

 <p><b>WATER &amp; WETLAND</b> LAKE POND &amp; WETLAND MANAGEMENT</p>	<p><b>BIOLOGIST:</b> Brian O Leary (o): (888)493-8526 BrianO@waterandwetland.com</p> <p>Call/Email with any questions!</p>	
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## FIELD NOTES SUMMARY

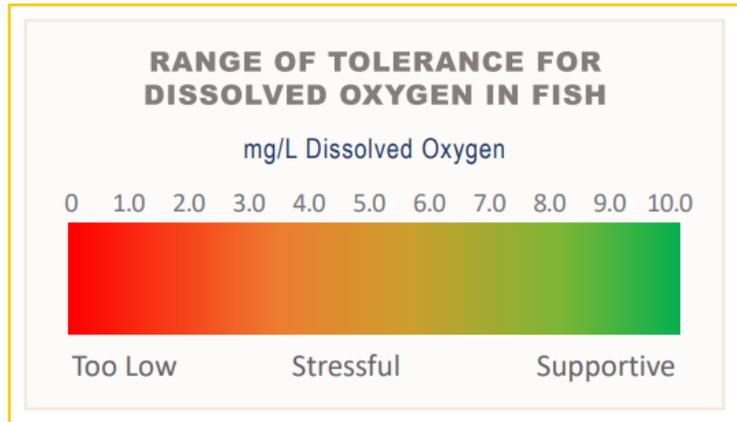
**Customer:** City of Framingham  
**Pond Name:** Waushakum Pond  
**Site Location:** Framingham, MA  
**Date:** 9/15/25

On 9/15/25, Aquatic Field Biologist, Brian O'Leary, made a visit to Waushakum Pond. The following services were completed during the visit:

Upon arrival to the site, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Plants documented during the survey are documented in the table below. (\*) denotes an invasive species. Invasive species are non-native to the ecosystem and are likely to cause economic harm, environmental harm, or harm to human health.

Species Identified	
Common Name	Latin Name
Benthic Algae	
Filamentous Algae	
Microscopic Algae	
Bladderwort	<i>Utricularia sp.</i>
Clasping-leaf Pondweed	<i>Potamogeton perfoliatis</i>
Cattails	<i>Typha</i>
Coontail	<i>Ceratophyllum demersum</i>

While on-site, dissolved oxygen (DO) and temperature readings were collected using a calibrated YSI meter with optical sensor. Dissolved oxygen is the amount of oxygen in water that is available to aquatic organisms. DO is necessary to support fish spawning, growth, and activity. Tolerance varies by species, but the figure below provides a general range of fish tolerance (Source: epa.gov). Dissolved oxygen can be affected by many outside factors, such as: temperature, time of day, and pollution. Dissolved oxygen levels are typically lowest early in the morning. Healthy water should generally have concentrations of about 6.5-8+ mg/L.



Results from the visit are included in the table below:

Location 1: Temperature & Dissolved Oxygen		
Depth (M)	Surface Temp (°C)	Surface DO (mg/L)
Surface	23.3	9.16
1	23.1	9.19
2	22.6	9.18
3	22.0	8.73
4	21.3	8.14
5	20.7	6.11
6	19.6	5.11
7	15.2	2.34

Location 2: Temperature & Dissolved Oxygen		
Depth (M)	Surface Temp (°C)	Surface DO (mg/L)
Surface	22.8	9.05
1	22.8	9.04
2	22.8	9.03
3	21.9	9.07
4	21.5	8.59
5	21.0	7.48

6	19.7	3.42
7	19.5	2.89
8	18.1	2.41

Location 3: Temperature & Dissolved Oxygen		
Depth (M)	Surface Temp (°C)	Surface DO (mg/L)
Surface	22.8	9.10
1	22.7	9.08
2	22.1	9.12
3	21.9	8.89
4	21.4	8.43
5	21.0	6.96
6	20.1	5.19
7	19.9	5.23
8	13.9	1.97
9	14.1	1.08
10	11.4	0.79
11	11.3	0.56
12	10.4	0.12

A Secchi disk is a disk with alternating black and white quadrants. It is lowered into the water of a lake until it can no longer be seen by the observer. This depth of disappearance, called the Secchi depth, is a measure of the transparency of the water.

Secchi Disk Clarity	
Secchi Disk Depth (Feet)	Location 1 Southern Point 9'3"
Secchi Disk Depth (Feet)	Location 2 Mid Pond 12'2"
Secchi Disk Depth (Feet)	Location 3 Deep Hole 10'8"

Additional samples were collected from the contracted locations (Location 1, Location 2, Location 3). Samples were not collected from Location 4 – the outlet, as there was no flow. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

**\*Additional Notes from the Biologist\***

The site visit to Waushakum Pond consisted of a brief survey and an extensive collection of basic water quality data and water samples per the contract conditions. Since the outlet was not flowing at the time of visit, only three sampling locations were provided with complete vertical profiles: Location 1/Southern Point, Location 2/Mid-Pond, and Location 3/Deep Hole (see map attached for designated locations). The dissolved oxygen reading profiles remained relatively consistent and water clarity did not drastically deviate between locations. Water samples, complying with the required parameters, were taken from the surface, middle, and bottom of the water column at all three in-pond locations. Weather conditions were optimal for surveying and sampling. In addition to the services provided, this site visit will aid in guiding future management decisions for the upcoming 2026 season.

As always, we will notify you prior to any upcoming visits, as applicable. Please feel free to reach out to us directly with any questions.

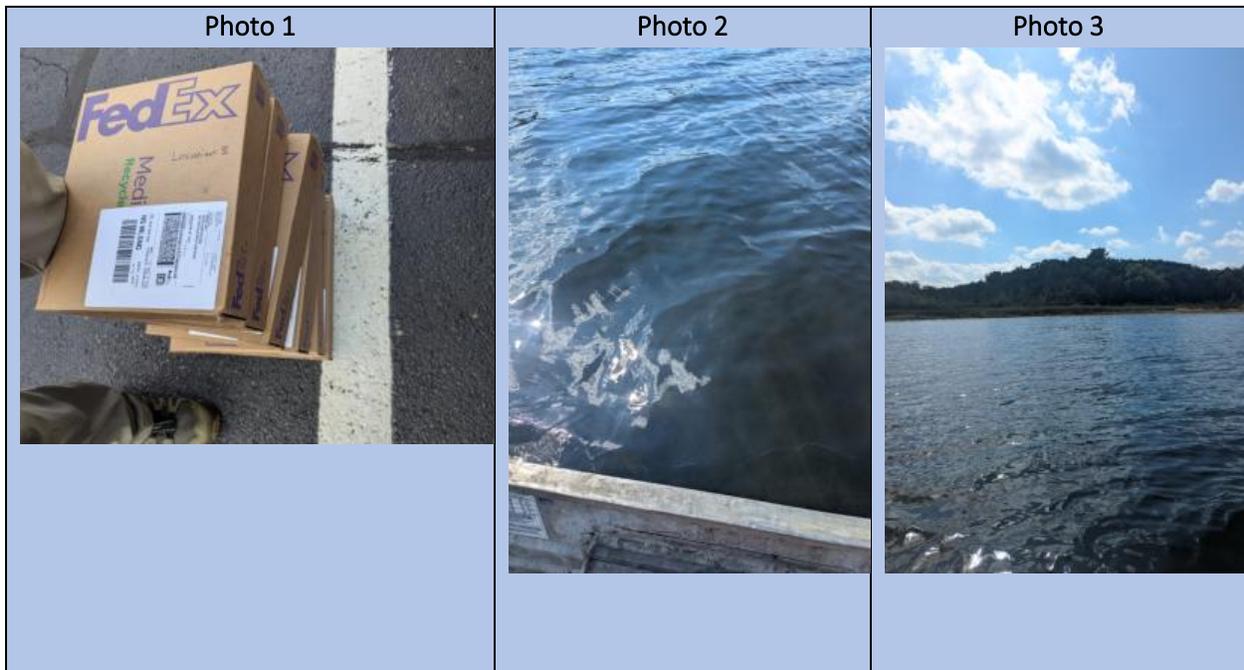


Photo 4



Photo 5



Photo 6



**SePRO Lab**

Water Diagnostics for Lakes &amp; Ponds

**SeSCRIPT\***

16013 Watson Seed Farm Road, Whitakers, NC 27891

# LABORATORY REPORT

Chain of Custody: eCOC19552

## Customer Contact Information

Company Name: Water and Wetland	Contact Person: James Lacasse
Address: 134 Ferry St., South Grafton, MA 01560	E-mail Address: james@waterandwetland.com
	Phone: 888-493-8526

## Waterbody Information

Waterbody:	Waushakum Pond - MA
Waterbody size:	88
Depth Average:	

Sample ID	Sample Location	Test	Method	Results	Sampling Date / Time
CTM68478-1	Location 1 (Southern Pond) - Surface	Conductivity (µS/cm)	EPA 120.1	442.8	09/15/2025
		Total Phosphorus (µg/L)	EPA 365.3	23	
		Alkalinity (mg/L as CaCO3)	EPA 310.2	35.8	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	0.38	
		pH	EPA 150.1	7.4	
CTM68479-1	Location 1 (Southern End) - Bottom	Conductivity (µS/cm)	EPA 120.1	438.9	09/15/2025
		Total Phosphorus (µg/L)	EPA 365.3	30.3	
		Alkalinity (mg/L as CaCO3)	EPA 310.2	35.6	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	0.32	
		pH	EPA 150.1	7.2	
CTM68480-1	Location 2 (Mid-Pond) - Surface	Conductivity (µS/cm)	EPA 120.1	439.6	09/15/2025
		Total Phosphorus (µg/L)	EPA 365.3	18.2	
		Alkalinity (mg/L as CaCO3)	EPA 310.2	33	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	0.21	
		pH	EPA 150.1	7.4	
CTM68481-1	Location 2 (Mid-Pond) - Bottom	Conductivity (µS/cm)	EPA 120.1	440.4	09/15/2025
		Total Phosphorus (µg/L)	EPA 365.3	251.8	
		Alkalinity (mg/L as CaCO3)	EPA 310.2	31.8	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	0.5	
		pH	EPA 150.1	7	
CTM68482-1	Location 3 (Deep Hole) - Surface	Conductivity (µS/cm)	EPA 120.1	440.1	09/15/2025
		Total Phosphorus (µg/L)	EPA 365.3	17.8	
		Alkalinity (mg/L as CaCO3)	EPA 310.2	35.1	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	0.15	
		pH	EPA 150.1	7.4	
CTM68483-1	Location 3 (Deep Hole) - Bottom	Conductivity (µS/cm)	EPA 120.1	438.4	09/15/2025
		Total Phosphorus (µg/L)	EPA 365.3	22	
		Alkalinity (mg/L as CaCO3)	EPA 310.2	34.9	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	<0.1	

**ANALYSIS STATEMENTS:**

**SAMPLE RECEIPT /HOLDING TIMES:** All samples arrived in an acceptable condition and were analyzed within prescribed holding times in accordance with the SRTC Laboratory Sample Receipt Policy unless otherwise noted in the report.

**PRESERVATION:** Samples requiring preservation were verified prior to sample analysis and any qualifiers will be noted in the report.

**QA/QC CRITERIA:** All analyses met method criteria, except as noted in the report with data qualifiers.

**COMMENTS:** No significant observations were made unless noted in the report.

**MEASUREMENT UNCERTAINTY:** Uncertainty of measurement has been determined and is available upon request.

**Laboratory Information**

Date / Time Received: 09/16/25 12:00 PM

Date Results Sent: Friday, September 19, 2025

*Disclaimer: The results listed within this Laboratory Report relate only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a dry weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the exclusive use of SRTC Laboratory and its client. This report shall not be reproduced, except in full, without written permission from SRTC Laboratory. The Chain of Custody is included and is an essential component of this report.*

*This entire report was reviewed and approved for release.*



*Reviewed By: Laboratory Manager*

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**SePRO Lab**

Water Diagnostics for Lakes & Ponds

**SeSCRIPT\***

16013 Watson Seed Farm Road, Whitakers, NC 27891

# LABORATORY REPORT

Chain of Custody: eCOC19555

## Customer Contact Information

Company Name: Water and Wetland	Contact Person: James Lacasse
Address: 134 Ferry St., South Grafton, MA 01560	E-mail Address: james@waterandwetland.com
	Phone: 888-493-8526

## Waterbody Information

Waterbody:	Waushakum Pond - MA
Waterbody size:	88
Depth Average:	

Sample ID	Sample Location	Test	Method	Results	Sampling Date / Time
CTM68469-1	Location 1 (Southern Point) - Surface	Chlorophyll a (µg/L)	EPA 445	<10	09/15/2025
CTM68470-1	Location 1 (Southern Point) - 20'	Chlorophyll a (µg/L)	EPA 445	<10	09/15/2025
CTM68471-1	Location 2 (Mid-Pond) - Surface	Chlorophyll a (µg/L)	EPA 445	<10	09/15/2025
CTM68472-1	Location 2 (Mid-Pond) - 20'	Chlorophyll a (µg/L)	EPA 445	<10	09/15/2025
CTM68473-1	Location 3 (Deep Hole) - Surface	Chlorophyll a (µg/L)	EPA 445	<10	09/15/2025
CTM68474-1	Location 3 (Deep Hole) - 20'	Chlorophyll a (µg/L)	EPA 445	<10	09/15/2025

### ANALYSIS STATEMENTS:

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### Laboratory Information

Date / Time Received: 09/16/25 12:00 PM

Date Results Sent: Friday, September 19, 2025

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**SePRO Lab**

Water Diagnostics for Lakes & Ponds

**SeSCRIPT\***

16013 Watson Seed Farm Road, Whitakers, NC 27891

# LABORATORY REPORT

Chain of Custody: eCOC19554

## Customer Contact Information

Company Name: Water and Wetland	Contact Person: James Lacasse
Address: 134 Ferry St., South Grafton, MA 01560	E-mail Address: james@waterandwetland.com
	Phone: 888-493-8526

## Waterbody Information

Waterbody:	Waushakum Pond - MA
Waterbody size:	88
Depth Average:	

Sample ID	Sample Location	Test	Method	Results	Sampling Date / Time
CTM68475-1	Location 3 (Deep Hole) - Mid	Conductivity (µS/cm)	EPA 120.1	353.6	09/15/2025
		Total Phosphorus (µg/L)	EPA 365.3	20.2	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	0.17	
		pH	EPA 150.1	6.9	

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**SePRO Lab**

Water Diagnostics for Lakes & Ponds

**SeSCRIPT\***

16013 Watson Seed Farm Road, Whitakers, NC 27891

# LABORATORY REPORT

Chain of Custody: eCOC19553

## Customer Contact Information

Company Name: Water and Wetland	Contact Person: James Lacasse
Address: 134 Ferry St., South Grafton, MA 01560	E-mail Address: james@waterandwetland.com
	Phone: 888-493-8526

## Waterbody Information

Waterbody:	Waushakum Pond - MA
Waterbody size:	88
Depth Average:	

Sample ID	Sample Location	Test	Method	Results	Sampling Date / Time
CTM68476-1	Location 1 (Southern Point) - Mid	Conductivity ( $\mu\text{S}/\text{cm}$ )	EPA 120.1	390.3	09/15/2025
		pH	EPA 150.1	7.2	
CTM68477-1	Location 2 (Mid-Pond) - Mid	Conductivity ( $\mu\text{S}/\text{cm}$ )	EPA 120.1	393.7	09/15/2025
		pH	EPA 150.1	7.3	

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## SePRO Lab

Water Diagnostics for Lakes & Ponds

### Water Quality Analysis Explanation

These water quality parameters are essential to document the condition of a water body and design custom treatment prescriptions to achieve the desired management objective.

**pH:** Measure of how acidic or basic the water is ( pH 7 is considered neutral).

**<6 Notably Acidic**

**6 - 9 Standard for Typical Freshwaters**

**>9 Notably Basic**



**Hardness:** Measure of the concentration of divalent cations, primarily consisting of calcium and magnesium in typical freshwaters.

*0-60 mg/L as CaCO<sub>3</sub> soft; 61-120 mg/L as CaCO<sub>3</sub> moderately hard; 121-180 mg/L as CaCO<sub>3</sub> hard; > 181 mg/L as CaCO<sub>3</sub> very hard*

**Alkalinity:** Measure of the buffering capacity of water, primarily consisting of carbonate, bicarbonate, and hydroxide in typical freshwaters. Waters with lower levels are more susceptible to pH shifts.

*< 50 mg/L as CaCO<sub>3</sub> low buffered; 51-100 mg/L as CaCO<sub>3</sub> moderately buffered; 101-200 mg/L as CaCO<sub>3</sub> buffered; > 200 mg/L as CaCO<sub>3</sub> high buffered*

**Conductivity:** Measure of the waters ability to transfer an electrical current, increases with more dissolved ions.

*< 50  $\mu$ S/cm relatively low concentration may not provide sufficient dissolved ions for ecosystem health; 50-1500  $\mu$ S/cm typical freshwaters; > 1500  $\mu$ S/cm may be stressful to some freshwater organisms, though not uncommon in many areas*

**Phosphorus:** Essential nutrient often correlating to growth of algae in freshwaters.

**Total Phosphorus (TP):** is the measure of all phosphorus in a sample as measured by persulfate strong digestion and includes: inorganic, oxidizable organic and polyphosphates. This includes what is readily available, potential to become available and stable forms. *<12  $\mu$ g/L oligotrophic; 12-24  $\mu$ g/L mesotrophic; 25-96  $\mu$ g/L eutrophic; > 96  $\mu$ g/L hypereutrophic*

**Free Reactive Phosphorus (FRP):** is the measure of inorganic dissolved reactive phosphorus (PO<sub>4</sub>-3, HPO<sub>4</sub>-2, etc). This form is readily available in the water column for algae growth.

**Nitrogen:** Essential nutrient that can enhance growth of algae.

**Total N** is all nitrogen in the sample (organic N+ and Ammonia) determined by the sum of the measurements for Total Kjeldahl Nitrogen (TKN) and ionic forms.

**Nitrites and Nitrates** are the sum of total oxidized nitrogen, often readily free for algae uptake.

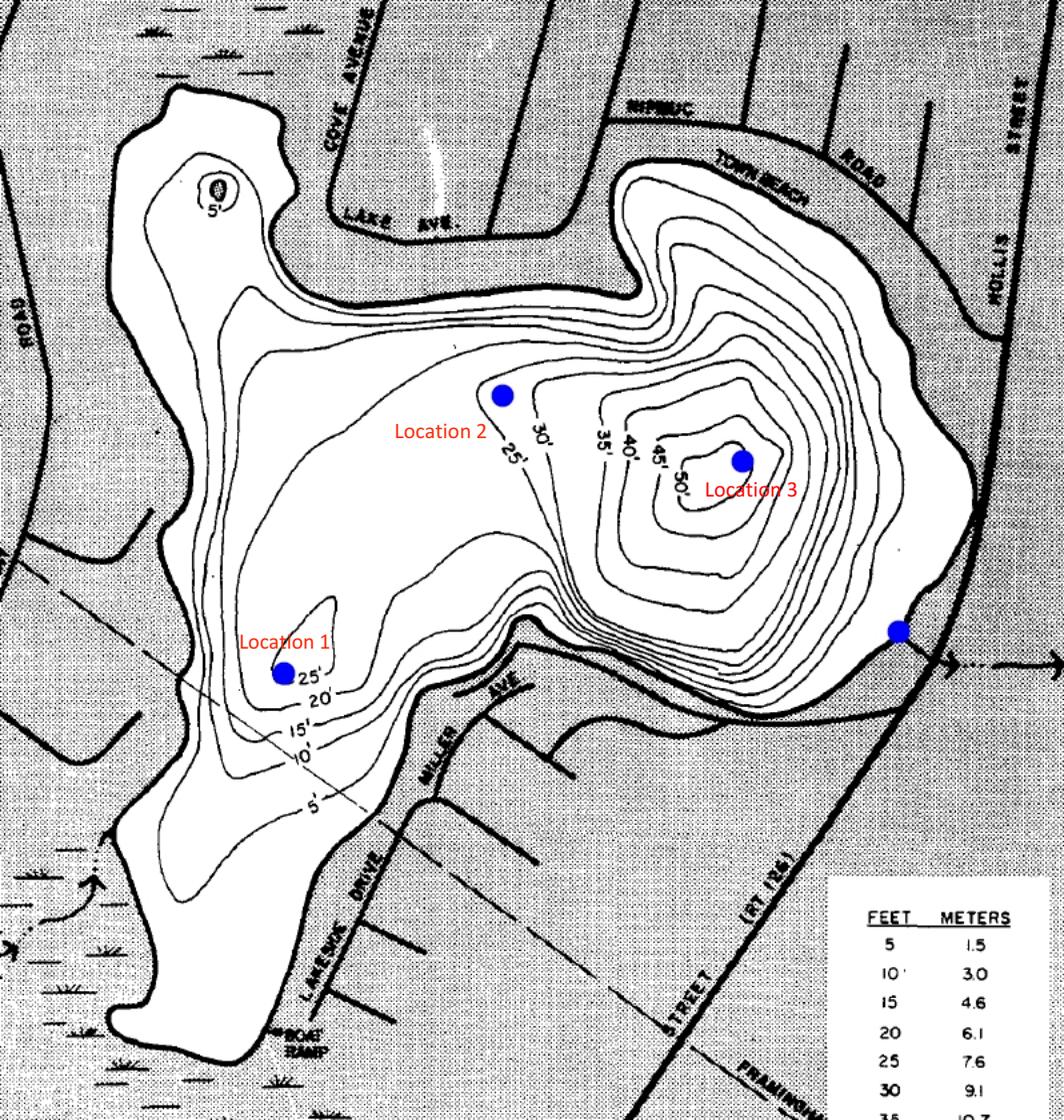
*< 1 mg/L typical freshwater; 1-10 mg/L potentially harmful; >10 mg/L possible toxicity, above many regulated guidelines*

**Chlorophyll a:** primary light-harvesting pigment found in algae and a measure of the algal productivity and water quality in a system.

*0-2.6 $\mu$ g/L oligotrophic; 2.7-20  $\mu$ g/L mesotrophic; 21-56  $\mu$ g/L eutrophic; > 56  $\mu$ g/L hypereutrophic*

**Turbidity:** Measurement of water clarity. Suspended particulates (algae, clay, silt, dead organic matter) are the common constituents impacting turbidity.

*< 10 NTU drinking water standards and typical trout waters; 10-50 NTU moderate; > 50 NTU potential impact to aquatic life.*



FEET	METERS
5	1.5
10	3.0
15	4.6
20	6.1
25	7.6
30	9.1
35	10.7