

SePRO Lab

Water Diagnostics for Lakes & Ponds

SeSCRIPT Analysis Report: Great Hill Pond

Company: The Pond and Lake Connection
Address: 112 Federal Rd. Brookfield, CT. 06804
Contact Person: Peter Grundy
Phone: (203)-885-0184
Email: peter@thepondandlake.com

Project Name: Great Hill Pond
Surface Area: 76 acres
Average depth: 6 feet
Date Algae Sample Received: 8/13/2024
SeSCRIPT Analysis Performed: Algae ID and
Water Quality Baseline Plus

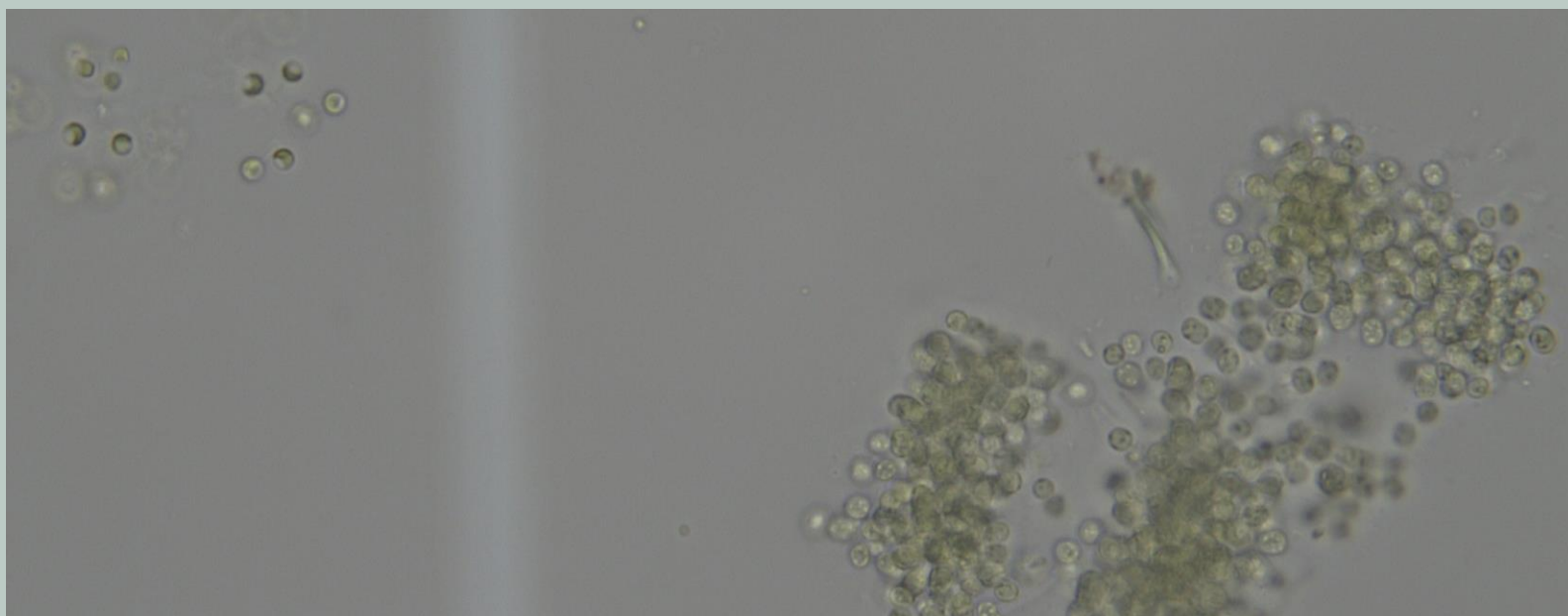
Algae ID Results

Great Hill Pond

Identification	Classification	Description	Density/Biomass (cells/mL)
<i>Dictyosphaerium</i> sp.	Chlorophyta- Green algae	Colonial, planktonic	8,400
<i>Microcystis</i> sp.	Cyanophyta- Blue-green algae	Colonial, scum-former, planktonic, potential toxin and taste/odor producer	7,200

Other algae observed at densities less than 40 cells/mL: *Cyclotella* (Bacillariophyta); *Gloeocystis* (Chlorophyta); *Aphanocapsa*, *Woronichinia* (Cyanophyta); *Euglena*, *Trachelomonas* (Euglenophyta); *Staurastrum* (Streptophyta)

Some particulate matter observed



Water Quality Results

Great Hill Pond

Analysis	Measurements	Description
pH (SU)	7.8	Near neutral
Conductivity ($\mu\text{S}/\text{cm}$)	75.6	Typical for freshwaters
Alkalinity (mg/L as CaCO_3)	19.5	Low buffered
Hardness (mg/L as CaCO_3)	17.3	Soft
Turbidity (NTU)	4.4	Low



Nutrient Results

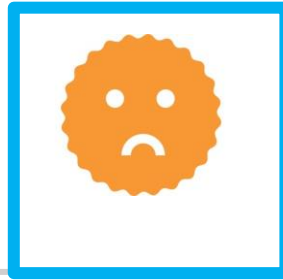
Great Hill Pond

Analysis	Measurements	Description
Total Phosphorus (µg/L)	23.5	Moderate amount: Mesotrophic
Free Reactive Phosphorus (µg/L)	< 5	Low
Total Kjeldahl Nitrogen (mg/L)	0.65	Low
Nitrates & Nitrites (mg/L)	0.02	Low
Total Nitrogen (mg/L)	0.67	Low
Chlorophyll a (µg/L)	12.4	Moderate

SeSCRIPT Discussion



Healthy



Polluted

The algae and water sample collected from **Great Hill Pond** was received on 8/13/2024. Based on results from the water quality and algae analyses, proposed treatment recommendations for control of the problematic algae and nutrient management in **Great Hill Pond** were determined (see below).

For the purpose of this report, the health rating reflects water quality concentrations detected at the time of collection and should only be used as a guide for treatment purposes. Follow product label instructions. Check with the appropriate local and state agencies for product restrictions and permit regulations prior to use.

SeSCRIPT Diagnostic Guidance

Great Hill Pond

To restore *Great Hill Pond* to a more balanced natural state, it is recommended to manage the nuisance algae and the nutrient pollution (or prevent pollution levels to rise to unhealthy levels.

STEP 1: ALGAE MANAGEMENT

In order to control the targeted algae at this site, apply:

Cutrine Plus at a rate range of 0.3-0.6 gallons/acre-foot (0.1-0.2 mg Cu/L).

Contact your SePRO Aquatic Specialist for further guidance on final application rate selection, technique and frequency based on project objectives, site conditions, algae location and density at treatment time.

STEP 2: PHOSPHORUS MANAGEMENT

Analysis of the water quality parameters in this pond revealed this system is mesotrophic. Based on these site-specific water parameters, consider implementing one of the following EutroSORB phosphorus removal solutions to restore water quality in your water body.

- Recovery Solution:** Improve or prevent further nutrient pollution by applying EutroSORB WC on an annual basis. The recommended starting dose is 10 PDUs per acre. Integrate with SePRO algaecide applications as needed to control algae and achieve desired water quality objectives.
- Reset Solution:** Reset the ecological clock and restore water quality in your pond by implementing a Reset application strategy customized by water body. EutroSORB G permanently binds phosphorus pollution both in the water and at a source, the sediments.

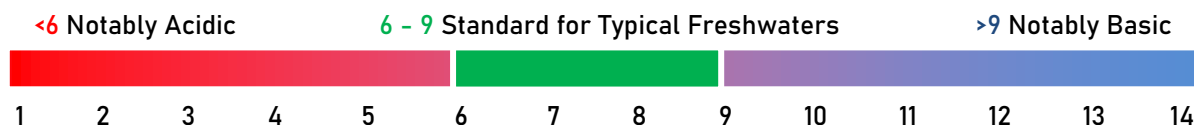
Always read and follow product labels and applicable permits. Contact your SePRO Technical Specialist for assistance on developing a custom prescription based on site conditions and water quality management objectives



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 desired management objectives.

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



Hardness: Measure of the concentration of divalent cations, primarily consisting of calcium and magnesium in typical freshwaters. *0-60 mg/L as CaCO₃ soft; 61-120 moderately hard; 121-180 hard; > 181 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 CaCO₃ low buffered; 51-100 moderately buffered; 101-200 buffered; > 200 high buffered.*

Conductivity- Measure of the waters ability to transfer an electrical current, increases with more dissolved ions. *50 uS/cm relatively low concentration may not provide sufficient dissolved ions for ecosystem health; 50-1500 typical freshwaters; > 1500 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 µg/L oligotrophic; 12-24 µg/L mesotrophic; 25-96 µg/L eutrophic; > 96 µg/L hypereutrophic*

Free Reactive Phosphorus (FRP) is the measure of inorganic dissolved reactive phosphorus. (PO₄⁻³, HPO₄⁻², 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 potentially harmful; >10 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. *0-2.6µg/L oligotrophic; 2.7-20 µg/L mesotrophic; 21-56 µg/L eutrophic; > 56 µg/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.*