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# HIGGINS LAKE WATER ANALYSIS

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Report #38



SEPTEMBER 20, 2022

RAVEN ANALYTICAL

104 First street

# Higgins Lake Report

Based on the data provided for testing from USGS suggestions and the concern(s) about the water quality on Higgins Lake, the following testing protocols are performed.

## Water Tests:

1. Phosphorus
  - a. Total phosphorus is reported in milligrams/liter (mg/L)
2. Nitrate
  - a. Nitrate is reported in milligrams/liter (mg/L)
3. Nitrite
  - a. Nitrite is reported in milligrams/liter (mg/L)
4. pH
  - a. pH is measured on a 1 to 14 scale with pure water being a pH of 7.0
5. Dissolved Oxygen
  - a. Dissolved oxygen is reported in milligrams/liter (mg/L)
6. Total dissolved solids (TDS)
  - a. measured in parts per million
7. Conductivity
  - a. Conductivity is reported in microsiemens per centimeter (uS/cm)
8. Beach Plate Count; MPN
  - a. Most probable number (MPN) is measured in colonies per 100 milliliters of cultured water
9. Beach Plate count: E-coli
  - a. Most probable number (MPN) E-coli is measured in colonies per 100 milliliters of cultured water

The standards developed for the Great Lakes in Michigan and may be used for inland beaches are:

- If the E. coli count is greater than 1000 MPN/100 mL, the beach is closed.
- If the E. coli count is greater than 235 MPN/100 mL but less than 1000 MPN/100 mL, an advisory is issued.
- If the E. coli count is under 235 MPN/100 mL, the beach has no advisories or warnings issued.

All water analysis was performed at Raven Analytical Laboratory in Roscommon using EPA approved test methods. This lab is an EPA certified water analysis laboratory (#9954) and has certified water sanitarians on staff at Roscommon.

Water quality tests were performed on water samples taken at Big Creek and Old 27 Higgins Lake on September 20, 2022.

Testing results for the year are shown below:

**Big Creek**

<u>Site</u>	4/27/2022	6/12/2022	7/20/2022	9/20/2022
<b>Phosphorus</b>	0.12	0.07	0.06	0.04
<b>Nitrogen (Nitrate)</b>	0.55	0.9	0.134	0.133
<b>Nitrogen (Nitrite)</b>	N.D.	N.D.	N.D.	N.D.
<b>Beach Plate Count; MPN</b>	328	79	914	249
<b>Beach Plate Count; e-coli</b>	26	11	166	31
<b>pH</b>	7.39	6.95	6.61	6.91
<b>Total Dissolved Solids</b>	94.6	156	153	162
<b>Conductivity; uS</b>	189	307	308	323

**Old 27**

<u>Site</u>	4/27/2022	6/12/2022	7/20/2022	9/20/2022
<b>Phosphorus</b>	0.08	0.09	0.03	0.12
<b>Nitrogen (Nitrate)</b>	0.59	0.112	0.134	0.019
<b>Nitrogen (Nitrite)</b>	N.D.	N.D.	N.D.	N.D.
<b>Beach Plate Count; MPN</b>	285	72	436	147
<b>Beach Plate Count; e-coli</b>	2.0	11	50	11
<b>pH</b>	7.45	6.84	6.70	7.00
<b>Total Dissolved Solids</b>	87.5	153	156	160
<b>Conductivity; uS</b>	174	306	312	316

Submitted by:

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