

Water Quality Summary – Horseshoe Lake

Parameter	Test Results		Target Range	Status
	Site 1	Site 2		
Chlorophyll 'α'	1.25	0.753 mg/m ³	1 – 140 mg/m ³	Oligotrophic
Total Dissolved Solids	440	440 ppm	0 – 1,000 ppm	Normal
Dissolved Oxygen	NA		4.0 – 12.0 ppm	
Phosphate	Less than 5 ppb		15 – 100 ppb	Normal
Nitrate	Less than 0.1 ppm		0 – 50 ppm	Healthy
E. coli	Less than 1 CFU / 100 ml		< 300 CFU/100 mL	Normal

● CRITICAL
 ● CAUTION
 ● HEALTHY

Discussion

These results show that the water at Horseshoe remains relatively healthy and suitable to support natural wildlife.

Chlorophyll 'a' is a measurement of projected biomass and photosynthesis rate of algae and plants within the waterbody. This measurement translates to a trophic state of the lake, or how active the lake is to produce algae and plants. There are four trophic states: Oligotrophic (< 2.5 mg/m³, very inactive), Mesotrophic (2.6-20 mg/m³, moderately active), Eutrophic (20-56 mg/m³, very active) and Hyper Eutrophic (> 56 mg/m³, extremely active). Many lakes and ponds in urbanized areas are Eutrophic to Hyper Eutrophic, meaning there is continuous production of algae and plants due to constant to excessive nutrient loading. A pond or lake that is Mesotrophic to Eutrophic is generally desired and considered healthy.

Total Dissolved Solids is the measurement of the combined content of all inorganic and organic substances contained in a waterbody. Pure water will contain no dissolved solids. Storm water run-off is the primary source of dissolved solids. Drinking water must have reading below 500 ppm. Reading of up to 1,000 ppm are generally considered safe for plants and other aquatic organisms.

Dissolved Oxygen Measures the amount of microscopic bubbles of oxygen gas in the water column. Just like animals on land, animals underwater require oxygen to breath. Warmer water tends to hold less oxygen so this measurement becomes very important during summer months. Reading below 4 ppm can be fatal.

Phosphate and Nitrate are essential nutrients for all aquatic life. A lack or excess of these components can lead to a change in the trophic state of a waterbody. Phosphate readings between 15 – 100 ppb are needed to maintain normal aquatic life. Nitrate levels over 50 ppm are considered to be polluted waters and unsafe for consumption.

E. coli are a form of bacteria that live in the intestines and fecal matter of warm blooded organisms. Although the e. coli may not be the agent of disease, high levels of this bacteria indicate the presence of disease-carrying organisms. Per the MDEQ, a single reading over 300 CFU/100 ml or sustained readings over 130 CFU/100ml for 30 days is considered unsafe for swimming.


Pond Test Water Quality Report by



Water samples were taken on 6/24/2016. Water tests were completed on 6/28/2016. This report describes conditions at the time the samples were taken. The quality of the water was tested only to the parameters listed above.

Compiled and Certified by:  Date: 6/29/2016

Pond  Test Technician

Reviewed and Approved by:  Date: 6/29/2016
Aqua-Weed Control Inc.

