

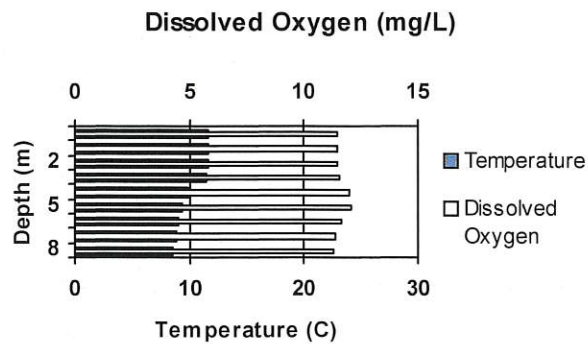


Water Quality Monitoring Report

Customer	Waterbody	Sample Information
Middle Lake (Muskegon)	Middle Lake	Date: 4/23/2019
		Site: Deep Hole

On-Site Results

Depth (m)	Temperature (degrees C)	Dissolved Oxygen	
		mg/L	%
0	11.7	11.4	11
1	11.6	11.4	105
2	11.6	11.4	105
3	11.5	11.5	105
4	9.9	12.0	106
5	9.4	12.1	106
6	9.1	11.6	101
7	8.9	11.4	96
8	8.5	11.3	93



Secchi Disk Depth	4.5 meters
Thermocline Depth	3.5 meters

Analytical Results

Parameter	Result	Units	Interpretation
Fecal Bacteria (E. coli)		CFU/100 mL	N/A
Conductivity	110	uS/cm	Low concentration of dissolved salts
Total Dissolved Solids	71	mg/L	
pH	7.8	S.U.	Water is slightly alkaline
Alkalinity	78	mg CaCO3/L	Water is soft
Total Phosphorus	7	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	mesotrophic
Based on Total Phosphorus	28	oligotrophic
Based on Chlorophyll	N/A	

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 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 11/21/2019

Mrs. Jaimee Conroy, Technical Services Manager

FROM YOUR **WQ PRO** DEALER



PLM Lake & Land Management Corp
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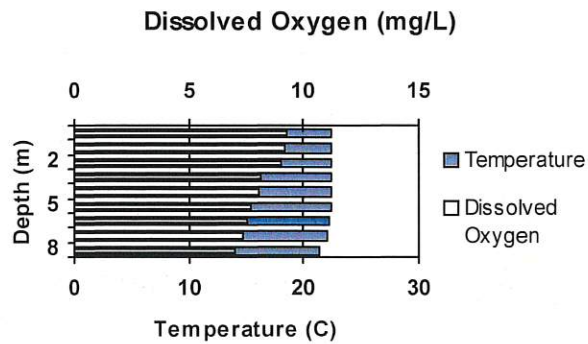
Water Quality Monitoring Report

2019091

Customer	Waterbody	Sample Information
Middle Lake (Muskegon)	Middle Lake	Date: 9/4/2019
		Site: Deep Hole

On-Site Results

Depth (m)	Temperature (degrees C)	Dissolved Oxygen	
		mg/L	%
0	22.4	9.3	92
1	22.4	9.2	91
2	22.4	9.0	89
3	22.4	8.2	81
4	22.3	8.0	80
5	22.3	7.7	76
6	22.2	7.6	74
7	22.0	7.4	72
8	21.4	7.0	71



Secchi Disk Depth	3.5 meters
Thermocline Depth	meters

Analytical Results

Parameter	Result	Units	Interpretation
Fecal Bacteria (E. coli)		CFU/100 mL	N/A
Conductivity	124	uS/cm	
Total Dissolved Solids	80	mg/L	Low concentration of dissolved salts
pH	7.8	S.U.	Water is slightly alkaline
Alkalinity	48	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	42	mesotrophic
Based on Total Phosphorus	34	meso-oligotrophic
Based on Chlorophyll	N/A	

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 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 11/21/2019

Mrs. Jaimee Conroy, Technical Services Manager

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Bacteria Sampling Report

Waterbody: Middle Lake (Muskegon)
Middle Lake (Muskegon)

Date Sampled:
7/9/2019

Location	<i>E. coli</i>	Total Coliforms	Interpretation
#1	1	N/A	● Water meets bacteriological standards for safe swimming.
#2	4	N/A	● Water meets bacteriological standards for safe swimming.
#3	1	N/A	● 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 Jaimie Conroy Date 11-Jul-19
Mrs. Jaimie Conroy, Technical Services Manager



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