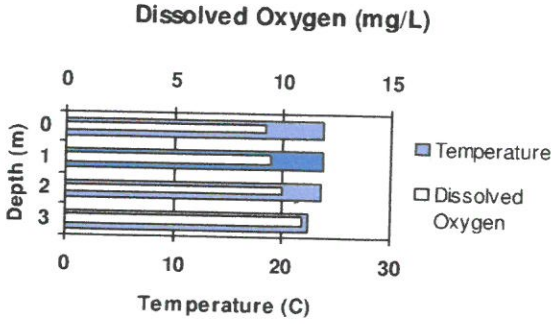
LAKE CHECK **Water Quality Monitoring Report**

2018252

Customer	Waterbody	Sample Information
Hiland Lake	Hiland Lake	Date: 9/20/2018
		Site: Middle

On-Site Results

Depth (m)	Temperature (degrees C)	Dissolved Oxygen mg/L	Dissolved Oxygen %
0	23.7	9.2	109
1	23.7	9.5	110
2	23.6	10.0	117
3	22.3	10.9	131



Secchi Disk Depth	2.0	meters
Thermocline Depth		meters

Analytical Results

Parameter	Result	Units	Interpretation
Fecal Bacteria (E. coli		CFU/100 mL	N/A
Conductivity	437	uS/cm	
Total Dissolved Solids	284	mg/L	Moderate concentration of dissolved salts
pH	8.5	S.U.	Water is slightly alkaline
Alkalinity	153	mg CaCO3/L	Water is hard
Total Phosphorus	10	ug/L	Slightly phosphorus enriched
Nitrates	230	ug/L	Not nitrogen enriched
Chlorophyll	N/A		

Trophic State Evaluation

	TSI	Trophic Status
Based on Secchi Disk Depth	50	moderately eutrophic
Based on Total Phosphorus	33	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.
- Phosphorus and Nitrogen are within acceptable limits.
- No remedial action recommended at this time.
- 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 11/29/2018

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

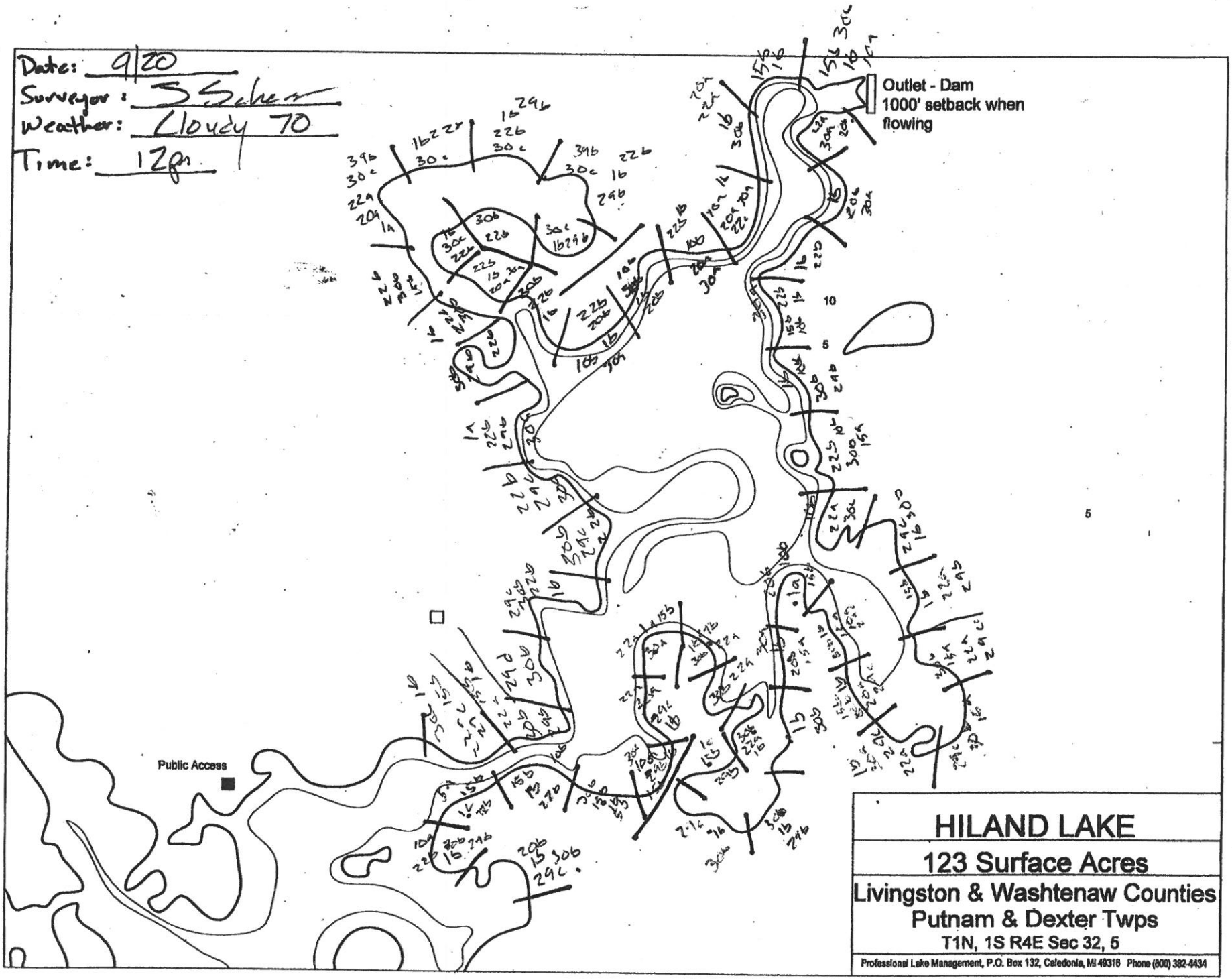
Lake:HiLand Lake County: Livingston Washtenaw Survey Date : 9/20/2018

Standard Aquatic Vegetation Summary Sheet

		Total number of AVAS's for each Density Category				Calculations				Sum of Columns 5-8	Total No. of AVAS	Col 9 divided by Col 10
Code		A	B	C	D	A x 1	B x 10	C x 40	D x 80			
No	Plant Name	1	2	3	4	5	6	7	8	9	10	11
1	Eurasian watermilfoil	5	38	2	0	5	380	80	0	465	57	8.16
2	Curly leaf pondweed	0	0	0	0	0	0	0	0			
3	Chara	0	1	0	0	0	10	0	0	10	57	0.18
4	Thinleaf pondweed	0	0	0	0	0	0	0	0			
5	Flatstem pondweed	1	0	0	0	1	0	0	0	1	57	0.02
6	Robbins pondweed	0	0	0	0	0	0	0	0			
7	Variable pondweed	0	0	0	0	0	0	0	0			
8	White stem pondweed	0	0	0	0	0	0	0	0			
9	Richardsons pondweed	0	0	0	0	0	0	0	0			
10	Illinois pondweed	7	6	0	0	7	60	0	0	67	57	1.18
11	Large leaf pondweed	0	0	0	0	0	0	0	0			
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	6	13	0	0	6	130	0	0	136	57	2.39
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	3	7	1	0	3	70	40	0	113	57	1.98
21	Elodea	0	0	0	0	0	0	0	0			
22	Bladderwort	14	22	0	0	14	220	0	0	234	57	4.11
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	1	0	0	0	10	0	0	10	57	0.18
27	Sago Pondweed	0	0	0	0	0	0	0	0			
28	Cabomba	0	0	0	0	0	0	0	0			
29	Starry Stonewort	0	14	9	1	0	140	360	80	580	57	10.18
30	Water Lily	13	28	7	1	13	280	280	80	653	57	11.46
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	1	0	0	20	40	0	60	57	1.05
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 **40.86**

Date: 9/20
Surveyor: S Scheer
Weather: Cloudy 70
Time: 12pm



HILAND LAKE

123 Surface Acres

Livingston & Washtenaw Counties
Putnam & Dexter Twps
T1N, 1S R4E Sec 32, 5

Professional Lake Management, P.O. Box 132, Caledonia, MI 49316 Phone (800) 382-4434

2018251

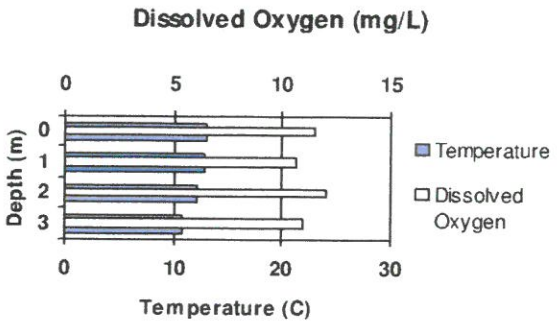
LAKE CHECK Water Quality Monitoring Report

Customer	Waterbody	Sample Information
Hiland Lake	Hiland Lake	Date: 4/27/2018
		Site: Middle

On-Site Results

Depth (m)	Temperature (degrees C)	Dissolved Oxygen mg/L	Dissolved Oxygen %
0	13.0	11.6	110
1	12.8	10.7	101
2	12.1	12.0	112
3	10.7	11.0	99

Secchi Disk Depth	3.0 meters
Thermocline Depth	3 meters



Analytical Results

Parameter	Result	Units	Interpretation
Fecal Bacteria (E. coli		CFU/100 mL	N/A
Conductivity	509	uS/cm	Moderate concentration of dissolved salts
Total Dissolved Solids	332	mg/L	
pH	8.3	S.U.	Water is slightly alkaline
Alkalinity	173	mg CaCO3/L	Water is hard
Total Phosphorus	18	ug/L	Moderately phosphorus enriched
Nitrates	1090	ug/L	Moderately nitrogen enriched
Chlorophyll	N/A		

Trophic State Evaluation

	TSI	Trophic Status
Based on Secchi Disk Depth	44	mesotrophic
Based on Total Phosphorus	41	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 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 11/29/2018

Mrs. Jaimee Conroy, Technical Services Manager

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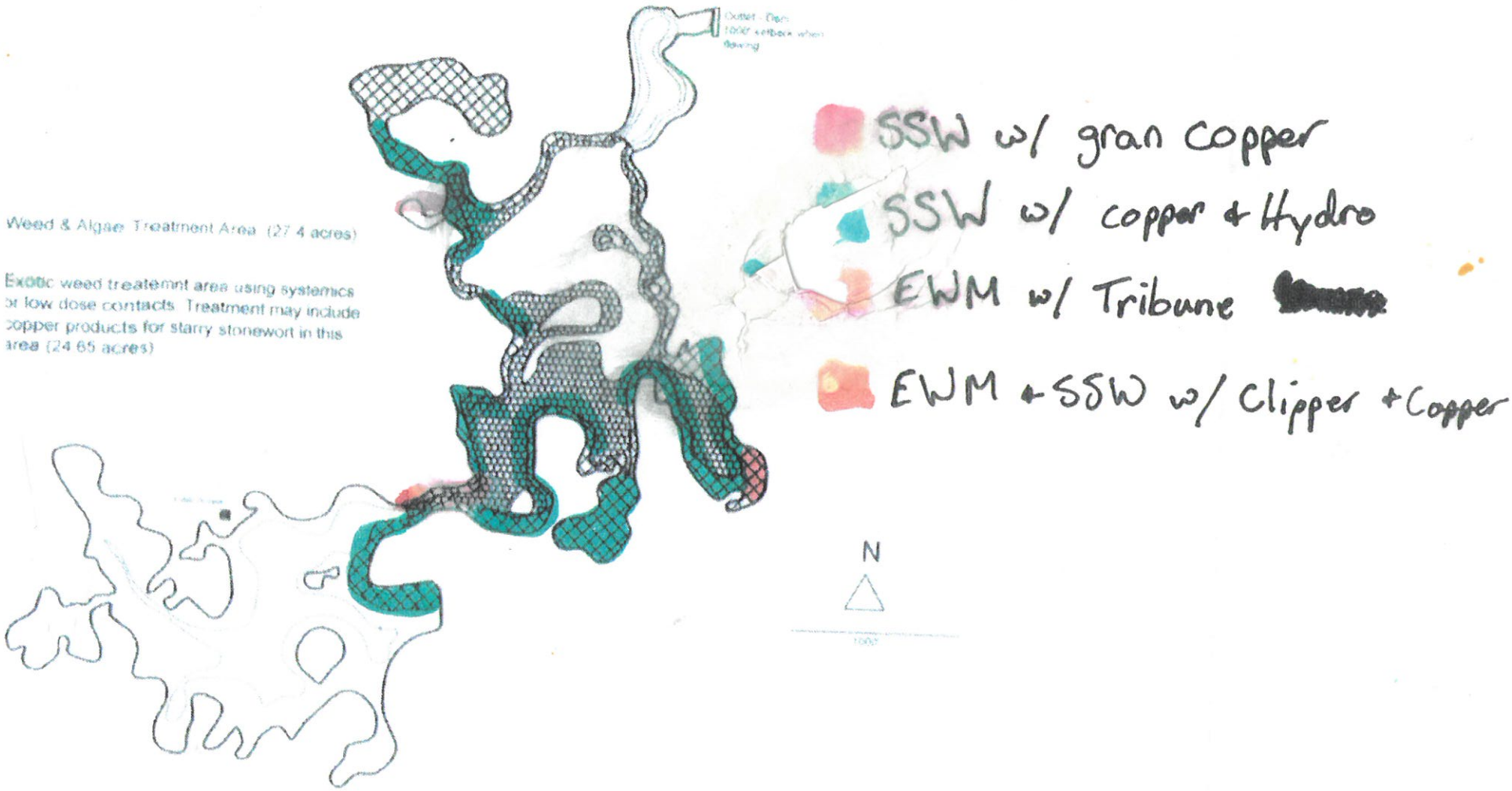
Treatment Areas - 6/21/18