

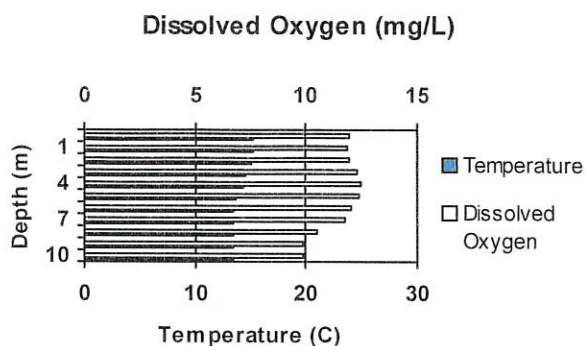
# LAKE CHECK Water Quality Monitoring Report

2017093

Customer	Waterbody	Sample Information
Middle Lake (Muskegon)	Middle Lake	Date: 4/26/2017
		Site: Deep Hole

## On-Site Results

Depth (m)	Temperature (degrees C)	Dissolved Oxygen	
		mg/L	%
0	15.3	12.0	119
1	15.3	11.9	119
2	15.1	12.0	119
3	14.5	12.3	121
4	14.3	12.5	122
5	13.7	12.4	120
6	13.4	12.0	116
7	13.4	11.8	114
8	13.4	10.5	101
9	13.4	9.9	95
10	13.4	9.9	95



Secchi Disk Depth 5.8 meters

Thermocline Depth meters

## Analytical Results

Parameter	Result	Units	Interpretation
Fecal Bacteria (E. coli)		CFU/100 mL	N/A
Conductivity	98	uS/cm	
Total Dissolved Solids	64	mg/L	Low concentration of dissolved salts
pH	8.3	S.U.	Water is slightly alkaline
Alkalinity	41	mg CaCO3/L	Water is very soft
Total Phosphorus	11	ug/L	Moderately phosphorus enriched
Nitrates	200	ug/L	Not nitrogen enriched
Chlorophyll	N/A		

## Trophic State Evaluation

	TSI	Trophic Status
Based on Secchi Disk Depth	35	meso-oligotrophic
Based on Total Phosphorus	34	meso-oligotrophic
Based on Chlorophyll	N/A	

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## Conclusions

- Conditions are good for fish growth.
- Minimum dissolved oxygen is adequate for good fish production.
- pH is within acceptable limits.
- Sample is somewhat phosphorus enriched. Create natural buffer between lawn & lakeshore.
- Repeat LakeCheck in Fall.

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- WARNING. condition requires immediate attention.
  - CAUTION. condition requires further evaluation.
  - OK. condition within acceptable limits.
  - NEUTRAL. condition neither good nor bad.

## Notes

Report describes conditions at the time the sample was collected.

Approved by

*Jaimee Conroy*

Date 12/6/2017

Mrs. Jaimee Conroy, Technical Services Manager

FROM YOUR **WQ  
PRO** DEALER



PLM Lake & Land Management Corp  
P.O. Box 132  
Caledonia MI 49316-  
Phone: (616) 891-1294

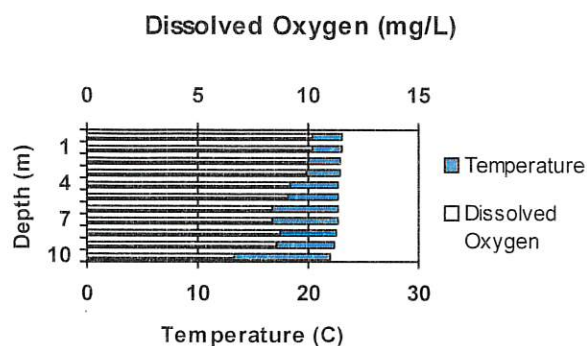
# LAKE CHECK Water Quality Monitoring Report

2017094

Customer	Waterbody	Sample Information
Middle Lake (Muskegon)	Middle Lake	Date: 8/30/2017
		Site: Deep Hole

## On-Site Results

Depth (m)	Temperature (degrees C)	Dissolved Oxygen	
		mg/L	%
0	23.0	10.2	119
1	23.0	10.2	118
2	22.8	9.9	116
3	22.8	9.9	115
4	22.7	9.1	111
5	22.7	9.1	105
6	22.6	8.4	97
7	22.6	8.4	97
8	22.5	8.7	97
9	22.3	8.5	94
10	22.0	6.7	74



Secchi Disk Depth 4.6 meters

Thermocline Depth meters

## Analytical Results

Parameter	Result	Units	Interpretation
Fecal Bacteria (E. coli)		CFU/100 mL	N/A
Conductivity	106	uS/cm	
Total Dissolved Solids	70	mg/L	Low concentration of dissolved salts
pH	8.2	S.U.	Water is slightly alkaline
Alkalinity	47	mg CaCO <sub>3</sub> /L	Water is very soft
Total Phosphorus	8	ug/L	Slightly phosphorus enriched
Nitrates	200	ug/L	Not nitrogen enriched
Chlorophyll	N/A		

## Trophic State Evaluation

	TSI	Trophic Status
Based on Secchi Disk Depth	38	meso-oligotrophic
Based on Total Phosphorus	30	oligotrophic
Based on Chlorophyll	N/A	

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## Conclusions

- Conditions are good for fish growth.
- Minimum dissolved oxygen is adequate for good fish production.
- pH is within acceptable limits.
- Phosphorus and Nitrogen are within acceptable limits.
- REPEAT LakeCheck NEXT YEAR!

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- WARNING. condition requires immediate attention.
  - CAUTION. condition requires further evaluation.
  - OK. condition within acceptable limits.
  - NEUTRAL. condition neither good nor bad.

## Notes

Report describes conditions at the time the sample was collected.

Approved by

*Jaimee Conroy*

Date 12/6/2017

Mrs. Jaimee Conroy, Technical Services Manager

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# Bacteria Sampling Report

Waterbody:  
Middle Lake

Middle Lake (Muskegon)

Date Sampled:  
7/27/2017

Location	<i>E. coli</i>	Total Coliforms	Interpretation
#1	4.0	260	● Water meets bacteriological standards for safe swimming.
#2	4.0	88	● Water meets bacteriological standards for safe swimming.
#3	4.0	20	● Water meets bacteriological standards for safe swimming.

Bacterial counts are expressed as the number of Colony Forming Units per 100 milliliters (CFU/100mL).

For full body contact recreation (including swimming) counts of *E. coli* should not exceed 130 (CFU/100mL) as a monthly geometric mean of at least five samples per the State of Michigan standard, or single samples should not exceed 298 (CFU/100mL) [235 CFU/100mL in a designated bathing beach area] per Federal (EPA) guidelines.

Current recreational water quality standards do not rely on Total Coliform counts.

Approved by Jaimee Conroy Date 31-Jul-17  
Mrs. Jaimee Conroy, Technical Services Manager



PLM Lake & Land Management Corp  
P.O. Box 132  
Caledonia MI 49316-  
Phone: (616) 891-1294

