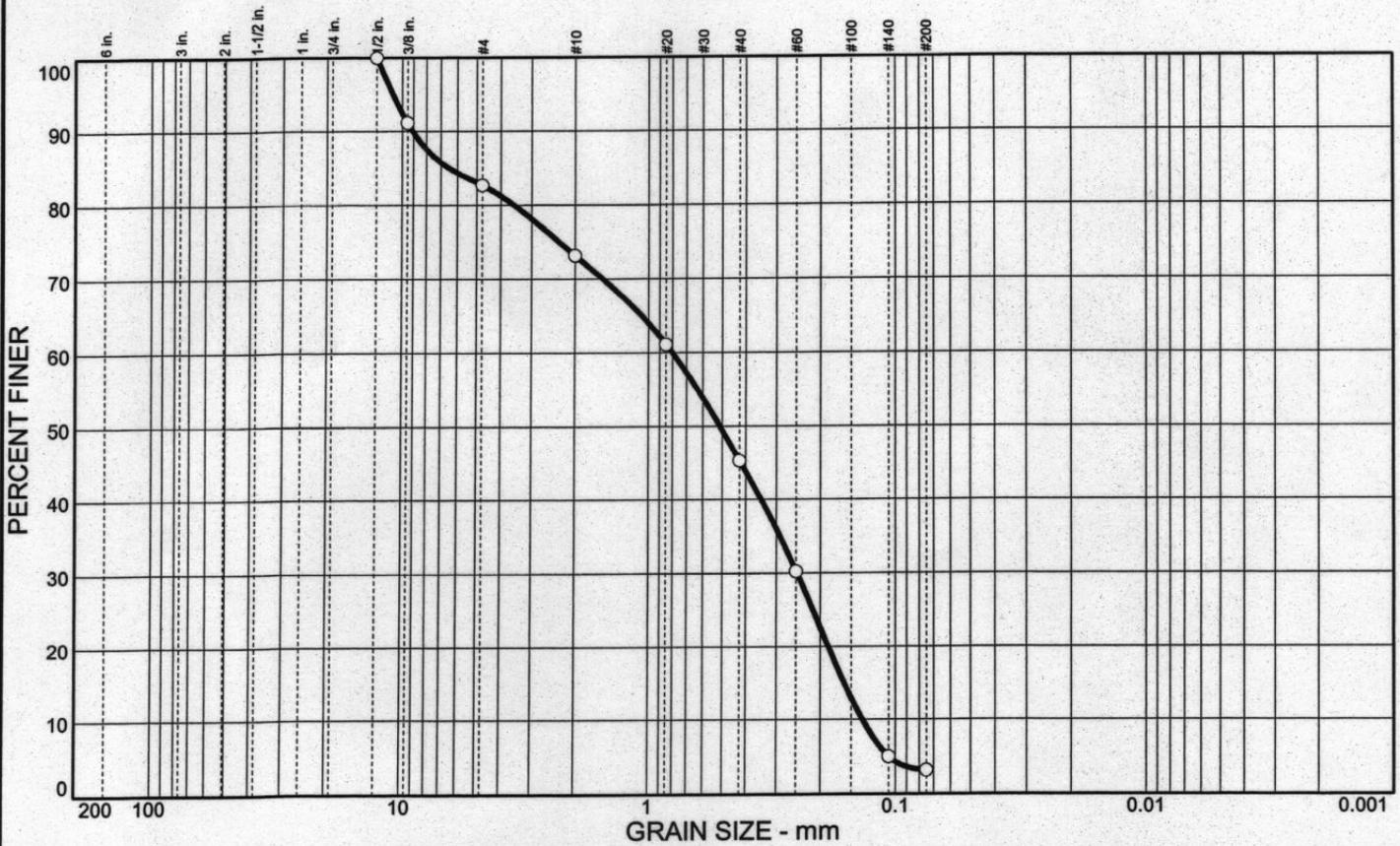
Sample No.: 307175
 Station ID: WCD03-4

Law Engineering and Environmental Services, Inc.	Client: Advanced Technology and Testing Laboratories, INC Project: Material Testing-ATTL Project No.: 6738-03-4393
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Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		17.3	79.5	3.2		SP	A-1-b		

SIEVE inches size	PERCENT FINER		
	○		
.5	100.0		
.375	91.1		
GRAIN SIZE			
D ₆₀	0.802		
D ₃₀	0.248		
D ₁₀	0.136		
COEFFICIENTS			
C _c	0.57		
C _u	5.92		

SIEVE number size	PERCENT FINER		
	○		
#4	82.7		
#10	73.2		
#20	61.1		
#40	45.3		
#60	30.2		
#140	5.0		
#200	3.2		

SOIL DESCRIPTION
 ○ SAND, some fine sand size quartz, some medium sand sized shell fragments, little fine gravel sized shell fragments, few coarse sand size shell fragments, trace silt, dark gray

REMARKS:
 ○

○ Source:

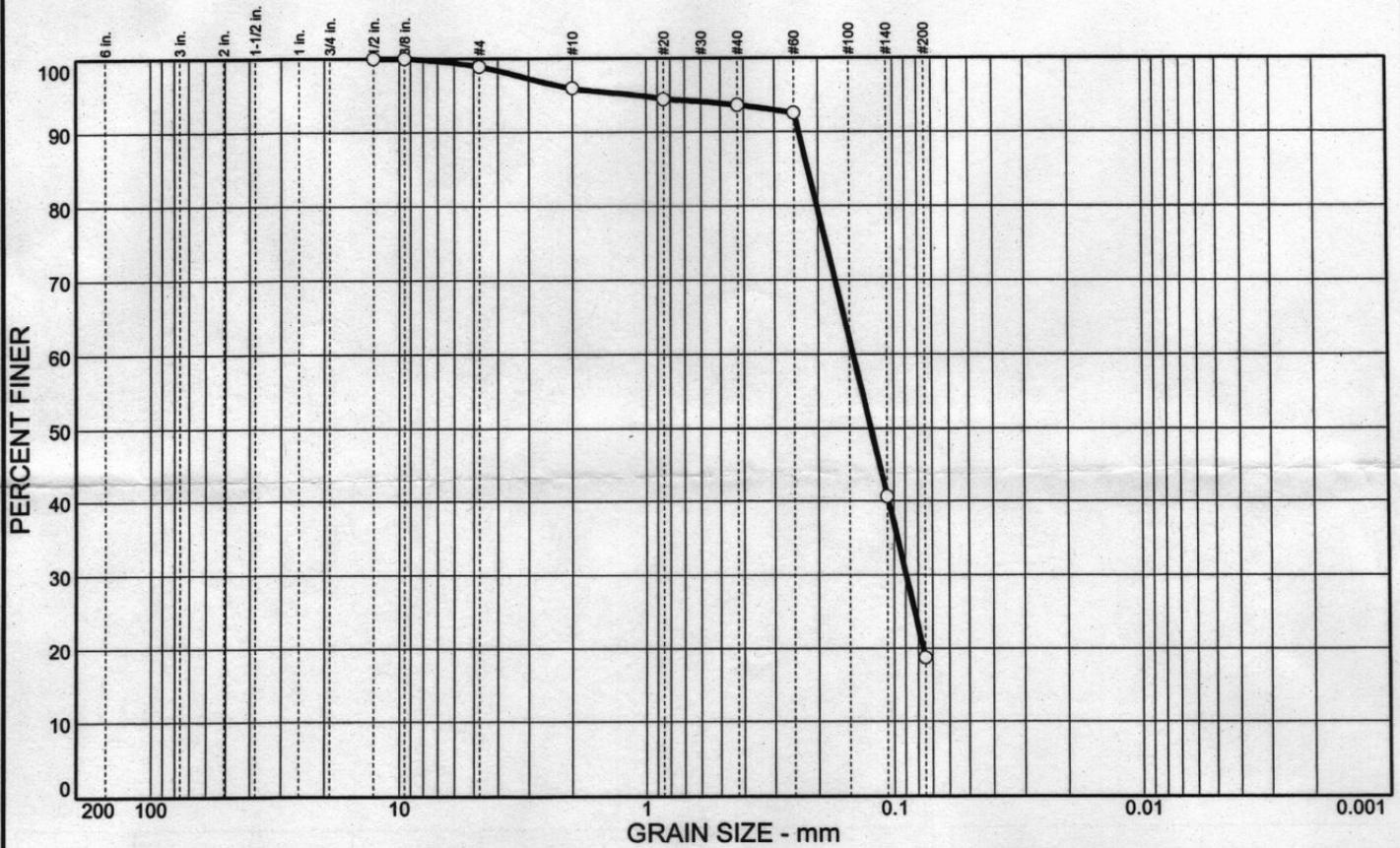
Sample No.: 307176
 Station ID: WCD03-5

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	1.1	80.2	18.7		SM	A-2-5(0)	42	52

SIEVE inches size	PERCENT FINER		
.5	○	100.0	
.375	○	100.0	
GRAIN SIZE			
D ₆₀	○	0.145	
D ₃₀	○	0.0896	
D ₁₀	○		
COEFFICIENTS			
C _c	○		
C _u	○		

SIEVE number size	PERCENT FINER		
#4	○	98.9	
#10	○	95.9	
#20	○	94.4	
#40	○	93.6	
#60	○	92.5	
#140	○	40.6	
#200	○	18.7	

SOIL DESCRIPTION
 ○ SAND, mostly fine sand size quartz, little silt, trace coarse sand to medium sand size shell fragments, gray

REMARKS:
 ○ Original sample was tested for SG, % Solids, Moisture, Settling Rate, & GS. Additional sample was sent & tested for Atterberg Limits.

○ Source:

Sample No.: 307177
 Station ID: WCD03-6

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