

# **APPENDIX B**

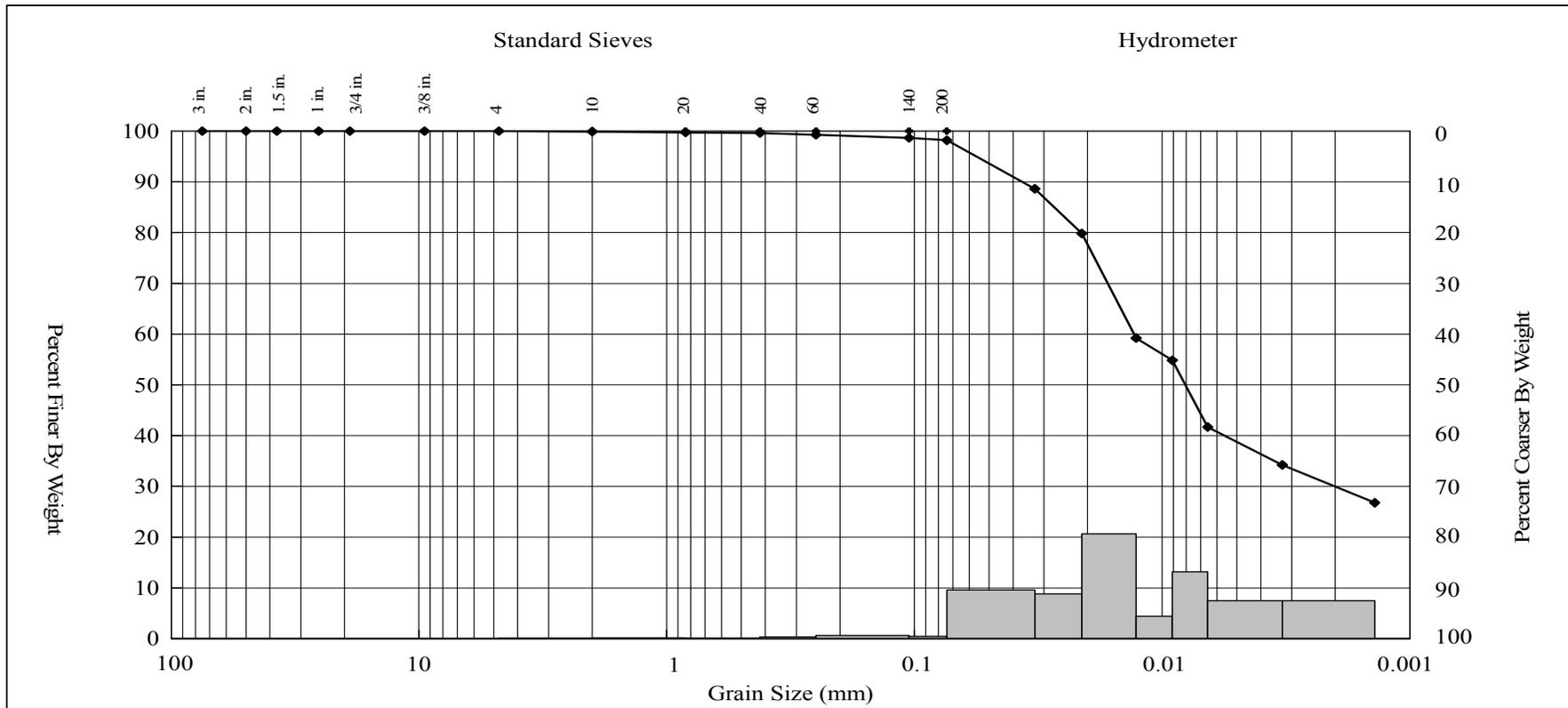
## Grain Size and TOC Data

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Deployment No. 1 and  
Surface Sampling Event No. 1

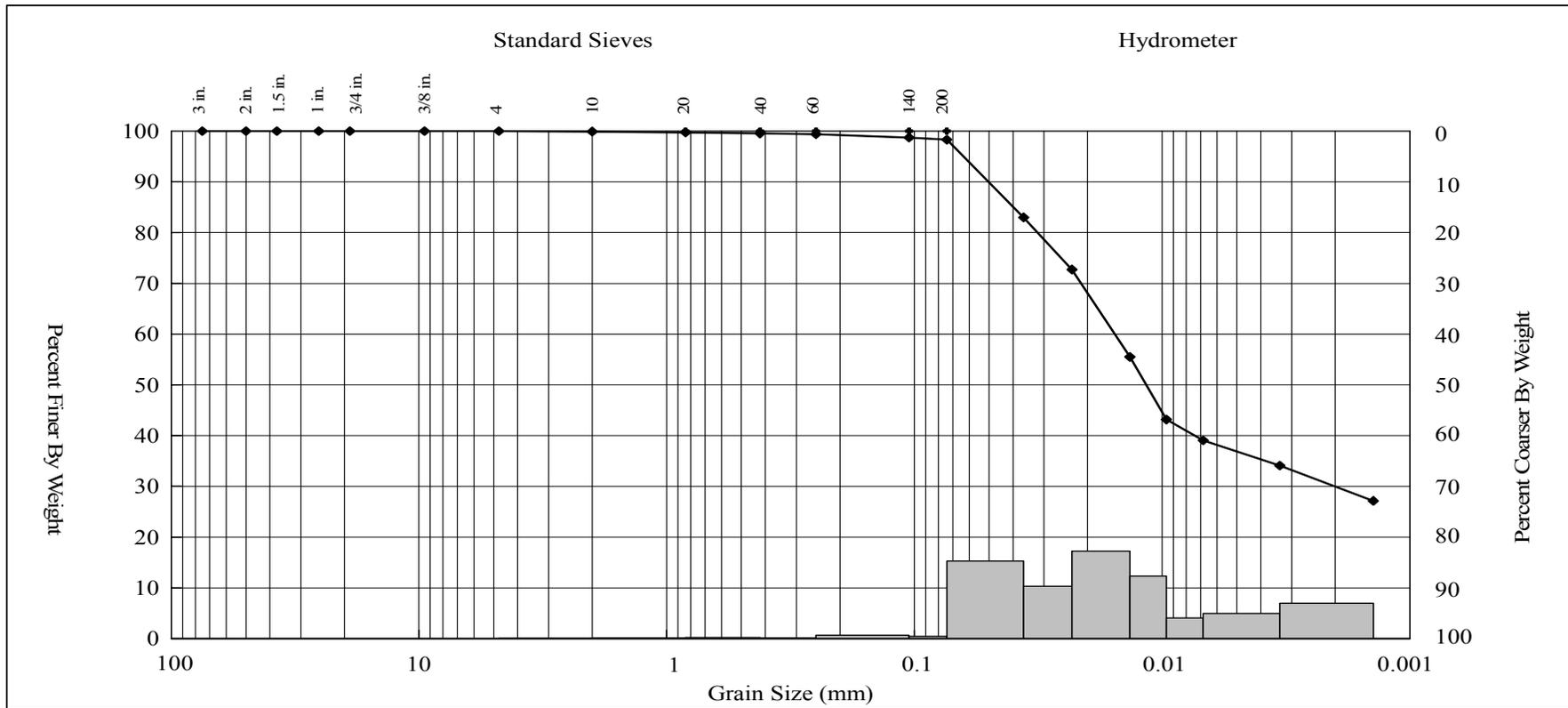
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## GEOTECHNICAL RESULTS



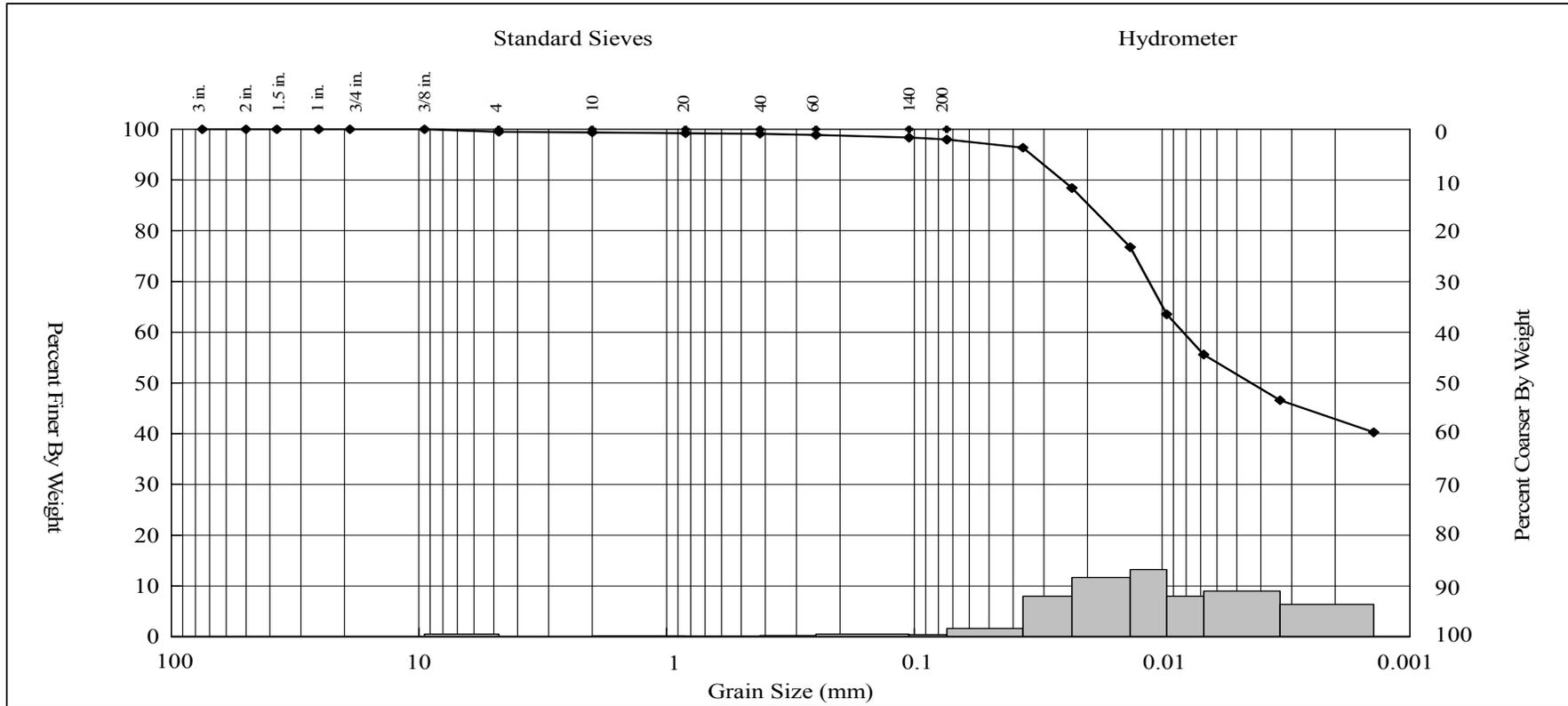
Gravel (%)	Sand (%)					Fines (%)							
	Coarse	Medium	Fine			Silt	Clay						
0.00	0.13	0.29	1.39			60.04	38.15					Client: Battelle	
												Client Project Title: New Bedford Harbor	
												Client Project Number: G606422-DUXCHEM	
												AMS Project Number: 07-137	
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>		Date Sampled: 10/31/2007	
224												Date Analyzed: 12/7/2007	
<b>Material Description</b>												Matrix, Method: Sediment, ASTM D 422	
Elastic Silt ("MH"), black (2.5 N)												Client Sample ID: Q0719	
												AMS Sample ID: 29271	
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

## GEOTECHNICAL RESULTS



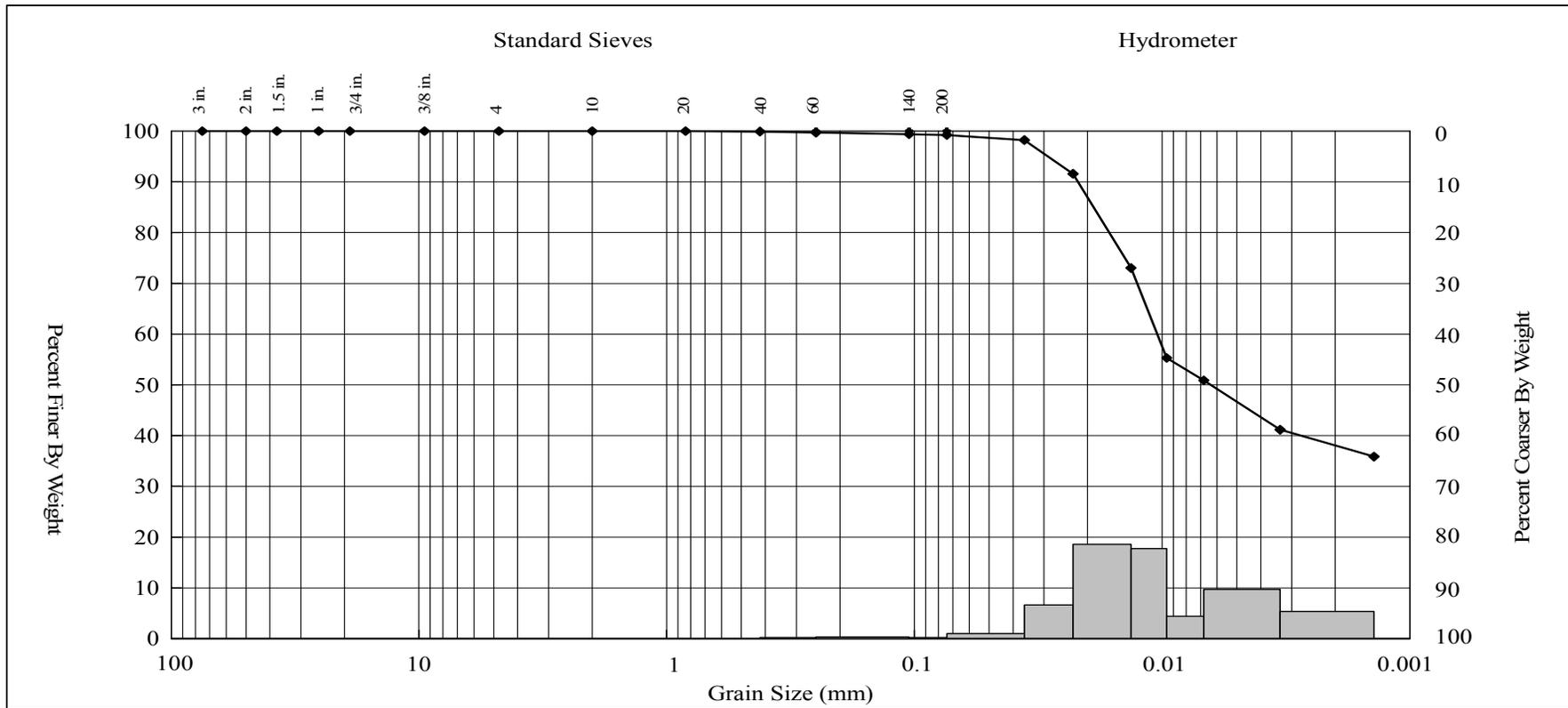
Gravel (%)	Sand (%)			Fines (%)							
	Coarse	Medium	Fine	Silt	Clay						
0.00	0.12	0.37	1.24	61.82	36.45						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client: Battelle
224											Client Project Title: New Bedford Harbor
<b>Material Description</b>											Client Project Number: G606422-DUXCHEM
Elastic Silt ("MH"), black (2.5 N)											AMS Project Number: 07-137
											Date Sampled: 10/31/2007
											Date Analyzed: 12/7/2007
											Matrix, Method: Sediment, ASTM D 422
											<b>Client Sample ID:</b> Q0719
											<b>AMS Sample ID:</b> 29271-2
<b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director					ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956

## GEOTECHNICAL RESULTS



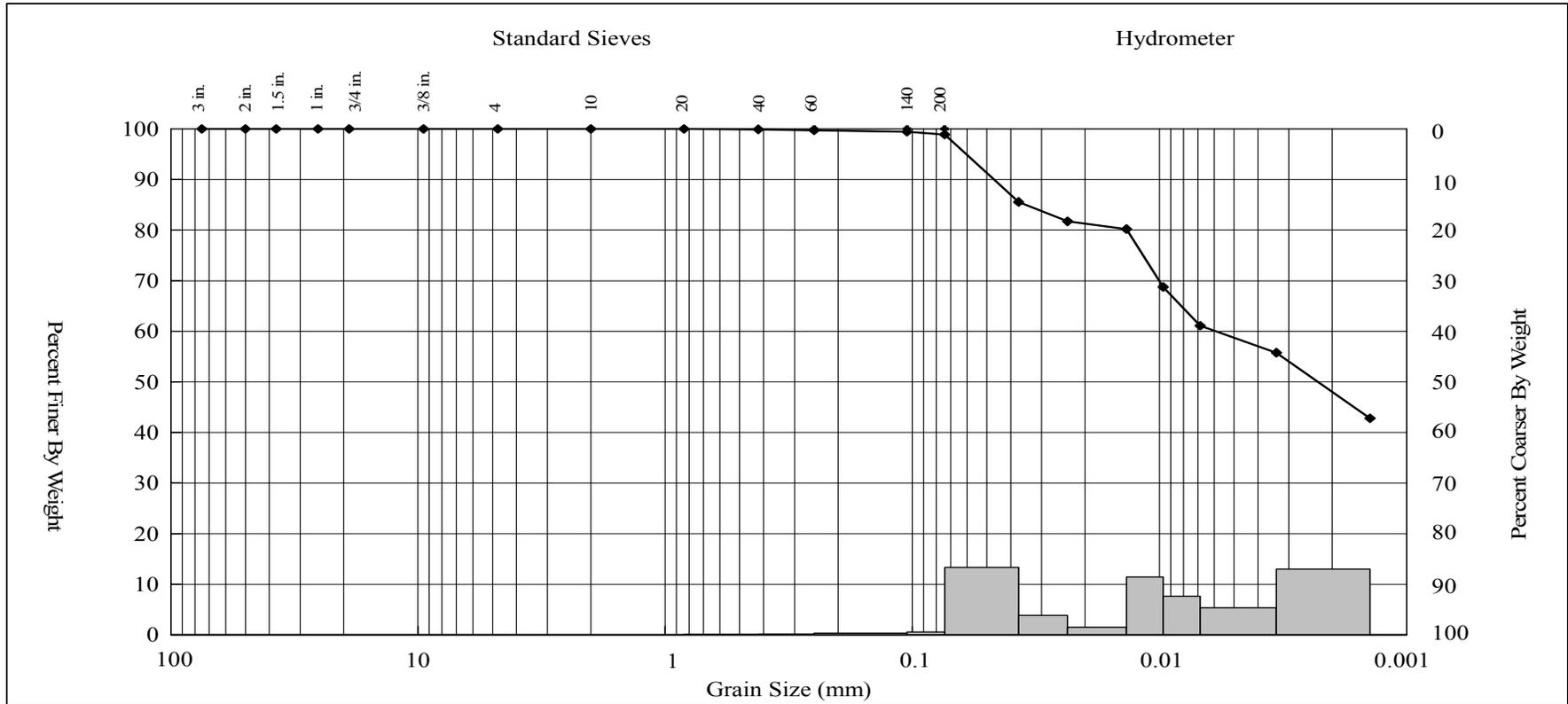
Gravel (%)	Sand (%)					Fines (%)							
	Coarse	Medium	Fine			Silt	Clay			Client:	Battelle		
0.53	0.08	0.29	1.14			47.07	50.89			Client Project Title:	New Bedford Harbor		
												Client Project Number:	G606422-DUXCHEM
												AMS Project Number:	07-137
												Date Sampled:	10/31/2007
												Date Analyzed:	12/7/2007
												Matrix, Method:	Sediment, ASTM D 422
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>			
285											<b>Client Sample ID:</b>	Q0721	
												<b>AMS Sample ID:</b>	29272
Material Description													
Lean Clay ("CL"), black (2.5 N)													
<b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> <hr style="width: 50%; margin: auto;"/> AMS, Inc. Technical Director						ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

## GEOTECHNICAL RESULTS



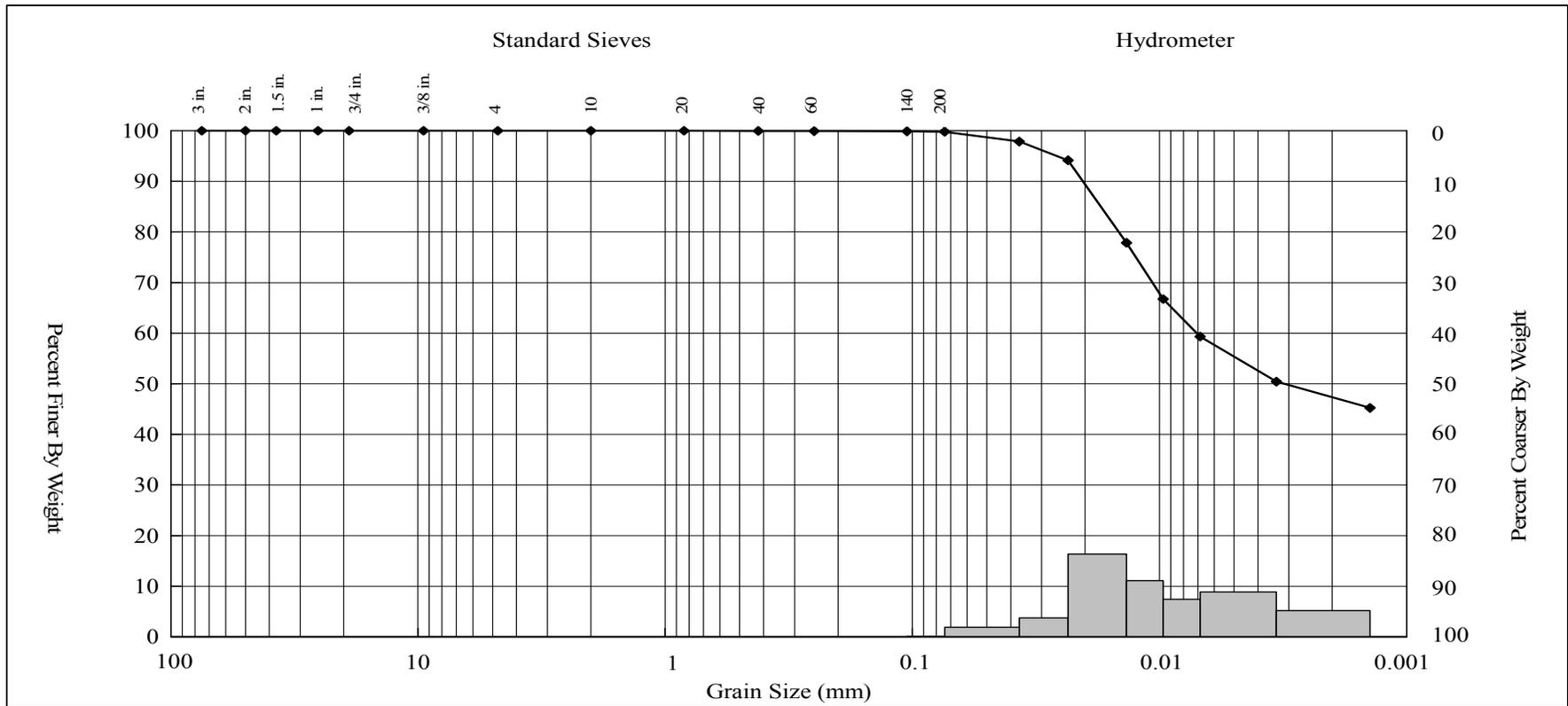
Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.11	0.68	53.38	45.83	Client Project Title: New Bedford Harbor						
						Client Project Number: G606422-DUXCHEM						
						AMS Project Number: 07-137						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled: 10/31/2007	
261											Date Analyzed: 12/7/2007	
<b>Material Description</b>											Matrix, Method: Sediment, ASTM D 422	
Elastic Silt ("MH"), black (2.5 N)											<b>Client Sample ID:</b> Q0723	
											<b>AMS Sample ID:</b> 29273	
<b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax				These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.						ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956		
				<i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director								

## GEOTECHNICAL RESULTS



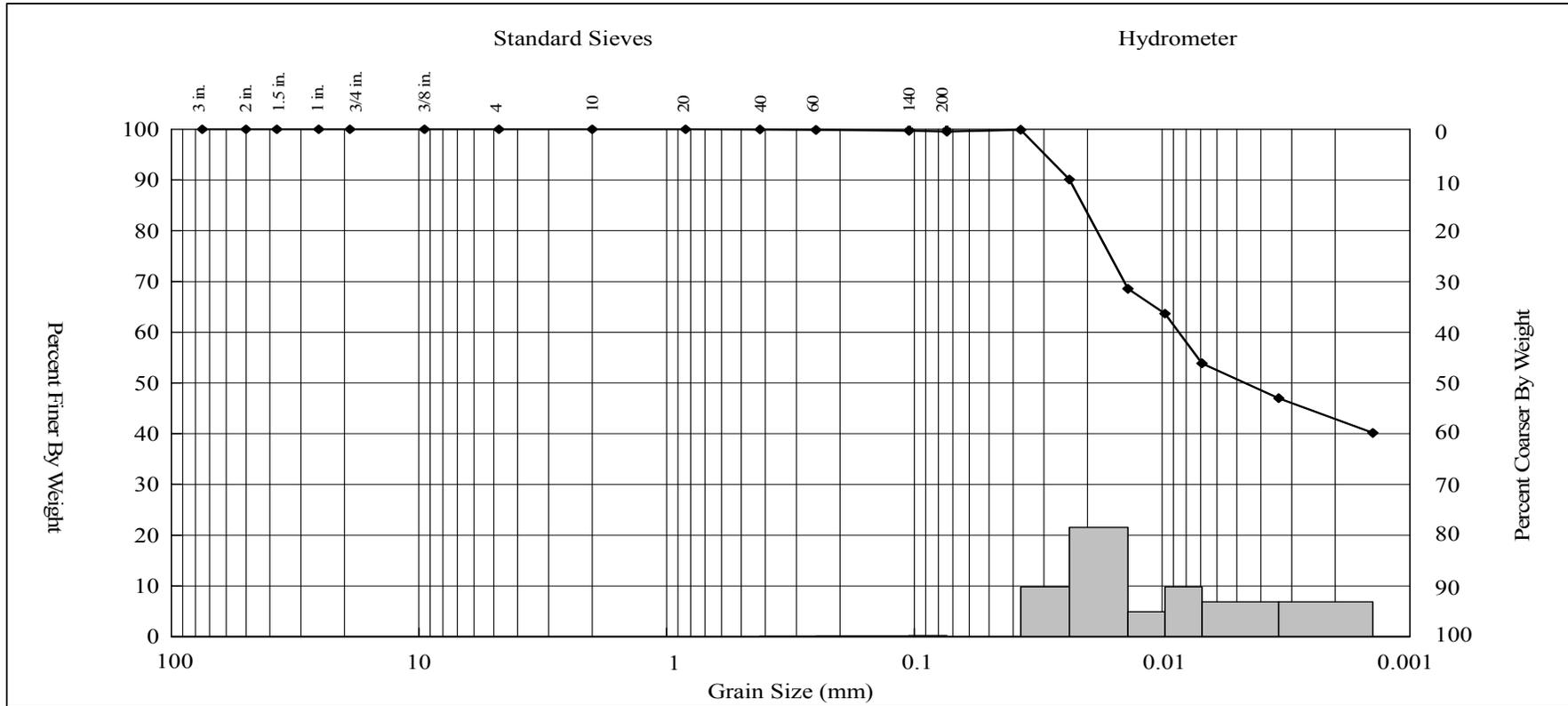
Gravel (%)	Sand (%)					Fines (%)										
	Coarse	Medium	Fine						Silt	Clay	Client:	Battelle				
0.00	0.00	0.12	1.01						40.61	58.26	Client Project Title:	New Bedford Harbor				
											Client Project Number:	G606422-DUXCHEM				
											AMS Project Number:	07-137				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	10/31/2007				
283											Date Analyzed:	12/7/2007				
<b>Material Description</b>																
Lean Clay ("CL"), black (2.5 N)											Client Sample ID:	Q0724				
											AMS Sample ID:	29274				
<b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax				These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.					<i>K.S. Davis, P.G.</i> <hr style="width: 100%;"/> AMS, Inc. Technical Director				ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956			

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)					Fines (%)					Client:	Battelle		
	Coarse	Medium	Fine			Silt	Clay				Client Project Title:	New Bedford Harbor		
0.00	0.00	0.06	0.20	45.16	54.58						Client Project Number:	G606422-DUXCHEM		
											AMS Project Number:	07-137		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	10/31/2007		
301											Date Analyzed:	12/7/2007		
Material Description													Matrix, Method:	Sediment, ASTM D 422
Lean Clay ("CL"), black (2.5 N)											Client Sample ID:	Q0725		
											AMS Sample ID:	29275		
<b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax					These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.					<i>K.S. Davis, P.G.</i> <hr style="width: 100%;"/> AMS, Inc. Technical Director			ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)					Fines (%)					
	Coarse	Medium	Fine								
0.00	0.00	0.05	0.43	Silt	Clay						Client: Battelle
				49.37	50.15						Client Project Title: New Bedford Harbor
									Client Project Number: G606422-DUXCHEM		
									AMS Project Number: 07-137		
									Date Sampled: 10/31/2007		
									Date Analyzed: 12/7/2007		
									Matrix, Method: Sediment, ASTM D 422		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	
293											Client Sample ID: Q0726
<b>Material Description</b>											AMS Sample ID: 29276
Lean Clay ("CL"), black (2.5 N)											



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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K.S. Davis, P.G.*

AMS, Inc. Technical Director



## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor  
 Project Number: G606422-DUXCHEM  
 Client Sample ID: Q0719  
 AMS Sample ID: 29271

AMS Project Number: 07-137  
 Date Sampled: 10/31/2007  
 Date Analyzed: 12/7/2007  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 120707-01G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.13	0.12	8.00		≤ 25
0.425	No. 40	Medium Sand	0.29	0.37	24.24		≤ 25
0.074	No. 200	Fine Sand	1.39	1.24	11.41		≤ 25
<0.074 - 0.005	Hydrometer	Silt	60.04	61.82	2.92		≤ 25
<0.005	Hydrometer	Clay	38.15	36.45	4.56		≤ 25

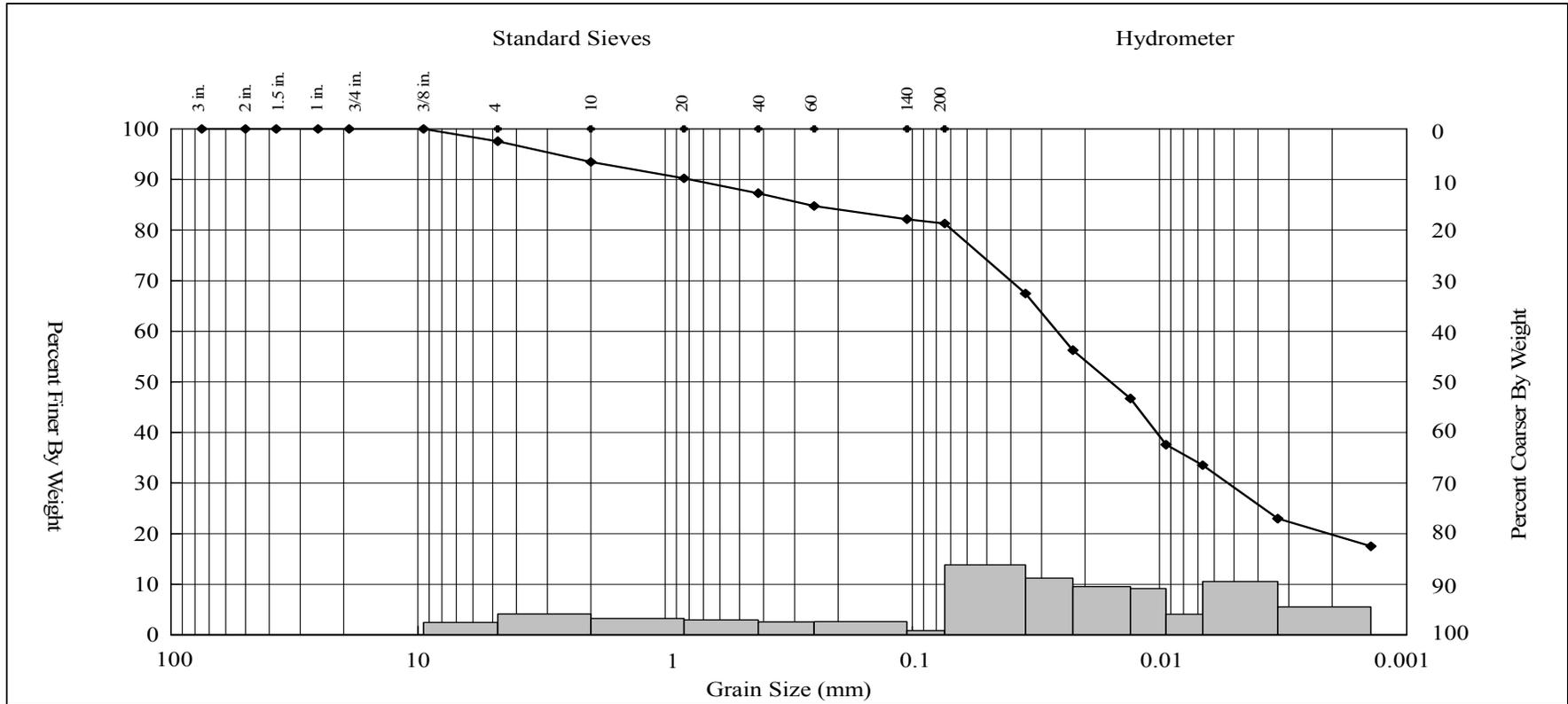
**Samples in Batch:** 29271 29273 29275 29280 29282 29355 29360 29365 29372 29376  
 29272 29274 29276 29281 29353 29357 29364 29371 29375 29379

**Qualifiers:**  
 Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit, and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

	<p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="margin-top: 10px;"><i>K.S. Davis, P.G.</i></p> <hr style="width: 20%; margin: 0 auto;"/> <p>AMS, Inc. Technical Director</p>	
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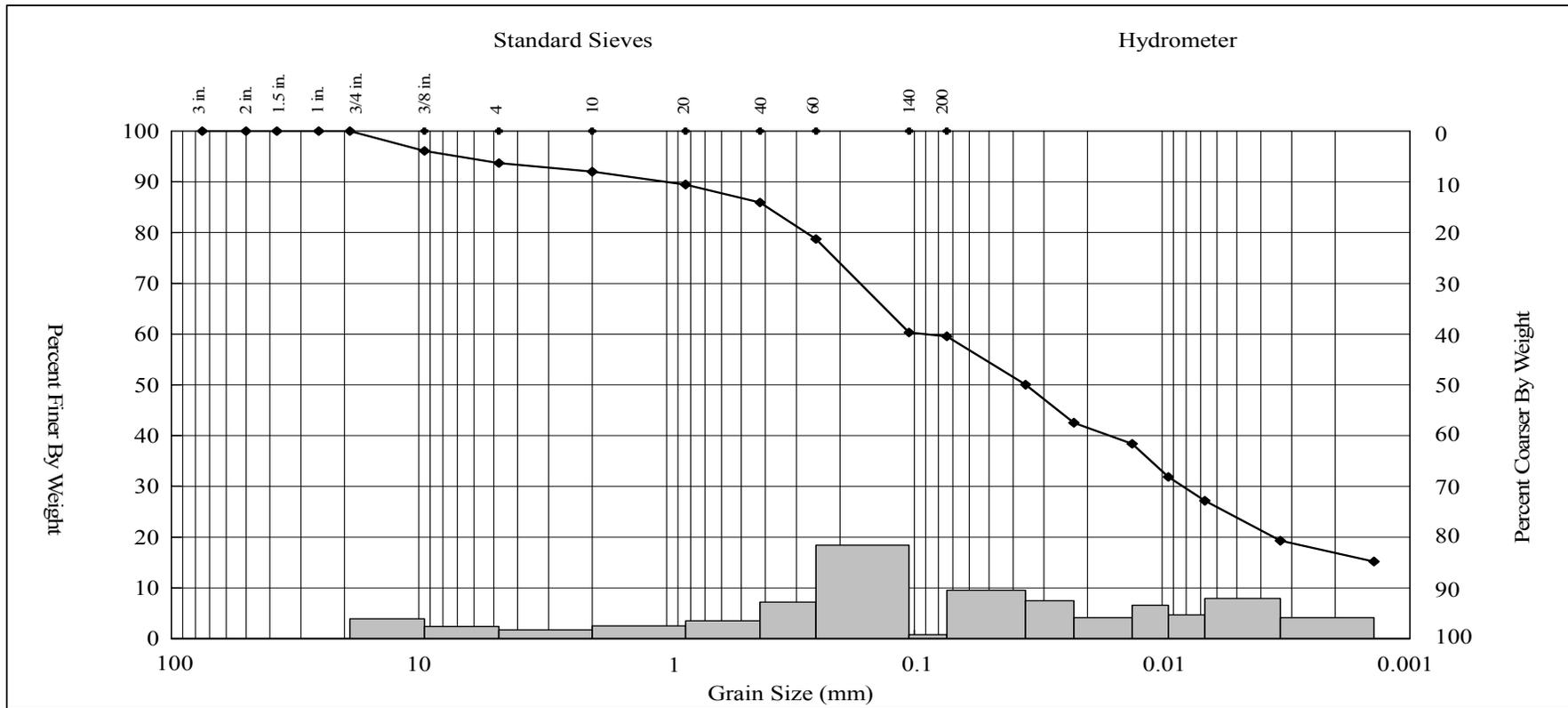
## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:		Battelle		
	Coarse	Medium	Fine	Silt	Clay	Client Project Title:		New Bedford Harbor 2007 WQM		
2.45	4.11	6.14	6.02	53.06	28.22	Client Project Number:		G606422 DUXCHEM		
						AMS Project Number:		07-141		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
185										
Material Description										
Elastic Silt with Sand ("MH"), black (N 2.5)						Client Sample ID:		Q0930 (SS-ST04-111207)		
						AMS Sample ID:		29318		
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director					 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956		



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)							
	Coarse	Medium	Fine	Silt	Clay						
6.30	1.72	6.06	26.36	36.41	23.15						
	<b>Material Description</b>										
	Sandy Elastic Silt ("MH"), black (N 2.5)										
						Client:	Battelle				
						Client Project Title:	New Bedford Harbor 2007 WQM				
						Client Project Number:	G606422 DUXCHEM				
						AMS Project Number:	07-141				
						Date Sampled:	11/12/2007				
						Date Analyzed:	12/7/2007				
						Matrix, Method:	Sediment, ASTM D 422				
						<b>Client Sample ID:</b>	Q0932 (SS-ST02-111207)				
						<b>AMS Sample ID:</b>	29320				



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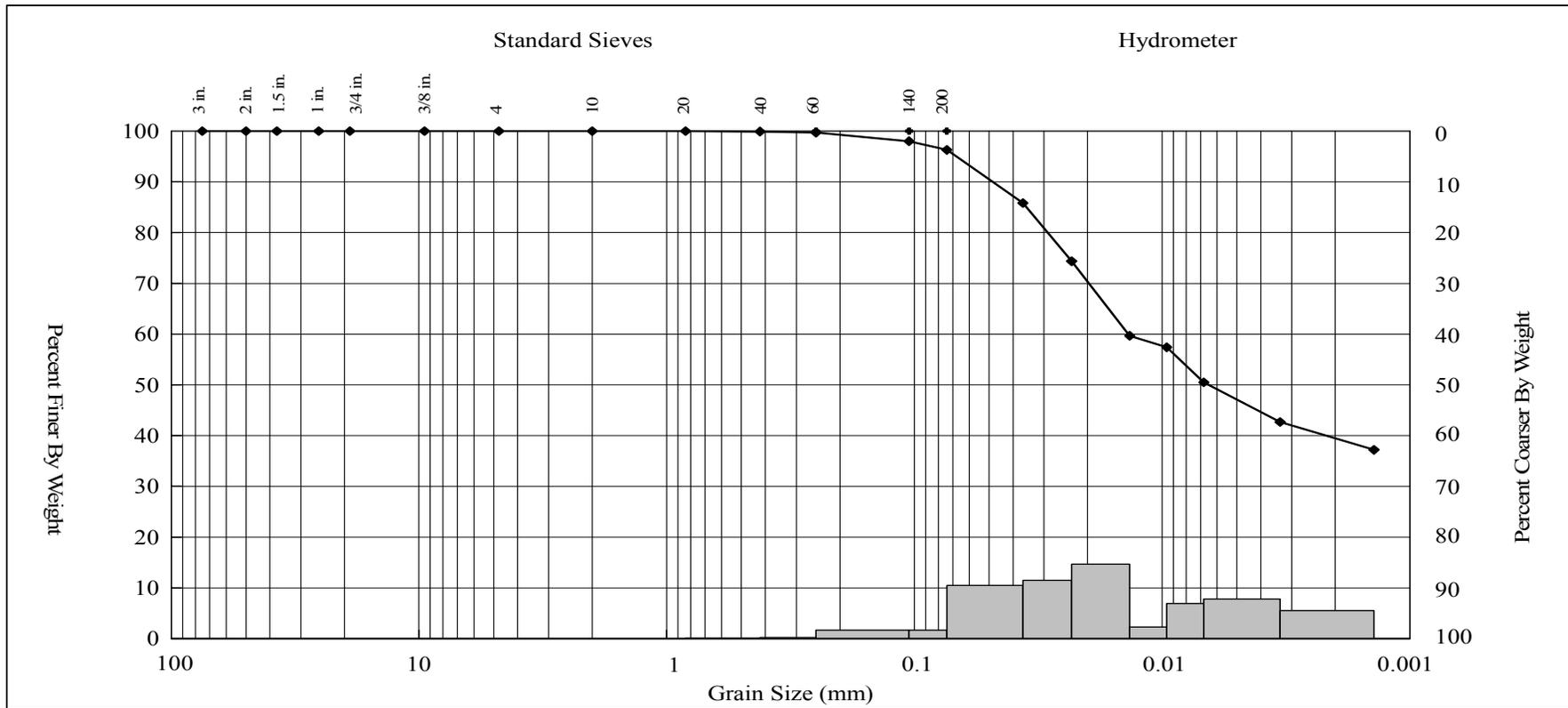
These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

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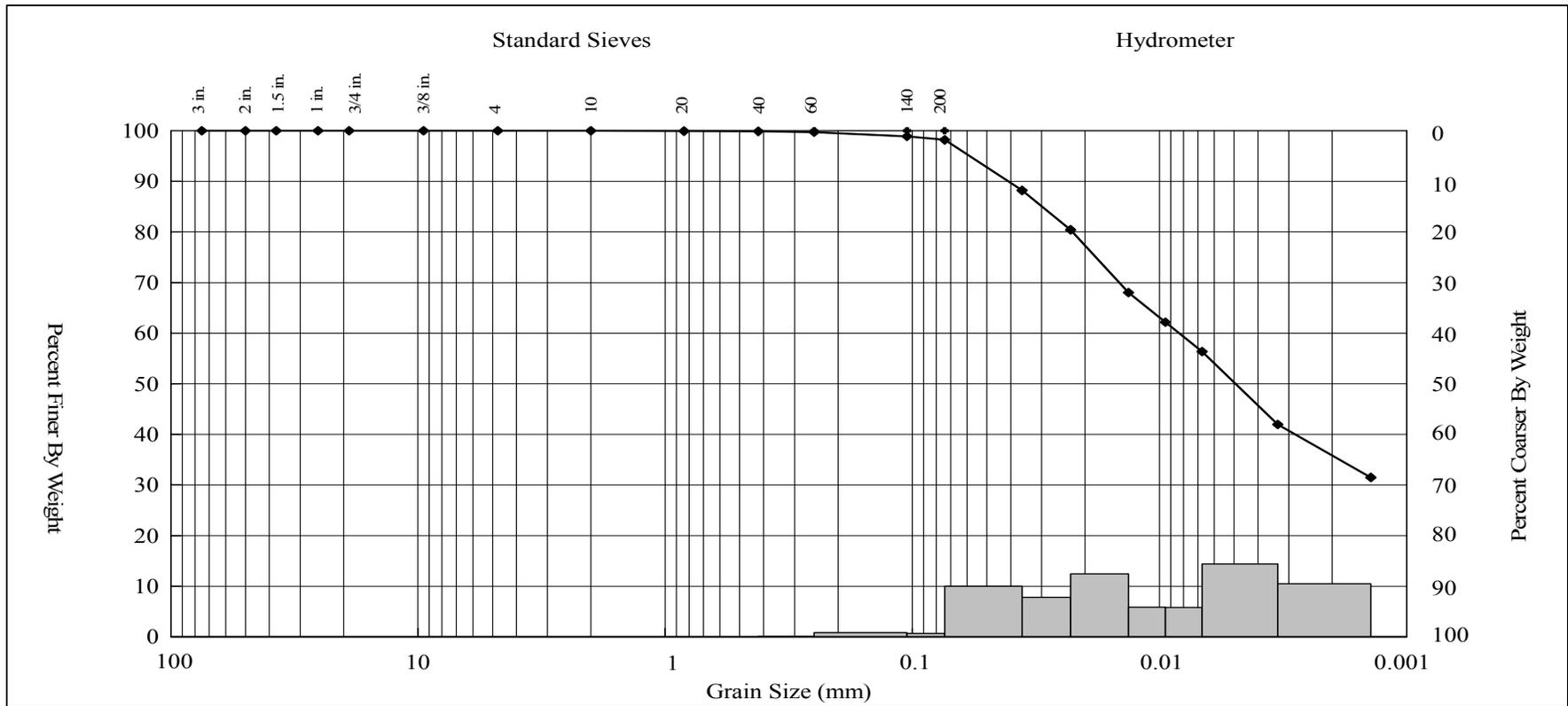


## GEOTECHNICAL RESULTS



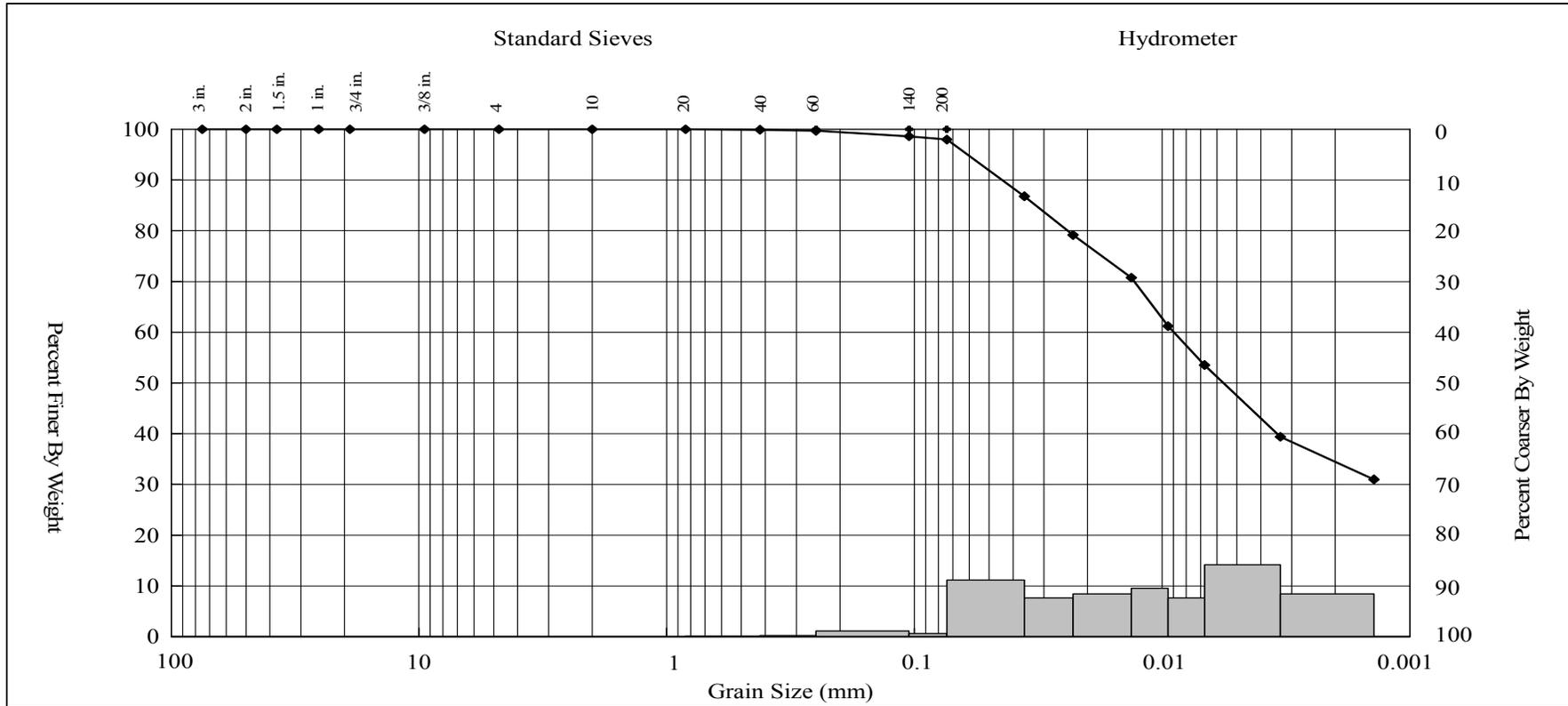
Gravel (%)	Sand (%)					Fines (%)					
	Coarse	Medium	Fine			Silt	Clay				
0.00	0.00	0.12	3.58			49.86	46.44				
	<b>Material Description</b>										
Elastic Silt ("MH"), black (N 1)											
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	
488											
											Client: Battelle Client Project Title: New Bedford Harbor 2007 WQM Client Project Number: G606422 DUXCHEM AMS Project Number: 07-141 Date Sampled: 11/12/2007 Date Analyzed: 12/7/2007 Matrix, Method: Sediment, ASTM D 422
											Client Sample ID: Q0933 (SS-ST01-111207) AMS Sample ID: 29321
APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director					ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956			

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:		Battelle						
	Coarse	Medium	Fine	Silt	Clay	Client Project Title:		New Bedford Harbor 2007 WQM						
0.00	0.00	0.16	1.64	49.17	49.03	Client Project Number:		G606422 DUXCHEM						
						AMS Project Number:		07-141						
						Date Sampled:		11/12/2007						
						Date Analyzed:		12/7/2007						
						Matrix, Method:		Sediment, ASTM D 422						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID:		Q0934 (SS-ST01-111207-DUP)	
318											AMS Sample ID:		29322	
<b>Material Description</b>														
Elastic Silt ("MH"), black (N 2.5)														
<b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax					These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director					ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956				

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:		Battelle			
	Coarse	Medium	Fine	Silt	Clay	Client Project Title:		New Bedford Harbor 2007 WQM			
0.00	0.00	0.13	1.93	51.64	46.30	Client Project Number:		G606422 DUXCHEM			
						AMS Project Number:		07-141			
						Date Sampled:		11/12/2007			
						Date Analyzed:		12/7/2007			
						Matrix, Method:		Sediment, ASTM D 422			
						<b>Client Sample ID:</b>		Q0934 (SS-ST01-111207-DUP)			
						<b>AMS Sample ID:</b>		29322-2			
<b>Water Cont. (%)</b>											
	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	
318											
<b>Material Description</b>											
Elastic Silt ("MH"), black (N 2.5)											
<b>APPLIED MARINE SCIENCES, INC.</b>						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director					 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956
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## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor 2007 WQM  
 Project Number: G606422 DUXCHEM  
 Client Sample ID: Q0934 (SS-ST01-111207-DUP)  
 AMS Sample ID: 29322

AMS Project Number: 07-141  
 Date Sampled: 11/12/2007  
 Date Analyzed: 12/7/2007  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 120707-02G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.16	0.13	20.69		≤ 25
0.074	No. 200	Fine Sand	1.64	1.93	16.25		≤ 25
<0.074 - 0.005	Hydrometer	Silt	49.17	51.64	4.90		≤ 25
<0.005	Hydrometer	Clay	49.03	46.30	5.73		≤ 25

**Samples in Batch:** 29280 29282 29319 29321 29394 29402 29407 29417 29419 29421  
 29281 29318 29320 29322 29395 29403 29410 29418 29420 29422

**Qualifiers:**  
 Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit, and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

 <p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>K.S. Davis, P.G.</i></p> <hr style="width: 20%; margin: auto;"/> <p>AMS, Inc. Technical Director</p>	 <p><b>Laboratory No. E87956</b></p>
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# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-DUXCHEM  
Project Name: New Bedford Harbor  
Client Sample ID: Q0719 (ST-04-103107-2)  
AMS Sample ID: 29271

AMS Project Number: 07-137  
Date Sampled: 10/31/2007  
Date Received: 11/9/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	10.10	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director





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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-DUXCHEM  
Project Name: New Bedford Harbor  
Client Sample ID: Q0721 (ST-03-1203107-2)  
AMS Sample ID: 29272

AMS Project Number: 07-137  
Date Sampled: 10/31/2007  
Date Received: 11/9/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	10.14	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-DUXCHEM  
Project Name: New Bedford Harbor  
Client Sample ID: Q0723 (ST-02-103107-2)  
AMS Sample ID: 29273

AMS Project Number: 07-137  
Date Sampled: 10/31/2007  
Date Received: 11/9/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.36	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director





# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-DUXCHEM  
Project Name: New Bedford Harbor  
Client Sample ID: Q0724 (ST-01-103107-1)  
AMS Sample ID: 29274

AMS Project Number: 07-137  
Date Sampled: 10/31/2007  
Date Received: 11/9/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.41	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director





# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-DUXCHEM  
Project Name: New Bedford Harbor  
Client Sample ID: Q0725 (ST-01-103107-2)  
AMS Sample ID: 29275

AMS Project Number: 07-137  
Date Sampled: 10/31/2007  
Date Received: 11/9/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	14.40	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-DUXCHEM  
Project Name: New Bedford Harbor  
Client Sample ID: Q0726 (ST-01-103107-3)  
AMS Sample ID: 29276

AMS Project Number: 07-137  
Date Sampled: 10/31/2007  
Date Received: 11/9/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.75	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director





## TOC QUALITY CONTROL RESULTS

Client: Battelle  
 Project Number: G606422-DUXCHEM  
 Project Name: New Bedford Harbor  
 Matrix: Sediment  
 Method: EPA 9060A

AMS Project Number: 07-137  
 Date Analyzed: 12/13/2007  
 Batch ID: 121307-01T

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-01	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-01	3.16	3.23	2.19		0.01	0.03	≤ 5 RPD
ICCV-01	2.08	2.00	3.92		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
29271	10.10	10.21	1.08		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 29271 29274 29318 29321  
 29272 29275 29319 29322  
 29273 29276 29320

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

*KS Davis, P.G.*

AMS, Inc. Technical Director





# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-DUXCHEM  
Project Name: New Bedford Harbor

AMS Project Number: 07-137

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	07-141
Project Number:	New Bedford Harbor 2007 WQM	Date Sampled:	11/12/2007
Project Name:	G606422 DUXCHEM	Date Received:	11/15/2007
Client Sample ID:	Q0930 (SS-ST04-111207)		
AMS Sample ID:	29318		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	7.77	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director

1 of 7





# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number: 07-141
Project Number:	New Bedford Harbor 2007 WQM	Date Sampled: 11/12/2007
Project Name:	G606422 DUXCHEM	Date Received: 11/15/2007
Client Sample ID:	Q0931 (SS-ST03-111207)	
AMS Sample ID:	29319	

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	1.84	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: New Bedford Harbor 2007 WQM  
Project Name: G606422 DUXCHEM  
Client Sample ID: Q0932 (SS-ST02-111207)  
AMS Sample ID: 29320

AMS Project Number: 07-141  
Date Sampled: 11/12/2007  
Date Received: 11/15/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	7.91	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director





# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	07-141
Project Number:	New Bedford Harbor 2007 WQM	Date Sampled:	11/12/2007
Project Name:	G606422 DUXCHEM	Date Received:	11/15/2007
Client Sample ID:	Q0933 (SS-ST01-111207)		
AMS Sample ID:	29321		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	15.47	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: New Bedford Harbor 2007 WQM  
Project Name: G606422 DUXCHEM  
Client Sample ID: Q0934 (SS-ST01-111207-DUP)  
AMS Sample ID: 29322

AMS Project Number: 07-141  
Date Sampled: 11/12/2007  
Date Received: 11/15/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.25	%		0.01	0.03	EPA 9060A	Sediment	12/13/2007

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



## TOC QUALITY CONTROL RESULTS

Client: Battelle  
 Project Number: New Bedford Harbor 2007 WQM  
 Project Name: G606422 DUXCHEM  
 Matrix: Sediment  
 Method: EPA 9060A

AMS Project Number: 07-141  
 Date Analyzed: 12/13/2007  
 Batch ID: 121307-01T

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-01	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-01	3.16	3.23	2.19		0.01	0.03	≤ 5 RPD
ICCV-01	2.08	2.00	3.92		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
29322	12.25	15.04	20.45		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 29271 29274 29318 29321  
 29272 29275 29319 29322  
 29273 29276 29320

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

*KS Davis, P.G.*

AMS, Inc. Technical Director





# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## QUALITY CONTROL

Client: Battelle  
Project Number: New Bedford Harbor 2007 WQM  
Project Name: G606422 DUXCHEM

AMS Project Number: 07-141

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

TOC / Grain Size

Proj. No: **G-606422**  
Proj. Name: **Sediment Traps - NBH**

SAMPLERS: Signature  
*Michael P. [Signature]*

ANALYSIS REQUESTED →  
"NUMBER OF CONTAINERS"

DATE	TIME	BATTELLE ID	CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers
10/31/07	1411	Q0718	ST-04-103107-1	station 4 1 <sup>st</sup> sed trap deployment		✓						✓			1
	1411	Q0719	ST-04-103107-2	" 4		✓						✓			1
	1422	Q0720	ST-03-103107-1	" 3		✓						✓			1
	1422	Q0721	ST-03-103107-2	" 3		✓						✓			1
	1431	Q0722	ST-02-103107-1	" 2		✓						✓			1
	1431	Q0723	ST-02-103107-2	" 2		✓						✓			1
	1441	Q0724	ST-01-103107-1	" 1		✓						✓			1
	1441	Q0725	ST-01-103107-2	" 1		✓						✓			1
	1441	Q0726	ST-01-103107-3	" 1		✓						✓			1

Relinquished by: <b>Mike McKee</b>	Date/Time		Received by: <i>Jeanine P. Seyfert</i>	Date/Time	
	11/01/07	12:00		11/1/07	12:00
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:

Proj. No <b>G606422</b>	Proj. Name <b>New Bedford Harbor</b>
----------------------------	---

SAMPLERS: Signature <b>Michael Walsh</b>				ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers
---	--	--	--	--	------	-----	--------------------	-----	-----	-----	--------	-------	-----------	-----------	-------------------------------

DATE	TIME	Client ID BATTELLE ID	LIMS ID -CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers
11/12/2007	0950	SS-ST04-111207	Q0930	Surface Sediment from Sediment Trap keatrans		✓									1
11/12/2007	1016	SS-ST03-111207	Q0931	" "		✓									1
11/12/2007	1051	SS-ST02-111207	Q0932	" "		✓									1
11/12/2007	1105	SS-ST01-111207	Q0933	1 of 2		✓									1
11/12/2007	1116	SS-ST01-111207-DUP	2 of 2	" " Q0934		✓									1

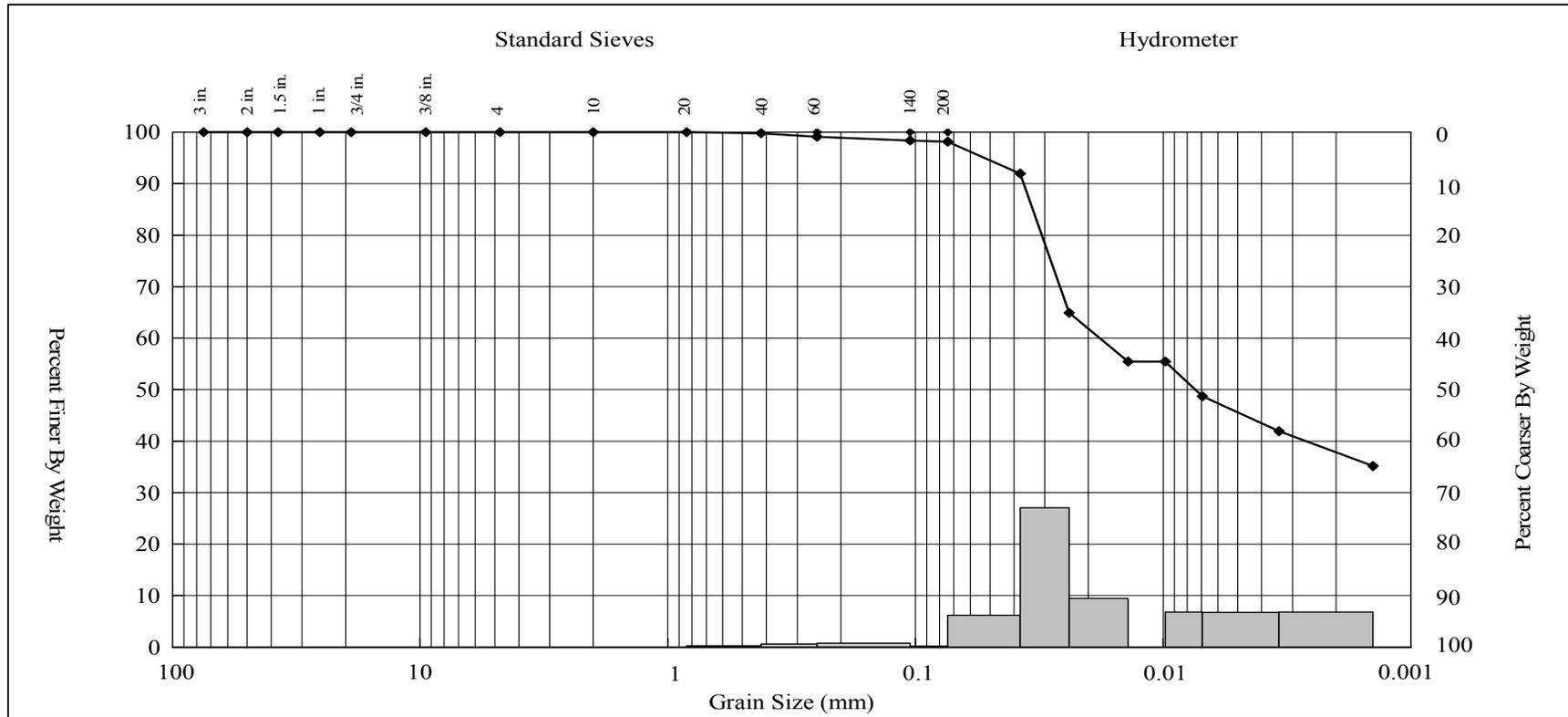
Relinquished by: <b>Michael Walsh</b>	Date/Time <b>11/12/2007 1545</b>		Received by: <b>Jeannine Siefert</b>	Date/Time <b>11-12-07 15:45</b>	
	Date/Time			Date/Time	

Comments:

## Deployment No. 2

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)								
	Coarse	Medium	Fine	Silt		Clay						
0.00	0.00	0.24	1.60	53.17		44.99						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>		
440												
Material Description												
Elastic Silt ("MH"), black (SY 2.5/1)												
										Client Project Title: New Bedford Harbor WQM		
										Client Project Number: G606422		
										AMS Project Number: 07-159		
										Date Sampled: 12/10/2007		
										Date Analyzed: 1/8/2008		
										Matrix: Sediment		
										Method: ASTM D 422		
										Client Sample ID: Q1173 (ST-01-121007-1)		
										AMS Sample ID: 29596		



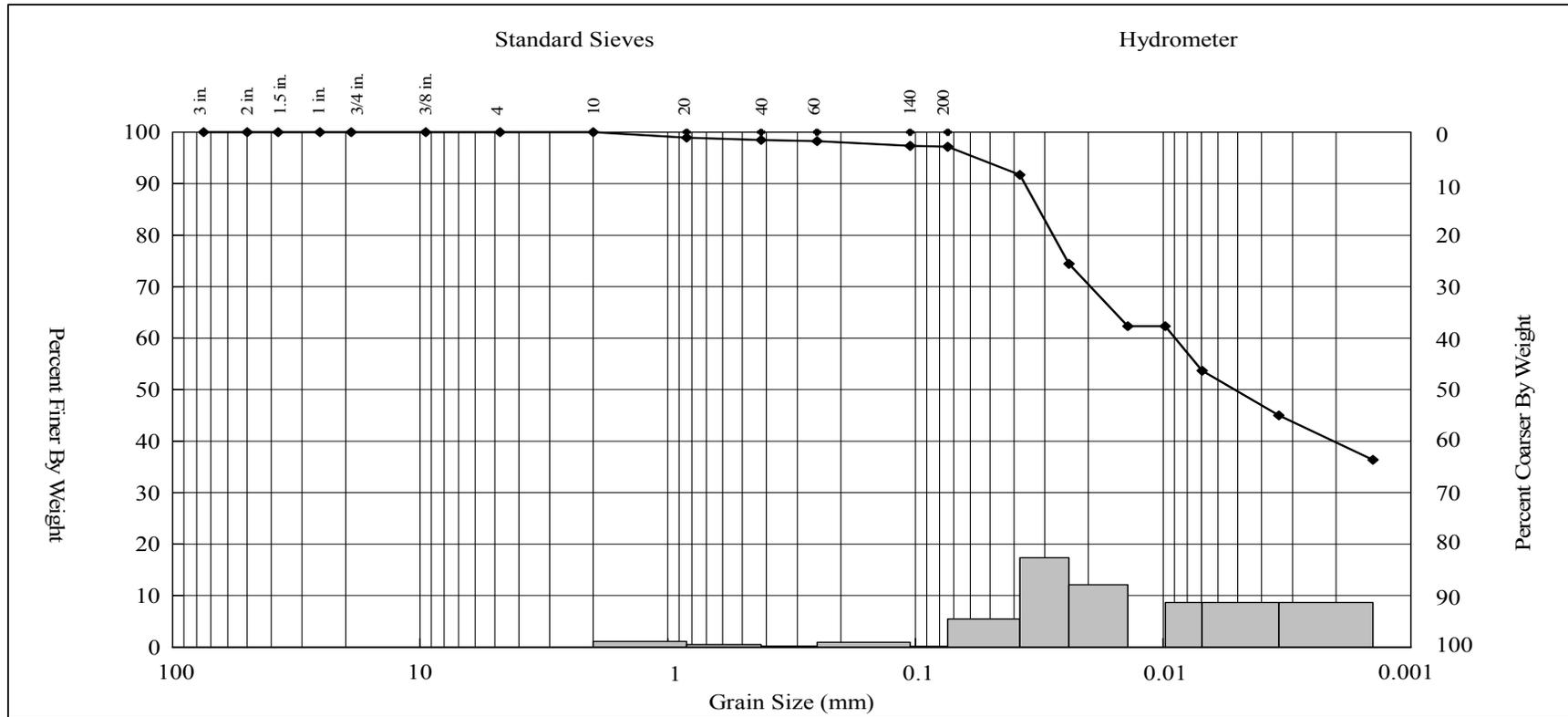
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K.S. Davis, P.G.*  
 \_\_\_\_\_  
 AMS, Inc. Technical Director



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor WQM		Client Project Number: G606422				
	Coarse	Medium	Fine	Silt	Clay							
0.00	0.00	1.53	1.32	48.27	48.88	AMS Project Number: 07-159		Date Sampled: 12/10/2007				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Analyzed: 1/8/2008	
	267										Matrix: Sediment	
<b>Material Description</b>										Method: ASTM D 422		
Lean Clay ("CL"), black (SY 2.5/1)										Client Sample ID: Q1174 (ST-01-121007-2)		
										AMS Sample ID: 29597		



**APPLIED MARINE SCIENCES, INC.**  
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

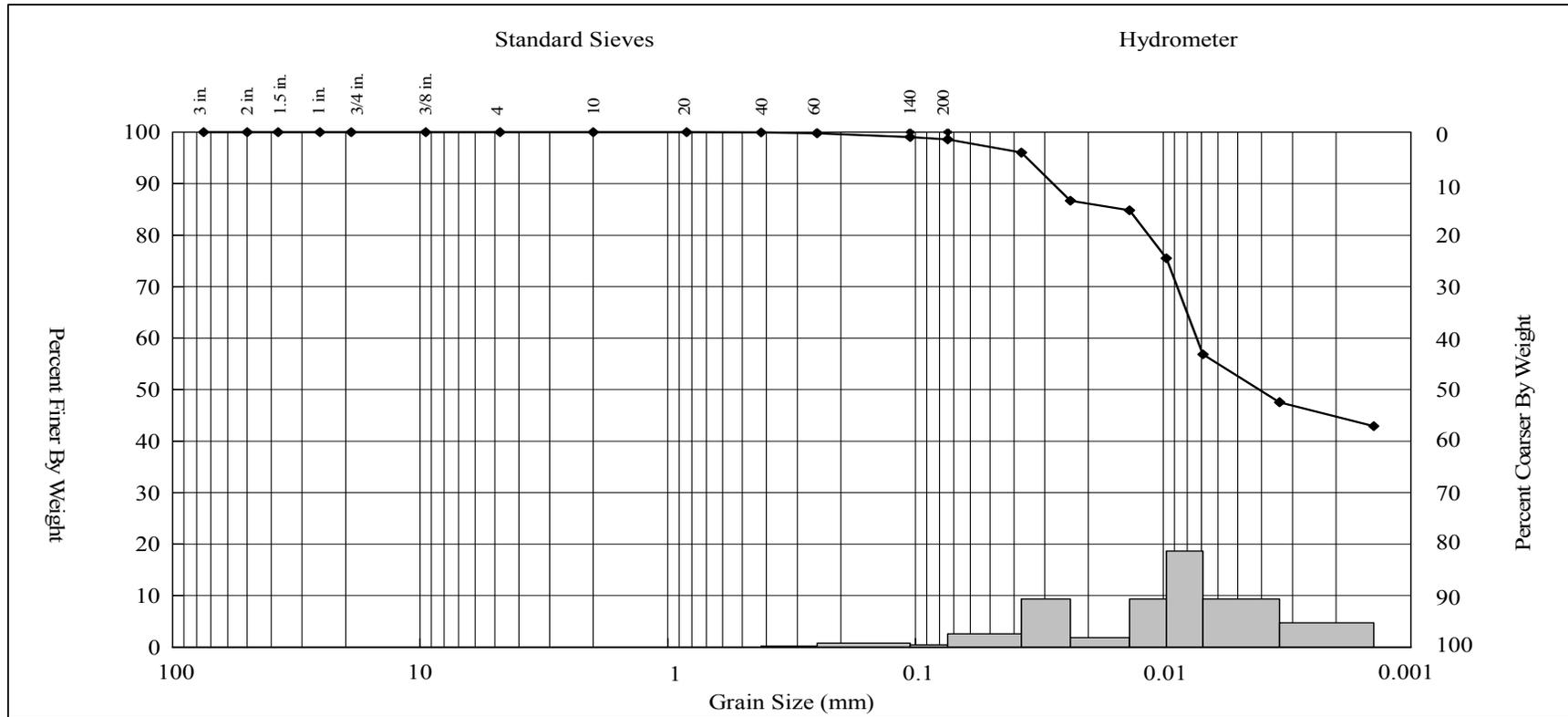
*K.S. Davis, P.G.*

AMS, Inc. Technical Director





## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor WQM						
	Coarse	Medium	Fine	Silt	Clay							
0.00	0.00	0.06	1.34	46.77	51.83	Client Project Number: G606422						
						AMS Project Number: 07-159						
						Date Sampled: 12/10/2007						
						Date Analyzed: 1/8/2008						
						Matrix: Sediment						
						Method: ASTM D 422						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: Q1177 (ST-02-121007-2)	
235												
<b>Material Description</b>												
Lean Clay ("CL"), black (SY 2.5/1)												
						AMS Sample ID: 29599						



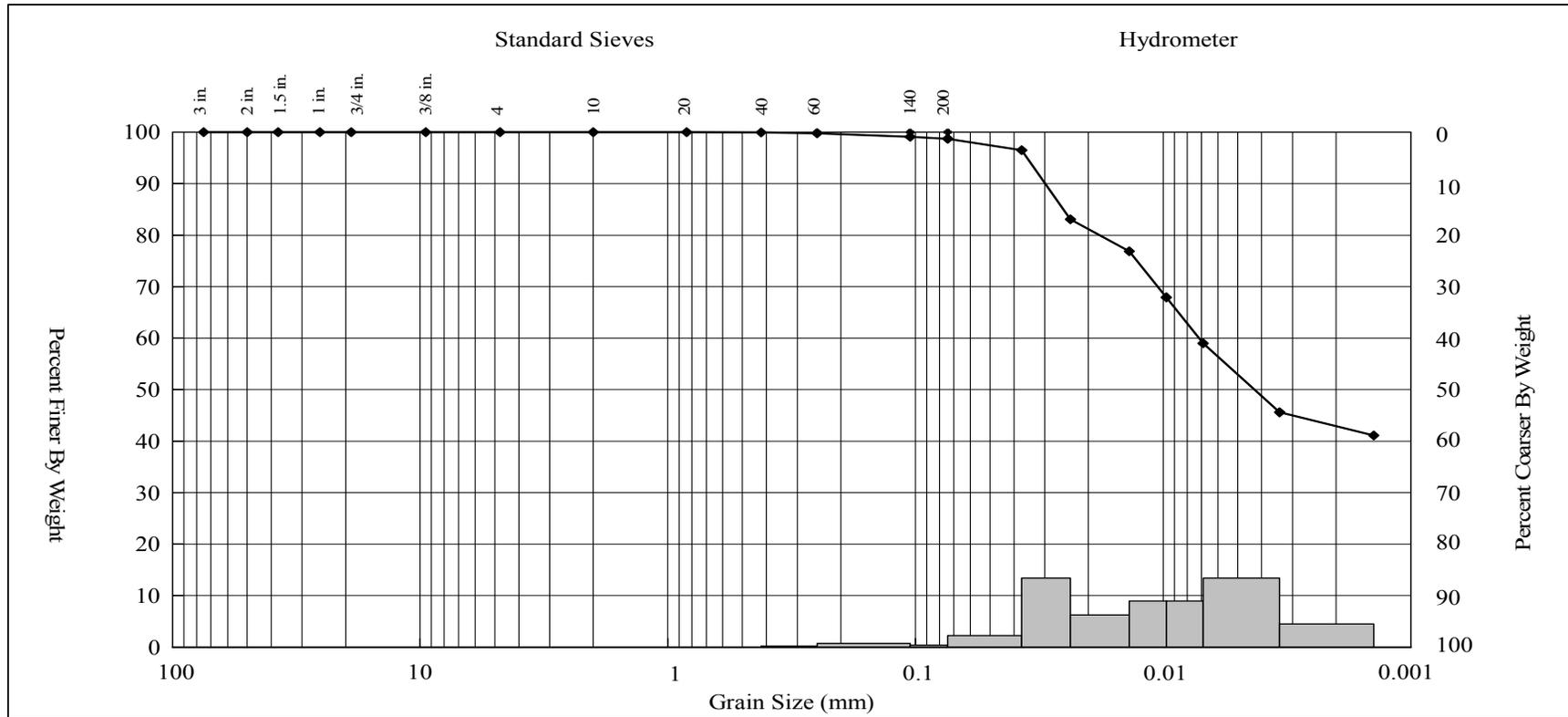
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K.S. Davis, P.G.*  
 \_\_\_\_\_  
 AMS, Inc. Technical Director



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)						
	Coarse	Medium	Fine	Silt	Clay					
0.00	0.00	0.05	1.22	46.98	51.75					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
235										
Material Description										
Lean Clay ("CL"), black (SY 2.5/1)										
									Client Project Title: New Bedford Harbor WQM	
									Client Project Number: G606422	
									AMS Project Number: 07-159	
									Date Sampled: 12/10/2007	
									Date Analyzed: 1/8/2008	
									Matrix: Sediment	
									Method: ASTM D 422	
									Client Sample ID: Q1177 (ST-02-121007-2)	
									AMS Sample ID: 29599-2	



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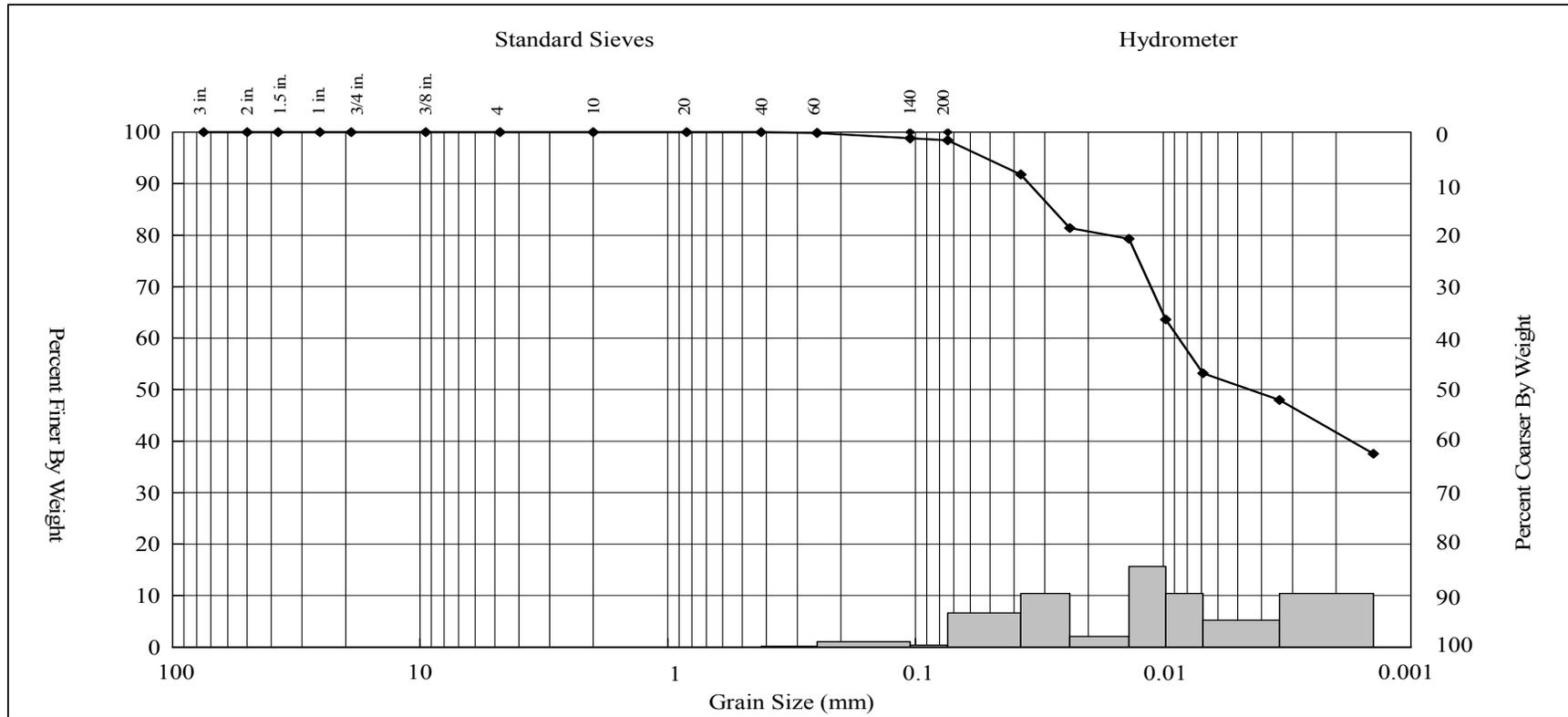
These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K.S. Davis, P.G.*

AMS, Inc. Technical Director



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor WQM						
	Coarse	Medium	Fine	Silt	Clay							
0.00	0.00	0.02	1.58	48.02	50.38	Client Project Number: G606422						
						AMS Project Number: 07-159						
						Date Sampled: 12/10/2007						
						Date Analyzed: 1/8/2008						
						Matrix: Sediment						
						Method: ASTM D 422						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: Q1179 (ST-03-121007-2)	
367												
<b>Material Description</b>												
Lean Clay ("CL"), black (SY 2.5/1)												



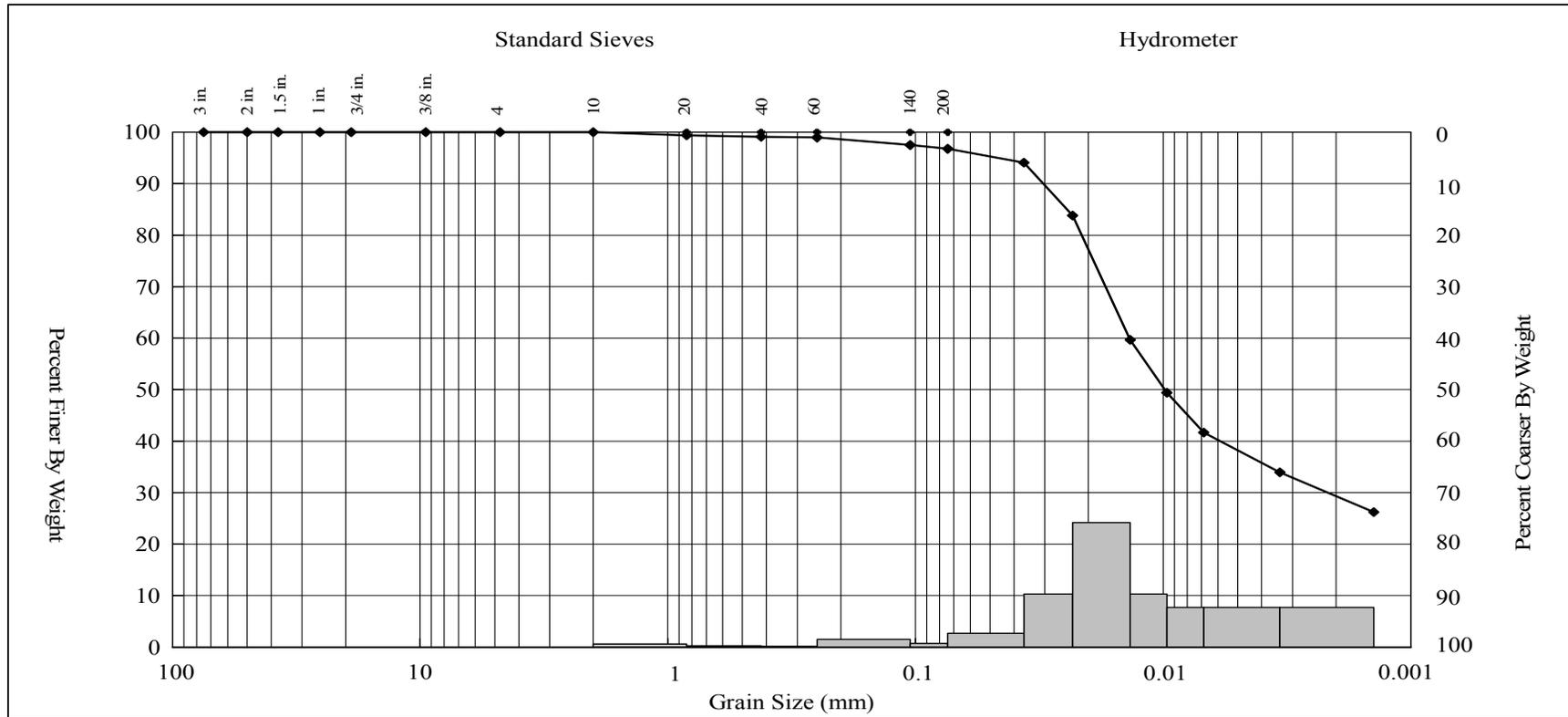
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*K.S. Davis, P.G.*  
 \_\_\_\_\_  
 AMS, Inc. Technical Director



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)						Client Project Title:	New Bedford Harbor WQM	
	Coarse	Medium	Fine	Silt		Clay				Client Project Number:	G606422	
0.00	0.00	0.88	2.36	59.23						AMS Project Number:	07-159	
											Date Sampled:	12/10/2007
											Date Analyzed:	1/8/2008
											Matrix:	Sediment
											Method:	ASTM D 422
<b>Material Description</b>												
Elastic Silt ("MH"), black (SY 2.5/1)												
										<b>Client Sample ID:</b>	Q1181 (ST-04-121007-2)	
										<b>AMS Sample ID:</b>	29601	

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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K.S. Davis, P.G.*  
 \_\_\_\_\_  
 AMS, Inc. Technical Director

**ACCREDITED IN ACCORDANCE WITH**  
**nelac**  
 LABORATORY NO. E87956

## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor WQM  
 Project Number: G606422  
 Client Sample ID: Q1177 (ST-02-121007-2)  
 AMS Sample ID: 29599

AMS Project Number: 07-159  
 Date Sampled: 12/10/2007  
 Date Analyzed: 1/8/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 010808-01G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.06	0.05	0.00		≤ 25
0.074	No. 200	Fine Sand	1.34	1.22	9.37		≤ 25
<0.074 - 0.005	Hydrometer	Silt	46.77	46.98	0.45		≤ 25
<0.005	Hydrometer	Clay	51.83	51.75	0.15		≤ 25

**Samples in Batch:** 29596 29598 29600  
 29597 29599 29601

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

	<p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="margin-top: 10px;"><i>K.S. Davis, P.G.</i></p> <hr style="width: 20%; margin: 0 auto;"/> <p>AMS, Inc. Technical Director</p>	
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# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422  
Project Name: New Bedford Harbor WQM  
Client Sample ID: Q1173 (ST-01-121007-1)  
AMS Sample ID: 29596

AMS Project Number: 07-159  
Date Sampled: 12/10/2007  
Date Received: 12/28/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.85	%		0.01	0.03	EPA 9060A	Sediment	1/15/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director





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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422  
Project Name: New Bedford Harbor WQM  
Client Sample ID: Q1174 (ST-01-121007-2)  
AMS Sample ID: 29597

AMS Project Number: 07-159  
Date Sampled: 12/10/2007  
Date Received: 12/28/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.14	%		0.01	0.03	EPA 9060A	Sediment	1/15/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422  
Project Name: New Bedford Harbor WQM  
Client Sample ID: Q1175 (ST-01-121007-3)  
AMS Sample ID: 29598

AMS Project Number: 07-159  
Date Sampled: 12/10/2007  
Date Received: 12/28/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.50	%		0.01	0.03	EPA 9060A	Sediment	1/15/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422  
Project Name: New Bedford Harbor WQM  
Client Sample ID: Q1177 (ST-02-121007-2)  
AMS Sample ID: 29599

AMS Project Number: 07-159  
Date Sampled: 12/10/2007  
Date Received: 12/28/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	10.44	%		0.01	0.03	EPA 9060A	Sediment	1/15/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director





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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422  
Project Name: New Bedford Harbor WQM  
Client Sample ID: Q1179 (ST-03-121007-2)  
AMS Sample ID: 29600

AMS Project Number: 07-159  
Date Sampled: 12/10/2007  
Date Received: 12/28/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	9.72	%		0.01	0.03	EPA 9060A	Sediment	1/15/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422  
Project Name: New Bedford Harbor WQM  
Client Sample ID: Q1181 (ST-04-121007-2)  
AMS Sample ID: 29601

AMS Project Number: 07-159  
Date Sampled: 12/10/2007  
Date Received: 12/28/2007

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	10.53	%		0.01	0.03	EPA 9060A	Sediment	1/15/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



## TOC QUALITY CONTROL RESULTS

Client: Battelle  
 Project Number: G606422  
 Project Name: New Bedford Harbor WQM  
 Matrix: Sediment  
 Method: EPA 9060A

AMS Project Number: 07-159  
 Date Analyzed: 1/15/2008  
 Batch ID: 011508-02T

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-02	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-02	3.14	3.23	2.83		0.01	0.03	≤ 5 RPD
ICCV-02	2.06	2.00	2.96		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
29599	10.44	10.31	1.25		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 29591 29594 29597 29600  
 29592 29595 29598 29601  
 29593 29596 29599

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

*KS Davis, P.G.*

AMS, Inc. Technical Director





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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422  
Project Name: New Bedford Harbor WQM

AMS Project Number: 07-159

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

*KS Davis, P.G.*

AMS, Inc. Technical Director



### Chain of Custody

Project Name: NBH Sed Traps  
Project Number: G606422

Relinquished by: Mike McKee  
Received by: *Jeanmi Light*

Date: 12-11-07  
Date: *12-11-07*

Field Sample ID	Analytical Lab Sample ID	Sample Date (ddmmyy)	Sample Time (local)	Station ID	Analysis	No. of Containers	Size (liters)	Container Type	Preservative
ST-01-121007-1	<i>Q1173</i>	12-10-2007	0915	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-01-121007-2	<i>Q1174</i>	12-10-2007	0915	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-01-121007-3	<i>Q1175</i>	12-10-2007	0915	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-02-121007-1	<i>Q1176</i>	12-10-2007	0910	ST02	PCB, TOC, Grain Size	1	2	PE	NA
ST-02-121007-2	<i>Q1177</i>	12-10-2007	0910	ST02	PCB, TOC, Grain Size	1	2	PE	NA
ST-03-121007-1	<i>Q1178</i>	12-10-2007	0900	ST03	PCB, TOC, Grain Size	1	2	PE	
ST-03-121007-2	<i>Q1179</i>	12-10-2007	0900	ST03	PCB, TOC, Grain Size	1	2	PE	
ST-04-121007-1	<i>Q1180</i>	12-10-2007	0855	ST04	PCB, TOC, Grain Size	1	2	PE	NA
ST-04-121007-2	<i>Q1181</i>	12-10-2007	0855	ST04	PCB, TOC, Grain Size	1	2	PE	NA

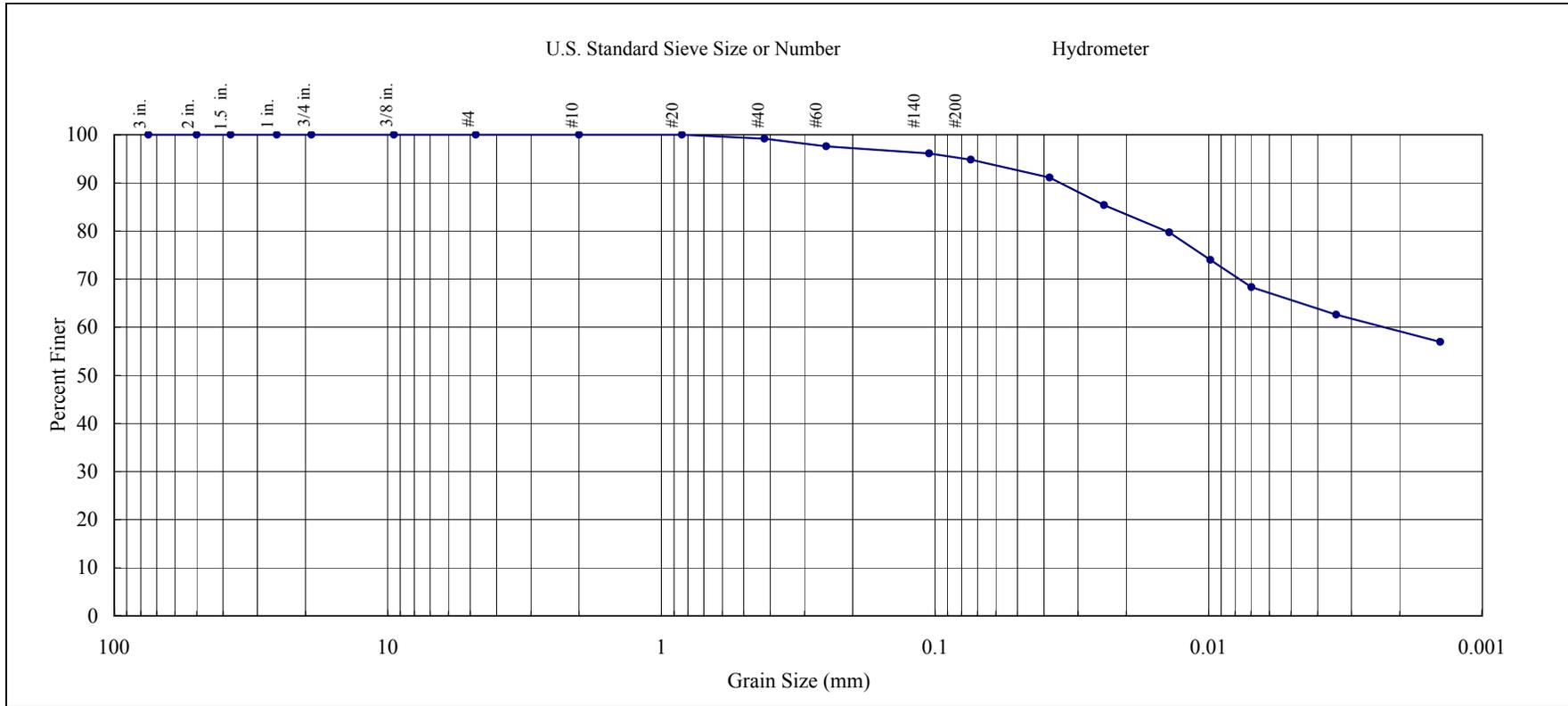
*This is the corrected COC. Please see the corrective action for details.*

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## Deployment No. 3

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.83	4.37	29.64	65.16	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C6					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	4/15/2008
309											Date Analyzed:	4/23/2008
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												
						Client Sample ID:	Q2744 (ST-01-041508-B)					
						AMS Sample ID:	8C6-1					



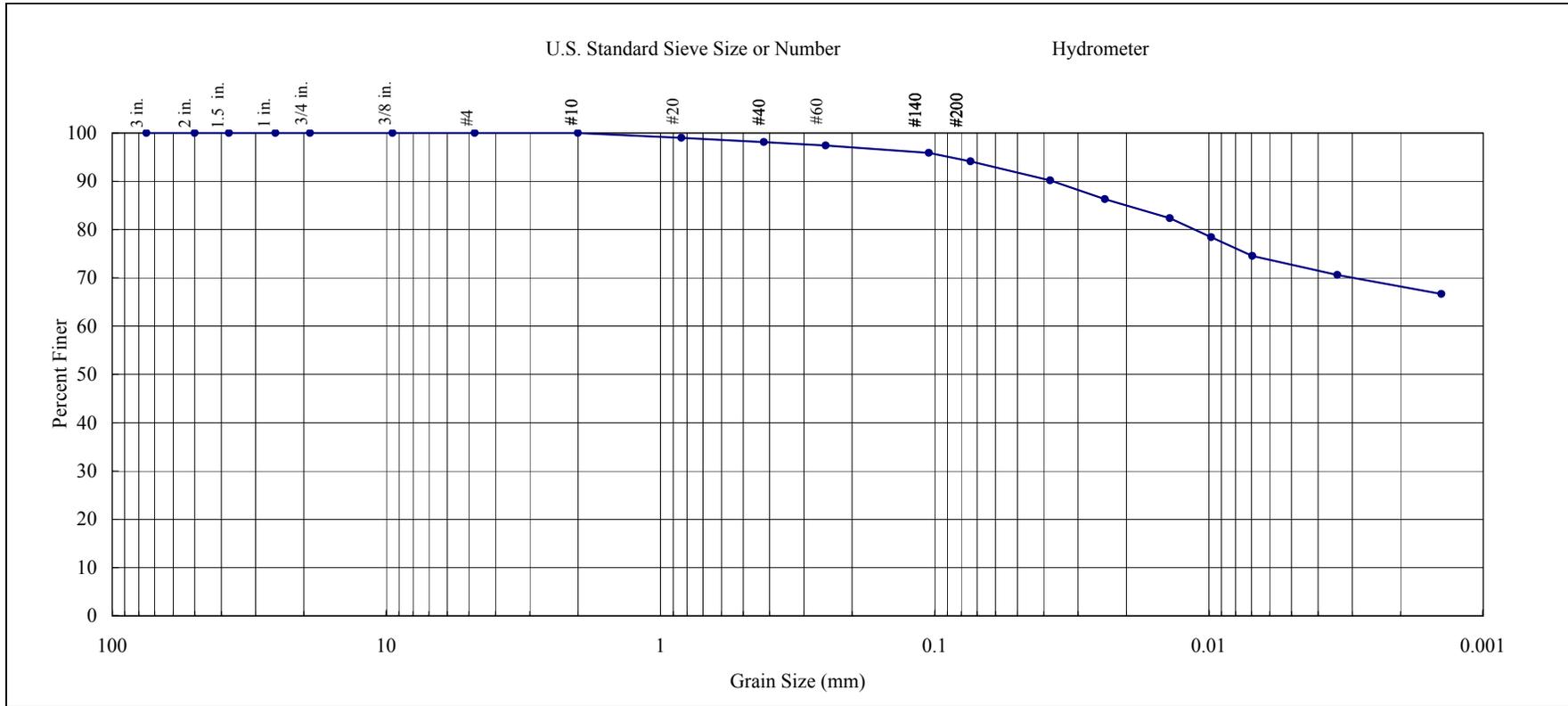
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager

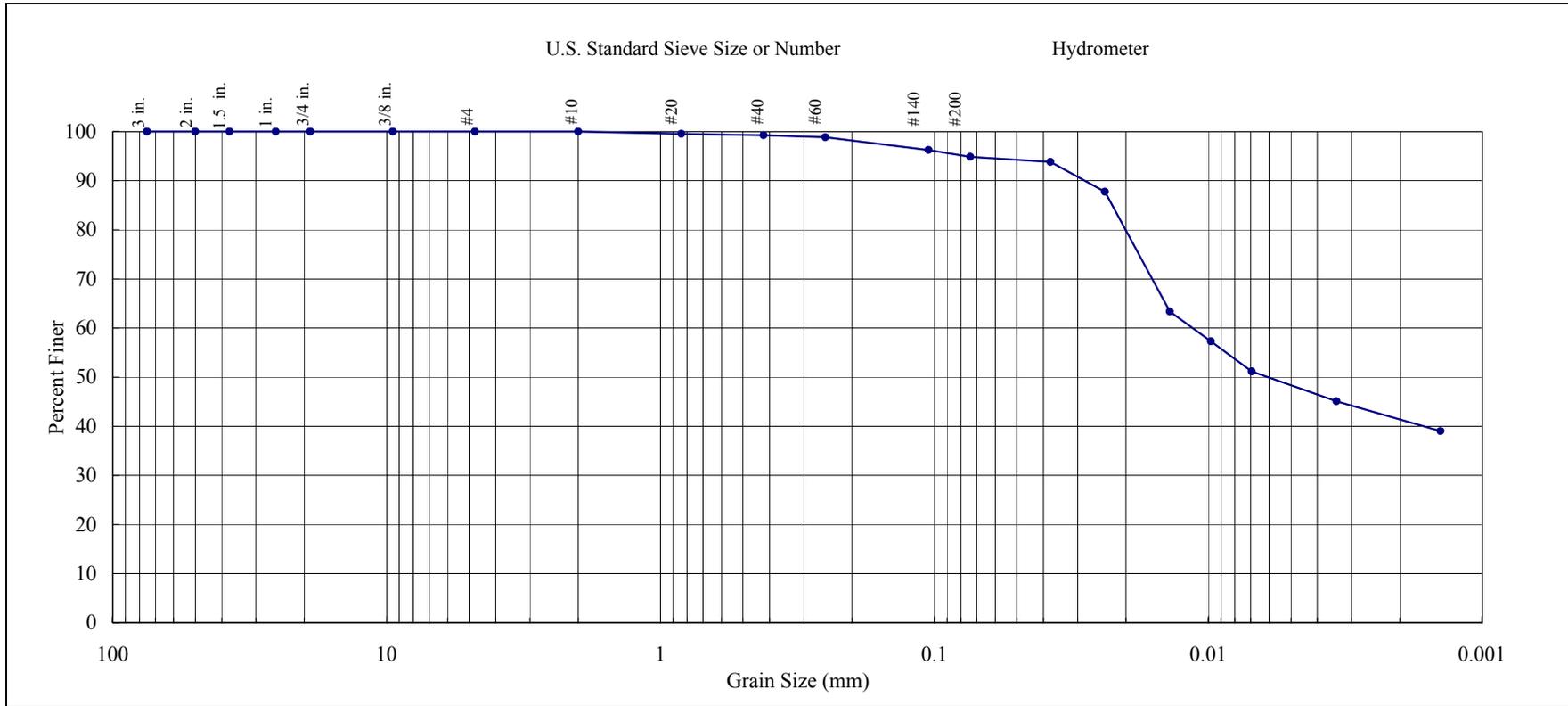


## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)					Client:	Battelle																						
	Coarse	Medium	Fine	Silt	Clay			Client Project Title:	New Bedford Harbor Sed Traps																							
0.00	0.00	1.88	4.02	21.73	72.37			Client Project Number:	G606422																							
AMS Project Number: 8C6																																
Date Sampled: 4/15/2008																																
Date Analyzed: 4/23/2008																																
Matrix, Method: Sediment, ASTM D 422																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Water Cont. (%)</th> <th style="width: 5%;">LL</th> <th style="width: 5%;">PI</th> <th style="width: 5%;">D<sub>85</sub></th> <th style="width: 5%;">D<sub>60</sub></th> <th style="width: 5%;">D<sub>50</sub></th> <th style="width: 5%;">D<sub>30</sub></th> <th style="width: 5%;">D<sub>15</sub></th> <th style="width: 5%;">D<sub>10</sub></th> <th style="width: 5%;">C<sub>c</sub></th> <th style="width: 5%;">C<sub>u</sub></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">305</td> <td></td> </tr> </tbody> </table>									Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	305											<b>Client Sample ID:</b> Q2745 (ST-01-041508-C) <b>AMS Sample ID:</b> 8C6-2	
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>																						
305																																
<b>Material Description</b>																																
Fat Clay ("CH"), black (N1)																																
<b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax				These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.				 <b>Laboratory No. E87956</b>																								
<i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager																																

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.75	4.41	47.00	47.84	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C6					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	4/15/2008
316											Date Analyzed:	4/23/2008
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												
						Matrix, Method:	Sediment, ASTM D 422					
						<b>Client Sample ID:</b>	Q2747 (ST-02-041508-B)					
						<b>AMS Sample ID:</b>	8C6-3					



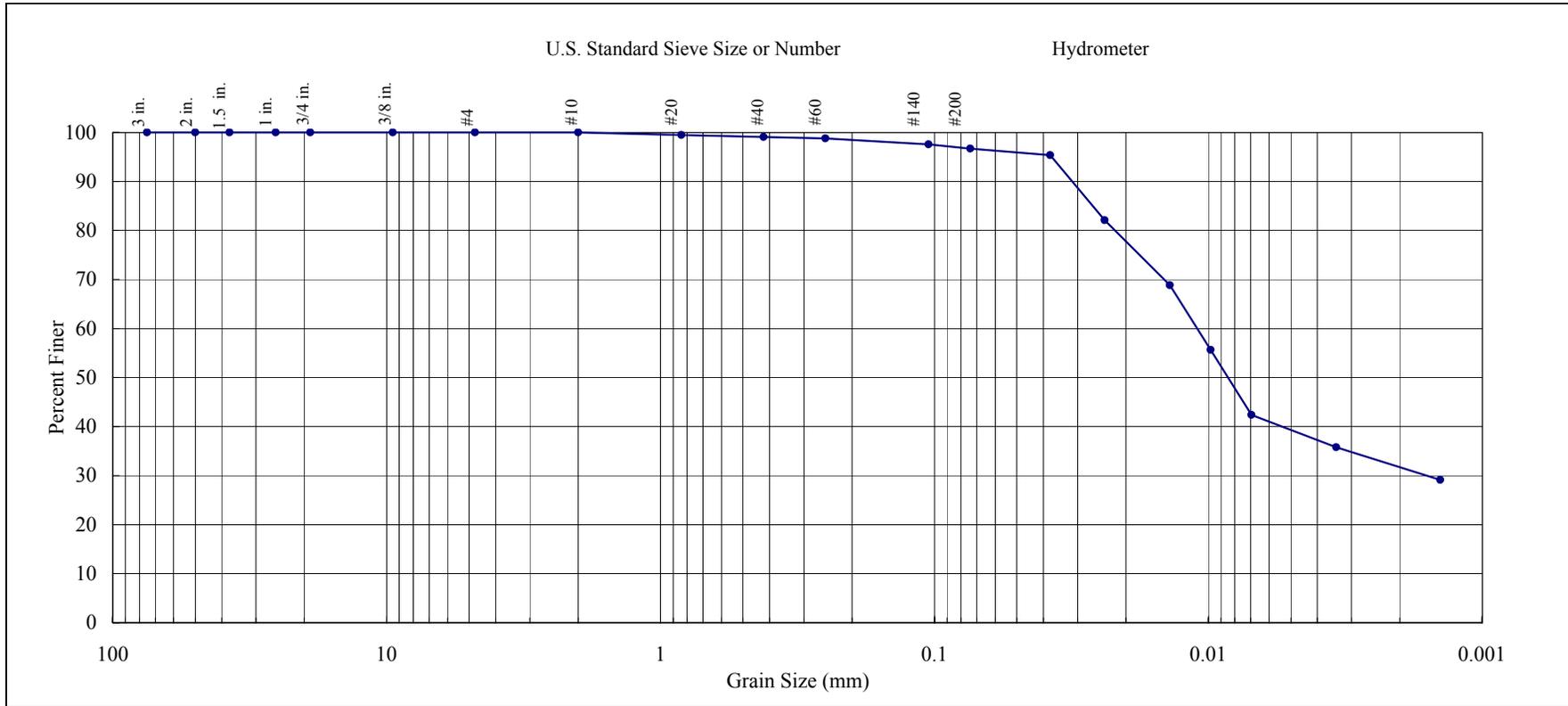
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.90	2.41	57.96	38.73	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C6					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	4/15/2008
272											Date Analyzed:	4/23/2008
<b>Material Description</b>												
Elastic Silt ("MH"), black (N1)												
						Client Sample ID:	Q2749 (ST-03-041508-B)					
						AMS Sample ID:	8C6-4					



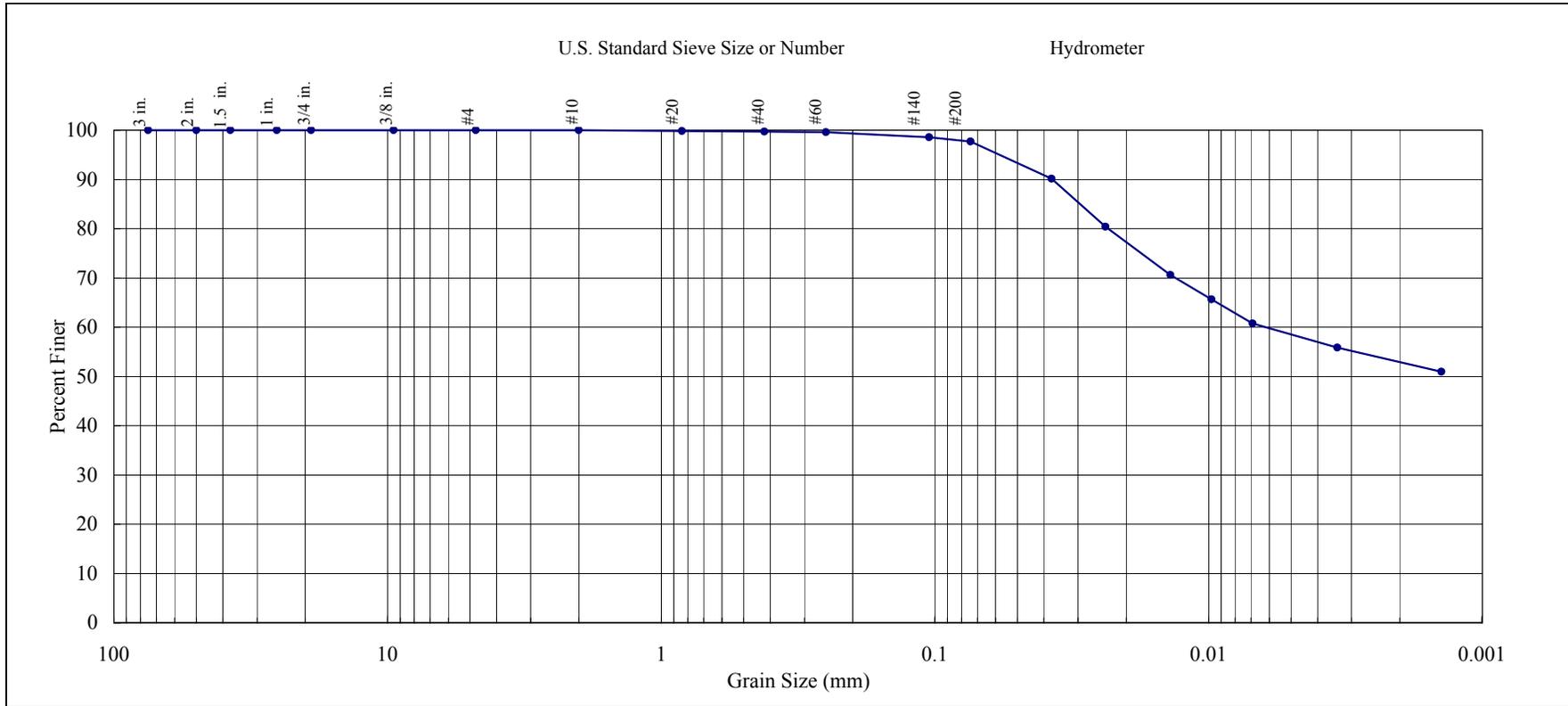
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager

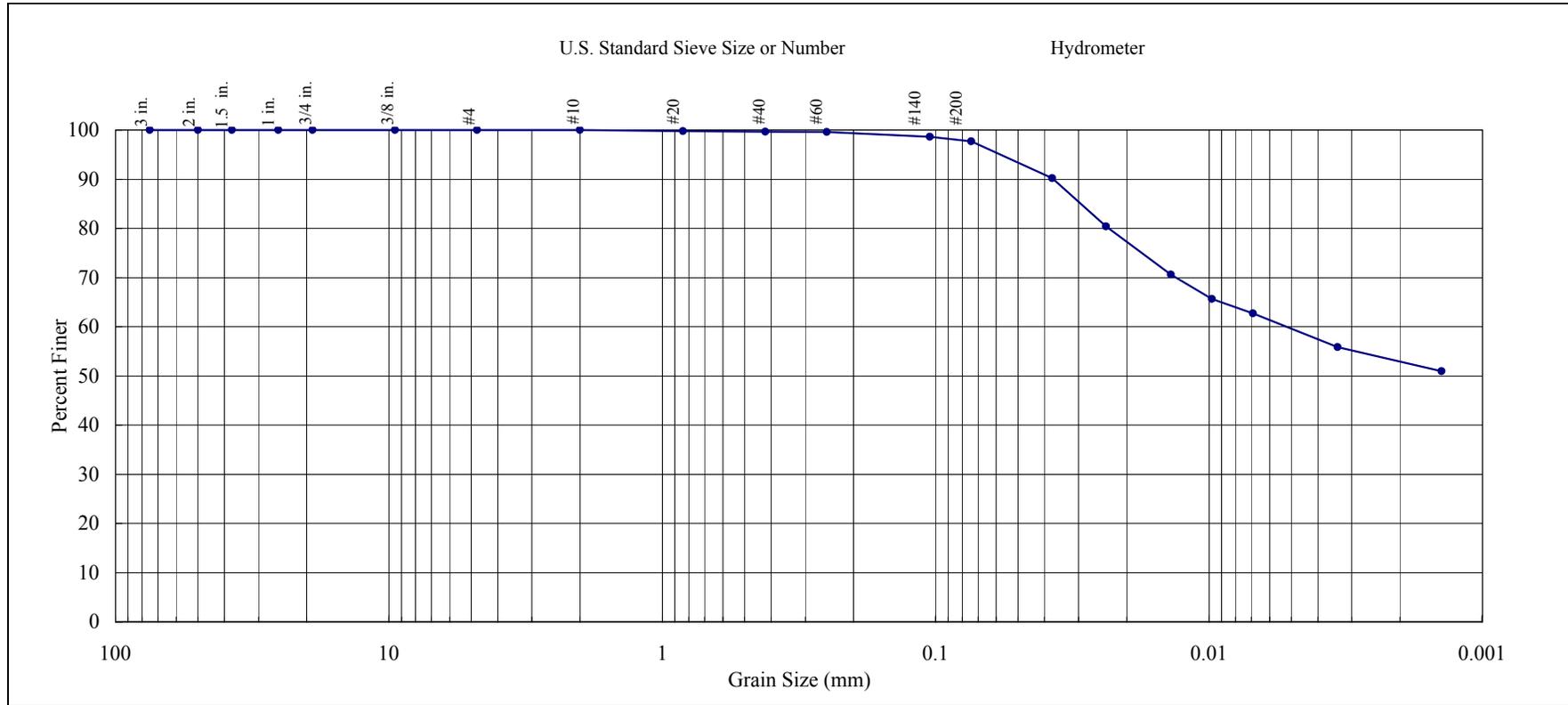


## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)					Client:	Battelle
	Coarse	Medium	Fine	Silt	Clay			Client Project Title:	New Bedford Harbor Sed Traps	
0.00	0.00	0.28	2.02	39.58	58.12			Client Project Number:	G606422	
AMS Project Number: 8C6										
Date Sampled: 4/15/2008										
Date Analyzed: 4/23/2008										
Matrix, Method: Sediment, ASTM D 422										
<b>Material Description</b>									<b>Client Sample ID:</b>	Q2751 (ST-04-041508-B)
Lean Clay ("CL"), black (N1)									<b>AMS Sample ID:</b>	8C6-5
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.					 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> LABORATORY No. E87956		
			<i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager							

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.35	1.95	38.68	59.02	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C6					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	4/15/2008
289											Date Analyzed:	4/23/2008
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												
						Matrix, Method:	Sediment, ASTM D 422					
						<b>Client Sample ID:</b>	Q2751 (ST-04-041508-B)					
						<b>AMS Sample ID:</b>	8C6-5Q					



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 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor Sed Traps  
 Project Number: G606422  
 Client Sample ID: Q2751 (ST-04-041508-B)  
 AMS Sample ID: 8C6-5

AMS Project Number: 8C6  
 Date Sampled: 4/15/2008  
 Date Analyzed: 4/23/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 042208-01G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.28	0.35	22.22		≤ 25
0.074	No. 200	Fine Sand	2.02	1.95	3.53		≤ 25
<0.074 - 0.005	Hydrometer	Silt	39.58	38.68	2.30		≤ 25
<0.005	Hydrometer	Clay	58.12	59.02	1.54		≤ 25

**Samples in Batch:** 8C6-1      8C6-4  
 8C6-2      8C6-5  
 8C6-3

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit, and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

 <p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager</p>	 <p>ACCREDITED IN ACCORDANCE WITH  <b>nelac</b>                  LABORATORY NO. E87956</p>
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# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: Q2744 (ST-01-041508-B)  
AMS Sample ID: 8C6-1

AMS Project Number: 8C6  
Date Sampled: 4/15/2008  
Date Received: 4/22/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.05	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number: 8C6
Project Number:	G606422-07DUXCHE	Date Sampled: 4/15/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received: 4/22/2008
Client Sample ID:	Q2745 (ST-01-041508-C)	
AMS Sample ID:	8C6-2	

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.66	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C6
Project Number:	G606422-07DUXCHE	Date Sampled:	4/15/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	4/22/2008
Client Sample ID:	Q2747 (ST-02-041508-B)		
AMS Sample ID:	8C6-3		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.61	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: Q2749 (ST-03-041508-B)  
AMS Sample ID: 8C6-4

AMS Project Number: 8C6  
Date Sampled: 4/15/2008  
Date Received: 4/22/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	9.18	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C6
Project Number:	G606422-07DUXCHE	Date Sampled:	4/15/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	4/22/2008
Client Sample ID:	Q2751 (ST-04-041508-B)		
AMS Sample ID:	8C6-5		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	10.57	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number: 8C6
Project Number:	G606422-07DUXCHE	AMS SOP Number: 2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed: 5/1/2008
Matrix:	Sediment	Batch ID: 050108-01T
Method:	EPA 9060A	

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-01	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-01	3.16	3.23	2.19		0.01	0.03	≤ 5 RPD
ICCV-01	2.07	2.00	3.44		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C6-5	10.57	10.10	4.55		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):**

8C6-1	8C6-4
8C6-2	8C6-5
8C6-3	

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C6  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



### Chain of Custody

Project Name: NBH Sed Traps  
Project Number: G606422

Relinquished by: Mike McKee  
Received by: *Jocanne Aghd*

Date: 04-16-08  
Date: *4-17-08*

Field Sample ID	Analytical Lab Sample ID	Sample Date (ddmmmyy)	Sample Time (local)	Station ID	Analysis <sup>1</sup>	No. of Containers	Size (liters)	Container Type	Preservative
ST-01-041508-A	<i>Q2743</i>	04-15-2008	1556	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-01-041508-B	<i>Q2744</i>	04-15-2008	1556	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-01-041508-C	<i>Q2745</i>	04-15-2008	1556	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-02-041508-A	<i>Q2746</i>	04-15-2008	1620	ST02	PCB, TOC, Grain Size	1	2	PE	NA
ST-02-041508-B	<i>Q2747</i>	04-15-2008	1620	ST02	PCB, TOC, Grain Size	1	2	PE	NA
ST-03-041508-A	<i>Q2748</i>	04-15-2008	1438	ST03	PCB, TOC, Grain Size	1	2	PE	NA
ST-03-041508-B	<i>Q2749</i>	04-15-2008	1438	ST03	PCB, TOC, Grain Size	1	2	PE	NA
ST-04-041508-A	<i>Q2750</i>	04-15-2008	1637	ST04	PCB, TOC, Grain Size	1	2	PE	NA
ST-04-041508-B	<i>Q2751</i>	04-15-2008	1637	ST04	PCB, TOC, Grain Size	1	2	PE	NA

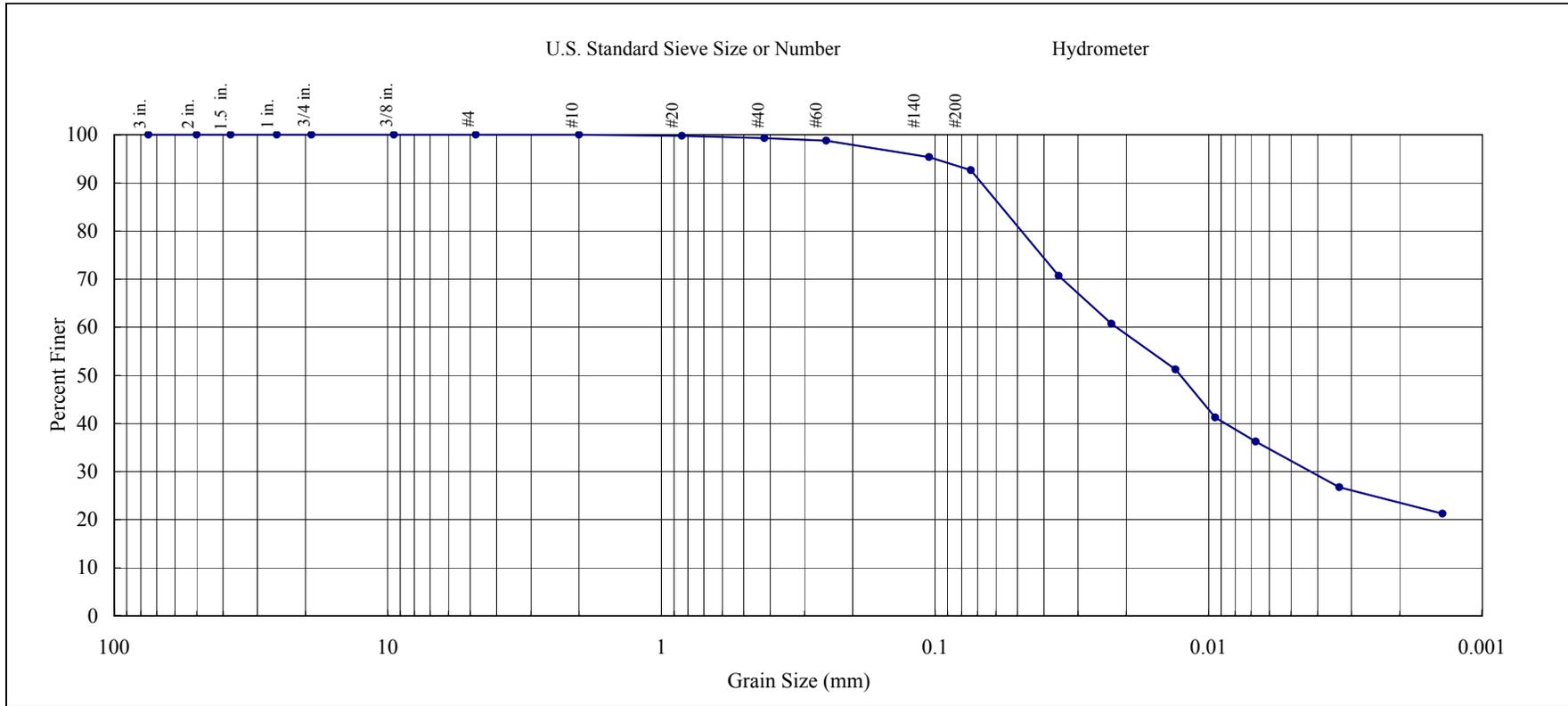
<sup>1</sup> All sediment trap samples will be allowed to settle overnight at 4°C. On the following day, overlying water will be decanted and remaining sediment slurry will be centrifuged to remove excessive water. The weight of each centrifuged sample will be weighed to assess reproducibility of total mass at each location. PCB, TOC, and grain size analyses will be conducted on 1 of 2 samples at ST-02, 03, and 04. PCB, TOC, and grain size analyses will be conducted on 2 of 3 samples collected at ST-01. Samples designated for PCB analysis will be frozen until sample analysis starts. Samples designated for TOC and grain size analyses will be shipped to Applied Marine Sciences located in League City, TX.

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## Surface Sampling Event No. 2

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)					Fines (%)					Client:	Battelle		
	Coarse	Medium	Fine			Silt	Clay				Client Project Title:	New Bedford Harbor Sed Traps		
0.00	0.00	0.68	6.67			61.27	31.38				Client Project Number:	G606422		
											AMS Project Number:	8C7		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	4/22/2008		
237											Date Analyzed:	4/28/2008		
<b>Material Description</b>													Matrix, Method:	Sediment, ASTM D 422
Elastic Silt ("MH"), black (N1)											<b>Client Sample ID:</b>	SS01-042208		
											<b>AMS Sample ID:</b>	8C7-1		



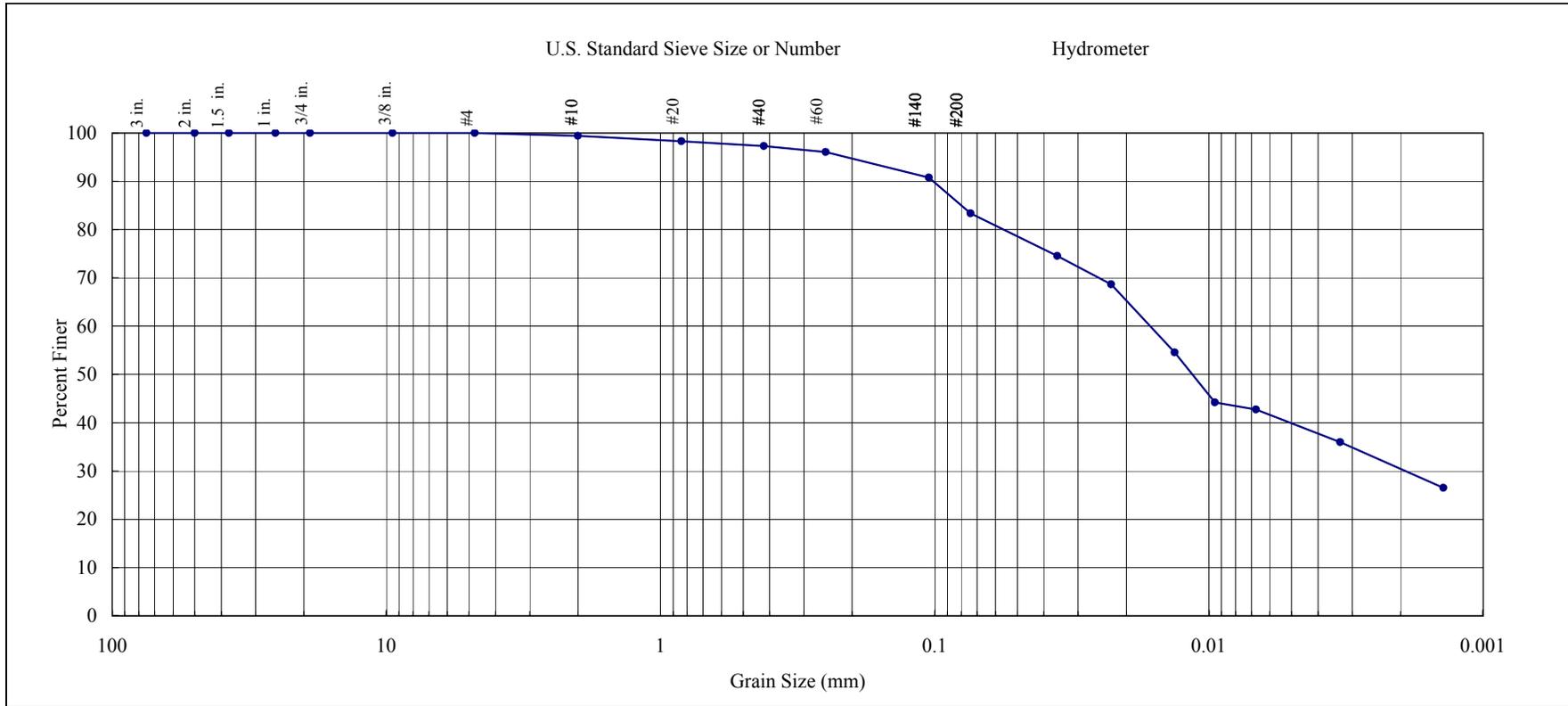
**APPLIED MARINE SCIENCES, INC.**  
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 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



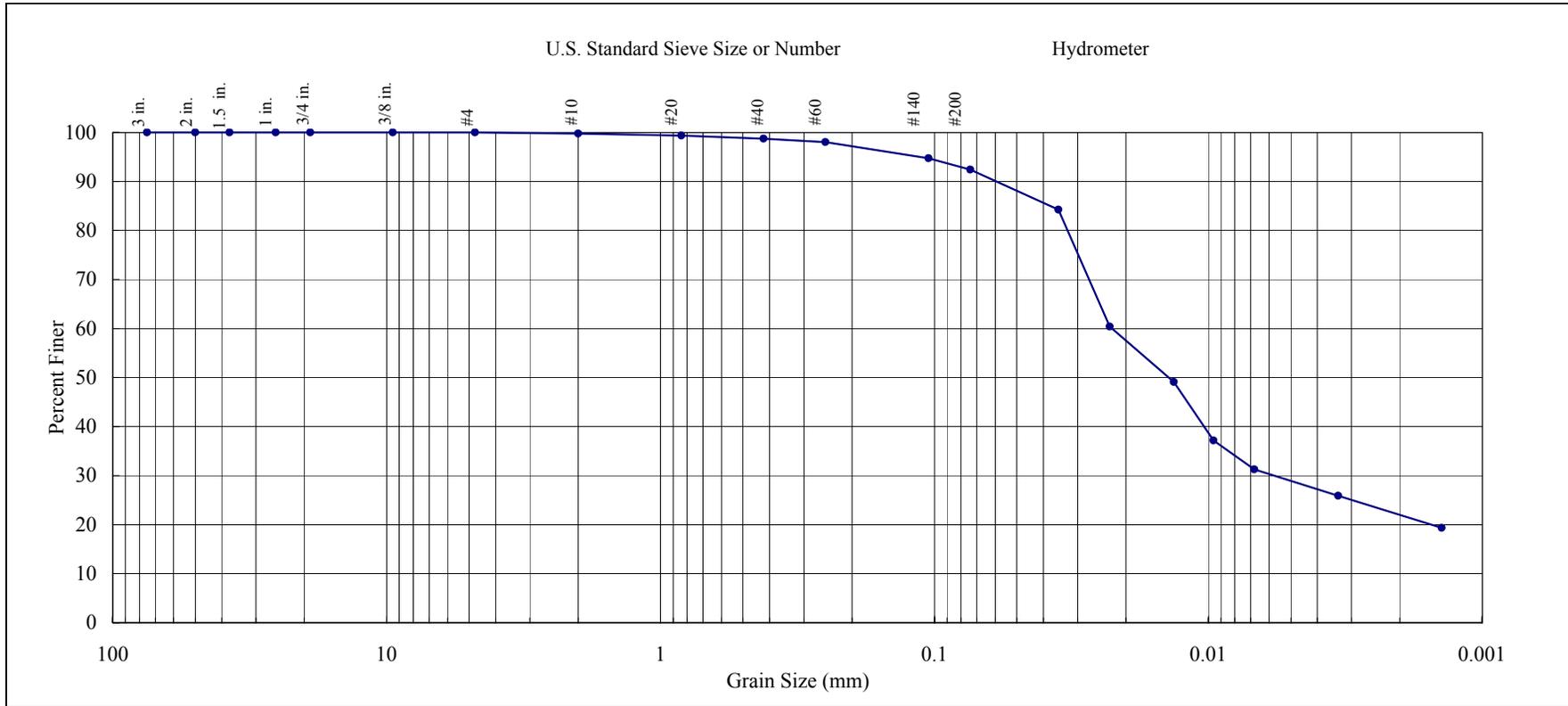
## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client: Battelle		Client Project Title: New Bedford Harbor Sed Traps					
	Coarse	Medium	Fine	Silt	Clay								
0.00	0.57	2.15	13.91	44.07	39.30	Client Project Number: G606422		AMS Project Number: 8C7					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled: 4/22/2008	Date Analyzed: 4/28/2008	Matrix, Method: Sediment, ASTM D 422
244													
Material Description													
Elastic Silt with Sand ("MH"), black (N1)											Client Sample ID: SS02-042208		
											AMS Sample ID: 8C7-2		
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> LABORATORY No. E87956				
<i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager													



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.24	1.05	6.30	63.96	28.45	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C7					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	4/22/2008
287											Date Analyzed:	4/28/2008
<b>Material Description</b>												
Elastic Silt ("MH"), black (N1)												
						Matrix, Method:	Sediment, ASTM D 422					
						<b>Client Sample ID:</b>	SS01-042208-dup					
						<b>AMS Sample ID:</b>	8C7-5					



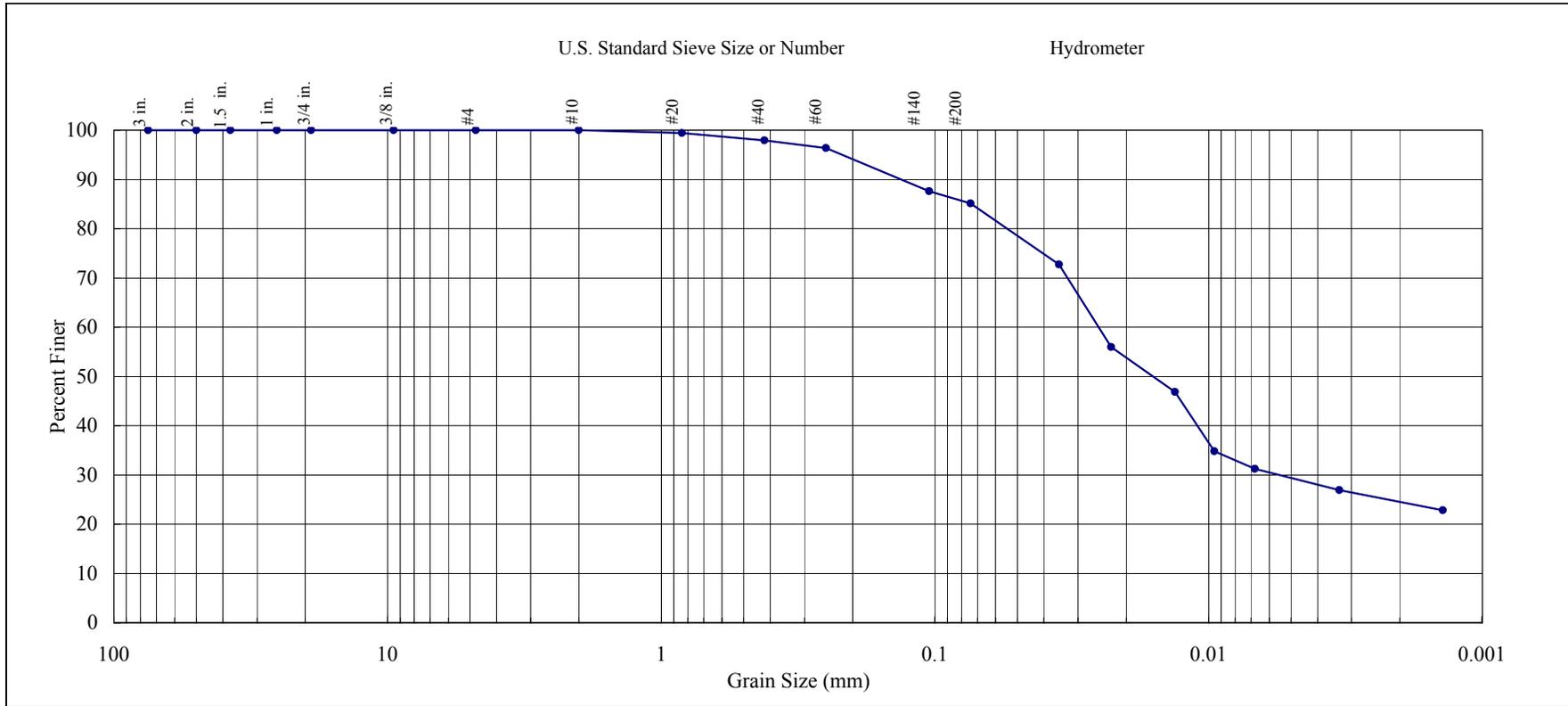
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	2.09	12.78	56.13	29.00	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C7					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	4/22/2008
208											Date Analyzed:	4/28/2008
<b>Material Description</b>												
Elastic Silt ("MH"), black (N1)												
						Client Sample ID:	SS03-042208					
						AMS Sample ID:	8C7-3					



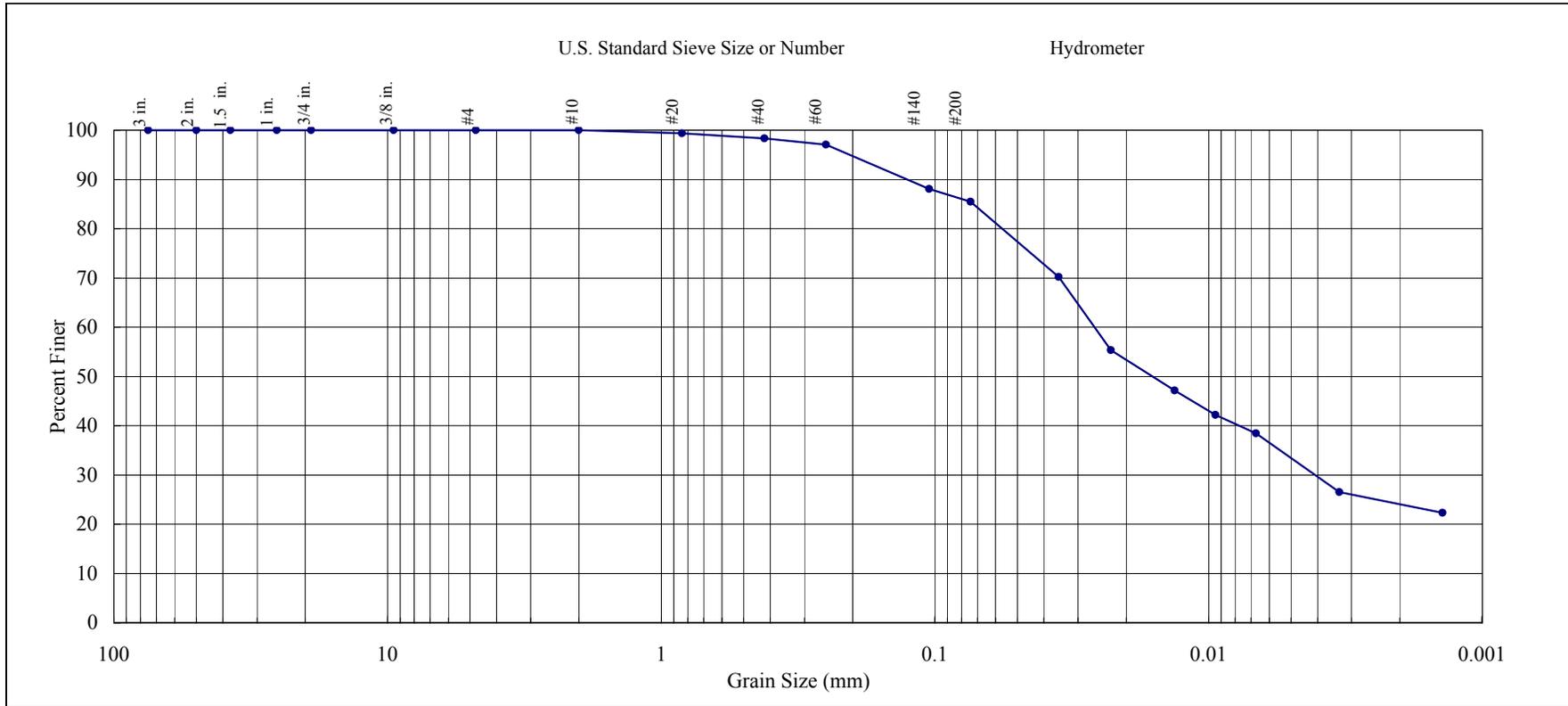
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 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client: Battelle		Client Project Title: New Bedford Harbor Sed Traps				
	Coarse	Medium	Fine	Silt	Clay							
0.00	0.00	1.68	12.85	53.05	32.42	Client Project Number: G606422		AMS Project Number: 8C7				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled: 4/22/2008	Date Analyzed: 4/28/2008
208											Matrix, Method: Sediment, ASTM D 422	
Material Description												
Elastic Silt ("MH"), black (N1)												
						<b>Client Sample ID:</b> SS03-042208						
						<b>AMS Sample ID:</b> 8C7-3Q						
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.					 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956				
						<i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager						

## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor Sed Traps  
 Project Number: G606422  
 Client Sample ID: SS03-042208  
 AMS Sample ID: 8C7-3

AMS Project Number: 8C7  
 Date Sampled: 4/22/2008  
 Date Analyzed: 4/28/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 042708-01G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	2.09	1.68	21.75		≤ 25
0.074	No. 200	Fine Sand	12.78	12.85	0.55		≤ 25
<0.074 - 0.005	Hydrometer	Silt	56.13	53.05	5.64		≤ 25
<0.005	Hydrometer	Clay	29.00	32.42	11.14		≤ 25

**Samples in Batch:** 8C7-1 8C7-5  
 8C7-2 8C7-3  
 8C7-4

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit, and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

	<p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager</p>	
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# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: SS01-042208  
AMS Sample ID: 8C7-1

AMS Project Number: 8C7  
Date Sampled: 4/22/2008  
Date Received: 4/24/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.16	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C7
Project Number:	G606422-07DUXCHE	Date Sampled:	4/22/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	4/24/2008
Client Sample ID:	SS02-042208		
AMS Sample ID:	8C7-2		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	9.31	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: SS01-042208-dup  
AMS Sample ID: 8C7-5

AMS Project Number: 8C7  
Date Sampled: 4/22/2008  
Date Received: 4/24/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.92	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C7
Project Number:	G606422-07DUXCHE	Date Sampled:	4/22/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	4/24/2008
Client Sample ID:	SS04-042208		
AMS Sample ID:	8C7-4		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.33	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: SS03-042208  
AMS Sample ID: 8C7-3

AMS Project Number: 8C7  
Date Sampled: 4/22/2008  
Date Received: 4/24/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	8.07	%		0.01	0.03	EPA 9060A	Sediment	5/1/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number: 8C7
Project Number:	G606422-07DUXCHE	AMS SOP Number: 2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed: 5/1/2008
Matrix:	Sediment	Batch ID: 050108-02T
Method:	EPA 9060A	

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-02	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-02	3.16	3.23	2.19		0.01	0.03	≤ 5 RPD
ICCV-02	2.07	2.00	3.44		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C7-3	8.07	8.14	0.86		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 8C7-1 8C7-4  
8C7-2 8C7-3  
8C7-5

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C7  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

# Battelle

The Business of Innovation

## Chain of Custody

397 Washington Street  
Duxbury, MA 02332  
Phone: 781-952-5200  
Fax: 781-934-2124

Proj. No G606422	Proj. Name NBH Sed Trap
---------------------	----------------------------

SAMPLERS: Signature

*Michael P. [Signature]*

ANALYSIS REQUESTED →  
"NUMBER OF CONTAINERS"

DATE	TIME	BATTELLE ID	CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER TOC & Grain Size	ACIDIFIED	PRESERVED	Total Number of Containers
04/22/08	0945	SS01-042208		station 1 sed grab											
	1030	SS02-042208		station 2 sed grab											
	0908	SS03-042208		station 3 sed grab											
	0818	SS04-042208		station 4 sed grab											
		<del>SS04-0</del>		<del>station 4 sed grab</del>											
	1005	SS01-042208-DUP		station 1 sed grab - field duplicate											

Relinquished by: <i>Michael P. [Signature]</i>	Date/Time		Received by:	Date/Time	
	04/23/08	0800			
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:

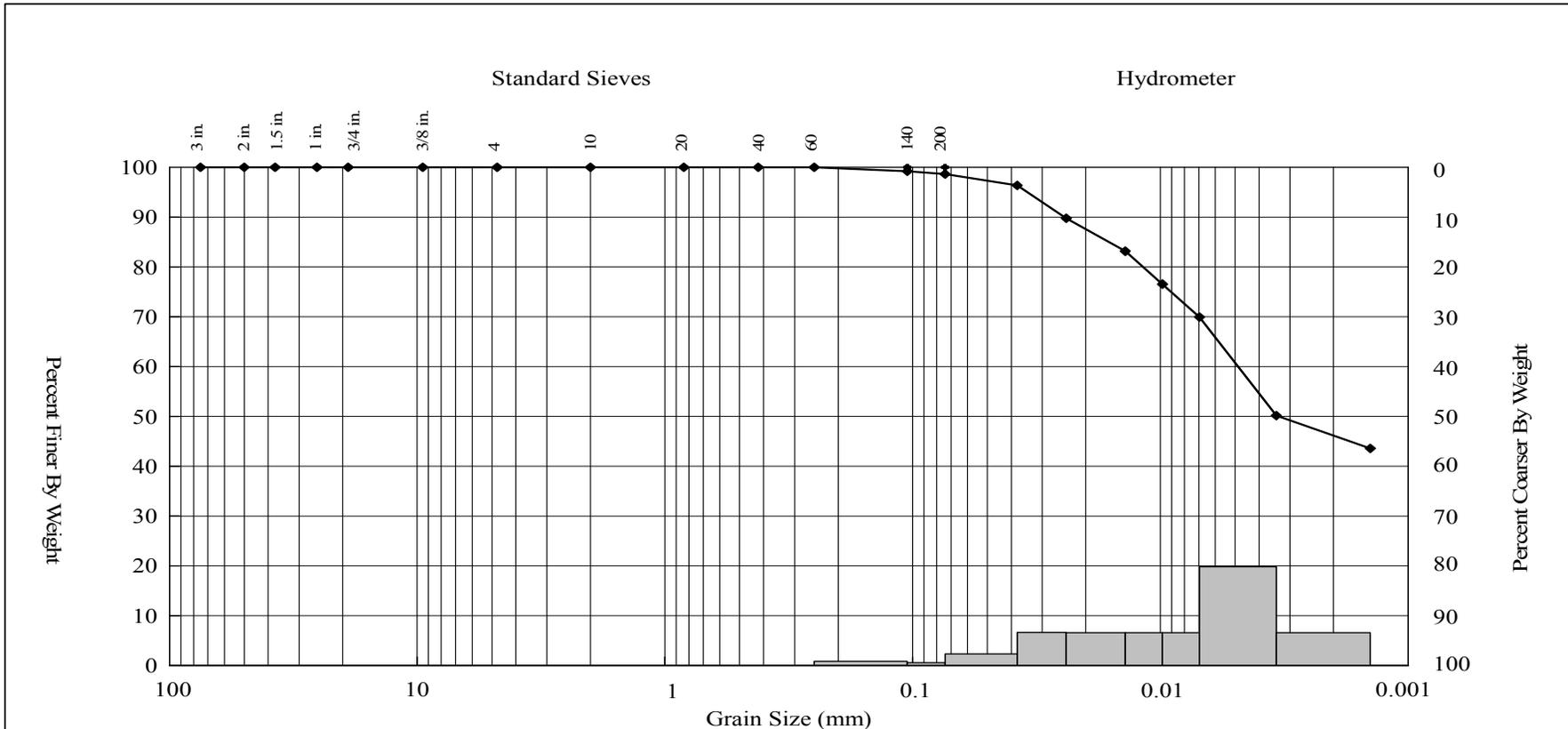
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## Deployment No. 4

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM		
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE		
0.00	0.00	0.00	1.35	39.60	59.05	AMS Project Number:		8C9		
						Date Sampled:		5/15/2008		
						Date Analyzed:		6/15/2008		
						Matrix:		Sediment		
						Method:		ASTM D 422		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
375										
Material Description										
Lean Clay ("CL"), black (5Y 2.5/1)						Client Sample ID:		Q2882 (ST-03-051508-B)		
						AMS Sample ID:		8C9-2		



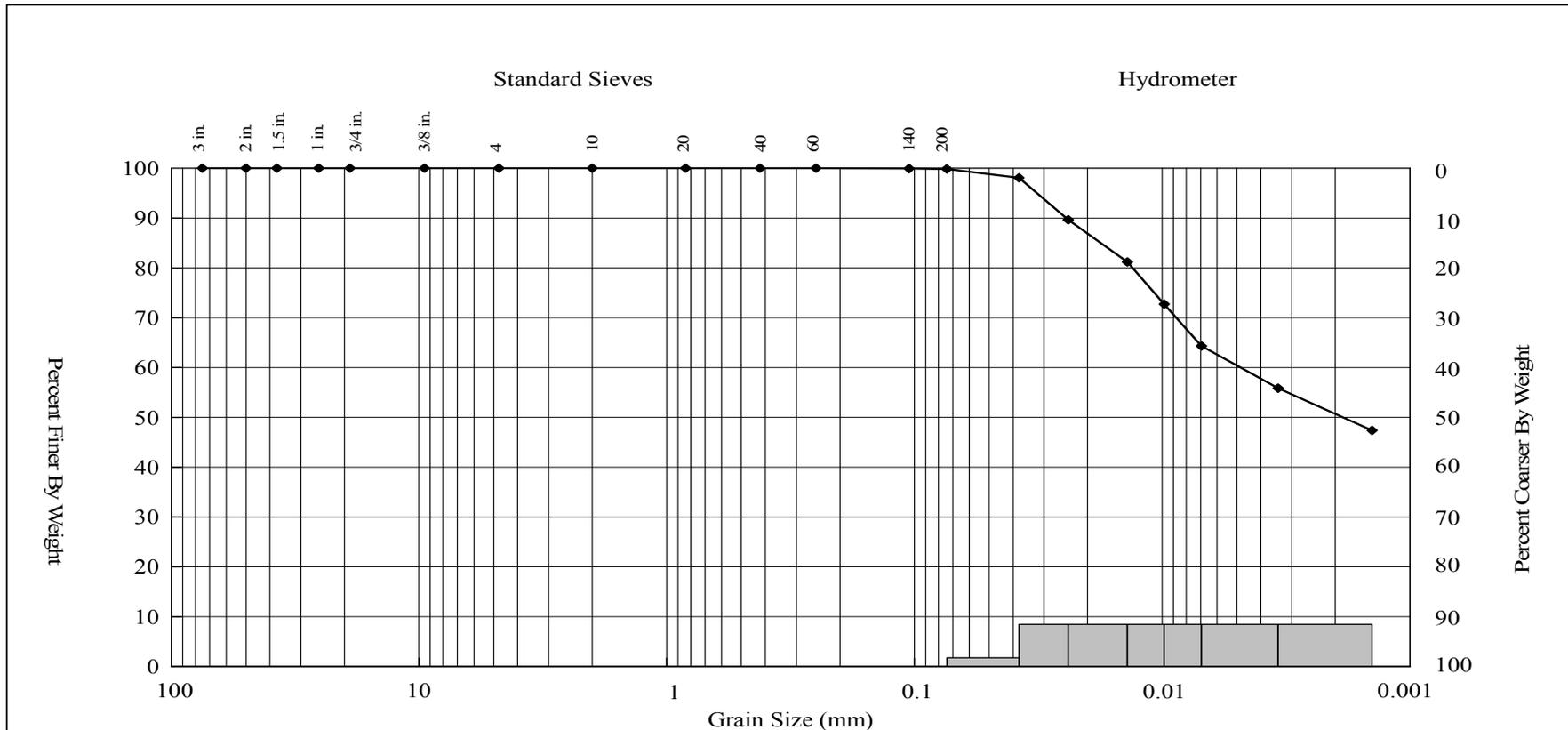
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM		
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE		
0.00	0.00	0.00	0.17	40.20	59.63	AMS Project Number:		8C9		
						Date Sampled:		5/15/2008		
						Date Analyzed:		6/15/2008		
						Matrix:		Sediment		
						Method:		ASTM D 422		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
408										
<b>Material Description</b>										
Lean Clay ("CL"), black (5Y 2.5/1)						<b>Client Sample ID:</b>		Q2884 (ST-02-051508-B)		
						<b>AMS Sample ID:</b>		8C9-3		



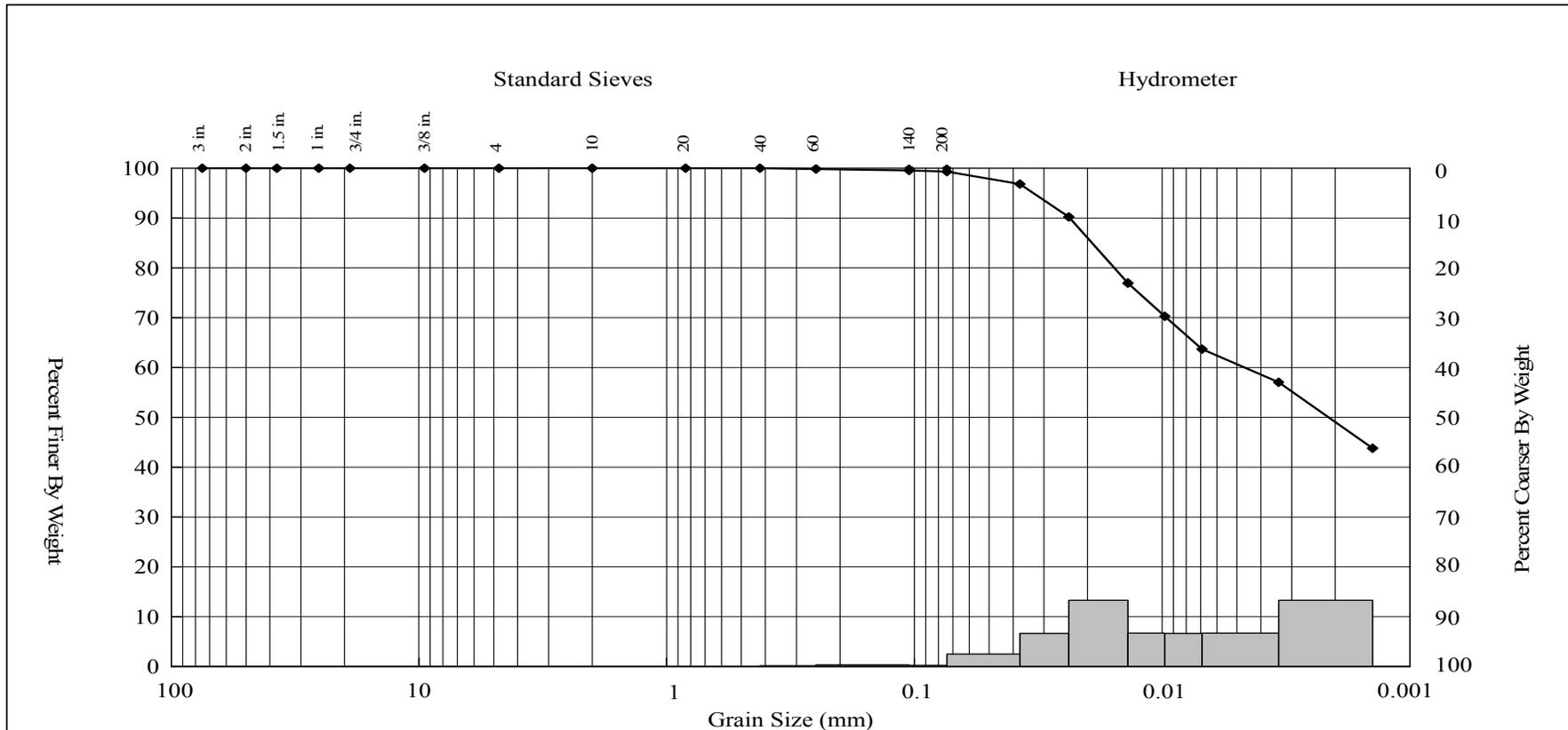
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM		
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE		
0.00	0.00	0.00	0.67	39.25	60.08	AMS Project Number:		8C9		
						Date Sampled:		5/15/2008		
						Date Analyzed:		6/15/2008		
						Matrix:		Sediment		
						Method:		ASTM D 422		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
507										
Material Description										
Lean Clay ("CL"), black (5Y 2.5/1)						<b>Client Sample ID:</b>		Q2886 (ST-01-051508-B)		
						<b>AMS Sample ID:</b>		8C9-4		



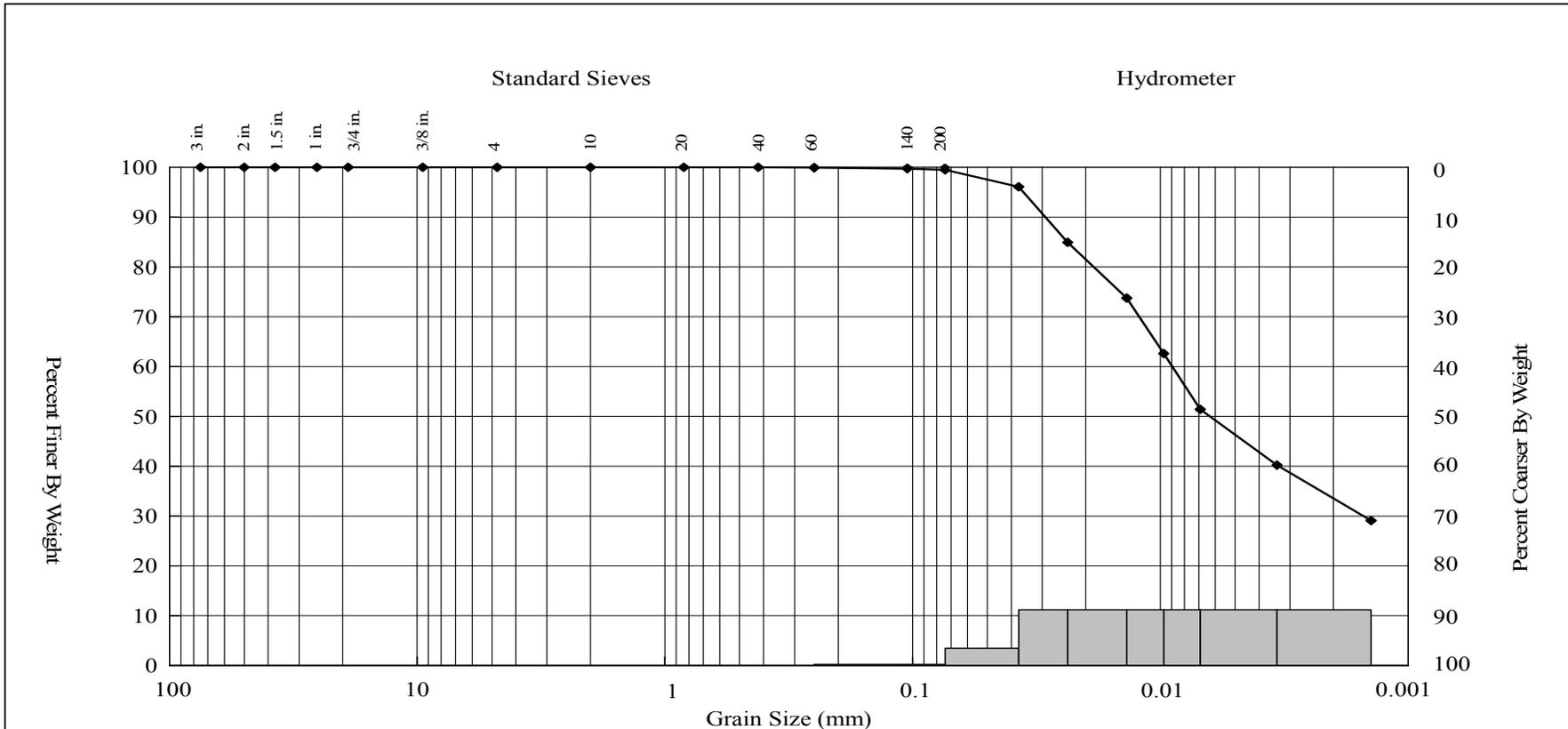
**APPLIED MARINE SCIENCES, INC.**  
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



<b>Gravel (%)</b>	<b>Sand (%)</b>			<b>Fines (%)</b>		Client Project Title: New Bedford Harbor WQM						
	Coarse	Medium	Fine	Silt	Clay	Client Project Number: G606422-07DUXCHE						
0.00	0.00	0.00	0.52	54.12	45.36	AMS Project Number: 8C9						
											Date Sampled: 5/15/2008	
											Date Analyzed: 6/15/2008	
											Matrix: Sediment	
											Method: ASTM D 422	
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	<b>Client Sample ID:</b> Q2887 (ST-01-051508-C)	
507											<b>AMS Sample ID:</b> 8C9-5	
<b>Material Description</b>												
Elastic Silt ("MH"), black (5Y 2.5/1)												

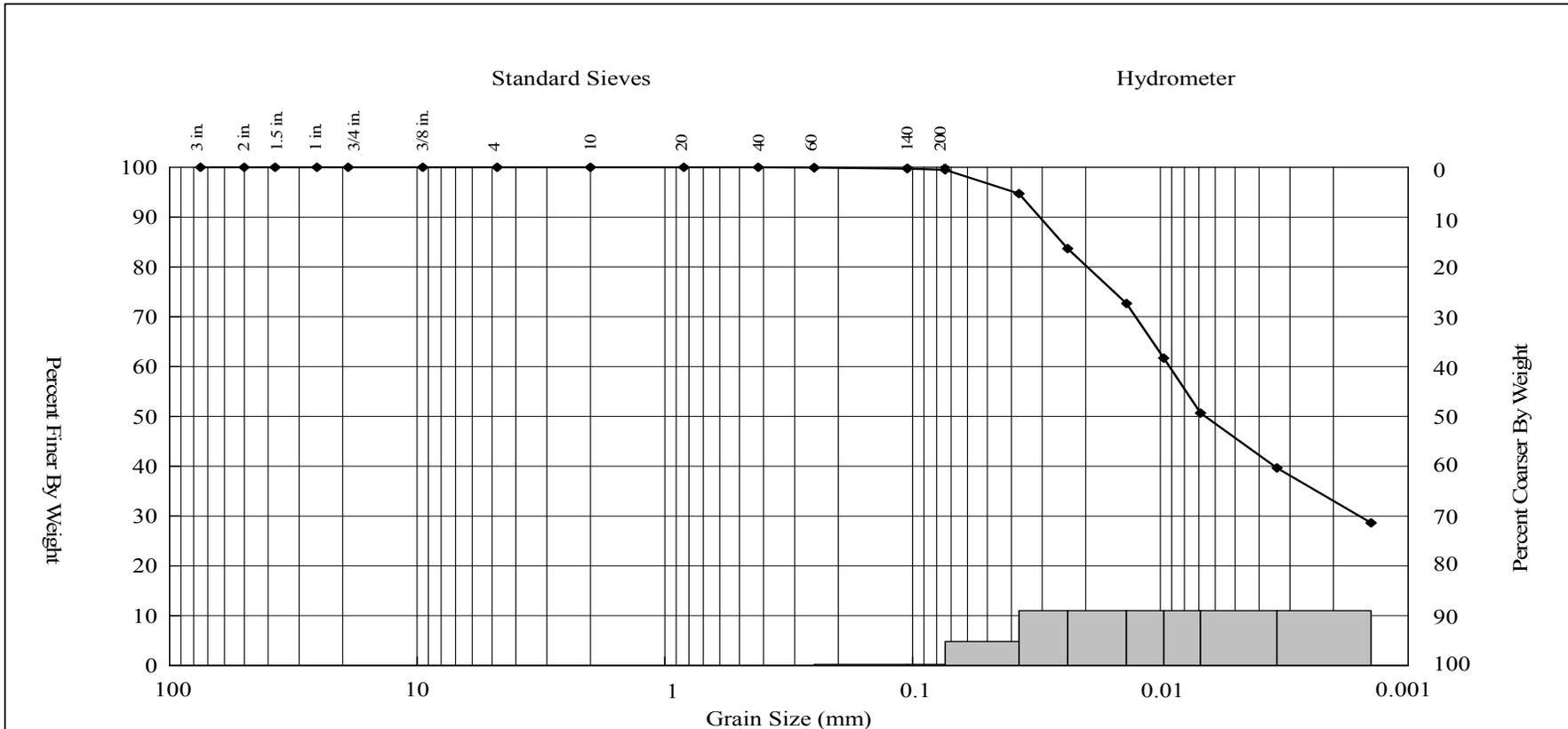
**APPLIED MARINE SCIENCES, INC.**  
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 League City, TX 77573  
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager

ACCREDITED IN ACCORDANCE WITH  
**nelac**  
 Laboratory No. E87956

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM		
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE		
0.00	0.00	0.00	0.51	54.77	44.72	AMS Project Number:		8C9		
						Date Sampled:		5/15/2008		
						Date Analyzed:		6/15/2008		
						Matrix:		Sediment		
						Method:		ASTM D 422		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
565										
<b>Material Description</b>										
Elastic Silt ("MH"), black (5Y 2.5/1)						<b>Client Sample ID:</b>		Q2887 (ST-01-051508-C)		
						<b>AMS Sample ID:</b>		8C9-5Q		



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*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor WQM  
 Project Number: G606422-07DUXCHE  
 Client Sample ID: Q2887 (ST-01-051508-C)  
 AMS Sample ID: 8C9-5

AMS Project Number: 8C9  
 Date Sampled: 5/15/2008  
 Date Analyzed: 6/15/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 061508-01G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.00	0.00	0.00		≤ 25
0.074	No. 200	Fine Sand	0.52	0.51	1.94		≤ 25
<0.074 - 0.005	Hydrometer	Silt	54.12	54.77	1.19		≤ 25
<0.005	Hydrometer	Clay	45.36	44.72	1.42		≤ 25

**Samples in Batch:** 8C9-1 8C9-3 8C9-5  
 8C9-2 8C9-4

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

	<p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager</p>	
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# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C9
Project Number:	G606422-07DUXCHE	Date Sampled:	5/15/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	6/4/2008
Client Sample ID:	Q2880 (ST-04-051508-B)		
AMS Sample ID:	8C9-1		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	9.89	%		0.01	0.03	EPA 9060A	Sediment	6/18/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C9
Project Number:	G606422-07DUXCHE	Date Sampled:	5/15/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	6/4/2008
Client Sample ID:	Q2882 (ST-03-051508-B)		
AMS Sample ID:	8C9-2		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.72	%		0.01	0.03	EPA 9060A	Sediment	6/18/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: Q2884 (ST-02-051508-B)  
AMS Sample ID: 8C9-3

AMS Project Number: 8C9  
Date Sampled: 5/15/2008  
Date Received: 6/4/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.77	%		0.01	0.03	EPA 9060A	Sediment	6/18/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C9
Project Number:	G606422-07DUXCHE	Date Sampled:	5/15/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	6/4/2008
Client Sample ID:	Q2886 (ST-01-051508-B)		
AMS Sample ID:	8C9-4		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	16.36	%		0.01	0.03	EPA 9060A	Sediment	6/18/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C9
Project Number:	G606422-07DUXCHE	Date Sampled:	5/15/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	6/4/2008
Client Sample ID:	Q2887 (ST-01-051508-C)		
AMS Sample ID:	8C9-5		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	17.19	%		0.01	0.03	EPA 9060A	Sediment	6/18/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number: 8C9
Project Number:	G606422-07DUXCHE	AMS SOP Number: 2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed: 6/18/2008
Matrix:	Sediment	Batch ID: 061808-01T
Method:	EPA 9060A	

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-01	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-01	3.12	3.23	3.46		0.01	0.03	≤ 5 RPD
ICCV-01	2.06	2.00	2.96		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C9-5	17.19	17.94	4.27		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 8C9-1 8C9-4  
8C9-2 8C9-5  
8C9-3

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C9  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

OTHER TOC/Grain Size

Proj. No: **GG06422**  
Proj. Name: **Sediment Trap-NBH**

SAMPLERS: Signature  
*Michael P. Mc...*

ANALYSIS REQUESTED →  
"NUMBER OF CONTAINERS"

DATE	TIME	LAB BATTELLE ID	FIELD CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER TOC/Grain Size	ACIDIFIED	PRESERVED	Total Number of Containers
05/15/08	14:38	Q2879	ST-04-051508-A	4 <sup>th</sup> sediment trap recovery station 04		✓						✓			
	↓	Q2880	ST-04-051508-B	station 04		✓						✓			
	14:59	Q2881	ST-03-051508-A	station 03		✓						✓			
	↓	Q2882	ST-03-051508-B	station 03		✓						✓			
	15:36	Q2883	ST-02-051508-A	station 02		✓						✓			
	↓	Q2884	ST-02-051508-B	station 02		✓						✓			
	15:52	Q2885	ST-01-051508-A	station 01		✓						✓			
	↓	Q2886	ST-01-051508-B	station 01		✓						✓			
	↓	Q2887	ST-01-051508-C	station 01		✓						✓			

Relinquished by:  
*Michael P. Mc...*

Date/Time  
05/16/08 1200

Received by:  
*Jeanine S...*

Date/Time  
5/16/08 1200

Relinquished by:

Date/Time

Received by:

Date/Time

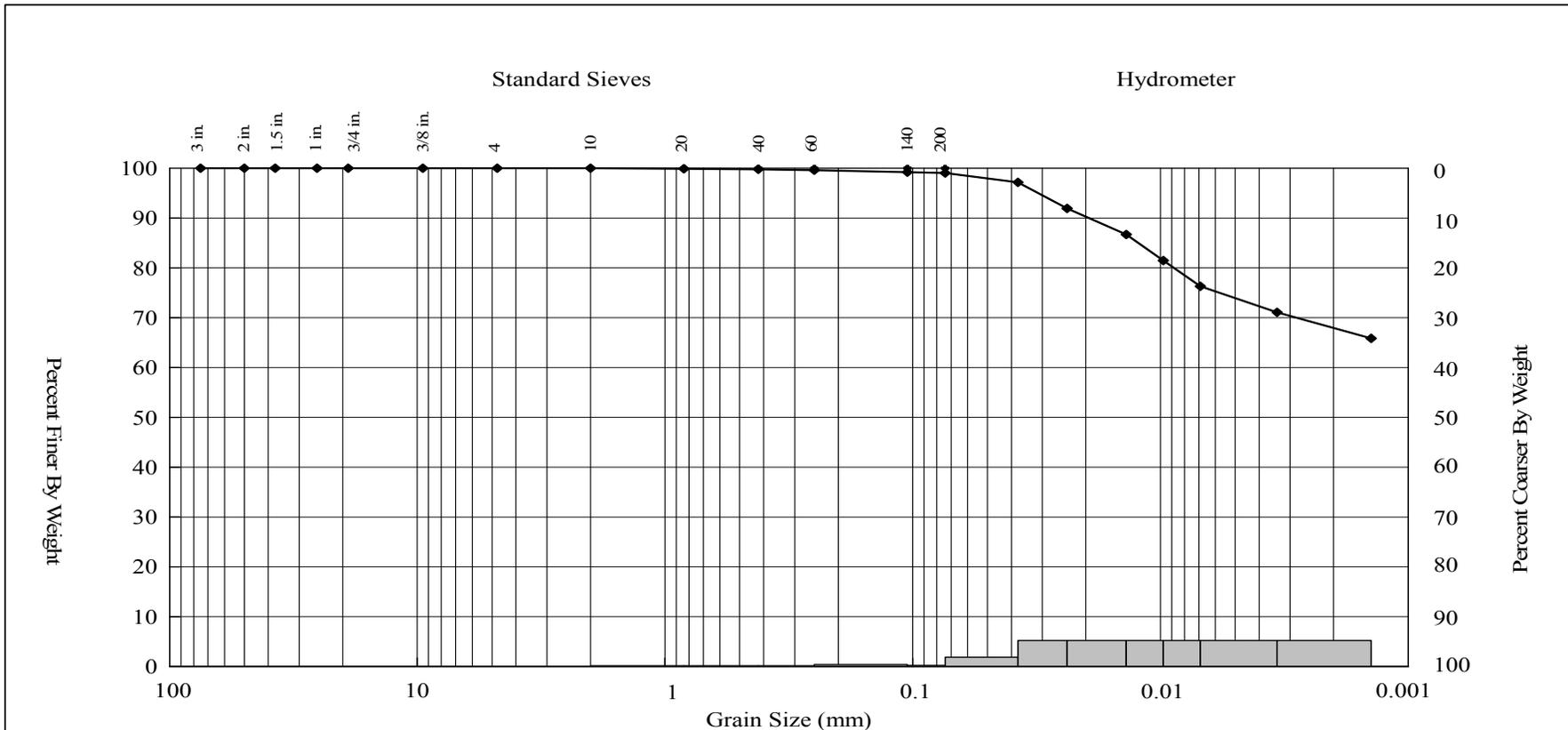
Comments: After settling and decanting, all samples will be weighed for reproducibility. At station 01, 2 of 3 samples will be analyzed for PCB, TOC, & Grain Size. At stations 02, 03 & 04, 1 of 2 samples will be analyzed for PCB, TOC, & Grain Size.

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# Deployment No. 5

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor WQM		Client Project Number: G606422-07DUXCHE		AMS Project Number: 8C13		Date Sampled: 6/11/2008		Date Analyzed: 7/12/2008		Matrix: Sediment		Method: ASTM D 422		
	Coarse	Medium	Fine	Silt	Clay															
0.00	0.00	0.24	0.75	25.56	73.45															
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>										
249																				
Material Description											Client Sample ID: Q3079 (ST-01-061108-B)		AMS Sample ID: 8C13-1							
Fat Clay ("CH"), black (SY 2.5/1)																				



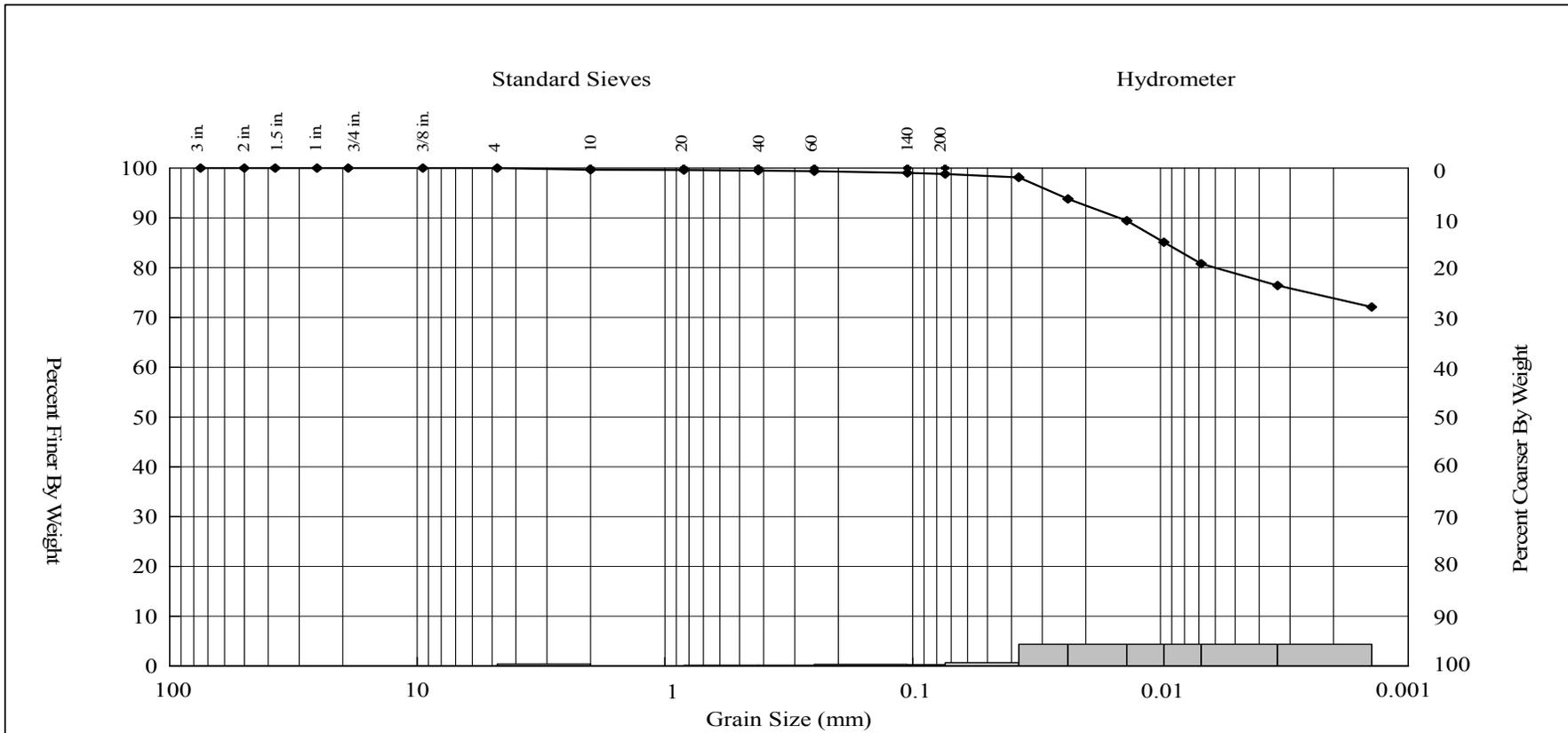
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:						
	Coarse	Medium	Fine	Silt	Clay	New Bedford Harbor WQM						
0.00	0.34	0.16	0.70	20.34	78.46	Client Project Number: G606422-07DUXCHE						
						AMS Project Number: 8C13						
						Date Sampled: 6/11/2008						
						Date Analyzed: 7/12/2008						
						Matrix: Sediment						
						Method: ASTM D 422						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	<b>Client Sample ID:</b> Q3080 (ST-01-061108-C) <b>AMS Sample ID:</b> 8C13-2	
375												
Material Description												
Fat Clay ("CH"), black (SY 2.5/1)												



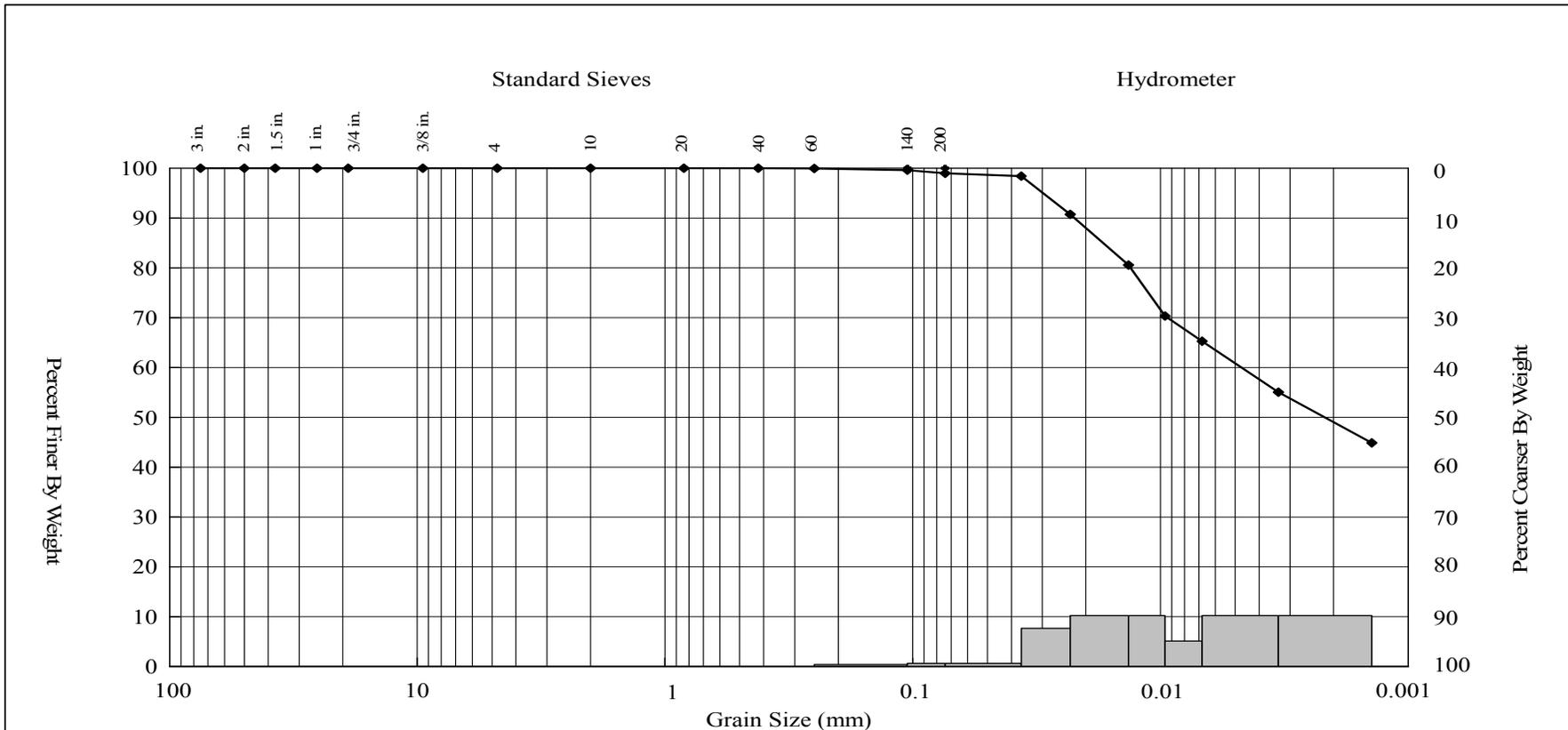
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM		
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE		
0.00	0.00	0.01	1.01	39.02	59.96	AMS Project Number:		8C13		
						Date Sampled:		6/11/2008		
						Date Analyzed:		7/12/2008		
						Matrix:		Sediment		
						Method:		ASTM D 422		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
216										
<b>Material Description</b>										
Lean Clay ("CL"), black (5Y 2.5/1)						<b>Client Sample ID:</b>		Q3082 (ST-02-061108-B)		
						<b>AMS Sample ID:</b>		8C13-3		



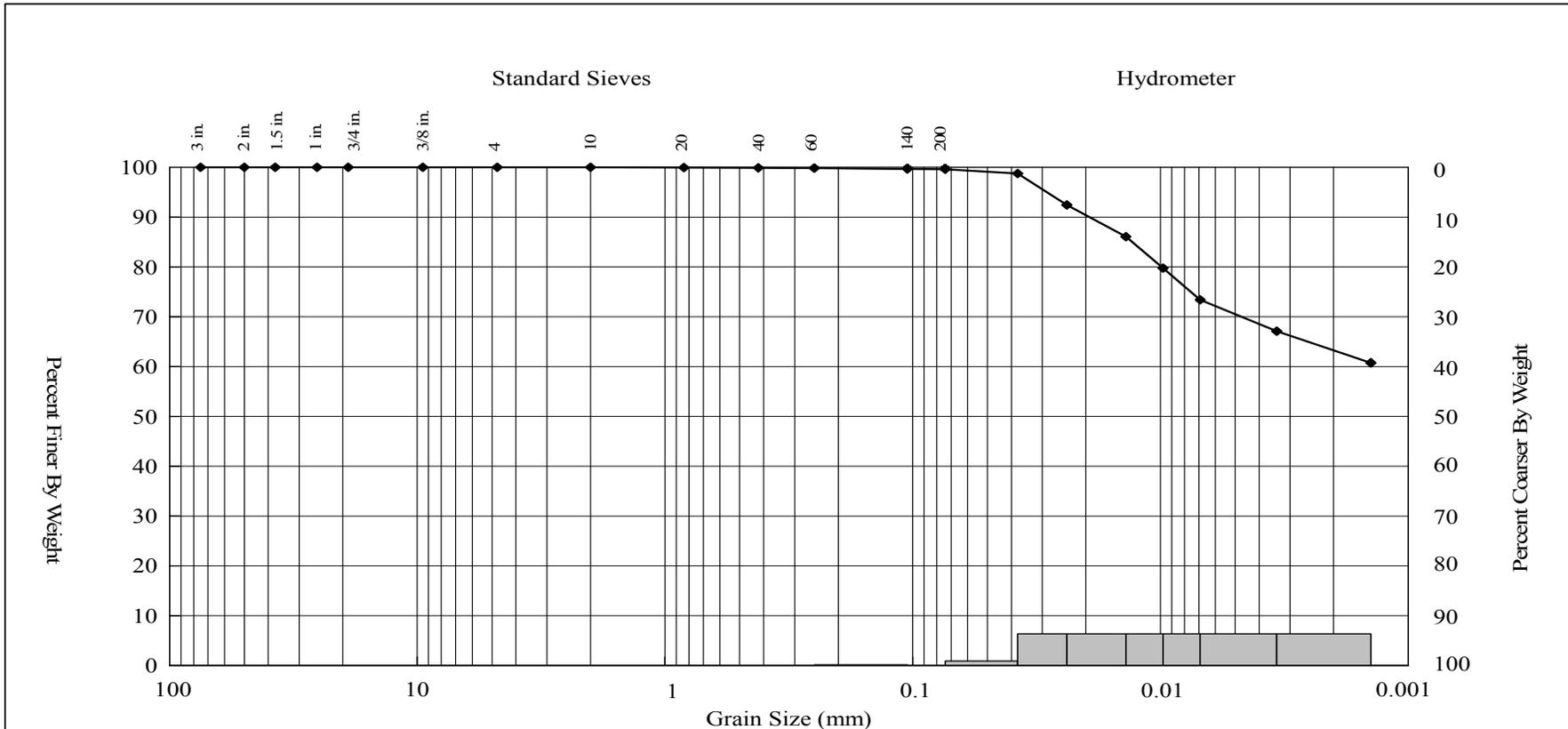
**APPLIED MARINE SCIENCES, INC.**  
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor WQM					
	Coarse	Medium	Fine	Silt	Clay	Client Project Number: G606422-07DUXCHE	AMS Project Number: 8C13				
0.00	0.00	0.13	0.27	29.62	69.98	Date Sampled: 6/11/2008	Date Analyzed: 7/12/2008				
						Matrix: Sediment	Method: ASTM D 422				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: Q3084 (ST-04-061108-B)
342											AMS Sample ID: 8C13-4
<b>Material Description</b>											
Lean Clay ("CL"), black (5Y 2.5/1)											



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 281.554.6356 Fax

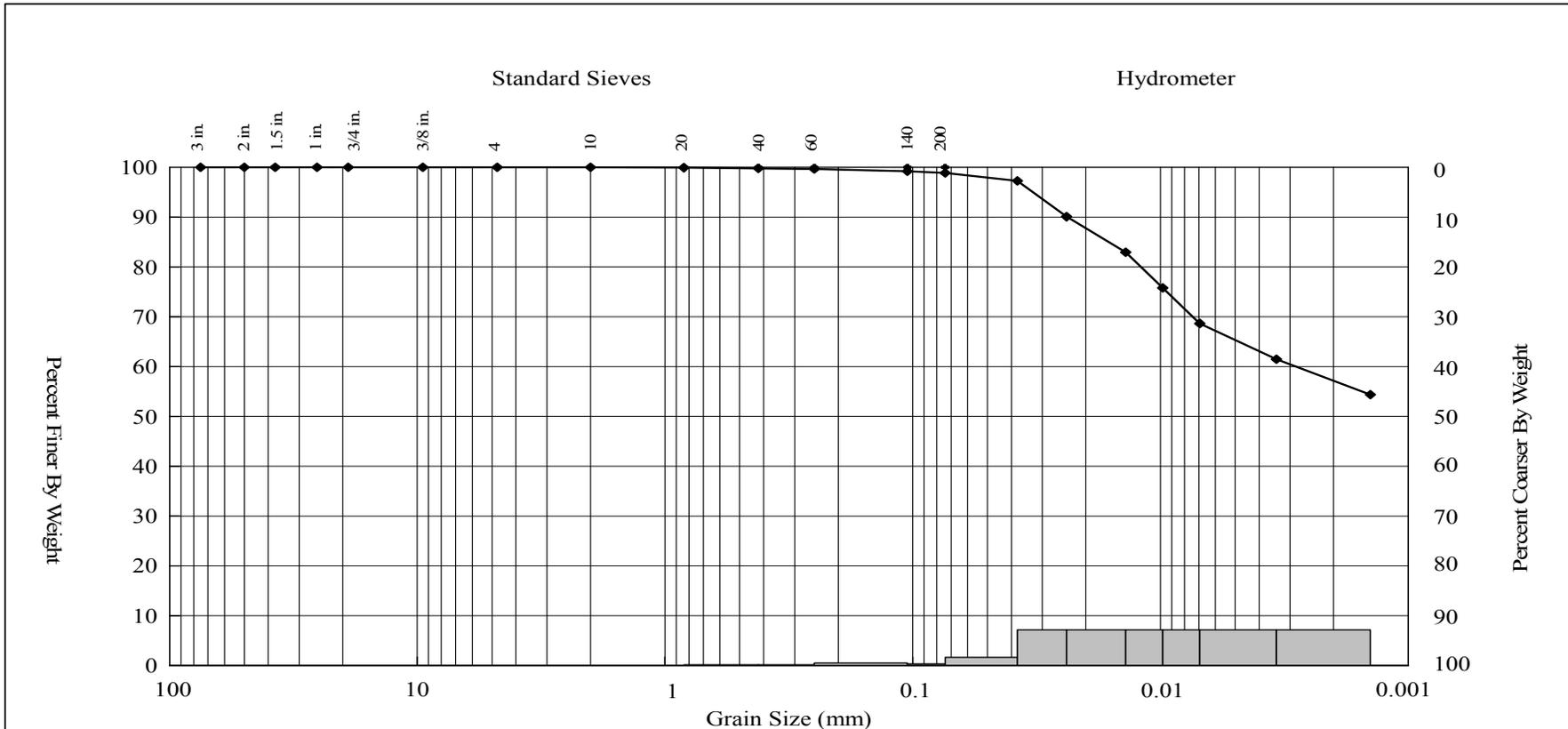
These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager





## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor WQM		Client Project Number: G606422-07DUXCHE		AMS Project Number: 8C13		Date Sampled: 6/11/2008		Date Analyzed: 7/12/2008		Matrix: Sediment		Method: ASTM D 422		
	Coarse	Medium	Fine	Silt	Clay															
0.00	0.00	0.20	0.93	34.15	64.72															
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>										
412																				
Material Description											Client Sample ID: Q3086 (ST-03-061108-B)		AMS Sample ID: 8C13-5Q							
Lean Clay ("CL"), black (5Y 2.5/1)																				



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 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor WQM  
 Project Number: G606422-07DUXCHE  
 Client Sample ID: Q3086 (ST-03-061108-B)  
 AMS Sample ID: 8C13-5

AMS Project Number: 8C13  
 Date Sampled: 6/11/2008  
 Date Analyzed: 7/12/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 071108-01G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.20	0.20	0.00		≤ 25
0.074	No. 200	Fine Sand	0.99	0.93	6.25		≤ 25
<0.074 - 0.005	Hydrometer	Silt	35.88	34.15	4.94		≤ 25
<0.005	Hydrometer	Clay	62.93	64.72	2.80		≤ 25

**Samples in Batch:** 8C13-1 8C13-3 8C13-5  
 8C13-2 8C13-4

**Qualifiers:**  
 Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

	<p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="margin-top: 10px;"> <i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager             </p>	
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# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: Q3079 (ST-01-061108-B)  
AMS Sample ID: 8C13-1

AMS Project Number: 8C13  
Date Sampled: 6/11/2008  
Date Received: 6/24/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	15.45	%		0.01	0.03	EPA 9060A	Sediment	7/5/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: Q3080 (ST-01-061108-C)  
AMS Sample ID: 8C13-2

AMS Project Number: 8C13  
Date Sampled: 6/11/2008  
Date Received: 6/24/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	15.54	%		0.01	0.03	EPA 9060A	Sediment	7/5/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C13
Project Number:	G606422-07DUXCHE	Date Sampled:	6/11/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	6/24/2008
Client Sample ID:	Q3082 (ST-02-061108-B)		
AMS Sample ID:	8C13-3		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.20	%		0.01	0.03	EPA 9060A	Sediment	7/5/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C13
Project Number:	G606422-07DUXCHE	Date Sampled:	6/11/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	6/24/2008
Client Sample ID:	Q3084 (ST-04-061108-B)		
AMS Sample ID:	8C13-4		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.44	%		0.01	0.03	EPA 9060A	Sediment	7/5/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C13
Project Number:	G606422-07DUXCHE	Date Sampled:	6/11/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	6/24/2008
Client Sample ID:	Q3086 (ST-03-061108-B)		
AMS Sample ID:	8C13-5		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	10.79	%		0.01	0.03	EPA 9060A	Sediment	7/5/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number: 8C13
Project Number:	G606422-07DUXCHE	AMS SOP Number: 2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed: 7/5/2008
Matrix:	Sediment	Batch ID: 070508-01T
Method:	EPA 9060A	

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-01	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-01	3.11	3.23	3.79		0.01	0.03	≤ 5 RPD
ICCV-01	2.05	2.00	2.47		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C13-5	10.79	10.76	0.28		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 8C13-1 8C13-4  
8C13-2 8C13-5  
8C13-3

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C13  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

Toc/Grain Size

Proj. No <b>G606422</b>	Proj. Name <b>NB4 Sed Trp</b>
----------------------------	----------------------------------

SAMPLERS: Signature  
*Michael P. M...*

ANALYSIS REQUESTED →  
"NUMBER OF CONTAINERS"

DATE	TIME	Lab BATTELLE ID	Field CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER Toc/Grain Size	ACIDIFIED	PRESERVED	Total Number of Containers
06/11/08	1215	Q3078	ST-01-061108-A	5 <sup>m</sup> sediment trap recovery station 01		✓						✓			
	↓	Q3079	ST-01-061108-B	01		✓						✓			
		Q3080	ST-01-061108-C	01		✓						✓			
	1224	Q3081	ST-02-061108-A	02		✓						✓			
	↓	Q3082	ST-02-061108-B	02		✓						✓			
	1248	Q3083	ST-04-061108-A	04		✓						✓			
	↓	Q3084	ST-04-061108-B	04		✓						✓			
	1310	Q3085	ST-03-061108-A	03		✓						✓			
	↓	Q3086	ST-03-061108-B	03		✓						✓			

Relinquished by: <i>Michael P. M...</i>	Date/Time <del>05/12/08</del> 0800	Received by: <i>Jeannine Seyfert</i>	Date/Time 6/12/08 1148
	Date/Time 06/12/08		Date/Time

Comments: After settling samples for 24 hrs and decanting, all samples will be weighed for reproducibility. At ST-01 2 of 3 samples will be analyzed for PCB, TOC & GS. At ST-02, 03 & 04 only 1 of 2

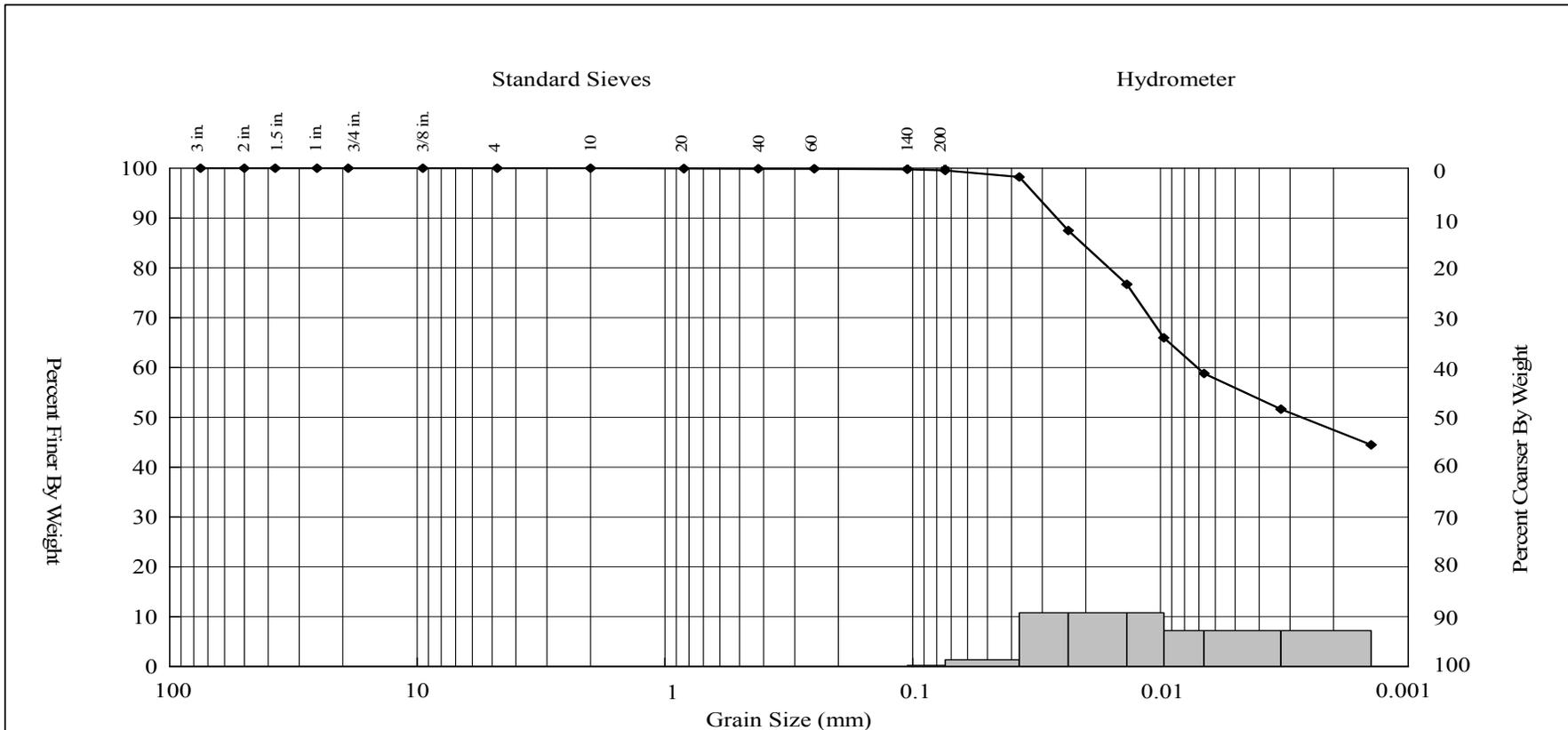
samples will be analyzed for PCB, TOC & GS

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# Deployment No. 6

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM				
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE				
0.00	0.00	0.12	0.32	44.28	55.28	AMS Project Number:		8C14				
						Date Sampled:		7/10/2008				
						Date Analyzed:		8/4/2008				
						Matrix:		Sediment				
						Method:		ASTM D 422				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>		
407												
<b>Material Description</b>												
Lean Clay ("CL"), black (5Y 2.5/1)						<b>Client Sample ID:</b>		Q3438 (ST-01-071008-B)				
						<b>AMS Sample ID:</b>		8C14-1				



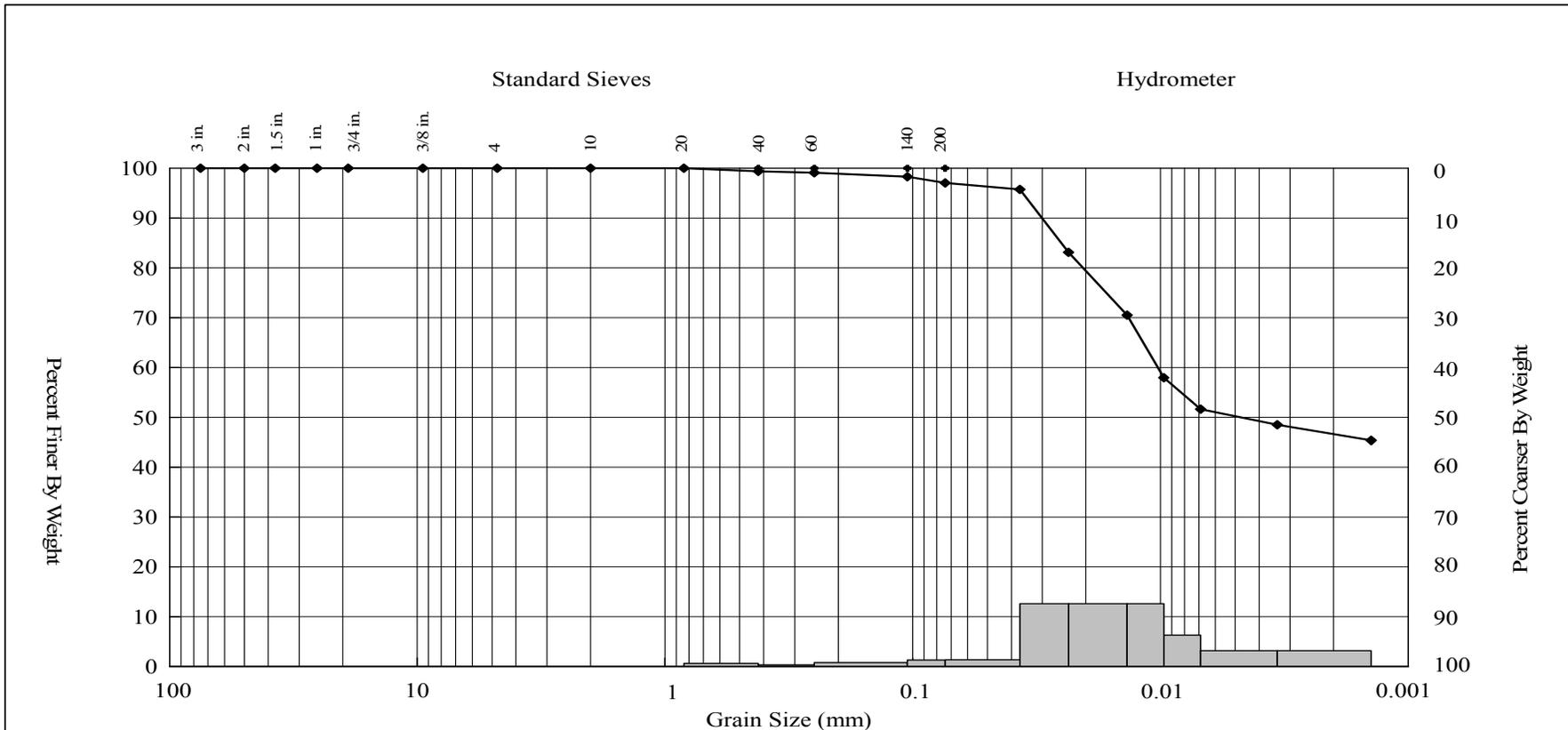
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor WQM						
	Coarse	Medium	Fine	Silt	Clay							
0.00	0.00	0.62	2.34	47.10	49.94	Client Project Number: G606422-07DUXCHE						
						AMS Project Number: 8C14						
						Date Sampled: 7/10/2008						
						Date Analyzed: 8/4/2008						
						Matrix: Sediment						
						Method: ASTM D 422						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: Q3439 (ST-01-071008-C)	
375											AMS Sample ID: 8C14-2	
Material Description												
Lean Clay ("CL"), black (5Y 2.5/1)												



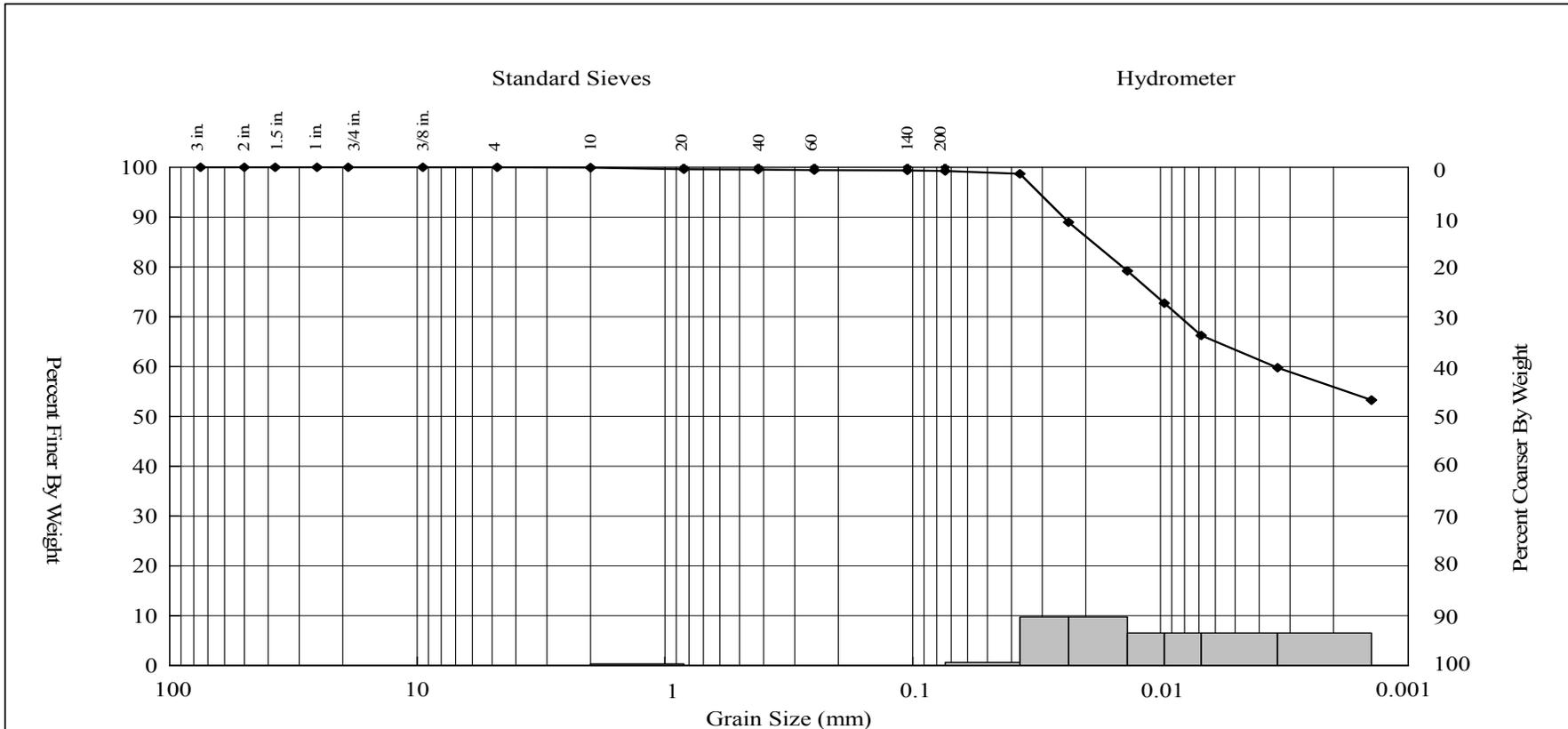
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*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM				
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE				
0.00	0.10	0.36	0.27	36.49	62.78	AMS Project Number:		8C14				
						Date Sampled:		7/10/2008				
						Date Analyzed:		8/4/2008				
						Matrix:		Sediment				
						Method:		ASTM D 422				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	<b>Client Sample ID:</b> Q3441 (ST-02-071008-B) <b>AMS Sample ID:</b> 8C14-3	
297												
Material Description												
Lean Clay ("CL"), black (5Y 2.5/1)												



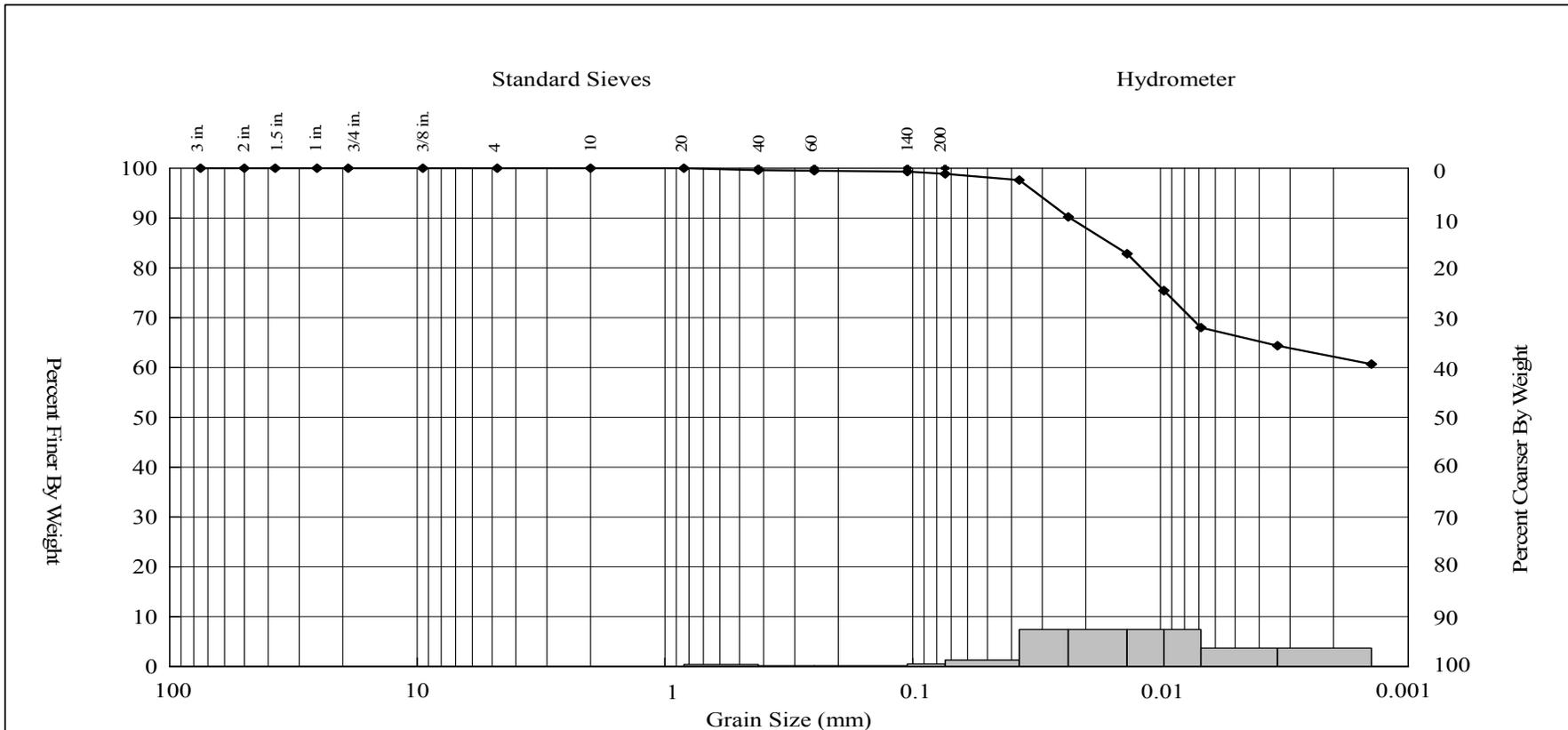
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*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM				
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE				
0.00	0.00	0.37	0.77	32.80	66.06	AMS Project Number:		8C14				
						Date Sampled:		7/10/2008				
						Date Analyzed:		8/4/2008				
						Matrix:		Sediment				
						Method:		ASTM D 422				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	<b>Client Sample ID:</b> Q3443 (ST-03-071008-B) <b>AMS Sample ID:</b> 8C14-4	
293												
<b>Material Description</b>												
Lean Clay ("CL"), black (5Y 2.5/1)												



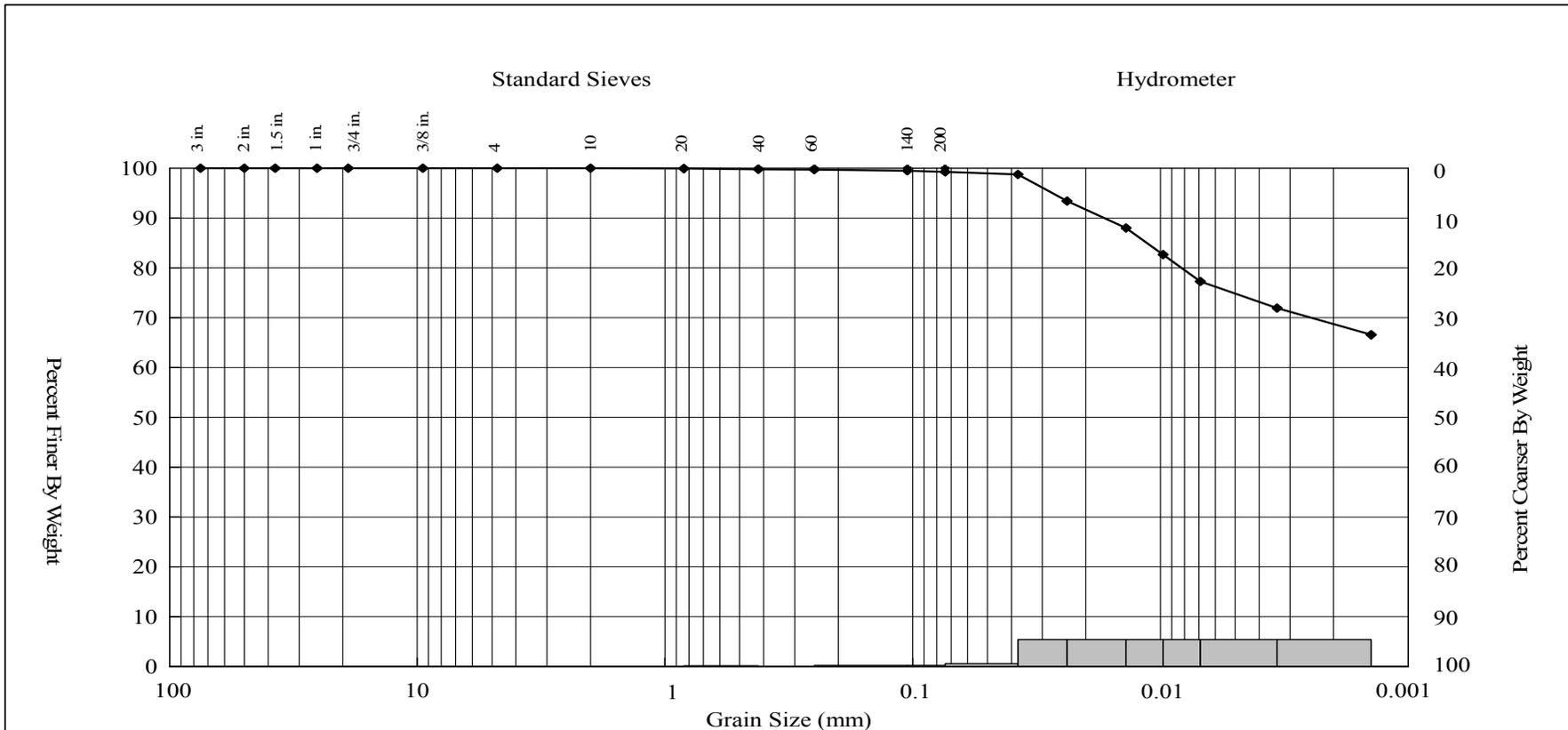
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*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM						
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE						
0.00	0.00	0.21	0.49	24.93	74.37	AMS Project Number:		8C14						
						Date Sampled:		7/10/2008						
						Date Analyzed:		8/4/2008						
						Matrix:		Sediment						
						Method:		ASTM D 422						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID:		Q3445 (ST-03-071008-B)	
293											AMS Sample ID:		8C14-5	
Material Description														
Lean Clay ("CL"), black (5Y 2.5/1)														



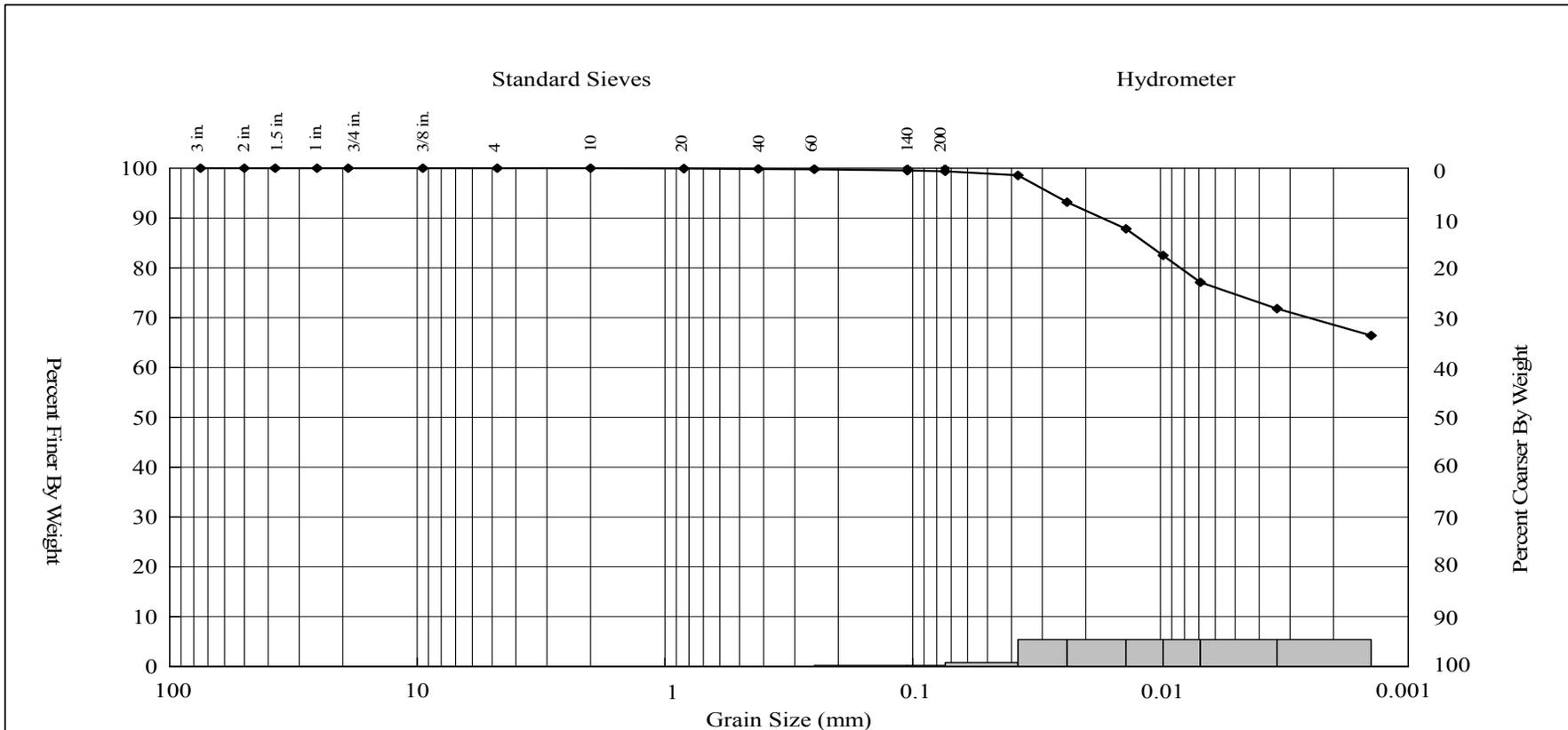
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*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor WQM		
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		G606422-07DUXCHE		
0.00	0.00	0.17	0.47	25.12	74.24	AMS Project Number:		8C14		
						Date Sampled:		7/10/2008		
						Date Analyzed:		8/4/2008		
						Matrix:		Sediment		
						Method:		ASTM D 422		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
292										
Material Description										
Lean Clay ("CL"), black (5Y 2.5/1)						Client Sample ID:		Q3445 (ST-03-071008-B)		
						AMS Sample ID:		8C14-5Q		



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*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor WQM  
 Project Number: G606422-07DUXCHE  
 Client Sample ID: Q3445 (ST-03-071008-B)  
 AMS Sample ID: 8C14-5

AMS Project Number: 8C14  
 Date Sampled: 7/10/2008  
 Date Analyzed: 8/4/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 073108-01G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.21	0.17	21.05		≤ 25
0.074	No. 200	Fine Sand	0.49	0.47	4.17		≤ 25
<0.074 - 0.005	Hydrometer	Silt	24.93	25.12	0.76		≤ 25
<0.005	Hydrometer	Clay	74.37	74.24	0.17		≤ 25

**Samples in Batch:** 8C14-1 8C14-3 8C14-5  
 8C14-2 8C14-4

**Qualifiers:**  
 Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

	<p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager</p>	
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# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number: 8C14
Project Number:	G606422-07DUXCHE	Date Sampled: 7/10/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received: 7/23/2008
Client Sample ID:	Q3438 (ST-01-071008-B)	
AMS Sample ID:	8C14-1	

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.89	%		0.01	0.03	EPA 9060A	Sediment	8/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C14
Project Number:	G606422-07DUXCHE	Date Sampled:	7/10/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	7/23/2008
Client Sample ID:	Q3439 (ST-01-071008-C)		
AMS Sample ID:	8C14-2		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	14.02	%		0.01	0.03	EPA 9060A	Sediment	8/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C14
Project Number:	G606422-07DUXCHE	Date Sampled:	7/10/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	7/23/2008
Client Sample ID:	Q3441 (ST-02-071008-B)		
AMS Sample ID:	8C14-3		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	15.01	%		0.01	0.03	EPA 9060A	Sediment	8/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C14
Project Number:	G606422-07DUXCHE	Date Sampled:	7/10/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	7/23/2008
Client Sample ID:	Q3443 (ST-03-071008-B)		
AMS Sample ID:	8C14-4		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	10.62	%		0.01	0.03	EPA 9060A	Sediment	8/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C14
Project Number:	G606422-07DUXCHE	Date Sampled:	7/10/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	7/23/2008
Client Sample ID:	Q3445 (ST-03-071008-B)		
AMS Sample ID:	8C14-5		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.10	%		0.01	0.03	EPA 9060A	Sediment	8/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number:	8C14
Project Number:	G606422-07DUXCHE	AMS SOP Number:	2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed:	8/4/2008
Matrix:	Sediment	Batch ID:	080408-03T
Method:	EPA 9060A		

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-03	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-03	3.14	3.23	2.83		0.01	0.03	≤ 5 RPD
ICCV-03	2.07	2.00	3.44		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C14-5	12.10	12.23	1.07		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 8C14-1 8C14-4  
8C14-2 8C14-5  
8C14-3

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C14  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

Proj. No <b>G606422</b>	Proj. Name <b>NBH Sed Trap</b>
----------------------------	-----------------------------------

SAMPLERS: Signature  
*Michael P. McGuire*

ANALYSIS REQUESTED →  
"NUMBER OF CONTAINERS"

DATE	TIME	LAB BATTELLE ID	FIELD CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER TOC/GRAIN SIZE	ACIDIFIED	PRESERVED	Total Number of Containers
07/10/08	1158	Q3437	ST-01-071008-A	6 <sup>th</sup> sediment trap recovery station 01		✓									
	↓	Q3438	ST-01-071008-B			✓									
		Q3439	ST-01-071008-C			✓									
	1219	Q3440	ST-02-071008-A			✓									
	↓	Q3441	ST-02-071008-B			✓									
	1242	Q3442	ST-04-071008-A			✓									
	↓	Q3443	ST-04-071008-B			✓									
	1317	Q3444	ST-03-071008-A			✓									
	↓	Q3445	ST-03-071008-B			✓									

Relinquished by: <i>Michael P. McGuire</i>	Date/Time		Received by: <i>Jamie Light</i>	Date/Time	
	07/11/08	12:00		7-11-08	12:00
Relinquished by:	Date/Time		Received by:	Date/Time	

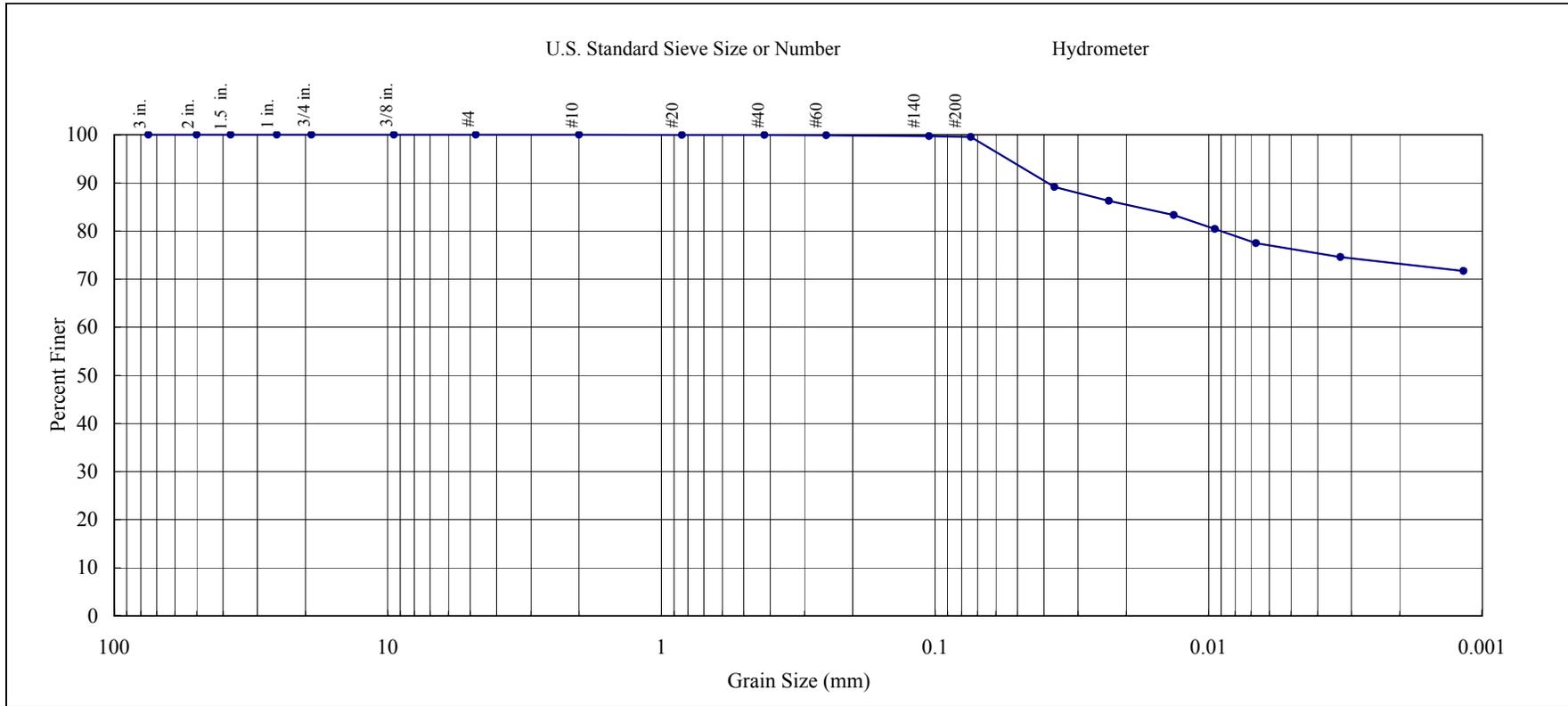
Comments: After settling for 24 hrs and decanting, all samples will be weighed for reproducibility. At station ST-01 2 of 3 samples will be analyzed for PCB, TOC, & GS. At ST-02, 03 & 04, only 1 of 2 samples will be analyzed.

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## Deployment No. 7

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:							
	Coarse	Medium	Fine	Silt	Clay	Battelle							
0.00	0.00	0.06	0.43	23.49	76.02	Client Project Title:	New Bedford Harbor Sed Traps						
						Client Project Number:	G606422						
						AMS Project Number:	8C17						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	7/31/2008	
292											Date Analyzed:	10/3/2008	
<b>Material Description</b>												Matrix, Method:	Sediment, ASTM D 422
Lean Clay ("CL"), black (N1)												<b>Client Sample ID:</b>	Q3735
												<b>AMS Sample ID:</b>	8C17-01



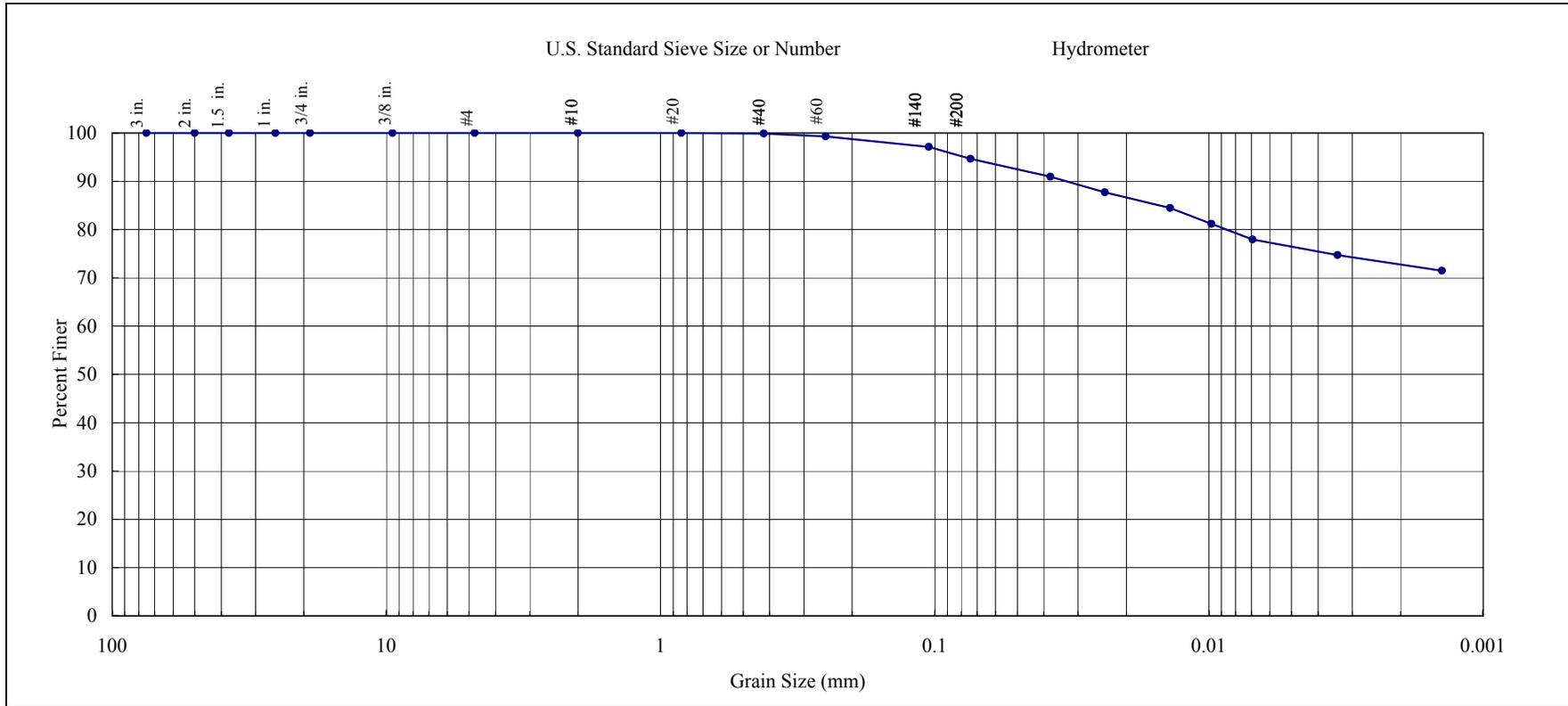
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client: Battelle		Client Project Title: New Bedford Harbor Sed Traps					
	Coarse	Medium	Fine	Silt	Clay								
0.00	0.00	0.12	5.24	18.45	76.19	Client Project Number: G606422		AMS Project Number: 8C17					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled: 7/31/2008	Date Analyzed: 10/3/2008	Matrix, Method: Sediment, ASTM D 422
210											Client Sample ID: Q3737		
<b>Material Description</b>											AMS Sample ID: 8C17-02		
Lean Clay ("CL"), black (N1)													



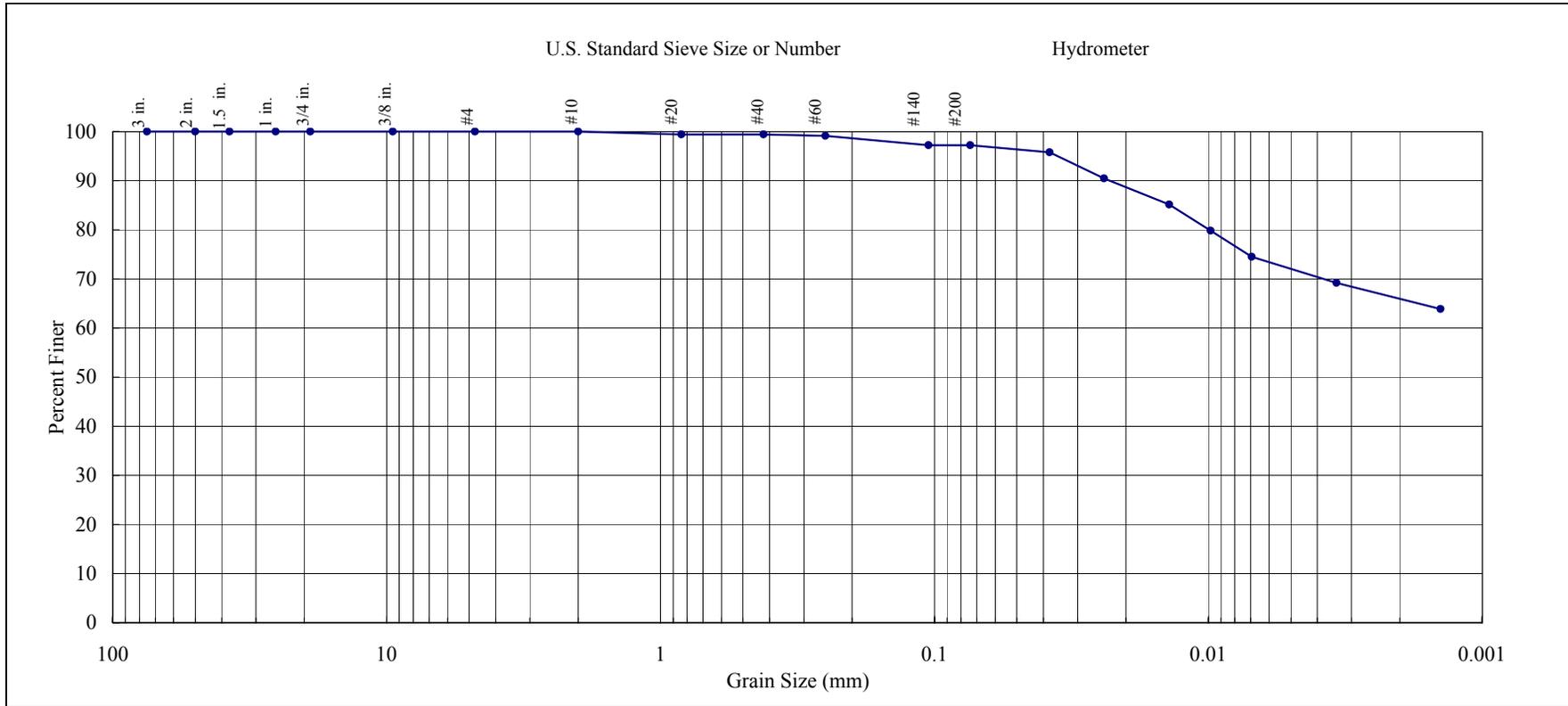
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager

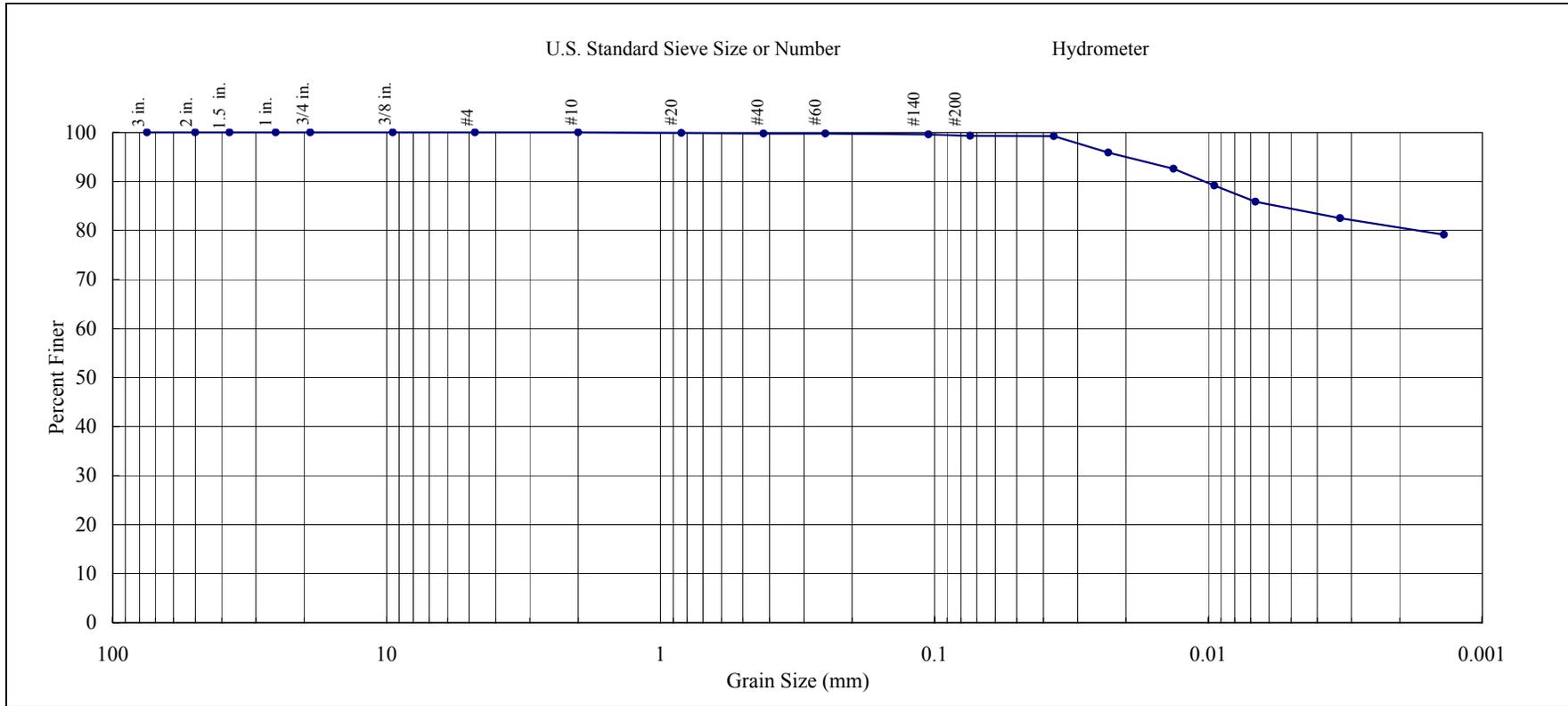


## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:							
	Coarse	Medium	Fine	Silt	Clay	Battelle							
0.00	0.00	0.60	2.19	25.62	71.59	Client Project Title:	New Bedford Harbor Sed Traps						
						Client Project Number:	G606422						
						AMS Project Number:	8C17						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	7/31/2008	
246											Date Analyzed:	10/3/2008	
<b>Material Description</b>												Matrix, Method:	Sediment, ASTM D 422
Lean Clay ("CL"), black (N1)												<b>Client Sample ID:</b>	Q3738
												<b>AMS Sample ID:</b>	8C17-03
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax				These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager								 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.21	0.49	15.14	84.16	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C17					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	7/31/2008
244											Date Analyzed:	10/3/2008
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												
						Client Sample ID:	Q3740					
						AMS Sample ID:	8C17-04					



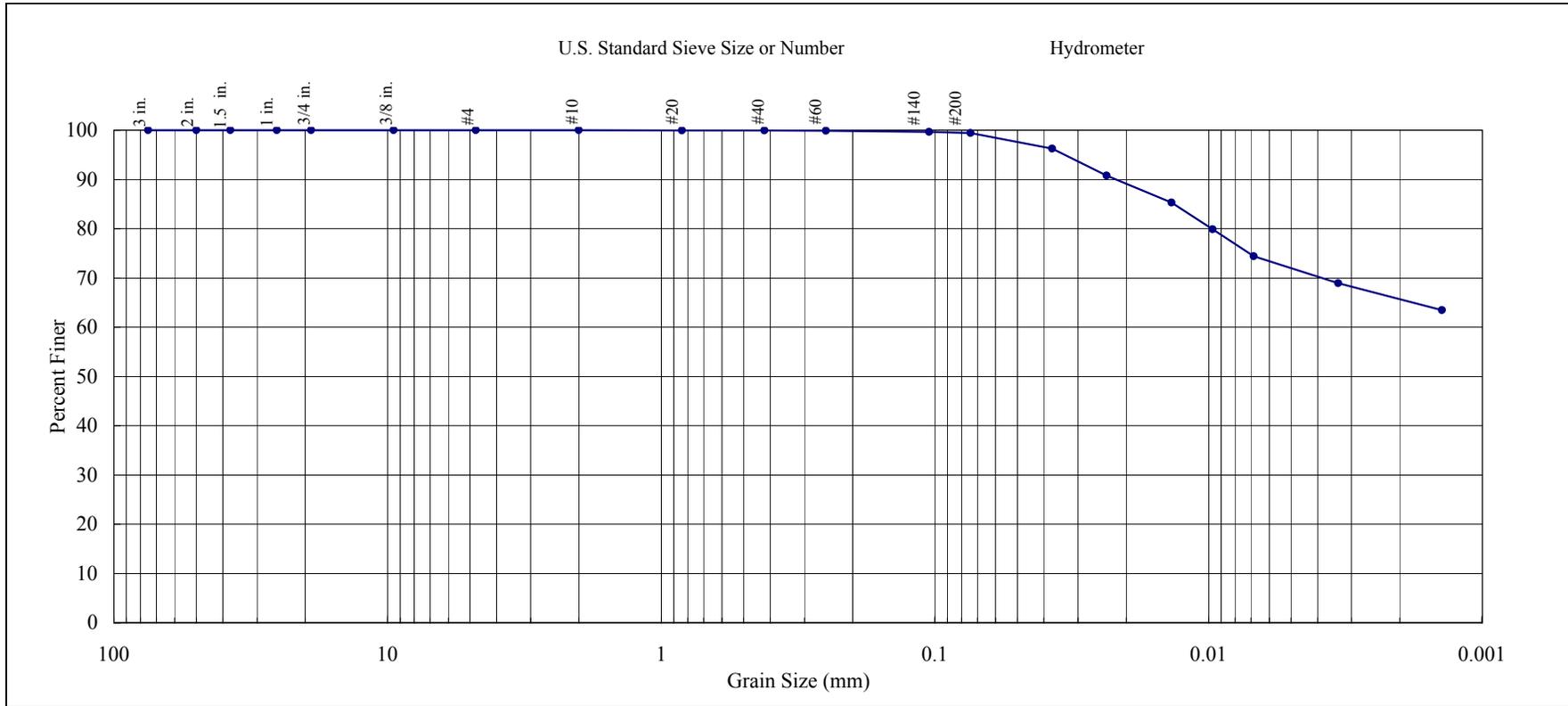
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:							
	Coarse	Medium	Fine	Silt	Clay	Battelle							
0.00	0.00	0.05	0.50	27.95	71.50	Client Project Title:	New Bedford Harbor Sed Traps						
						Client Project Number:	G606422						
						AMS Project Number:	8C17						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	7/31/2008	
257											Date Analyzed:	10/3/2008	
<b>Material Description</b>												Matrix, Method:	Sediment, ASTM D 422
Lean Clay ("CL"), black (N1)												<b>Client Sample ID:</b>	Q3742
												<b>AMS Sample ID:</b>	8C17-05



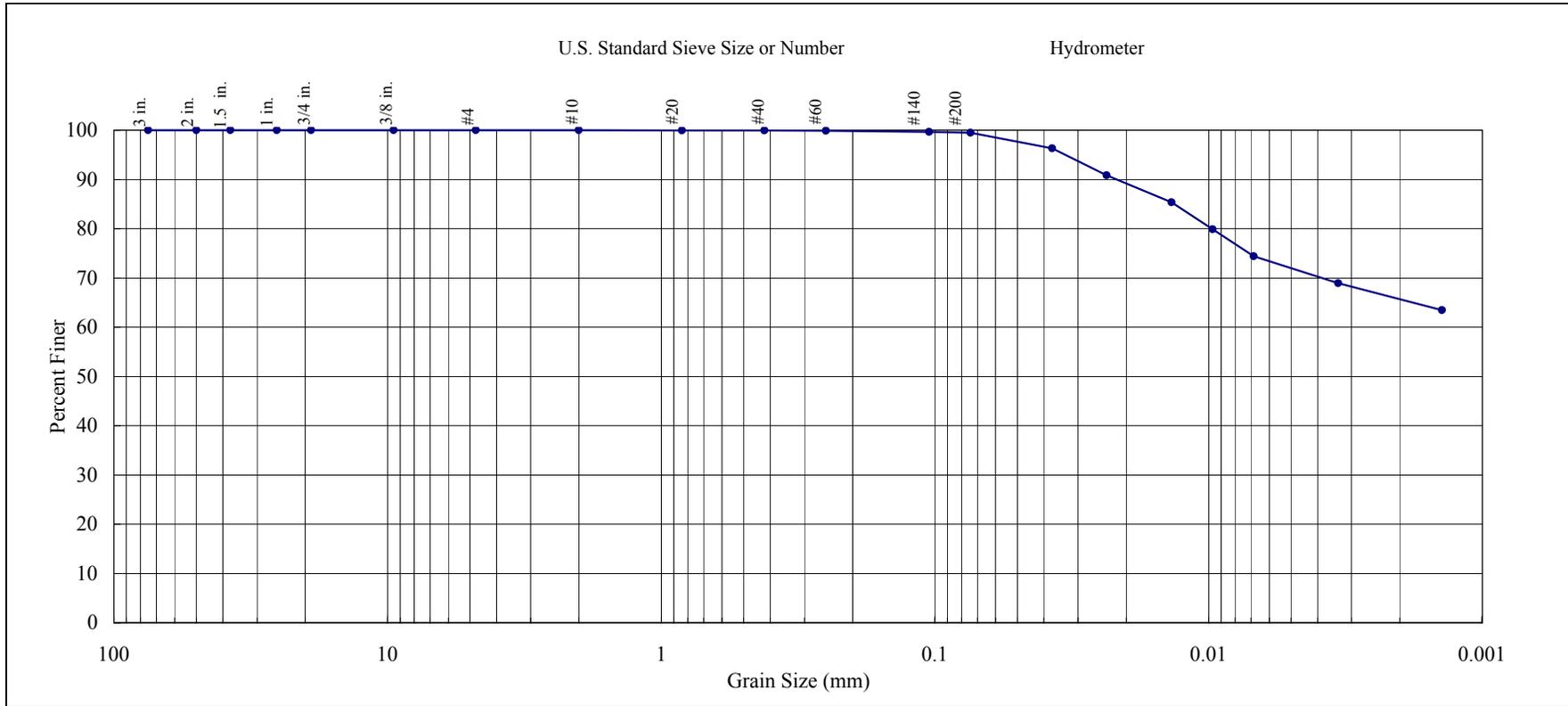
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.05	0.45	27.97	71.53	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C17					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	7/31/2008
257											Date Analyzed:	10/3/2008
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												
						Client Sample ID:	Q3742					
						AMS Sample ID:	8C17-05Q					



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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor Sed Traps  
 Project Number: G606422  
 Client Sample ID: Q3742  
 AMS Sample ID: 8C17-05

AMS Project Number: 8C17  
 Date Sampled: 7/31/2008  
 Date Analyzed: 10/3/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 1

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.05	0.05	0.00		≤ 25
0.074	No. 200	Fine Sand	0.50	0.45	10.53		≤ 25
<0.074 - 0.005	Hydrometer	Silt	27.95	27.97	0.07		≤ 25
<0.005	Hydrometer	Clay	71.50	71.53	0.04		≤ 25

**Samples in Batch:** 8C17-01 8C17-04  
 8C17-02 8C17-05  
 8C17-03

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit, and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

	<p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager</p>	
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# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C17
Project Number:	G606422-07DUXCHE	Date Sampled:	7/31/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	8/21/2008
Client Sample ID:	Q3735 (ST-04-073108-B)		
AMS Sample ID:	8C17-1		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.71	%		0.01	0.03	EPA 9060A	Sediment	9/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C17
Project Number:	G606422-07DUXCHE	Date Sampled:	7/31/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	8/21/2008
Client Sample ID:	Q3737 (ST-01-073108-B)		
AMS Sample ID:	8C17-2		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	16.25	%		0.01	0.03	EPA 9060A	Sediment	9/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C17
Project Number:	G606422-07DUXCHE	Date Sampled:	7/31/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	8/21/2008
Client Sample ID:	Q3738 (ST-01-073108-C)		
AMS Sample ID:	8C17-3		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.40	%		0.01	0.03	EPA 9060A	Sediment	9/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C17
Project Number:	G606422-07DUXCHE	Date Sampled:	7/31/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	8/21/2008
Client Sample ID:	Q3740 (ST-02-073108-B)		
AMS Sample ID:	8C17-4		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.70	%		0.01	0.03	EPA 9060A	Sediment	9/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C17
Project Number:	G606422-07DUXCHE	Date Sampled:	7/31/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	8/21/2008
Client Sample ID:	Q3742 (ST-03-073108-B)		
AMS Sample ID:	8C17-5		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.29	%		0.01	0.03	EPA 9060A	Sediment	9/4/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number: 8C17
Project Number:	G606422-07DUXCHE	AMS SOP Number: 2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed: 9/4/2008
Matrix:	Sediment	Batch ID: 090408-03T
Method:	EPA 9060A	

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-03	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-03	3.15	3.23	2.51		0.01	0.03	≤ 5 RPD
ICCV-03	2.04	2.00	1.98		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C17-5	12.30	12.23	0.57		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 8C17-1 8C17-4  
8C17-2 8C17-5  
8C17-3

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C17  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

Proj. No: **G606422**  
Proj. Name: **Sed Trap**

SAMPLERS: Signature  
*Mark P M*

ANALYSIS REQUESTED →  
"NUMBER OF CONTAINERS"

DATE	TIME	LAB BATTLE ID	FIELD CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	<del>OTHER</del> GS/TOC	ACIDIFIED	PRESERVED	Total Number of Containers
07/31/08	0828	Q3734	ST-01-073108-A	7th sediment trap recovery station 04		✓						✓			
	↓	Q3735	ST-04-073108-B			✓						✓			
	0854	Q3736	ST-01-073108-A			✓						✓			
	↓	Q3737	ST-01-073108-B			✓						✓			
	↓	Q3738	ST-01-073108-C			✓						✓			
	0913	Q3739	ST-02-073108-A			✓						✓			
	↓	Q3740	ST-02-073108-B			✓						✓			
	0935	Q3741	ST-03-073108-A			✓						✓			
	↓	Q3742	ST-03-073108-B			✓						✓			

Relinquished by:  
*Mark P M*

Date/Time  
07/31/08 11:45

Received by:  
*Jeanine Slight*

Date/Time  
7-31-08 11:45am

Relinquished by:

Date/Time

Received by:

Date/Time

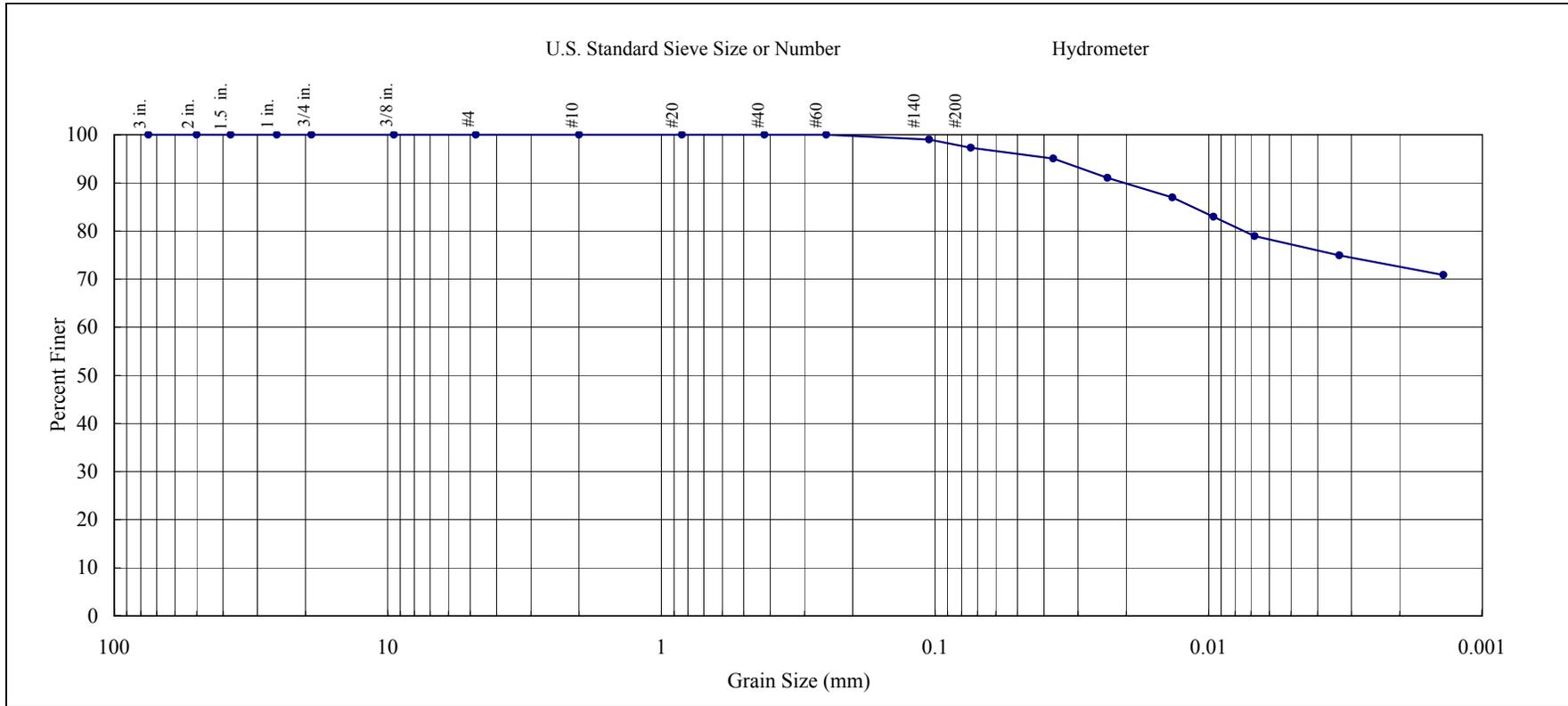
Comments: After settling for 24 hrs & decanting, all samples will be weighed for reproducibility. At station ST-01, 3 samples will be analyzed for PCB, TOC & GS. At ST-02, 03 & 04, only 1 of 2 samples will be analyzed.

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# Deployment No. 8

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client: Battelle						
	Coarse	Medium	Fine	Silt	Clay							
0.00	0.00	0.00	2.70	20.45	76.85	Client Project Title: New Bedford Harbor Sed Traps						
						Client Project Number: G606422						
						AMS Project Number: 8C20						
						Date Sampled: 8/25/2008						
						Date Analyzed: 10/3/2008						
						Matrix, Method: Sediment, ASTM D 422						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: Q4052 (ST-01-082508-B)	
236												
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												



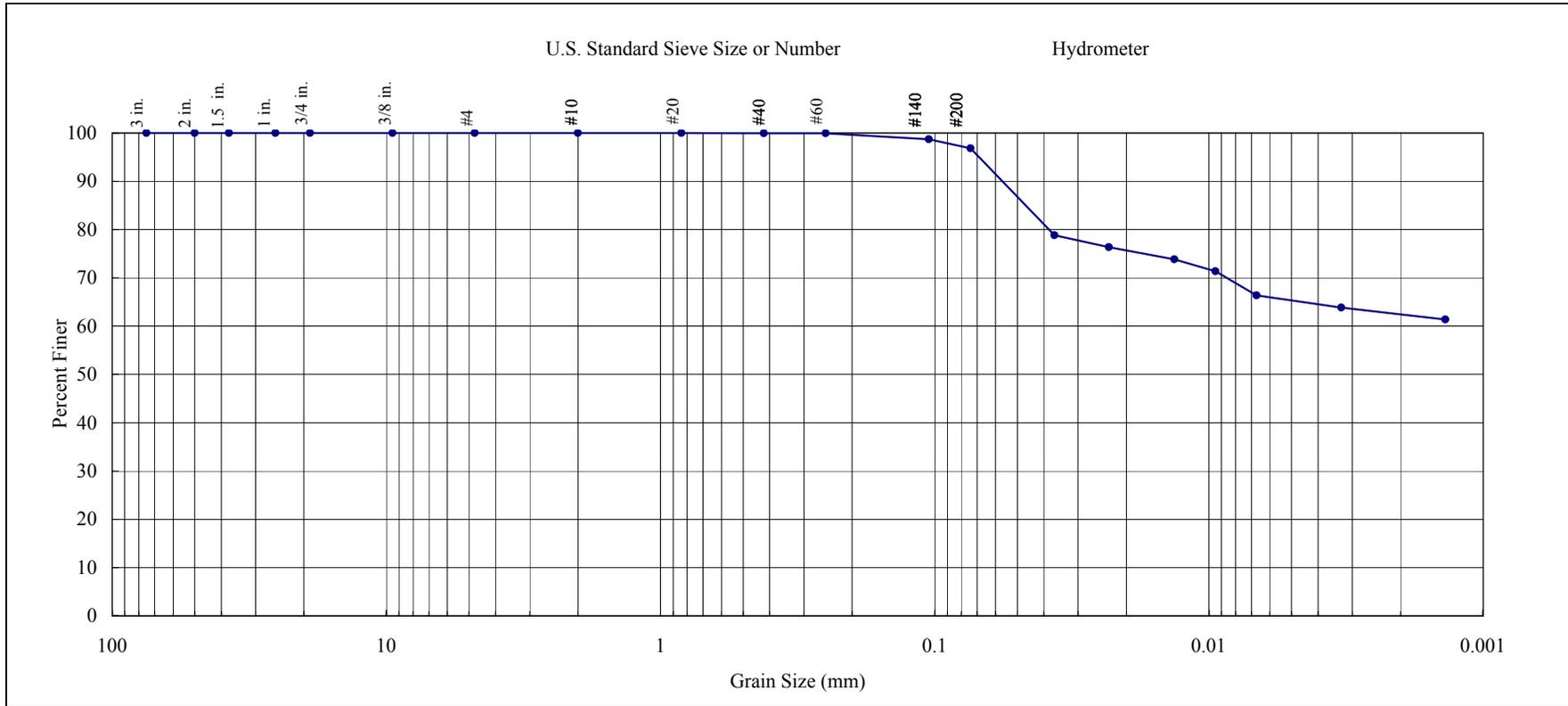
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*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager

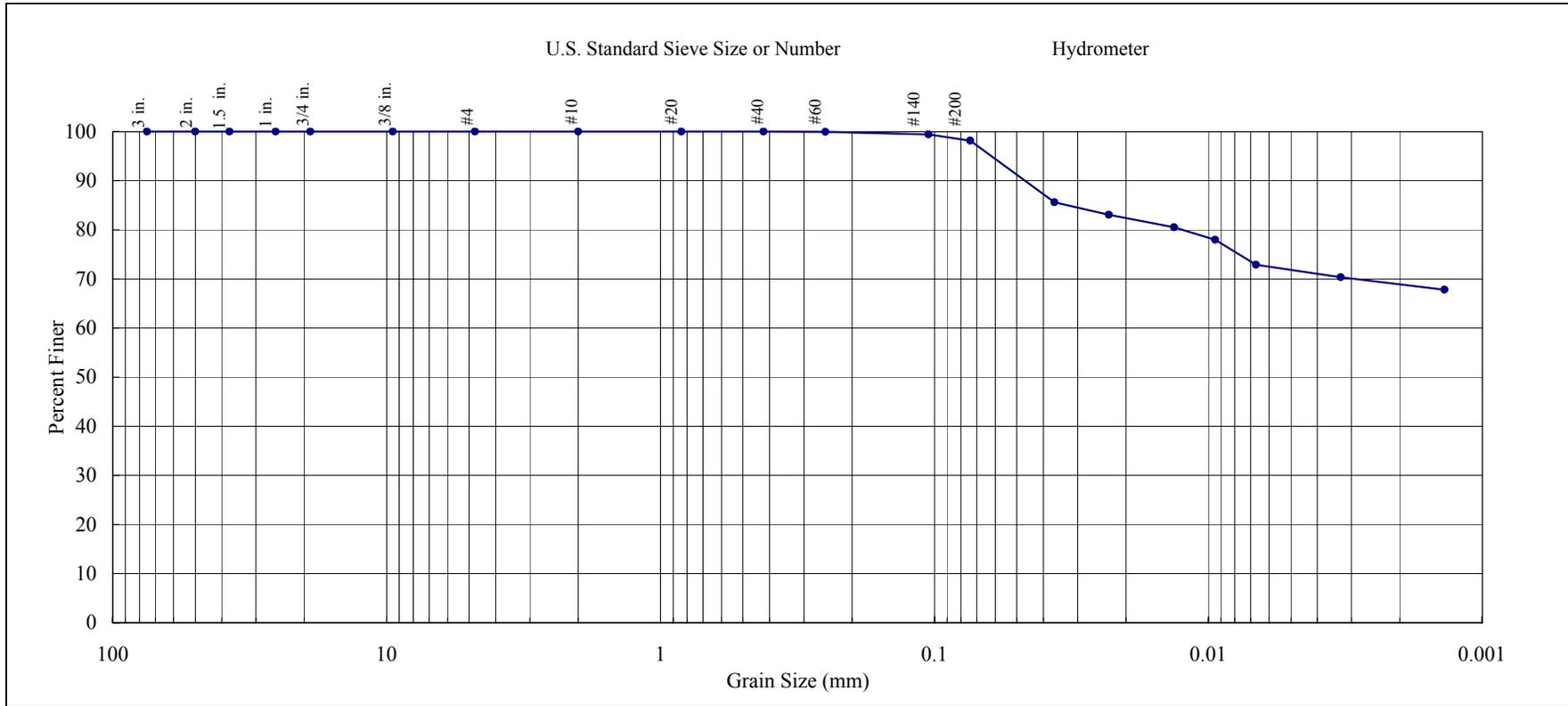


## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)					Client:	Battelle																						
	Coarse	Medium	Fine	Silt	Clay			Client Project Title:	New Bedford Harbor Sed Traps																							
0.00	0.00	0.04	3.15	31.69	65.12			Client Project Number:	G606422																							
AMS Project Number: 8C20																																
Date Sampled: 8/25/2008																																
Date Analyzed: 10/3/2008																																
Matrix, Method: Sediment, ASTM D 422																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Water Cont. (%)</th> <th style="width: 5%;">LL</th> <th style="width: 5%;">PI</th> <th style="width: 5%;">D<sub>85</sub></th> <th style="width: 5%;">D<sub>60</sub></th> <th style="width: 5%;">D<sub>50</sub></th> <th style="width: 5%;">D<sub>30</sub></th> <th style="width: 5%;">D<sub>15</sub></th> <th style="width: 5%;">D<sub>10</sub></th> <th style="width: 5%;">C<sub>c</sub></th> <th style="width: 5%;">C<sub>u</sub></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">234</td> <td></td> </tr> </tbody> </table>									Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	234											<b>Client Sample ID:</b> Q4053 (ST-01-082508-C) <b>AMS Sample ID:</b> 8C20-2	
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>																						
234																																
<b>Material Description</b>																																
Lean Clay ("CL"), black (N1)																																
<b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax				These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.				 Laboratory No. E87956																								
_____ Jennifer D. Davis AMS, Inc. Project Manager																																

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)					Fines (%)					Client:	Battelle
	Coarse	Medium	Fine			Silt	Clay				Client Project Title:	New Bedford Harbor Sed Traps
0.00	0.00	0.00	1.84			26.53					Client Project Number:	G606422
											AMS Project Number:	8C20
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	8/25/2008
224											Date Analyzed:	10/3/2008
Material Description												
Lean Clay ("CL"), black (N1)											Matrix, Method:	Sediment, ASTM D 422
											<b>Client Sample ID:</b>	Q4055 (ST-02-082508-B)
											<b>AMS Sample ID:</b>	8C20-3



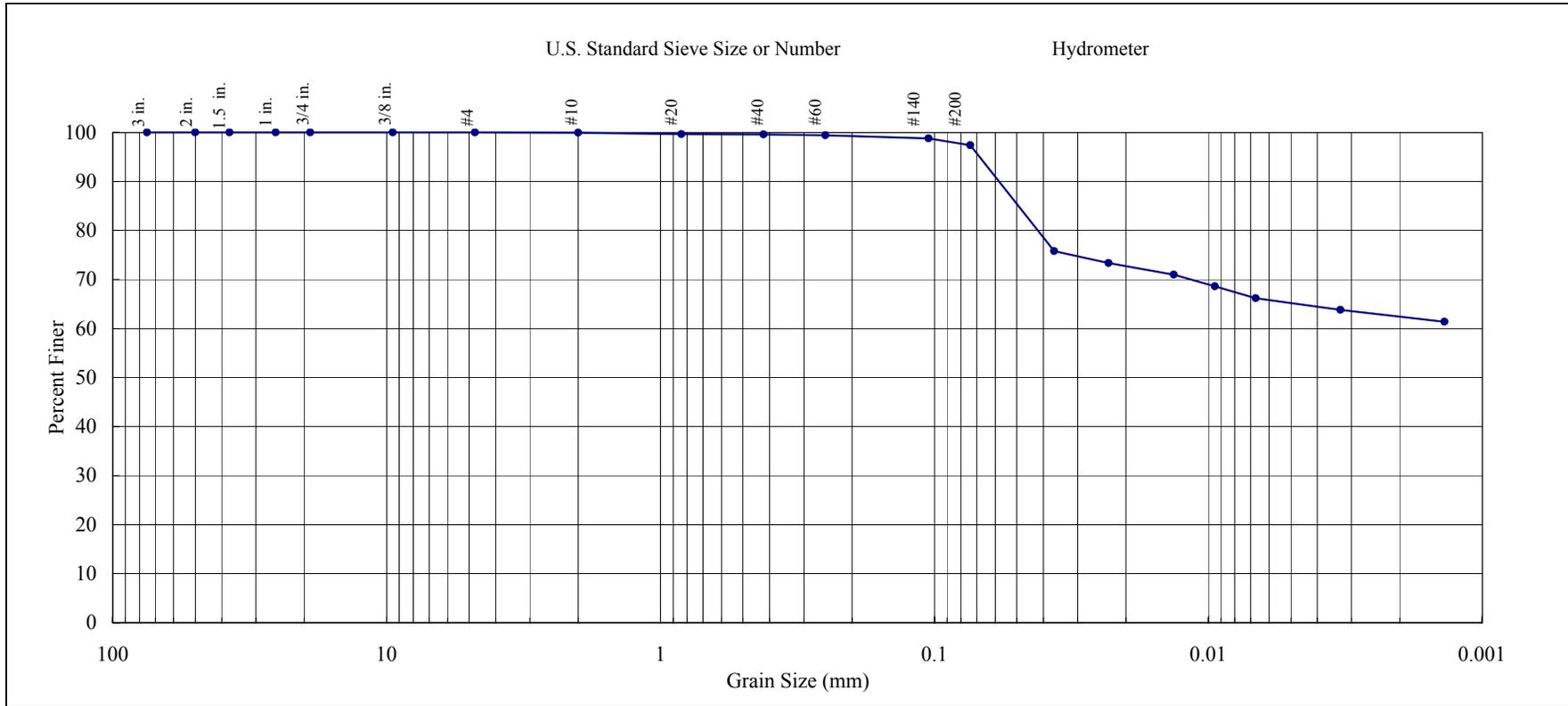
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 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.05	0.36	2.22	32.37	65.00	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C20					
						Date Sampled:	8/25/2008					
						Date Analyzed:	10/3/2008					
						Matrix, Method:	Sediment, ASTM D 422					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	<b>Client Sample ID:</b>	Q4057 (ST-03-082508-B)
219											<b>AMS Sample ID:</b>	8C20-4
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												



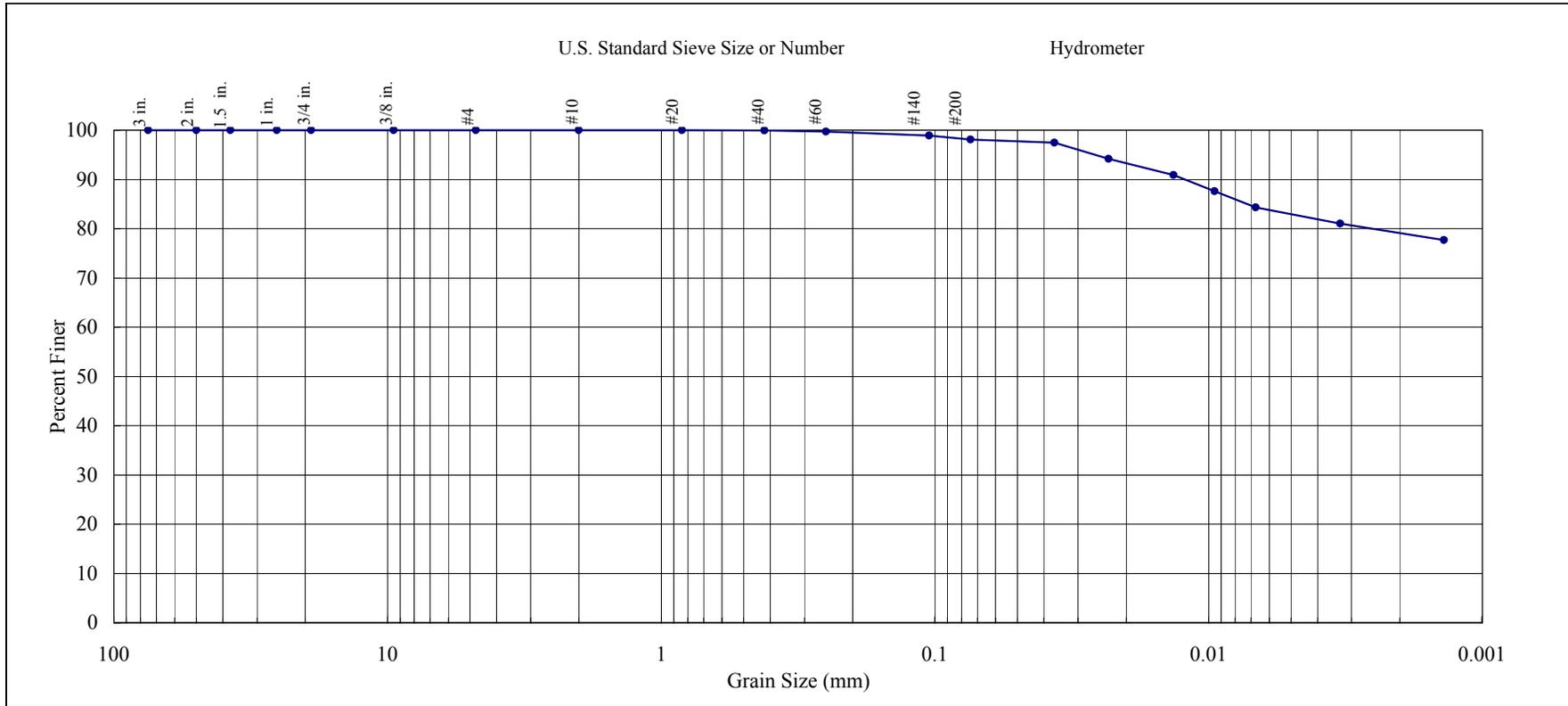
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.08	1.81	15.46	82.65	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C20					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	8/25/2008
198											Date Analyzed:	10/3/2008
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												
						Client Sample ID:	Q4059 (ST-04-082508-B)					
						AMS Sample ID:	8C20-5					



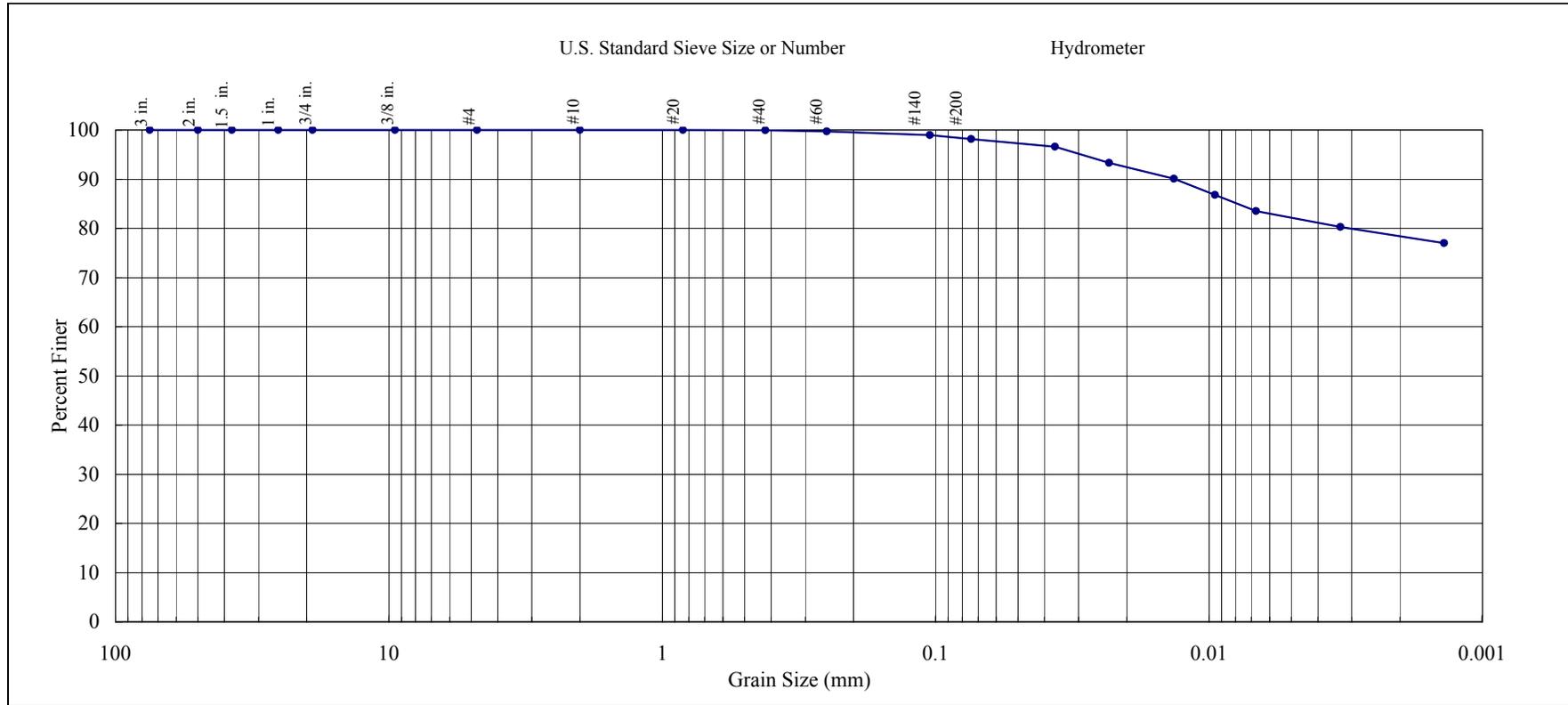
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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client: Battelle		Client Project Title: New Bedford Harbor Sed Traps					
	Coarse	Medium	Fine	Silt	Clay								
0.00	0.00	0.08	1.78	16.25	81.89	Client Project Number: G606422		AMS Project Number: 8C20					
Water Cont. (%)		LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled: 8/25/2008	
198												Date Analyzed: 10/3/2008	
<b>Material Description</b>											Matrix, Method: Sediment, ASTM D 422		
Lean Clay ("CL"), black (N1)											<b>Client Sample ID:</b> Q4059 (ST-04-082508-B)		
											<b>AMS Sample ID:</b> 8C20-05Q		
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax				These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager							 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956		

## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor Sed Traps  
 Project Number: G606422  
 Client Sample ID: Q4059 (ST-04-082508-B)  
 AMS Sample ID: 8C20-5

AMS Project Number: 8C20  
 Date Sampled: 8/25/2008  
 Date Analyzed: 10/3/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 1

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.08	0.08	0.00		≤ 25
0.074	No. 200	Fine Sand	1.81	1.78	1.67		≤ 25
<0.074 - 0.005	Hydrometer	Silt	15.46	16.25	4.98		≤ 25
<0.005	Hydrometer	Clay	82.65	81.89	0.92		≤ 25

**Samples in Batch:** 8C20-1      8C20-4  
 8C20-2      8C20-05  
 8C20-3

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit, and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

 <p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager</p>	 <p>ACCREDITED IN ACCORDANCE WITH  <b>nelac</b>                  LABORATORY NO. E87956</p>
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# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C20
Project Number:	G606422-07DUXCHE	Date Sampled:	8/25/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	9/9/2008
Client Sample ID:	Q4052 (ST-01-082508-B)		
AMS Sample ID:	8C20-1		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.68	%		0.01	0.03	EPA 9060A	Sediment	10/3/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C20
Project Number:	G606422-07DUXCHE	Date Sampled:	8/25/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	9/9/2008
Client Sample ID:	Q4053 (ST-01-082508-C)		
AMS Sample ID:	8C20-2		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.06	%		0.01	0.03	EPA 9060A	Sediment	10/3/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring  
Client Sample ID: Q4055 (ST-02-082508-B)  
AMS Sample ID: 8C20-3

AMS Project Number: 8C20  
Date Sampled: 8/25/2008  
Date Received: 9/9/2008

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.88	%		0.01	0.03	EPA 9060A	Sediment	10/3/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C20
Project Number:	G606422-07DUXCHE	Date Sampled:	8/25/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	9/9/2008
Client Sample ID:	Q4057 (ST-03-082508-B)		
AMS Sample ID:	8C20-4		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.83	%		0.01	0.03	EPA 9060A	Sediment	10/3/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C20
Project Number:	G606422-07DUXCHE	Date Sampled:	8/25/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	9/9/2008
Client Sample ID:	Q4059 (ST-04-082508-B)		
AMS Sample ID:	8C20-5		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.59	%		0.01	0.03	EPA 9060A	Sediment	10/3/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number: 8C20
Project Number:	G606422-07DUXCHE	AMS SOP Number: 2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed: 10/3/2008
Matrix:	Sediment	Batch ID: 100308-04T
Method:	EPA 9060A	

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-03	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-03	3.17	3.23	1.88		0.01	0.03	≤ 5 RPD
ICCV-03	2.08	2.00	3.92		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C20-5	11.51	12.23	6.07		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 8C20-1 8C20-4  
8C20-2 8C20-5  
8C20-3

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C20  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

Proj. No G606422	Proj. Name NBH Sed Trap
---------------------	----------------------------

SAMPLERS: Signature  
*Michael P. ...*

ANALYSIS REQUESTED →  
"NUMBER OF CONTAINERS"

DATE	TIME	LAB <del>BATTELLE</del> ID	FIELD <del>CLIENT</del> ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER (GS/TOC)	ACIDIFIED	PRESERVED	Total Number of Containers
08/25/08	13:07	Q4051	ST-01-082508-A			✓						✓			1
	↓	Q4052	ST-01-082508-B			✓						✓			1
	↓	Q4053	ST-01-082508-C			✓						✓			1
	13:30	Q4054	ST-02-082508-A			✓						✓			1
	↓	Q4055	ST-02-082508-B			✓						✓			1
	14:18	Q4056	ST-03-082508-A			✓						✓			1
	↓	Q4057	ST-03-082508-B			✓						✓			1
	13:56	Q4058	ST-04-082508-A			✓						✓			1
	↓	Q4059	ST-04-082508-B			✓						✓			1

Relinquished by: <i>Michael P. ...</i>	Date/Time 08/26/08 14:10		Received by: <i>Jeanne Donovan</i>	Date/Time 8/26/08 1410	
	Date/Time			Date/Time	

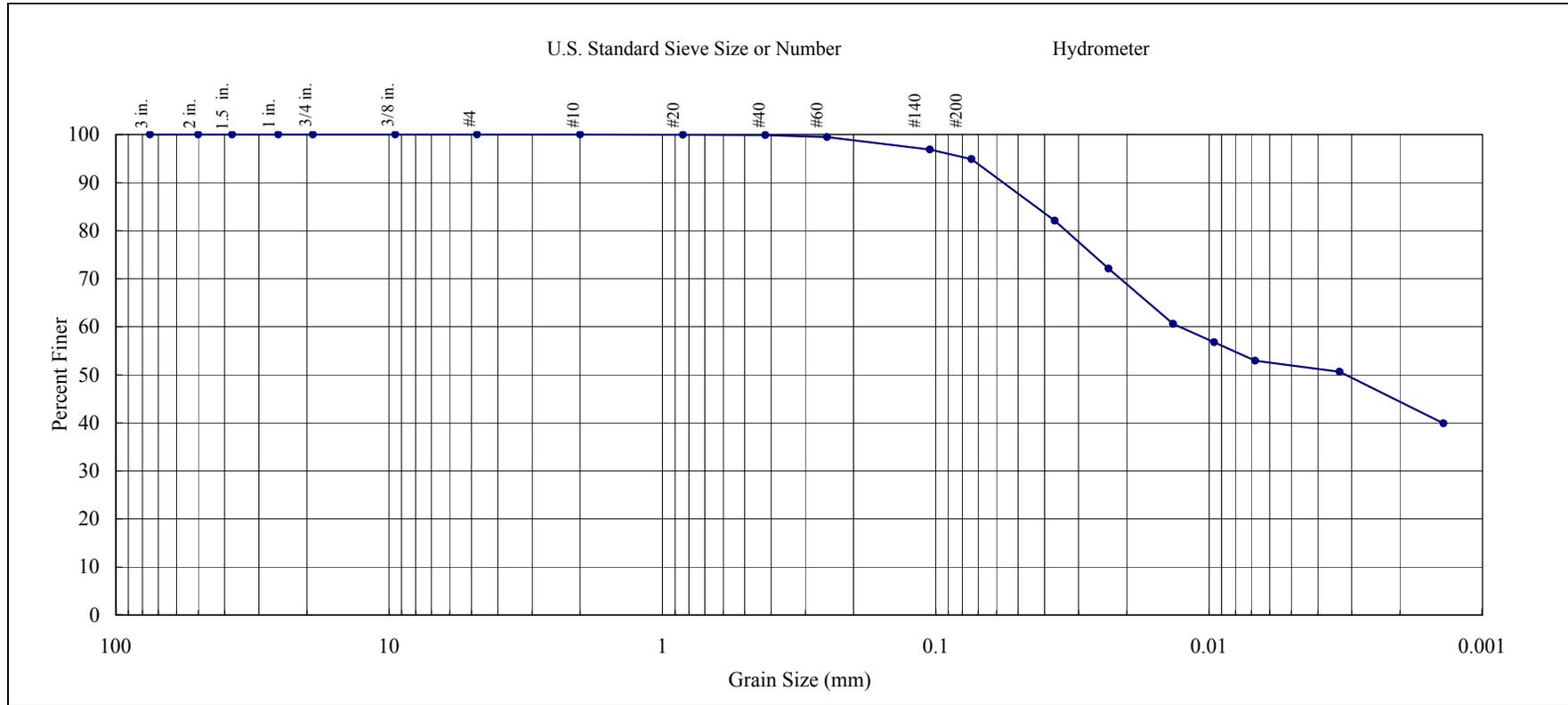
Comments: After settling for 24 hrs & decanting, all samples will be weighed for reproducibility. At station ST-01, 2 of 3 samples will be analyzed for PCB, TOC & Grain Size. At station ST-02, 03 & 04 only, 1 of 2 samples will be analyzed

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## Deployment No. 9

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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.14	4.99	43.15	51.72	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C24					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	10/2/2008
261											Date Analyzed:	11/15/2008
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												
						Client Sample ID:	Q4850 (ST01-100208-B)					
						AMS Sample ID:	8C24-1					



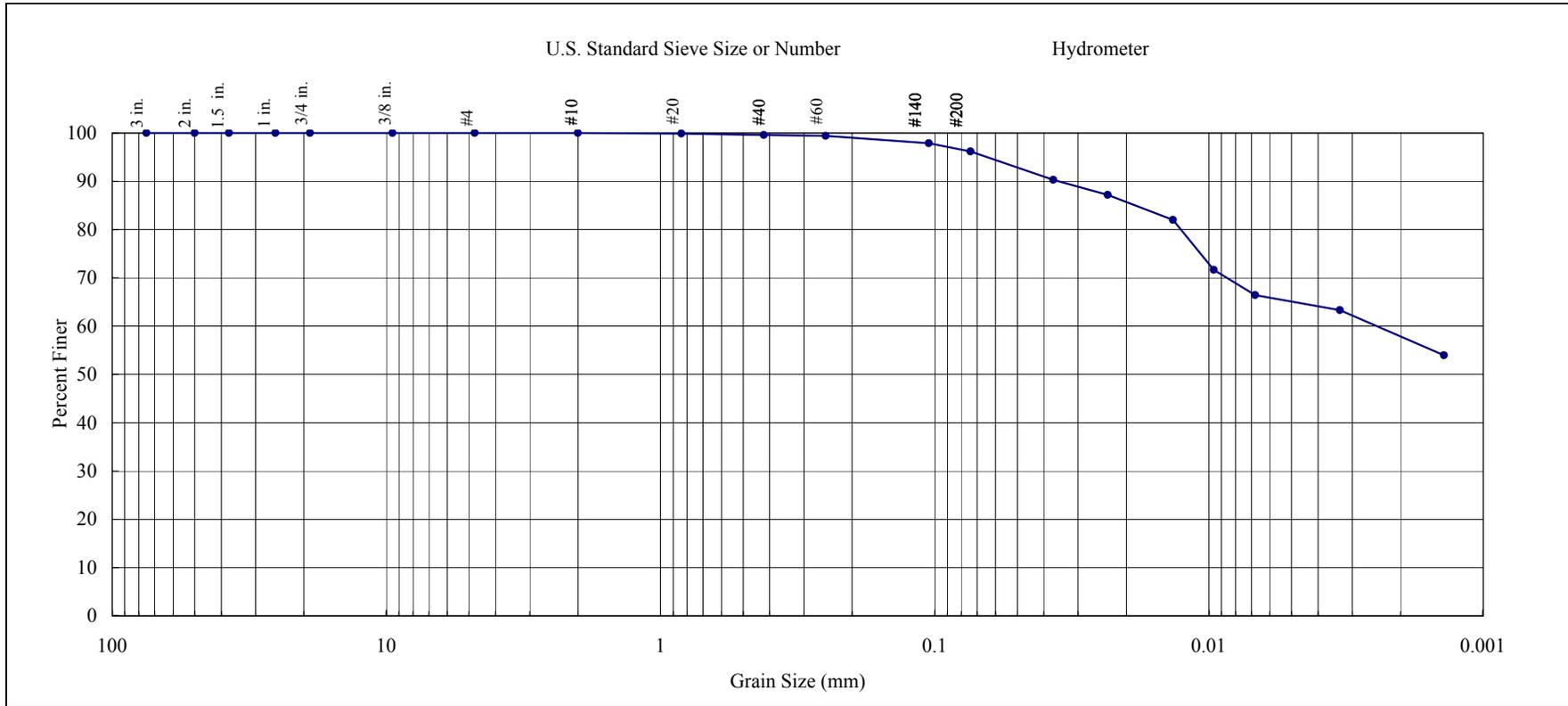
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 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:							
	Coarse	Medium	Fine	Silt	Clay	Battelle							
0.00	0.00	0.40	3.41	31.35	64.84	Client Project Title:	New Bedford Harbor Sed Traps						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Project Number:	G606422	
253											AMS Project Number:	8C24	
<b>Material Description</b>												Date Sampled:	10/2/2008
Lean Clay ("CL"), black (N1)												Date Analyzed:	11/15/2008
												Matrix, Method:	Sediment, ASTM D 422
												<b>Client Sample ID:</b>	Q4851 (ST01-100208-C)
												<b>AMS Sample ID:</b>	8C24-2



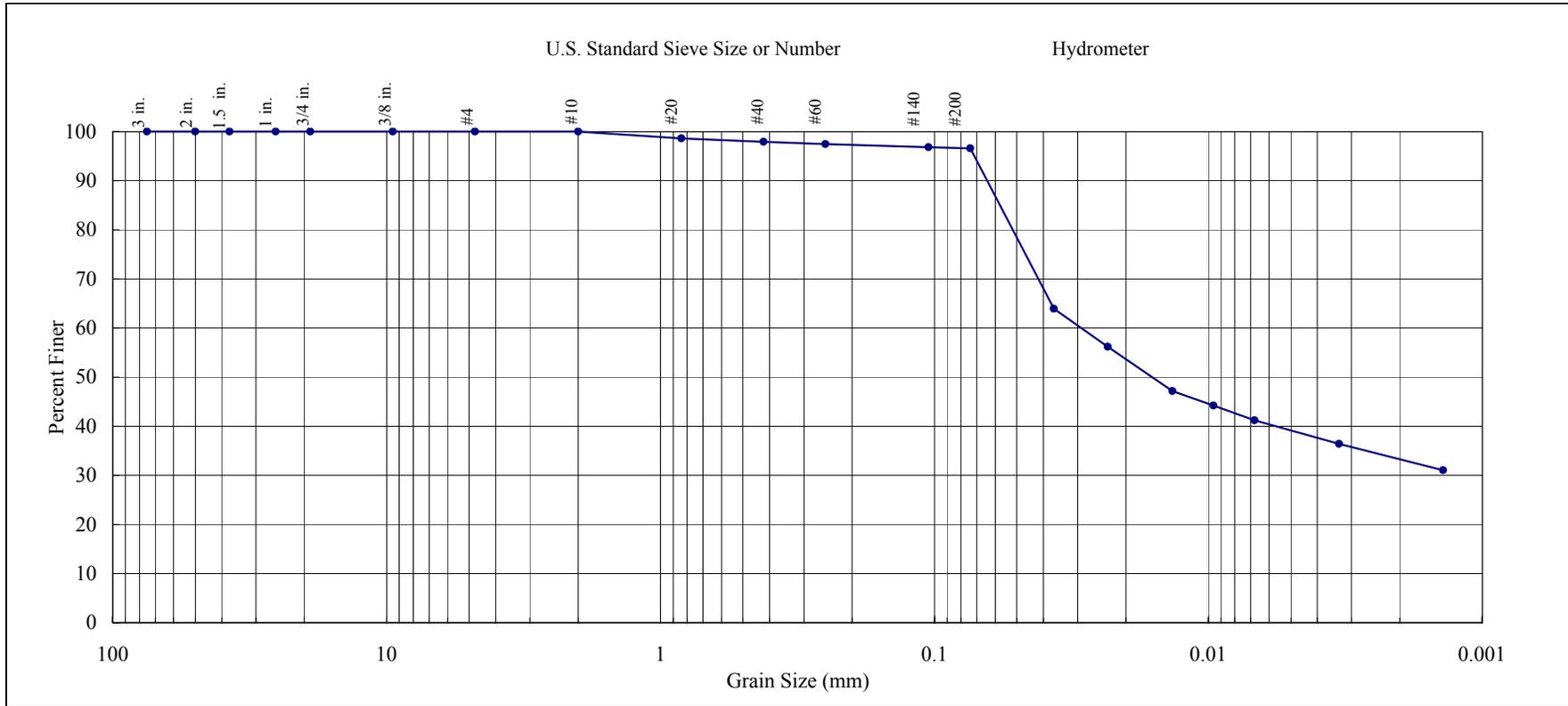
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*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	2.07	1.35	57.83	38.75	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C24					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	10/2/2008
315											Date Analyzed:	11/15/2008
<b>Material Description</b>												
Elastic Silt ("MH"), black (N1)												
						Matrix, Method:	Sediment, ASTM D 422					
						<b>Client Sample ID:</b>	Q4853 (ST02-100208-B)					
						<b>AMS Sample ID:</b>	8C24-3					



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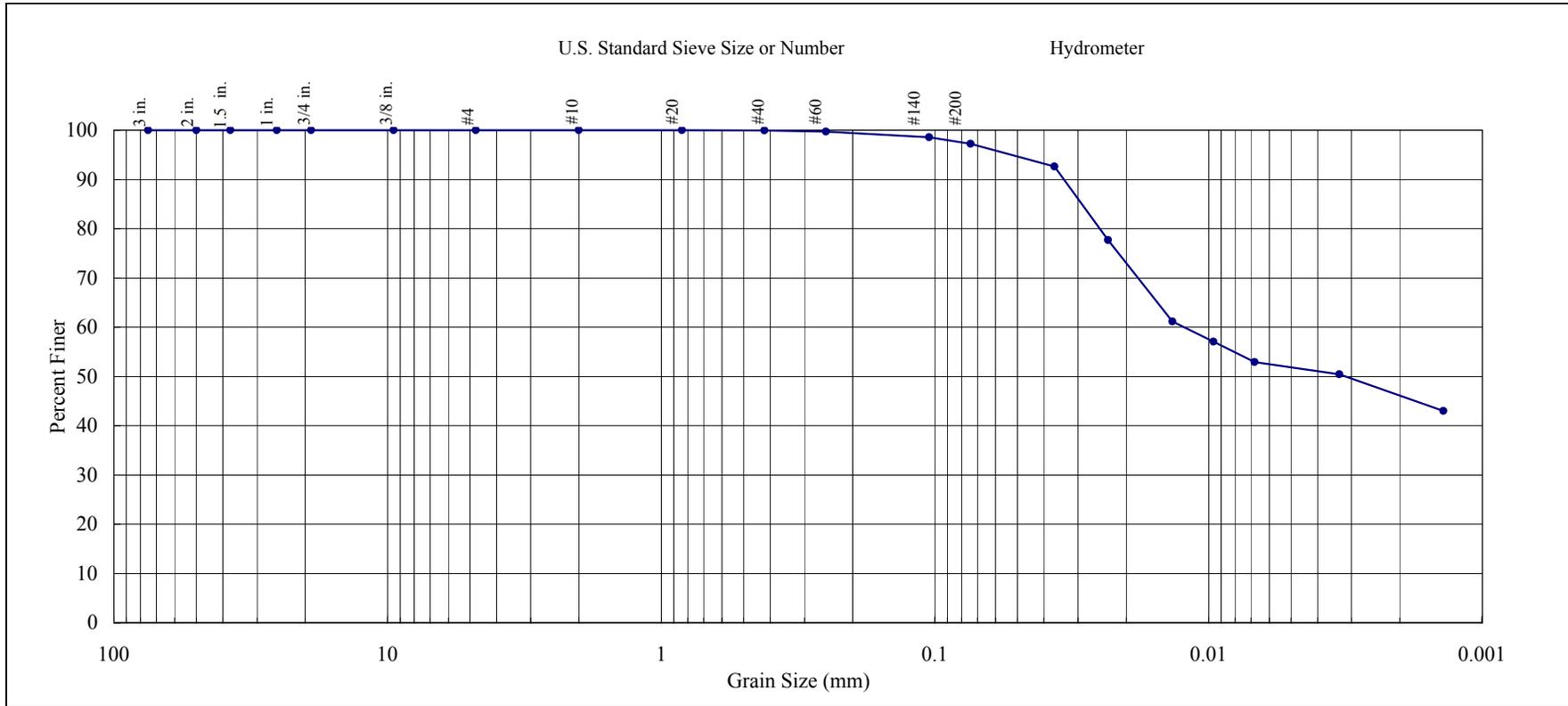
These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



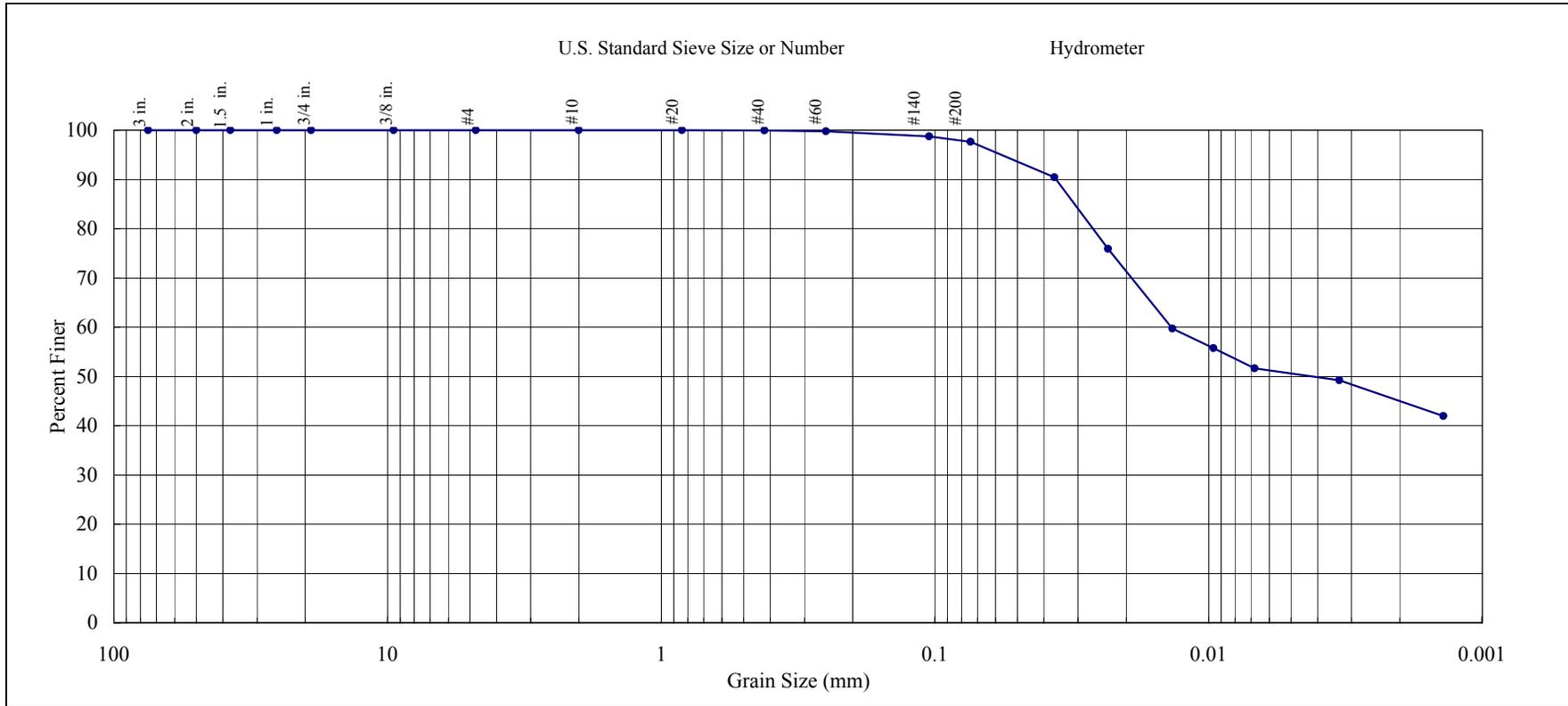


## GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)			Fines (%)		Client: Battelle		Client Project Title: New Bedford Harbor Sed Traps		
		Coarse	Medium	Fine	Silt	Clay					
0.00		0.00	0.06	2.72	45.59	51.63	Client Project Number: G606422		AMS Project Number: 8C24		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled: 10/2/2008
259											Date Analyzed: 11/15/2008
Material Description											
Lean Clay ("CL"), black (N1)								Matrix, Method: Sediment, ASTM D 422		Client Sample ID: Q4857 (ST03-100208-B)	
								AMS Sample ID: 8C24-5			
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.					 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> LABORATORY No. E87956			

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client: Battelle		Client Project Title: New Bedford Harbor Sed Traps				
	Coarse	Medium	Fine	Silt	Clay							
0.00	0.00	0.05	2.32	47.22	50.41	Client Project Number: G606422		AMS Project Number: 8C24				
Date Sampled: 10/2/2008		Date Analyzed: 11/15/2008		Matrix, Method: Sediment, ASTM D 422		Client Sample ID: Q4857 (ST03-100208-B)		AMS Sample ID: 8C24-5Q				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	<b>Material Description</b> Lean Clay ("CL"), black (N1)	
259												



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These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor Sed Traps  
 Project Number: G606422  
 Client Sample ID: Q4857 (ST03-100208-B)  
 AMS Sample ID: 8C24-5

AMS Project Number: 8C24  
 Date Sampled: 10/2/2008  
 Date Analyzed: 11/15/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 1

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.06	0.05	18.18		≤ 25
0.074	No. 200	Fine Sand	2.72	2.32	15.87		≤ 25
<0.074 - 0.005	Hydrometer	Silt	45.59	47.22	3.51		≤ 25
<0.005	Hydrometer	Clay	51.63	50.41	2.39		≤ 25

**Samples in Batch:** 8C24-1      8C24-4  
 8C24-2      8C20-5  
 8C24-3

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit, and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

 <p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager</p>	 <p>ACCREDITED IN ACCORDANCE WITH  <b>nelac</b>                  LABORATORY NO. E87956</p>
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# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number: 8C24
Project Number:	G606422-07DUXCHE	Date Sampled: 10/2/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received: 10/8/2008
Client Sample ID:	Q4850 (ST01-100208-B)	
AMS Sample ID:	8C24-1	

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	15.41	%		0.01	0.03	EPA 9060A	Sediment	10/25/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number: 8C24
Project Number:	G606422-07DUXCHE	Date Sampled: 10/2/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received: 10/8/2008
Client Sample ID:	Q4851 (ST01-100208-C)	
AMS Sample ID:	8C24-2	

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	15.37	%		0.01	0.03	EPA 9060A	Sediment	10/25/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number: 8C24
Project Number:	G606422-07DUXCHE	Date Sampled: 10/2/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received: 10/8/2008
Client Sample ID:	Q4853 (ST02-100208-B)	
AMS Sample ID:	8C24-3	

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	23.83	%		0.01	0.03	EPA 9060A	Sediment	10/25/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C24
Project Number:	G606422-07DUXCHE	Date Sampled:	10/2/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	10/8/2008
Client Sample ID:	Q4854 (ST04-100208-A)		
AMS Sample ID:	8C24-4		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.58	%		0.01	0.03	EPA 9060A	Sediment	10/25/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C24
Project Number:	G606422-07DUXCHE	Date Sampled:	10/2/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	10/8/2008
Client Sample ID:	Q4857 (ST03-100208-B)		
AMS Sample ID:	8C24-5		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.39	%		0.01	0.03	EPA 9060A	Sediment	10/25/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

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## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number: 8C24
Project Number:	G606422-07DUXCHE	AMS SOP Number: 2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed: 10/25/2008
Matrix:	Sediment	Batch ID: 102508-01T
Method:	EPA 9060A	

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-01	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-01	3.11	3.23	3.79		0.01	0.03	≤ 5 RPD
ICCV-01	2.07	2.00	3.44		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C24-5	12.39	11.74	5.39		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 8C24-1 8C24-4  
8C24-2 8C24-5  
8C24-3

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C24  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

# Chain of Custody

 Proj. No: 6606422  
 Proj. Name: Sed Trap

 SAMPLERS: Signature  


 ANALYSIS REQUESTED →  
 "NUMBER OF CONTAINERS"

GS/TOC

DATE	TIME	Lab BATTELLE ID	Field CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	<del>OTHER</del> GS/TOC	ACIDIFIED	PRESERVED	Total Number of Containers	
10/2/08	0926	Q4849	ST01-100208-A	9 <sup>th</sup> sediment trap recovery station	ST01	X						X			1	
	↓	Q4850	ST01-100208-B		ST01	X							X			1
	↓	Q4851	ST01-100208-C		ST01	X							X			1
	0955	Q4852	ST02-100208-A		ST02	X							X			1
	↓	Q4853	ST02-100208-B		ST02	X							X			1
	1022	Q4854	ST04-100208-A		ST04	X							X			1
	↓	Q4855	ST04-100208-B		ST04	X							X			1
	1045	Q4856	ST03-100208-A		ST03	X							X			1
	↓	Q4857	ST03-100208-B	ST03	X							X			1	

 Relinquished by:  


 Date/Time  
10/2/08 1315

 Received by:  


 Date/Time  
10/2/08 13:15

Relinquished by:

Date/Time

Received by:

Date/Time

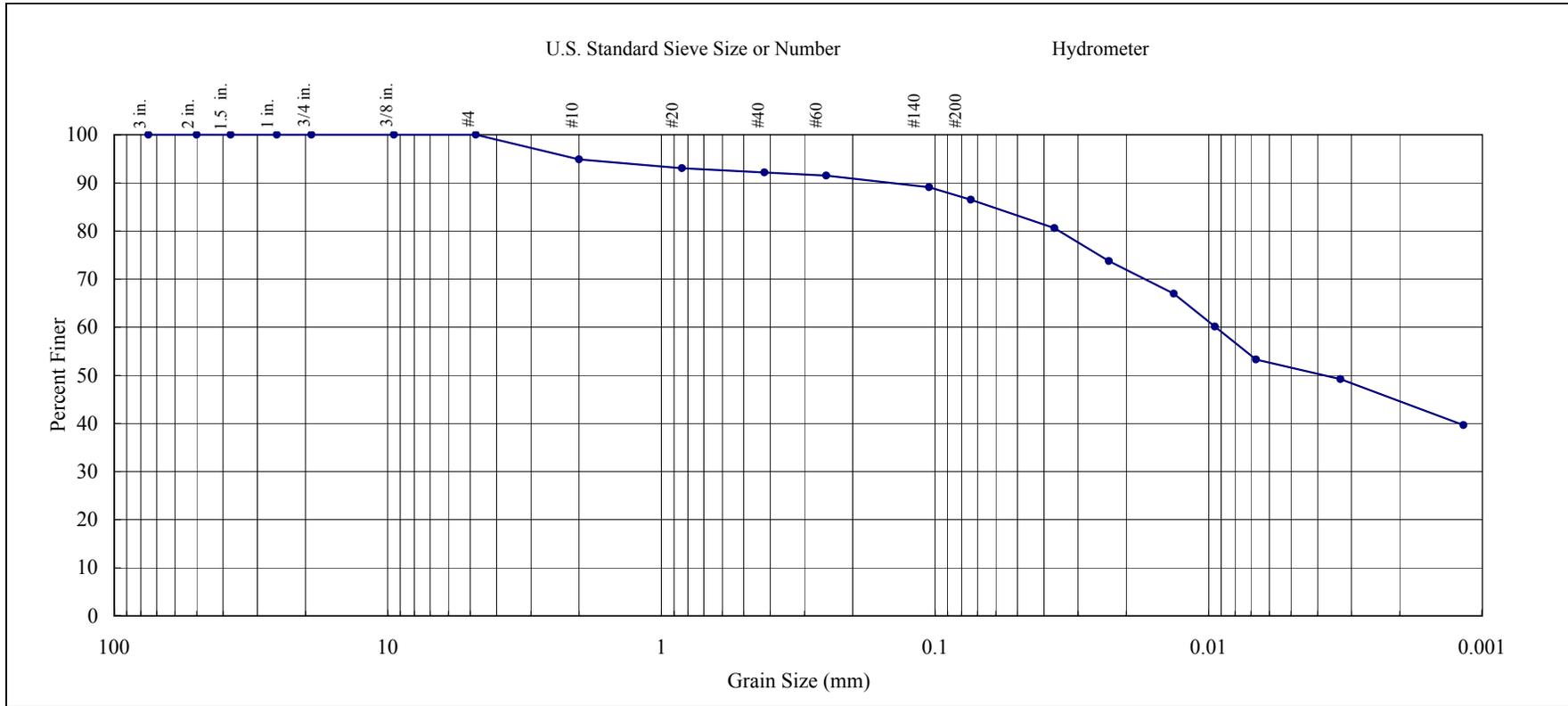
Comments: After settling for 24 hours, All samples will be decanted + weighed for reproducibility. At Station ST01 2 of 3 samples will be analyzed for PCB, TOC, + GS. At the remaining stations only 1 of 2 samples will be analyzed

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# Deployment No. 10

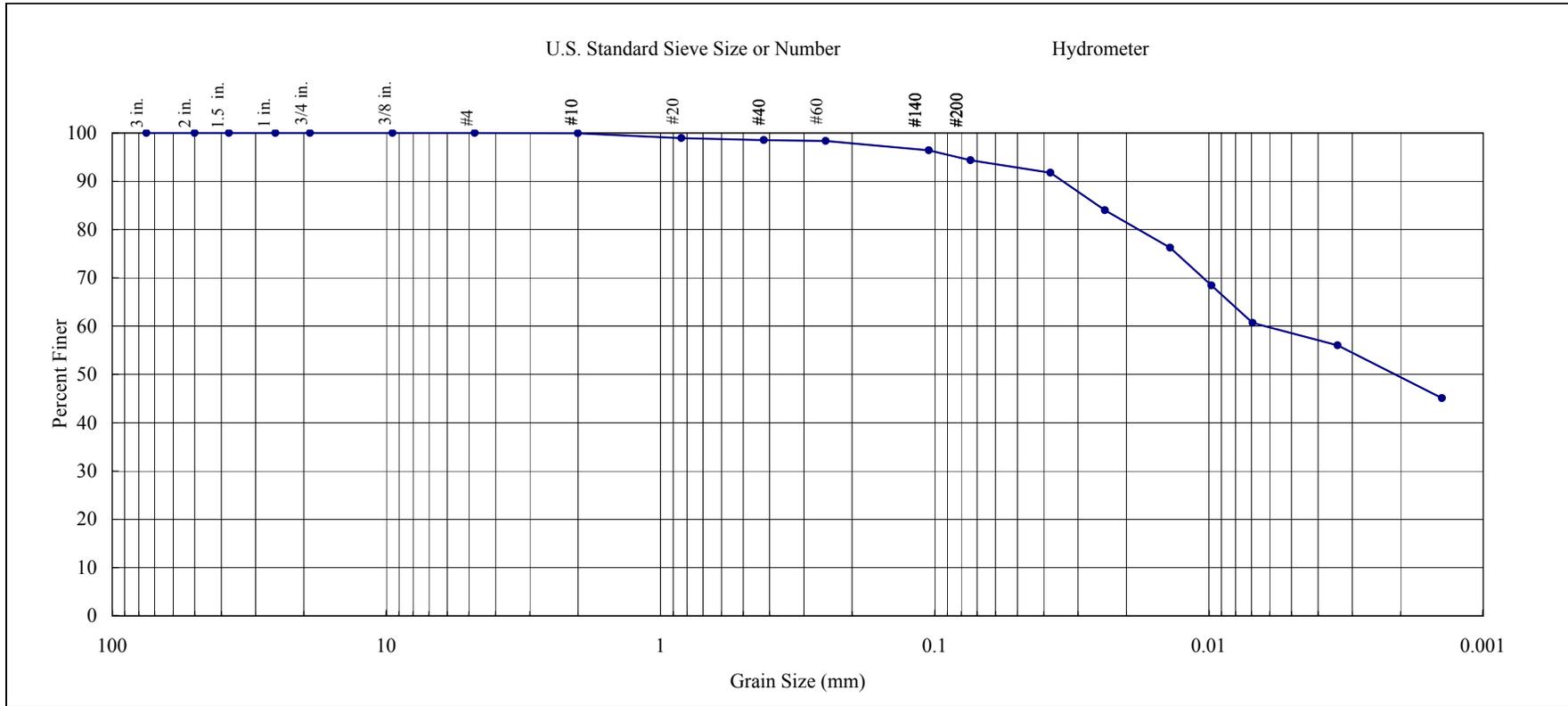
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## GEOTECHNICAL RESULTS



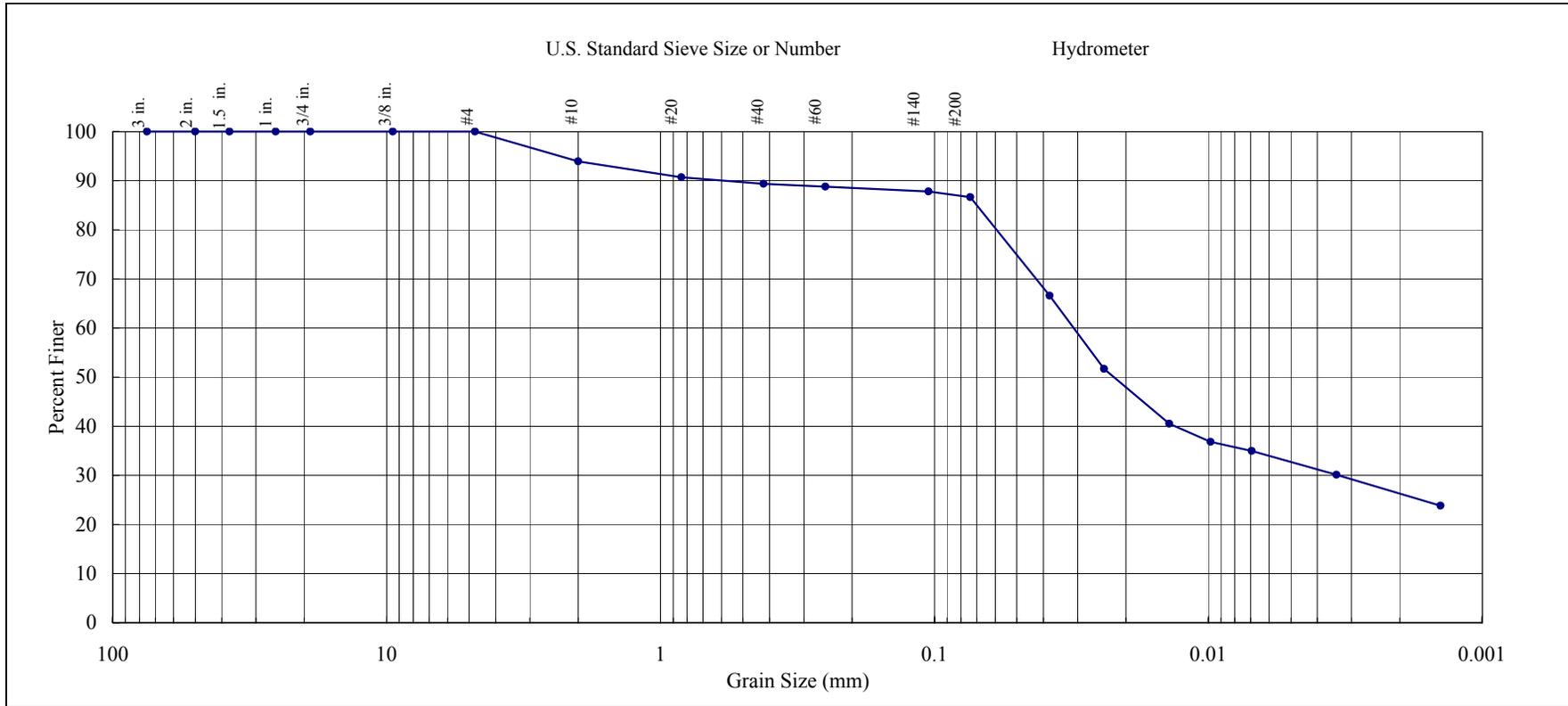
Gravel (%)	Sand (%)			Fines (%)		Client:					
	Coarse	Medium	Fine	Silt	Clay	Battelle					
0.00	5.13	2.69	5.69	35.27	51.22	Client Project Title:	New Bedford Harbor Sed Traps				
						Client Project Number:	G606422				
						AMS Project Number:	8C26				
						Date Sampled:	10/30/2008				
						Date Analyzed:	12/2/2008				
						Matrix, Method:	Sediment, ASTM D 422				
						<b>Client Sample ID:</b>	Q5252 (ST-01-103008-B)				
						<b>AMS Sample ID:</b>	8C26-01				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	
227											
<b>Material Description</b>											
Lean Clay ("CL"), black (N1)											
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager					 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> LABORATORY No. E87956

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)			Client:		Battelle						
	Coarse	Medium	Fine	Silt	Clay		Client Project Title:		New Bedford Harbor Sed Traps						
0.00	0.05	1.43	4.18	36.20	58.14		Client Project Number:		G606422						
							AMS Project Number:		8C26						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>		Date Sampled:		10/30/2008	
320												Date Analyzed:		12/2/2008	
Material Description											Matrix, Method:		Sediment, ASTM D 422		
Lean Clay ("CL"), black (N1)											<b>Client Sample ID:</b>		Q5253 (ST-01-103008-C)		
											<b>AMS Sample ID:</b>		8C26-02		
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.						<i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager			 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> LABORATORY No. E87956			

## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	6.08	4.56	2.69	54.36	32.31	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C26					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	10/30/2008
253											Date Analyzed:	12/2/2008
<b>Material Description</b>												
Elastic Silt ("MH"), black (N1)												
						Client Sample ID:	Q5255 (ST-02-103008-B)					
						AMS Sample ID:	8C26-03					



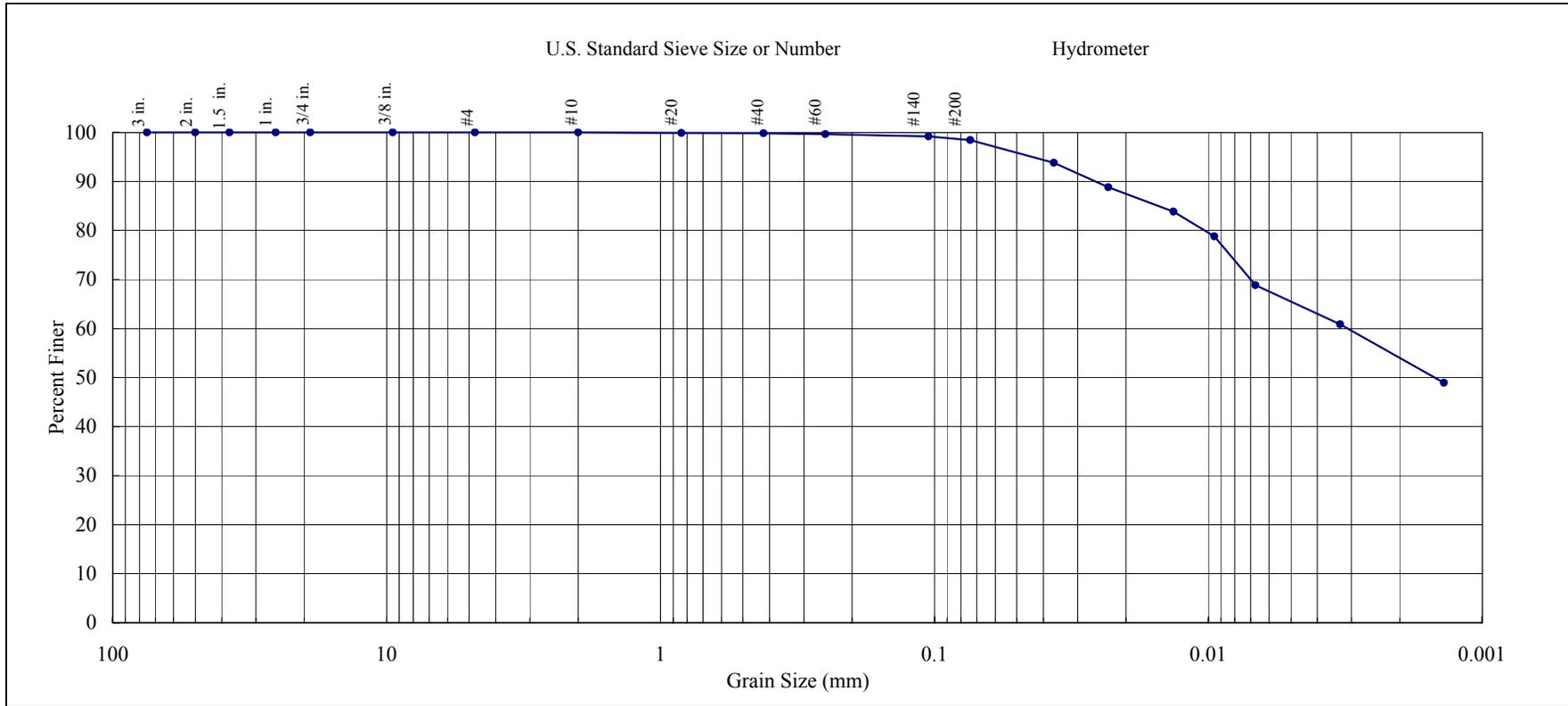
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client: Battelle		Client Project Title: New Bedford Harbor Sed Traps					
	Coarse	Medium	Fine	Silt	Clay								
0.00	0.00	0.20	1.35	33.62	64.83	Client Project Number: G606422		AMS Project Number: 8C26					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled: 10/30/2008	Date Analyzed: 12/2/2008	Matrix, Method: Sediment, ASTM D 422
302											Client Sample ID: Q5257 (ST-03-103008-B)		
<b>Material Description</b>										AMS Sample ID: 8C26-04			
Lean Clay ("CL"), black (N1)													



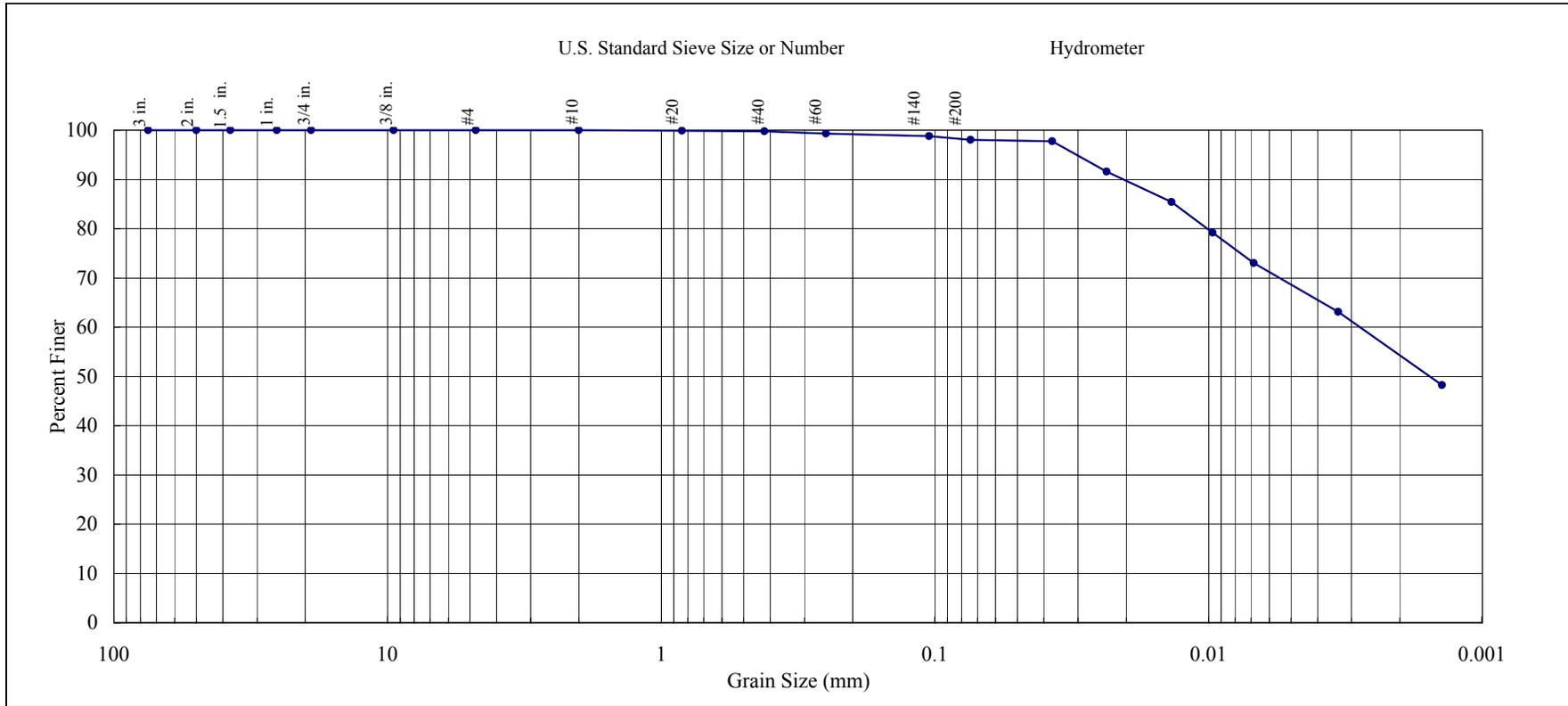
**APPLIED MARINE SCIENCES, INC.**  
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 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)					Fines (%)						
	Coarse	Medium	Fine			Silt	Clay					Client: Battelle
0.00	0.00	0.25	1.69			30.28	67.78					Client Project Title: New Bedford Harbor Sed Traps
												Client Project Number: G606422
												AMS Project Number: 8C26
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>		Date Sampled: 10/30/2008
317												Date Analyzed: 12/2/2008
Material Description												Matrix, Method: Sediment, ASTM D 422
Lean Clay ("CL"), black (N1)												Client Sample ID: Q5259 (ST-04-103008-B)
												AMS Sample ID: 8C26-05



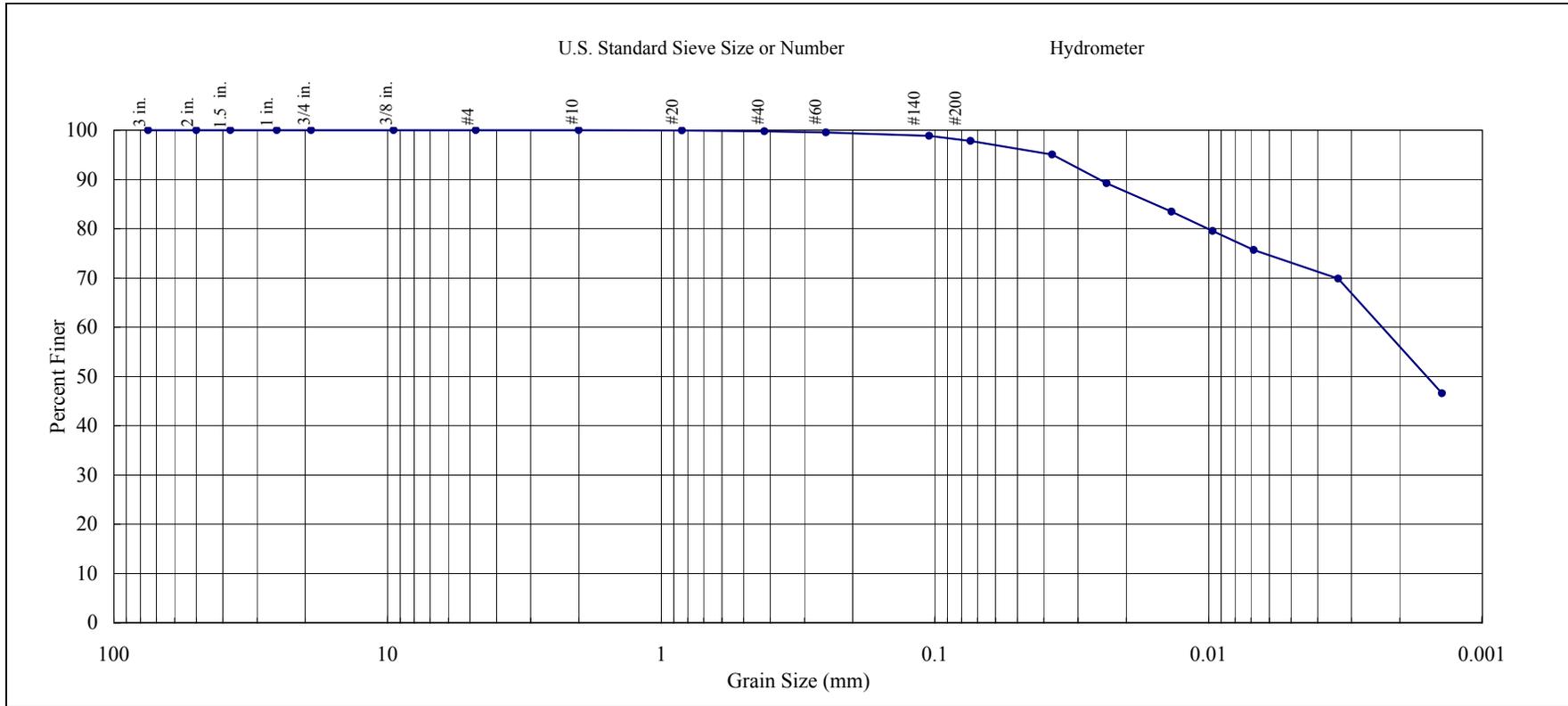
**APPLIED MARINE SCIENCES, INC.**  
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 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*Jennifer D. Davis*  
 \_\_\_\_\_  
 AMS, Inc. Project Manager



## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client:						
	Coarse	Medium	Fine	Silt	Clay	Battelle						
0.00	0.00	0.22	1.95	25.24	72.59	Client Project Title:	New Bedford Harbor Sed Traps					
						Client Project Number:	G606422					
						AMS Project Number:	8C26					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Sampled:	10/30/2008
317											Date Analyzed:	12/2/2008
<b>Material Description</b>												
Lean Clay ("CL"), black (N1)												
						Client Sample ID:	Q5259 (ST-04-103008-B)					
						AMS Sample ID:	8C26-05Q					
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax				These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.				 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> LABORATORY No. E87956				
				<i>Jennifer D. Davis</i> _____ AMS, Inc. Project Manager								

## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor Sed Traps  
 Project Number: G606422  
 Client Sample ID: Q5259 (ST-04-103008-B)  
 AMS Sample ID: 8C26-05

AMS Project Number: 8C26  
 Date Sampled: 10/30/2008  
 Date Analyzed: 12/2/2008  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 112208-01G

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	0.00		≤ 25
2.00	No. 10	Coarse Sand	0.00	0.00	0.00		≤ 25
0.425	No. 40	Medium Sand	0.25	0.22	12.77		≤ 25
0.074	No. 200	Fine Sand	1.69	1.95	14.29		≤ 25
<0.074 - 0.005	Hydrometer	Silt	30.28	25.24	18.16		≤ 25
<0.005	Hydrometer	Clay	67.78	72.59	6.85		≤ 25

**Samples in Batch:** 8C26-01 8C26-04  
 8C26-02 8C26-05  
 8C26-03

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit, and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

	<p><b>APPLIED MARINE SCIENCES, INC.</b>                  502 N. Hwy 3, Suite B                  League City, TX 77573                  281.554.7272 Tel.                  281.554.6356 Fax</p>	<p>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</p> <p style="text-align: center;"><i>Jennifer D. Davis</i>                  _____                  AMS, Inc. Project Manager</p>	
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# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C26
Project Number:	G606422-07DUXCHE	Date Sampled:	10/30/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	11/4/2008
Client Sample ID:	Q5252 (ST-01-103008-B)		
AMS Sample ID:	8C26-1		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.38	%		0.01	0.03	EPA 9060A	Sediment	11/24/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*Jennifer D. Davis*  
AMS, Inc. Project Manager



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C26
Project Number:	G606422-07DUXCHE	Date Sampled:	10/30/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	11/4/2008
Client Sample ID:	Q5253 (ST-01-103008-C)		
AMS Sample ID:	8C26-2		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.21	%		0.01	0.03	EPA 9060A	Sediment	11/24/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number: 8C26
Project Number:	G606422-07DUXCHE	Date Sampled: 10/30/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received: 11/4/2008
Client Sample ID:	Q5255 (ST-02-103008-B)	
AMS Sample ID:	8C26-3	

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	16.97	%		0.01	0.03	EPA 9060A	Sediment	11/24/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C26
Project Number:	G606422-07DUXCHE	Date Sampled:	10/30/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	11/4/2008
Client Sample ID:	Q5257 (ST-03-103008-B)		
AMS Sample ID:	8C26-4		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	13.05	%		0.01	0.03	EPA 9060A	Sediment	11/24/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client:	Battelle	AMS Project Number:	8C26
Project Number:	G606422-07DUXCHE	Date Sampled:	10/30/2008
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Received:	11/4/2008
Client Sample ID:	Q5259 (ST-04-103008-B)		
AMS Sample ID:	8C26-5		

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	12.21	%		0.01	0.03	EPA 9060A	Sediment	11/24/2008

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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AMS, Inc. Project Manager



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## TOC QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number: 8C26
Project Number:	G606422-07DUXCHE	AMS SOP Number: 2201
Project Name:	New Bedford Harbor 2007 Water Quality Monitoring	Date Analyzed: 11/24/2008
Matrix:	Sediment	Batch ID: 112408-01T
Method:	EPA 9060A	

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-01	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-01	3.17	3.23	1.88		0.01	0.03	≤ 5 RPD
ICCV-01	2.05	2.00	2.47		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
8C26-5	12.21	12.15	0.49		0.01	0.03	≤ 25 RPD

**Samples in Batch (AMS ID):** 8C26-1 8C26-4  
8C26-2 8C26-5  
8C26-3

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.



# Applied Marine Sciences, Inc.

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## QUALITY CONTROL

Client: Battelle  
Project Number: G606422-07DUXCHE  
Project Name: New Bedford Harbor 2007 Water Quality Monitoring

AMS Project Number: 8C26  
AMS SOP Number: 2201

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3), and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

# Chain of Custody

Proj. No: **GG06422**  
 Proj. Name: **New Bedford Harbor Sed. Trap**

SAMPLERS: Signature  
*Matt Flynn Annie Murphy Patrick Curran*

ANALYSIS REQUESTED →  
 "NUMBER OF CONTAINERS"

DATE	TIME	Field BATTELLE ID	Lab CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers	
10/30/08	0911	ST-01-103008-A	Q5251	Sediment trap sample from station ST01		X									1	
	↓	ST-01-103008-B	Q5252			X										1
	↓	ST-01-103008-C	Q5253			X										1
	0930	ST-02-103008-A	Q5254			X										1
	↓	ST-02-103008-B	Q5255			X										1
	0950	ST-03-103008-A	Q5256			X										1
	↓	ST-03-103008-B	Q5257			X										1
	1010	ST-04-103008-A	Q5258			X										1
	↓	ST-04-103008-B	Q5259		X										1	

Relinquished by:  
*Matthew R Flynn*

Date/Time  
 10/30/08 1700

Received by:  
*Jeannine Siefert*

Date/Time  
 10/30/08 1700

Relinquished by:

Date/Time

Received by:

Date/Time

Comments: