

April 5, 2024

Delia Kaye, Natural Resources Director  
Town of Concord  
141 Keyes Road  
Concord, Massachusetts 01742

*RE: Sediment Sampling Technical Memorandum  
Warner's Pond Dam Removal Preliminary Design  
Concord, Massachusetts  
EA Project No. 6404001*

Dear Ms. Kaye,

EA Engineering, Science, and Technology, Inc., PBC (EA) is pleased to provide you with this technical memorandum for the sediment characterization within Warner's Pond, Nashoba Brook, and the Assabet River in Concord, Massachusetts (the site). EA collected three sediment grab samples from both Nashoba Brook and the Assabet River, and two sediment core samples from Nashoba Brook on October 25, 2023. Additionally, EA collected five sediment core samples from within Warner's Pond on November 8, 2023.

## **INTRODUCTION**

Warner's Pond is an approximately 59-acre impoundment of Nashoba Brook – a perennial tributary to the Assabet River – located in West Concord, Massachusetts. Nashoba Brook continues approximately 1,300-feet downstream of the dam to its confluence with the Assabet River. Warner's Pond generally contains water depths that are 5 feet or less, and a few deep holes where water depths reach a maximum of approximately 12 feet. Sediment depth ranges between 0 and 9 feet. Sediment samples were collected to examine the sediment characteristics within Warner's Pond, Nashoba Brook, and the Assabet River to determine how dam removal would influence the physical and chemical sediment characteristics within and downstream of the pond.

## **METHODS**

### **In-pond Sediment Sampling**

Five sediment cores were collected from within Warner's Pond. Cores were collected from a 14-foot catamaran-style coring platform using a Vibracore system on a sampling winch and A-frame. Cores were collected using 2-5/8 inch polycarbonate core tubes. Core tubes were driven into the sediment until the tube reached the target depth at each location, at which point the tube was pulled to the surface, split open, and visually examined for the core's sediment characteristics. Samples were collected from each distinctive sediment horizon. In the event that a hard bottom was encountered at a depth shallower than the target depth, a retry was attempted. Samples were analyzed for physical analysis (bulk density, moisture content, and dry density) and grain size analysis using sieve testing. Results from the analysis are presented in the results section of this technical memorandum.

---

## **Downstream Sediment Sampling**

EA collected sediment grab samples to support the development of recommendations for sediment management as part of the potential Warner's Pond Dam removal. Sediment grabs were collected at three points within Nashoba Brook downstream of the dam between the Commonwealth Avenue bridge and Nashoba Brook's confluence with the Assabet River (see Figure 1). Three grabs were also collected from the Assabet River between Nashoba Brook and Route 2. Each group of sediment grabs was composited into one sample for each respective stream reach for a total of two samples. Sediment grabs were collected using an Ekman dredge in the upper twelve inches of the sediment profile to classify the zone with the highest likelihood of human and ecological interaction.

In conjunction with sediment grab samples, EA collected two sediment cores from within Nashoba Brook between the Pail Factory (Commonwealth Avenue) Bridge and the Bruce Freeman Rail Trail. Sediment cores were collected using a hand corer fitted with a core sleeve. The corer was driven into the sediment and pulled straight up as friction/suction held the core in place within the sleeve. Upon removal from the water, the core sleeve was split open to allow examination of the core's sediment characteristics. At the conclusion of visual observations, each distinct horizon of each core was removed and sampled for analysis.

Sediment samples were analyzed for all required parameters identified in the Massachusetts Department of Environmental Protection (MassDEP) 401 Water Quality Criteria (WQC) regulations. The sediment analysis included heavy metals, polycyclic aromatic hydrocarbons, organochlorine pesticides, polychlorinated biphenyls, extractable and total petroleum hydrocarbons, volatile organic compounds, total organic carbon, physical analysis (bulk density, moisture content, and dry density), and grain size analysis using sieve testing. Results from the analysis are presented in the results section of this technical memorandum.

## **RESULTS**

### **In-Pond Sediment Sampling Results**

Observations of sediment samples within Warner's Pond indicated that the majority of the sediment collected is dark brown to gray. Grain size analysis of sediment samples indicated that in most samples, the upper 3 to 4 feet primarily contained fine silt and clay while fine sand was primarily observed at sediment depths greater than 3 to 4 feet. However, sample SED-05, which was collected approximately 800 feet upstream of the dam, contained a substantial amount of gravel in the upper 4 feet of the sample. Physical analysis results of in-pond sediment samples are presented in Table 1.

### **Downstream Sediment Sampling Results**

Observations and grain size analysis of sediment core samples collected within Nashoba Brook indicated that the majority of sediment collected is a silty sand with small amounts of organic material. Gravel was more prevalent in Nashoba Brook than in Warner's Pond. Physical analysis results of downstream sediment samples are present in Table 2.

No chemical or petroleum odors were noted during sediment grab sampling in either Nashoba Brook or the Assabet River. Chemical analysis of sediment grab samples indicated that none of the analytes included as part of this study exceeded the S-1/GW-1 Method 1 Risk Values found in Table 2 of the Massachusetts Contingency Plan (MCP). However, the reporting limits and method detection limits of bromoform, Dibromochloromethane, and Methyl tert butyl ether



exceed the S-1/GW-1 Risk Values. Laboratory reporting limit is defined as the lowest concentration of an analyte that can be reported reliably under normal laboratory conditions. Method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. As such, despite laboratory analysis results indicating non-detections for the aforementioned analytes, it is possible that their actual concentrations in the samples exceed the S-1/GW-1 Risk Values. Chemical analysis results of downstream sediment samples are present in Table 3 attached.

### **COMPARISON OF RESULTS TO PREVIOUSLY COLLECTED IN-POND DATA**

The results of the downstream investigation were compared to previous in-pond sediment sampling results collected in 2018. The 2018 sampling indicated that arsenic was in exceedance of the MCP S-1/GW-1 standard in one sample located approximately 1,200-feet upstream of the dam immediately south of Scout Island. Additionally, several analytes that were not detected by laboratory analysis also had a method detection limit that exceeded the MCP standard and confirmation of their compliance with the MCP could not be achieved.

None of the analytes included as part of this study of downstream waters exceeded the MCP standard. However, since the reporting limits and method detection limits of bromoform, Dibromochloromethane, and Methyl tert butyl ether exceed the S-1/GW-1 Risk Values, these analytes could not be confirmed to be in compliance with the risk values.

### **SUMMARY**

EA completed sampling and analysis of sediment within the Nashoba Brook and Assabet River downstream of the Warner's Pond dam, and within the pond itself. The sediment sample analysis revealed the majority of sediment collected within Nashoba Brook is composed of silty sand or organic matter at various depths in the sediment. Additionally, chemical analysis of the downstream sediment samples indicated that there are no exceedances of regulatory criteria for the chemicals analyzed. Sediment samples collected from within Warner's Pond indicated that the sediment collected at the sampling locations is a fine silt or clay near the sediment surface, and a fine sand at depth.

The results of this study, in conjunction with previously collected in-pond data, suggest that management of sediment containing arsenic in Warner's Pond may be required by MassDEP as part of the design of a dam removal project at Warner's Pond to avoid potential downstream impacts. As such, the 30% design prepared by EA will take into account the need for sediment management in the context of the results of this study.

EA appreciates the opportunity to provide the Town of Concord with professional environmental consulting services. Should you have any questions or require additional information, please do not hesitate to contact me at [qmilton@eaest.com](mailto:qmilton@eaest.com) or (401) 352-5740.

Sincerely,

**EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC**

A handwritten signature in black ink that reads "Quincy Milton III". The signature is written in a cursive style with a clear "III" at the end.

Quincy Milton III, CE  
Ecologist



**Attachments:**

Figure

Photographic Log

Sediment Core Log Sheets

Laboratory Analysis Results

---

**Table 1. Physical Analysis Results of Sediment Coring within Warner's Pond**

Sample ID	Depth (in.)	Visual Description	Bulk Density pcf	Moisture Content (%)	Dry Density pcf
SED-01-2.5	2.5	Moist, very dark brown silt with sand and organics	93.87	70.38	55.09
SED-01-7	7	Moist, grayish brown sand	105.4	26.92	83.08
SED-01-10.25	10.25	Moist, very dark brown silty sand with organics	84.94	91.04	44.46
SED-01-12.5	12.5	Moist, gray sandy clay with organics	115.3	31.49	87.7
SED-01-14.75	14.75	Moist, gray sand with silt	115.7	15.54	100.2
SED-02-3	3	Moist, very dark brown silt with organics	69.11	195.9	23.36
SED-02-11	11	Moist, very dark brown silt with organics	63.4	389.6	12.95
SED-02-18	18	Moist, dark grayish brown silty sand with organics	101	36.29	74.12
SED-03-6.5	6.5	Moist, very dark brown sandy silt with organics	63.8	353.6	14.07
SED-03-15	15	Moist, grayish brown sand with silt	107.9	23.03	87.67
SED-03-18.5	18.5	Moist, very dark brown clay with organics	65.36	263.2	17.99
SED-04-2.5	2.5	Moist, very dark brown clay with organics	59.02	359.3	12.85
SED-04-5.5	5.5	Moist, dark brown clay with sand	89.56	62.11	55.25
SED-04-10	10	Moist, grayish brown sand	117.1	23.08	95.17
SED-05-1	1	Moist, very dark brown silt	67.61	367.5	14.46
SED-05-5.5	5.5	Moist, grayish brown sand with gravel	110.2	13.44	97.11
SED-05-12	12	Moist, yellowish-brown sand	119.7	18.03	101.4

pcf = pounds/cubic foot

**Table 2. Physical Analysis Results of Sediment Coring within Nashoba Brook**

<b>Sample ID</b>	<b>Depth (in.)</b>	<b>Visual Description</b>	<b>Bulk Density pcf</b>	<b>Moisture Content (%)</b>	<b>Dry Density pcf</b>
NB-CA-2-4	2-4	Moist, dark brown sand with silt and organics	99.49	75.61	56.66
NB- PB-0-2.5	0-2.5	Moist, dark brown silt	69.12	359.6	15.04
NB- PB-2.5-6	2.5-6	Moist, dark brown sandy silt with organics	95.13	99.45	47.69

pcf = pounds/cubic foot

**Table 3. Chemical Analysis Results of Sediment Grab Samples**

Analyte	RL	MDL	NB-102523	AR-102523	MCP S-1 & GW-1 Standard
			Result	Result	
<b>Volatiles ug/kg</b>					
1,1,1,2-Tetrachloroethane	43	11	ND	ND	100
1,1,1-Trichloroethane	43	14	ND	ND	30000
1,1,2,2-Tetrachloroethane	43	14	ND	ND	100
1,1,2-Trichloroethane	86	23	ND	ND	100
1,1-Dichloroethane	86	12	ND	ND	3000
1,1-Dichloroethene	86	20	ND	ND	400
1,1-Dichloropropene	43	14	ND	ND	NL
1,2,3-Trichlorobenzene	170	28	ND	ND	NL
1,2,3-Trichloropropane	170	11	ND	ND	NL
1,2,4-Trichlorobenzene	170	24	ND	ND	2000
1,2,4-Trimethylbenzene	170	29	ND	ND	NL
1,2-Dibromo-3-chloropropane	260	86	ND	ND	NL
1,2-Dibromoethane	86	24	ND	ND	100
1,2-Dichlorobenzene	170	12	ND	ND	9000
1,2-Dichloroethane	86	22	ND	ND	100
1,2-Dichloroethene, Total	86	12	ND	ND	NL
1,2-Dichloropropane	86	11	ND	ND	100
1,3,5-Trimethylbenzene	170	17	ND	ND	NL
1,3-Dichlorobenzene	170	13	ND	ND	3000
1,3-Dichloropropane	170	14	ND	ND	NL
1,3-Dichloropropene, Total	43	14	ND	ND	10
1,4-Dichlorobenzene	170	15	ND	ND	700
1,4-Dichlorobutane	860	20	ND	ND	NL
2,2-Dichloropropane	170	17	ND	ND	NL
2-Butanone	860	190	ND	ND	NL
2-Hexanone	860	100	ND	ND	NL
4-Methyl-2-pentanone	860	110	ND	ND	NL
Acetone	860	420	ND	ND	6000
Acrylonitrile	350	100	ND	ND	NL
Benzene	43	14	ND	ND	2000
Bromobenzene	170	12	ND	ND	NL
Bromochloromethane	170	18	ND	ND	NL
Bromodichloromethane	43	9.4	ND	ND	100
Bromoform	350	21	ND	ND	100
Bromomethane	170	50	ND	ND	500
Carbon disulfide	860	390	ND	ND	NL
Carbon tetrachloride	86	20	ND	ND	10000



Analyte	RL	MDL	NB-102523	AR-102523	MCP S-1 & GW-1 Standard
			Result	Result	
<b>Volatiles ug/kg</b>					
Chlorobenzene	43	11	ND	ND	1000
Chloroethane	170	39	ND	ND	NL
Chloroform	130	12	ND	ND	400
Chloromethane	350	81	ND	ND	NL
cis-1,2-Dichloroethene	86	15	ND	ND	300
cis-1,3-Dichloropropene	43	14	ND	ND	NL
Dibromochloromethane	86	12	ND	ND	5
Dibromomethane	170	20	ND	ND	NL
Dichlorodifluoromethane	860	79	ND	ND	NL
Ethyl ether	170	30	ND	ND	NL
Ethyl methacrylate	860	140	ND	ND	NL
Ethylbenzene	86	12	ND	ND	40000
Hexachlorobutadiene	350	15	ND	ND	30000
Isopropylbenzene	86	9.4	ND	ND	NL
Methyl tert butyl ether	170	17	ND	ND	100
Methylene chloride	430	200	ND	ND	NL
Naphthalene	350	56	ND	ND	4000
n-Butylbenzene	86	14	ND	ND	NL
n-Propylbenzene	86	15	ND	ND	NL
o-Chlorotoluene	170	16	ND	ND	NL
o-Xylene	86	25	ND	ND	NL
p/m-Xylene	170	48	ND	ND	NL
p-Chlorotoluene	170	9.3	ND	ND	NL
p-Isopropyltoluene	86	9.4	ND	ND	NL
sec-Butylbenzene	86	13	ND	ND	NL
Styrene	86	17	ND	ND	3000
tert-Butylbenzene	170	10	ND	ND	NL
Tetrachloroethene	43	17	ND	ND	1000
Tetrahydrofuran	350	140	ND	ND	NL
Toluene	86	47	ND	ND	30000
trans-1,2-Dichloroethene	130	12	ND	ND	1000
trans-1,3-Dichloropropene	86	24	ND	ND	NL
trans-1,4-Dichloro-2-butene	430	120	ND	ND	NL
Trichloroethene	43	12	ND	ND	300
Trichlorofluoromethane	350	60	ND	ND	NL
Vinyl acetate	860	190	ND	ND	NL
Vinyl chloride	86	29	ND	ND	900
Xylenes, Total	86	25	ND	ND	400000



Analyte	RL	MDL	NB-102523	AR-102523	MCP S-1 & GW-1 Standard
			Result	Result	
<b>Semi Volatiles ug/kg</b>					
Acenaphthene	5.34	2.67	18	18	4000
Acenaphthylene	5.34	2.67	35.4	10.5	1000
Anthracene	5.34	2.67	74.4	49.5	1000000
Benz(a)anthracene	5.34	2.67	252	215	7000
Benzo(a)pyrene	5.34	2.67	249	236	2000
Benzo(b)fluoranthene	5.34	2.67	225	187	7000
Benzo(ghi)perylene	5.34	2.67	189	176	1000000
Benzo(k)fluoranthene	5.34	2.67	214	152	70000
Chrysene	5.34	2.67	258	203	70000
Cl10-BZ#209	0.534	0.267	0.514	4.75	NL
Cl2-BZ#8	0.534	0.267	ND	ND	NL
Cl3-BZ#18	0.534	0.267	ND	ND	NL
Cl3-BZ#28	0.534	0.267	ND	ND	NL
Cl4-BZ#44	0.534	0.267	ND	ND	NL
Cl4-BZ#49	0.534	0.267	ND	ND	NL
Cl4-BZ#52	0.534	0.267	ND	0.722	NL
Cl4-BZ#66	0.534	0.267	ND	ND	NL
Cl5-BZ#101	0.534	0.267	ND	0.964	NL
Cl5-BZ#105	0.534	0.267	ND	ND	NL
Cl5-BZ#118	0.534	0.267	ND	0.956	NL
Cl5-BZ#87	0.534	0.267	ND	0.326	NL
Cl6-BZ#128	0.534	0.267	ND	ND	NL
Cl6-BZ#138	0.534	0.267	ND	2.12	NL
Cl6-BZ#153	0.534	0.267	ND	1.26	NL
Cl7-BZ#170	0.534	0.267	ND	ND	NL
Cl7-BZ#180	0.534	0.267	ND	0.671	NL
Cl7-BZ#183	0.534	0.267	ND	ND	NL
Cl7-BZ#184	0.534	0.267	ND	ND	NL
Cl7-BZ#187	0.534	0.267	ND	0.396	NL
Cl8-BZ#195	0.534	0.267	ND	ND	NL
Cl9-BZ#206	0.534	0.267	ND	4.19	NL
Dibenz(a,h)anthracene	5.34	2.67	43.1	37.2	700
Fluoranthene	5.34	2.67	540	365	1000000
Fluorene	5.34	2.67	26.3	15.7	1000000
Indeno(1,2,3-cd)Pyrene	5.34	2.67	191	174	7000
Naphthalene	5.34	2.67	18.8	36	4000
Phenanthrene	5.34	2.67	290	212	10000
Pyrene	5.34	2.67	430	318	1000000



Analyte	RL	MDL	NB-102523	AR-102523	MCP S-1 & GW-1 Standard
			Result	Result	
<b>PH mg/kg</b>					
C9-C18 Aliphatics	9.58	9.58	ND	ND	1000
C19-C36 Aliphatics	9.58	9.58	29	21.4	3000
C11-C22 Aromatics	9.58	9.58	23.5	29.9	1000
C11-C22 Aromatics, Adjusted	9.58	9.58	23.5	25.6	NL
<b>Pesticides ug/kg</b>					
2,4'-DDD	0.146	0.146	ND	ND	NL
2,4'-DDE	0.146	0.146	ND	ND	NL
2,4'-DDT	0.146	0.146	ND	ND	NL
4,4'-DDD	0.146	0.146	0.314	0.487	NL
4,4'-DDE	0.146	0.146	1.84	1.62	NL
4,4'-DDT	0.146	0.146	0.465	0.41	NL
Aldrin	0.146	0.146	ND	ND	6000
alpha-BHC	0.146	0.146	ND	ND	NL
alpha-Chlordane	0.146	0.146	ND	0.175	NL
beta-BHC	0.146	0.146	ND	ND	NL
Chlordane	7.32	7.32	ND	ND	5000
cis-Nonachlor	0.146	0.146	ND	ND	NL
delta-BHC	0.146	0.146	ND	ND	NL
Dieldrin	0.146	0.146	ND	ND	80
Endosulfan I	0.146	0.146	ND	ND	500
Endosulfan II	0.146	0.146	ND	ND	500
Endosulfan sulfate	0.146	0.146	ND	ND	500
Endrin	0.146	0.146	ND	ND	10000
Endrin aldehyde	0.437	0.437	ND	ND	NL
Endrin ketone	0.146	0.146	ND	ND	NL
gamma-BHC	0.146	0.146	ND	ND	3
gamma-Chlordane	0.146	0.146	ND	0.237	NL
Heptachlor	0.146	0.146	ND	ND	300
Heptachlor epoxide (B)	0.292	0.292	ND	ND	100
Hexachlorobenzene	0.292	0.292	ND	ND	700
Methoxychlor	1.46	1.46	ND	ND	200000
Mirex	0.146	0.146	ND	ND	NL
Oxychlordane	0.292	0.292	ND	ND	NL
Toxaphene	7.32	7.32	ND	ND	NL
trans-Nonachlor	0.146	0.146	0.52	0.386	NL
<b>Metals mg/kg</b>					
Arsenic, Total	0.726	0.096	5.14	5.75	20
Cadmium, Total	0.29	0.038	0.064	0.112	70



Analyte	RL	MDL	NB-102523	AR-102523	MCP S-1 & GW-1 Standard
			Result	Result	
<b>Metals mg/kg</b>					
Chromium, Total	2.9	0.679	21	38.7	100
Copper, Total	2.9	0.281	121	14.6	NL
Lead, Total	0.871	0.212	14.9	24.6	200
Mercury, Total	0.018	0.002	0.005	0.122	20
Nickel, Total	1.45	0.388	12.4	9.04	600
Zinc, Total	14.5	3.77	24.1	41.7	1000
<b>Inorganic/Miscellaneous</b>					
Total Organic Carbon (Rep1)	0.01	0.01	0.832	0.817	NA
Total Organic Carbon (Rep2)	0.01	0.01	0.819	0.735	
Total Organic Carbon (Average)	0.01	0.01	0.826	0.776	
% Total Gravel	0.1	NA	28.2	4.2	
% Coarse Sand	0.1	NA	13.1	5.7	
% Medium Sand	0.1	NA	41.1	19.3	
% Fine Sand	0.1	NA	16.2	63.2	
% Total Fines	0.1	NA	1.4	7.6	
Solids, Total	0.1	0.1	68.1	64.1	

mg/kg = milligrams/kilogram

ug/kg = micrograms/kilogram

PH = Petroleum Hydrocarbons

ND = Non-detect

S-1/GW-1 Risk Values found in Table 2 of the MCP

RL = Reporting Limit

MDL = Method Detection Limit

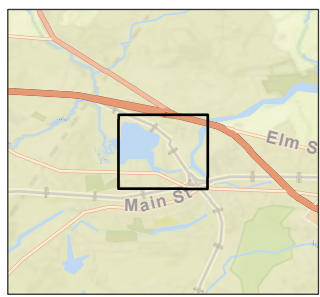
**RED** values indicate RL or MDL that exceed the S-1/GW-1 Risk Values

*This page intentionally left blank*

**Figure**

*This page intentionally left blank*

Path: \\Warwick\FP\Warwick\p\GIS - Warwick\StateandLocal\Northeast\Massachusetts\6373001 - TownofConcord\Warmer'sPond\PROJECTS\ArcGIS\Pro\Warmer'sPond - SedimentAnalysis\Warmer'sPond - SedimentAnalysis.aprx | 3/7/2024 | qmilton



- Legend**
- Grab Sample Location
  - Core Sample Location
  - Vibracore Sample Location

**Figure 1**  
**Sediment Sample Locations**  
 Warner's Pond Dam  
 Removal Feasibility  
 Concord, Massachusetts

Source: MassMapper2021  
 Date: 3/7/2024  
 Projection: NAD 1983 StatePlane Massachusetts  
 FIPS 2001



*This page intentionally left blank*

# **Photographic Log**

*This page intentionally left blank*



1: SED-01 sediment core sample.



2: SED-01 sediment core sample.



3: SED-01 sediment core sample.



4: SED-01 sediment core sample.



5: SED-01 sediment core sample.



6: SED-02 sediment core sample.



7: SED-02 sediment core sample.



8: SED-02 sediment core sample.



9: SED-02 sediment core sample.



10: SED-02 sediment core sample.



11: SED-02 sediment core sample.



12: SED-02 sediment core sample.



13: SED-03 sediment core sample.



14: SED-03 sediment core sample.



15: SED-03 sediment core sample.



16: SED-03 sediment core sample.



17: SED-03 sediment core sample.



18: SED-03 sediment core sample.



19: SED-04 sediment core sample.



20: SED-04 sediment core sample.



21: SED-04 sediment core sample.



22: SED-04 sediment core sample.



23: SED-04 sediment core sample.



24: SED-05 sediment core sample.



25: SED-05 sediment core sample.



26: SED-05 sediment core sample.



27: SED-05 sediment core sample.



28: SED-05 sediment core sample.



29: SED-05 sediment core sample.

*This page intentionally left blank*

# **Sediment Core Log Sheets**

*This page intentionally left blank*



EA Engineering, Science,  
and Technology, Inc., PBC

Job No. \_\_\_\_\_ Client: Town of Concord  
Project: 6404021

Location: Warner's Pond

Drilling Method: \_\_\_\_\_

Soil Boring/Well Number: SED-01

LOG OF SOIL BORING

Sampling Method: Vibracore

Sheet 1 of \_\_\_\_\_

Coordinates: Northing \_\_\_\_\_ Easting: \_\_\_\_\_

TOC Elevation: \_\_\_\_\_

Surface Elevation: \_\_\_\_\_

Water Level: \_\_\_\_\_

Start \_\_\_\_\_ Finish \_\_\_\_\_

Reference Elevation: \_\_\_\_\_

Time: \_\_\_\_\_

DATE 11/8/23 DATE \_\_\_\_\_

Reference Description: \_\_\_\_\_

Date: \_\_\_\_\_

TIME 9:30 TIME \_\_\_\_\_

Blow Counts (140-lb)	In. Recvd/ In. Driven	Boring Diagram	PID (ppm) 10.6 eV with Isobutylene as reference gas	Depth		Surface Conditions: <u>Pond surface</u>
				in	Feet	
				0	0	
				1	1	
				2	2	0-2.5': decomposed organics, muck, dark grey, soft, fine grained, visible roots near end. silt
				3	3	
				4	4	
				5	5	4.5-5.75': dark grey/brown, fine grain, some roots, medium stiff, sandy silt
				6	6	
				7	7	
				8	8	5.75-6.75': light olive grey, fine grained stiff clay
				9	9	
				10	10	6.75-8': light olive grey, coarse grained sand
				11	11	
				12	12	
				13	13	
				14	14	
				15	15	
				16	16	
				17	17	
				18	18	
				19	19	
				20	20	

Monitoring Well Construction Information

Soil Vapor Point Installation Information

Monitoring Well Diameter: \_\_\_\_\_ in  
 Bottom of Monitoring Well: \_\_\_\_\_ ft bgs  
 Stick Up or Flush Mount: \_\_\_\_\_  
 Screen Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
 Riser Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
 Sand Pack Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
 Bentonite Seal: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
 Grout Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs

Depth of Soil Vapor Point: \_\_\_\_\_ ft  
 Bottom of Tubing: \_\_\_\_\_ ft  
 Top of Sand Pack: \_\_\_\_\_ ft  
 Top of Bentonite Seal: \_\_\_\_\_ ft

Logged by: DM  
 Drilling Contractor: TGB

Date: 11/8/23  
 Driller: \_\_\_\_\_



EA Engineering, Science,  
and Technology, Inc., PBC

Job No. \_\_\_\_\_ Client: Town of Concord  
Project: W64061

Location: Wagner's Pond  
Soil Boring/Well Number: SED-02

LOG OF SOIL BORING

Coordinates: Northing \_\_\_\_\_ Easting: \_\_\_\_\_  
TOC Elevation: \_\_\_\_\_  
Surface Elevation: \_\_\_\_\_  
Reference Elevation: \_\_\_\_\_  
Reference Description: \_\_\_\_\_

Drilling Method: \_\_\_\_\_  
Sampling Method: Vibracore  
Water Level: \_\_\_\_\_  
Time: \_\_\_\_\_  
Date: \_\_\_\_\_  
Start DATE 11/8/23 TIME 10:30  
Finish DATE \_\_\_\_\_ TIME \_\_\_\_\_

Blow Counts (140-16)	In. Recvrd/ In. Driven	Boring Diagram	PID (ppm) 10.6 eV with isobutylene as reference gas	Depth	Surface Conditions:
				in	
				Feet	Temperature: <u>38°</u>
				0	<u>0-3': decomposed organics, muck, visible roots, dark grey, fine grain silt</u>
				1	
				2	
				3	<u>3-8': dark greenish grey, visible roots, fine grained, clayey silt</u>
				4	
				5	
				6	<u>8-10': dark grey, coarse grained sandy, some organic matter packets</u>
				7	
				8	
				9	
				10	
				11	
				12	
				13	
				14	
				15	
				16	
				17	
				18	
				19	
				20	

Monitoring Well Construction Information

Monitoring Well Diameter: \_\_\_\_\_ in  
Bottom of Monitoring Well: \_\_\_\_\_ ft bgs  
Stick Up or Flush Mount: \_\_\_\_\_  
Screen Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Riser Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Sand Pack Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Bentonite Seal: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Grout Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs

Soil Vapor Point Installation Information

Depth of Soil Vapor Point: \_\_\_\_\_ ft  
Bottom of Tubing: \_\_\_\_\_ ft  
Top of Sand Pack: \_\_\_\_\_ ft  
Top of Bentonite Seal: \_\_\_\_\_ ft

Logged by: DM Date: 11/8/23  
Drilling Contractor: TGBB Driller: \_\_\_\_\_



EA Engineering, Science,  
and Technology, Inc., PBC

Job No. \_\_\_\_\_ Client: Town of Concord  
Project: 6404001

Location: Warner's Pond

Drilling Method: \_\_\_\_\_

Soil Boring/Well Number:  
SED-03

LOG OF SOIL BORING

Sampling Method: Vibracore

Sheet 1 of 1

Coordinates: Northing \_\_\_\_\_ Easting: \_\_\_\_\_

TOC Elevation: \_\_\_\_\_

Surface Elevation: \_\_\_\_\_

Reference Elevation: \_\_\_\_\_

Reference Description: \_\_\_\_\_

Water Level: \_\_\_\_\_

Time: \_\_\_\_\_

Date: \_\_\_\_\_

Start \_\_\_\_\_ Finish \_\_\_\_\_

DATE 11/8/23 DATE \_\_\_\_\_

TIME 11:30 TIME \_\_\_\_\_

Blow Counts (140-lb)	In. Recvd/ In. Driven	Boring Diagram	PID (ppm) 10.6 eV with isobutylene as reference gas	Depth		Surface Conditions:
				in	Feet	
				0		Weather: <u>sun</u> Temperature: <u>40°</u>
				1		<u>0-6.5': dark grey, decomposed organ. cs very soft silt</u>
				2		
				3		
				4		<u>6.5-8.5': light olive grey, medium and coarse grained sand</u>
				5		
				6		
				7		<u>8.5-10': dark grey, medium stiff, fine grain, silty clay</u>
				8		
				9		
				10		
				11		
				12		
				13		
				14		
				15		
				16		
				17		
				18		
				19		
				20		

Monitoring Well Construction Information

Monitoring Well Diameter: \_\_\_\_\_ in  
 Bottom of Monitoring Well: \_\_\_\_\_ ft bgs  
 Stick Up or Flush Mount: \_\_\_\_\_  
 Screen Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
 Riser Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
 Sand Pack Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
 Bentonite Seal: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
 Grout Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs

Soil Vapor Point Installation Information

Depth of Soil Vapor Point: \_\_\_\_\_ ft  
 Bottom of Tubing: \_\_\_\_\_ ft  
 Top of Sand Pack: \_\_\_\_\_ ft  
 Top of Bentonite Seal: \_\_\_\_\_ ft

Logged by: DM  
 Drilling Contractor: TGB

Date: 11/8/23  
 Driller: \_\_\_\_\_



EA Engineering, Science,  
and Technology, Inc., PBC

Job No. \_\_\_\_\_ Client: Town of Concord  
Project: GH01001

Location: Warner's Pond  
Soil Boring/Well Number: SED-04

LOG OF SOIL BORING

Coordinates: Northing \_\_\_\_\_ Easting: \_\_\_\_\_  
TOC Elevation: \_\_\_\_\_  
Surface Elevation: \_\_\_\_\_  
Reference Elevation: \_\_\_\_\_  
Reference Description: \_\_\_\_\_

Drilling Method: \_\_\_\_\_  
Sampling Method: \_\_\_\_\_  
Woracore  
Water Level: \_\_\_\_\_  
Time: \_\_\_\_\_  
Date: \_\_\_\_\_

Sheet 1 of 1  
Drilling  
Start \_\_\_\_\_ Finish \_\_\_\_\_  
DATE 11/8/23 DATE \_\_\_\_\_  
TIME 11:58 TIME \_\_\_\_\_

Blow Counts (140-lb)	In. Recvrd/ In. Driven	Boring Diagram	PID (ppm) 10.6 eV with isobutylene as reference gas	Depth		Surface Conditions:	
				in	Feet	Weather: <u>Sun</u>	Temperature: <u>40°</u>
				0			
				1			0-2.5': decomposed organic, dark grey, soft, fine grain silt
				2			
				3			2.5-3': dark grey, fine grained silty clay, medium stiff
				4			
				5			3-7': light olive grey, medium / coarse grained sand, some roots
				6			
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Monitoring Well Construction Information

Monitoring Well Diameter: \_\_\_\_\_ in  
Bottom of Monitoring Well: \_\_\_\_\_ ft bgs  
Stick Up or Flush Mount: \_\_\_\_\_  
Screen Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Riser Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Sand Pack Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Bentonite Seal: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Grout Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs

Soil Vapor Point Installation Information

Depth of Soil Vapor Point: \_\_\_\_\_ ft  
Bottom of Tubing: \_\_\_\_\_ ft  
Top of Sand Pack: \_\_\_\_\_ ft  
Top of Bentonite Seal: \_\_\_\_\_ ft

Logged by: DK  
Drilling Contractor: TGBB

Date: 11/8/23  
Driller: \_\_\_\_\_



EA Engineering, Science,  
and Technology, Inc., PBC

Job No. \_\_\_\_\_ Client: Town of Concord  
Project: (1104001)

Location: Warner's Pond

Drilling Method: \_\_\_\_\_

Soil Boring/Well Number: SED-00

LOG OF SOIL BORING

Sampling Method: Vibracore

Sheet 1 of 1

Coordinates: Northing \_\_\_\_\_ Easting \_\_\_\_\_

TOC Elevation: \_\_\_\_\_

Surface Elevation: \_\_\_\_\_

Reference Elevation: \_\_\_\_\_

Reference Description: \_\_\_\_\_

Water Level: \_\_\_\_\_  
Time: \_\_\_\_\_  
Date: \_\_\_\_\_

Drilling  
Start \_\_\_\_\_ Finish \_\_\_\_\_  
DATE 11/8/23 DATE \_\_\_\_\_  
TIME 12:15 TIME \_\_\_\_\_

Blow Counts (140-lb)	In. Recvrd/ In. Driven	Boring Diagram	PID (ppm) 10.6 eV with isobutylene as reference gas	Depth		Surface Conditions:
				in	Feet	
				0		Weather: <u>SUN</u> Temperature: <u>40°</u>
				1		0-1': decomposed organics, muck, dark grey, soft, fine grained silt
				2		
				3		
				4		1-4.5': greenish grey, coarse grained sand
				5		
				6		4.5-7.5': light tan grey, medium grained sand, some redox features near bottom, larger rocks mixed in
				7		
				8		
				9		
				10		
				11		
				12		
				13		
				14		
				15		
				16		
				17		
				18		
				19		
				20		

Monitoring Well Construction Information

Monitoring Well Diameter: \_\_\_\_\_ in  
Bottom of Monitoring Well: \_\_\_\_\_ ft bgs  
Stick Up or Flush Monnt: \_\_\_\_\_  
Screen Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Riser Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Sand Pack Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Bentonite Seal: \_\_\_\_\_ To \_\_\_\_\_ ft bgs  
Grout Interval: \_\_\_\_\_ To \_\_\_\_\_ ft bgs

Soil Vapor Point Installation Information

Depth of Soil Vapor Point: \_\_\_\_\_ ft  
Bottom of Tubing: \_\_\_\_\_ ft  
Top of Sand Pack: \_\_\_\_\_ ft  
Top of Bentonite Seal: \_\_\_\_\_ ft

Logged by: [Signature] Date: 11/8/23  
Drilling Contractor: TGB Driller: \_\_\_\_\_



EA Engineering, Science, and Technology, Inc., PBC

Job No.	Client: <u>Town of Concord</u> Project: <u>6404201</u>	Location: <u>Nashoba Brook</u>
Drilling Method:		Soil Boring/Well Number: <u>WB-CA</u>
Sampling Method: <u>Wildco Sed Corer</u>		Sheet <u>1</u> of <u>1</u>
Coordinates: Northing _____ Easting: _____		Drilling
TOC Elevation: _____	Water Level: _____	Start _____ Finish _____
Surface Elevation: _____	Time: _____	DATE <u>10/15/23</u> DATE _____
Reference Elevation: _____	Date: _____	TIME <u>1600</u> TIME _____
Reference Description: _____		

Blow Counts (140-lb)	In. Recvrd/ In. Driven	Boring Diagram	PID (ppm) 10.6 eV with isobutylene as reference gas	Depth in <del>feet</del> <u>m</u>	Surface Conditions: <u>~ 1ft of water, cobbles, gravel</u> Weather: <u>Sun</u> Temperature: <u>68°</u>
				0	
				1	0-2' : brown organics suspended in water column
				2	
				3	2-4' : brown-gray fine to medium sand w some roots
				4	
				5	
				6	
				7	
				8	
				9	
				10	
				11	
				12	
				13	
				14	
				15	
				16	
				17	
				18	
				19	
				20	

Monitoring Well Construction Information	Soil Vapor Point Installation Information
Monitoring Well Diameter: _____ in	Depth of Soil Vapor Point: _____ ft
Bottom of Monitoring Well: _____ ft bgs	Bottom of Tubing: _____ ft
Stick Up or Flush Mount: _____	Top of Sand Pack: _____ ft
Screen Interval: _____ To _____ ft bgs	Top of Bentonite Seal: _____ ft
Riser Interval: _____ To _____ ft bgs	
Sand Pack Interval: _____ To _____ ft bgs	
Bentonite Seal: _____ To _____ ft bgs	
Grout Interval: _____ To _____ ft bgs	

Logged by: GA/AM Date: 10-25-23  
 Drilling Contractor: \_\_\_\_\_ Driller: \_\_\_\_\_



EA Engineering, Science, and Technology, Inc., PBC

Job No. \_\_\_\_\_ Client: Town of Concord  
Project: 6404001

Location: Nashua Brook

Drilling Method: \_\_\_\_\_

Soil Boring/Well Number: \_\_\_\_\_

NB-PB

LOG OF SOIL BORING

Sampling Method: \_\_\_\_\_

Sheet 1 of 1

Coordinates: Northing \_\_\_\_\_ Easting: \_\_\_\_\_

TOC Elevation: \_\_\_\_\_

Wildco seal cover

Surface Elevation: \_\_\_\_\_

Water Level: \_\_\_\_\_

Drilling  
Start \_\_\_\_\_ Finish \_\_\_\_\_

Reference Elevation: \_\_\_\_\_

Time: \_\_\_\_\_

DATE 10/25/23 DATE \_\_\_\_\_

Reference Description: \_\_\_\_\_

Date: \_\_\_\_\_

TIME 1520 TIME \_\_\_\_\_

Blow Counts (140-lb)	In. Recvrd/ In. Driven	Boring Diagram	PID (ppm) 10.6 eV with isobutylene as reference gas	Depth	Surface Conditions: <u>~1 ft of water, sediment</u>
				in	
				0	Temperature: <u>68°</u>
				1	<u>0-2.5" : brown organic muck, wet</u>
				2	
				3	
				4	<u>2.5-6" : brown loamy fine sand</u>
				5	
				6	
				7	
				8	
				9	
				10	
				11	
				12	
				13	
				14	
				15	
				16	
				17	
				18	
				19	
				20	

Monitoring Well Construction Information		Soil Vapor Point Installation Information	
Monitoring Well Diameter: _____	in	Depth of Soil Vapor Point: _____	ft
Bottom of Monitoring Well: _____	ft bgs	Bottom of Tubing: _____	ft
Stick Up or Flush Mount: _____		Top of Sand Pack: _____	ft
Screen Interval: _____ To _____	ft bgs	Top of Bentonite Seal: _____	ft
Riser Interval: _____ To _____	ft bgs		
Sand Pack Interval: _____ To _____	ft bgs		
Bentonite Seal: _____ To _____	ft bgs		
Grout Interval: _____ To _____	ft bgs		

Logged by: GJ/KM Date: 10/25/23  
Drilling Contractor: \_\_\_\_\_ Driller: \_\_\_\_\_

*This page intentionally left blank*

# **Laboratory Reports**

*This page intentionally left blank*



Client:	EA Engineering, Science, & Technology		
Project:	Warner's Pond		
Location:	Concord, MA	Project No:	GTX-318057
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	11/27/23
Depth :	---	Test Id:	745089
		Tested By:	ckg
		Checked By:	jsc

## Laboratory Determination of Density (Unit Weight) of Soil Specimens by ASTM D7263

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf	*
---	SED- 01 -0-2.5	---	Moist, very dark brown silt with sand and organics	93.87	70.38	55.09	(1)
---	SED- 01 -2.5-4.5	---	Moist, grayish brown sand	105.4	26.92	83.08	(2)
---	SED- 01 -4.5-5.75	---	Moist, very dark brown silty sand with organics	84.94	91.04	44.46	(3)
---	SED- 01 -5.75-6.75	---	Moist, gray sandy clay with organics	115.3	31.49	87.70	(4)
---	SED- 01 -6.75-8	---	Moist, gray sand with silt	115.7	15.54	100.2	(5)

\* Sample Comments

- (1): Sample contains organics  
Method B-Volumetric, Reconstituted (compacted)
- (2): Method B-Volumetric, Reconstituted (compacted)
- (3): Sample contains organics  
Method B-Volumetric,
- (4): Sample contains organics  
Method B-Volumetric, Reconstituted (compacted)
- (5): Method B-Volumetric, Reconstituted (compacted)

Notes: Moisture Content determined by ASTM D2216.



Client:	EA Engineering, Science, & Technology		
Project:	Warner's Pond		
Location:	Concord, MA	Project No:	GTX-318057
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	11/27/23
Depth :	---	Test Id:	745111

## Laboratory Determination of Density (Unit Weight) of Soil Specimens by ASTM D7263

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf	*
---	SED- 02 -0-3	---	Moist, very dark brown silt with organics	69.11	195.9	23.36	(1)
---	SED- 02 -3-8	---	Moist, very dark brown silt with organics	63.40	389.6	12.95	(2)
---	SED- 02 -8-10	---	Moist, dark grayish brown silty sand with organics	101.0	36.29	74.12	(3)
---	SED- 03 -0-6.5	---	Moist, very dark brown sandy silt with organics	63.80	353.6	14.07	(4)
---	SED- 03 -6.5-8.5	---	Moist, grayish brown sand with silt	107.9	23.03	87.67	(5)

\* Sample Comments

- (1): Sample contains organics  
Method B-Volumetric, Reconstituted (compacted)
- (2): Sample contains organics  
Method B-Volumetric, Reconstituted (compacted)
- (3): Sample contains organics  
Method B-Volumetric, Reconstituted (compacted)
- (4): Sample contains organics  
Method B-Volumetric, Reconstituted (compacted)
- (5): Method B-Volumetric, Reconstituted (compacted)

Notes: Moisture Content determined by ASTM D2216.



Client:	EA Engineering, Science, & Technology		
Project:	Warner's Pond		
Location:	Concord, MA	Project No:	GTX-318057
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	11/28/23
Depth :	---	Test Id:	745116
		Tested By:	ckg
		Checked By:	jsc

## Laboratory Determination of Density (Unit Weight) of Soil Specimens by ASTM D7263

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf	*
---	SED- 03 -8.5-10	---	Moist, very dark brown clay with organics	65.36	263.2	17.99	(1)
---	SED- 04 -0-2.5	---	Moist, very dark brown clay with organics	59.02	359.3	12.85	(2)
---	SED- 04 -2.5-3	---	Moist, dark brown clay with sand	89.56	62.11	55.25	(3)
---	SED- 04 -3-7	---	Moist, grayish brown sand	117.1	23.08	95.17	(4)
---	SED- 05 -0-1	---	Moist, very dark brown silt	67.61	367.5	14.46	(5)

\* Sample Comments

- (1): Sample contains organics  
Method B-Volumetric, Reconstituted (compacted)
- (2): Sample contains organics  
Method B-Volumetric, Reconstituted (compacted)
- (3): Method B-Volumetric, Reconstituted (compacted)
- (4): Method B-Volumetric, Reconstituted (compacted)
- (5): Method B-Volumetric, Reconstituted (compacted)

Notes: Moisture Content determined by ASTM D2216.



Client:	EA Engineering, Science, & Technology		
Project:	Warner's Pond		
Location:	Concord, MA	Project No:	GTX-318057
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	11/27/23
Depth :	---	Test Id:	745118

**Laboratory Determination of Density (Unit Weight)  
of Soil Specimens by ASTM D7263**

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf	*
---	SED- 05 -1-4.5	---	Moist, grayish brown sand with gravel	110.2	13.44	97.11	(1)
---	SED- 05 -4.5-7.5	---	Moist, yellowish brown sand	119.7	18.03	101.4	(2)

\* Sample Comments

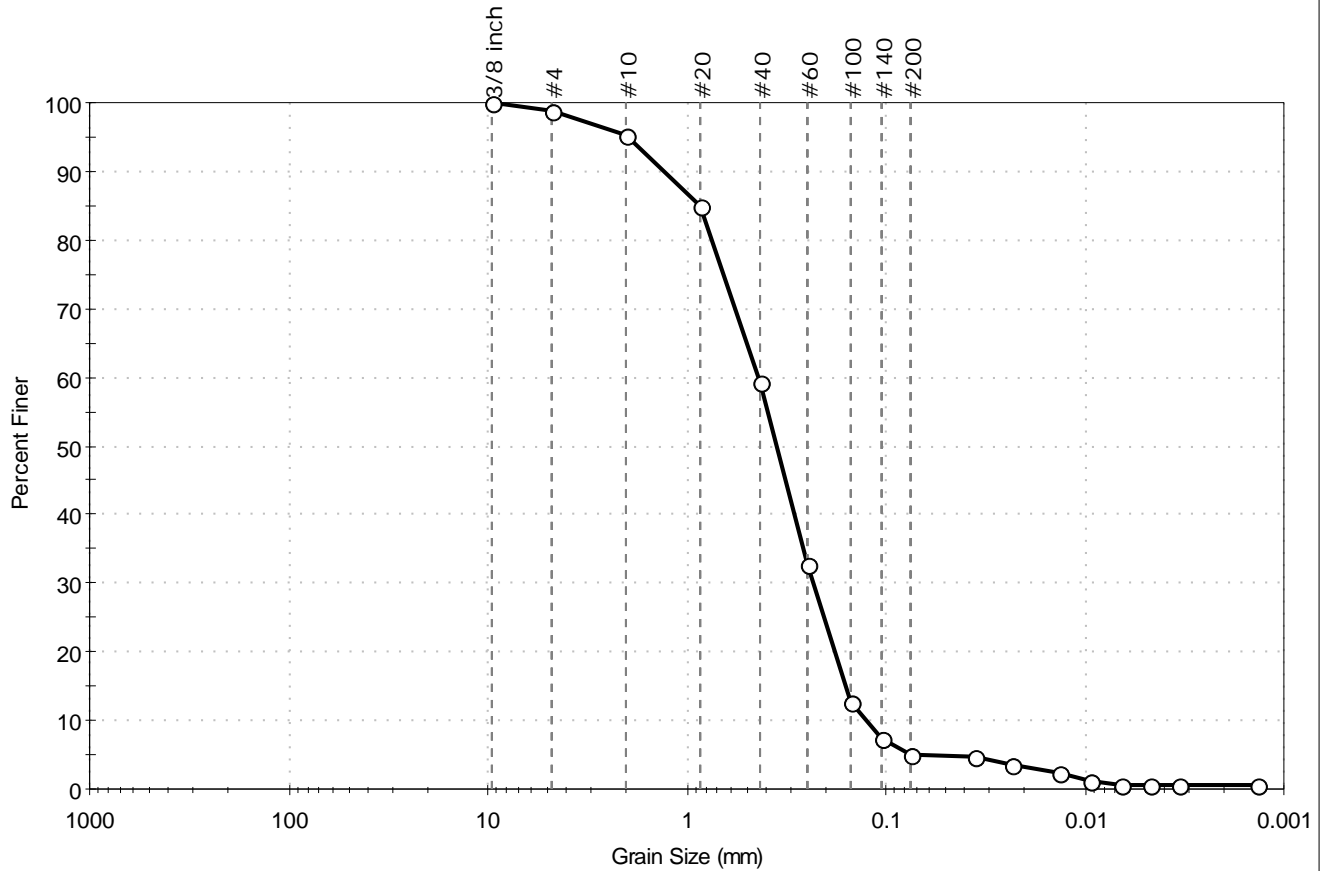
- (1): Method B-Volumetric, Reconstituted (compacted)
- (2): Method B-Volumetric, Reconstituted (compacted)

Notes: Moisture Content determined by ASTM D2216.



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-03-6.5-8.5	Test Date: 11/28/23
Depth: ---	Test Id: 745103
Test Comment: ---	Tested By: ckg
Visual Description: Moist, grayish brown sand with silt	Checked By: jsc
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	1.0	93.9	5.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	99		
#10	2.00	95		
#20	0.85	85		
#40	0.42	59		
#60	0.25	33		
#100	0.15	13		
#140	0.11	7		
#200	0.075	5.1		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0362	5		
---	0.0232	4		
---	0.0134	2		
---	0.0095	1		
---	0.0066	0		
---	0.0047	0		
---	0.0033	0		
---	0.0014	0		

<u>Coefficients</u>	
D <sub>85</sub> = 0.8478 mm	D <sub>30</sub> = 0.2334 mm
D <sub>60</sub> = 0.4329 mm	D <sub>15</sub> = 0.1591 mm
D <sub>50</sub> = 0.3530 mm	D <sub>10</sub> = 0.1257 mm
C <sub>u</sub> = 3.444	C <sub>c</sub> = 1.001

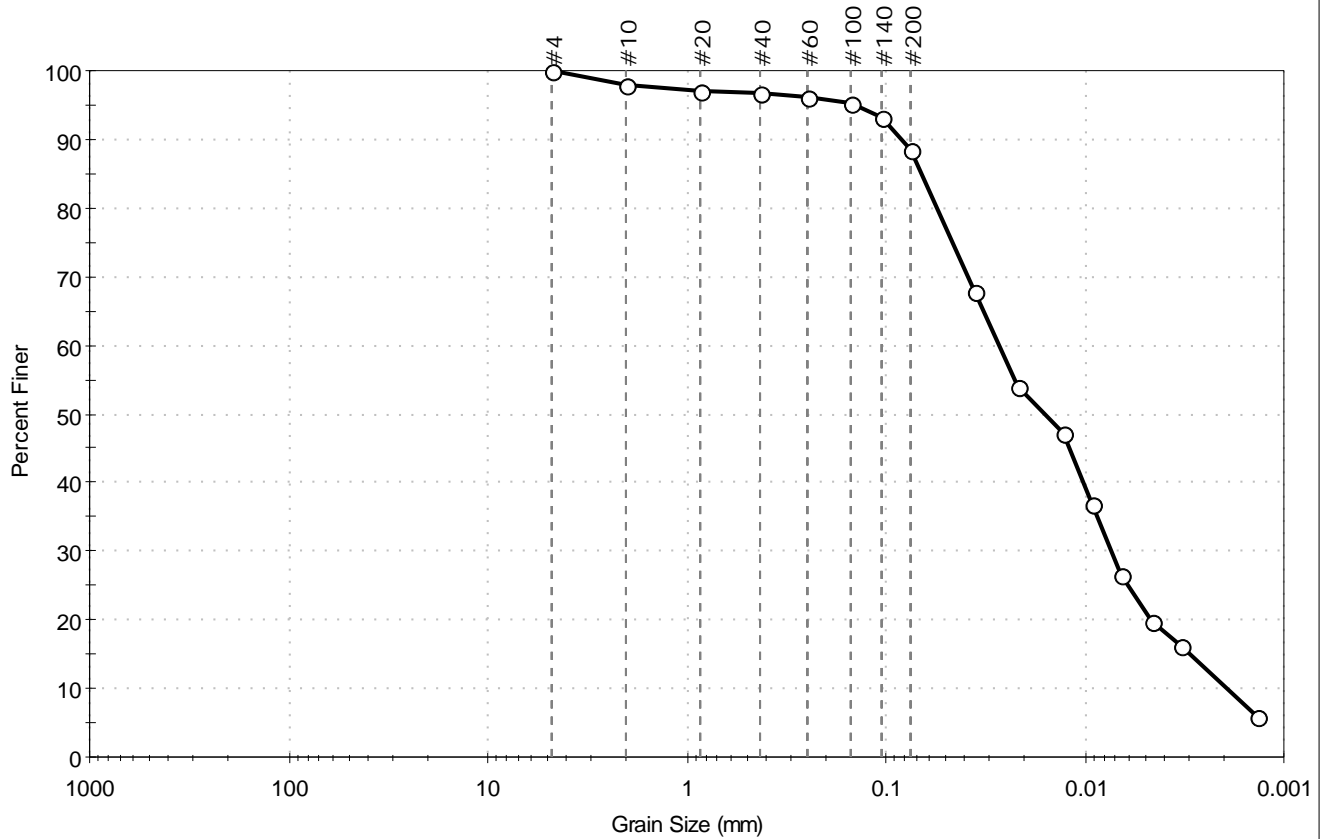
<u>Classification</u>	
ASTM	N/A
AASHTO	Fine Sand (A-3 (1))

<u>Sample/Test Description</u>	
Sand/Gravel Particle Shape	: ---
Sand/Gravel Hardness	: ---
Dispersion Device	: Apparatus A - Mech Mixer
Dispersion Period	: 1 minute
Est. Specific Gravity	: 2.65
Separation of Sample	: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-03-8.5-10	Test Date: 11/28/23
Depth: ---	Test Id: 745104
Test Comment: ---	Tested By: ckg
Visual Description: Moist, very dark brown clay with organics	Checked By: jsc
Sample Comment: Sample contains organics	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	11.5	88.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.85	97		
#40	0.42	97		
#60	0.25	96		
#100	0.15	95		
#140	0.11	93		
#200	0.075	88		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0360	68		
---	0.0220	54		
---	0.0130	47		
---	0.0092	37		
---	0.0066	27		
---	0.0047	20		
---	0.0033	16		
---	0.0014	6		

<u>Coefficients</u>	
D <sub>85</sub> = 0.0663 mm	D <sub>30</sub> = 0.0074 mm
D <sub>60</sub> = 0.0272 mm	D <sub>15</sub> = 0.0030 mm
D <sub>50</sub> = 0.0161 mm	D <sub>10</sub> = 0.0019 mm
C <sub>u</sub> = 14.316	C <sub>c</sub> = 1.060

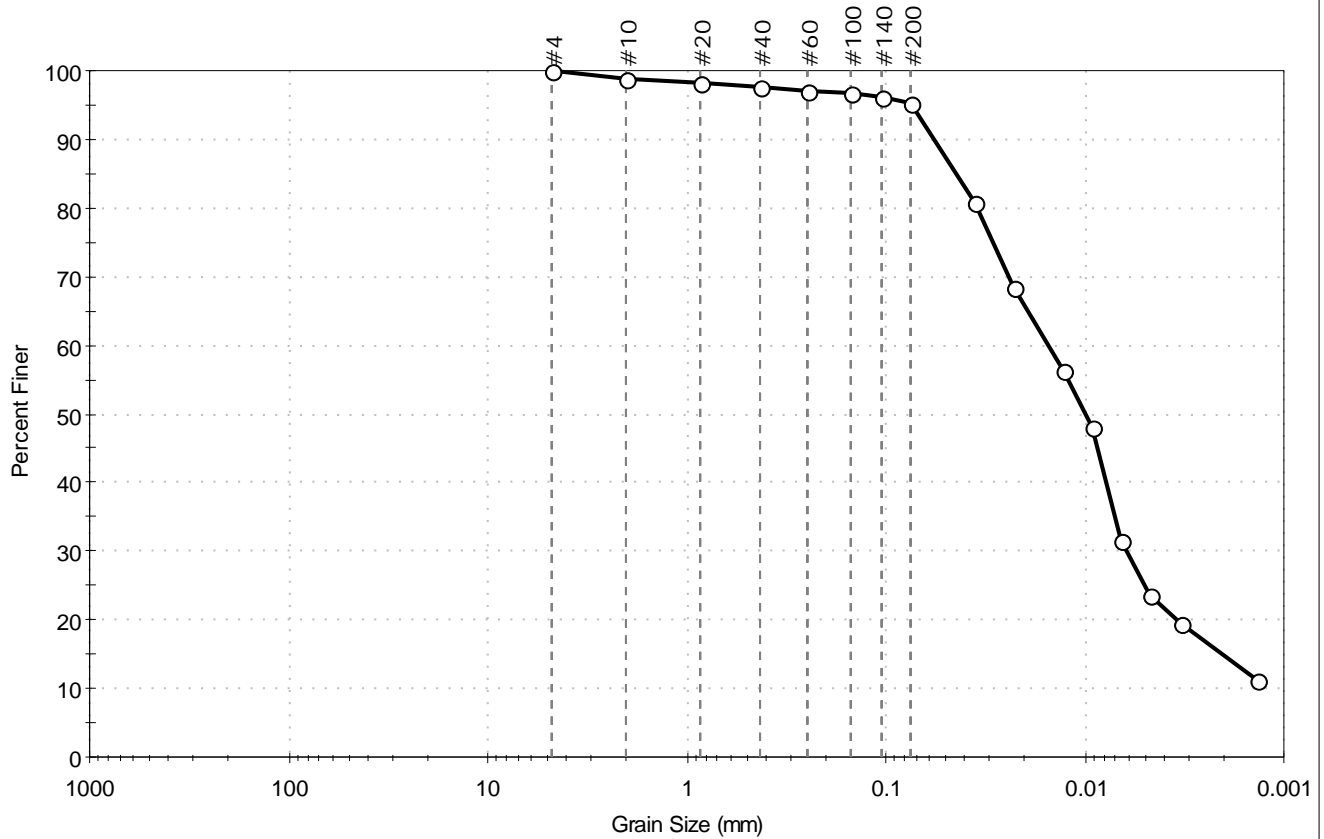
<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-04-0-2.5	Test Date: 11/28/23
Depth: ---	Test Id: 745105
Test Comment: ---	Tested By: ckg
Visual Description: Moist, very dark brown clay with organics	Checked By: jsc
Sample Comment: Sample contains organics	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	4.6	95.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	98		
#40	0.42	98		
#60	0.25	97		
#100	0.15	97		
#140	0.11	96		
#200	0.075	95		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0359	81		
---	0.0225	69		
---	0.0130	56		
---	0.0092	48		
---	0.0066	32		
---	0.0047	23		
---	0.0033	19		
---	0.0014	11		

<u>Coefficients</u>	
D <sub>85</sub> = 0.0444 mm	D <sub>30</sub> = 0.0061 mm
D <sub>60</sub> = 0.0154 mm	D <sub>15</sub> = 0.0021 mm
D <sub>50</sub> = 0.0100 mm	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

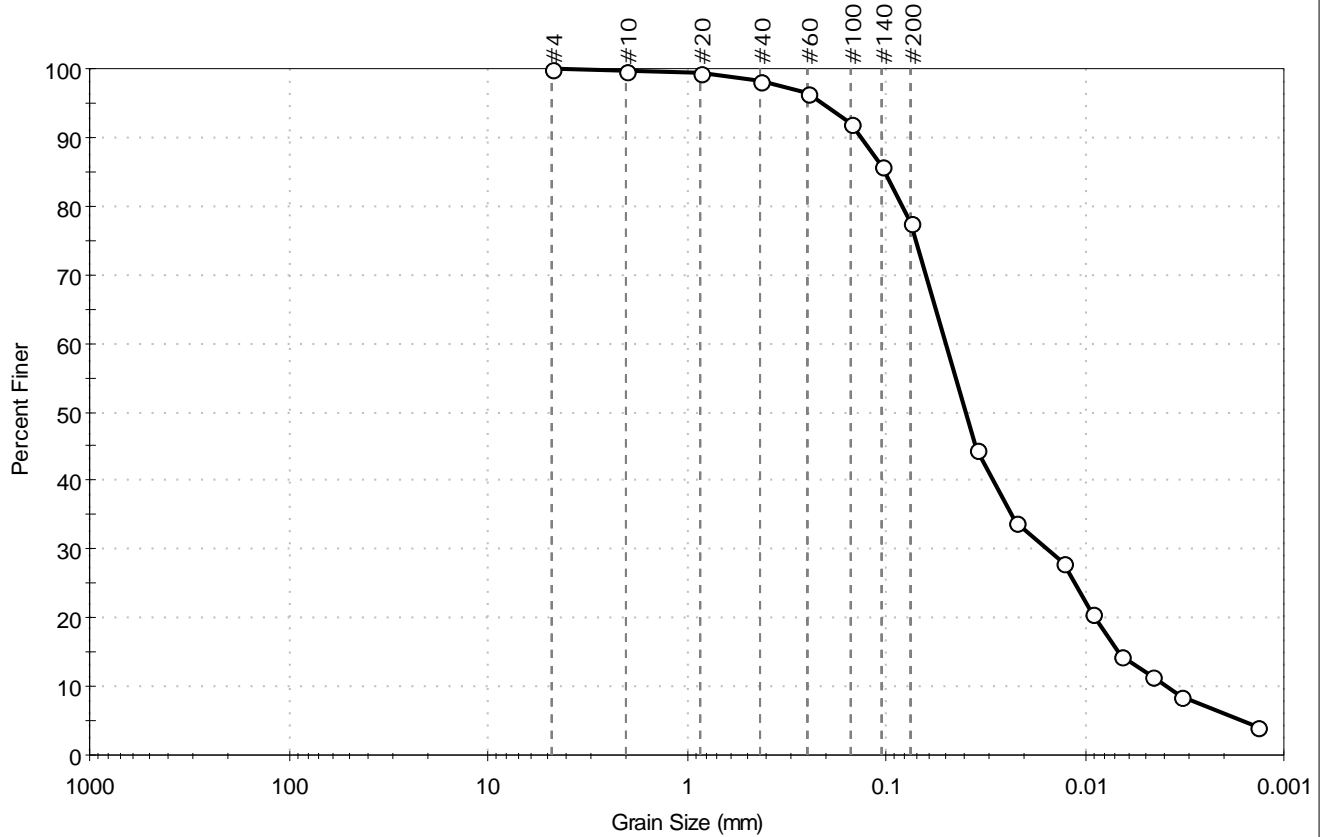
<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-04-2.5-3	Test Date: 11/28/23
Depth: ---	Test Id: 745106
Tested By: ckg	Checked By: jsc
Test Comment: ---	
Visual Description: Moist, dark brown clay with sand	
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	22.5	77.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	98		
#60	0.25	97		
#100	0.15	92		
#140	0.11	86		
#200	0.075	78		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0351	45		
---	0.0222	34		
---	0.0128	28		
---	0.0091	21		
---	0.0065	15		
---	0.0047	12		
---	0.0033	9		
---	0.0014	4		

<u>Coefficients</u>	
D <sub>85</sub> = 0.1027 mm	D <sub>30</sub> = 0.0153 mm
D <sub>60</sub> = 0.0501 mm	D <sub>15</sub> = 0.0067 mm
D <sub>50</sub> = 0.0398 mm	D <sub>10</sub> = 0.0039 mm
C <sub>u</sub> = 12.846	C <sub>c</sub> = 1.198

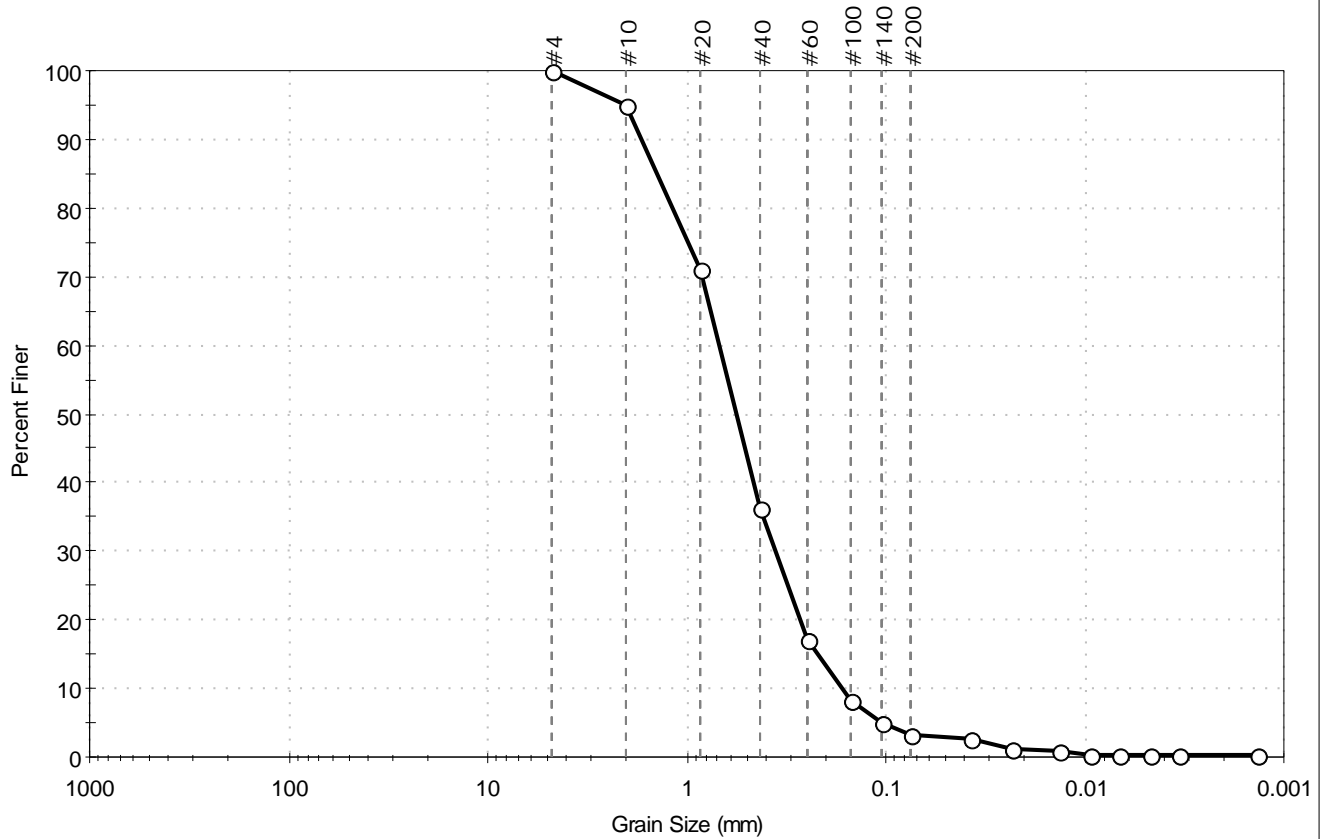
<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057	
Project: Warner's Pond	Tested By: ckg	
Location: Concord, MA	Sample Type: tube	Checked By: jsc
Boring ID: ---	Test Date: 11/28/23	Test Id: 745107
Sample ID: SED-04-3-7	Visual Description: Moist, grayish brown sand	
Depth: ---	Sample Comment: ---	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	96.9	3.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	95		
#20	0.85	71		
#40	0.42	36		
#60	0.25	17		
#100	0.15	8		
#140	0.11	5		
#200	0.075	3.1		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0374	3		
---	0.0235	1		
---	0.0134	1		
---	0.0095	0		
---	0.0067	0		
---	0.0047	0		
---	0.0034	0		
---	0.0014	0		

<u>Coefficients</u>	
D <sub>85</sub> = 1.3974 mm	D <sub>30</sub> = 0.3573 mm
D <sub>60</sub> = 0.6813 mm	D <sub>15</sub> = 0.2231 mm
D <sub>50</sub> = 0.5582 mm	D <sub>10</sub> = 0.1672 mm
C <sub>u</sub> = 4.075	C <sub>c</sub> = 1.121

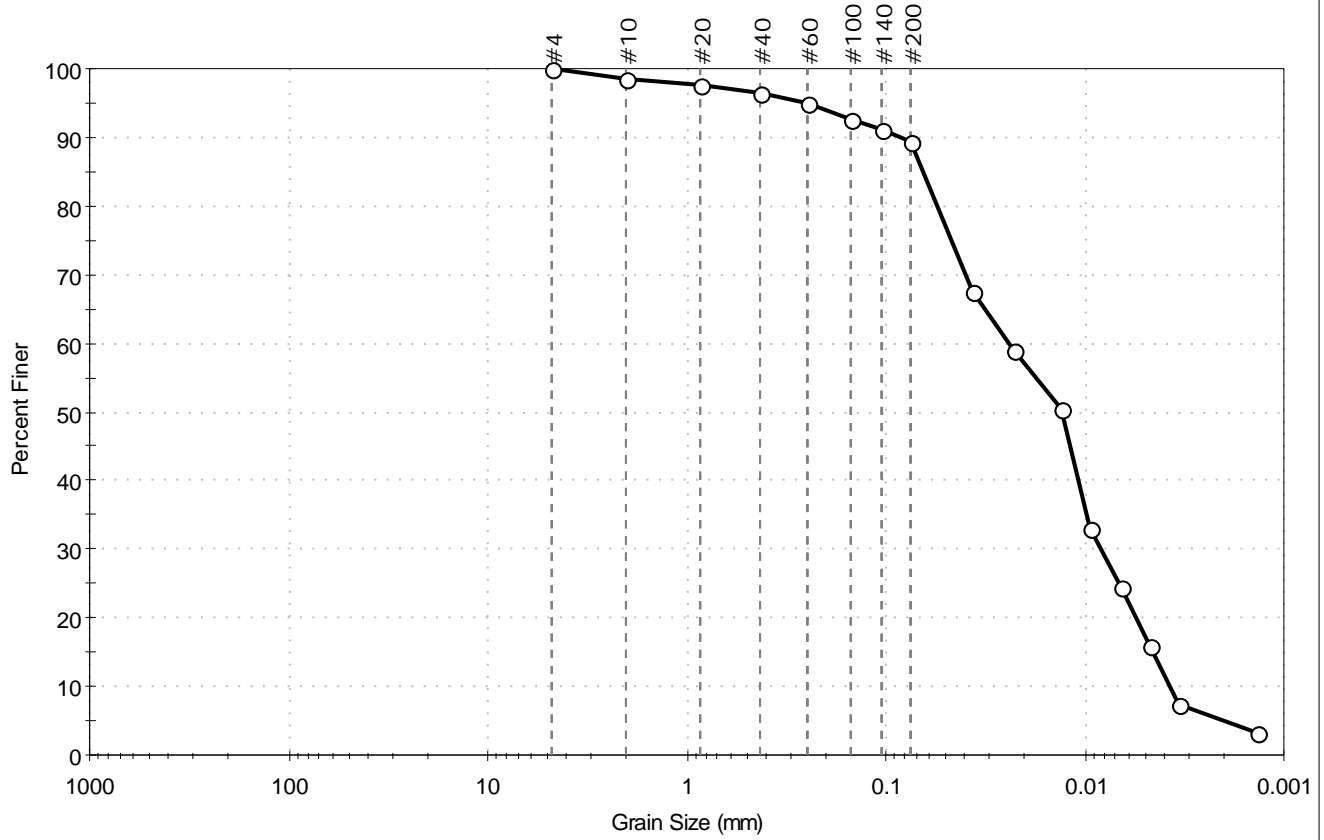
<u>Classification</u>	
<u>ASTM</u>	Poorly graded SAND (SP)
<u>AASHTO</u>	Stone Fragments, Gravel and Sand (A-1-b (1))

<u>Sample/Test Description</u>	
Sand/Gravel Particle Shape : ---	
Sand/Gravel Hardness : ---	
Dispersion Device : Apparatus A - Mech Mixer	
Dispersion Period : 1 minute	
Est. Specific Gravity : 2.65	
Separation of Sample: #200 Sieve	



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-05-0-1	Test Date: 11/28/23
Depth: ---	Test Id: 745108
Tested By: ckg	Checked By: jsc
Test Comment: ---	
Visual Description: Moist, very dark brown silt	
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	10.5	89.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	98		
#40	0.42	97		
#60	0.25	95		
#100	0.15	93		
#140	0.11	91		
#200	0.075	89		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0364	67		
---	0.0228	59		
---	0.0131	50		
---	0.0093	33		
---	0.0066	25		
---	0.0047	16		
---	0.0033	7		
---	0.0014	3		

<u>Coefficients</u>	
D <sub>85</sub> = 0.0648 mm	D <sub>30</sub> = 0.0082 mm
D <sub>60</sub> = 0.0242 mm	D <sub>15</sub> = 0.0045 mm
D <sub>50</sub> = 0.0130 mm	D <sub>10</sub> = 0.0037 mm
C <sub>u</sub> = 6.541	C <sub>c</sub> = 0.751

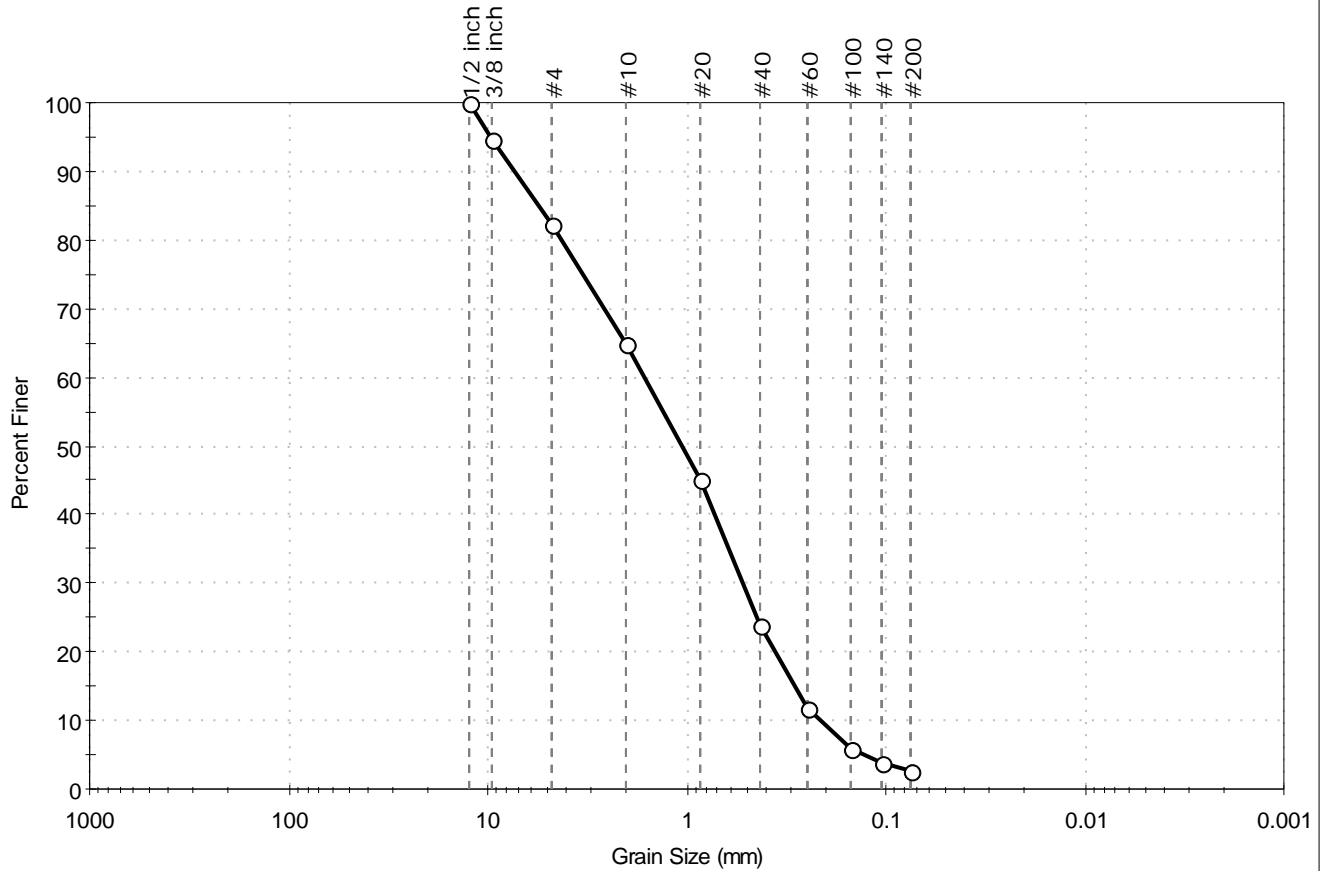
<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

<u>Sample/Test Description</u>	
Sand/Gravel Particle Shape : ---	
Sand/Gravel Hardness : ---	
Dispersion Device : Apparatus A - Mech Mixer	
Dispersion Period : 1 minute	
Est. Specific Gravity : 2.65	
Separation of Sample: #200 Sieve	



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-05-1-4.5	Test Date: 11/28/23
Depth: ---	Test Id: 745109
Tested By: ckg	Checked By: jsc
Test Comment: ---	
Visual Description: Moist, grayish brown sand with gravel	
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	17.7	79.5	2.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	95		
#4	4.75	82		
#10	2.00	65		
#20	0.85	45		
#40	0.42	24		
#60	0.25	12		
#100	0.15	6		
#140	0.11	4		
#200	0.075	2.8		

<u>Coefficients</u>	
D <sub>85</sub> = 5.5373 mm	D <sub>30</sub> = 0.5181 mm
D <sub>60</sub> = 1.6174 mm	D <sub>15</sub> = 0.2877 mm
D <sub>50</sub> = 1.0512 mm	D <sub>10</sub> = 0.2151 mm
C <sub>u</sub> = 7.519	C <sub>c</sub> = 0.772

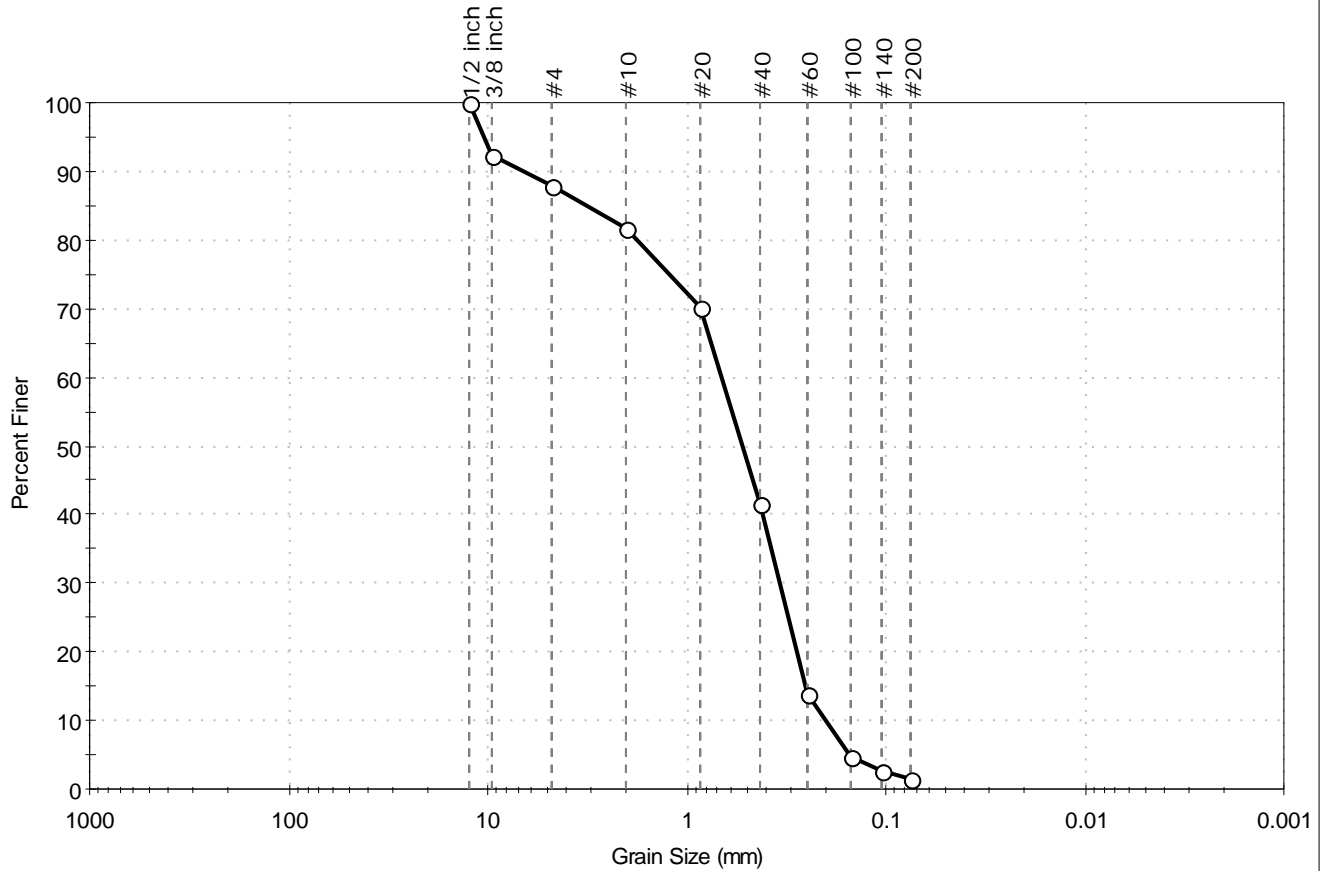
<u>Classification</u>	
<u>ASTM</u>	Poorly graded SAND with Gravel (SP)
<u>AASHTO</u>	Stone Fragments, Gravel and Sand (A-1-b (1))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-05-4.5-7.5	Test Date: 11/28/23
Depth: ---	Test Id: 745110
Test Comment: ---	Tested By: ckg
Visual Description: Moist, yellowish brown sand	Checked By: jsc
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	12.0	86.6	1.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	92		
#4	4.75	88		
#10	2.00	82		
#20	0.85	70		
#40	0.42	42		
#60	0.25	14		
#100	0.15	5		
#140	0.11	3		
#200	0.075	1.4		

<u>Coefficients</u>	
D <sub>85</sub> = 3.1395 mm	D <sub>30</sub> = 0.3409 mm
D <sub>60</sub> = 0.6644 mm	D <sub>15</sub> = 0.2558 mm
D <sub>50</sub> = 0.5218 mm	D <sub>10</sub> = 0.2017 mm
C <sub>u</sub> = 3.294	C <sub>c</sub> = 0.867

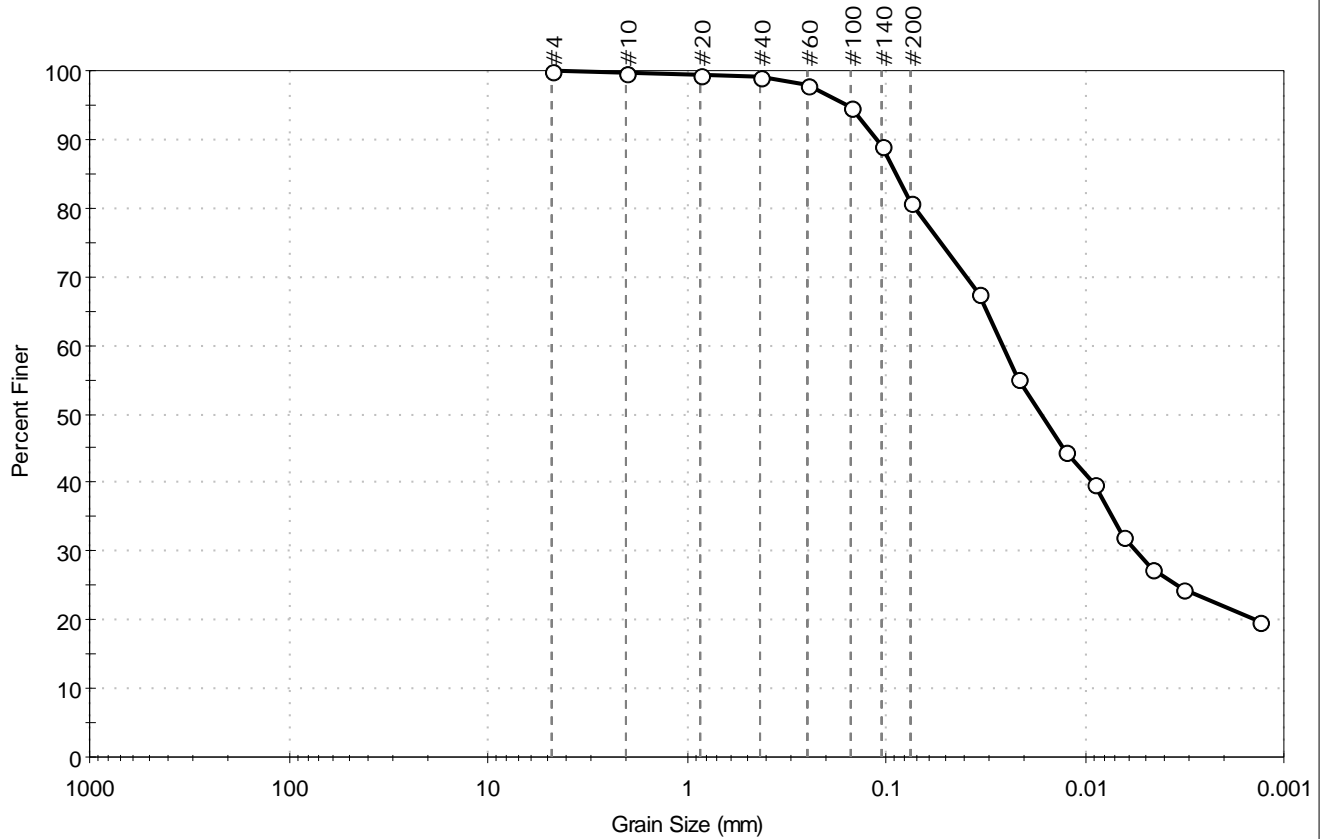
<u>Classification</u>	
<u>ASTM</u>	Poorly graded SAND (SP)
<u>AASHTO</u>	Stone Fragments, Gravel and Sand (A-1-b (1))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD



Client: EA Engineering, Science, & Technology  
 Project: Warner's Pond  
 Location: Concord, MA  
 Project No: GTX-318057  
 Boring ID: ---  
 Sample Type: tube  
 Tested By: ckg  
 Sample ID: SED-01-0-2.5  
 Test Date: 11/28/23  
 Checked By: jsc  
 Depth: ---  
 Test Id: 745076  
 Test Comment: ---  
 Visual Description: Moist, very dark brown silt with sand and organics  
 Sample Comment: Sample contains organics

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	19.1	80.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	99		
#60	0.25	98		
#100	0.15	95		
#140	0.11	89		
#200	0.075	81		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0338	68		
---	0.0215	55		
---	0.0126	44		
---	0.0090	40		
---	0.0064	32		
---	0.0046	27		
---	0.0032	24		
---	0.0013	20		

<u>Coefficients</u>	
D <sub>85</sub> = 0.0890 mm	D <sub>30</sub> = 0.0055 mm
D <sub>60</sub> = 0.0256 mm	D <sub>15</sub> = N/A
D <sub>50</sub> = 0.0166 mm	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

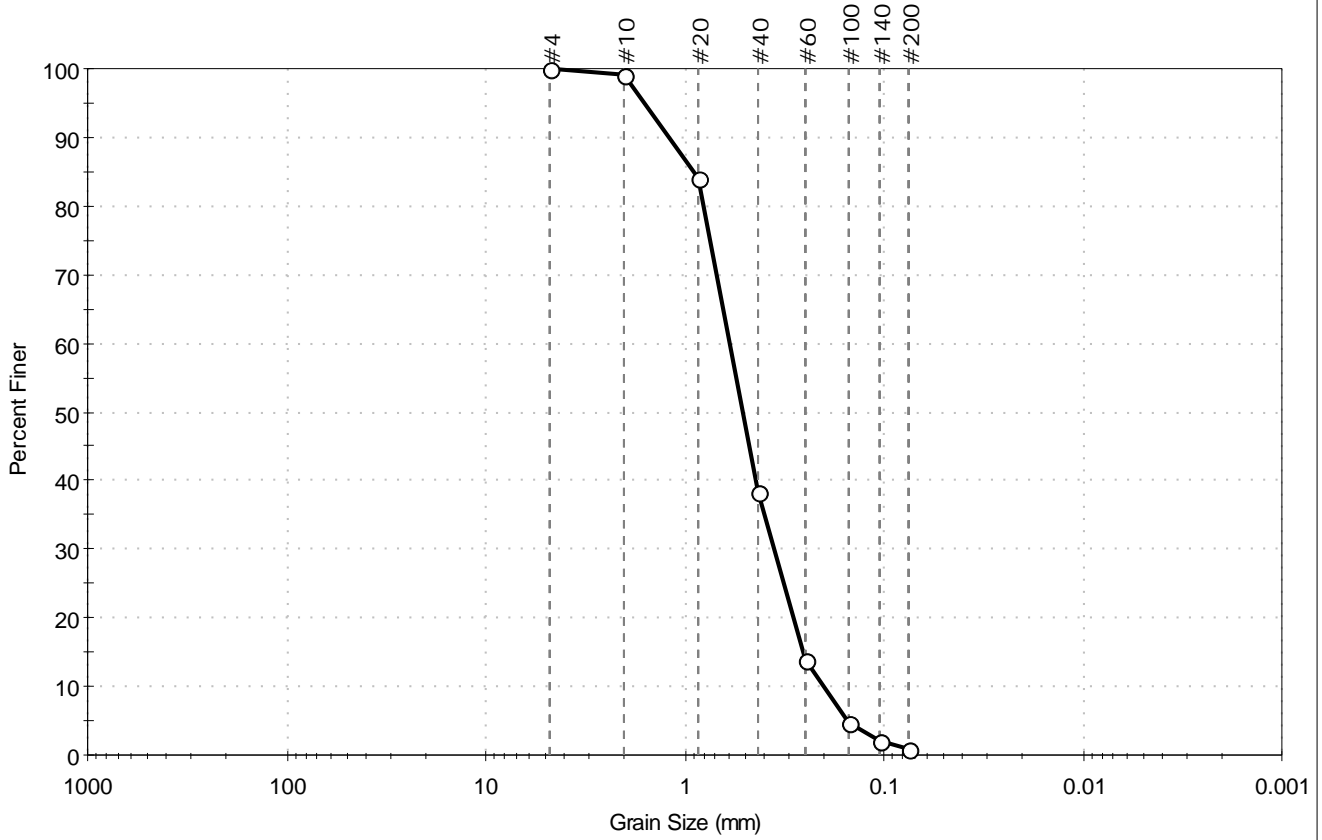
<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-01-2.5-4.5	Test Date: 11/28/23
Depth: ---	Test Id: 745077
Test Comment: ---	Tested By: ckg
Visual Description: Moist, grayish brown sand	Checked By: jsc
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	99.2	0.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	84		
#40	0.42	38		
#60	0.25	14		
#100	0.15	5		
#140	0.11	2		
#200	0.075	0.8		

<u>Coefficients</u>	
D <sub>85</sub> = 0.9014 mm	D <sub>30</sub> = 0.3545 mm
D <sub>60</sub> = 0.5907 mm	D <sub>15</sub> = 0.2559 mm
D <sub>50</sub> = 0.5074 mm	D <sub>10</sub> = 0.2005 mm
C <sub>u</sub> = 2.946	C <sub>c</sub> = 1.061

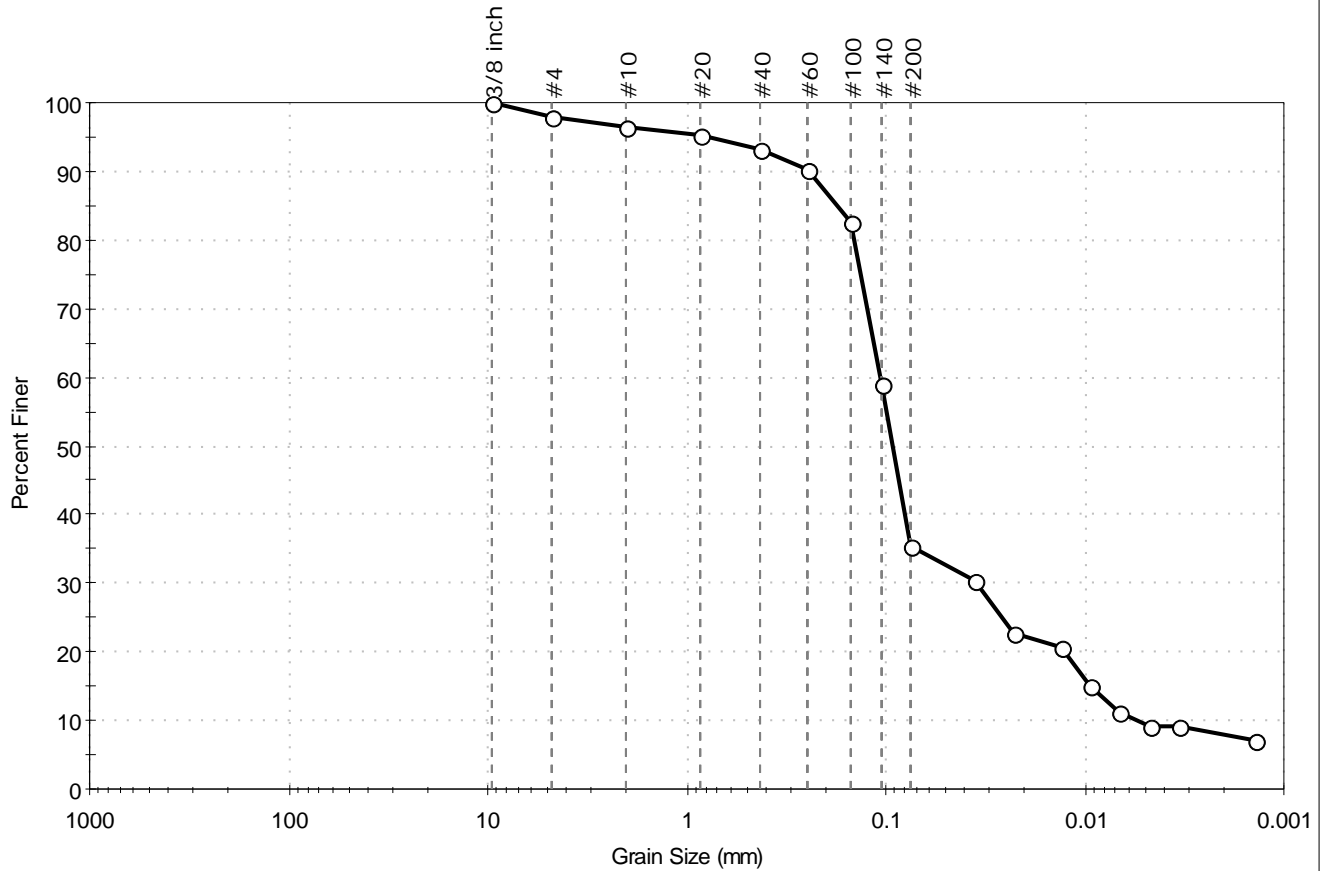
<u>Classification</u>	
<u>ASTM</u>	Poorly graded SAND (SP)
<u>AASHTO</u>	Stone Fragments, Gravel and Sand (A-1-b (1))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-01-4.5-5.75	Test Date: 11/28/23
Depth: ---	Test Id: 745078
Tested By: ckg	Checked By: jsc
Test Comment: ---	
Visual Description: Moist, very dark brown silty sand with organics	
Sample Comment: Sample contains organics	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	2.1	62.6	35.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	98		
#10	2.00	97		
#20	0.85	95		
#40	0.42	93		
#60	0.25	90		
#100	0.15	82		
#140	0.11	59		
#200	0.075	35		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0361	30		
---	0.0230	23		
---	0.0133	21		
---	0.0094	15		
---	0.0067	11		
---	0.0047	9		
---	0.0034	9		
---	0.0014	7		

Coefficients	
D <sub>85</sub> = 0.1773 mm	D <sub>30</sub> = 0.0356 mm
D <sub>60</sub> = 0.1074 mm	D <sub>15</sub> = 0.0094 mm
D <sub>50</sub> = 0.0929 mm	D <sub>10</sub> = 0.0054 mm
C <sub>u</sub> = 19.889	C <sub>c</sub> = 2.185

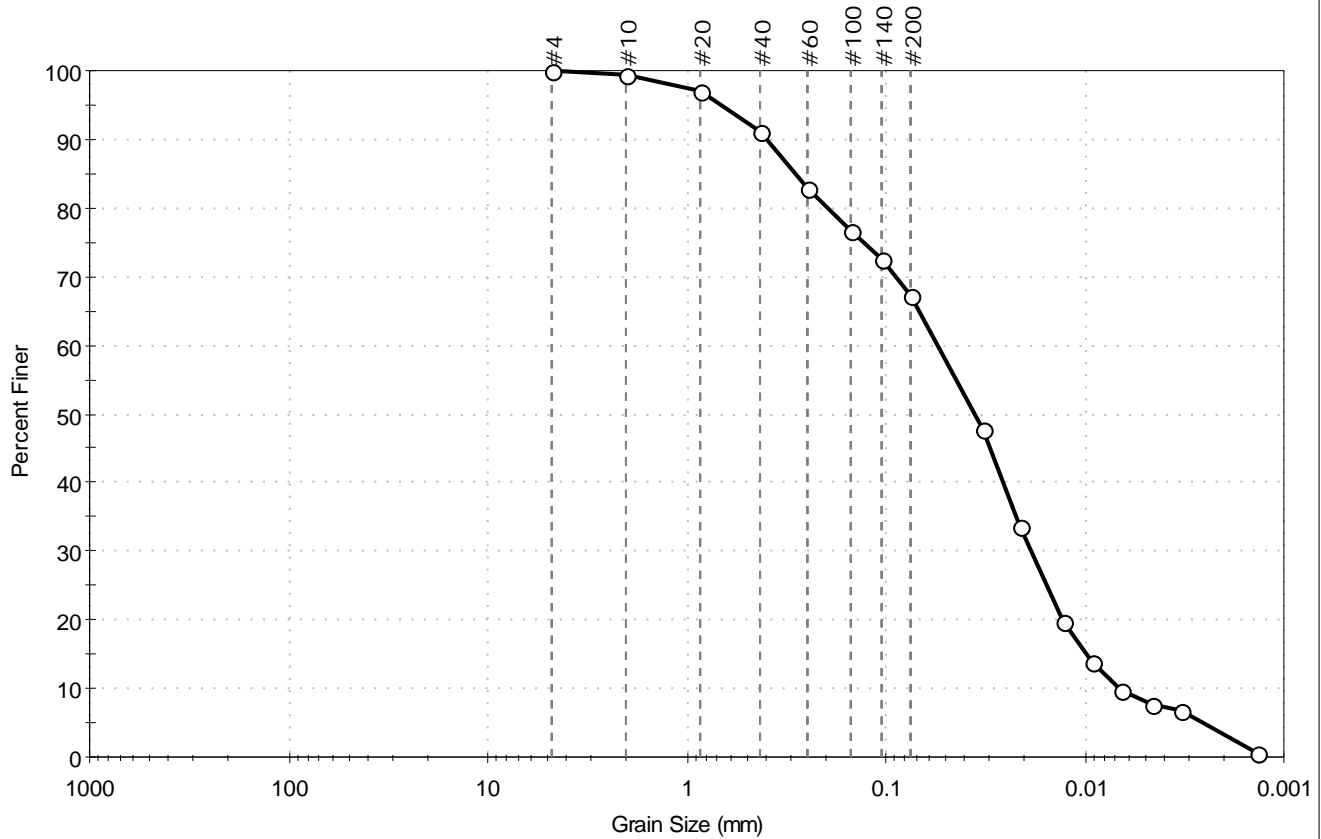
Classification	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

Sample/Test Description
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-01-5.75-6.75	Test Date: 11/28/23
Depth: ---	Test Id: 745079
Test Comment: ---	Tested By: ckg
Visual Description: Moist, gray sandy clay with organics	Checked By: jsc
Sample Comment: Sample contains organics	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	32.7	67.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	97		
#40	0.42	91		
#60	0.25	83		
#100	0.15	77		
#140	0.11	72		
#200	0.075	67		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0328	48		
---	0.0214	34		
---	0.0127	20		
---	0.0092	14		
---	0.0065	10		
---	0.0046	8		
---	0.0033	7		
---	0.0014	1		

<u>Coefficients</u>	
D <sub>85</sub> = 0.2860 mm	D <sub>30</sub> = 0.0186 mm
D <sub>60</sub> = 0.0550 mm	D <sub>15</sub> = 0.0098 mm
D <sub>50</sub> = 0.0360 mm	D <sub>10</sub> = 0.0067 mm
C <sub>u</sub> = 8.209	C <sub>c</sub> = 0.939

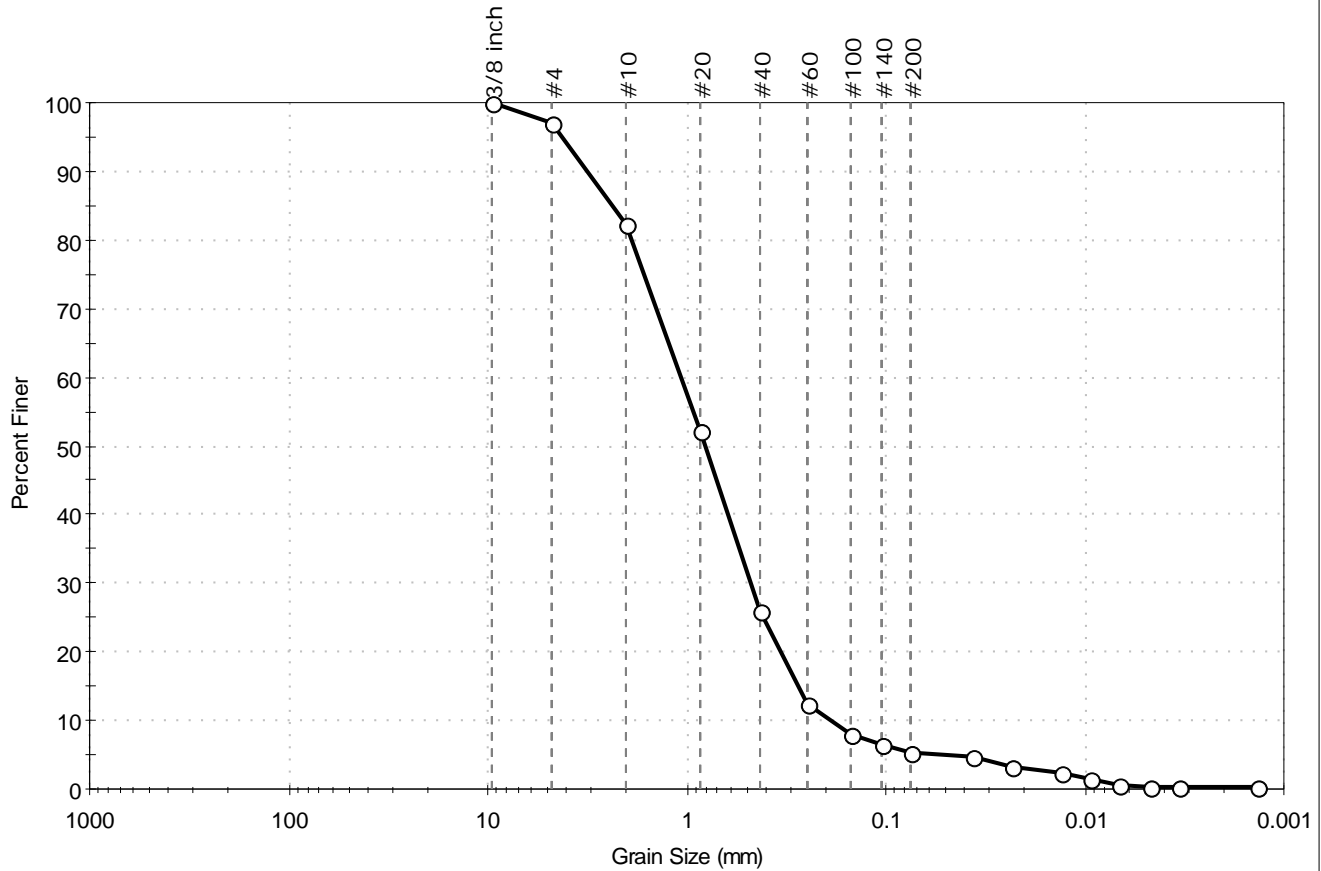
<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-01-6.75-8	Test Date: 11/28/23
Depth: ---	Test Id: 745080
Tested By: ckg	Checked By: jsc
Test Comment: ---	
Visual Description: Moist, gray sand with silt	
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	3.0	91.6	5.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	97		
#10	2.00	82		
#20	0.85	52		
#40	0.42	26		
#60	0.25	12		
#100	0.15	8		
#140	0.11	7		
#200	0.075	5.4		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0364	5		
---	0.0231	3		
---	0.0133	2		
---	0.0094	1		
---	0.0067	1		
---	0.0047	0		
---	0.0034	0		
---	0.0014	0		

Coefficients	
D <sub>85</sub> = 2.3437 mm	D <sub>30</sub> = 0.4724 mm
D <sub>60</sub> = 1.0592 mm	D <sub>15</sub> = 0.2767 mm
D <sub>50</sub> = 0.8005 mm	D <sub>10</sub> = 0.1878 mm
C <sub>u</sub> = 5.640	C <sub>c</sub> = 1.122

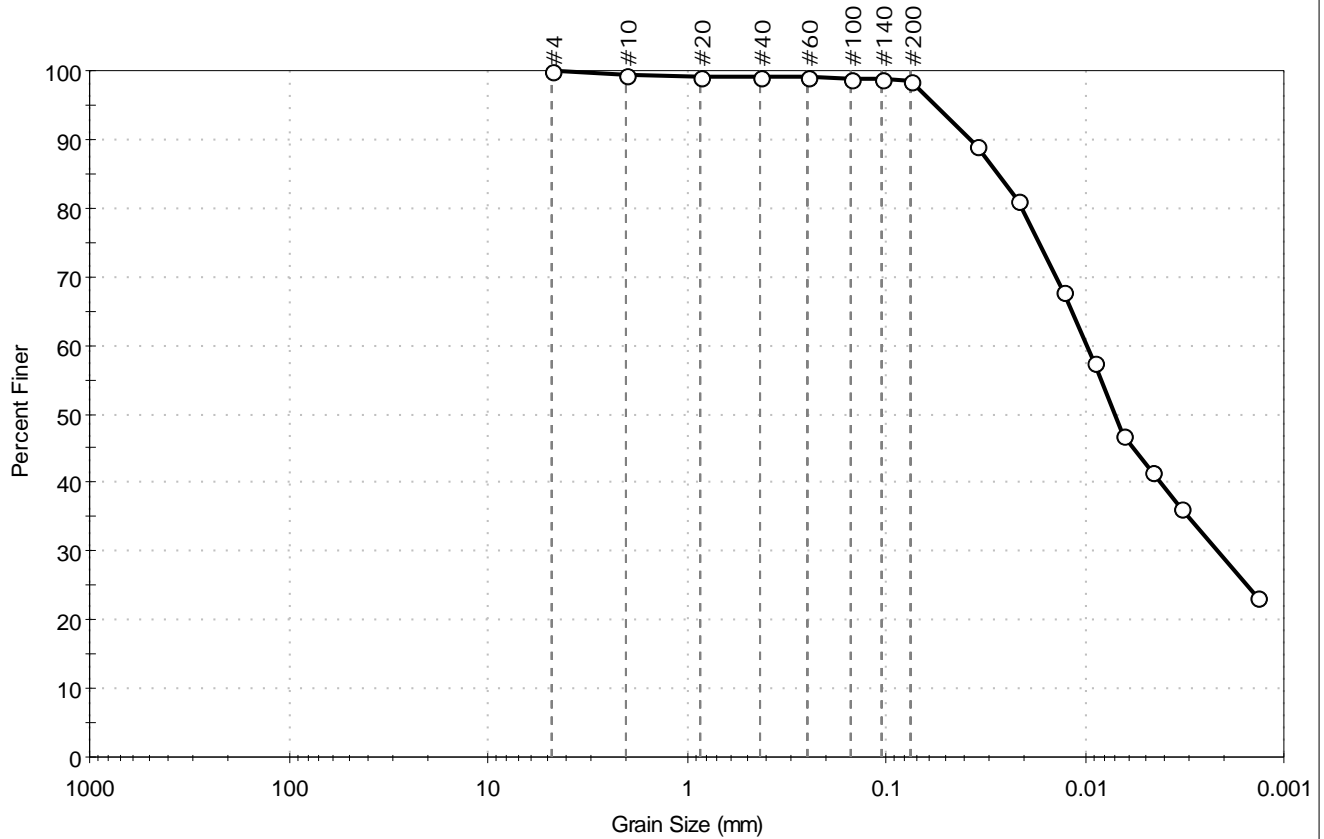
Classification	
ASTM	N/A
AASHTO	Stone Fragments, Gravel and Sand (A-1-b (1))

Sample/Test Description
Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-02-0-3	Test Date: 11/28/23
Depth: ---	Test Id: 745081
Test Comment: ---	Tested By: ckg
Visual Description: Moist, very dark brown silt with organics	Checked By: jsc
Sample Comment: Sample contains organics	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	1.5	98.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#140	0.11	99		
#200	0.075	99		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0351	89		
---	0.0219	81		
---	0.0127	68		
---	0.0091	57		
---	0.0065	47		
---	0.0046	42		
---	0.0033	36		
---	0.0014	23		

<u>Coefficients</u>	
D <sub>85</sub> = 0.0276 mm	D <sub>30</sub> = 0.0021 mm
D <sub>60</sub> = 0.0098 mm	D <sub>15</sub> = N/A
D <sub>50</sub> = 0.0071 mm	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

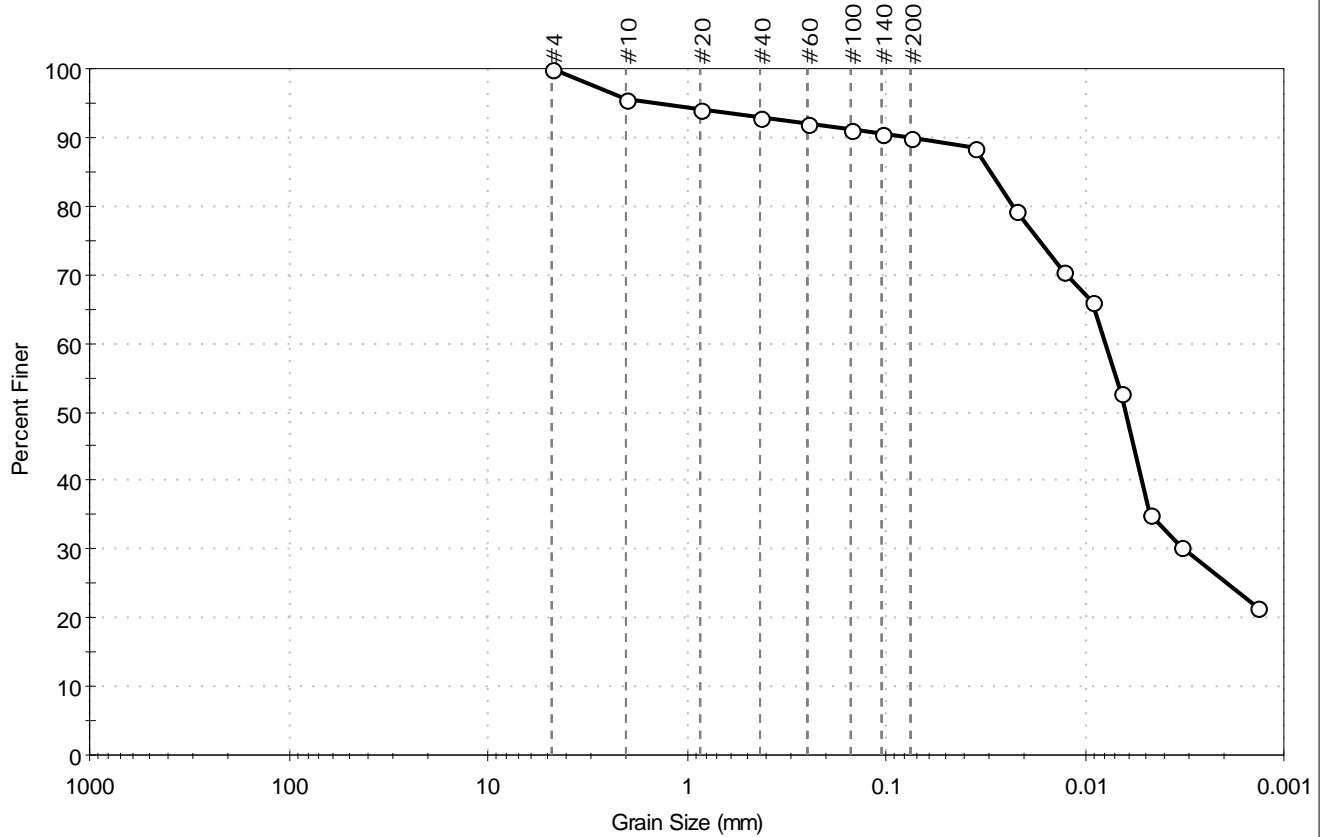
<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-02-3-8	Test Date: 11/28/23
Depth: ---	Test Id: 745082
Test Comment: ---	Tested By: ckg
Visual Description: Moist, very dark brown silt with organics	Checked By: jsc
Sample Comment: Sample contains organics	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	10.0	90.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	96		
#20	0.85	94		
#40	0.42	93		
#60	0.25	92		
#100	0.15	91		
#140	0.11	91		
#200	0.075	90		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0360	88		
---	0.0225	79		
---	0.0129	71		
---	0.0092	66		
---	0.0065	53		
---	0.0047	35		
---	0.0033	31		
---	0.0014	22		

Coefficients	
D <sub>85</sub> = 0.0301 mm	D <sub>30</sub> = 0.0031 mm
D <sub>60</sub> = 0.0079 mm	D <sub>15</sub> = N/A
D <sub>50</sub> = 0.0062 mm	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

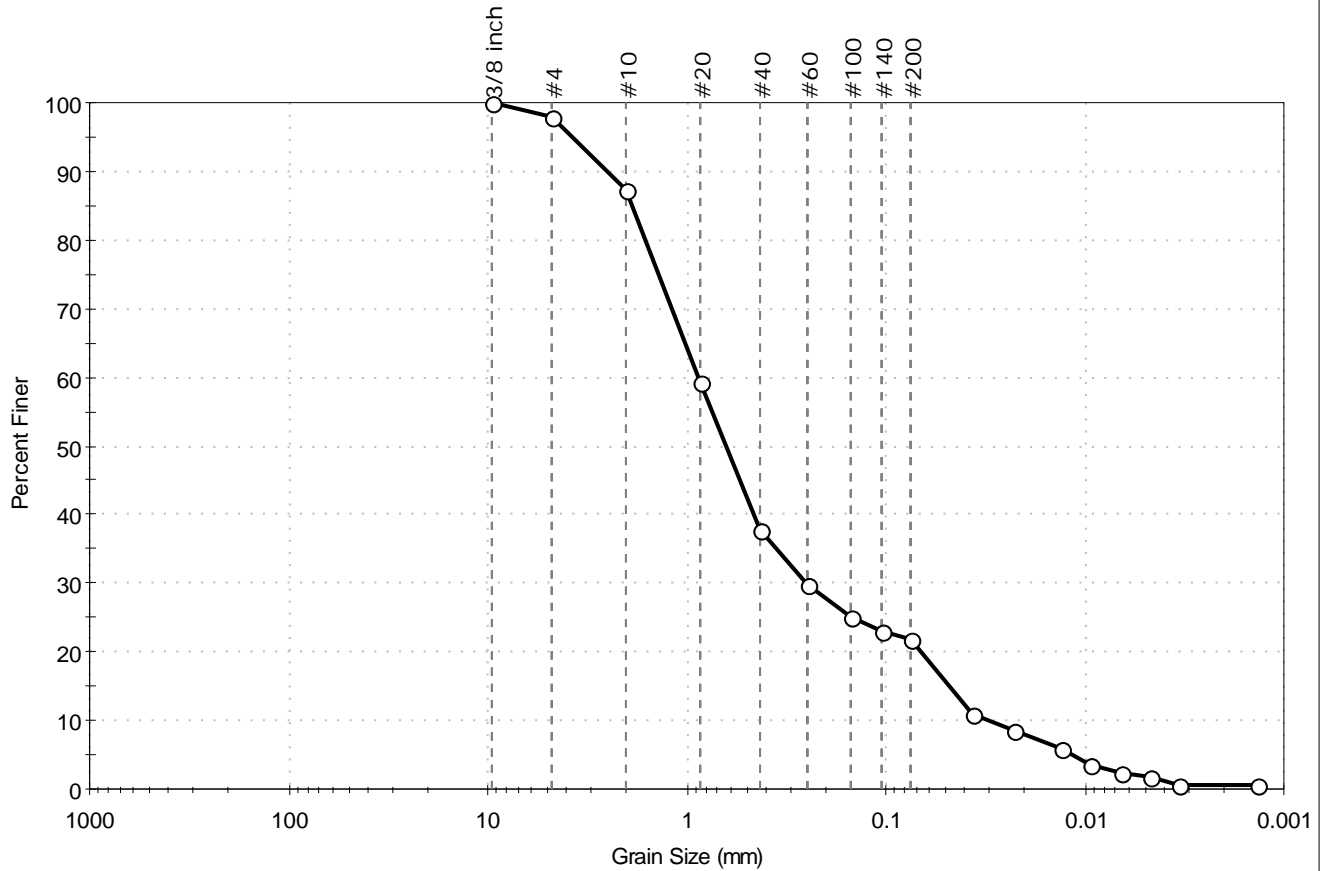
Classification	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

Sample/Test Description
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: SED-02-8-10	Test Date: 11/28/23
Depth: ---	Test Id: 745083
Test Comment: ---	Tested By: ckg
Visual Description: Moist, dark grayish brown silty sand with organics	Checked By: jsc
Sample Comment: Sample contains organics	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	2.1	76.2	21.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	98		
#10	2.00	87		
#20	0.85	59		
#40	0.42	38		
#60	0.25	30		
#100	0.15	25		
#140	0.11	23		
#200	0.075	22		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0364	11		
---	0.0228	9		
---	0.0131	6		
---	0.0094	4		
---	0.0066	2		
---	0.0047	2		
---	0.0033	0		
---	0.0014	0		

Coefficients	
D <sub>85</sub> = 1.8664 mm	D <sub>30</sub> = 0.2544 mm
D <sub>60</sub> = 0.8692 mm	D <sub>15</sub> = 0.0477 mm
D <sub>50</sub> = 0.6317 mm	D <sub>10</sub> = 0.0301 mm
C <sub>u</sub> = 28.877	C <sub>c</sub> = 2.474

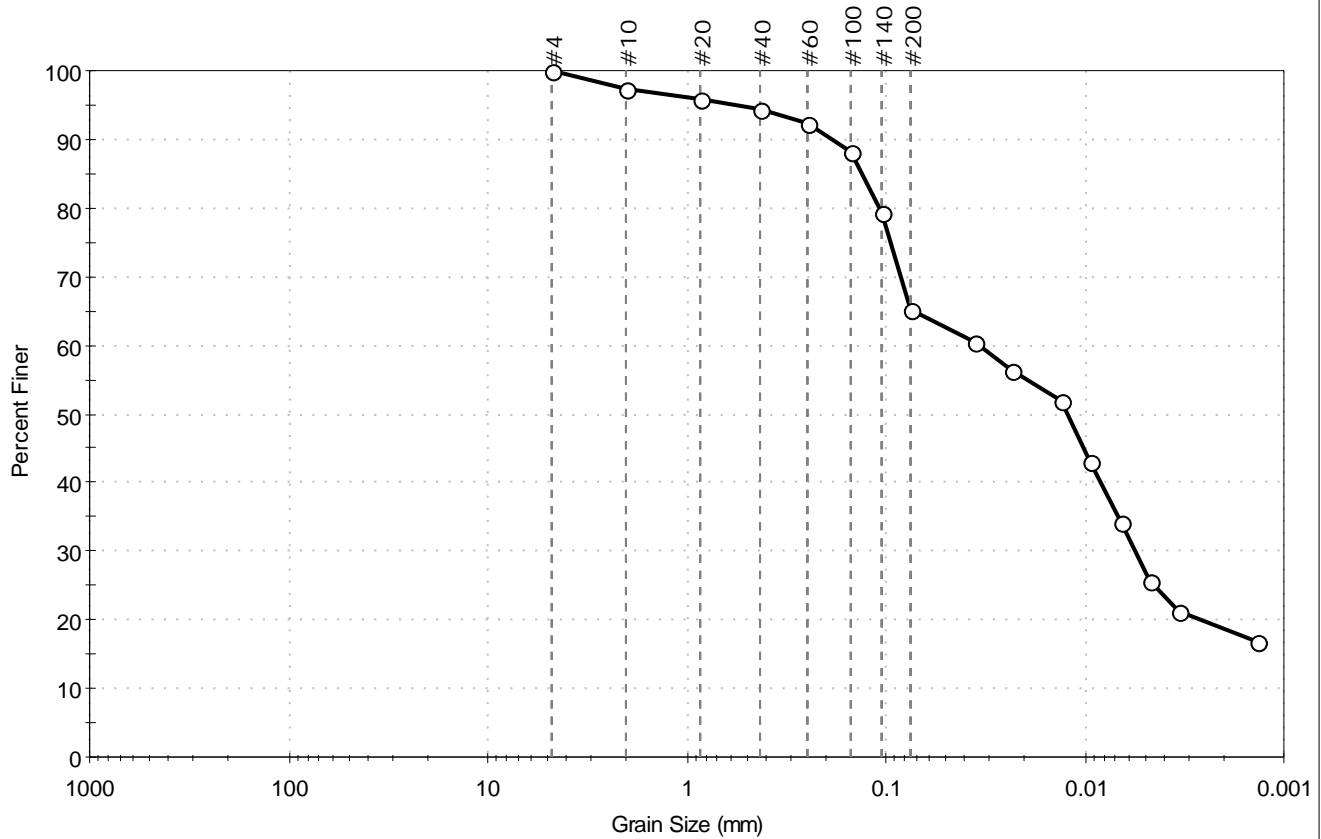
Classification	
ASTM	N/A
AASHTO	Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description	
Sand/Gravel Particle Shape	: ANGULAR
Sand/Gravel Hardness	: HARD
Dispersion Device	: Apparatus A - Mech Mixer
Dispersion Period	: 1 minute
Est. Specific Gravity	: 2.65
Separation of Sample	: #200 Sieve



Client: EA Engineering, Science, & Technology  
 Project: Warner's Pond  
 Location: Concord, MA  
 Project No: GTX-318057  
 Boring ID: ---  
 Sample Type: tube  
 Tested By: ckg  
 Sample ID: SED-03-0-6.5  
 Test Date: 11/28/23  
 Checked By: jsc  
 Depth: ---  
 Test Id: 745084  
 Test Comment: ---  
 Visual Description: Moist, very dark brown sandy silt with organics  
 Sample Comment: Sample contains organics

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	34.7	65.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	97		
#20	0.85	96		
#40	0.42	94		
#60	0.25	92		
#100	0.15	88		
#140	0.11	79		
#200	0.075	65		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0361	61		
---	0.0231	56		
---	0.0132	52		
---	0.0093	43		
---	0.0067	34		
---	0.0047	26		
---	0.0034	21		
---	0.0014	17		

<u>Coefficients</u>	
D <sub>85</sub> = 0.1325 mm	D <sub>30</sub> = 0.0056 mm
D <sub>60</sub> = 0.0340 mm	D <sub>15</sub> = N/A
D <sub>50</sub> = 0.0123 mm	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client:	EA Engineering, Science, & Technology		
Project:	Warner's Pond		
Location:	Concord, MA	Project No:	GTX-318057
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	11/10/23
Depth :	---	Test Id:	742660
		Tested By:	ckg
		Checked By:	ank

## Laboratory Determination of Density (Unit Weight) of Soil Specimens by ASTM D7263

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf	*
---	NB- CA-2-4	2-4	Moist, dark brown sand with silt and organics	99.49	75.61	56.66	(1)
---	NB- PB-0-2.5	0-2.5	Moist, dark brown silt	69.12	359.6	15.04	(2)
---	NB- PB-2.5-6	2.5-6	Moist, dark brown sandy silt with organics	95.13	99.45	47.69	(3)

\* Sample Comments

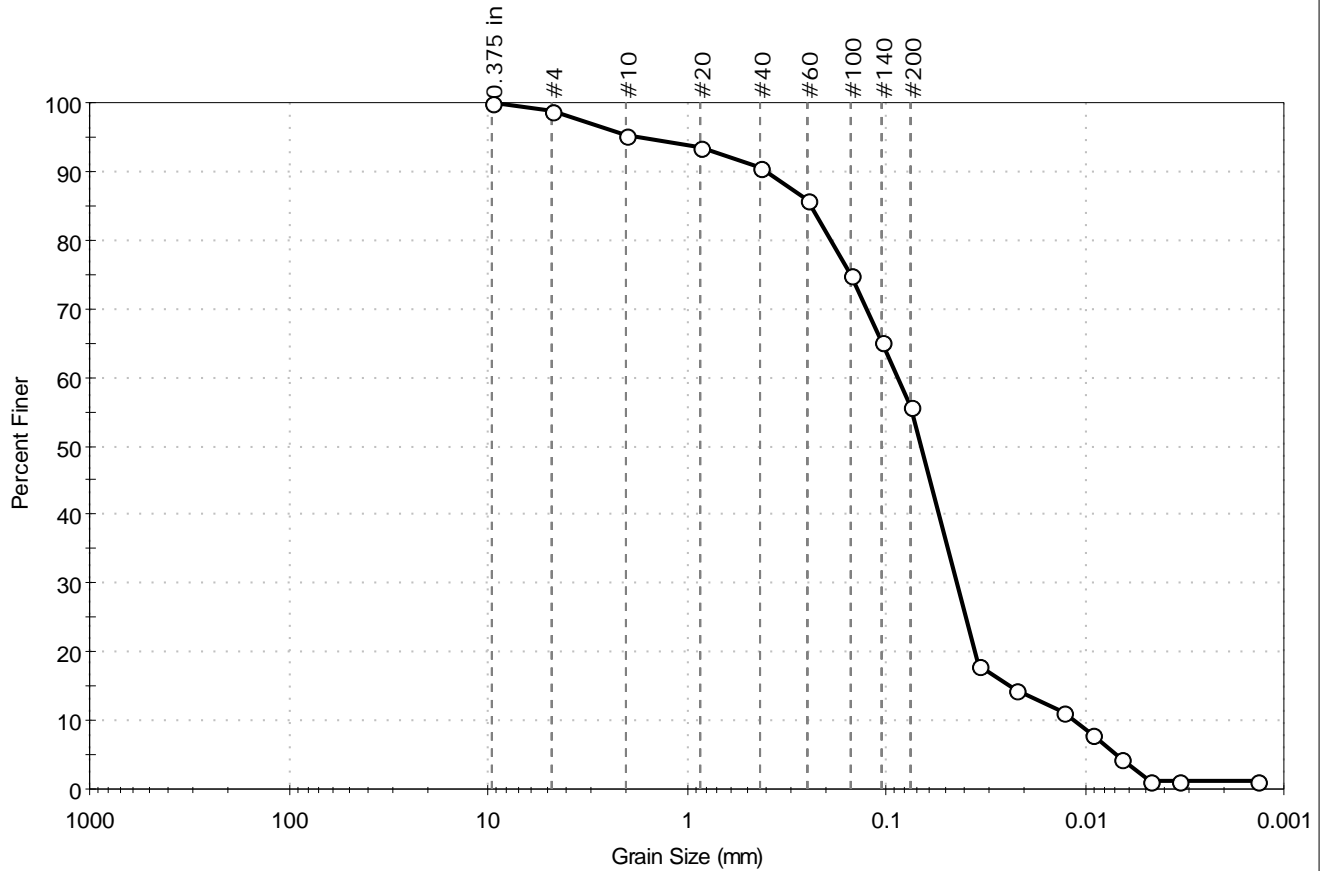
- (1): Method B-Volumetric, Reconstituted (compacted)
- (2): Method B-Volumetric, Reconstituted (compacted)
- (3): Method B-Volumetric, Reconstituted (compacted)

Notes: Moisture Content determined by ASTM D2216.



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: NB-PB-2.5-6	Test Date: 11/10/23
Depth: 2.5-6	Test Id: 742656
Tested By: ckg	Checked By: ank
Test Comment: ---	
Visual Description: Moist, dark brown sandy silt with organics	
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	1.1	43.1	55.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	99		
#10	2.00	95		
#20	0.85	94		
#40	0.42	90		
#60	0.25	86		
#100	0.15	75		
#140	0.11	65		
#200	0.075	56		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0338	18		
---	0.0223	15		
---	0.0130	11		
---	0.0091	8		
---	0.0066	5		
---	0.0047	1		
---	0.0034	1		
---	0.0014	1		

Coefficients	
D <sub>85</sub> = 0.2399 mm	D <sub>30</sub> = 0.0437 mm
D <sub>60</sub> = 0.0875 mm	D <sub>15</sub> = 0.0236 mm
D <sub>50</sub> = 0.0664 mm	D <sub>10</sub> = 0.0114 mm
C <sub>u</sub> = 7.675	C <sub>c</sub> = 1.914

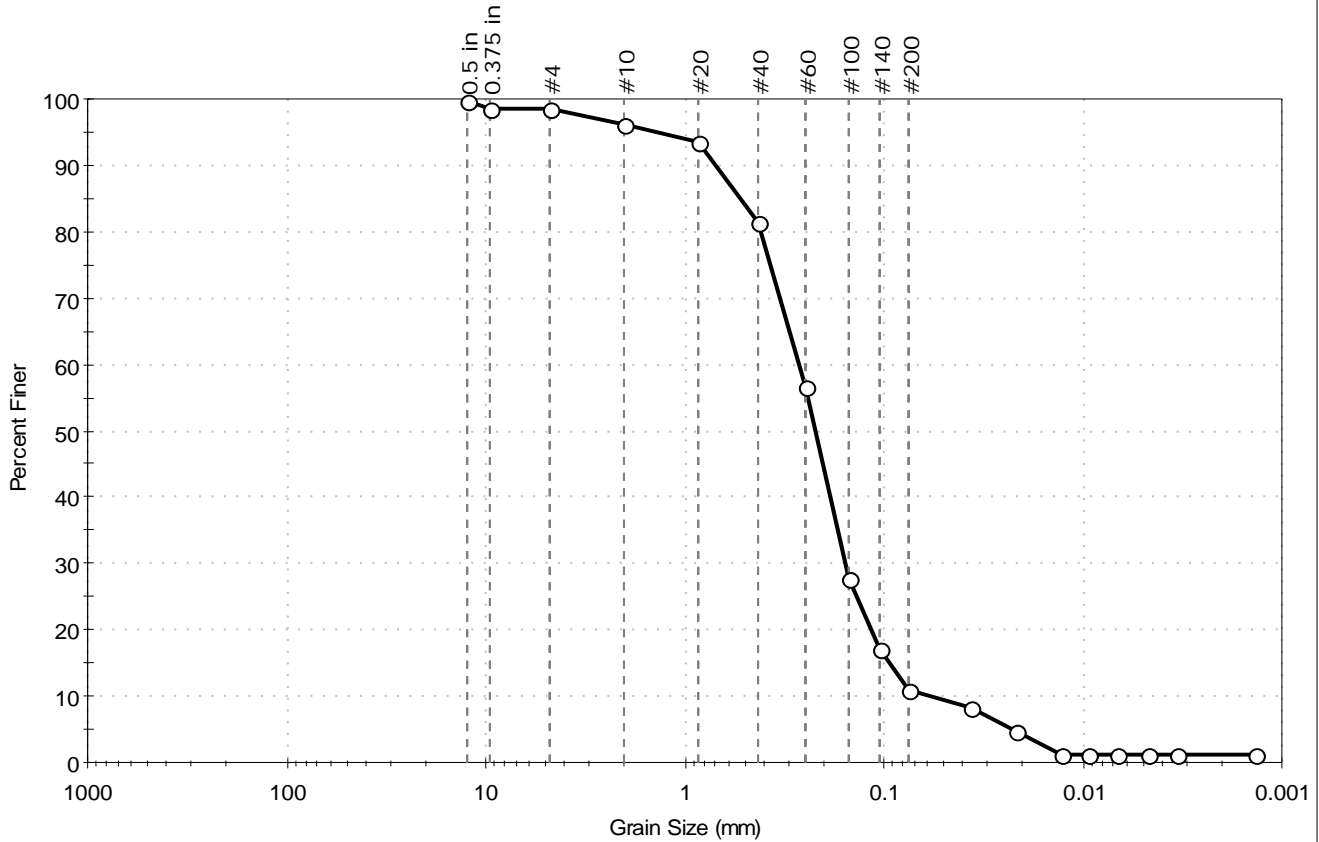
Classification	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

Sample/Test Description
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: EA Engineering, Science, & Technology	Project No: GTX-318057
Project: Warner's Pond	
Location: Concord, MA	
Boring ID: ---	Sample Type: tube
Sample ID: NB-CA-2-4	Test Date: 11/10/23
Depth: 2-4	Test Id: 742658
Test Comment: ---	Tested By: ckg
Visual Description: Moist, dark brown sand with silt and organics	Checked By: ank
Sample Comment: ---	

## Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	1.6	87.6	10.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	98		
#4	4.75	98		
#10	2.00	96		
#20	0.85	93		
#40	0.42	82		
#60	0.25	57		
#100	0.15	28		
#140	0.11	17		
#200	0.075	11		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0363	8		
---	0.0218	5		
---	0.0130	1		
---	0.0094	1		
---	0.0067	1		
---	0.0047	1		
---	0.0034	1		
---	0.0014	1		

<u>Coefficients</u>	
D <sub>85</sub> = 0.5200 mm	D <sub>30</sub> = 0.1565 mm
D <sub>60</sub> = 0.2689 mm	D <sub>15</sub> = 0.0940 mm
D <sub>50</sub> = 0.2227 mm	D <sub>10</sub> = 0.0592 mm
C <sub>u</sub> = 4.542	C <sub>c</sub> = 1.539

<u>Classification</u>	
ASTM	N/A
AASHTO	Silty Gravel and Sand (A-2-4 (0))

<u>Sample/Test Description</u>	
Sand/Gravel Particle Shape : ---	
Sand/Gravel Hardness : ---	
Dispersion Device : Apparatus A - Mech Mixer	
Dispersion Period : 1 minute	
Est. Specific Gravity : 2.65	
Separation of Sample: #200 Sieve	



## ANALYTICAL REPORT

Lab Number:	L2363511
Client:	EA Engineering, Science and Technology 301 Metro Center Blvd. Suite 102 Warwick, RI 02886
ATTN:	Alexander Patterson
Phone:	(401) 736-3440
Project Name:	WARNER'S POND
Project Number:	6404001
Report Date:	12/19/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

---

Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2363511-01	NB-102523	SEDIMENT	CONCORD, MA	10/25/23 12:00	10/25/23
L2363511-02	AR-102523	SEDIMENT	CONCORD, MA	10/25/23 13:00	10/25/23

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

---

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

### Case Narrative (continued)

#### Report Submission

December 19, 2023: This final report includes the results of all requested analyses.

December 14, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

#### Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with ice and delivered directly from the sampling site. This is considered acceptable since the samples were in the process of cooling.

#### PAHs/PCB Congeners

L2363511-01 and -02: The sample was frozen upon receipt in order to arrest the holding time.

The WG1859138-1 Method Blank, associated with L2363511-01 and -02, has a concentration above the reporting limit for Naphthalene. The results of the original analysis are reported and are qualified with a "B" for any associated sample concentrations that are less than 10x the blank concentration for this analyte.

#### Pesticides

L2363511-01 and -02: The sample was frozen upon receipt in order to arrest the holding time.

#### Total Metals

L2363511-01 and -02: The samples were frozen upon receipt in order to arrest the holding time for Total Mercury.

The WG1857705-3 MS recovery, performed on L2363511-01, is outside the acceptance criteria for chromium (49%). A post digestion spike was performed and was within acceptance criteria.

The WG1857705-3 MS recovery for copper (0%), performed on L2363511-01, does not apply because the

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

### Case Narrative (continued)

sample concentration is greater than four times the spike amount added.

The WG1857705-4 Laboratory Duplicate RPDs for arsenic (21%), chromium (62%), copper (175%), lead (33%) and nickel (33%), performed on L2363511-01, are outside the acceptance criteria. The elevated RPDs have been attributed to the non-homogeneous nature of the native sample.

#### Total Organic Carbon

L2363511-01 and -02: The sample was frozen upon receipt in order to arrest the holding time.

#### Grain Size Analysis

The WG1860514-1 Laboratory Duplicate RPDs for % gravel (24%), % coarse sand (62%) and fines (24%), performed on L2363511-02, are outside the acceptance criteria. The elevated RPDs have been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Melissa Sturgis

Title: Technical Director/Representative

Date: 12/19/23

# ORGANICS

# VOLATILES

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-01  
 Client ID: NB-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 12:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 1,8260D  
 Analytical Date: 11/06/23 21:00  
 Analyst: JIC  
 Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 High - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	430	200	1
1,1-Dichloroethane	ND		ug/kg	86	12.	1
Chloroform	ND		ug/kg	130	12.	1
Carbon tetrachloride	ND		ug/kg	86	20.	1
1,2-Dichloropropane	ND		ug/kg	86	11.	1
Dibromochloromethane	ND		ug/kg	86	12.	1
1,1,2-Trichloroethane	ND		ug/kg	86	23.	1
Tetrachloroethene	ND		ug/kg	43	17.	1
Chlorobenzene	ND		ug/kg	43	11.	1
Trichlorofluoromethane	ND		ug/kg	350	60.	1
1,2-Dichloroethane	ND		ug/kg	86	22.	1
1,1,1-Trichloroethane	ND		ug/kg	43	14.	1
Bromodichloromethane	ND		ug/kg	43	9.4	1
trans-1,3-Dichloropropene	ND		ug/kg	86	24.	1
cis-1,3-Dichloropropene	ND		ug/kg	43	14.	1
1,3-Dichloropropene, Total	ND		ug/kg	43	14.	1
1,1-Dichloropropene	ND		ug/kg	43	14.	1
Bromoform	ND		ug/kg	350	21.	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	43	14.	1
Benzene	ND		ug/kg	43	14.	1
Toluene	ND		ug/kg	86	47.	1
Ethylbenzene	ND		ug/kg	86	12.	1
Chloromethane	ND		ug/kg	350	81.	1
Bromomethane	ND		ug/kg	170	50.	1
Vinyl chloride	ND		ug/kg	86	29.	1
Chloroethane	ND		ug/kg	170	39.	1
1,1-Dichloroethene	ND		ug/kg	86	20.	1
trans-1,2-Dichloroethene	ND		ug/kg	130	12.	1

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-01  
 Client ID: NB-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 12:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatiles Organics by EPA 5035 High - Westborough Lab</b>						
Trichloroethene	ND		ug/kg	43	12.	1
1,2-Dichlorobenzene	ND		ug/kg	170	12.	1
1,3-Dichlorobenzene	ND		ug/kg	170	13.	1
1,4-Dichlorobenzene	ND		ug/kg	170	15.	1
Methyl tert butyl ether	ND		ug/kg	170	17.	1
p/m-Xylene	ND		ug/kg	170	48.	1
o-Xylene	ND		ug/kg	86	25.	1
Xylenes, Total	ND		ug/kg	86	25.	1
cis-1,2-Dichloroethene	ND		ug/kg	86	15.	1
1,2-Dichloroethene, Total	ND		ug/kg	86	12.	1
Dibromomethane	ND		ug/kg	170	20.	1
1,4-Dichlorobutane	ND		ug/kg	860	20.	1
1,2,3-Trichloropropane	ND		ug/kg	170	11.	1
Styrene	ND		ug/kg	86	17.	1
Dichlorodifluoromethane	ND		ug/kg	860	79.	1
Acetone	ND		ug/kg	860	420	1
Carbon disulfide	ND		ug/kg	860	390	1
2-Butanone	ND		ug/kg	860	190	1
Vinyl acetate	ND		ug/kg	860	190	1
4-Methyl-2-pentanone	ND		ug/kg	860	110	1
2-Hexanone	ND		ug/kg	860	100	1
Ethyl methacrylate	ND		ug/kg	860	140	1
Acrylonitrile	ND		ug/kg	350	100	1
Bromochloromethane	ND		ug/kg	170	18.	1
Tetrahydrofuran	ND		ug/kg	350	140	1
2,2-Dichloropropane	ND		ug/kg	170	17.	1
1,2-Dibromoethane	ND		ug/kg	86	24.	1
1,3-Dichloropropane	ND		ug/kg	170	14.	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	43	11.	1
Bromobenzene	ND		ug/kg	170	12.	1
n-Butylbenzene	ND		ug/kg	86	14.	1
sec-Butylbenzene	ND		ug/kg	86	13.	1
tert-Butylbenzene	ND		ug/kg	170	10.	1
o-Chlorotoluene	ND		ug/kg	170	16.	1
p-Chlorotoluene	ND		ug/kg	170	9.3	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	260	86.	1
Hexachlorobutadiene	ND		ug/kg	350	15.	1

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

**Lab ID:** L2363511-01  
**Client ID:** NB-102523  
**Sample Location:** CONCORD, MA

**Date Collected:** 10/25/23 12:00  
**Date Received:** 10/25/23  
**Field Prep:** Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	ND		ug/kg	86	9.4	1
p-Isopropyltoluene	ND		ug/kg	86	9.4	1
Naphthalene	ND		ug/kg	350	56.	1
n-Propylbenzene	ND		ug/kg	86	15.	1
1,2,3-Trichlorobenzene	ND		ug/kg	170	28.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	24.	1
1,3,5-Trimethylbenzene	ND		ug/kg	170	17.	1
1,2,4-Trimethylbenzene	ND		ug/kg	170	29.	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	430	120	1
Ethyl ether	ND		ug/kg	170	30.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	89		70-130

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-02  
 Client ID: AR-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 13:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 1,8260D  
 Analytical Date: 11/06/23 21:26  
 Analyst: JIC  
 Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 High - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	370	170	1
1,1-Dichloroethane	ND		ug/kg	75	11.	1
Chloroform	ND		ug/kg	110	10.	1
Carbon tetrachloride	ND		ug/kg	75	17.	1
1,2-Dichloropropane	ND		ug/kg	75	9.4	1
Dibromochloromethane	ND		ug/kg	75	10.	1
1,1,2-Trichloroethane	ND		ug/kg	75	20.	1
Tetrachloroethene	ND		ug/kg	37	15.	1
Chlorobenzene	ND		ug/kg	37	9.5	1
Trichlorofluoromethane	ND		ug/kg	300	52.	1
1,2-Dichloroethane	ND		ug/kg	75	19.	1
1,1,1-Trichloroethane	ND		ug/kg	37	12.	1
Bromodichloromethane	ND		ug/kg	37	8.2	1
trans-1,3-Dichloropropene	ND		ug/kg	75	20.	1
cis-1,3-Dichloropropene	ND		ug/kg	37	12.	1
1,3-Dichloropropene, Total	ND		ug/kg	37	12.	1
1,1-Dichloropropene	ND		ug/kg	37	12.	1
Bromoform	ND		ug/kg	300	18.	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	37	12.	1
Benzene	ND		ug/kg	37	12.	1
Toluene	ND		ug/kg	75	41.	1
Ethylbenzene	ND		ug/kg	75	10.	1
Chloromethane	ND		ug/kg	300	70.	1
Bromomethane	ND		ug/kg	150	44.	1
Vinyl chloride	ND		ug/kg	75	25.	1
Chloroethane	ND		ug/kg	150	34.	1
1,1-Dichloroethene	ND		ug/kg	75	18.	1
trans-1,2-Dichloroethene	ND		ug/kg	110	10.	1

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

**Lab ID:** L2363511-02  
**Client ID:** AR-102523  
**Sample Location:** CONCORD, MA

**Date Collected:** 10/25/23 13:00  
**Date Received:** 10/25/23  
**Field Prep:** Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 High - Westborough Lab</b>						
Trichloroethene	ND		ug/kg	37	10.	1
1,2-Dichlorobenzene	ND		ug/kg	150	11.	1
1,3-Dichlorobenzene	ND		ug/kg	150	11.	1
1,4-Dichlorobenzene	ND		ug/kg	150	13.	1
Methyl tert butyl ether	ND		ug/kg	150	15.	1
p/m-Xylene	ND		ug/kg	150	42.	1
o-Xylene	ND		ug/kg	75	22.	1
Xylenes, Total	ND		ug/kg	75	22.	1
cis-1,2-Dichloroethene	ND		ug/kg	75	13.	1
1,2-Dichloroethene, Total	ND		ug/kg	75	10.	1
Dibromomethane	ND		ug/kg	150	18.	1
1,4-Dichlorobutane	ND		ug/kg	750	17.	1
1,2,3-Trichloropropane	ND		ug/kg	150	9.5	1
Styrene	ND		ug/kg	75	15.	1
Dichlorodifluoromethane	ND		ug/kg	750	68.	1
Acetone	ND		ug/kg	750	360	1
Carbon disulfide	ND		ug/kg	750	340	1
2-Butanone	ND		ug/kg	750	170	1
Vinyl acetate	ND		ug/kg	750	160	1
4-Methyl-2-pentanone	ND		ug/kg	750	96.	1
2-Hexanone	ND		ug/kg	750	88.	1
Ethyl methacrylate	ND		ug/kg	750	120	1
Acrylonitrile	ND		ug/kg	300	86.	1
Bromochloromethane	ND		ug/kg	150	15.	1
Tetrahydrofuran	ND		ug/kg	300	120	1
2,2-Dichloropropane	ND		ug/kg	150	15.	1
1,2-Dibromoethane	ND		ug/kg	75	21.	1
1,3-Dichloropropane	ND		ug/kg	150	12.	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	37	9.9	1
Bromobenzene	ND		ug/kg	150	11.	1
n-Butylbenzene	ND		ug/kg	75	12.	1
sec-Butylbenzene	ND		ug/kg	75	11.	1
tert-Butylbenzene	ND		ug/kg	150	8.8	1
o-Chlorotoluene	ND		ug/kg	150	14.	1
p-Chlorotoluene	ND		ug/kg	150	8.1	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	220	75.	1
Hexachlorobutadiene	ND		ug/kg	300	13.	1

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

**Lab ID:** L2363511-02  
**Client ID:** AR-102523  
**Sample Location:** CONCORD, MA

**Date Collected:** 10/25/23 13:00  
**Date Received:** 10/25/23  
**Field Prep:** Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 High - Westborough Lab</b>						
Isopropylbenzene	ND		ug/kg	75	8.2	1
p-Isopropyltoluene	ND		ug/kg	75	8.2	1
Naphthalene	ND		ug/kg	300	49.	1
n-Propylbenzene	ND		ug/kg	75	13.	1
1,2,3-Trichlorobenzene	ND		ug/kg	150	24.	1
1,2,4-Trichlorobenzene	ND		ug/kg	150	20.	1
1,3,5-Trimethylbenzene	ND		ug/kg	150	14.	1
1,2,4-Trimethylbenzene	ND		ug/kg	150	25.	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	370	110	1
Ethyl ether	ND		ug/kg	150	26.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	87		70-130

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260D  
Analytical Date: 11/06/23 13:12  
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-02 Batch: WG1849235-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
1,2-Dichloropropane	ND		ug/kg	50	6.2
Dibromochloromethane	ND		ug/kg	50	7.0
1,1,2-Trichloroethane	ND		ug/kg	50	13.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
Trichlorofluoromethane	ND		ug/kg	200	35.
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Bromodichloromethane	ND		ug/kg	25	5.4
trans-1,3-Dichloropropene	ND		ug/kg	50	14.
cis-1,3-Dichloropropene	ND		ug/kg	25	7.9
1,3-Dichloropropene, Total	ND		ug/kg	25	7.9
1,1-Dichloropropene	ND		ug/kg	25	8.0
Bromoform	ND		ug/kg	200	12.
1,1,2,2-Tetrachloroethane	ND		ug/kg	25	8.3
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Chloromethane	ND		ug/kg	200	47.
Bromomethane	ND		ug/kg	100	29.
Vinyl chloride	ND		ug/kg	50	17.
Chloroethane	ND		ug/kg	100	23.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260D  
Analytical Date: 11/06/23 13:12  
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-02 Batch: WG1849235-5					
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
1,2-Dichloroethene, Total	ND		ug/kg	50	6.8
Dibromomethane	ND		ug/kg	100	12.
1,4-Dichlorobutane	ND		ug/kg	500	11.
1,2,3-Trichloropropane	ND		ug/kg	100	6.4
Styrene	ND		ug/kg	50	9.8
Dichlorodifluoromethane	ND		ug/kg	500	46.
Acetone	ND		ug/kg	500	240
Carbon disulfide	ND		ug/kg	500	230
2-Butanone	ND		ug/kg	500	110
Vinyl acetate	ND		ug/kg	500	110
4-Methyl-2-pentanone	ND		ug/kg	500	64.
2-Hexanone	ND		ug/kg	500	59.
Ethyl methacrylate	ND		ug/kg	500	79.
Acrylonitrile	ND		ug/kg	200	58.
Bromochloromethane	ND		ug/kg	100	10.
Tetrahydrofuran	ND		ug/kg	200	80.
2,2-Dichloropropane	ND		ug/kg	100	10.
1,2-Dibromoethane	ND		ug/kg	50	14.
1,3-Dichloropropane	ND		ug/kg	100	8.4
1,1,1,2-Tetrachloroethane	ND		ug/kg	25	6.6
Bromobenzene	ND		ug/kg	100	7.2

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260D  
Analytical Date: 11/06/23 13:12  
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-02 Batch: WG1849235-5					
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
o-Chlorotoluene	ND		ug/kg	100	9.6
p-Chlorotoluene	ND		ug/kg	100	5.4
1,2-Dibromo-3-chloropropane	ND		ug/kg	150	50.
Hexachlorobutadiene	ND		ug/kg	200	8.4
Isopropylbenzene	ND		ug/kg	50	5.4
p-Isopropyltoluene	ND		ug/kg	50	5.4
Naphthalene	ND		ug/kg	200	32.
n-Propylbenzene	ND		ug/kg	50	8.6
1,2,3-Trichlorobenzene	ND		ug/kg	100	16.
1,2,4-Trichlorobenzene	ND		ug/kg	100	14.
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
trans-1,4-Dichloro-2-butene	ND		ug/kg	250	71.
Ethyl ether	ND		ug/kg	100	17.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	82		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-02 Batch: WG1849235-3 WG1849235-4								
Methylene chloride	75		74		70-130	1		30
1,1-Dichloroethane	91		89		70-130	2		30
Chloroform	84		81		70-130	4		30
Carbon tetrachloride	92		90		70-130	2		30
1,2-Dichloropropane	92		90		70-130	2		30
Dibromochloromethane	105		100		70-130	5		30
1,1,2-Trichloroethane	93		89		70-130	4		30
Tetrachloroethene	98		95		70-130	3		30
Chlorobenzene	100		96		70-130	4		30
Trichlorofluoromethane	80		79		70-139	1		30
1,2-Dichloroethane	97		95		70-130	2		30
1,1,1-Trichloroethane	88		88		70-130	0		30
Bromodichloromethane	86		86		70-130	0		30
trans-1,3-Dichloropropene	105		100		70-130	5		30
cis-1,3-Dichloropropene	87		86		70-130	1		30
1,1-Dichloropropene	89		87		70-130	2		30
Bromoform	96		95		70-130	1		30
1,1,2,2-Tetrachloroethane	91		86		70-130	6		30
Benzene	84		82		70-130	2		30
Toluene	96		92		70-130	4		30
Ethylbenzene	100		96		70-130	4		30
Chloromethane	94		88		52-130	7		30
Bromomethane	69		67		57-147	3		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-02 Batch: WG1849235-3 WG1849235-4								
Vinyl chloride	78		75		67-130	4		30
Chloroethane	77		74		50-151	4		30
1,1-Dichloroethene	79		75		65-135	5		30
trans-1,2-Dichloroethene	80		78		70-130	3		30
Trichloroethene	87		88		70-130	1		30
1,2-Dichlorobenzene	104		101		70-130	3		30
1,3-Dichlorobenzene	101		100		70-130	1		30
1,4-Dichlorobenzene	101		100		70-130	1		30
Methyl tert butyl ether	85		83		66-130	2		30
p/m-Xylene	100		96		70-130	4		30
o-Xylene	100		96		70-130	4		30
cis-1,2-Dichloroethene	81		80		70-130	1		30
Dibromomethane	80		78		70-130	3		30
1,4-Dichlorobutane	120		118		70-130	2		30
1,2,3-Trichloropropane	100		98		68-130	2		30
Styrene	98		93		70-130	5		30
Dichlorodifluoromethane	71		70		30-146	1		30
Acetone	82		76		54-140	8		30
Carbon disulfide	77		75		59-130	3		30
2-Butanone	91		84		70-130	8		30
Vinyl acetate	83		71		70-130	16		30
4-Methyl-2-pentanone	108		97		70-130	11		30
2-Hexanone	98		94		70-130	4		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-02 Batch: WG1849235-3 WG1849235-4								
Ethyl methacrylate	95		90		70-130	5		30
Acrylonitrile	93		92		70-130	1		30
Bromochloromethane	86		81		70-130	6		30
Tetrahydrofuran	83		80		66-130	4		30
2,2-Dichloropropane	87		84		70-130	4		30
1,2-Dibromoethane	104		98		70-130	6		30
1,3-Dichloropropane	102		96		69-130	6		30
1,1,1,2-Tetrachloroethane	105		103		70-130	2		30
Bromobenzene	100		100		70-130	0		30
n-Butylbenzene	104		103		70-130	1		30
sec-Butylbenzene	106		104		70-130	2		30
tert-Butylbenzene	109		107		70-130	2		30
o-Chlorotoluene	122		120		70-130	2		30
p-Chlorotoluene	106		105		70-130	1		30
1,2-Dibromo-3-chloropropane	92		90		68-130	2		30
Hexachlorobutadiene	93		95		67-130	2		30
Isopropylbenzene	108		106		70-130	2		30
p-Isopropyltoluene	108		106		70-130	2		30
Naphthalene	102		100		70-130	2		30
n-Propylbenzene	105		103		70-130	2		30
1,2,3-Trichlorobenzene	97		97		70-130	0		30
1,2,4-Trichlorobenzene	96		96		70-130	0		30
1,3,5-Trimethylbenzene	107		107		70-130	0		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-02 Batch: WG1849235-3 WG1849235-4								
1,2,4-Trimethylbenzene	107		106		70-130	1		30
trans-1,4-Dichloro-2-butene	119		113		70-130	5		30
Ethyl ether	79		75		67-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		95		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	110		110		70-130
Dibromofluoromethane	85		85		70-130

# SEMIVOLATILES

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-01  
 Client ID: NB-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 12:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 12/16/23 21:58  
 Analyst: DB  
 Percent Solids: 68%

Extraction Method: EPA 3570  
 Extraction Date: 12/03/23 13:17  
 Cleanup Method: EPA 3630  
 Cleanup Date: 12/05/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs/PCB Congeners by GC/MS - Mansfield Lab</b>						
Naphthalene	18.8	B	ug/kg	5.34	2.67	1
2-Methylnaphthalene	7.46		ug/kg	5.34	2.67	1
Acenaphthylene	35.4		ug/kg	5.34	2.67	1
Acenaphthene	18.0		ug/kg	5.34	2.67	1
Fluorene	26.3		ug/kg	5.34	2.67	1
Phenanthrene	290		ug/kg	5.34	2.67	1
Anthracene	74.4		ug/kg	5.34	2.67	1
Fluoranthene	540		ug/kg	5.34	2.67	1
Pyrene	430		ug/kg	5.34	2.67	1
Benz(a)anthracene	252		ug/kg	5.34	2.67	1
Chrysene	258		ug/kg	5.34	2.67	1
Benzo(b)fluoranthene	225		ug/kg	5.34	2.67	1
Benzo(k)fluoranthene	214		ug/kg	5.34	2.67	1
Benzo(a)pyrene	249		ug/kg	5.34	2.67	1
Indeno(1,2,3-cd)Pyrene	191		ug/kg	5.34	2.67	1
Dibenz(a,h)anthracene	43.1		ug/kg	5.34	2.67	1
Benzo(ghi)perylene	189		ug/kg	5.34	2.67	1
Cl2-BZ#8	ND		ug/kg	0.534	0.267	1
Cl3-BZ#18	ND		ug/kg	0.534	0.267	1
Cl3-BZ#28	ND		ug/kg	0.534	0.267	1
Cl4-BZ#44	ND		ug/kg	0.534	0.267	1
Cl4-BZ#49	ND		ug/kg	0.534	0.267	1
Cl4-BZ#52	ND		ug/kg	0.534	0.267	1
Cl4-BZ#66	ND		ug/kg	0.534	0.267	1
Cl5-BZ#87	ND		ug/kg	0.534	0.267	1
Cl5-BZ#101	ND		ug/kg	0.534	0.267	1
Cl5-BZ#105	ND		ug/kg	0.534	0.267	1
Cl5-BZ#118	ND		ug/kg	0.534	0.267	1

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

**Lab ID:** L2363511-01  
**Client ID:** NB-102523  
**Sample Location:** CONCORD, MA

**Date Collected:** 10/25/23 12:00  
**Date Received:** 10/25/23  
**Field Prep:** Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/PCB Congeners by GC/MS - Mansfield Lab						
Cl6-BZ#128	ND		ug/kg	0.534	0.267	1
Cl6-BZ#138	ND		ug/kg	0.534	0.267	1
Cl6-BZ#153	ND		ug/kg	0.534	0.267	1
Cl7-BZ#170	ND		ug/kg	0.534	0.267	1
Cl7-BZ#180	ND		ug/kg	0.534	0.267	1
Cl7-BZ#183	ND		ug/kg	0.534	0.267	1
Cl7-BZ#184	ND		ug/kg	0.534	0.267	1
Cl7-BZ#187	ND		ug/kg	0.534	0.267	1
Cl8-BZ#195	ND		ug/kg	0.534	0.267	1
Cl9-BZ#206	ND		ug/kg	0.534	0.267	1
Cl10-BZ#209	0.514	J	ug/kg	0.534	0.267	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	83		30-150
Pyrene-d10	92		30-150
Benzo(b)fluoranthene-d12	95		30-150
DBOB	62		50-125
BZ 198	115		50-125

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-02  
 Client ID: AR-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 13:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 12/16/23 22:31  
 Analyst: DB  
 Percent Solids: 64%

Extraction Method: EPA 3570  
 Extraction Date: 12/03/23 13:17  
 Cleanup Method: EPA 3630  
 Cleanup Date: 12/05/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs/PCB Congeners by GC/MS - Mansfield Lab</b>						
Naphthalene	36.0	B	ug/kg	6.12	3.06	1
2-Methylnaphthalene	12.9		ug/kg	6.12	3.06	1
Acenaphthylene	10.5		ug/kg	6.12	3.06	1
Acenaphthene	18.0		ug/kg	6.12	3.06	1
Fluorene	15.7		ug/kg	6.12	3.06	1
Phenanthrene	212		ug/kg	6.12	3.06	1
Anthracene	49.5		ug/kg	6.12	3.06	1
Fluoranthene	365		ug/kg	6.12	3.06	1
Pyrene	318		ug/kg	6.12	3.06	1
Benz(a)anthracene	215		ug/kg	6.12	3.06	1
Chrysene	203		ug/kg	6.12	3.06	1
Benzo(b)fluoranthene	187		ug/kg	6.12	3.06	1
Benzo(k)fluoranthene	152		ug/kg	6.12	3.06	1
Benzo(a)pyrene	236		ug/kg	6.12	3.06	1
Indeno(1,2,3-cd)Pyrene	174		ug/kg	6.12	3.06	1
Dibenz(a,h)anthracene	37.2		ug/kg	6.12	3.06	1
Benzo(ghi)perylene	176		ug/kg	6.12	3.06	1
Cl2-BZ#8	ND		ug/kg	0.612	0.306	1
Cl3-BZ#18	ND		ug/kg	0.612	0.306	1
Cl3-BZ#28	ND		ug/kg	0.612	0.306	1
Cl4-BZ#44	ND		ug/kg	0.612	0.306	1
Cl4-BZ#49	ND		ug/kg	0.612	0.306	1
Cl4-BZ#52	0.722		ug/kg	0.612	0.306	1
Cl4-BZ#66	ND		ug/kg	0.612	0.306	1
Cl5-BZ#87	0.326	J	ug/kg	0.612	0.306	1
Cl5-BZ#101	0.964		ug/kg	0.612	0.306	1
Cl5-BZ#105	ND		ug/kg	0.612	0.306	1
Cl5-BZ#118	0.956		ug/kg	0.612	0.306	1

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

**Lab ID:** L2363511-02  
**Client ID:** AR-102523  
**Sample Location:** CONCORD, MA

**Date Collected:** 10/25/23 13:00  
**Date Received:** 10/25/23  
**Field Prep:** Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs/PCB Congeners by GC/MS - Mansfield Lab</b>						
Cl6-BZ#128	ND		ug/kg	0.612	0.306	1
Cl6-BZ#138	2.12		ug/kg	0.612	0.306	1
Cl6-BZ#153	1.26		ug/kg	0.612	0.306	1
Cl7-BZ#170	ND		ug/kg	0.612	0.306	1
Cl7-BZ#180	0.671		ug/kg	0.612	0.306	1
Cl7-BZ#183	ND		ug/kg	0.612	0.306	1
Cl7-BZ#184	ND		ug/kg	0.612	0.306	1
Cl7-BZ#187	0.396	J	ug/kg	0.612	0.306	1
Cl8-BZ#195	ND		ug/kg	0.612	0.306	1
Cl9-BZ#206	4.19		ug/kg	0.612	0.306	1
Cl10-BZ#209	4.75		ug/kg	0.612	0.306	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	75		30-150
Pyrene-d10	86		30-150
Benzo(b)fluoranthene-d12	89		30-150
DBOB	63		50-125
BZ 198	112		50-125

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 105,8270E-SIM/680(M)  
Analytical Date: 12/16/23 14:26  
Analyst: DB

Extraction Method: EPA 3570  
Extraction Date: 12/03/23 13:17  
Cleanup Method: EPA 3630  
Cleanup Date: 12/05/23

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/PCB Congeners by GC/MS - Mansfield Lab for sample(s): 01-02 Batch: WG1859138-1					
Naphthalene	4.56		ug/kg	4.00	2.00
2-Methylnaphthalene	ND		ug/kg	4.00	2.00
Acenaphthylene	ND		ug/kg	4.00	2.00
Acenaphthene	ND		ug/kg	4.00	2.00
Fluorene	ND		ug/kg	4.00	2.00
Phenanthrene	ND		ug/kg	4.00	2.00
Anthracene	ND		ug/kg	4.00	2.00
Fluoranthene	ND		ug/kg	4.00	2.00
Pyrene	ND		ug/kg	4.00	2.00
Benz(a)anthracene	ND		ug/kg	4.00	2.00
Chrysene	ND		ug/kg	4.00	2.00
Benzo(b)fluoranthene	ND		ug/kg	4.00	2.00
Benzo(k)fluoranthene	ND		ug/kg	4.00	2.00
Benzo(a)pyrene	ND		ug/kg	4.00	2.00
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	4.00	2.00
Dibenz(a,h)anthracene	ND		ug/kg	4.00	2.00
Benzo(ghi)perylene	ND		ug/kg	4.00	2.00
Cl2-BZ#8	ND		ug/kg	0.400	0.200
Cl3-BZ#18	ND		ug/kg	0.400	0.200
Cl3-BZ#28	ND		ug/kg	0.400	0.200
Cl4-BZ#44	ND		ug/kg	0.400	0.200
Cl4-BZ#49	ND		ug/kg	0.400	0.200
Cl4-BZ#52	ND		ug/kg	0.400	0.200
Cl4-BZ#66	ND		ug/kg	0.400	0.200
Cl5-BZ#87	ND		ug/kg	0.400	0.200
Cl5-BZ#101	ND		ug/kg	0.400	0.200
Cl5-BZ#105	ND		ug/kg	0.400	0.200
Cl5-BZ#118	ND		ug/kg	0.400	0.200
Cl6-BZ#128	ND		ug/kg	0.400	0.200

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 105,8270E-SIM/680(M)  
Analytical Date: 12/16/23 14:26  
Analyst: DB

Extraction Method: EPA 3570  
Extraction Date: 12/03/23 13:17  
Cleanup Method: EPA 3630  
Cleanup Date: 12/05/23

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/PCB Congeners by GC/MS - Mansfield Lab for sample(s): 01-02 Batch: WG1859138-1					
CI6-BZ#138	ND		ug/kg	0.400	0.200
CI6-BZ#153	ND		ug/kg	0.400	0.200
CI7-BZ#170	ND		ug/kg	0.400	0.200
CI7-BZ#180	ND		ug/kg	0.400	0.200
CI7-BZ#183	ND		ug/kg	0.400	0.200
CI7-BZ#184	ND		ug/kg	0.400	0.200
CI7-BZ#187	ND		ug/kg	0.400	0.200
CI8-BZ#195	ND		ug/kg	0.400	0.200
CI9-BZ#206	ND		ug/kg	0.400	0.200
CI10-BZ#209	ND		ug/kg	0.400	0.200

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	78		30-150
Pyrene-d10	100		30-150
Benzo(b)fluoranthene-d12	101		30-150
DBOB	68		50-125
BZ 198	109		50-125

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/PCB Congeners by GC/MS - Mansfield Lab Associated sample(s): 01-02 Batch: WG1859138-2 WG1859138-3								
Naphthalene	75		82		40-140	9		30
Acenaphthylene	85		93		40-140	9		30
Acenaphthene	76		81		40-140	6		30
Fluorene	84		88		40-140	5		30
Phenanthrene	79		82		40-140	4		30
Anthracene	90		95		40-140	5		30
Fluoranthene	82		85		40-140	4		30
Pyrene	81		87		40-140	7		30
Benz(a)anthracene	104		108		40-140	4		30
Chrysene	77		82		40-140	6		30
Benzo(b)fluoranthene	91		99		40-140	8		30
Benzo(k)fluoranthene	81		90		40-140	11		30
Benzo(a)pyrene	86		94		40-140	9		30
Indeno(1,2,3-cd)Pyrene	103		109		40-140	6		30
Dibenz(a,h)anthracene	92		99		40-140	7		30
Benzo(ghi)perylene	100		107		40-140	7		30
Cl2-BZ#8	94		96		40-140	2		50
Cl3-BZ#18	89		92		40-140	3		50
Cl3-BZ#28	92		95		40-140	3		50
Cl4-BZ#44	100		103		40-140	3		50
Cl4-BZ#49	95		99		40-140	4		50
Cl4-BZ#52	93		96		40-140	3		50
Cl4-BZ#66	99		103		40-140	4		50

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

Parameter	LCS %Recovery	Qual	LCS %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/PCB Congeners by GC/MS - Mansfield Lab Associated sample(s): 01-02 Batch: WG1859138-2 WG1859138-3								
Cl5-BZ#87	99		103		40-140	4		50
Cl5-BZ#101	102		105		40-140	3		50
Cl5-BZ#105	108		114		40-140	5		50
Cl5-BZ#118	95		99		40-140	4		50
Cl6-BZ#128	107		108		40-140	1		50
Cl6-BZ#138	105		108		40-140	3		50
Cl6-BZ#153	102		105		40-140	3		50
Cl7-BZ#170	112		116		40-140	4		50
Cl7-BZ#180	93		95		40-140	2		50
Cl7-BZ#183	103		106		40-140	3		50
Cl7-BZ#184	101		103		40-140	2		50
Cl7-BZ#187	107		107		40-140	0		50
Cl8-BZ#195	126		130		40-140	3		50
Cl9-BZ#206	119		125		40-140	5		50
Cl10-BZ#209	111		119		40-140	7		50

Surrogate	LCS %Recovery	Qual	LCS %Recovery	Qual	Acceptance Criteria
2-Methylnaphthalene-d10	81		84		30-150
Pyrene-d10	94		98		30-150
Benzo(b)fluoranthene-d12	99		104		30-150
DBOB	80		75		50-125
BZ 198	112		113		50-125



# PETROLEUM HYDROCARBONS

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-01  
 Client ID: NB-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 12:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Sediment  
 Analytical Method: 135,EPH-19-2.1  
 Analytical Date: 10/28/23 16:52  
 Analyst: CRE  
 Percent Solids: 68%

Extraction Method: EPA 3546  
 Extraction Date: 10/27/23 08:36  
 Cleanup Method1: EPH-19-2.1  
 Cleanup Date1: 10/27/23

**Quality Control Information**

Condition of sample received: Satisfactory  
 Sample Temperature upon receipt: Received on Ice  
 Sample Extraction method: Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	9.58	9.58	1
C19-C36 Aliphatics	29.0		mg/kg	9.58	9.58	1
C11-C22 Aromatics	23.5		mg/kg	9.58	9.58	1
C11-C22 Aromatics, Adjusted	23.5		mg/kg	9.58	9.58	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	61		40-140
o-Terphenyl	65		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	75		40-140

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-02  
 Client ID: AR-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 13:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Sediment  
 Analytical Method: 135,EPH-19-2.1  
 Analytical Date: 10/28/23 17:17  
 Analyst: CRE  
 Percent Solids: 64%

Extraction Method: EPA 3546  
 Extraction Date: 10/27/23 08:36  
 Cleanup Method1: EPH-19-2.1  
 Cleanup Date1: 10/27/23

**Quality Control Information**

Condition of sample received: Satisfactory  
 Sample Temperature upon receipt: Received on Ice  
 Sample Extraction method: Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	10.0	10.0	1
C19-C36 Aliphatics	21.4		mg/kg	10.0	10.0	1
C11-C22 Aromatics	29.9		mg/kg	10.0	10.0	1
C11-C22 Aromatics, Adjusted	25.6		mg/kg	10.0	10.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	60		40-140
o-Terphenyl	76		40-140
2-Fluorobiphenyl	83		40-140
2-Bromonaphthalene	86		40-140

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 135,EPH-19-2.1  
Analytical Date: 10/28/23 10:21  
Analyst: MTC

Extraction Method: EPA 3546  
Extraction Date: 10/27/23 08:36  
Cleanup Method: EPH-19-2.1  
Cleanup Date: 10/27/23

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-02 Batch: WG1845020-1					
C9-C18 Aliphatics	ND		mg/kg	6.31	6.31
C19-C36 Aliphatics	ND		mg/kg	6.31	6.31
C11-C22 Aromatics	ND		mg/kg	6.31	6.31
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.31	6.31

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	63		40-140
2-Fluorobiphenyl	70		40-140
2-Bromonaphthalene	72		40-140

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02 Batch: WG1845020-2 WG1845020-3								
C9-C18 Aliphatics	67		65		40-140	3		25
C19-C36 Aliphatics	80		75		40-140	6		25
C11-C22 Aromatics	73		73		40-140	0		25
Naphthalene	67		68		40-140	1		25
2-Methylnaphthalene	70		71		40-140	1		25
Acenaphthylene	65		65		40-140	0		25
Acenaphthene	69		69		40-140	0		25
Fluorene	72		72		40-140	0		25
Phenanthrene	72		72		40-140	0		25
Anthracene	73		73		40-140	0		25
Fluoranthene	71		71		40-140	0		25
Pyrene	72		72		40-140	0		25
Benzo(a)anthracene	72		72		40-140	0		25
Chrysene	74		74		40-140	0		25
Benzo(b)fluoranthene	69		68		40-140	1		25
Benzo(k)fluoranthene	66		65		40-140	2		25
Benzo(a)pyrene	72		72		40-140	0		25
Indeno(1,2,3-cd)Pyrene	68		66		40-140	3		25
Dibenzo(a,h)anthracene	69		67		40-140	3		25
Benzo(ghi)perylene	65		62		40-140	5		25

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02 Batch: WG1845020-2 WG1845020-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	71		67		40-140
o-Terphenyl	66		66		40-140
2-Fluorobiphenyl	75		76		40-140
2-Bromonaphthalene	75		77		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# PESTICIDES

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-01  
 Client ID: NB-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 12:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 12/07/23 19:37  
 Analyst: DP  
 Percent Solids: 68%

Extraction Method: EPA 3570  
 Extraction Date: 12/05/23 18:52  
 Cleanup Method: EPA 3630  
 Cleanup Date: 12/07/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.146	0.146	1	A
Hexachlorobenzene	ND		ug/kg	0.292	0.292	1	A
beta-BHC	ND		ug/kg	0.146	0.146	1	A
gamma-BHC	ND		ug/kg	0.146	0.146	1	A
delta-BHC	ND		ug/kg	0.146	0.146	1	A
Heptachlor	ND		ug/kg	0.146	0.146	1	A
Aldrin	ND		ug/kg	0.146	0.146	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.292	0.292	1	B
Oxychlordane	ND		ug/kg	0.292	0.292	1	B
gamma-Chlordane	ND		ug/kg	0.146	0.146	1	A
2,4'-DDE	ND		ug/kg	0.146	0.146	1	A
Endosulfan I	ND		ug/kg	0.146	0.146	1	A
alpha-Chlordane	ND		ug/kg	0.146	0.146	1	A
trans-Nonachlor	0.520		ug/kg	0.146	0.146	1	B
4,4'-DDE	1.84		ug/kg	0.146	0.146	1	B
Dieldrin	ND		ug/kg	0.146	0.146	1	A
2,4'-DDD	ND		ug/kg	0.146	0.146	1	A
Endrin	ND		ug/kg	0.146	0.146	1	A
Endosulfan II	ND		ug/kg	0.146	0.146	1	A
4,4'-DDD	0.314		ug/kg	0.146	0.146	1	A
2,4'-DDT	ND		ug/kg	0.146	0.146	1	A
cis-Nonachlor	ND		ug/kg	0.146	0.146	1	A
Endrin aldehyde	ND		ug/kg	0.437	0.437	1	A
Endosulfan sulfate	ND		ug/kg	0.146	0.146	1	A
4,4'-DDT	0.465		ug/kg	0.146	0.146	1	A
Endrin ketone	ND		ug/kg	0.146	0.146	1	A
Methoxychlor	ND		ug/kg	1.46	1.46	1	A
Mirex	ND		ug/kg	0.146	0.146	1	A

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-01  
 Client ID: NB-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 12:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
Toxaphene	ND		ug/kg	7.32	7.32	1	A
Chlordane	ND		ug/kg	7.32	7.32	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	59		30-150	A
DCB - Surrogate	58		30-150	A
TMX - Surrogate	59		30-150	B
DCB - Surrogate	66		30-150	B

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-02  
 Client ID: AR-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 13:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 12/07/23 20:10  
 Analyst: DP  
 Percent Solids: 64%

Extraction Method: EPA 3570  
 Extraction Date: 12/05/23 18:52  
 Cleanup Method: EPA 3630  
 Cleanup Date: 12/07/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.155	0.155	1	A
Hexachlorobenzene	ND		ug/kg	0.310	0.310	1	A
beta-BHC	ND		ug/kg	0.155	0.155	1	A
gamma-BHC	ND		ug/kg	0.155	0.155	1	A
delta-BHC	ND		ug/kg	0.155	0.155	1	A
Heptachlor	ND		ug/kg	0.155	0.155	1	A
Aldrin	ND		ug/kg	0.155	0.155	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.310	0.310	1	B
Oxychlordane	ND		ug/kg	0.310	0.310	1	B
gamma-Chlordane	0.237		ug/kg	0.155	0.155	1	B
2,4'-DDE	ND		ug/kg	0.155	0.155	1	A
Endosulfan I	ND		ug/kg	0.155	0.155	1	A
alpha-Chlordane	0.175		ug/kg	0.155	0.155	1	A
trans-Nonachlor	0.386		ug/kg	0.155	0.155	1	A
4,4'-DDE	1.62		ug/kg	0.155	0.155	1	A
Dieldrin	ND		ug/kg	0.155	0.155	1	A
2,4'-DDD	ND		ug/kg	0.155	0.155	1	A
Endrin	ND		ug/kg	0.155	0.155	1	A
Endosulfan II	ND		ug/kg	0.155	0.155	1	A
4,4'-DDD	0.487		ug/kg	0.155	0.155	1	B
2,4'-DDT	ND		ug/kg	0.155	0.155	1	A
cis-Nonachlor	ND		ug/kg	0.155	0.155	1	A
Endrin aldehyde	ND		ug/kg	0.465	0.465	1	A
Endosulfan sulfate	ND		ug/kg	0.155	0.155	1	A
4,4'-DDT	0.410	IP	ug/kg	0.155	0.155	1	A
Endrin ketone	ND		ug/kg	0.155	0.155	1	A
Methoxychlor	ND		ug/kg	1.55	1.55	1	A
Mirex	ND		ug/kg	0.155	0.155	1	A

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

Lab ID: L2363511-02  
 Client ID: AR-102523  
 Sample Location: CONCORD, MA

Date Collected: 10/25/23 13:00  
 Date Received: 10/25/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
Toxaphene	ND		ug/kg	7.78	7.78	1	A
Chlordane	ND		ug/kg	7.78	7.78	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	56		30-150	A
DCB - Surrogate	60		30-150	A
TMX - Surrogate	57		30-150	B
DCB - Surrogate	68		30-150	B

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8081B  
Analytical Date: 12/07/23 14:34  
Analyst: DP

Extraction Method: EPA 3570  
Extraction Date: 12/05/23 18:52  
Cleanup Method: EPA 3630  
Cleanup Date: 12/07/23

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-02 Batch: WG1860053-1						
alpha-BHC	ND		ug/kg	0.100	0.100	A
Hexachlorobenzene	ND		ug/kg	0.200	0.200	A
beta-BHC	ND		ug/kg	0.100	0.100	A
gamma-BHC	ND		ug/kg	0.100	0.100	A
delta-BHC	ND		ug/kg	0.100	0.100	A
Heptachlor	ND		ug/kg	0.100	0.100	A
Aldrin	ND		ug/kg	0.100	0.100	A
gamma-Chlordane	ND		ug/kg	0.100	0.100	A
2,4'-DDE	ND		ug/kg	0.100	0.100	A
Endosulfan I	ND		ug/kg	0.100	0.100	A
alpha-Chlordane	ND		ug/kg	0.100	0.100	A
trans-Nonachlor	ND		ug/kg	0.100	0.100	A
4,4'-DDE	ND		ug/kg	0.100	0.100	A
Dieldrin	ND		ug/kg	0.100	0.100	A
2,4'-DDD	ND		ug/kg	0.100	0.100	A
Endrin	ND		ug/kg	0.100	0.100	A
Endosulfan II	ND		ug/kg	0.100	0.100	A
4,4'-DDD	ND		ug/kg	0.100	0.100	A
2,4'-DDT	ND		ug/kg	0.100	0.100	A
cis-Nonachlor	ND		ug/kg	0.100	0.100	A
Endrin aldehyde	ND		ug/kg	0.300	0.300	A
Endosulfan sulfate	ND		ug/kg	0.100	0.100	A
4,4'-DDT	ND		ug/kg	0.100	0.100	A
Endrin ketone	ND		ug/kg	0.100	0.100	A
Methoxychlor	ND		ug/kg	1.00	1.00	A
Mirex	ND		ug/kg	0.100	0.100	A
Toxaphene	ND		ug/kg	5.02	5.02	A
Chlordane	ND		ug/kg	5.02	5.02	A
Heptachlor epoxide (B)	ND		ug/kg	0.200	0.200	B

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8081B  
Analytical Date: 12/07/23 14:34  
Analyst: DP

Extraction Method: EPA 3570  
Extraction Date: 12/05/23 18:52  
Cleanup Method: EPA 3630  
Cleanup Date: 12/07/23

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-02 Batch: WG1860053-1						
Oxychlorane	ND		ug/kg	0.200	0.200	B

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
TMX - Surrogate	73		30-150	A
DCB - Surrogate	87		30-150	A
TMX - Surrogate	72		30-150	B
DCB - Surrogate	90		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-02 Batch: WG1860053-2 WG1860053-3									
alpha-BHC	97		99		40-140	2		50	A
Hexachlorobenzene	79		80		40-140	1		50	A
beta-BHC	80		82		40-140	2		50	A
gamma-BHC	93		95		40-140	2		50	A
delta-BHC	74		75		40-140	1		50	A
Heptachlor	88		90		40-140	2		50	A
Aldrin	92		94		40-140	2		50	A
gamma-Chlordane	94		97		40-140	3		50	A
2,4'-DDE	89		91		40-140	2		50	A
Endosulfan I	94		96		40-140	2		50	A
alpha-Chlordane	92		94		40-140	2		50	A
trans-Nonachlor	96		98		40-140	2		50	A
4,4'-DDE	102		105		40-140	3		50	A
Dieldrin	103		106		40-140	3		50	A
2,4'-DDD	99		102		40-140	3		50	A
Endrin	86		88		40-140	2		50	A
Endosulfan II	92		96		40-140	4		50	A
4,4'-DDD	102		106		40-140	4		50	A
2,4'-DDT	106		108		40-140	2		50	A
cis-Nonachlor	88		91		40-140	3		50	A
Endrin aldehyde	68		74		40-140	8		50	A
Endosulfan sulfate	96		100		40-140	4		50	A
4,4'-DDT	98		102		40-140	4		50	A

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-02 Batch: WG1860053-2 WG1860053-3								
Endrin ketone	114		118		40-140	3		50 A
Methoxychlor	92		94		40-140	2		50 A
Mirex	79		83		40-140	5		50 A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
TMX - Surrogate	74		75		30-150	A
DCB - Surrogate	86		87		30-150	A
TMX - Surrogate	72		74		30-150	B
DCB - Surrogate	91		92		30-150	B



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-02 Batch: WG1860053-2 WG1860053-3									
Heptachlor epoxide (B)	91		93		40-140	2		50	B
Oxychlorane	99		102		40-140	3		50	B

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
TMX - Surrogate	74		75		30-150	A
DCB - Surrogate	86		87		30-150	A
TMX - Surrogate	72		74		30-150	B
DCB - Surrogate	91		92		30-150	B



## METALS

**Project Name:** WARNER'S POND**Lab Number:** L2363511**Project Number:** 6404001**Report Date:** 12/19/23**SAMPLE RESULTS**

Lab ID: L2363511-01

Date Collected: 10/25/23 12:00

Client ID: NB-102523

Date Received: 10/25/23

Sample Location: CONCORD, MA

Field Prep: Not Specified

Sample Depth:

Matrix: Sediment

Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Arsenic, Total	5.14		mg/kg	0.726	0.096	10	12/07/23 15:37	12/07/23 19:32	EPA 3050B	1,6020B	NTB
Cadmium, Total	0.064	J	mg/kg	0.290	0.038	10	12/07/23 15:37	12/07/23 19:32	EPA 3050B	1,6020B	NTB
Chromium, Total	21.0		mg/kg	2.90	0.679	10	12/07/23 15:37	12/07/23 19:32	EPA 3050B	1,6020B	NTB
Copper, Total	121		mg/kg	2.90	0.281	10	12/07/23 15:37	12/07/23 19:32	EPA 3050B	1,6020B	NTB
Lead, Total	14.9		mg/kg	0.871	0.212	10	12/07/23 15:37	12/07/23 19:32	EPA 3050B	1,6020B	NTB
Mercury, Total	0.005	J	mg/kg	0.018	0.002	5	12/07/23 14:10	12/08/23 09:19	EPA 7474	1,7474	RJP
Nickel, Total	12.4		mg/kg	1.45	0.388	10	12/07/23 15:37	12/07/23 19:32	EPA 3050B	1,6020B	NTB
Zinc, Total	24.1		mg/kg	14.5	3.77	10	12/07/23 15:37	12/07/23 19:32	EPA 3050B	1,6020B	NTB

**Project Name:** WARNER'S POND**Lab Number:** L2363511**Project Number:** 6404001**Report Date:** 12/19/23**SAMPLE RESULTS**

Lab ID: L2363511-02

Date Collected: 10/25/23 13:00

Client ID: AR-102523

Date Received: 10/25/23

Sample Location: CONCORD, MA

Field Prep: Not Specified

Sample Depth:

Matrix: Sediment

Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Arsenic, Total	5.75		mg/kg	0.745	0.098	10	12/07/23 15:37	12/07/23 19:46	EPA 3050B	1,6020B	NTB
Cadmium, Total	0.112	J	mg/kg	0.298	0.039	10	12/07/23 15:37	12/07/23 19:46	EPA 3050B	1,6020B	NTB
Chromium, Total	38.7		mg/kg	2.98	0.697	10	12/07/23 15:37	12/07/23 19:46	EPA 3050B	1,6020B	NTB
Copper, Total	14.6		mg/kg	2.98	0.289	10	12/07/23 15:37	12/07/23 19:46	EPA 3050B	1,6020B	NTB
Lead, Total	24.6		mg/kg	0.894	0.218	10	12/07/23 15:37	12/07/23 19:46	EPA 3050B	1,6020B	NTB
Mercury, Total	0.122		mg/kg	0.020	0.003	5	12/07/23 14:10	12/08/23 09:28	EPA 7474	1,7474	RJP
Nickel, Total	9.04		mg/kg	1.49	0.398	10	12/07/23 15:37	12/07/23 19:46	EPA 3050B	1,6020B	NTB
Zinc, Total	41.7		mg/kg	14.9	3.87	10	12/07/23 15:37	12/07/23 19:46	EPA 3050B	1,6020B	NTB

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1857705-1									
Arsenic, Total	ND	mg/kg	0.500	0.066	10	12/07/23 15:37	12/07/23 19:09	1,6020B	NTB
Cadmium, Total	ND	mg/kg	0.200	0.026	10	12/07/23 15:37	12/07/23 19:09	1,6020B	NTB
Chromium, Total	ND	mg/kg	2.00	0.468	10	12/07/23 15:37	12/07/23 19:09	1,6020B	NTB
Copper, Total	ND	mg/kg	2.00	0.194	10	12/07/23 15:37	12/07/23 19:09	1,6020B	NTB
Lead, Total	ND	mg/kg	0.600	0.146	10	12/07/23 15:37	12/07/23 19:09	1,6020B	NTB
Nickel, Total	ND	mg/kg	1.00	0.267	10	12/07/23 15:37	12/07/23 19:09	1,6020B	NTB
Zinc, Total	ND	mg/kg	10.0	2.60	10	12/07/23 15:37	12/07/23 19:09	1,6020B	NTB

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1857709-1									
Mercury, Total	ND	mg/kg	0.013	0.002	5	12/07/23 14:10	12/08/23 09:14	1,7474	RJP

### Prep Information

Digestion Method: EPA 7474



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: WARNER'S POND

Project Number: 6404001

Lab Number: L2363511

Report Date: 12/19/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1857705-2 SRM Lot Number: D122-540								
Arsenic, Total	95		-		81-119	-		20
Cadmium, Total	102		-		83-117	-		20
Chromium, Total	93		-		82-118	-		20
Copper, Total	93		-		84-116	-		20
Lead, Total	94		-		83-117	-		20
Nickel, Total	97		-		83-117	-		20
Zinc, Total	94		-		82-119	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1857709-2 SRM Lot Number: D122-540								
Mercury, Total	100		-		73-127	-		20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02    QC Batch ID: WG1857705-3    QC Sample: L2363511-01    Client ID: NB-102523												
Arsenic, Total	5.14	13.6	21.1	117		-	-		75-125	-		20
Cadmium, Total	0.064J	6.02	5.98	99		-	-		75-125	-		20
Chromium, Total	21.0	22.7	32.2	49	Q	-	-		75-125	-		20
Copper, Total	121	28.4	33.6	0	Q	-	-		75-125	-		20
Lead, Total	14.9	60.2	79.4	107		-	-		75-125	-		20
Nickel, Total	12.4	56.8	61.9	87		-	-		75-125	-		20
Zinc, Total	24.1	56.8	75.8	91		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02    QC Batch ID: WG1857709-3    QC Sample: L2363511-01    Client ID: NB-102523												
Mercury, Total	0.005J	0.838	0.830	99		-	-		80-120	-		20

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: WARNER'S POND

Project Number: 6404001

Lab Number: L2363511

Report Date: 12/19/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1857705-4 QC Sample: L2363511-01 Client ID: NB-102523</b>						
Arsenic, Total	5.14	6.37	mg/kg	21	Q	20
Cadmium, Total	0.064J	0.061J	mg/kg	NC		20
Chromium, Total	21.0	11.1	mg/kg	62	Q	20
Copper, Total	121	8.04	mg/kg	175	Q	20
Lead, Total	14.9	20.8	mg/kg	33	Q	20
Nickel, Total	12.4	8.90	mg/kg	33	Q	20
Zinc, Total	24.1	26.4	mg/kg	9		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1857709-4 QC Sample: L2363511-01 Client ID: NB-102523</b>						
Mercury, Total	0.005J	0.013J	mg/kg	NC		20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

**Lab ID:** L2363511-01  
**Client ID:** NB-102523  
**Sample Location:** CONCORD, MA

**Date Collected:** 10/25/23 12:00  
**Date Received:** 10/25/23  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.832		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP
Total Organic Carbon (Rep2)	0.819		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP
Total Organic Carbon (Average)	0.826		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP
<b>Grain Size Analysis - Mansfield Lab</b>										
% Total Gravel	28.2		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
% Coarse Sand	13.1		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
% Medium Sand	41.1		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
% Fine Sand	16.2		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
% Total Fines	1.40		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	68.1		%	0.100	0.100	1	-	10/26/23 19:19	121,2540G	CLF



**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

**SAMPLE RESULTS**

**Lab ID:** L2363511-02  
**Client ID:** AR-102523  
**Sample Location:** CONCORD, MA

**Date Collected:** 10/25/23 13:00  
**Date Received:** 10/25/23  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.817		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP
Total Organic Carbon (Rep2)	0.735		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP
Total Organic Carbon (Average)	0.776		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP
<b>Grain Size Analysis - Mansfield Lab</b>										
% Total Gravel	4.20		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
% Coarse Sand	5.70		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
% Medium Sand	19.3		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
% Fine Sand	63.2		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
% Total Fines	7.60		%	0.100	NA	1	-	12/06/23 12:36	12,D6913/D7928	SJK
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	64.1		%	0.100	0.100	1	-	10/26/23 19:19	121,2540G	CLF



Project Name: WARNER'S POND

Lab Number: L2363511

Project Number: 6404001

Report Date: 12/19/23

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab for sample(s): 01-02 Batch: WG1864065-1										
Total Organic Carbon (Rep1)	ND		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP
Total Organic Carbon (Rep2)	ND		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP
Total Organic Carbon (Average)	ND		%	0.010	0.010	1	-	12/14/23 08:38	1,9060A	SPP

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02 Batch: WG1864065-2								
Total Organic Carbon (Rep1)	103		-		75-125	-		25
Total Organic Carbon (Rep2)	104		-		75-125	-		25
Total Organic Carbon (Average)	103		-		75-125	-		25



### Matrix Spike Analysis Batch Quality Control

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1864065-4 WG1864065-5 QC Sample: L2363403-04 Client ID: MS Sample												
Total Organic Carbon (Rep1)	2.06	1.84	3.99	105		3.44	105		75-125	15		25
Total Organic Carbon (Rep2)	2.04	1.54	3.71	109		3.70	109		75-125	0		25

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: WARNER'S POND

Project Number: 6404001

Lab Number: L2363511

Report Date: 12/19/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>General Chemistry - Mansfield Lab</b> Associated sample(s): 01-02 QC Batch ID: WG1844741-1 QC Sample: L2359195-04 Client ID: DUP Sample						
Solids, Total	96.8	96.9	%	0		10
<b>Grain Size Analysis - Mansfield Lab</b> Associated sample(s): 01-02 QC Batch ID: WG1860514-1 QC Sample: L2363511-02 Client ID: AR-102523						
% Total Gravel	4.20	3.30	%	24	Q	20
% Coarse Sand	5.70	3.00	%	62	Q	20
% Medium Sand	19.3	19.5	%	1		20
% Fine Sand	63.2	68.2	%	8		20
% Total Fines	7.60	6.00	%	24	Q	20
<b>Total Organic Carbon - Mansfield Lab</b> Associated sample(s): 01-02 QC Batch ID: WG1864065-3 QC Sample: L2363403-04 Client ID: DUP Sample						
Total Organic Carbon (Rep1)	2.06	2.04	%	1		25
Total Organic Carbon (Rep2)	2.04	1.96	%	4		25
Total Organic Carbon (Average)	2.05	2.00	%	2		25

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Serial\_No:**12192316:40  
**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Cooler Information**

**Cooler**                      **Custody Seal**  
A                                      Absent

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2363511-01A	Vial MeOH preserved	A	NA		12.7	Y	Absent		8260H(14)
L2363511-01B	Vial water preserved	A	NA		12.7	Y	Absent	25-OCT-23 19:30	ARCHIVE()
L2363511-01C	Vial water preserved	A	NA		12.7	Y	Absent	25-OCT-23 19:30	ARCHIVE()
L2363511-01D	Plastic 2oz unpreserved for TS	A	NA		12.7	Y	Absent		A2-TS(7)
L2363511-01E	Plastic 2oz unpreserved for TS	A	NA		12.7	Y	Absent		A2-TS(7)
L2363511-01F	Glass 120ml/4oz unpreserved	A	NA		12.7	Y	Absent		EPH-20(14)
L2363511-01G	Plastic 8oz unpreserved for Grain Size	A	NA		12.7	Y	Absent		A2-HYDRO-TFINE(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND()
L2363511-01H	Glass 250ml/8oz unpreserved	A	NA		12.7	Y	Absent		A2-PB-6020T(180),A2-ZN-6020T(180),A2-NI-6020T(180),A2-HG-7474T(28),A2-CR-6020T(180),A2-AS-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-PREP-3050:2T(180),A2-CU-6020T(180)
L2363511-01I	Glass 250ml/8oz unpreserved	A	NA		12.7	Y	Absent		A2-PEST-8081(14),A2-TOC-9060-2REPS(28),A2-PAH/PCBCONG(14)
L2363511-02A	Vial MeOH preserved	A	NA		12.7	Y	Absent		8260H(14)
L2363511-02B	Vial water preserved	A	NA		12.7	Y	Absent	25-OCT-23 19:30	ARCHIVE()
L2363511-02C	Vial water preserved	A	NA		12.7	Y	Absent	25-OCT-23 19:30	ARCHIVE()
L2363511-02D	Plastic 2oz unpreserved for TS	A	NA		12.7	Y	Absent		A2-TS(7)
L2363511-02E	Plastic 2oz unpreserved for TS	A	NA		12.7	Y	Absent		A2-TS(7)
L2363511-02F	Glass 120ml/4oz unpreserved	A	NA		12.7	Y	Absent		EPH-20(14)
L2363511-02G	Plastic 8oz unpreserved for Grain Size	A	NA		12.7	Y	Absent		A2-HYDRO-TFINE(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND()
L2363511-02H	Glass 250ml/8oz unpreserved	A	NA		12.7	Y	Absent		A2-PB-6020T(180),A2-NI-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-CR-6020T(180),A2-AS-6020T(180),A2-HGPREP-AF(28),A2-CD-6020T(180),A2-PREP-3050:2T(180),A2-CU-6020T(180)

\*Values in parentheses indicate holding time in days



**Project Name:** WARNER'S POND  
**Project Number:** 6404001

Serial\_No:12192316:40  
**Lab Number:** L2363511  
**Report Date:** 12/19/23

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2363511-02I	Glass 250ml/8oz unpreserved	A	NA		12.7	Y	Absent		A2-PEST-8081(14),A2-TOC-9060-2REPS(28),A2-PAH/PCBCONG(14)

**Container Comments**

L2363511-01I

L2363511-02I

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Chlordane:** The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Gasoline Range Organics (GRO):** Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

#### Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

**Project Name:** WARNER'S POND  
**Project Number:** 6404001

**Lab Number:** L2363511  
**Report Date:** 12/19/23

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 12 Annual Book of ASTM Standards. (American Society for Testing and Materials) ASTM International.
- 105 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997 in conjunction with NOAA Technical Memorandum NMFS-NWFSC-59: Extraction, Cleanup and GC/MS Analysis of Sediments and Tissues for Organic Contaminants, March 2004 and the Determination of Pesticides and PCBs in Water and Oil/Sediment by GC/MS: Method 680, EPA 01A0005295, November 1985.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

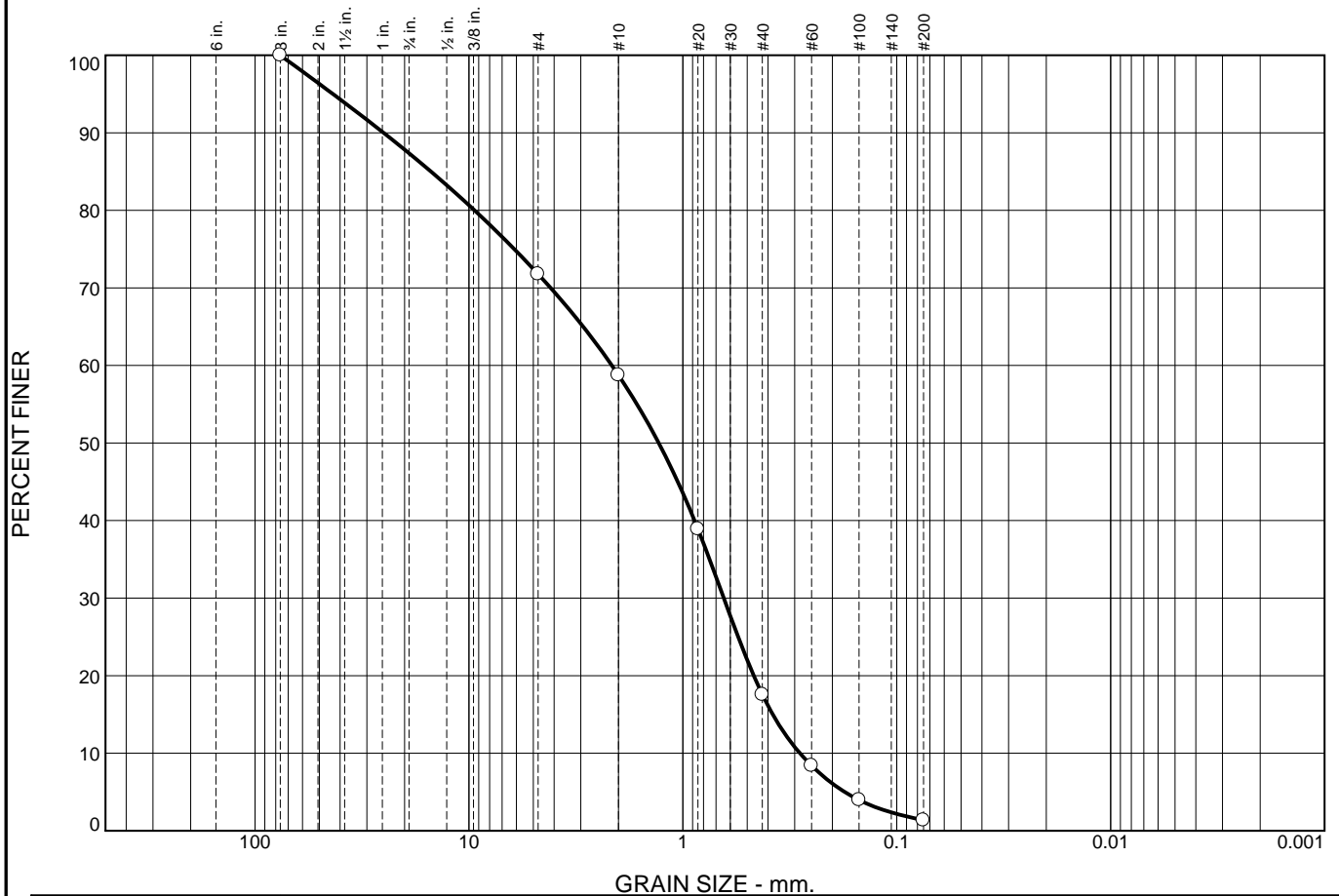
We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



# **ASTM D6913/D7928**

## **GRAIN SIZE ANALYSIS**

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.6	15.6	13.1	41.1	16.2	1.4	

LL	PL	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>
0.0		15.0483	2.1471	1.2957	0.6437	0.3800	0.2837	0.68	7.57

Material Description	USCS	AASHTO
	SP	

<b>Project No.</b>	<b>Client:</b>	<b>Remarks:</b>
<b>Project:</b>		
<input type="radio"/> <b>Source of Sample:</b> NB-102523	<b>Sample Number:</b> L2363511-01	
<b>Alpha Analytical</b>		<b>Figure</b>
<b>Mansfield, MA</b>		

## GRAIN SIZE DISTRIBUTION TEST DATA

12/11/2023

Location: NB-102523

Sample Number: L2363511-01

USCS Classification: SP

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 130.23  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
130.23	0.00	3	0.00	0.00	100.0
		#4	36.76	0.00	71.8
		#10	16.96	0.00	58.7
		#20	25.85	0.00	38.9
		#40	27.79	0.00	17.6
		#60	11.94	0.00	8.4
		#100	5.77	0.00	4.0
		#200	3.40	0.00	1.4

## Fractional Components

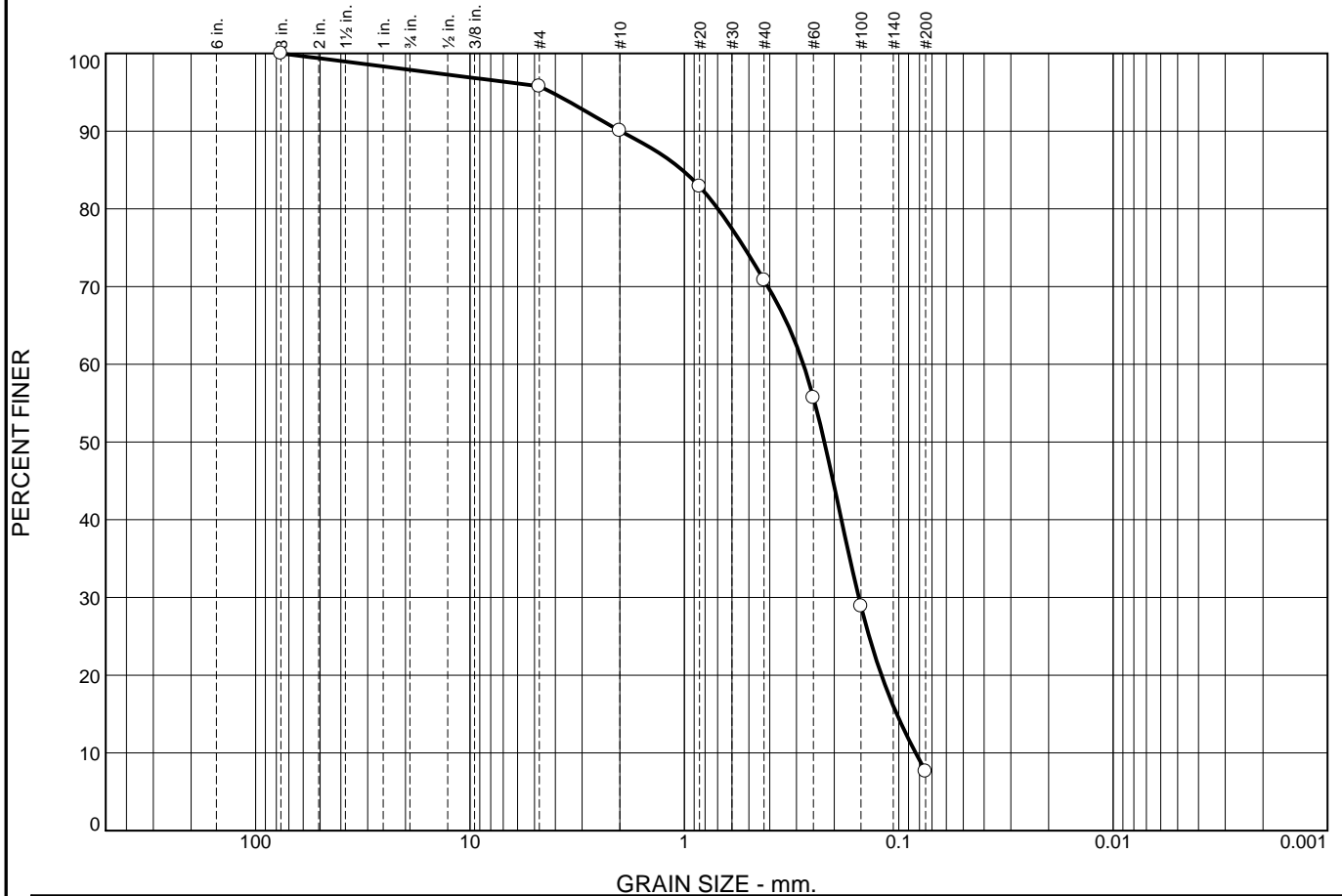
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	12.6	15.6	28.2	13.1	41.1	16.2	70.4			1.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.1751	0.2837	0.3800	0.4662	0.6437	0.8819	1.2957	2.1471	9.4150	15.0483	25.0633	43.2448

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
4.15	7.57	0.68

Alpha Analytical

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.1	2.1	5.7	19.3	63.2	7.6	

LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
		1.0224	0.2786	0.2222	0.1536	0.1021	0.0834	1.02	3.34

Material Description	USCS	AASHTO

<b>Project No.</b>	<b>Client:</b>	<b>Remarks:</b>
<b>Project:</b>		
<input type="radio"/> <b>Source of Sample:</b> AR-102523	<b>Sample Number:</b> L2363511-02	
<b>Alpha Analytical</b>		
<b>Mansfield, MA</b>		<b>Figure</b>

## GRAIN SIZE DISTRIBUTION TEST DATA

12/11/2023

Location: AR-102523

Sample Number: L2363511-02

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 99.62

Tare Wt. = 0.00

Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
99.62	0.00	3	0.00	0.00	100.0
		#4	4.21	0.00	95.8
		#10	5.70	0.00	90.1
		#20	7.15	0.00	82.9
		#40	12.00	0.00	70.8
		#60	15.07	0.00	55.7
		#100	26.73	0.00	28.9
		#200	21.16	0.00	7.6

## Fractional Components

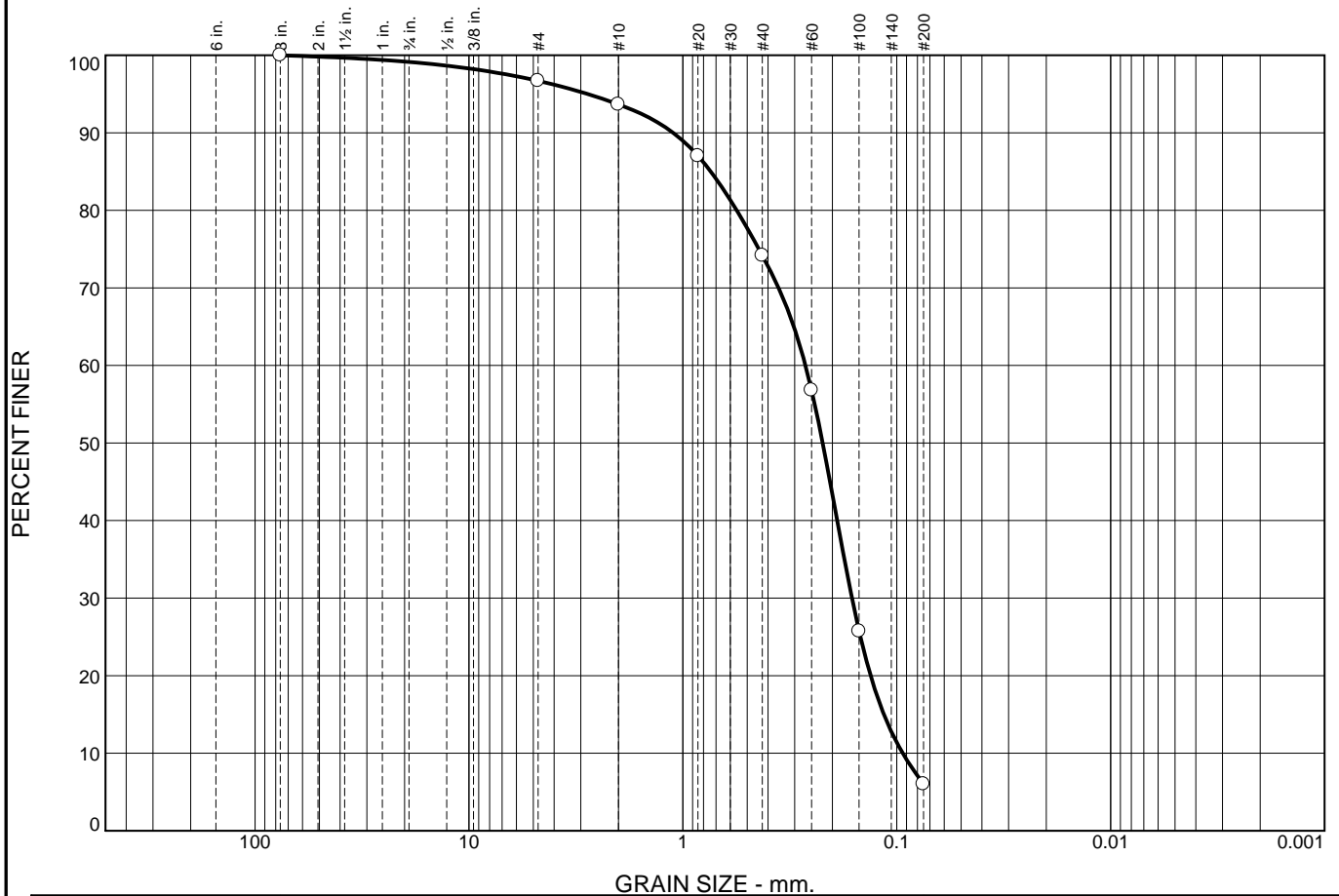
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	2.1	2.1	4.2	5.7	19.3	63.2	88.2			7.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0834	0.1021	0.1204	0.1536	0.1852	0.2222	0.2786	0.6975	1.0224	1.9842	4.1687

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.64	3.34	1.02

Alpha Analytical

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.9	2.4	3.0	19.5	68.2	6.0	

LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
		0.7405	0.2671	0.2219	0.1619	0.1149	0.0938	1.05	2.85

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b>	<b>Client:</b>  <b>Source of Sample:</b> AR-102523 <b>Sample Number:</b> WG1860514-1	<b>Remarks:</b>   <div style="text-align: right; margin-top: 20px;"><b>Figure</b></div>
<b>Alpha Analytical</b> <b>Mansfield, MA</b>		

## GRAIN SIZE DISTRIBUTION TEST DATA

12/11/2023

Location: AR-102523

Sample Number: WG1860514-1

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 111.64

Tare Wt. = 0.00

Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
111.64	0.00	3	0.00	0.00	100.0
		#4	3.69	0.00	96.7
		#10	3.39	0.00	93.7
		#20	7.41	0.00	87.0
		#40	14.35	0.00	74.2
		#60	19.40	0.00	56.8
		#100	34.67	0.00	25.7
		#200	22.01	0.00	6.0

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.9	2.4	3.3	3.0	19.5	68.2	90.7			6.0

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0938	0.1149	0.1325	0.1619	0.1899	0.2219	0.2671	0.5601	0.7405	1.1102	2.7859

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.50	2.85	1.05

Alpha Analytical

## Certification Information

---

The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624.1:** m/p-xylene, o-xylene, Naphthalene

**EPA 625.1:** alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270E:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** EPA 3050B

---

The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

**SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables).

**Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.

**EPA 522, EPA 537.1.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1** Hg.

**SM2340B**

---

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

