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MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
WATER RESOURCES DIVISION

STAFF REPORT

CYANOBACTERIA BLOOM MONITORING IN MICHIGAN INLAND LAKES DURING 2021 AND 2022

Introduction

Cyanobacteria blooms, algal toxin concentrations, and complaints about algae in Michigan have been tracked by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) since 2016. Data analysis over several years found that confirmed cyanobacteria blooms were most prevalent in the southern half of the Lower Peninsula (Parker, 2020). Around half of the lakes in Michigan with confirmed cyanobacteria blooms were either reservoirs or natural lakes with dam control structures at their outlets. This is noteworthy because only about 11 percent of the inland lakes (>5 acres) in Michigan are reservoirs or natural lakes with dams.

This report builds upon harmful algal bloom monitoring results generated by EGLE since 2016. Parker (2020) provides a detailed description of cyanobacteria and causes of cyanobacterial blooms. In 2022, some taxa identifications were made for cyanobacteria. Particularly if it was not a sheen-forming cyanobacteria or was a cyanobacteria that produced low, or no toxins. Photographs of cyanobacteria that were later identified are located in Appendix 1. Raw cyanotoxin data are located in Appendix 2.

Sites

The lakes that were sampled for cyanotoxins in 2021 and 2022 by EGLE can be placed into two broad categories: (1) targeted lakes that were visited by EGLE or United States Geological Survey (USGS) staff as part of separate lake surveillance work with observed cyanobacteria blooms; and (2) lakes that EGLE or local health departments received complaints about either from citizens or staff.

Field Methods

During a monitoring event at a lake, staff of EGLE, Water Resources Division (WRD), typically took pictures of algal conditions, collected general water chemistry in the center of the lake (if accessible by boat), and collected water samples for cyanobacteria toxin analysis from up to four locations around the lake. If a water body was inaccessible by boat, or staff did not have a boat available for sampling, then only shoreline samples were collected for toxin analysis and nutrient and chlorophyll samples were not collected. The cyanobacteria toxin samples were initially analyzed using Abraxis (Abraxis, Inc., Warminster, Pennsylvania) test strips to assess microcystin presence/absence. Samples sent to the Michigan Department of Health and Human Services (MDHHS) Laboratory were analyzed using tandem liquid chromatography mass spectrometry (LC/MS/MS) for quantitative assessment of a suite of cyanobacterial toxins including microcystins, cylindrospermopsin, nodularin, and anatoxin-a (Table 1).

Water Samples - General Chemistry

Water parameters collected at targeted and response lakes were generally similar. At many lakes, temperature, dissolved oxygen, conductivity, pH, chlorophyll *a* concentration, chlorophyll relative fluorescence unit, phycocyanin concentration, and phycocyanin relative fluorescence unit were measured using an EXO sonde (YSI Incorporated, Yellow Springs, Ohio). At some response lakes, the staff available to collect the water samples did not have access to an EXO sonde unit. In those cases, only water samples were collected for the purpose of cyanobacteria toxin analysis.

At targeted lakes and response lakes where a boat could be taken to the center of the lake, the following samples were collected: total phosphorus, Kjeldahl nitrogen, nitrate+nitrite, ortho-phosphate, and chlorophyll *a*. The total phosphorus, Kjeldahl nitrogen, and nitrate+nitrite were preserved with sulfuric acid in the field. Nutrient surface water samples were collected at approximately 0.5 feet below the water surface using new, 250 milliliter (ml) polypropylene sample bottles that were triple-rinsed with site water. Chlorophyll *a* samples were collected as an integrated sample of the photic zone (twice the Secchi depth) and preserved with magnesium carbonate in the field. The samples were analyzed at the EGLE Environmental Laboratory using standard United States Environmental Protection Agency (USEPA) methods (Table 1). Following collection, sample bottles were placed on ice or refrigerated for transport and storage prior to delivery to the laboratory.

Water Samples - Cyanobacterial Toxins

At most lakes that were sampled by boat, one sample over the deepest part of the lake and at least three shoreline samples were collected in 250 ml Polyethylene terephthalate glycol (PETG) sample bottles at the water surface. Shoreline samples were typically collected at 1- to 6-foot depths. If sampling by boat, the shoreline sampling locations were distributed approximately evenly around the shoreline of the lake. However, downwind locations, areas that may be used for recreation, and beaches were preferentially targeted. When a boat could not be used, attempts were made to sample an even distribution of the shoreline; however, sampling locations were limited to areas of public access and/or private property that EGLE workers received permission to access. Prior to sampling, bottles were triple-rinsed with site water and samples were collected from an undisturbed area of water. Cyanobacteria toxin samples were collected at the water surface (i.e., the mouth of the bottle was half in the water, half out of the water).

In situations where cyanobacteria were sequestering amongst filamentous green algae or plants, an aliquot of algae or plants was placed into the bottle along with water near the algae. Because the filamentous green algae strands were often quite long, sampling an aliquot of filamentous green algae often meant breaking a small subsection of the strand and placing it in the PETG bottle.

At response lakes, often only shoreline samples were collected from an area with a cyanobacteria accumulation present, or in an area that previously had high concentrations of microcystins. Most of the samples were collected by EGLE staff, although in some cases workers from the USGS, Michigan Department of Natural Resources (MDNR), local health departments, or environmental consulting firms collected samples and arranged for EGLE workers to deliver the samples to the MDHHS Laboratory.

Ambient water and scum samples that were analyzed using qualitative and quantitative methods were kept on ice during transport back to the laboratory. Microcystin presence/absence and relative concentration estimate were determined using test strips. If the initial test strip indicated that microcystins were present in the sample, or if EGLE staff had reason to suspect that other toxins may be present, then it was delivered to the MDHHS Laboratory for quantitative analysis. Quantitative analysis of anatoxin-a, cylindrospermopsin, nodularin, and ten microcystin congeners (Table 1) was performed using LC/MS/MS. If the Abraxis test strips indicated that no microcystin was present in any samples from a lake, then only one sample was sent to the MDHHS Laboratory for further quantitative analysis.

Microcystin samples were held on ice or refrigerated for no more than 48 hours prior to laboratory analysis. If microcystin samples needed to be held longer than 48 hours, they were frozen, with care taken to reduce volume to allow for expansion. If samples needed to be delivered to the laboratory by mail, they were first frozen overnight and then delivered in a cooler with ice packs.

Table 1. Analytical methods and reporting limits.

Parameter	Analytical Method	Reporting Level (µg/L *)
Microcystin RR	LC/MS/MS	0.5
Microcystin YR	LC/MS/MS	0.5
Microcystin HTYR	LC/MS/MS	0.5
Microcystin LR	LC/MS/MS	0.5
Microcystin LR ASP3	LC/MS/MS	0.5
Microcystin WR	LC/MS/MS	0.5
Microcystin LA	LC/MS/MS	0.5
Microcystin LY	LC/MS/MS	0.5
Microcystin LW	LC/MS/MS	0.5
Microcystin LF	LC/MS/MS	0.5
Nodularin	LC/MS/MS	0.5
Anatoxin-a	LC/MS/MS	0.25
Cylindrospermopsin	LC/MS/MS	0.25
Qualitative Total Microcystin	Abraxis Test Strips (PN52022)	1
Total Phosphorus	EPA 365.4	10
Kjeldahl Nitrogen	EPA 351.2	100
Ammonia	EPA 350.1	10
Nitrate+Nitrite	EPA 353.2	10
Ortho-phosphate	EPA 365.1	10
Chlorophyll a	10200H (Standard Methods)	1

*micrograms per liter (µg/L).

Analytical Methods

Water bodies with confirmed cyanobacteria blooms were classified as either “natural,” “natural drowned river mouth,” “natural with dam,” “excavated,” or “reservoirs.” Natural lakes were considered to be lakes that were not created either by excavation, or by impounding a river, and did not have a dam artificially maintaining water levels. Natural, drowned river mouth lakes are

unique to the west coast of Michigan. The drowned river mouth lakes are fed by river tributaries and form close enough to the terminus of the river watershed that their water levels are influenced by Lake Michigan. Several drowned river mouth lakes that have experienced cyanobacteria blooms (e.g., Duck Lake, Muskegon County; Stony Lake, Oceana County; and Bass Lake, Mason County) do have low-head dams. However, during high-water years, Lake Michigan will encroach far enough upstream in the small channels, between the inland lake and Lake Michigan, to overtop the dams. Because Lake Michigan water levels are more influential on the hydrology of those lakes, they were classified as drowned river mouth lakes as opposed to natural lakes with dams. Natural lakes with a dam were considered to be non-drowned river mouth, natural lakes, as described above, but with dams at their outlets that artificially maintain a lake level. Reservoirs were considered to be lakes that were formed only as a result of a dam impounding a flowing river, or creek, and creating an artificial impoundment. Finally, excavated lakes were considered to be lakes that are present in areas that were historically terrestrial systems, but were excavated to create the lakes. Classifications about water bodies were largely made by checking sources such as the dam database maintained by EGLE. For water bodies with no information or lakes with dams where classifications (reservoir or natural with dam) were unavailable, historic topographic maps were evaluated over time using the USGS Historical Topographic Map Explorer (LivingAtlas.Arcgis.com/TopoExplorer/Index.html) to determine how the lakes were created.

To determine the accuracy of the commercially-available test strips at detecting levels of cyanotoxins that may be harmful to human health, microcystin concentrations obtained using dual methods (Abraxis test strips and quantitative laboratory LC/MS/MS) from 2016-2021 (n=986) were compared. Test strip microcystin values are generally associated with more uncertainty than lab-measured values. However, if the test strips are found to have good agreement with lab-measured values (i.e., test strips do not over- or under-estimate microcystin levels in reference to laboratory testing), it may allow field staff to make recommendations regarding a potential cyanobacteria bloom sooner and more efficiently.

The USEPA sets the recommended level for microcystin swimming advisories in recreational waters at 8 µg/L (USEPA, 2019). Given this federal guidance, and the expected uncertainty associated with test strip readings, we split test strip values into three categories for comparison with quantitative lab values. The test strip readings were categorized as either <1 µg/L, 1-10 µg/L, or >10 µg/L. Samples within these categories were then compared with the laboratory microcystin concentrations. Furthermore, a logistic regression was conducted to determine the probability that a test strip would correctly detect microcystin given known microcystin values from laboratory analysis. Test strip readings were converted to a binary variable for the purposes of logistic regression, with a reading <1 µg/L resulting in ‘no detection’, and a reading >1 µg/L resulting in ‘microcystin present’. This binary threshold was chosen because test strips can often only be identified to one of the three categories listed above. The USEPA recommended advisory threshold of 8 µg/L is within the 1-10 µg/L category, so an advisory should be published whenever a test strip reads anywhere within the 1-10 µg/L or >10 µg/L categories. To focus on this relevant range of values, the logistic regression model only considered data wherein laboratory microcystin values measured between 0 and 11 µg/L.

The distribution of cyanobacteria blooms was assessed along a north-south gradient in Michigan. Centroid latitudes for each Michigan county were calculated with the Calculate Geometry tool function in ArcMap 10.4 (Environmental Systems Research Institute [ESRI],

2011) using the NAD 1983 Geographic Coordinate System. For coastal counties, islands were excluded from the calculations, so latitude centroids were only for the mainland. A linear regression was performed on the number of confirmed cyanobacteria blooms (log +1-transformed) in a county versus the latitude centroid for all 83 Michigan counties.

Depths, shoreline development factors (SDF), and watershed/lake size ratios of lakes that had confirmed cyanobacteria blooms were compared using Analysis of Variance (ANOVA) with Tukey's honestly significant difference post-hoc testing. Maximum lake depths were mostly obtained from MDNR bathymetric maps. In some cases, where depth data were not available for a lake, other sources such as consultant or MDNR reports were used. A database of calculated SDF values for all Michigan lakes was provided by P. Tyning (Progressive AE, Grand Rapids, Michigan). SDF is the degree of a lake's shoreline irregularity and is expressed as the ratio of shoreline length to the circumference of a circle of area equal to the lake's area (Horne and Goldman, 1994). A lake with the least amount of lake shoreline would be perfectly circular and would have an SDF of 1.0. As shorelines become more irregular (less circular) the SDF increases. Finally, lake watershed areas were obtained either from an existing EGLE GIS layer or the Web site, "Model My Watershed (ModelMyWatershed.org/)." The EGLE GIS layer was mostly used for small, kettle lakes or excavated lakes with no significant tributaries. The Model My Watershed Web site was used for lakes with larger watersheds and outlets. The lake watersheds were then divided by the lake areas to get lake watershed/lake size ratios. Prior to statistical analysis, the watershed/lake size ratios were log +1-tranformed to reduce variability. Statistical significance for all tests was set at $\alpha = 0.05$.

Results

In 2021 the first citizen reports of nuisance algae came in February and the first sampling for cyanobacteria occurred in March. The last cyanobacteria bloom was recorded in November. In 2022 the first complaints of nuisance algae were received in March. The first confirmed cyanobacteria bloom occurred in June and the last one occurred in December. Both the number of complaints about algae and/or cyanobacteria (Figure 1) and the number of water bodies with confirmed cyanobacteria blooms (Figure 2) in Michigan have increased over the years. It should be noted that EGLE also fields numerous calls about suspected algae and/or cyanobacteria that turn out to be plants (typically duckweed), other bacteria, pollen, or other materials that are not included in Figure 1.

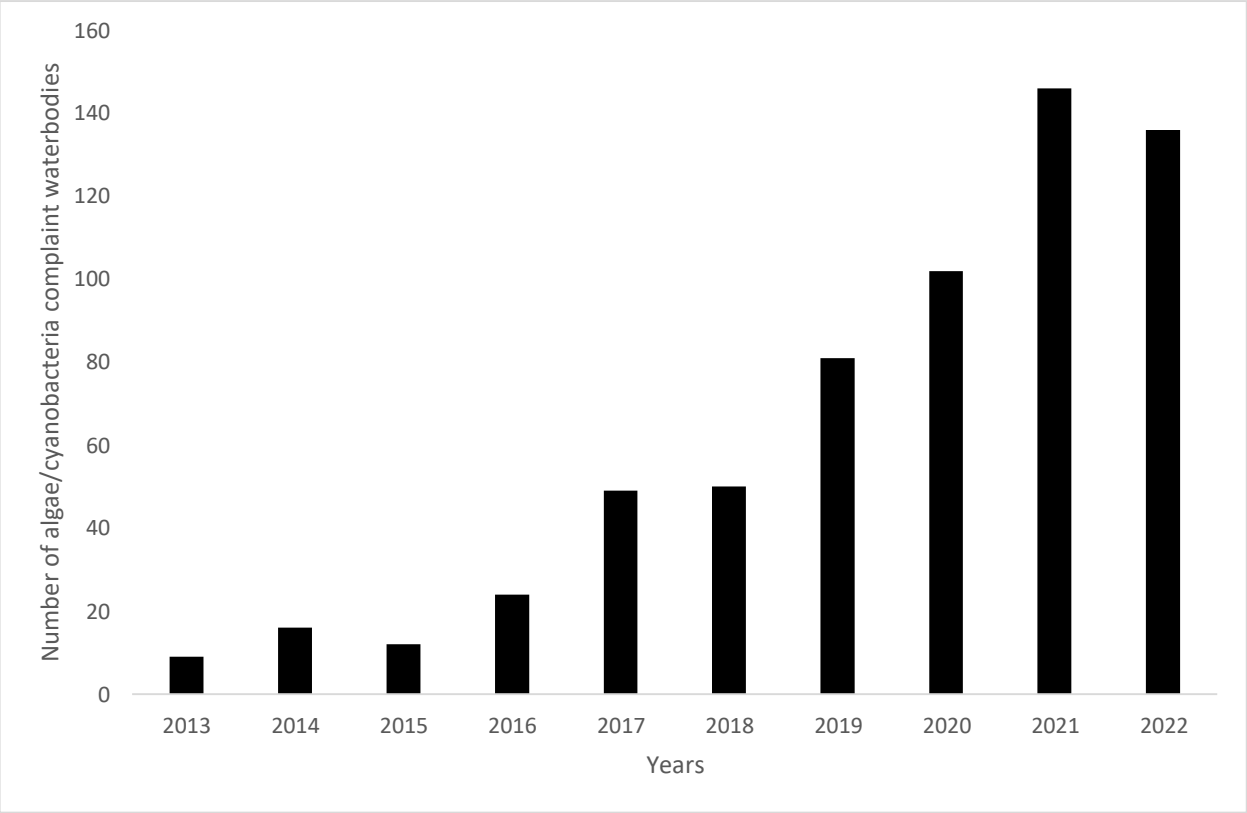

Figure 1. Number of different water bodies that EGLE received complaints about algae and/or cyanobacteria from 2013-2022.

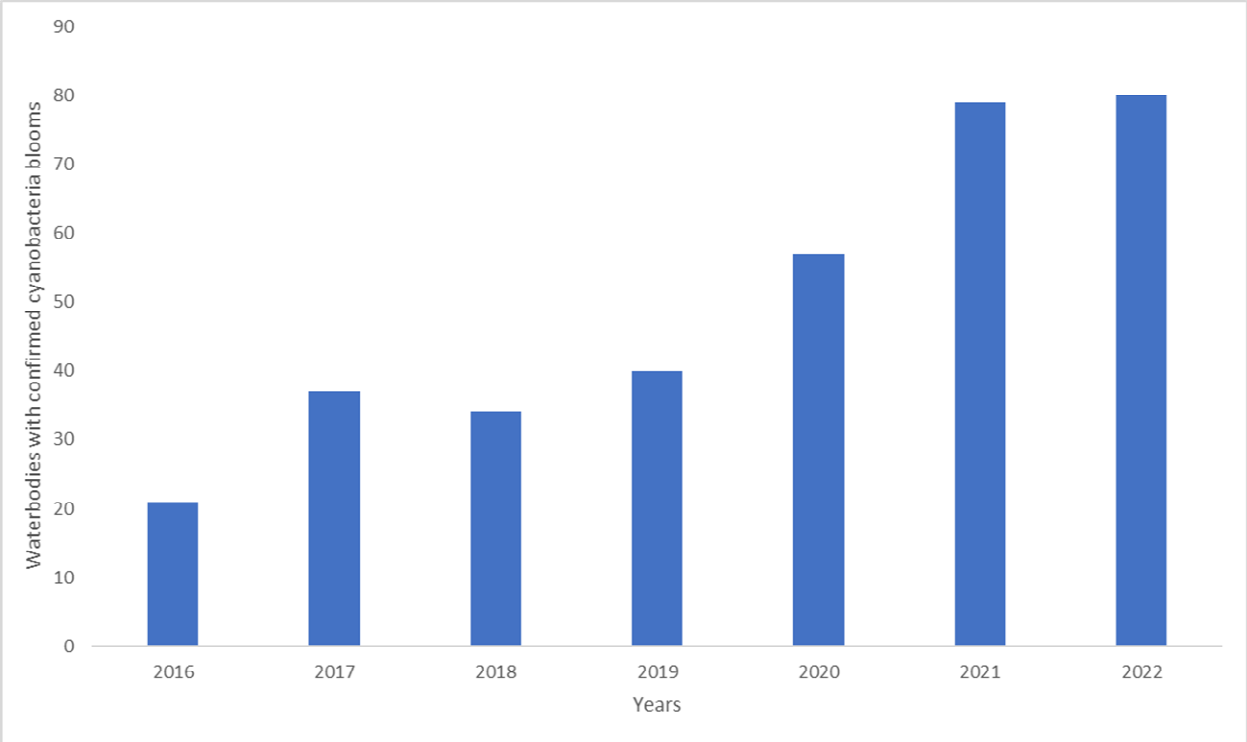

Figure 2. Number of different water bodies in Michigan with confirmed cyanobacteria blooms from 2016-2022.

Most of the confirmed cyanobacteria blooms in Michigan were in the southern half of the Lower Peninsula, and just over half of the blooms were in water bodies that were either reservoirs, natural lakes with dams, or excavated lakes (Figure 3). A linear regression between the number of different water bodies with cyanobacteria bloom occurrences by county and county latitude centroids confirmed this visual interpretation (Figure 4; $R^2 = 0.14$, df = 1, 81, $p < 0.001$).

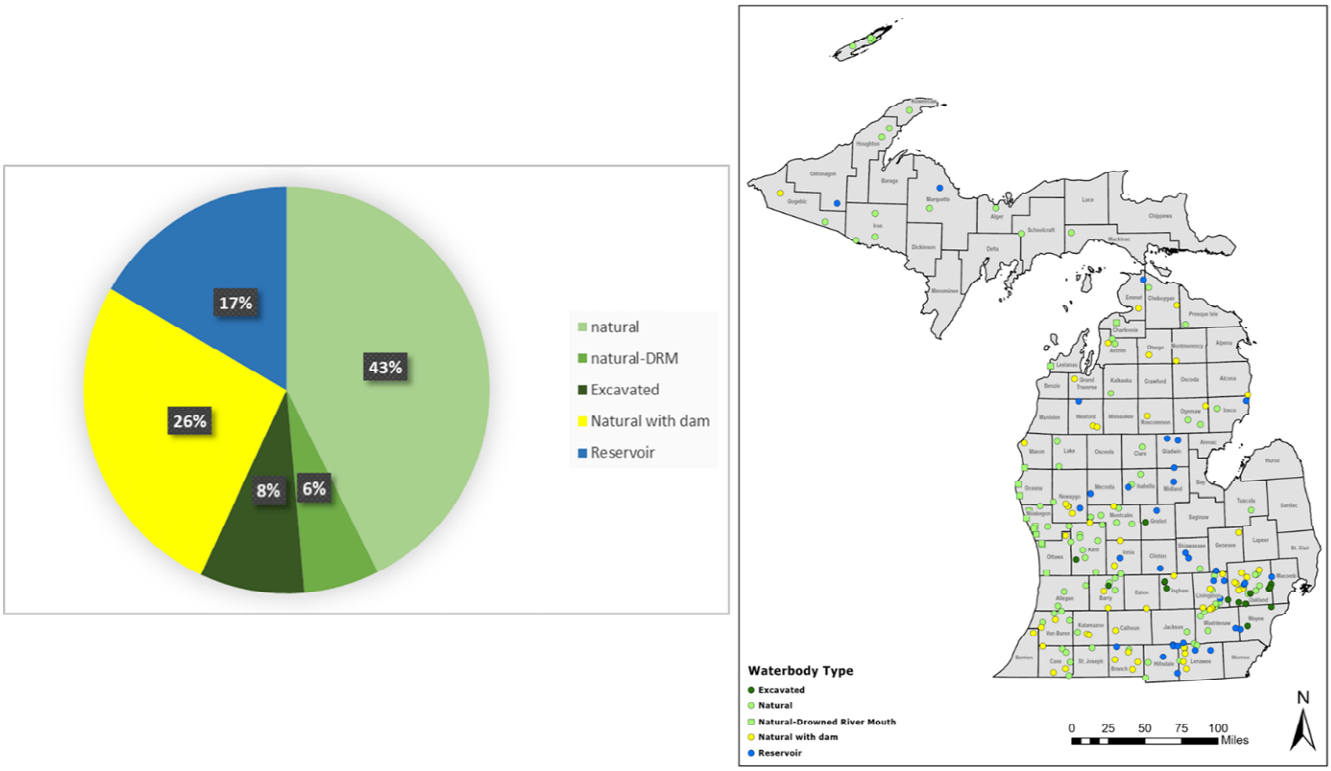

Figure 3. Confirmed inland lake cyanobacteria blooms from 2016-2022. Map points denote water bodies that are classified as excavated, natural, natural with dam, and reservoirs. Pie chart shows the proportions of inland lakes with cyanobacteria blooms that were excavated, natural, natural with dam, natural-drowned river mouth, and reservoirs.

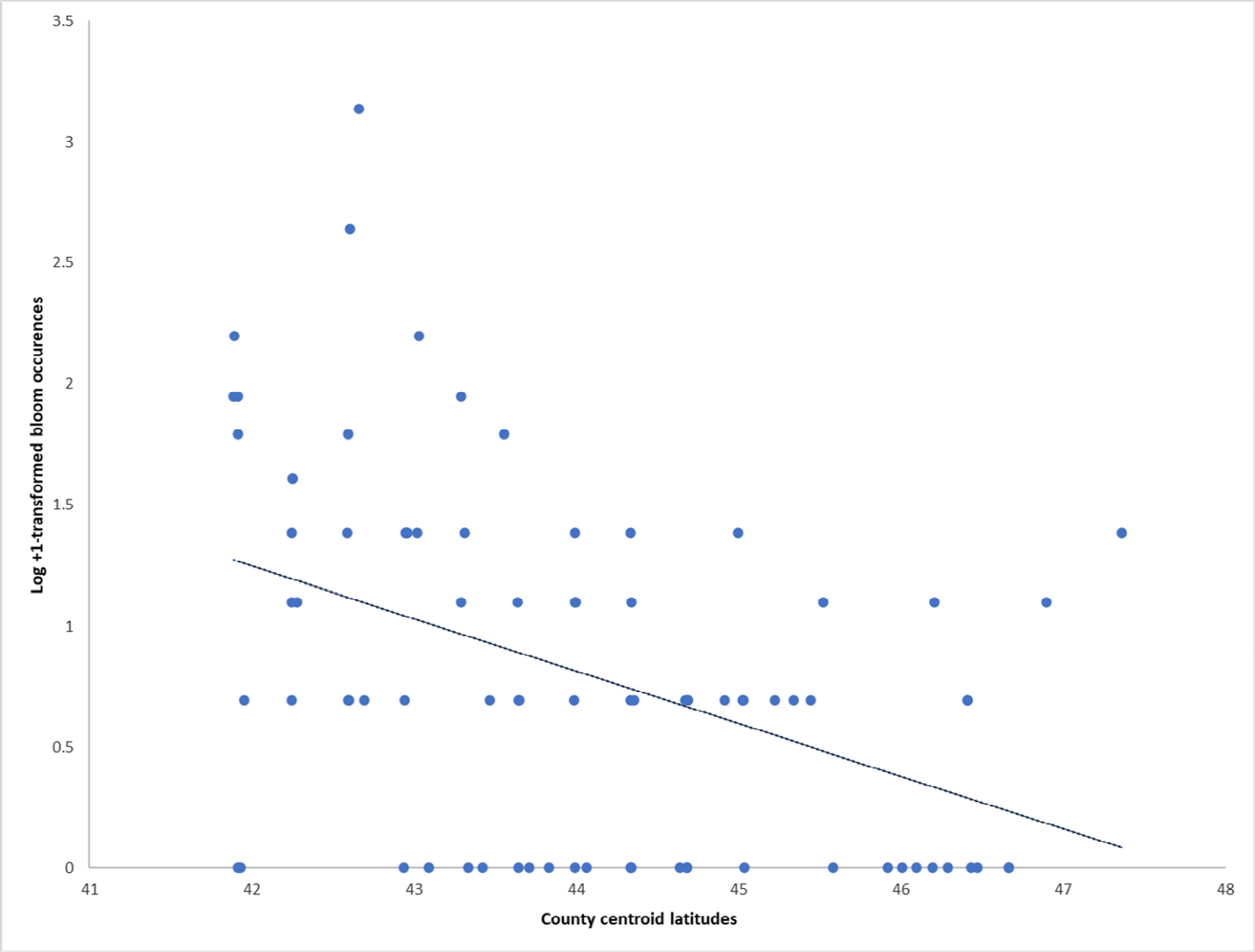

Figure 4. Linear regression of the number of confirmed cyanobacteria blooms from 2016-2022 and the county latitude centroids.

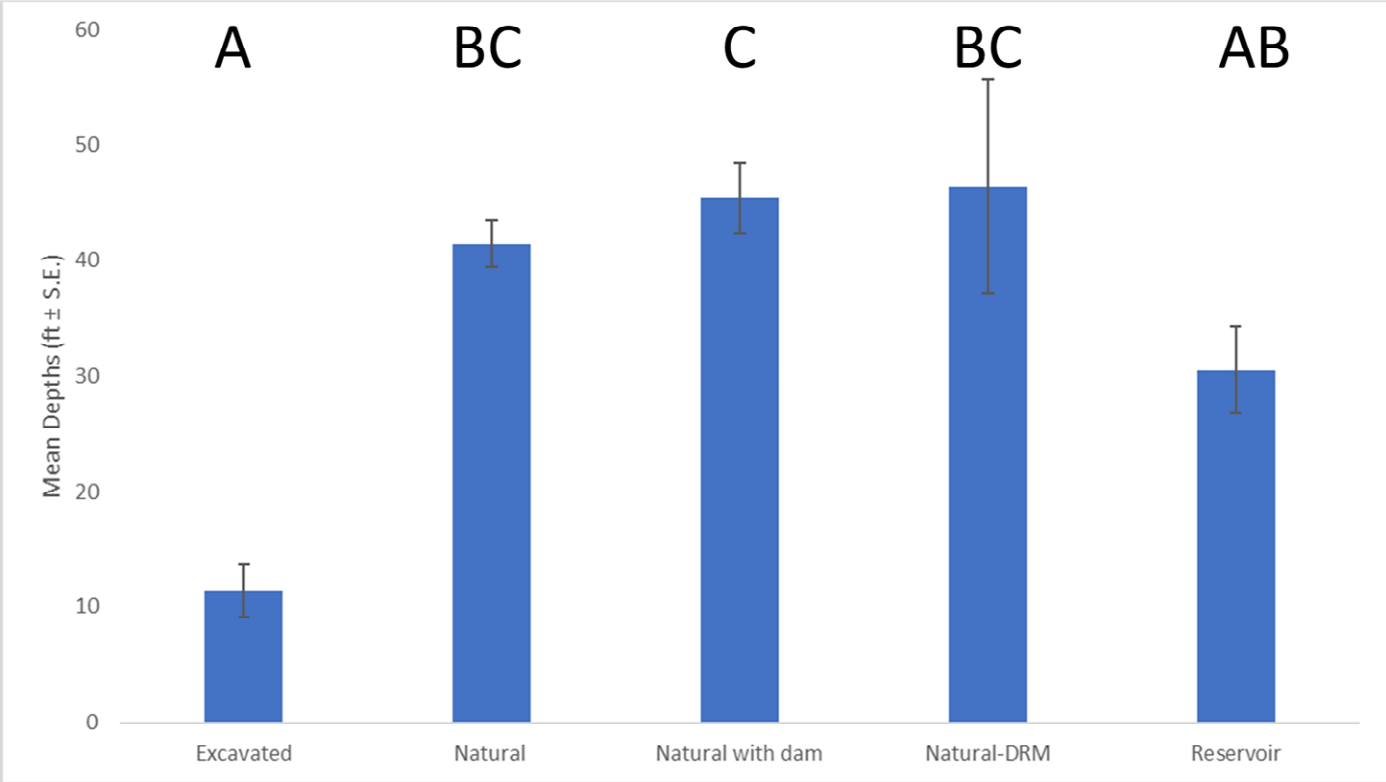

Figure 5. Mean depths (ft; ± S.E.) of lakes that experienced cyanobacteria blooms categorized by lake type.

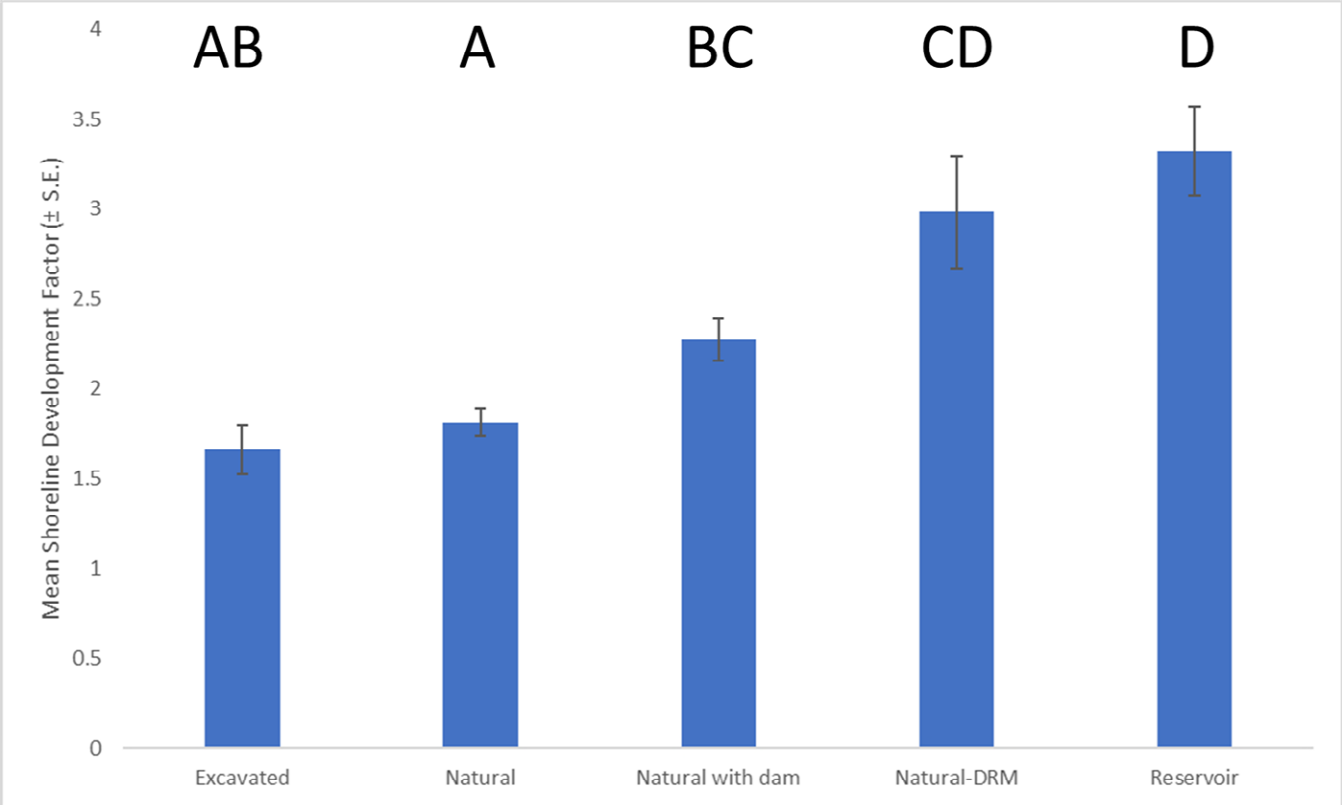

Figure 6. Mean SDFs (± S.E.) of lakes that experienced cyanobacteria blooms categorized by lake type.

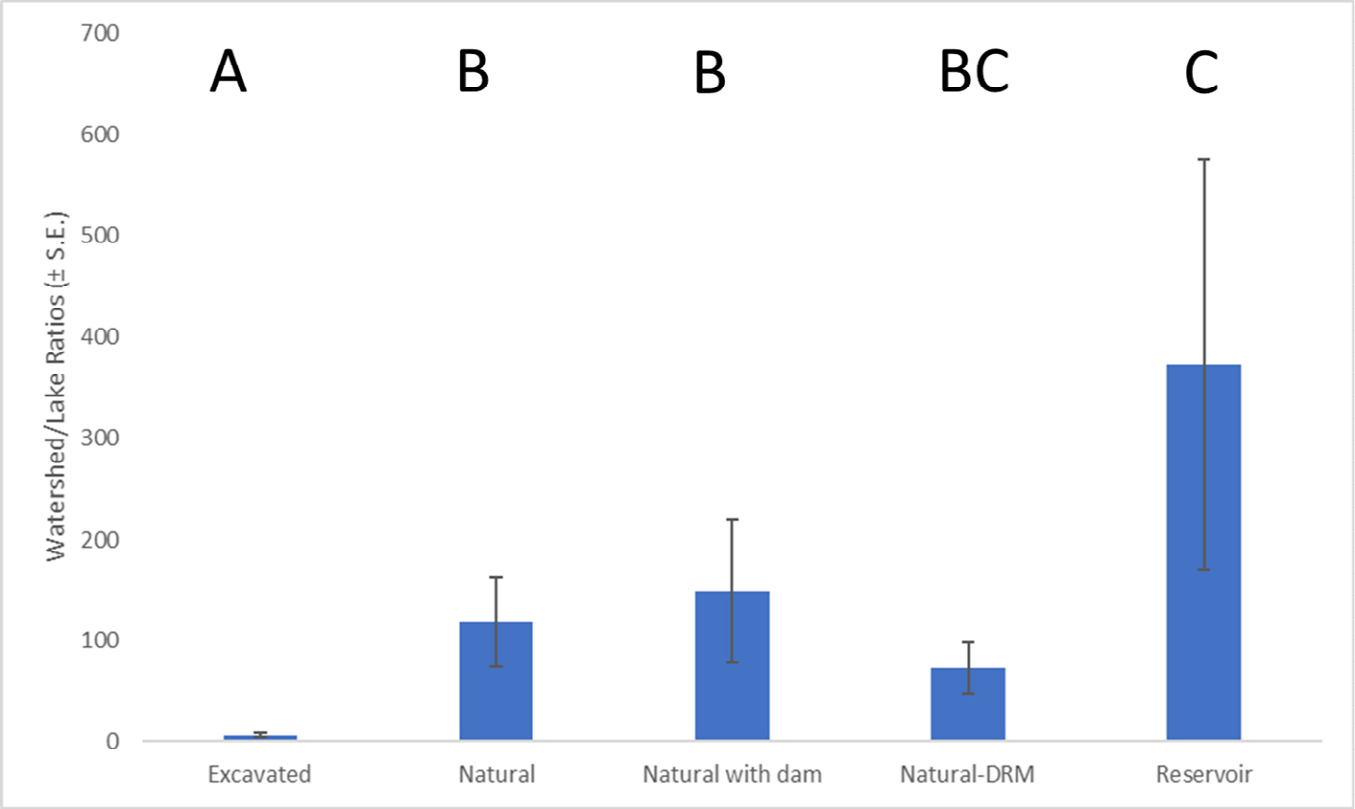

Figure 7. Mean watershed/lake ratios (± S.E.) of lakes that experienced cyanobacteria blooms categorized by lake type.

Excavated lakes and reservoirs tended to be the shallowest lakes to experience cyanobacteria blooms (ANOVA: $F = 6.86$, $df = 4, 185$, $p < 0.01$; Figure 5). Excavated and natural lakes that did not have a dam, and were not drowned river mouth lakes, tended to have the lowest SDFs. Reservoirs, drowned river mouth lakes, and natural lakes with dams generally had the highest SDFs (ANOVA: $F = 20.6$, $df = 4, 211$, $p < 0.01$; Figure 6). The reservoirs had higher mean watershed/lake ratios than the other lake types ($F = 7.3$, $df = 4, 204$, $p < 0.01$). However, there was no significant difference in watershed/lake ratios between reservoirs and drowned river mouth lakes (Figure 7). This is most likely because of the low number of drowned river mouth lakes and+ the high variability of reservoir watershed/lake ratios.

The Abraxis test strips agreed with laboratory analysis for most lakes sampled. To account for measurement uncertainty inherent to the test strips, results assume a conservative approach wherein a test strip microcystin value of <1 µg/L would indicate microcystin absence but any test strip value >1 µg/L would result in microcystin presence. With this approach, test strips would have agreed with lab results on microcystin presence for 88.7 percent (875) of the lakes sampled from 2016-2021. Test strips overestimated microcystin concentration relative to the laboratory results in 7.7 percent (76) of lakes. Test strips underestimated microcystin concentration relative to laboratory results in 3.5 percent (35) lakes. In total, there were 35 instances out of 986 samples wherein test strips returned a microcystin value <1 µg/L but the lab measured microcystin concentrations >1 µg/L. Of these 35 samples, 34 were below the USEPA advisory threshold of 8 µg/L.

The test strip logistic regression model indicated that test strips are useful as a tool to detect the presence of microcystin. Based on the logistic regression model when laboratory results were

≥ 8 µg/L, the test strips are 99.93 percent accurate at detecting the presence of microcystin (Figure 8).

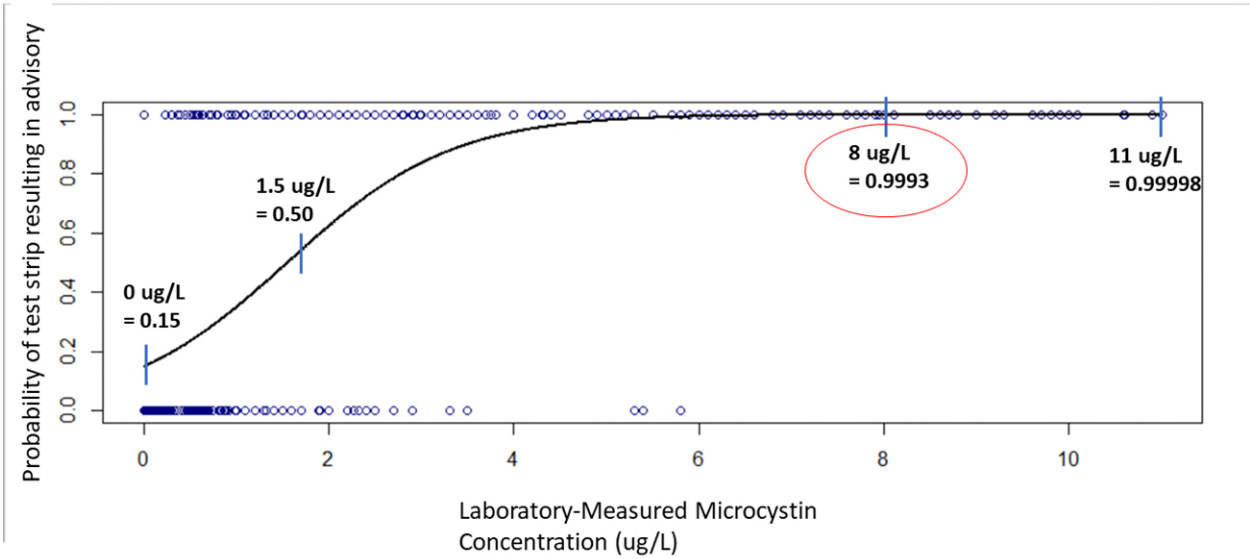

Figure 8. Logistic regression model detailing the probability that the results of a test strip will detect microcystin presence at different laboratory-determined microcystin concentrations.

Discussion

In Michigan, both the number of complaints about algae in general and the number of water bodies with confirmed cyanobacteria blooms has increased over the years. The number of water bodies in the state with confirmed cyanobacteria blooms is inversely related to latitude. While most of the blooms in the state are in the southern Lower Peninsula, each year we receive new reports about cyanobacteria in water bodies in the northern Lower and Upper Peninsula.

Lakes that are either natural lakes with dams at their outlets, which artificially elevate water levels, and reservoirs that were formed by impounding a lotic system remain over-represented (43 percent) amongst the water bodies that have experienced blooms. This is because based on EGLE's database of dam structures, only an estimated 11 percent of lakes that are >5 acres in the state are natural lakes with dams or reservoirs.

For details, and citations therein, outlining possible reasons why most confirmed cyanobacteria blooms have occurred in the southern Lower Peninsula and why natural lakes with dams and reservoirs are over-represented, see Parker (2020). Briefly, the southern Lower Peninsula is the most populated area of the state and contains more agricultural land use, which are likely sources of anthropogenic nutrient inputs. Reservoirs tend to have larger watershed-to-lake size ratios, meaning that their watersheds, and nutrient sources within, are larger than natural lakes. The reservoirs also tend to be shallow and have numerous coves/embayments. These small coves tend to be shallow and often stagnate and warm up in the summer, which may lead to cyanobacteria blooms.

Natural lakes with dams at their outlets had SDFs that were higher than natural lakes. Low head dams do not cause inundation of historic tributary valleys to the extent that reservoir dams do, so that is an unlikely cause of the increased SDF in those lakes. However, many of these lakes are highly populated and some of them such as Duck, Orion, and White Lakes in Oakland County and Hamlin Lake in Mason County have had artificial channels excavated into wetlands or low-lying terrestrial areas to increase the amount of lake shoreline. Besides raising water levels, the dams will also reduce the flow of lake water, which can lead to increased stagnation and reduce the amount of nutrients that are flushed out of the lake. Also, if homes along lakes with artificially elevated water levels use septic systems, there may be less unsaturated soils between the drain fields and groundwater to absorb nutrients. Furthermore, both reservoirs and natural lakes with dams often undergo artificial water level fluctuations. Reservoirs often undergo large water level fluctuations for dam maintenance activities and natural lakes with dams may have lake legal levels that mandate dam owners to lower the lakes in the winter and raise them in the summer. Lake level fluctuations have been shown to increase cyanobacteria blooms in some lakes (Bakker and Hilt, 2016; Carmignani and Roy, 2017), possibly as a result of decreased sediment nutrient retention during desiccation and subsequent nutrient release upon re-inundation (Callieri et al., 2014).

Finally, both excavated lakes and drowned river mouth lakes have been experiencing enough cyanobacteria blooms that they were compared separately in the above analyses. While natural, the drowned river mouth lakes were formed in similar ways to reservoirs and have some of the same characteristics as reservoirs such as large watersheds, high SDFs, and fluctuating water levels. While the drowned river mouth lakes do have large watersheds, the lakes tend to also be large, which reduced the watershed/lake size ratios. Many of the drowned river mouth lakes that have experienced cyanobacteria blooms also have well documented histories of anthropogenic disturbance (Steinman et al., 2006 and 2008; Iavorivska et al., 2021).

The excavated lakes tend to be shallow, with low SDFs and small watersheds. Although the watersheds for the excavated lakes are small, they are often surrounded by residential lots that may contribute lawn fertilizer nutrients. With no natural, perennial stream inputs of water, oftentimes the only sources of water to these lakes come in the form of storm water (personal observation), which can carry high amounts of nutrients (Steinman et al., 2006; Brabec et al., 2009). Finally, many excavated lakes either have no outlet, or have a perched outlet that water only flows out of ephemerally to prevent upland flooding (personal observation). Thus, these water bodies may only be able to flush nutrients out sporadically, if at all, and may function mostly as a nutrient sink. A summary of morphometric characteristics of reservoirs, natural lakes with dams, and excavated lakes can be found in Table 2.

Table 2. Summary of reservoir, natural lakes with dams, and excavated lakes that may contribute to cyanobacteria bloom formations.

Reservoirs	Natural Lakes with Dams	Excavated Lakes
Shallow	Highly populated	Shallow
High SDF	Water level fluctuations	Mostly storm water fed
High watershed/lake area ratios	Possible septic system issues	Perched/no outlet
Water level fluctuations	Decreased flow/increased water residence time	
Decreased flow/increased water residence time		

Conclusions

Both the number of citizen complaints about algae and the number of confirmed cyanobacteria blooms have increased since we began recording them. As detailed in Parker (2020), this is consistent with worldwide trends and is expected to continue given future, predicted climate scenarios, population/development, and agricultural practices.

Monitoring of cyanobacteria blooms by EGLE will continue. The MDHHS now posts monitoring results to an online, interactive mapper. EGLE has also used past cyanobacteria blooms to inform decisions to list several water bodies as not meeting the Other Indigenous Aquatic Life and Wildlife Designated Use in the 2022 Integrated Report, with phosphorus listed as the pollutant (Goodwin and Smith, 2022). Those water bodies can serve as focus areas for watershed management plan development and best management practice implementation to prevent nutrient pollution.

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Joshua Tellier, Aquatic Biologist
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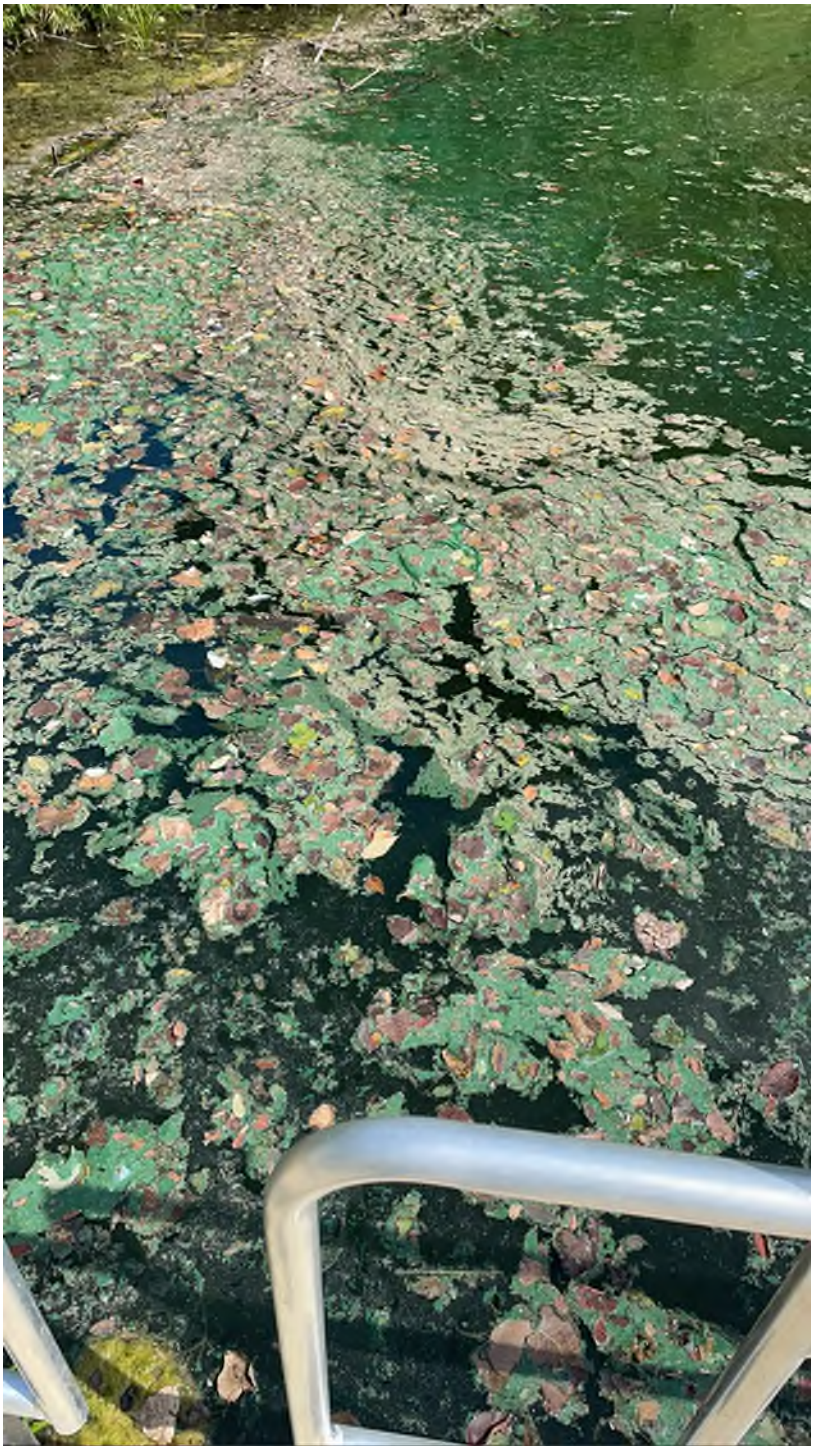
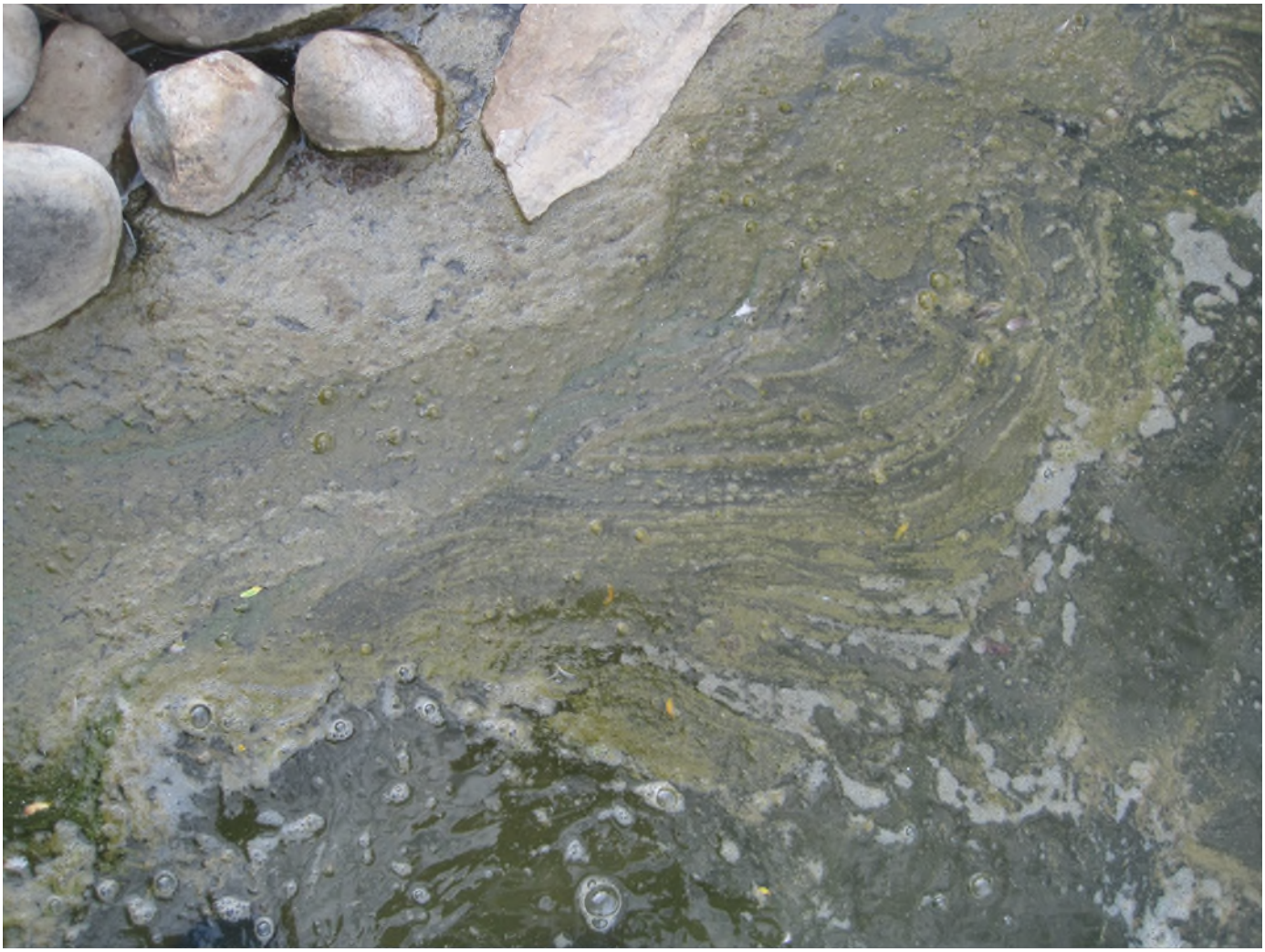
Appendix 1. Photographs and taxa identifications of cyanobacteria or algae that was sampled in 2022.



Identification: *Planktothrix* (cyanobacteria). Location: Cedar Lake, Ingham County.

Identification: *Phormidium* (benthic cyanobacteria). Location: Andale Lake, Oakland County.

Identification: *Oscillatoria* (benthic cyanobacteria). Location: Avon Lake, Oakland County.



Identification: *Phacotus lenticularis* (green algae) and Eugelenoids. Location: Sandshores Lake, Oakland County.

Identification: *Lyngbya* (benthic cyanobacteria). Location: Huyck Lake, Cass County.

Identification: *Dolichospermum* (cyanobacteria). Location: Lake Erie, Monroe County.

Identification: *Planktothrix* (cyanobacteria). Location: Coady Lake, Montcalm County.

Identification: coccoid cyanobacteria. Location: Sessions Lake, Ionia County.

Appendix 2. Raw cyanotoxin results for 2021 and 2022.

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Dixie Lake	Oakland	East	42.7626	-83.4845	Lake	3/12/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Gulfwood 2	42.5987	-83.5471	Lake	3/12/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Gulfwood1	42.5986	-83.5471	Lake	3/12/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Dixie Lake	Oakland	East	42.7680	-83.4898	Lake	3/12/21	Other	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Gulfwood 1	42.5988	-83.5470	Lake	3/12/21	Other	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Gulfwood 2	42.5988	-83.5469	Lake	3/12/21	Other	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Rood Lake	Lapeer	South Central side	43.0628	-83.2828	Lake	4/29/21	Other		<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Cornell Pond	Ingham	west	42.7049	-84.3969	Pond	5/17/21	Other	<1					No
Complaint	Cornell Pond	Ingham	east	42.7052	-84.3965	Pond	5/17/21	Other	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Chandler Lake	Grand Traverse	SE Dock	44.6852	-85.5214	Lake	5/18/21	clear		<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Fish Lake	Van Buren	NE	42.3247	-85.8060	Lake	5/18/21	clear	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Fish Lake	Van Buren	SE	42.3211	-85.8069	Lake	5/18/21	clear	1-10	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Lake Allegan	Allegan	Lincoln RD	42.5449	-85.8773	impound	5/18/21	Other	<1					Yes
Complaint	Narrow Lake	Eaton	boat launch	42.4359	-84.7795	Lake	5/19/21	clear	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Big Lake	Osceola	Crittendon Park	43.8671	-85.1905	Lake	5/20/21	Other	<1					No
Complaint	Ocqueoc Lake	Presque Isle	Circle DR edge of bloom	45.4679	-84.1140	Canal	5/20/21	Other	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Ocqueoc	Presque Isle	Circle Dr-middle bloom	45.4679	-84.1140	Canal	5/20/21	Other	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Hill Lake	Allegan	Fourth st	42.6705	-85.5877	Lake	5/21/21	clear	<1	1.33	<0.05	<0.05	<0.5	Yes
Complaint	Higgins Lake	Roscommon	Lakewood benthic algae	44.4698	-84.7193	Lake	5/24/21	Other	Test Fail	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Ledgewood	42.5953	-83.5389	Lake	5/24/21	clear	<1	<0.5	<0.5	5.53	<0.5	Yes
Complaint	Chandler Lake	Grand Traverse	boat launch	44.6856	-85.5203	Lake	5/25/21	clear		<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Chandler Lake	Grand Traverse	east shore	44.6865	-85.5238	Lake	5/25/21	clear		<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Chandler Lake	Grand Traverse	NW cove	44.6870	-85.5277	Lake	5/25/21	clear		<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Chandler Lake	Grand Traverse	Boat launch	44.6855	-85.5201	Lake	6/2/21	clear	<1					No
Complaint	Chandler Lake	Grand Traverse	Deep	44.6840	-85.5220	Lake	6/2/21	clear	<1					No
Complaint	Chandler Lake	Grand Traverse	Deep bottom	44.6839	-85.5219	Lake	6/2/21	Scum	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Chandler Lake	Grand Traverse	South	44.6829	-85.5217	Lake	6/2/21	clear	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Chandler Lake	Grand Traverse	Sw	44.6831	-85.5250	Lake	6/2/21	clear	<1					No
Complaint	Chandler Lake	Grand Traverse	Twin Bay	44.6839	-85.5246	Lake	6/2/21	Scum	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Chandler Lake	Grand Traverse	Mid west	44.6853	-85.5240	Lake	6/2/21	Scum	<1					No
Complaint	Chandler Lake	Grand Traverse	Nw	44.6873	-85.5279	Lake	6/2/21	Scum	<1					No
Complaint	Chandler Lake	Grand Traverse	North	44.6888	-85.5285	Lake	6/2/21	clear	<1					No

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Chandler Lake	Grand Traverse	NE	44.6881	-85.5244	Lake	6/2/21	clear	<1					No
Complaint	Driskels Lake	Cass	1	41.9056	-85.8022	Lake	6/3/21	clear	<1					No
Complaint	Driskels Lake	Cass	3	41.9066	-85.8021	Lake	6/3/21	clear	<1					
Complaint	Driskels Lake	Cass	4	41.9072	-85.7974	Lake	6/3/21	clear	<1					No
Complaint	Driskels Lake	Cass	5	41.9060	-85.8026	Lake	6/3/21	clear	<1					No
Complaint	Driskels	Cass	6	41.9053	-85.8026	Lake	6/3/21	Scum	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Driskels Lake	Cass	Plant	41.9061	-85.8025	Lake	6/3/21	Other	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Base Line Lake	Livingston	Baseview	42.4280	-83.8972	Lake	6/3/21	Scum	1-10	40.476	<0.5	<0.5	<0.5	Yes
Complaint	Dixie Lake	Oakland	Island st	42.7677	-83.4894	Lake	6/8/21	clear	<1					No
Complaint	Flat River Impoundment	Kent	Boat launch	42.9364	-85.3391	impound	6/9/21	clear	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Flat River Impoundment	Kent	East Main st	42.9347	-85.3382	impound	6/9/21	clear	<1					No
Complaint	Flat River Impoundment	Kent	West	42.9350	-85.3406	impound	6/9/21	clear	<1					No
Complaint	Runyan Lake	Livingston	Runyan Lake Pt	42.7617	-83.7480	Lake	6/9/21	Scum	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Thompson Lake	Livingston	Butler	42.6189	-83.9147	Lake	6/9/21	clear		2.23	<0.5	<0.5	<0.5	Yes
Complaint	Thompson Lake	Livingston	City Park beach	42.6174	-83.9205	Lake	6/9/21	clear		5.96	<0.5	<0.5	<0.5	Yes
Complaint	Higgins Lake	Roscommon	Lakewood	44.4697	-84.7193	Lake	6/10/21	clear	<1					No
Complaint	Driskels Lake	Cass	2	41.9060	-85.8022	Lake	6/11/21	clear	<1					No
Complaint	White Lake	Oakland	Deep	42.6626	-83.5661	Lake	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	SE cove	42.6578	-83.5621	Lake	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	SW cove	42.6574	-83.5740	Lake	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	Duck Lake rd	42.6688	-83.5742	Canal	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	Clarice	42.6703	-83.5742	Canal	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	Canal intersection	42.6730	-83.5709	Canal	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	NW	42.6802	-83.5703	Lake	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	North canals	42.6799	-83.5609	Canal	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	NW canals	42.6790	-83.5567	Canal	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	NE	42.6767	-83.5545	Lake	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	East	42.6675	-83.5596	Lake	6/15/21	clear	<1					No
Complaint	White Lake	Oakland	Boat launch	42.6640	-83.5747	Lake	6/15/21	clear	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Strawberry Lake	Livingston	Edgelake rd	42.4542	-83.8405	Lake	6/15/21	clear	1-10	1.718	<0.5	<0.5	<0.5	Yes
Complaint	Base Line Lake	Washtenaw	Deep	42.4245	-83.8941	Lake	6/15/21	clear	<1					No
Complaint	Base Line Lake	Livingston	Baseview	42.4284	-83.8965	Lake	6/15/21	clear	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Base Line Lake	Livingston	NW canals	42.4270	-83.9018	Canal	6/15/21	clear	<1					No
Complaint	Base Line	Livingston	West	42.4232	-83.9011	Lake	6/15/21	clear	<1					No

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Complaint	Base Line Lake	Washtenaw	SW	42.4209	-83.8956	Lake	6/15/21	clear	<1					No
Complaint	Base Line Lake	Washtenaw	SE	42.4230	-83.8877		6/15/21	clear	<1					No
Targeted	Hess Lake	Newaygo	Boat launch	43.3931	-85.7829	Lake	6/28/21	Scum	>10	46.417	<0.5	<0.5	<0.5	Yes
Targeted	Hess Lake	Newaygo	1372 E. 88th ST	43.3924	-85.7688	Lake	6/28/21	Scum	<1					No
Targeted	Hess Lake	Newaygo	1622 E. 88th	43.3917	-85.7607	Lake	6/28/21	Scum	1-10					No
Targeted	Hess Lake	Newaygo	9161 Catalpa	43.3887	-85.7536	Lake	6/28/21	Scum	1-10					No
Complaint	Portage Lake	Livingston	Portage Lake AVE	42.4316	-83.9034	Lake	6/28/21	Scum	>10	33.55	<0.5	<0.5	<0.5	Yes
Complaint	Strawberry Lake	Livingston	EdgeLake Dr	42.4542	-83.8402	Lake	6/29/21	Scum	1-10	2.29	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Boat launch	42.8627	-85.2137	Lake	7/1/21	Scum	>10	64.06	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Deep	42.8651	-85.2004	Lake	7/1/21	Scum		3.99	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Site A	42.8596	-85.2187	Lake	7/1/21	Scum	1-10	4.32	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Site B	42.8596	-85.2240	Lake	7/1/21	clear	<1	<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Site C	42.8547	-85.2200	Lake	7/1/21	clear	<1	0.572	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Site D	42.8574	-85.2140	Lake	7/1/21	Scum	1-10	2.92	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Site E	42.8603	-85.2065	Lake	7/1/21	Scum	1-10	7.94	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Site F	42.8635	-85.1976	Lake	7/1/21	Scum	>10	10.083	<0.5	<0.5	<0.5	Yes
Complaint	Morrison Lake	Ionia	Site G	42.8672	-85.2088	Lake	7/1/21	clear	<1	<0.5	<0.5	<0.5	<0.5	Yes
surveillance	Hess Lake	Newaygo	1372 E. 88th	43.3925	-85.7689	Lake	7/14/21	Scum		<0.5	<0.5	<0.5	<0.5	Yes
surveillance	Hess Lake	Newaygo	1622 E 88TH	43.3917	-85.7606	Lake	7/14/21	Scum		<0.5	<0.5	<0.5	<0.5	Yes
surveillance	Hess Lake	Newaygo	9121 CATALPA	43.3891	-85.7537	Lake	7/14/21	Scum		<0.5	<0.5	<0.5	<0.5	Yes
surveillance	Hess Lake	Newaygo	boat launch	43.3932	-85.7829	Lake	7/14/21	Scum		<0.5	<0.5	<0.5	<0.5	Yes
Complaint	Lime Lake	Hillsdale	Klein residence	41.7859	-84.3799	Lake	7/20/21	clear		<0.5	<0.5	<0.5	<0.5	Yes
Targeted	Belleville Lake	Wayne	Sandys	42.2130	-83.4433	impound	7/26/21	clear	<1					No
Targeted	Belleville Lake	Wayne	west launch	42.2095	-83.5410	impound	7/26/21	clear	<1					No
Targeted	Belleville Lake	Wayne	MDNR boat launch	42.2137	-83.4733	impound	7/26/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Ford Lake	Washtenaw	Lakeside Park	42.2045	-83.5622	impound	7/26/21	clear	<1					No
Targeted	Ford Lake	Washtenaw	Ford Lake Park	42.2109	-83.5730	impound	7/26/21	clear	<1					No
Targeted	Ford Lake	Washtenaw	Lakeshore apts	42.2099	-83.5667	impound	7/26/21	Scum	1-10	3.7	<0.25	<0.25	<0.5	Yes
Complaint	Dixie Lake	Oakland	East shore	42.7669	-83.4884	Lake	7/27/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
surveillance	Hardy Dam Pond	Newaygo	Marina	43.4913	-85.6365	impound	7/28/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Bass Lake	Mason	Marrison Park	43.8341	-86.4064	Lake	7/28/21	clear	<1					No
Targeted	Bass Lake	Mason	Beach	43.8290	-86.4187	Lake	7/28/21	clear	<1					No
Targeted	Bass Lake	Mason	NW launch	43.8397	-86.4178	Lake	7/28/21	clear	<1					No
Targeted	Bass Lake	Mason	Lakeshore DR	43.8266	-86.4174	Lake	7/28/21	Scum	>10	4	<0.25	<0.25	<0.5	Yes
Targeted	Hess Lake	Newaygo	boat launch	43.3931	-85.7830	Lake	7/29/21	clear	<1					No

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Targeted	Hess Lake	Newaygo	1372 88th	43.3925	-85.7688	Lake	7/29/21	clear	<1					No
Targeted	Hess Lake	Newaygo	Catalpa	43.3892	-85.7537	Lake	7/29/21	clear	<1					No
Targeted	Hess Lake	Newaygo	1672 88th	43.3920	-85.7601	Lake	7/29/21	clear	1-10	<0.5	<0.25	<0.5	<0.25	Yes
Complaint	North Scott Lake	Van Buren	Boat launch	42.3337	-86.0008	Lake	8/2/21	Scum	<1	0.7	<0.25	<0.25	<0.5	Yes
Complaint	North Scott Lake	Van Buren	Broadway	42.3292	-85.9986	Lake	8/2/21	Scum	<1	1.3	<0.25	<0.25	<0.5	Yes
Complaint	South Scott Lake	Van Buren	Beach	42.3232	-85.9961	Lake	8/2/21	clear	<1					No
Complaint	Walker Lake	Oakland	Beach	42.6118	-83.1223	Lake	8/3/21	clear	<1					No
Complaint	Emerald Lake	Oakland	Beach	42.6166	-83.1139	Lake	8/3/21	clear	<1					No
Complaint	Square Lake	Oakland	Condo	42.6110	-83.3080	Lake	8/3/21	clear	<1					No
Complaint	Coventry Lake	Oakland	Inkster rd	42.5265	-83.3223	Lake	8/3/21	Scum	<1	<0.5	<.25	<0.25	<0.5	Yes
Complaint	Lake Sherwood		Ravinewood	42.5865	-83.5470	Lake	8/3/21	Scum	>10	635.9	<0.25	0.82	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Ledgewood beach	42.5950	-83.5389	Lake	8/3/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Driftwood beach	42.5935	-83.5548	Lake	8/3/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Raftwood docks	42.5928	-83.5461	Lake	8/3/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Pikewood	42.5921	-83.5368	Lake	8/3/21	clear	<1					No
Complaint	Unnamed pond	Livingston	Spring Grove	42.5727	-83.7444	Lake	8/3/21	clear	<1					No
Complaint	Andale Lake	Oakland	3 Lakes Dr	42.6135	-83.1129	Lake	8/4/21	Scum	<1	363.4	<0.25	1.51	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Kayak launch	43.2941	-84.7667	Lake	8/4/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Beach	43.2968	-84.7665	Lake	8/5/21	Scum	>10	12.3	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	North	43.2970	-84.7682	Lake	8/5/21	clear	1-10	3	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	SW	43.2943	-84.7705	Lake	8/5/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Hunscher Lake Park	Gratiot	SE	43.2940	-84.7669	Lake	8/5/21	clear	1-10					Yes
Complaint	Pine Lake	Genesee	Eleanor	42.7925	-83.7656	Lake	8/5/21	clear	<1					No
Complaint	Swan Lake	Allegan	South Canal	42.4602	-85.9552	Lake	8/5/21	Scum	>10	7.3	<0.25	<0.25	<0.5	Yes
Complaint	Swan Lake	Allegan	Lakeview	42.4695	-85.9590	Lake	8/5/21	Scum	1-10	1.2	<0.25	<0.25	<0.5	Yes
Complaint	Sandshores Lake	Oakland	Little Creek	42.6196	-83.1137	Lake	8/5/21	Scum	<1	3.3	<0.25	<0.25	<0.5	Yes
Complaint	Andale Lake	Oakland	Three Lakes	42.6135	-83.1130	Lake	8/6/21	clear	<1					Yes
Complaint	Mandon Lake	Oakland	Round Lake Rd	42.6223	-83.4683	Lake	8/6/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Livermore	Keweenaw	North shore, portage trail	48.0666	-88.7077	Lake	8/8/21	Scum		<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Richie	Keweenaw	Campground shoreline	48.0510	-88.6867	Lake	8/8/21	clear		<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Intermediate Lake	Keweenaw	Portage trail	48.0338	-88.7187	Lake	8/8/21	clear		<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Chickenbone Lake	Keweenaw	west campground	48.0643	-88.7242	Lake	8/8/21	clear		<0.5	<0.25	<0.25	<0.5	No
Targeted	Belleville Lake	Wayne	MDNR launch	42.2138	-83.4733	impound	8/9/21	clear	<1					No
Targeted	Belleville Lake	Wayne	Edison Lake RD	42.2130	-83.4433	impound	8/9/21	clear	<1					No

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Targeted	Ford Lake	Washtenaw	Lakeside Apartments	42.2100	-83.5667	impound	8/9/21	clear	<1					No
Targeted	Ford Lake	Washtenaw	Lakeside Park	42.2045	-83.5622	impound	8/9/21	clear	<1					No
Targeted	Ford Lake	Washtenaw	Ford Lake Park	42.2109	-83.5730	impound	8/9/21	clear	<1					No
Complaint	Long Lake	Washtenaw	East camp	42.3488	-84.0590	Lake	8/10/21	Scum	<1	0.6	<0.25	<0.25	<0.5	Yes
Complaint	Long Lake	Washtenaw	west camp	42.3487	-84.0596	Lake	8/10/21	Scum	<1	3.3	<0.25	<0.25	<0.5	Yes
surveillance	Bass Lake	Mason	Marrison Park	43.8341	-86.4065	Lake	8/11/21	clear	<1					No
surveillance	Bass Lake	Mason	Ferwerda's	43.8290	-86.4186	Lake	8/11/21	clear	<1					No
surveillance	Bass Lake	Mason	NW Launch	43.8397	-86.4178	Lake	8/11/21	Scum	1-10	0.7	<0.25	<0.25	<0.5	Yes
Targeted	Hess Lake	Newaygo	boat launch	43.3932	-85.7829	Lake	8/12/21	Scum	<1					No
Targeted	Hess Lake	Newaygo	1372 E. 88th ST	43.3925	-85.7689	Lake	8/12/21	Scum	<1					No
Targeted	Hess Lake	Newaygo	9121 Catalpa Ave	43.3891	-85.7537	Lake	8/12/21	Scum	<1	2.9	<0.25	<0.25	<0.5	Yes
Targeted	Hess Lake	Newaygo	1622 E. 88th ST	43.3917	-85.7606	Lake	8/12/21	Scum	<1					No
Targeted	Hess Lake	Newaygo	9614 Peninsula Dr	43.3800	-85.7650	Lake	8/12/21	Scum	<1					No
surveillance	Hardy Dam Pond	Newaygo	Marina launch	43.4913	-85.6365	impound	8/12/21	Scum	>10	16.5	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Beach	43.2956	-84.7718	Lake	8/12/21	clear	>10	16.7	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	North	43.2965	-84.7730	Lake	8/12/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Playground beach	43.2943	-84.7740	Lake	8/13/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Kayak launch	43.2930	-84.7724	Lake	8/13/21	clear	1-10	3.1	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Campground beach	43.2958	-84.7751	Lake	8/13/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Swan Lake	Allegan	Boat launch	42.4662	-85.9545	Lake	8/13/21	Scum	>10	7.6	<0.25	<0.25	<0.5	Yes
Complaint	Swan Lake	Allegan	Deep	42.4654	-85.9634	Lake	8/13/21	Scum	<1					
Complaint	Swan Lake	Allegan	Campground beach	42.4681	-85.9641	Lake	8/13/21	Scum	<1					No
Complaint	Swan Lake	Allegan	Estate launch	42.4637	-85.9650	Lake	8/13/21	Scum	<1					No
Complaint	Swan Lake	Allegan	South main	42.4601	-85.9591	Lake	8/13/21	Scum	<1					No
Complaint	Swan Lake	Allegan	South canal entrance	42.4602	-85.9568	Canal	8/13/21	Scum	1-10	4.9	0.26	<0.25	<0.5	Yes
Complaint	Swan Lake	Allegan	North	42.4690	-85.9583	Lake	8/13/21	Scum	<1					No
Complaint	North Scott Lake	Van Buren	Boat launch	42.3336	-86.0007	Lake	8/13/21	clear	<1					
Complaint	North Scott Lake	Van Buren	Deep	42.3307	-85.9989	Lake	8/13/21	clear	<1					
Complaint	North Scott Lake	Van Buren	South cove	42.3293	-86.0012	Lake	8/13/21	clear	<1					
Complaint	North Scott Lake	Van Buren	Broadway	42.3293	-85.9985	Lake	8/13/21	clear	<1					
Complaint	North Scott Lake	Van Buren	Channel entrance	42.3277	-85.9957	Lake	8/13/21	clear	<1					
Complaint	North Scott Lake	Van Buren	NE	42.3308	-85.9949	Lake	8/13/21	clear	<1					
Complaint	North Scott Lake	Van Buren	Resort beach	42.3326	-86.0023	Lake	8/13/21	clear	<1					
Complaint	North Scott Lake	Van Buren	Outlet	42.3306	-86.0038	Lake	8/13/21	clear	<1					
Complaint	White River	Muskegon	E River st	43.4126	-86.3409	River/Stream	8/15/21	clear	<1					No

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	White River	Muskegon	E River st	43.4126	-86.3409	River/Stream	8/15/21	clear	<1					No
Complaint	Soft Water Lake	Genesee	Soft Water Lake DR	42.7910	-83.8387	Lake	8/16/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Soft Water Lake	Genesee	Soft Water Lake DR	42.7910	-83.8386	Lake	8/16/21	Scum	<1					Yes
Complaint	Avon Lake	Oakland	S Shore	42.6469	-83.0965	Lake	8/16/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Avon Lake	Oakland	S. Shore	42.6469	-83.0965	Lake	8/16/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Avon Lake	Oakland	Nw	42.6486	-83.1008	Lake	8/16/21	Scum	<1	0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Deep	42.7171	-83.0900	impound	8/16/21	clear	<1					No
Targeted	Stony Creek Lake	Macomb	Kayak rental	42.7300	-83.0935	impound	8/16/21	clear	<1					No
Targeted	Stony Creek Lake	Macomb	Baypoint Beach	42.7290	-83.0914	impound	8/16/21	clear	<1					No
Targeted	Stony Creek Lake	Macomb	Eastwood Beach	42.7250	-83.0837	impound	8/16/21	clear	<1					No
Targeted	Stony Creek Lake	Macomb	NE cove	42.7305	-83.0730	impound	8/16/21	Scum	<1		0.32	<0.25		Yes
Targeted	Stony Creek Lake	Macomb	Inflow dam	42.7363	-83.0718	impound	8/16/21	Scum	<1	0.7	2.45	<0.25	0.5	Yes
Complaint	Tommy's Lake	Oakland	Camp Agawam Lake beach	42.7610	-83.2725	Lake	8/16/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Soft Water Lake	Genesee	Soft Water Lake Dr	42.7910	-83.8385	Lake	8/16/21	Scum	1-10	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Soft Water Lake	Genesee	Soft Water Lake Dr	42.7910	-83.8386	Lake	8/16/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	West Bloomfield Lake	Oakland	Park	42.5612	-83.3818	Lake	8/17/21	Scum	>10	65.9	<0.25	<0.25	<0.5	Yes
Targeted	West Bloomfield Lake		Deep	42.5617	-83.3829	Lake	8/17/21	Scum						
Targeted	West Bloomfield Lake		Deep	42.5617	-83.3829	Lake	8/17/21	Scum						
Targeted	West Bloomfield Lake	Oakland	SW	42.5614	-83.3835	Lake	8/17/21	Scum	>10	99.2	<0.25	<0.25	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Ravinewood Beach	42.5850	-83.5484	Lake	8/18/21	Scum	>10	1105.9	<0.25	0.58	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Ravinewood DR	42.5866	-83.5472	Lake	8/18/21	Scum	>10	79.8	<0.25	0.65	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Deep	42.5830	-83.5503	Lake	8/18/21	Scum	>10	18.3	<0.25	0.66	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Driftwood Beach	42.5936	-83.5547	Lake	8/18/21	Scum	>10	335.8	<0.25	0.43	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Ledgewood	42.5954	-83.5390	Lake	8/18/21	Scum	1-10	4.3	<0.25	0.92	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Pikewood	42.5920	-83.5370	Lake	8/18/21	Scum	>10	8.8	<0.25	1.08	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Raftwood	42.5932	-83.5458	Lake	8/18/21	Scum	>10	11.7	<0.25	0.78	<0.5	Yes
Complaint	Unnamed pond	Oakland	Petros	42.6138	-83.4044	Lake	8/18/21	clear	<1					No
Complaint	Hubscher Park Lake	Gratiot	Main beach left	43.2953	-84.7716	Lake	8/18/21	Scum	1-10	2.5	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Main beach right	43.2959	-84.7719	Lake	8/18/21	Scum	>10	98.4	<0.25	<0.25	<0.5	Yes
Targeted	West Bloomfield Lake	Oakland	NW	42.5627	-83.3832	Lake	8/18/21	Scum	>10	10.9	<0.25	<0.25	<0.5	Yes
Targeted	West Bloomfield Lake	Oakland	NE	42.5625	-83.3806	Lake	8/18/21	Scum	>10	165.6	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Campground beach	43.2965	-84.7737	Lake	8/18/21	clear	1-10	0.5	<0.25	<0.25	<0.5	Yes
Targeted	West Bloomfield Lake	Oakland	SE	42.5610	-83.3804	Lake	8/18/21	Scum	>10	45.1	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	kayak launch	43.2929	-84.7725	Lake	8/18/21	Scum	>10	25.2	<0.25	<0.25	<0.5	Yes

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Hubscher Park Lake	Gratiot	Pavilion	43.2931	-84.7755	Lake	8/18/21	Scum	>10	175.1	<0.25	<0.25	<0.5	Yes
Complaint	Lake Allegan	Allegan	Monroe	42.5461	-85.9181	impound	8/18/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Allegan	Allegan	Manor Ln	42.5468	-85.9402	impound	8/18/21	clear	<1					No
Complaint	Lake Allegan	Allegan	Dam	42.5619	-85.9504	impound	8/18/21	clear	<1					No
Complaint	Swan Lake	Allegan	Boat launch	42.4661	-85.9543	Lake	8/19/21	Scum	1-10	7.9	<0.25	<0.25	<0.5	Yes
Complaint	Swan Lake	Allegan	Deep	42.4656	-85.9633	Lake	8/19/21	Scum	<1					
Complaint	Swan Lake	Allegan	North	42.4689	-85.9586	Lake	8/19/21	Scum	<1					No
Complaint	Swan Lake	Allegan	Campground beach	42.4679	-85.9645	Lake	8/19/21	Scum	>10	10.6	<0.25	<0.25	<0.5	Yes
Complaint	Swan Lake	Allegan	Estate launch	42.4638	-85.9650	Lake	8/19/21	Scum	>10	17.3	<0.25	<0.25	<0.5	Yes
Complaint	Swan Lake	Allegan	South cove	42.4604	-85.9606	Lake	8/19/21	Scum	>10	16.9	<0.25	<0.25	<0.5	Yes
Complaint	Swan Lake	Allegan	South canal entrance	42.4602	-85.9567	Canal	8/19/21	Scum	1-10	8.7	0.32	<0.25	<0.5	Yes
Complaint	Round Lake	Shiawassee	east A.M.	42.8181	-84.0525	Lake	8/20/21	Scum	>10	62	<0.25	<0.25	<0.5	Yes
Complaint	Round Lake	Shiawassee	east P.M.	42.8181	-84.0525	Lake	8/20/21	Scum	>10	11.5	<0.25	<0.25	<0.5	Yes
Complaint	North Lake	Washtenaw	Webbs Landing	42.3931	-84.0013	Lake	8/21/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	AWRI	43.2339	-86.2599	Lake	8/23/21	Scum	1-10					No
Complaint	Muskegon Lake	Muskegon	Fisherman's Landing	43.2439	-86.2438	Lake	8/23/21	Scum	>10	334.3	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Harbor Towne Beach	43.2301	-86.3263	Lake	8/23/21	clear	<1					No
Complaint	Muskegon Lake	Muskegon	Jaycees launch	43.2154	-86.3153	Lake	8/23/21	clear	<1					No
Complaint	Muskegon Lake	Muskegon	Grand Trunk launch	43.2173	-86.2944	Lake	8/23/21	clear	<1					No
Complaint	Muskegon Lake	Muskegon	Water Sports Park	43.2507	-86.2693	Lake	8/23/21	Scum	>10	70	<0.25	<0.25	<0.5	Yes
Complaint	Bear Lake Channel	Muskegon	Bear Lake Tavern	43.2434	-86.2964	Canal	8/23/21	Scum	1-10					
Complaint	Bear Lake		Fleming beach	43.2586	-86.2718	Lake	8/23/21	clear	<1					
Complaint	Bear Lake		Lake st launch	43.2612	-86.2774	Lake	8/23/21	clear	<1					
Complaint	White Lake	Muskegon	Lau Rd launch	43.3761	-86.4212	Lake	8/23/21	clear	<1					No
Complaint	White Lake		Maple Grove beach	43.4012	-86.3584	Lake	8/23/21	Scum	<1					No
Complaint	White Lake	Muskegon	Montague municipal launch	43.4114	-86.3570	Lake	8/23/21	clear	<1					No
Complaint	White Lake	Muskegon	Goodrich Park	43.4092	-86.3520	Lake	8/23/21	clear	<1					No
Complaint	White Lake	Muskegon	Crosswinds	43.4064	-86.3500	Lake	8/23/21	Scum	>10					No
Complaint	White Lake	Muskegon	Municipal marina	43.4099	-86.3517	Lake	8/23/21	Scum	>10	55.7	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Svensson Park	43.3970	-86.3549	Lake	8/23/21	Scum	<1					No
Complaint	White Lake		Mill Pond launch	43.3901	-86.3552	Lake	8/23/21	Scum	>10					No
Complaint	White Lake	Muskegon	Scenic dr launch	43.3632	-86.4120	Lake	8/23/21	clear	<1					No
Complaint	Half Moon Lake	Muskegon	Moore's County Park beach	43.2621	-85.8117	Lake	8/23/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Half Moon Lake		Launch beach	43.2598	-85.8107	Lake	8/23/21	clear	<1					No

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Complaint	Hubscher Park Lake	Gratiot	Kayak launch	43.2930	-84.7724	Lake	8/24/21	Scum	>10	30.4	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	SW beach	43.2931	-84.7754	Lake	8/24/21	clear	<1					No
Complaint	Hubscher Park Lake	Gratiot	Campground beach	43.2958	-84.7751	Lake	8/24/21	clear	<1					No
Complaint	Hubscher Park Lake	Gratiot	Main beach	43.2960	-84.7720	Lake	8/24/21	Scum	>10	196	<0.25	<0.25	<0.5	Yes
Complaint	Hubscher Park Lake	Gratiot	Playground beach	43.2943	-84.7740	Lake	8/24/21	clear	<1					No
Complaint	Hubscher Park Lake	Gratiot	Deep	43.2935	-84.7749	Lake	8/24/21	clear						
Complaint	Avon Lake		North Park	42.6489	-83.0987	Lake	8/26/21	Scum	<1					No
Complaint	Avon Lake		North Park	42.6489	-83.0987	Lake	8/26/21	Scum	<1					No
Complaint	Avon Lake	Oakland	South Park	42.6467	-83.0987	Lake	8/26/21	Scum	<1					No
Complaint	Avon Lake		S shore dr	42.6469	-83.0965	Lake	8/26/21	Scum	<1					No
Complaint	Avon Lake	Oakland	Mackwood	42.6488	-83.1007	Lake	8/26/21	Scum	1-10	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Avon Lake		Deep	42.6482	-83.0956	Lake	8/26/21	clear	<1					No
Complaint	Sandshores Lake	Oakland	Sandshores beach	42.6212	-83.1140	Lake	8/26/21	clear	<1					No
Complaint	Sandshores Lake	Oakland	Little Creek	42.6199	-83.1136	Lake	8/26/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Sandshores Lake	Oakland	Deep	42.6210	-83.1149	Lake	8/26/21	clear	<1					No
Complaint	Sandshores Lake	Oakland	Se	42.6193	-83.1141	Lake	8/26/21	clear	<1					No
Complaint	Emerald Lake	Oakland	Beach	42.6165	-83.1140	Lake	8/26/21	clear	<1					No
Complaint	Andale Lake	Oakland	Easement	42.6136	-83.1128	Lake	8/26/21	Scum	>10	557.1	<0.25	1.7	<0.5	Yes
Complaint	Andale Lake	Oakland	Easement	42.6135	-83.1128	Lake	8/26/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Pebble Lake	Oakland	Pebble point dr	42.6108	-83.1192	Lake	8/26/21	Scum	<1					No
Complaint	Pebble Lake	Oakland	Pebble point dr	42.6108	-83.1192	Lake	8/26/21	clear	<1					No
Complaint	Walker Lake	Oakland	Beach	42.6117	-83.1220	Lake	8/26/21	clear	<1					No
Complaint	Sandshores Lake	Oakland	SW	42.6193	-83.1159	Lake	8/26/21	clear	<1					No
Targeted	West Bloomfield Lake	Oakland	Lake bluff	42.5627	-83.3815	Lake	8/26/21	Scum	>10					Yes
Targeted	West Bloomfield Lake	Oakland	Park	42.5613	-83.3815	Lake	8/26/21	Scum	>10	56.9	<0.25	<0.25	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Ravinewood beach	42.5848	-83.5482	Lake	8/26/21	Scum	>10	12.7	<0.25	0.4	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Driftwood beach	42.5934	-83.5549	Lake	8/26/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Raftwood	42.5933	-83.5462	Lake	8/26/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Ledgewood	42.5950	-83.5389	Lake	8/26/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Pikewood	42.5922	-83.5370	Lake	8/26/21	clear	<1					No
Complaint	Thornapple Lake	Barry	boat launch	42.6178	-85.1984	Lake	8/27/21	Scum	1-10	2.5	<0.25	<0.25	<0.5	Yes
Complaint	Thornapple Lake	Barry	Beach	42.6209	-85.1938	Lake	8/27/21	Scum	1-10	8.7	<0.25	<0.25	<0.5	Yes
Complaint	Wadness Lake	Genesee	Sheridan	42.9349	-83.9286	Lake	8/27/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Pine River	Mackinac	South Pine River rd	46.0561	-84.6567	River/Stream	8/30/21	Scum	<1		<0.25	<0.25		Yes
Complaint	Hubscher Park Lake	Gratiot	Main beach left	43.2950	-84.7717	Lake	8/31/21	clear	<1		<0.25	<0.25		Yes

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Hubscher Park Lake	Gratiot	Main beach right	43.2959	-84.7719	Lake	8/31/21	clear	<1					No
Complaint	Hubscher Park Lake	Gratiot	Campground beach	43.2965	-84.7737	Lake	8/31/21	clear	<1					No
Complaint	Hubscher Park Lake	Gratiot	kayak launch	43.2929	-84.7725	Lake	8/31/21	clear	<1					No
Complaint	Hubscher Park Lake	Gratiot	Pavillion beach	43.2931	-84.7755	Lake	8/31/21	clear	<1					No
Complaint	Andale Lake	Oakland	Easement	42.6136	-83.1128	Lake	8/31/21	Scum	>10	342	<0.25	4.94	<0.5	Yes
Complaint	Andale Lake	Oakland	Easement	42.6136	-83.1128	Lake	8/31/21	Scum	>10	342	<0.25	4.94	<0.5	yes
Complaint	Sandshores Lake	Oakland	Beach	42.6210	-83.1140	Lake	8/31/21	clear	<1					
Complaint	Sandshores Lake	Oakland	SE	42.6194	-83.1136	Lake	8/31/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Eastwood beach	42.7245	-83.0840	impound	8/31/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Eastwood beach	42.7245	-83.0840	impound	8/31/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Eastwood beach	42.7244	-83.0842	impound	8/31/21	Scum	<1	1.3	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Inflow dam	42.7366	-83.0720	impound	8/31/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Inflow dam	42.7367	-83.0721	impound	8/31/21	clear	<1					No
Targeted	Stony Creek Lake	Macomb	Baypoint beach	42.7284	-83.0906	impound	8/31/21	Scum	<1					
Targeted	Stony Creek Lake	Macomb	Baypoint beach	42.7283	-83.0906	impound	8/31/21	clear	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Kayak launch	42.7300	-83.0937	impound	8/31/21	clear	<1					
Targeted	Stony Creek Lake	Oakland	Winter Cove	42.7267	-83.0994	impound	8/31/21	Scum	1-10	1.1	1.67	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Boat launch	42.7190	-83.0853	impound	8/31/21	Scum	<1					
Targeted	Stony Creek Lake	Macomb	Boat launch	42.7190	-83.0854	impound	8/31/21	clear	<1					
Complaint	Muskegon Lake	Muskegon	Harbor Towne Beach	43.2301	-86.3263	Lake	9/2/21	clear	<1					No
Complaint	Muskegon Lake	Muskegon	Harbor Towne beach	43.2299	-86.3269	Lake	9/2/21	clear	<1					No
Complaint	Muskegon Lake	Muskegon	Grand Trunk launch	43.2172	-86.2943	Lake	9/2/21	Scum	>10					No
Complaint	Muskegon Lake	Muskegon	Heritage Landing dock	43.2306	-86.2629	Lake	9/2/21	Scum	>10		<0.25	<0.25		Yes
Complaint	Muskegon Lake	Muskegon	Fisherman's Landing	43.2439	-86.2437	Lake	9/2/21	Scum	>10		0.55	<0.25		Yes
Complaint	Muskegon Lake	Muskegon	Water sports park	43.2510	-86.2686	Lake	9/2/21	Scum	>10					No
Complaint	Bear Lake	Muskegon	Channel	43.2433	-86.2964	Canal	9/2/21	clear	<1					No
Complaint	White Lake	Muskegon	Scenic dr launch	43.3632	-86.4120	Lake	9/2/21	clear	<1					No
Complaint	White Lake	Muskegon	Mill Pond launch	43.3902	-86.3551	Lake	9/2/21	Scum	1-10					No
Complaint	White Lake	Muskegon	Svensson Park	43.3969	-86.3548	Lake	9/2/21	Scum	1-10					No
Complaint	White Lake	Muskegon	Crosswinds	43.4064	-86.3501	Lake	9/2/21	Scum	>10	242.1	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Municipal marina	43.4098	-86.3517	Lake	9/2/21	Scum	>10	52.9	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Montague boat launch	43.4114	-86.3571	Lake	9/2/21	clear	<1					No
Complaint	White Lake	Muskegon	Maple Grove	43.4013	-86.3586	Lake	9/2/21	clear	<1					No
Complaint	White Lake	Muskegon	Lau rd	43.3761	-86.4212	Lake	9/2/21	clear	<1					No
Complaint	Bass Lake	Mason	Marrison Park	43.8341	-86.4061	Lake	9/2/21	clear	<1					No

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Bass Lake	Mason	Bass Lake blvd	43.8389	-86.4178	Lake	9/2/21	Scum	>10	472.7	<0.25	<0.25	<0.5	Yes
Complaint	Bass Lake	Mason	Ferwerdas	43.8288	-86.4191	Lake	9/2/21	clear	>10	1.9	<0.25	<0.25	<0.5	Yes
Complaint	Bass Lake	Mason	S Bass Lake blvd	43.8362	-86.4196	Lake	9/2/21	Scum	>10					No
Complaint	Pine River	Mackinac	South Pine River rd	46.0560	-84.6567	River/Stream	9/6/21	clear	<1		<0.25	<0.25		Yes
	Hardy Dam Pond		River Ridge	43.5836	-85.5273		9/9/21	scum	1-10	3.1	<0.25	<0.25	<0.5	yes
	Van Etten		6799 Loud				9/10/21	scum	>10	11.7	<0.25	<0.25	<0.5	
	Van Etten		6789 Loud				9/10/21	scum	1-10					
Complaint	Stony Creek Lake	Macomb	Baypoint beach	42.7289	-83.0913	impound	9/13/21	clear	<1					No
Complaint	Stony Creek Lake	Macomb	Kayak rental	42.7300	-83.0937	impound	9/13/21	clear	<1					No
Complaint	Stony Creek Lake	Oakland	Winter Cove	42.7269	-83.0995	impound	9/13/21	Scum	<1	1.3	1.9	<0.25	<0.5	Yes
Complaint	Stony Creek Lake	Macomb	Boat launch	42.7189	-83.0852	impound	9/13/21	clear	<1					No
Complaint	Stony Creek Lake	Macomb	Eastwood beach	42.7243	-83.0841	impound	9/13/21	clear	<1					No
Complaint	Stony Creek Lake	Macomb	Inflow dam	42.7364	-83.0718	impound	9/13/21	Scum	>10	5.7	<0.25	<0.25	<0.5	Yes
Complaint	Andale Lake	Oakland	Easement	42.6134	-83.1129	Lake	9/13/21	Scum	>10	1147.2	<0.25	5.75	<0.5	Yes
Complaint	Andale Lake		Deep	42.6133	-83.1143	Lake	9/13/21	clear	<1					
Complaint	Andale Lake	Oakland	NW	42.6133	-83.1153	Lake	9/13/21	Scum	>10					No
Complaint	Andale Lake	Oakland	SW	42.6123	-83.1151	Lake	9/13/21	Scum	>10					No
Complaint	West Bloomfield Lake	Oakland	Park	42.5613	-83.3817	Lake	9/13/21	Scum	>10	16.8	<0.25	<0.25	<0.5	yes
Complaint	West Bloomfield Lake	Oakland	Lake bluff	42.5629	-83.3823	Lake	9/13/21	Scum	>10					No
Complaint	Lake Sherwood	Oakland	Ravinewood beach	42.5849	-83.5483	Lake	9/13/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Driftwood	42.5940	-83.5550	Lake	9/13/21	Scum	1-10					No
Complaint	Lake Sherwood	Oakland	Raftwood	42.5938	-83.5550	Lake	9/13/21	Scum	>10	28.6	<0.25	0.68	<0.5	Yes
Targeted	West Bloomfield Lake	Oakland	Park	42.5613	-83.3815	Lake	9/13/21	Scum	>10	16.8	<0.25	<0.25	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Ledgewood	42.5950	-83.5388	Lake	9/13/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Pikewood	42.5921	-83.5370	Lake	9/13/21	clear	<1					No
Complaint	Woodland Lake	Livingston	Boat launch	42.5512	-83.7737	Lake	9/13/21	clear	<1					No
Targeted	South Lake Leann	Hillsdale	Boat launch	42.0593	-84.4252	Lake	9/15/21	Scum	>10	23.4	<0.25	<0.25	<0.5	Yes
Targeted	South Lake Leann	Hillsdale	Deep	42.0576	-84.4265	Lake	9/15/21	clear	<1					
Targeted	South Lake Leann	Hillsdale	South	42.0546	-84.4360	Lake	9/15/21	clear	<1					No
Targeted	South Lake Leann	Hillsdale	West	42.0600	-84.4442	Lake	9/15/21	clear	<1					No
Targeted	South Lake Leann	Hillsdale	Nw deep	42.0628	-84.4385	Lake	9/15/21	clear	<1					No
Targeted	South Lake Leann	Hillsdale	Dam	42.0626	-84.4310	Lake	9/15/21	clear	<1					No
Targeted	North Lake Leann	Hillsdale	Boat launch	42.0684	-84.4287	Lake	9/15/21	Scum	>10	72.2	<0.25	<0.25	<0.5	Yes
Targeted	North Lake Leann	Hillsdale	Middle deep	42.0679	-84.4298	Lake	9/15/21	clear	<1					
Targeted	North Lake Leann	Hillsdale	West deep	42.0671	-84.4381	Lake	9/15/21	clear	<1					No

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Targeted	North Lake Leann	Hillsdale	West	42.0679	-84.4425	Lake	9/15/21	Scum	>10	13.8	<0.25	<0.25	<0.5	
Targeted	North Lake Leann	Hillsdale	North playground	42.0703	-84.4358	Lake	9/15/21	clear	.					
Targeted	North Lake Leann	Hillsdale	Vicary	42.0723	-84.4348	Lake	9/15/21	Scum	<1					
Targeted	North Lake Leann	Hillsdale	NE Cove	42.0721	-84.4219	Lake	9/15/21	Scum	<1					
Targeted	North Lake Leann	Hillsdale	SE cove	42.0627	-84.4239	Lake	9/15/21	Scum	1-10					
Targeted	North Lake Leann	Hillsdale	Inflow dam	42.0649	-84.4370	Lake	9/15/21	clear	<1					No
Complaint	Lake Somerset	Hillsdale	Beach scum	42.0522	-84.3786	Lake	9/15/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Somerset	Hillsdale	Beach ambient	42.0521	-84.3786	Lake	9/15/21	clear	<1					
Complaint	Lake Somerset	Hillsdale	SE	42.0522	-84.3759	Lake	9/15/21	Scum	<1					No
Complaint	Lake Somerset	Hillsdale	SE Cove	42.0537	-84.3744	Lake	9/15/21	Scum	<1					No
Complaint	Lake Somerset	Hillsdale	Kildale	42.0538	-84.3721	Lake	9/15/21	Scum	<1					No
Complaint	Lake Somerset	Hillsdale	Deep	42.0564	-84.3705	Lake	9/15/21	clear	<1					No
Complaint	Lake Somerset	Hillsdale	North cove	42.0572	-84.3861	Lake	9/15/21	clear	<1					No
Complaint	Lake Somerset	Hillsdale	Dorchester	42.0576	-84.3885	Lake	9/15/21	Scum	1-10	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Lake Somerset	Hillsdale	Emerald	42.0564	-84.3885	Lake	9/15/21	Scum	Test Fail	0.8	<0.25	<0.25	<0.5	Yes
Complaint	Lake Somerset	Hillsdale	West	42.0532	-84.3944	Lake	9/15/21	Scum	<1					No
Complaint	Muskegon Lake	Muskegon	Harbour Towne Beach	43.2302	-86.3262	Lake	9/17/21	clear	<1					No
Complaint	White Lake	Muskegon	Maple Grove Beach	43.4014	-86.3610	Lake	9/17/21	clear	<1					No
Complaint	Muskegon Lake	Muskegon	Barbour Towne Beach	43.2301	-86.3263	Lake	9/17/21	clear	<1					
Complaint	Muskegon Lake	Muskegon	Jaycees launch	43.2153	-86.3155	Lake	9/17/21	clear	<1					No
Complaint	Muskegon Lake	Muskegon	Grand Trunk launch	43.2171	-86.2943	Lake	9/17/21	Scum	>10	77	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Heritage dock	43.2307	-86.2631	Lake	9/17/21	Scum	>10	166.8	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Fisherman's Landing	43.2439	-86.2438	Lake	9/17/21	Scum	>10					No
Complaint	Muskegon Lake	Muskegon	Water sports park	43.2505	-86.2695	Lake	9/17/21	Scum	>10	2255.4	<0.25	<0.25	<0.5	Yes
Complaint	Bear Lake Channel	Muskegon	Bear Lake Channel	43.2433	-86.2964	Canal	9/17/21	Scum	1-10					No
Complaint	White Lake	Muskegon	Maple Grove Park	43.4013	-86.3586	Lake	9/17/21	clear	<1					No
Complaint	White Lake	Muskegon	Lau Rd	43.3761	-86.4212	Lake	9/17/21	clear	<1					No
Complaint	White Lake	Muskegon	Montague municipal boat launch	43.4115	-86.3571	Lake	9/17/21	clear	<1					No
Complaint	White Lake	Muskegon	Goodrich Park	43.4092	-86.3521	Lake	9/17/21	Scum	1-10	3.2	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Crosswinds	43.4064	-86.3500	Lake	9/17/21	Scum	1-10	6.6	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Svensson Park	43.3968	-86.3549	Lake	9/17/21	clear	<1					No
Complaint	White Lake	Muskegon	Mill Pond launch	43.3902	-86.3552	Lake	9/17/21	Scum	<1					No
Complaint	White Lake	Muskegon	Scenic drive	43.3631	-86.4120	Lake	9/17/21	clear	<1					No
Complaint	Bass Lake	Mason	Ferwerdas	43.8289	-86.4191	Lake	9/26/21	clear	<1					No

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Bass Lake	Mason	Bass Lake blvd	43.8362	-86.4196	Lake	9/26/21	clear	<1					No
Complaint	Bass Lake	Mason	NW launch	43.8395	-86.4180	Lake	9/26/21	Scum	>10	28.8	<0.25	<0.25	<0.5	YES
Complaint	White Lake	Muskegon	Municipal marina	43.4099	-86.3517	Lake	9/26/21	Scum	>10	36.2	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Crosswinds	43.4065	-86.3500	Lake	9/26/21	Scum	>10	68.3	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Water sports park	43.2503	-86.2693	Lake	9/26/21	Scum	>10	6755	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Fisherman's Landing	43.2438	-86.2428	Lake	9/26/21	Scum	>10	6465	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Heritage dock	43.2307	-86.2630	Lake	9/26/21	Scum	>10	1028.8	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Grand Trunk launch	43.2171	-86.2944	Lake	9/26/21	clear	<1	.				
Targeted	Stony Creek Lake	Macomb	Eastwood beach	42.7243	-83.0841	impound	9/27/21	clear	<1					No
Targeted	Stony Creek Lake	Macomb	Inflow dam	42.7365	-83.0718	impound	9/27/21	Scum	1-10					Yes
Targeted	Stony Creek Lake	Macomb	Baypoint beach	42.7289	-83.0913	impound	9/27/21	clear	<1					No
Targeted	Stony Creek Lake	Macomb	Kayak rental	42.7299	-83.0900	impound	9/27/21	clear	<1					No
Targeted	Stony Creek Lake	Oakland	Winter Cove	42.7269	-83.0995	impound	9/27/21	Scum	1-10					Yes
Targeted	Stony Creek Lake	Macomb	Boat launch	42.7190	-83.0854	impound	9/27/21	clear	<1					No
Complaint	Tommy's Lake	Oakland	Beach dr	42.7603	-83.2772	Lake	9/27/21	clear	<1					No
Complaint	Tommy's Lake	Oakland	Easement	42.7636	-83.2749	Lake	9/27/21	Scum	>10	15.4	<0.25	<0.25	<0.5	Yes
Complaint	Tommy's Lake	Oakland	Camp beach	42.7609	-83.2724	Lake	9/27/21	clear	<1					No
Complaint	Andale Lake	Oakland	Easement	42.6136	-83.1128	Lake	9/27/21	Scum	>10	1840	9.52	9.55	<0.5	Yes
Complaint	West Bloomfield Pond	Oakland	Pond Bluff	42.5595	-83.3837	Pond	9/27/21	Scum	>10	108	<0.25	<0.25	<0.5	yes
Targeted	West Bloomfield Lake	Oakland	Park	42.5613	-83.3816	Lake	9/27/21	Scum	1-10	<0.5	<0.25	<0.25	<0.5	yes
Targeted	West Bloomfield Lake	Oakland	Lake Bluff	42.5629	-83.3823	Lake	9/27/21	Scum	1-10					
Complaint	Lake Sherwood	Oakland	Ravinewood beach	42.5848	-83.5484	Lake	9/27/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Driftwood	42.5935	-83.5548	Lake	9/27/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Raftwood	42.5933	-83.5462	Lake	9/27/21	clear	<1	<0.5	<0.25	0.33	<0.5	Yes
Complaint	Lake Sherwood	Oakland	Ledgewood	42.5950	-83.5388	Lake	9/27/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Pikewood	42.5921	-83.5367	Lake	9/27/21	clear	<1					No
	Lacey Lake						9/28/21	am	1-10	0.5	<0.25	<0.25	<0.5	
	Lake Mitchell		state park	44.2380	-85.4562		9/28/21	scum	1-10	2.3	<0.25	<0.25	<0.5	
	Lake Mitchell		497 E Lake Mitchell Drive				9/28/21	scum	>10	7.1	<0.25	<0.25	<0.5	
Complaint	Swan Lake	Allegan	Boat launch	42.4662	-85.9545	Lake	9/29/21	Scum	1-10	9.7	<0.25	<0.25	<0.5	Yes
Complaint	Swan lake	Allegan	Camp beach				9/29/21	Scum	1-10	9.6	<0.25	<0.25	<0.5	Yes
Complaint	Swan lake	Allegan	Deep	42.4658	-85.9648	Lake	9/29/21	Scum	1-10					no
Complaint	Swan Lake	Allegan	Estate Boat launch	42.4636	-85.9648	Lake	9/29/21	Scum	>10	130.3	<0.25	<0.25	<0.5	Yes
	Swan Lake	Allegan	South cove				9/29/21	Scum	1-10					no
Complaint	Swan lake	Allegan	South canal entrance	42.4603	-85.9570	Lake	9/29/21	Scum	1-10					no

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Swan lake	Allegan	North	42.4687	-85.9582	Lake	9/29/21	Scum	<1					no
	Hardy Dam Pond		River Ridge	43.5836	-85.5273		9/30/21	scum		790.6	<0.25	<0.25	<0.5	yes
	Sand Lake		SE Corner				9/30/21	am		<0.5	<0.25	<0.25	<0.5	
Complaint	Black Lake	Presque Isle	Cedar Beach dock	45.4764	-84.2450	Lake	9/30/21	clear		<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Black Lake	Presque Isle	Cedar Beach shore	45.4762	-84.2449	Lake	9/30/21	Scum	.	49.2	<0.25	<0.25	<0.5	Yes
	Van Auken Lake	Van Buren	Boat launch				10/1/21	clear	<1	<0.5	<0.25	<0.25	<0.5	yes
	Crooked Lake		US 31 Dock				10/1/21	scum		54.8	<0.25	<0.25	<0.5	
	Crooked Lake		US 31 Seawall				10/1/21	scum		110.6	<0.25	<0.25	<0.5	
	Van Auken Lake	Van Buren	46th ave				10/2/21	scum	>10	78.1				
	Island Lake		Island Lake Dr				10/4/21	scum	>10	12.4	<0.25	<0.25	<0.5	
	Village Oaks Lake		west				10/4/21	scum	<0.5	0.5	<0.25	<0.25	<0.5	
	Village Oaks Lake		east				10/4/21	scum	<0.5	0.7	<0.25	<0.25	<0.5	
	Village Wood Lake		park				10/4/21	scum	1-10	3.1	<0.25	<0.25	<0.5	
	Lacey Lake						10/5/21	am	<0.5	0.5	<0.25	<0.25	<0.5	
	Lacey Lake						10/5/21	am	<0.5	0.5	<0.25	<0.25	<0.5	
Complaint	Narrow Lake	Eaton	Luella Lane	42.4415	-84.7775	Lake	10/5/21	scum	1-10	3.6	<0.25	<0.25	<0.5	yes
Complaint	Black Lake	Cheboygan	Waverly	45.4308	-84.2495	Lake	10/5/21	Scum	.	10.9	<0.25	<0.25	<0.5	Yes
Complaint	Black Lake	Cheboygan	Waverly boat ramp	45.4308	-84.2496	Lake	10/5/21	Scum	.	60.4	<0.25	<0.25	<0.5	Yes
Complaint	Black Lake	Cheboygan	Birch Ridge beach	45.4722	-84.3000	Lake	10/5/21	Scum	.	2913.1	<0.25	<0.25	<0.5	Yes
	Hardy Dam Pond		River Ridge	43.5836	-85.5273		10/6/21	scum	>10	645.3	<0.25	0.43	<0.5	yes
	Lake Cadillac		Kenwood Park	44.2436	-85.4442		10/6/21	am	<1					no
	Van Etten		Alabama				10/6/21	am	<1	<0.5	<0.25	<0.25	<0.5	
	Van Etten		6391 Loud				10/6/21	scum	>10	20	<0.25	<0.25	<0.5	
	Van Etten		6789 Loud				10/6/21	scum	1-10	<0.5	<0.25	<0.25	<0.5	
Complaint	Earl Lake	Livingston	Earl Lake RD				10/7/21	SCUM	>10	511.2	<0.25	<0.25	0.6	YES
	Fine Lake		2901 West Shore Drive				10/8/21	scum		7.5	<0.25	<0.25	<0.5	
Complaint	Tommy's Lake	Oakland	Beach Dr	42.7604	-83.2771	Lake	10/11/21	Scum	1-10	1.2	<0.25	<0.25	<0.5	Yes
Complaint	Tommy's Lake	Oakland	Easement	42.7636	-83.2749	Lake	10/11/21	Scum	>10	25.9	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	boat launch	42.7191	-83.0853	impound	10/11/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Complaint	Tommy's Lake	Oakland	Camp beach	42.7611	-83.2726	Lake	10/11/21	Scum	1-10	0.6	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Eastwood beach	42.7241	-83.0843	impound	10/11/21	clear	<1					No
Complaint	Stony Creek Lake	Macomb	Inflow dam	42.7365	-83.0719	impound	10/11/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Baypoint beach	42.7289	-83.0913	impound	10/11/21	clear	<1					No
Targeted	Stony Creek Lake	Macomb	Kayak rental	42.7300	-83.0938	impound	10/11/21	Scum	>10	9.9	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Oakland	Winter Cove	42.7311	-83.0952	impound	10/11/21	Scum	>10	13.4	<0.25	<0.25	<0.5	Yes

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	West Bloomfield Pond	Oakland	Pond Bluff	42.5595	-83.3837	Pond	10/11/21	Scum	>10	24.1	<0.25	<0.25	<0.5	yes
Targeted	West Bloomfield Lake	Oakland	Park	42.5613	-83.3816	Lake	10/11/21	Scum	<1					
Targeted	West Bloomfield Lake	Oakland	Lake Bluff	42.5629	-83.3823	Lake	10/11/21	Scum	1-10	<0.5	<0.25	<0.25	<0.5	yes
Complaint	Lake Sherwood	Oakland	Ravinewood	42.5849	-83.5483	Lake	10/11/21	clear	<1					No
Complaint	Lake Sherwood	Oakland	Driftwood	42.5937	-83.5549	Lake	10/11/21	Scum	>10	192.6	<0.25	<0.25	<0.5	yes
Complaint	Lake Sherwood	Oakland	Raftwood	42.5932	-83.5463	Lake	10/11/21	Scum	>10	83.4	<0.25	<0.25	<0.5	yes
Complaint	Lake Sherwood	Oakland	Pikewood	42.5921	-83.5367	Lake	10/11/21	Scum	<1					no
Complaint	Bass Lake	Mason	Morrison Park	43.8340	-86.4061	Lake	10/13/21	Scum	>10	424.5	<0.25	<0.25	<0.5	YES
Complaint	Bass Lake	Mason	Ferwerdas	43.8290	-86.4193	Lake	10/13/21	Scum	>10	73.1	<0.25	<0.25	<0.5	YES
Complaint	Bass Lake	Mason	Bass Lake blvd	43.8362	-86.4195	Lake	10/13/21	Scum	>10					
Complaint	Bass Lake	Mason	NW launch	43.8395	-86.4180	Lake	10/13/21	Scum	>10	289.7	<0.25	<0.25	<0.5	YES
Complaint	White Lake	Muskegon	Lau rd	43.3761	-86.4212	Lake	10/13/21	clear	<1					
Complaint	White Lake	Muskegon	Maple grove	43.4013	-86.3586	Lake	10/13/21	clear	<1					
Complaint	White Lake	Muskegon	Montague municipal launch	43.4114	-86.3572	Lake	10/13/21	clear	<1					
Complaint	White Lake	Muskegon	Goodrich Park	43.4093	-86.3521	Lake	10/13/21	Scum	>10	94.5	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Crosswinds	43.4065	-86.3500	Lake	10/13/21	Scum	>10	14.6	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Svensson Park	43.3970	-86.3549	Lake	10/13/21	clear	<1					
Complaint	White Lake	Muskegon	Mill Pond launch	43.3902	-86.3552	Lake	10/13/21	Scum	<1					
Complaint	White Lake	Muskegon	Scenic drive	43.3632	-86.4119	Lake	10/13/21	clear	<1					
Complaint	Bear Lake Channel	Muskegon	Channel	43.2427	-86.2971	Canal	10/13/21	clear	<1					
Complaint	Muskegon Lake	Muskegon	Water sports park	43.2503	-86.2695	Lake	10/13/21	Scum	>10	62.2	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Fisherman's Landing	43.2438	-86.2430	Lake	10/13/21	Scum	>10	13259.1	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Heritage dock	43.2307	-86.2630	Lake	10/13/21	Scum	>10	55.1	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Grand Trunk launch	43.2171	-86.2943	Lake	10/13/21	Scum	>10	8673.1	<0.25	<0.25	<0.5	Yes
Complaint	Muskegon Lake	Muskegon	Jaycees launch	43.2153	-86.3154	Lake	10/13/21	clear	<1					
Complaint	Muskegon Lake	Muskegon	Harbor Towne beach	43.2151	-86.3155	Lake	10/13/21	clear	<1					
Complaint	Cranberry Lake	Kent	South launch	43.1022	-85.7887	Lake	10/13/21	clear	<1	<0.5	<0.25	<0.25	<0.5	yes
Complaint	Cranberry Lake	Kent	North launch	43.1077	-85.7890	Lake	10/13/21	Scum	>10	40.3	<0.25	<0.25	<0.5	yes
Complaint	Lake Lansing	Ingham	Reynolds	42.7669	-84.4018	Lake	10/15/21	Scum	>10	79.9	<0.25	<0.25	<0.5	yes
Complaint	Lake Lansing	Ingham	Lake Lansing Park North	42.7636	-84.3942	Lake	10/15/21	Scum	>10	507.3	<0.25	<0.25	<0.5	yes
Complaint	Lake Lansing	Ingham	Lake Lansing Park - South	42.7556	-84.4049	Lake	10/15/21	clear	<1					no
	Hamlin	Mason	Hobby Crest			Lake	10/18/21	scum	1-10	8.4	<0.25	<0.25	<0.5	yes
Complaint	Van Auken Lake	Van Buren	Boat launch	42.2579	-86.1774	Lake	10/18/21	Scum	1-10					
Complaint	Van Auken Lake	Van Buren	Deep	42.2570	-86.1825	Lake	10/18/21	Scum	1-10					

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Van Auken	Van Buren	North	42.2593	-86.1828	Lake	10/18/21	Scum	>10	43.3				yes
Complaint	Van Auken	Van Buren	North canal	42.2604	-86.1854	Canal	10/18/21	Scum	>10	22.7				yes
Complaint	Van Auken Lake	Van Buren	West canal	42.2548	-86.1924	Canal	10/18/21	Scum	1-10					
Complaint	Van Auken	Van Buren	South	42.2482	-86.1897	Lake	10/18/21	Scum	1-10					
Complaint	Van Auken Lake	Van Buren	East	42.2548	-86.1770	Lake	10/18/21	Scum	1-10					
Complaint	Swan lake	Allegan	Boat launch	42.4662	-85.9544	Lake	10/18/21	Scum	>10	1254.9	5.99	<0.25	<0.5	yes
	Cranberry Lake	Kent	North launch				10/18/21	Scum	>10	167.9	<0.25	<0.25	<0.5	yes
Complaint	Cranberry Lake	Ottawa	Deep	43.1058	-85.7894	Lake	10/18/21	Scum	.					
Complaint	Cranberry Lake	Ottawa	West	43.1056	-85.7962	Lake	10/18/21	Scum	>10	20.9	<0.25	<0.25	<0.5	yes
Complaint	Cranberry Lake	Kent	South launch	43.1022	-85.7885	Lake	10/18/21	Scum	1-10					
Complaint	Cranberry Lake	Kent	East	43.1037	-85.7850	Lake	10/18/21	Scum	>10	250.6	<0.25	<0.25	<0.5	yes
	Hamlin	Mason	Long Skinny Park			Lake	10/20/21	am	<1	<0.5	<0.25	<0.25	<0.5	yes
	Hamlin	Mason	Hobby Crest			Lake	10/20/21	scum	1-10	<0.5	<0.25	0.51	<0.5	yes
Complaint	Lake Lansing	Ingham	Lake Lansing Park - South				10/20/21	clear	<1	<0.5	<0.25	<0.25	<0.5	yes
Complaint	Lake Lansing	Ingham	E. Lake DR				10/20/21	Scum	1-10	0.9	<0.25	<0.25	<0.5	yes
Complaint	Lake Lansing	Ingham	Lake Lansing Park - North	42.7636	-84.3941	Lake	10/20/21	Scum	>10	6	<0.25	<0.25	<0.5	yes
Complaint	Lake Lansing	Ingham	Reynolds RD				10/20/21	Scum	>10	12.2	<0.25	<0.25	<0.5	yes
Complaint	Narrow Lake	Eaton	boat launch	42.4359	-84.7795	Lake	10/22/21	scum	1-10	2.6	<0.25	<0.25	<0.5	yes
Complaint	Tommys Lake	Oakland	Camp beach	42.7611	-83.2725	Lake	10/28/21	clear	<1					
Complaint	Tommys Lake	Oakland	Easement	42.7635	-83.2748	Lake	10/28/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	
Complaint	Tommys Lake	Oakland	Beach dr	42.7603	-83.2771	Lake	10/28/21	clear	<1					
Targeted	Stony Creek Lake	Macomb	Inflow dam	42.7365	-83.0719	impound	10/28/21	Scum	>10	5.7	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Baypoint beach	42.7289	-83.0913	impound	10/28/21	Scum	<1					
Targeted	Stony Creek Lake	Macomb	Kayak rental	42.7300	-83.0937	impound	10/28/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Oakland	Winter Cove	42.7268	-83.0994	impound	10/28/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	Yes
Targeted	Stony Creek Lake	Macomb	Boat launch	42.7189	-83.0852	impound	10/28/21	Scum	<1					
Complaint	Andale Lake	Oakland	Easement	42.6136	-83.1128	Lake	10/28/21	Scum	>10	1108.6	<0.25	3.64	<0.5	Yes
Complaint	West Bloomfield Pond	Oakland	Pond bluff	42.5595	-83.3837	Pond	10/28/21	Scum	>10	33.3	<0.25	<0.25	<0.5	yes
Complaint	West Bloomfield Pond	Oakland	Boat launch	42.5589	-83.3852	Pond	10/28/21	clear	<1					no
Complaint	Lake Sherwood	Oakland	Ravinewood	42.5849	-83.5483	Lake	10/28/21	clear	<1					no
Complaint	Lake Sherwood	Oakland	Driftwood	42.5935	-83.5549	Lake	10/28/21	clear	<1					no
Complaint	Lake Sherwood	Oakland	Raftwood	42.5938	-83.5550	Lake	10/28/21	Scum	1-10	0.8	<0.25	<0.25	<0.5	yes
Complaint	Lake Sherwood	Oakland	Ledgewood	42.5952	-83.5391	Lake	10/28/21	Scum	>10	105.5	<0.25	<0.25	<0.5	yes
Complaint	Lake Sherwood	Oakland	Pikewood	42.5921	-83.5367	Lake	10/28/21	Scum	1-10	3.5	<0.25	<0.25	<0.5	yes

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Earl Lake	Livingston	3110 golf club	42.6032	-83.8930	Lake	10/28/21	clear	<1					no
Complaint	Earl Lake	Livingston	Earl Lake dr	42.6024	-83.9011	Lake	10/28/21	Scum	1-10	7.9	<0.25	<0.25	<0.5	yes
Complaint	Lake Lansing	Ingham	Lake Lansing Park-North	42.7635	-84.3945	Lake	10/29/21	clear	<1					no
Complaint	Lake Lansing	Ingham	Lake Lansing Park-South	42.7556	-84.4048	Lake	10/29/21	clear	<1					no
	White Lake	Muskegon	Montague boat launch				11/10/21	Scum	>10	11.6	<0.25	<0.25	<0.5	Yes
Complaint	Little Bass Lake	Lake	Lisaius	44.0944	-85.9717	Lake	11/10/21	Scum	<1	<0.5	<0.25	<0.25	<0.5	yes
Complaint	Bass Lake	Mason	Morrison Park	43.8341	-86.4060	Lake	11/10/21	clear	<1					
Complaint	Bass Lake	Mason	Ferwerdas	43.8288	-86.4190	Lake	11/10/21	Scum	1-10					
Complaint	Bass Lake	Mason	Bass Lake blvd	43.8361	-86.4196	Lake	11/10/21	Scum	>10	17.9	<0.25	<0.25	<0.5	YES
Complaint	Bass Lake	Mason	Nw launch	43.8395	-86.4180	Lake	11/10/21	Scum	1-10					
Complaint	White Lake	Muskegon	Lau rd	43.3760	-86.4212	Lake	11/10/21	clear	<1					
Complaint	White Lake	Muskegon	Maple Grove beach	43.4013	-86.3587	Lake	11/10/21	Scum	<1					
Complaint	White Lake	Muskegon	Municipal marina	43.4099	-86.3516	Lake	11/10/21	Scum	>10	19.9	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Crosswinds	43.4069	-86.3502	Lake	11/10/21	Scum	>10	185.8	<0.25	<0.25	<0.5	Yes
Complaint	White Lake	Muskegon	Svensson Park	43.3969	-86.3549	Lake	11/10/21	clear	<1					
Complaint	White Lake	Muskegon	Mill Pond	43.3902	-86.3552	Lake	11/10/21	Scum	<1					
Complaint	White Lake	Muskegon	Scenic drive	43.3631	-86.4121	Lake	11/10/21	clear	<1					
Complaint	Bear Lake Channel	Muskegon	Channel	43.2433	-86.2964	Canal	11/10/21	clear	<1					
Complaint	Muskegon Lake	Muskegon	Water sports park	43.2509	-86.2686	Lake	11/10/21	clear	<1					
Complaint	Muskegon Lake	Muskegon	Fisherman's Landing	43.2438	-86.2428	Lake	11/10/21	Scum	>10	1679.6				
Complaint	Muskegon Lake	Muskegon	Heritage dock	43.2308	-86.2631	Lake	11/10/21	Scum	>10	267.6				
Complaint	Muskegon Lake	Muskegon	Grand Trunk launch	43.2172	-86.2943	Lake	11/10/21	clear	<1					
Complaint	Muskegon Lake	Muskegon	Jaycees launch	43.2153	-86.3155	Lake	11/10/21	clear	<1					
Complaint	Muskegon Lake	Muskegon	Harbor Towne	43.2303	-86.3264	Lake	11/10/21	Scum	<1					
Complaint	Cranberry Lake	Kent	South launch	43.1021	-85.7887	Lake	11/10/21	clear	<1					
Complaint	Cranberry Lake	Kent	North launch	43.1077	-85.7889	Lake	11/10/21	clear	<1					
Complaint	Van Auken Lake	Van Buren	Boat launch	42.2579	-86.1774	Lake	11/18/21	clear	<1					no
Complaint	Van Auken Lake	Van Buren	46th ave	42.2535	-86.1900	Lake	11/18/21	clear	<1					no
Complaint	Swan lake	Allegan	Boat launch	42.4663	-85.9542	Lake	11/18/21	clear	<1					
Complaint	Swan lake	Allegan	Estate launch	42.4636	-85.9651	Lake	11/18/21	clear	<1					
Complaint	Andale Lake	Oakland	Easement	42.6136	-83.1128	Lake	11/19/21	clear	<1	.	.	.	.	no
Complaint	West Bloomfield Pond	Oakland	Launch	42.5590	-83.3851	Pond	11/19/21	clear	<1					no
Complaint	West Bloomfield Pond	Oakland	Pond bluff	42.5595	-83.3837	Pond	11/19/21	clear	<1					no
Complaint	Lake Sherwood	Oakland	Ravinewood	42.5849	-83.5483	Lake	11/19/21	clear	<1					no

Testing Reason	Lake	County	Site	Latitude	Longitude	Water Body Type	Samp Date	Samp Type	MC Test Strip ppb	Total MC ppb	Anatox ppb	Cylin ppb	Nod ppb	Lab
Complaint	Lake Sherwood	Oakland	Driftwood	42.5935	-83.5547	Lake	11/19/21	clear	<1					no
Complaint	Lake Sherwood	Oakland	Raftwood	42.5933	-83.5459	Lake	11/19/21	clear	<1					no
Complaint	Lake Sherwood	Oakland	Ledgewood	42.5950	-83.5388	Lake	11/19/21	clear	<1					no
Complaint	Lake Sherwood	Oakland	Pikewood	42.5921	-83.5369	Lake	11/19/21	clear	<1					no

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
Complaint	Stoney Lake	Kent	Stoney Lakeside Park	Lake	2022-05-31 18:10	Clear_water
Complaint	Peach Lake	Ogemaw	Driftwood Ct	Lake	2022-06-14 17:41	Visible_cyanobacteria
Complaint	Peach Lake	Ogemaw	boat launch	Lake	2022-06-14 17:44	Visible_cyanobacteria
Complaint	Lake Michigan	Emmet	Petsokey City Marina breakwall	Lake	2022-06-15 4:00	Non-cyanobacterial algae/aquatic plants
Complaint	Lake Michigan	Emmet	Petoskey City Marina shore	Lake	2022-06-15 4:00	Non-cyanobacterial algae/aquatic plants
Complaint	Middle Lake	Barry	Culbert Dr	Lake	2022-06-01 4:00	Non_Cyano_algae_plants
surveillance	Duck Lake Channel	Muskegon	Beach channel	River/Stream	2022-06-09 4:00	Visible_cyanobacteria
Targeted	Torch Lake	Antrim	US 31	Lake	2022-06-10 14:55	Non_Cyano_algae_plants
Complaint	Stoney Lake	Kent	Stoney Lakeside Park and Dog Park	Lake	2022-05-31 18:18	Clear_water
Complaint	Peach Lake	Ogemaw	Driftwood Ct	Lake	2022-06-14 18:23	Visible_cyanobacteria
Complaint	Peach Lake	Ogemaw	Boat Launch	Lake	2022-06-14 18:28	Visible_cyanobacteria
Complaint	Second Lake	Montcalm	Lucille Dr	Canal	2022-06-30 16:00	Visible_cyanobacteria
Complaint	Ford Lake	Washtenaw	Cliffs Dr	Lake	2022-07-08 4:00	Visible_cyanobacteria
Complaint	Robert Drain	Arenac	Steffas Road	Canal	2022-05-24 4:00	Non_Cyano_algae_plants
Complaint	Sessions Lake	Ionia	Beach	Lake	2022-07-15 2:56	Other,Sediment
Complaint	Sessions Lake	Ionia	Boat launch	Lake	2022-07-15 2:27	Clear_water
Complaint	Sessions Lake	Ionia	Point	Lake	2022-07-15 3:09	Clear_water
surveillance	Lake Richie	Keweenaw	East End	Lake	2022-07-14 4:00	Visible_cyanobacteria
Complaint	Lake Richie	Keweenaw	Unknown	Lake	2022-06-30 4:00	Visible_cyanobacteria
Complaint	Spring Lake	Muskegon	Pomona Park	Lake	2022-07-18 21:03	Visible_cyanobacteria
Complaint	Posey Lake	Lenawee	Private dock	Lake	2022-07-15 4:00	Visible_cyanobacteria
Complaint	Posey Lake	Lenawee	Private dock - clear water	Lake	2022-07-15 4:00	Clear_water
Targeted	Lake Erie	Monroe	Sterling State Park Center	Lake	2022-07-19 4:00	Clear_water
Targeted	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-07-19 4:00	Non_Cyano_algae_plants
Targeted	Lake Erie	Monroe	Luna Pier Beach Center	Lake	2022-07-19 4:00	Non_Cyano_algae_plants
Targeted	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-07-19 4:00	Non_Cyano_algae_plants
Complaint	Peach Lake	Ogemaw	S. Lake Dr.	Lake	2022-07-19 4:00	Visible_cyanobacteria
Complaint	Lake Gitchegumme	Wexford	Unknown	Lake	2022-06-28 4:00	Visible_cyanobacteria
Complaint	Spring Lake	Muskegon	NE	Lake	2022-07-19 4:00	Visible_cyanobacteria
Complaint	Swan Lake	Allegan	Swan Lake Dr.	Lake	2022-07-14 4:00	Clear_water
Complaint	Loon Lake	Livingston	Western Lane	Lake	2022-07-19 4:00	Non_Cyano_algae_plants

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
<1	<0.5	<0.25	<0.25	<0.5	Yes
>10	11.3	<0.25	<0.25	<0.5	Yes
1-10	2.7	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
>10	11.3	<0.25	<0.25	<0.5	Yes
1-10	2.7	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
NS	NS	NS	NS	NS	No
>10	34.2	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
>10					Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
Surveillance	Spring Lake	Muskegon	Pomona Park	Lake	2022-07-21 4:00	Visible_cyanobacteria
Targeted	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-07-26 4:00	Clear_water
Targeted	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-07-26 4:00	Clear_water
Targeted	Lake Erie	Monroe	Sterling State Park North	Lake	2022-07-26 4:00	Clear_water
Targeted	Lake Erie	Monroe	Sterling State Park South	Lake	2022-07-26 4:00	Clear_water
Complaint	Swan Lake	Allegan	North (A)	Lake	2022-07-26 4:00	Visible_cyanobacteria
Complaint	Swan Lake	Allegan	Middle (B)	Lake	2022-07-26 4:00	Visible_cyanobacteria
Complaint	Swan Lake	Allegan	South (C)	Lake	2022-07-26 4:00	Visible_cyanobacteria
Complaint	Pond near Munro Lake	Cheboygan	Pond	Lake	2022-07-29 4:00	Visible_cyanobacteria
surveillance	Ford Lake	Washtenaw	Shoreline	Lake	2022-07-26 4:00	Visible_cyanobacteria
Complaint	White Lake	Muskegon	Maple Park	Lake	2022-07-28 4:00	Visible_cyanobacteria
Complaint	Lake Desor	Keweenaw	South	Lake	2022-07-11 4:00	Clear_water
Complaint	Lake Desor	Keweenaw	North	Lake	2022-07-11 4:00	Clear_water
Complaint	Lake Desor	Keweenaw	South	Lake	2022-07-12 4:00	Visible_cyanobacteria
Complaint	Lake Waubascon	Calhoun	Boat launch	Lake	2022-08-01 4:00	Clear_water
surveillance	Lake Erie	Monroe	Sterling State Park North	Lake	2022-07-28 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Sterling State Park South	Lake	2022-07-28 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-07-28 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-07-28 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Sterling State Park North	Lake	2022-08-02 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Sterling State Park South	Lake	2022-08-02 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-08-02 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-08-02 4:00	Visible_cyanobacteria
Complaint	Coady Lake	Montcalm	Lakeview Dr	Lake	2022-08-03 4:00	Visible_cyanobacteria
Complaint	North Lake LeAnn	Hillsdale	Bradley Road	Lake	2022-08-04 4:00	Visible_cyanobacteria
Complaint	Sessions Lake	Ionia	Beach	Lake	2022-08-05 16:07	Visible_cyanobacteria
Complaint	Merriman Lake	Van Buren	County Rd	Lake	2022-08-09 13:49	Visible_cyanobacteria
surveillance	Ford Lake	Washtenaw	Lake Shore Apt.	Lake	2022-08-08 4:00	Visible_cyanobacteria
Complaint	Merriman Lake	Van Buren	Boat launch	Lake	2022-08-09 14:00	Visible_cyanobacteria
Complaint	Goshorn Lake	Allegan		Lake	2022-08-05 4:00	Clear_water
Complaint	Lake George	Clare	North	Lake	2022-08-03 4:00	Clear_water

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
1-10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
1-10	7.3	<0.25	<0.25	<0.5	Yes
>10	54.6	<0.25	<0.25	<0.5	Yes
>10	27	<0.25	<0.25	<0.5	Yes
>10	25.1	<0.5	<0.25	<0.25	Yes
1-10	8.8	<0.25	<0.25	<0.5	Yes
1-10	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
1-10	0.8	0.46	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
>10	27.3	<0.25	<0.25	<0.5	Yes
>10	76.9	<0.25	<0.25	<0.5	Yes
>10	54.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
Complaint	Lake George	Clare	Middle	Lake	2022-08-03 4:00	Clear_water
Complaint	Lake George	Clare	Middle 2	Lake	2022-08-03 4:00	Clear_water
Complaint	Lake George	Clare	South	Lake	2022-08-03 4:00	Clear_water
surveillance	Lake Erie	Monroe	Sterling State Park North	Lake	2022-08-09 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Sterling State Park South	Lake	2022-08-09 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-08-09 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-08-09 4:00	Visible_cyanobacteria
Complaint	White Lake	Muskegon	Keenan	Lake	2022-07-29 4:00	Visible_cyanobacteria
Complaint	White Lake	Muskegon	Old Channel Trl	Lake	2022-08-02 4:00	Visible_cyanobacteria
Complaint	Lake Desor	Keweenaw	North Shore	Lake	2022-07-25 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	A	Lake	2022-08-04 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	B	Lake	2022-08-04 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	C	Lake	2022-08-04 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	D	Lake	2022-08-04 4:00	Clear_water
surveillance	Swan Lake	Allegan	E	Lake	2022-08-04 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	F	Lake	2022-08-04 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	G	Lake	2022-08-04 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	A	Lake	2022-08-10 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	B	Lake	2022-08-10 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	C	Lake	2022-08-10 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	D	Lake	2022-08-10 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	E	Lake	2022-08-10 4:00	Visible_cyanobacteria
surveillance	Muskegon Lake	Muskegon	Fisherman's Landing	Lake	2022-08-04 20:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Pinconning Park	Lake	2022-08-08 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Brissette Beach Township Park	Lake	2022-08-08 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Bay City State Recreation Area	Lake	2022-08-08 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Wenona Beach	Lake	2022-08-08 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Nayanquing Point State Wildlife Area	Lake	2022-08-08 4:00	Clear_water
surveillance	Lake Erie	Monroe	Lake Pier Beach North	Lake	2022-08-11 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-08-11 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Sterling State Park North	Lake	2022-08-11 4:00	Visible_cyanobacteria

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	491.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
NS	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	36.4	3.12	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
Test Fail	186.8	2.59	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	4.1	<0.25	<0.25	<0.5	Yes
>10	34.6	1.67	<0.25	<0.5	Yes
>10	971.7	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
1-10	5.0	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
1-10	6.0	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
surveillance	Lake Erie	Monroe	Sterling State Park South	Lake	2022-08-11 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Quanicassee State Wildlife Area	Lake	2022-08-08 4:00	Clear_water
surveillance	Saginaw Bay	Tuscola	Sunset Bay Marina Beach	Lake	2022-08-08 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Huron	Geiger Rd. Access	Lake	2022-08-08 4:00	Clear_water
surveillance	Saginaw Bay	Huron	B.C. McLeish Memorial Park	Lake	2022-08-08 4:00	Clear_water
surveillance	Saginaw Bay	Huron	Caseville County Park	Lake	2022-08-08 4:00	Visible_cyanobacteria
Complaint	Round Lake	Hillsdale	Shaffer	Lake	2022-08-12 21:05	Visible_cyanobacteria
Complaint	Round Lake	Hillsdale	Shaffer	Lake	2022-08-12 21:45	Clear_water
Complaint	Round Lake	Hillsdale	NW	Lake	2022-08-12 21:30	Visible_cyanobacteria
Targeted	Muskegon Lake	Muskegon	Channel-Harbour Towne Beach	Lake	2022-08-02 4:00	Visible_cyanobacteria
surveillance	Lake Richie	Keweenaw	Campground	Lake	2022-07-28 4:00	Visible_cyanobacteria
Targeted	Sunday Lake	Gogebic	Beach	Lake	2022-08-15 4:00	Visible_cyanobacteria
surveillance	Chickenbone Lake	Keweenaw	Campground	Lake	2022-08-11 4:00	Visible_cyanobacteria
surveillance	Chickenbone Lake	Keweenaw	Trail	Lake	2022-08-11 4:00	Visible_cyanobacteria
surveillance	Lake Richie	Keweenaw	Campground	Lake	2022-08-11 4:00	Visible_cyanobacteria
Complaint	Lake Desor	Keweenaw	South Campground	Lake	2022-07-10 4:00	Visible_cyanobacteria
Targeted	Lake Erie	Monroe	Sterling State Park North	Lake	2022-08-16 4:00	Clear_water
Targeted	Lake Erie	Monroe	Sterling State Park South	Lake	2022-08-16 4:00	Clear_water
Targeted	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-08-16 4:00	Visible_cyanobacteria
Targeted	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-08-16 4:00	Visible_cyanobacteria
Targeted	Thornapple Lake	Barry	Charlton Park swim area	Lake	2022-08-17 4:00	Visible_cyanobacteria,Non_Cyano_algae_plants
Targeted	Thornapple Lake	Barry	Charlton Park cover	Lake	2022-08-17 4:00	Visible_cyanobacteria,Non_Cyano_algae_plants
Targeted	Thornapple Lake	Barry	MDNR public boat launch	Lake	2022-08-17 4:00	Visible_cyanobacteria,Non_Cyano_algae_plants
Targeted	Sunday Lake	Gogebic		Lake	2022-08-16 4:00	Clear_water
Targeted	Sunday Lake	Gogebic		Lake	2022-08-16 4:00	Clear_water
Complaint	White Lake	Muskegon	Crosswinds	Lake	2022-08-18 19:42	Visible_cyanobacteria
surveillance	Muskegon Lake	Muskegon	Water Sports Park	Lake	2022-08-19	Visible_cyanobacteria
Targeted	Bass Lake	Mason	NW launch	Lake	2022-08-22 15:25	Visible_cyanobacteria
Targeted	Hardy Dam Pond	Newaygo	State Park boat launch	Lake	2022-08-22 18:13	Visible_cyanobacteria
Targeted	Hardy Dam Pond	Newaygo	State Park beach	Lake	2022-08-22 19:46	Visible_cyanobacteria
Complaint	Lake Frances	Wayne	Palmer Park	Lake	2022-08-23 21:17	Visible_cyanobacteria

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
>10	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
1-10	8.4	<0.25	<0.25	<0.5	Yes
1-10	NS	NS	NS	NS	No
1-10	<0.5	<0.25	<0.25	<0.5	Yes
1-10	NS	NS	NS	NS	No
1-10	<0.5	<0.25	<0.25	<0.5	Yes
	<0.5	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	12.6	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	259.3	<0.25	<0.25	<0.5	Yes
>10	226.2	<0.25	<0.25	<0.5	Yes
>10	106.9	<0.25	<0.25	<0.5	Yes
>10	2032.6	<0.25	<0.25	<0.5	Yes
>10	35.3	<0.25	<0.25	<0.5	Yes
>10	480.8	<0.25	<0.25	<0.5	Yes

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
Targeted	Wolf Lake	Muskegon	Sunset Beach	Lake	2022-08-11 4:00	Visible_cyanobacteria
Complaint	Blodgett Lake	Kent	NE & NW	Lake	2022-08-19 4:00	Visible_cyanobacteria
surveillance	Hess Lake	Newaygo	E 88th	Lake	2022-08-24 18:00	Visible_cyanobacteria
surveillance	Bass Lake	Mason	NW Launch	Lake	2022-08-24 15:10	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	Boat Launch	Lake	2022-08-24 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	Campground Beach South	Lake	2022-08-24 4:00	Clear_water
surveillance	Swan Lake	Allegan	Campground Beach North	Lake	2022-08-24 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	Mobile Home Park Boat Launch	Lake	2022-08-24 4:00	Clear_water
surveillance	Swan Lake	Allegan	Swan Lake Dr.	Lake	2022-08-24 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	End of Channel	Lake	2022-08-24 4:00	Clear_water
Complaint	Lac View Desert	Gogebic	Northshore Campground Beach	Lake	2022-08-17 4:00	Non-cyanobacterial algae/aquatic plants
surveillance	White Lake	Muskegon	Municipal Marina/Goodrich Park	Lake	2022-08-18 4:00	Clear_water
surveillance	White Lake	Muskegon	Montague Municipal Boat Launch	Lake	2022-08-18 4:00	Clear_water
Targeted	Bass Lake	Mason	Marrison Park	Lake	2022-08-22 4:00	Clear_water
Complaint	Duck Lake	Oakland	W Channel	Lake	2022-08-19 4:00	Visible_cyanobacteria
Complaint	Avon Lake	Oakland	S. Shore Dr	Lake	2022-08-24 20:15	Other
Complaint	Andale Lake	Oakland	Easement	Lake	2022-08-24 19:15	Visible_cyanobacteria,Benthic_type
Complaint	Sandshores Lake	Oakland	Little Creek Dr	Lake	2022-08-24 19:30	Other
Complaint	Silver Lake	Oceana	State Park beach	Lake	2022-08-26 18:16	Clear_water
Complaint	Silver Lake	Oceana	Wave club	Lake	2022-08-26 18:28	Clear_water
Complaint	Silver Lake	Oceana	Rose ave	Lake	2022-08-26 18:36	Clear_water
Targeted	Lake Erie	Monroe	Sterling State Park North	Lake	2022-08-23 4:00	Clear_water
Targeted	Lake Erie	Monroe	Sterling State Park South	Lake	2022-08-23 4:00	Clear_water
surveillance	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-08-25 4:00	Clear_water
surveillance	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-08-25 4:00	Clear_water
surveillance	Bond Falls Lake	Ontonagon	Beach	Lake	2022-08-23 4:00	Visible_cyanobacteria
Complaint	Lac View Desert Lake	Gogebic	Rice Bay 1	Lake	2022-08-24 4:00	Non_Cyano_algae_plants
Complaint	Lac View Desert Lake	Gogebic	Rice Bay 2	Lake	2022-08-24 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	Campground Beach	Lake	2022-08-31 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	Campground Pier	Lake	2022-08-31 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	Boat Launch	Lake	2022-08-31 4:00	Visible_cyanobacteria

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
<1	NS	NS	NS	NS	No
>10	10.1	<0.25	<0.25	<0.5	Yes
>10	21.9	<0.25	<0.25	<0.5	Yes
>10	13.1	<0.25	<0.25	<0.5	Yes
>10	25.5	0.94	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
>10	124.5	2.69	<0.25	<0.5	Yes
1-10	5.3	1.2	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
	NS	NS	NS	NS	No
	NS	NS	NS	NS	No
	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
>10	74.2	<0.25	1.22	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	0.9	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	47.1	5.32	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
surveillance	Swan Lake	Allegan	MHP Boat Launch	Lake	2022-08-31 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	Mouth of Channel	Lake	2022-08-31 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	End of Channel	Lake	2022-08-31 4:00	Non_Cyano_algae_plants
Targeted	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-08-23 4:00	Visible_cyanobacteria
Targeted	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-08-23 4:00	Visible_cyanobacteria
surveillance	Lake Erie	Monroe	Sterling State Park North	Lake	2022-08-25 4:00	Clear_water
surveillance	Lake Erie	Monroe	Sterling State Park South	Lake	2022-08-25 4:00	Clear_water
Complaint	Lake Frances	Wayne	Palmer Park	Pond (< 5 acres)	2022-09-01 23:28	Visible_cyanobacteria
Complaint	Cedar Lake	Ingham	Esker Landing Park	Lake	2022-09-02 18:07	Visible_cyanobacteria
Complaint	Huyck Lake	Cass	Stevens	Lake	2022-09-03 3:00	Clear_water
Complaint	Huyck Lake	Cass	Stevens	Lake	2022-09-02 20:57	Visible_cyanobacteria
Complaint	White Lake	Muskegon	Montague boat launch	Lake	2022-09-06 17:00	Clear_water
Complaint	White Lake	Muskegon	Maple Beach	Lake	2022-09-06 17:18	Clear_water
Complaint	White Lake	Muskegon	Municipal marina	Lake	2022-09-06 17:33	Visible_cyanobacteria
Complaint	White Lake	Muskegon	Crosswinds	Lake	2022-09-06 17:47	Visible_cyanobacteria
Complaint	White Lake	Muskegon	Svensson Park	Lake	2022-09-06 18:02	Clear_water
Complaint	Muskegon Lake	Muskegon	Waterfront Sports Park	Lake	2022-09-06 18:05	Visible_cyanobacteria
Complaint	Muskegon Lake	Muskegon	Fisherman’s Landing	Lake	2022-09-06 19:07	Visible_cyanobacteria
Complaint	Muskegon Lake	Muskegon	Heritage Landing kayak launch	Lake	2022-09-06 19:21	Visible_cyanobacteria
Complaint	Muskegon Lake	Muskegon	Grand Trunk boat launch	Lake	2022-09-06 19:52	Visible_cyanobacteria
Complaint	Muskegon Lake	Muskegon	Jaycees launch	Lake	2022-09-06 20:03	Clear_water
Complaint	Muskegon Lake	Muskegon	Harbour Towne beach	Lake	2022-09-06 20:18	Clear_water
Complaint	Huyck Lake	Cass	Stevens Street	Lake	2022-09-02 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Pinconning Park	Lake	2022-09-01 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Brissette Beach Township Park	Lake	2022-09-01 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Bay City State Recreation Area	Lake	2022-09-01 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Wenona Beach	Lake	2022-09-01 4:00	Visible_cyanobacteria

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	1.0	<0.25	<0.25	<0.5	Yes
1-10	1.7	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	4.5	<0.25	<0.25	<0.5	Yes
>10	32.3	<0.25	<0.25	<0.5	Yes
1-10	<0.5	<0.25	<0.25	<0.5	Yes
>10	139.3	<0.25	<0.25	<0.5	Yes
>10	203.1	<0.25	<0.25	<0.5	Yes
>10	192.7	<0.25	<0.25	<0.5	Yes
>10	496.8	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	ND	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
surveillance	Saginaw Bay	Bay	Nayanquing Point State Wildlife Area	Lake	2022-09-01 4:00	Clear_water
surveillance	Saginaw Bay	Bay	REP Nayanquing Point State Wildlife Area	Lake	2022-09-01 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Quanicassee State Wildlife Area	Lake	2022-09-01 4:00	Clear_water
surveillance	Saginaw Bay	Tuscola	Sunset Bay Marina Beach	Lake	2022-09-01 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Tuscola	REP Sunset Bay Marina Beach	Lake	2022-09-01 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Huron	Geiger Rd. Access	Lake	2022-09-01 4:00	Clear_water
surveillance	Saginaw Bay	Huron	B.C. McLeish Memorial Park	Lake	2022-09-01 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Huron	Caseville County Park	Lake	2022-09-01 4:00	Visible_cyanobacteria
Complaint	Spring Lake	Oakland	Shoreline	Lake	2022-08-26 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	Boat Launch	Lake	2022-09-06 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	Campground Beach 1	Lake	2022-09-06 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	Campground Beach 2	Lake	2022-09-06 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	MHP Boat Launch	Lake	2022-09-06 4:00	Visible_cyanobacteria
surveillance	Swan Lake	Allegan	Mouth of Channel	Lake	2022-09-06 4:00	Non_Cyano_algae_plants
surveillance	Swan Lake	Allegan	End of Channel	Lake	2022-09-06 4:00	Non_Cyano_algae_plants
Targeted	Lake Erie	Monroe	Luna Pier Beach North	Lake	2022-09-06 4:00	Clear_water
Targeted	Lake Erie	Monroe	Luna Pier Beach South	Lake	2022-09-06 4:00	Clear_water
Targeted	Lake Erie	Monroe	Sterling State Park North	Lake	2022-09-06 4:00	Clear_water
Targeted	Lake Erie	Monroe	Sterling State Park South	Lake	2022-09-06 4:00	Clear_water
Complaint	Weidman Mill Pond	Isabella	N. Johnson	Lake	2022-09-09 4:00	Non_Cyano_algae_plants
Complaint	Dickerson Lake	Montcalm	Thompson Dr.	Lake	2022-09-07 4:00	Visible_cyanobacteria
surveillance	Hess Lake	Newaygo	MDNR Boat Launch	Lake	2022-09-07 4:00	Non_Cyano_algae_plants
surveillance	Bass Lake	Mason	NW boat launch	Lake	2022-09-07 17:33	Visible_cyanobacteria
surveillance	Hess Lake	Newaygo	88th ST	Lake	2022-09-07 17:36	Clear_water
surveillance	Hardy Dam Pond	Newaygo	Sandy Beach	Lake	2022-09-07 17:41	Visible_cyanobacteria
surveillance	Ford Lake	Washtenaw	Lakeshore apts	Lake	2022-09-08 13:00	Visible_cyanobacteria
surveillance	Belleville Lake	Wayne	NE	Lake	2022-09-08 21:01	Clear_water
surveillance	South Lake LeAnn	Hillsdale	Boat launch	Lake	2022-09-13 13:14	Visible_cyanobacteria
surveillance	South Lake Leann	Hillsdale	Deep 1	Lake	2022-09-13 13:45	Clear_water
surveillance	South Lake Leann	Hillsdale	Deep 2	Lake	2022-09-13 14:11	Clear_water

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	3044.3	<0.25	<0.25	<0.5	Yes
>10	32.2	11.6	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	66.7	6.8	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
1-10	3.7	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
>10	582.7	<0.25	<0.25	<0.5	Yes
<1	2.3	<0.25	<0.25	<0.5	Yes
>10	125.5	<0.25	<0.25	<0.5	Yes
>10	78.8	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
>10	37.0	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
surveillance	North Lake Leann	Hillsdale	Boat launch	Lake	2022-09-13 15:02	Visible_cyanobacteria
surveillance	North Lake Leann	Hillsdale	Deep 1	Lake	2022-09-13 15:22	Visible_cyanobacteria
surveillance	North Lake Leann	Hillsdale	Deep 2	Lake	2022-09-13 15:44	Visible_cyanobacteria
Complaint	Lake Isabella	Isabella	Trebuth Ct	Lake	2022-09-13 4:00	Clear_water
Complaint	Lake Isabella	Isabella	Trebuth Ct.	Lake	2022-09-13 4:00	Visible_cyanobacteria
Targeted surveillance	West Bloomfield Pond	Oakland	Boat Launch	Pond (< 5 acres)	2022-09-13 4:00	Non_Cyano_algae_plants
Monitoring	West Bloomfield Lake	Oakland	Park	Lake	2022-09-13 4:00	Clear_water
Complaint	Tommy's Lake	Oakland	Boat Launch off Scout Dr.	Lake	2022-09-13 4:00	Visible_cyanobacteria
Complaint	Tommy's Lake	Oakland	Camp Agawam Beach	Lake	2022-09-13 4:00	Clear_water
Complaint	Tommy's Lake	Oakland	Easement near Beach Dr.	Lake	2022-09-13 4:00	Clear_water
Complaint	Tommy's Lake	Oakland	Beach Dr.	Lake	2022-09-13 4:00	Clear_water
Complaint	Tommy's Lake	Oakland	Beach Dr. 2	Lake	2022-09-13 4:00	Visible_cyanobacteria,Clear_water
Complaint	Island Lake	Marquette	County Rd.	Lake	2022-09-19 4:00	Visible_cyanobacteria,No_Sample
Complaint	Huron River	Washtenaw	Gallup Park 1A	River/Stream	2022-08-25 4:00	Other
Complaint	Huron River	Washtenaw	Gallup Park 1B	River/Stream	2022-08-25 4:00	Other
Complaint	Huron River	Washtenaw	Galllup Park 2A	River/Stream	2022-08-25 4:00	Other
Complaint	Huron River	Washtenaw	Gallup Park 2B	River/Stream	2022-08-25 4:00	Other
Complaint	Huron River	Washtenaw	Gallup Park 3A	River/Stream	2022-08-25 4:00	Other
Complaint	Huron River	Washtenaw	Gallup Park 3B	River/Stream	2022-08-25 4:00	Other
Complaint	Huron River	Washtenaw	Gallup Park 4A	River/Stream	2022-08-25 4:00	Other
Complaint	Gallup Park Pond	Washtenaw	5A	Pond (< 5 acres)	2022-08-25 4:00	Other
Complaint	Gallup Park Pond	Washtenaw	B	Pond (< 5 acres)	2022-08-25 4:00	Other
surveillance	Saginaw Bay	Bay	Pinconning Park	Lake	2022-07-19 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Brissette Beach Township Park	Lake	2022-07-19 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Bay City State Recreation Area	Lake	2022-07-19 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Wenona Beach	Lake	2022-07-19 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Nayanquing Point State Wildlife Area	Lake	2022-07-19 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Quanicassee State Wildlife Area	Lake	2022-07-19 4:00	Clear_water
surveillance	Saginaw Bay	Bay	REP Quanicassee State Wildlife Area	Lake	2022-07-19 4:00	Clear_water
surveillance	Saginaw Bay	Tuscola	Sunset Bay Marina Beach	Lake	2022-07-19 4:00	Visible_cyanobacteria
surveillance	Saginaw Bay	Huron	Geiger Rd. Access	Lake	2022-07-19 4:00	Clear_water
Complaint	Saginaw Bay	Huron	B.C. McLeish Memorial Park	Lake	2022-07-19 4:00	Clear_water
surveillance	Saginaw Bay	Huron	Caseville County Park	Lake	2022-07-19 4:00	Clear_water

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
>10	446.7	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
1-10	NS	NS	NS	NS	Yes
<1	NS	NS	NS	NS	No
<1	0.7	<0.25	0.84	<0.5	Yes
<1	1.0	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
NS	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
Complaint	Island Lake	Marquette	County Rd CS	Lake	2022-09-19 23:26	Visible_cyanobacteria
Complaint	South Manistique Lake	Mackinac	South Long Point Rd	Lake	2022-09-22 14:15	Visible_cyanobacteria
Complaint	Gratiot Lake	Keweenaw	Boat launch	Lake	2022-09-20 4:00	Visible_cyanobacteria
Complaint	South Manistique Lake	Mackinac	North Long Point	Lake	2022-09-22 14:27	Clear_water
Complaint	Shoepac River	Mackinac	Sherman rd	River/Stream	2022-09-22 14:43	Clear_water
Complaint	South Manistique Lake	Mackinac	State campground boat launch	Lake	2022-09-22 14:58	Clear_water
Complaint	South Manistique Lake	Mackinac	Wolfe Bay boat launch	Lake	2022-09-22 15:21	Visible_cyanobacteria
Complaint	South Manistique Lake	Mackinac	Curtis Township boat launch	Lake	2022-09-22 15:39	Clear_water
Complaint	South Manistique Lake	Mackinac	Norton boat launch	Lake	2022-09-22 15:59	Clear_water
Complaint	Lake Frances	Wayne	Palmer Park	Pond (< 5 acres)	2022-09-24 19:54	Visible_cyanobacteria
Complaint	Woodland Lake	Livingston	Boat launch	Lake	2022-09-24 21:45	Clear_water
Complaint	Woodland Lake	Livingston	Hunter rd	Lake	2022-09-24 21:54	Non_Cyano_algae_plants
surveillance	Saginaw Bay	Bay	Pinconning Park	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Brissette Beach Township Park	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Bay City State Recreation Area	Lake	2022-09-27 4:15	Visible_cyanobacteria
surveillance	Saginaw Bay	Bay	Wenona Beach	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Nayanquing Point State Wildlife Area	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Nayanquing Point State Wildlife Area	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Quanicassee State Wildlife Area	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Wenona Beach	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Tuscola	Sunset Bay Marina Beach	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Huron	Geiger Rd. Access	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Bay	Quanicassee State Wildlife Area	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Huron	B.C. McLeish Memorial Park	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Tuscola	Sunset Bay Marina Beach	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Huron	Caseville County Park	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Huron	Geiger Road Access	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Huron	REP Caseville County Park	Lake	2022-09-27 4:00	Clear_water
surveillance	Saginaw Bay	Huron	B.C. McLeish Memorial Park	Lake	2022-09-27 4:00	Clear_water

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
>10	9.6	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	194.8	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
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<1	NS	NS	NS	NS	No
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<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
surveillance	Saginaw Bay	Huron	Caseville County Park	Lake	2022-09-27 4:00	Clear_water
Complaint	Stony Lake	Oceana	Birch Ln.	Lake	2022-09-30 4:00	Visible_cyanobacteria
Complaint	Brule Lake	Iron	E. Brule Lk Rd.	Lake	2022-10-04 4:00	Clear_water
Complaint	Lake Lansing	Ingham	E Lake Dr	Lake	2022-10-05 19:45	Clear_water
Complaint	Lake Lansing	Ingham	Lake Lansing Park South	Lake	2022-10-05 15:10	Clear_water
Complaint	Lake Lansing	Ingham	Lake Lansing Boat Launch	Lake	2022-10-05 15:00	Visible_cyanobacteria
Complaint	Lake Lansing	Ingham	E. Reynolds Rd	Lake	2022-10-05 19:52	Visible_cyanobacteria
Complaint	Gratiot Lake	Keweenaw	Boat launch	Lake	2022-10-05 4:00	Clear_water
Complaint	Bass Lake	Mason	NW Corner Boat Launch	Lake	2022-09-13 4:00	Visible_cyanobacteria
Complaint	Bass Lake	Mason	Marrison Rd. Boat Launch	Lake	2022-09-13 4:00	Clear_water
surveillance	Hardy Dam	Newaygo	State Park Beach	Lake	2022-09-08 4:00	Visible_cyanobacteria
surveillance	Hardy Pond	Newaygo	State Park Beach-clear water	Lake	2022-09-08 4:00	Clear_water
surveillance	Hardy Pond	Newaygo	State Park Boat Launch	Lake	2022-09-08 4:00	Visible_cyanobacteria
surveillance	Hardy Pond	Newaygo	State Park Boat Launch-clear water	Lake	2022-09-08 4:00	Clear_water
Complaint	Soldan Dog Park Pond	Ingham	North Beach	Lake	2022-10-06 15:39	Visible_cyanobacteria
Complaint	Hawk Island Lake	Ingham	Beach	Lake	2022-10-06 16:15	Clear_water
Complaint	Soldan Dog Park Pond	Ingham	East Beach	Lake	2022-10-06 15:34	Visible_cyanobacteria
Complaint	Hawk Island Lake	Ingham	North	Lake	2022-10-06 16:23	Visible_cyanobacteria
Complaint	Bass Lake	Montcalm	Oak Drive	Lake	2022-10-06 4:00	Visible_cyanobacteria
Complaint	North Ridge Lake	Barry	Briar Hill Dr.	Pond (< 5 acres)	2022-10-11 4:00	Visible_cyanobacteria
Complaint	North Ridge Lake	Barry	Briar Hill Dr	Pond (< 5 acres)	2022-10-11 15:31	Visible_cyanobacteria
Complaint	Lake Lansing	Ingham	Lake Lansing Park North Boat Launch	Lake	2022-10-12 20:21	Clear_water
Complaint	Lake Lansing	Ingham	Lake Lansing Park South	Lake	2022-10-12 20:25	Clear_water
surveillance	Hawk Island Lake	Ingham	North	Lake	2022-10-13 16:00	Clear_water
Complaint	Soldan Dog Park Pond	Ingham	North beach	Lake	2022-10-13 15:30	Visible_cyanobacteria
Complaint	Soldan Dog Park Pond	Ingham	East beach	Lake	2022-10-13 13:25	Visible_cyanobacteria

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	84.7	<0.25	<0.25	<0.5	Yes
>10	32.6	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	NS	NS	NS	NS	No
1-10	NS	NS	NS	NS	No
>10	9.0	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	<0.5	<0.25	<0.25	<0.5	Yes
1-10	2.4	<0.25	<0.25	<0.5	Yes
>10	211.4	<0.25	<0.25	<0.5	Yes
<1					No
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
>10	14.7 J	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
surveillance	Hawk Island Lake	Ingham	Beach	Lake	2022-10-14 2:00	Clear_water
Complaint	Soldan Park Dog Park	Ingham	East beach	Lake	2022-10-24 13:02	Visible_cyanobacteria
Complaint	Soldan Dog Park Pond	Ingham	North beach	Lake	2022-10-24 13:10	Visible_cyanobacteria
surveillance	Hawk Island Lake	Ingham	Beach	Lake	2022-10-24 13:46	Clear_water
surveillance	Hawk Island Lake	Ingham	North	Lake	2022-10-24 14:04	Clear_water
Complaint	Lake Erie	Monroe	Sterling State Park	Lake	2022-10-26 15:25	Clear_water
Complaint	Lake Erie	Monroe	Luna Pier	Lake	2022-10-26 15:50	Visible_cyanobacteria
Complaint	Soldan Dog Park Pond	Ingham	East beach	Lake	2022-10-27 12:47	Clear_water
Complaint	Soldan Dog Park Pond	Ingham	North	Lake	2022-10-27 12:53	Visible_cyanobacteria
surveillance	Hawk Island Lake	Ingham	North	Lake	2022-10-27 13:13	Clear_water
surveillance	Hawk Island Lake	Ingham	Beach	Lake	2022-10-27 13:23	Clear_water
Complaint	Duck Lake	Muskegon	Western Shore	Lake	2022-10-27 4:00	Visible_cyanobacteria,No_Sample
Complaint	Soldan Dog Park Pond	Ingham	East beach	Lake	2022-11-03 13:18	Clear_water
Complaint	Soldan Dog Park Pond	Ingham	North beach	Lake	2022-11-03 13:23	Visible_cyanobacteria
surveillance	Hawk Island Lake	Ingham	North	Lake	2022-11-03 14:00	Clear_water,Non_Cyano_algae_plants
surveillance	Hawk Island lake	Ingham	Beach	Lake	2022-11-03 14:11	Clear_water
Complaint	Soldan Dog Park Pond	Ingham	East Beach	Lake	2022-11-10 14:08	Clear_water
Complaint	Soldan Dog Park Pond	Ingham	North Beach	Lake	2022-11-10 14:14	Visible_cyanobacteria
surveillance	Hawk Island Lake	Ingham	North	Lake	2022-11-10 14:30	Clear_water
surveillance	Hawk Island Lake	Ingham	Beach	Lake	2022-11-10 14:40	Clear_water
Complaint	Hess Lake	Newaygo	Redwood	Lake	2022-11-02 5:00	Clear_water
Complaint	Hess Lake	Newaygo	MDNR Boat Launch	Lake	2022-11-02 5:00	Clear_water
Complaint	Pleasant Lake	Washtenaw	Reno Rd. Boat Launch	Lake	2022-10-31 4:00	Visible_cyanobacteria,No_Sample
Complaint	Muskrat Lake	Van Buren	38th 1/2 St.	Lake	2022-11-01 5:00	Visible_cyanobacteria

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
10-Jan	1.3	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10					Yes
<1	NS	NS	NS	NS	No
1-10	0.9	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
NS	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
1-10	2.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
NS	NS	NS	NS	NS	No
1-10	1.7	<0.25	<0.25	<0.5	Yes
NS	NS	NS	NS	NS	
NS	NS	NS	NS	NS	
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1					No
<1	NS	NS	NS	NS	No

Testing Reason	Lake	County	Site	Water Body Type	Sample Date	Sample Type
Complaint	Louise Lake	Livingston	Boat Launch Area	Lake	2022-11-02 5:00	Visible_cyanobacteria
Complaint	Soldan Dog Park Pond	Ingham	East beach	Lake	2022-11-15 14:58	Visible_cyanobacteria
Complaint	Soldan Dog Park Pond	Ingham	North	Lake	2022-11-15 15:04	Visible_cyanobacteria
Complaint	Soldan Dog Park Pond	Ingham	East beach	Lake	2022-11-18 13:54	Clear_water
Complaint	Soldan Dog Park Pond	Ingham	North	Lake	2022-11-18 14:00	Visible_cyanobacteria
Complaint	Soldan Dog Park Pond	Ingham	North	Lake	2022-11-23 13:54	Clear_water
Complaint	Pleasant Lake	Oakland	Leystone Blvd. Sample	Lake	2022-12-08 5:00	Visible_cyanobacteria

MC Test Strip ppb	Total Microcystins ppb	Anatoxin-a ppb	Cylindrospermopsin ppb	Nodularin ppb	Sent To Lab
>10	48.0	4.33	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	NS	NS	NS	NS	No
<1	0.5	<0.25	<0.25	<0.5	Yes
<1	<0.5	<0.25	<0.25	<0.5	Yes
<1	NS	NS	NS	NS	No