2017252

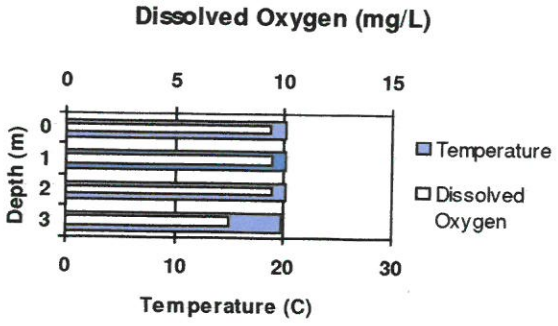
LAKE CHECK Water Quality Monitoring Report

Customer	Waterbody	Sample Information
Hiland Lake	Hiland Lake	Date: 10/10/2017
		Site: Middle

On-Site Results

Depth (m)	Temperature (degrees C)	Dissolved Oxygen mg/L	Dissolved Oxygen %
0	20.1	9.3	103
1	20.1	9.5	105
2	20.1	9.5	104
3	19.8	7.5	87

Secchi Disk Depth	3.0 meters
Thermocline Depth	meters



Analytical Results

Parameter	Result	Units	Interpretation
Fecal Bacteria (E. coli		CFU/100 mL	N/A
Conductivity	440	uS/cm	
Total Dissolved Solids	286	mg/L	Moderate concentration of dissolved salts
pH	8.3	S.U.	Water is slightly alkaline
Alkalinity	162	mg CaCO3/L	Water is hard
Total Phosphorus	5	ug/L	Not phosphorus enriched
Nitrates	100	ug/L	Not nitrogen enriched
Chlorophyll	N/A		

Trophic State Evaluation

	TSI	Trophic Status
Based on Secchi Disk Depth	44	mesotrophic
Based on Total Phosphorus	23	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 NEXT YEAR!

- 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 12/4/2017

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

2017251

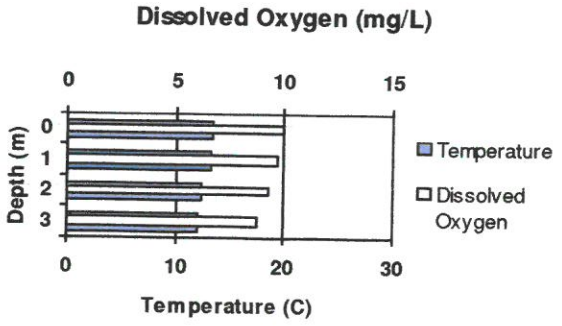
LAKE CHECK Water Quality Monitoring Report

Customer	Waterbody	Sample Information
Hiland Lake	Hiland Lake	Date: 4/18/2017
		Site: Middle

On-Site Results

Depth (m)	Temperature (degrees C)	Dissolved Oxygen mg/L	Dissolved Oxygen %
0	13.3	10.0	95
1	13.2	9.7	92
2	12.3	9.3	87
3	12.0	8.8	82

Secchi Disk Depth	2.5	meters
Thermocline Depth		meters



Analytical Results

Parameter	Result	Units	Interpretation
Fecal Bacteria (E. coli		CFU/100 mL	N/A
Conductivity	620	uS/cm	
Total Dissolved Solids	338	mg/L	Moderate concentration of dissolved salts
pH	8.2	S.U.	Water is slightly alkaline
Alkalinity	160	mg CaCO3/L	Water is hard
Total Phosphorus	15	ug/L	Moderately phosphorus enriched
Nitrates	1560	ug/L	Nitrogen enriched
Chlorophyll	N/A		

Trophic State Evaluation

	TSI	Trophic Status
Based on Secchi Disk Depth	47	mesotrophic
Based on Total Phosphorus	39	mesotrophic
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.
- Sample is highly nitrogen enriched. Consider nutrient abatement measures
- Repeat LakeCheck in Fall.

- 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 12/4/2017

Mrs. Jaimee Conroy, Technical Services Manager

FROM YOUR WQ PRO DEALER

PLM Lake & Land Management Corp
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Phone: (616) 891-1294

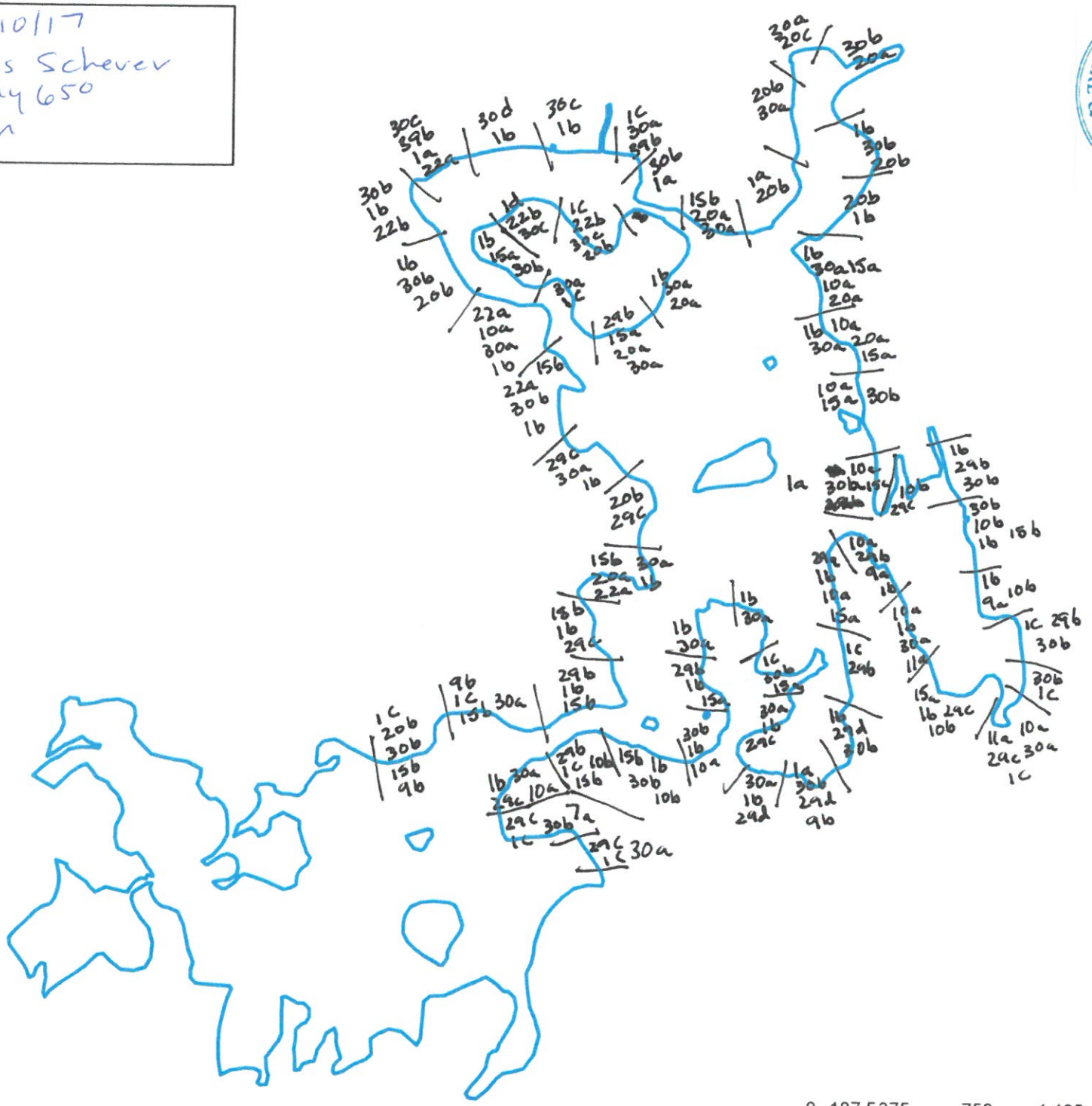
Lake:HiLand Lake County: Livingston Washtenaw Survey Date : 10/10/2017

Standard Aquatic Vegetation Summary Sheet

Code No	Plant Name	Total number of AVAS's for each Density Category A 1	B 2	C 3	D 4	Calculations A x 1 5	B x 10 6	C x 40 7	D x 80 8	Sum of Columns 5-8 9	Total No. of AVAS 10	Col 9 divided by Col 10 11
1	Eurasian watermilfoil	5	33	13	0	5	330	520	0	855	59	14.49
2	Curly leaf pondweed	0	0	0	0	0	0	0	0			
3	Chara	0	0	0	0	0	0	0	0			
4	Thinleaf pondweed	0	0	0	0	0	0	0	0			
5	Flatstem pondweed	0	0	0	0	0	0	0	0			
6	Robbins pondweed	0	0	0	0	0	0	0	0			
7	Variable pondweed	1	0	0	0	1	0	0	0	1	59	0.02
8	White stem pondweed	0	0	0	0	0	0	0	0			
9	Richardsons pondweed	2	4	0	0	2	40	0	0	42	59	0.71
10	Illinois pondweed	9	7	0	0	9	70	0	0	79	59	1.34
11	Large leaf pondweed	2	0	0	0	2	0	0	0	2	59	0.03
12	American pondweed	0	0	0	0	0	0	0	0			
13	Floating leaf pondweed	0	0	0	0	0	0	0	0			
14	Water stargrass	0	0	0	0	0	0	0	0			
15	Wild celery	8	10	1	0	8	100	40	0	148	59	2.51
16	Sagittaria (submersed)	0	0	0	0	0	0	0	0			
17	Northern watermilfoil	0	0	0	0	0	0	0	0			
18	Green watermilfoil	0	0	0	0	0	0	0	0			
19	Two-leaved watermilfoil	0	0	0	0	0	0	0	0			
20	Coontail	6	8	1	0	6	80	40	0	126	59	2.14
21	Elodea	0	0	0	0	0	0	0	0			
22	Bladderwort	5	3	0	0	5	30	0	0	35	59	0.59
23	Mini Bladderwort	0	0	0	0	0	0	0	0			
24	Buttercup	0	0	0	0	0	0	0	0			
25	Naiad	0	0	0	0	0	0	0	0			
26	Brittle naiad	0	0	0	0	0	0	0	0			
27	Sago Pondweed	0	0	0	0	0	0	0	0			
28	Cabomba	0	0	0	0	0	0	0	0			
29	Starry Stonewort	1	8	10	4	1	80	400	320	801	59	13.58
30	Water Lily	21	20	4	1	21	200	160	80	461	59	7.81
31	Spatterdock	0	0	0	0	0	0	0	0			
32	Water shield	0	0	0	0	0	0	0	0			
33	Lemna minor	0	0	0	0	0	0	0	0			
34	Greater duckweed	0	0	0	0	0	0	0	0			
35	Watermeal	0	0	0	0	0	0	0	0			
36	Arrowhead	0	0	0	0	0	0	0	0			
37	Pickerelweed	0	0	0	0	0	0	0	0			
38	Arrow arum	0	0	0	0	0	0	0	0			
39	Cattail	0	2	0	0	0	20	0	0	20	59	0.34
40	Bulrush	0	0	0	0	0	0	0	0			
41	Iris	0	0	0	0	0	0	0	0			
42	Swamp loosestrife	0	0	0	0	0	0	0	0			
43	Purple loosestrife	0	0	0	0	0	0	0	0			
44	Phragmites	0	0	0	0	0	0	0	0			
45		0	0	0	0	0	0	0	0			

Total cumulative cover **43.56**

Survey Date: 10/10/17
Surveyor: James Schever
Weather: Sunny 650
Time: 11:00 am



0 187.5375 750 1,125 1,500 Feet

N