PINE LAKE
SEDIMENT ANALYSIS

DATE COLLECTED 2.16.2017

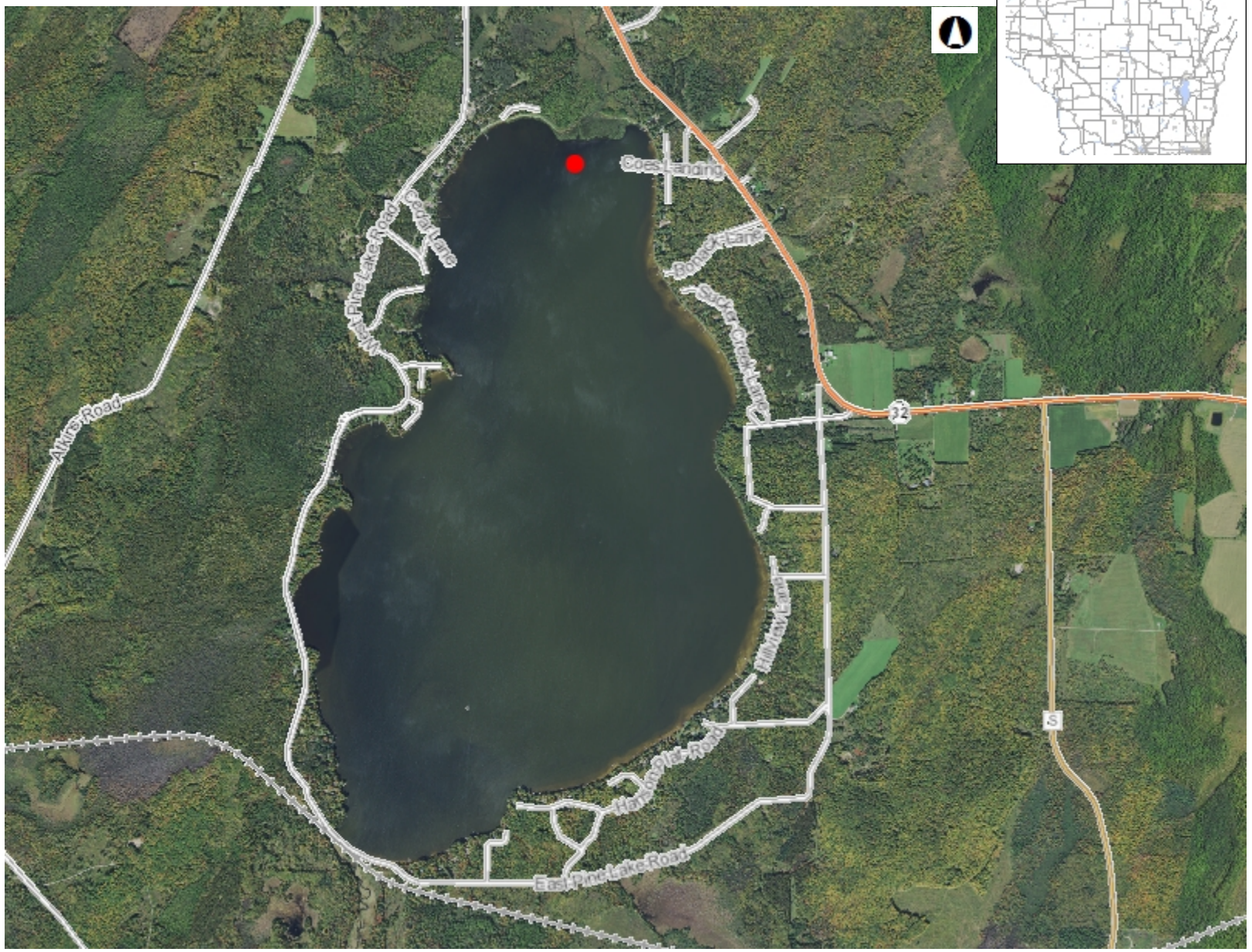
	PI POINT	LAT	LONG	WATER DEPTH FT	SEDIMENT DEPTH FT
LOCATION	501	45.69351	-88.9776	5	18

PARAMETER	RESULTS	UNITS	
Arsenic	13	mg/kg	DWB
Cadmium	0.77	mg/kg	DWB
Copper	14	mg/kg	DWB
Mercury	ND	mg/kg	DWB
Nitrogen - ammonia	0.094	%	DWB
Nitrogen - nitrate	0.08	%	DWB
Nitrogen - nitrite	ND	%	DWB
Nitrogen - Kjeldahl	2.8	%	DWB
Phosphorous	0.066	%	DWB
Solids	1.6	%	

DWB - Dry Weight Basis

A core sampler was used to collect the sample. The water depth was 5 feet and the depth to the bottom of sediment was 18+ feet. The sample was collected to a depth of 12 feet below the waters surface. The bottom of the proposed dredge depth is 10 feet. The sediment was unconsolidated organic material with very high water contentn (only 1.6% solids) and consistent throughout the 12 foot sample depth. There was an organic odor and the sediment was black (10YR2/1).

PINE LAKE
SEDIMENT SAMPLE FEB. 2017



Legend

- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands

1.0 0 0.50 1.0 Miles

NAD_1983_HARN_Wisconsin_TM

1: 31,680

Notes

PI POINT 501
LAT DD: 45.69351243
LONG DD: -88.97755609

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

Client: **Flambeau Engineering**
Attn: Tiffiney Kleczewski
PO Box 273
Park Falls, WI 54552

NLS Project: 275740
NLS Customer: 101992
Phone: 715 965 3489

Project: Pine Lake

501 NLS ID: 976225
COC: 208553:1 Matrix: SL
Collected: 02/16/17 10:00 Received: 02/17/17
Notes: Sample not received on ice.

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Arsenic, tot. recoverable as As by ICP	[13]	mg/Kg DWB	5	8.2	26	03/16/17	SW846 6010	721026460
Cadmium, tot. recoverable as Cd by ICP	0.77	mg/Kg DWB	5	0.19	0.61	03/16/17	SW846 6010	721026460
Copper, tot. recoverable as Cu by ICP	14	mg/Kg DWB	5	1.8	5.5	03/16/17	SW846 6010	721026460
Mercury, total as Hg on solids	ND	mg/Kg DWB	1	3.1	9.1	03/14/17	SW846 7471B	721026460
Nitrogen, ammonia as N on solids	0.094	% DWB	1	0.012	0.037	03/08/17	SA MTH 33	721026460
Nitrogen, nitrate as N on solids	0.080	% DWB	1	0.012	0.039	03/08/17	SA MTH 33	721026460
Nitrogen, nitrite as N on solids	ND	% DWB	1	0.012	0.039	03/08/17	SA MTH 33	721026460
Nitrogen, total Kjeldahl as N on solids	2.8	% DWB	1	0.20	0.63	03/09/17	SA MTH 33	721026460
Phosphorus, total recoverable as P by ICP	0.066	% DWB	5	0.014*	0.027*	03/16/17	SW846 6010B	721026460
Solids, total on solids	1.6	%	1	0.10*		03/08/17	SM 2540-G 20ed	721026460
Metals digestion - tot. recov (solid) ICP	yes					03/16/17	SW846 3050M	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.
ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President