

December 3, 2014

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

**RE: Flambeau Hydroelectric Projects**  
**FERC Project Number 2640**                      **FERC Project Number 2421**  
**FERC Project Number 2395**                      **FERC Project Number 2473**  
**Flambeau Hydro LLC**  
**Final Report 2014 Water Quality Monitoring Data**

Dear Ms. Bose:

On behalf of Flambeau Hydro LLC, "Flambeau" (Licensee), Renewable World Energies, LLC (RWE) is submitting a copy of the *Final Report 2014 Water Quality Monitoring Data* for each of the (4) Flambeau Hydroelectric Projects (Flambeau Upper, Flambeau Lower, Flambeau Pixley, and Flambeau Crowley). The report is a requirement of Flambeau's Federal license pursuant to articles 406 and 408 and the approved Water Quality Monitoring Plans for each. 2014 was the eleventh year monitoring was conducted since the license was issued, but is the 3<sup>rd</sup> year of submittal by RWE on the behalf of the Licensee.

Monitoring was conducted on June 10, July 14, and August 12, 2014. No out of the ordinary issues were encountered. Ice-Out occurred later than normal this year. High flows and dangerous water conditions prevented the Ice-Out sampling from occurring until June, as documented in the correspondence sections of the reports. The draft report was sent to the agencies by a letter dated October 29, 2014 as an attachment to an e-mail sent the same day for review and comment. No comments were received from WDNR or the USFWS. The next scheduled monitoring event will be conducted in 2015.

If you have any questions concerning this submittal, please contact Mr. Gary Rast at the Renewable World Energies, LLC offices @ 855-994-9376 Ext 105. He can also be reached by e-mail at [grast@rwehydro.com](mailto:grast@rwehydro.com).

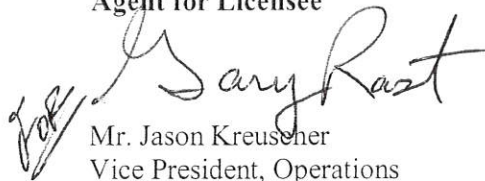
**Corporate Office**  
P.O. Box 264  
100 S. State Street  
Neshkoro, WI 54960  
Fax: 920-293-4100

Phone: 855-99HYDRO  
(855-994-9376)  
[www.renewableworldenergies.com](http://www.renewableworldenergies.com)

**Administrative Office**  
1001 Stephenson Street  
Norway, MI 49870  
Fax: 906-563-9344



Sincerely,  
**Renewable World Energies, LLC**  
**Agent for Licensee**

A handwritten signature in black ink, appearing to read "Jason Kreusener". The signature is written in a cursive style with a large, prominent "J" and "K".

Mr. Jason Kreusener  
Vice President, Operations

Attachments: Flambeau Upper Final Report 2014 Water Quality Monitoring Data - December 3, 2014  
Flambeau Lower Final Report 2014 Water Quality Monitoring Data - December 3, 2014  
Flambeau Pixley Final Report 2014 Water Quality Monitoring Data - December 3, 2014  
Flambeau Crowley Final Report 2014 Water Quality Monitoring Data - December 3, 2014

Cc: Ms. Cheryl Laatsch, WDNR  
Mr. Nick Utrup, USFWS  
RWE, Corporate

# **Final Report**

2014 Water Quality Monitoring Data

for the

Pixley Hydroelectric Project  
FERC Project #2395  
Flambeau Hydro, LLC

North Fork of the Flambeau River, Price County, Wisconsin

Respectfully Submitted by:

Renewable World Energies, LLC  
100 State Street – P.O. Box 264  
Neshkoro, Wisconsin 54960

Final – December 3, 2014

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## Summary

2014 marked the eleventh year of water quality sampling under the FERC approved "Water Quality Monitoring Plan Per License Article 406 for the Flambeau (Pixley) Hydroelectric Project – FERC Project # 2395 – Flambeau Hydro, LLC". Sampling was accomplished according to the plan and was un-eventful, with no major problems or concerns.

Ice-Out occurred between Agenda and Nine Mile Landing on the North Fork of the Flambeau River sometime during the week beginning April 20, 2014. The Licensee traveled to the region during the week of May 5, 2014 thru May 9, 2014 to conduct the monitoring. River flow, based on Pixley Hydroelectric Project records was over 4000 cubic feet per second during this time. High flows and dangerous conditions prevented sampling from being accomplished. The Licensee contacted agencies with this information and proposed the Ice-Out sampling be abandoned for 2014. The WDNR responded they wished the sampling be performed even if it could not be done until June. The Licensee gave the agencies an update on the sampling progress on May 27, 2014. They were told that nothing had been collected to that point; flows had come down quite a bit, however the boat barriers had not been installed at Upper or Lower. Sampling is on hold until at least the week of June 2<sup>nd</sup> or June 9<sup>th</sup>. The Ice-Out sampling event occurred on June 10, 2014. River flow, based on the Flambeau (Pixley) Hydroelectric Project records, was approximately 1319 cubic feet per second. Sampling occurred between 11:15 a.m. and 11:36 a.m. Samples were taken without incident. No unusual D.O. or Temperature readings were observed. Samples for laboratory analysis were delivered to Northern Lake Service, Inc. in Crandon, WI on June 11, 2014. Northern Lake Service, Inc. issued a laboratory report on June 19, 2014. No unusual levels of Chlorophyll a, True Color, or Total Phosphorus were noted in the laboratory reports.

River flow, based on Flambeau (Pixley) Hydroelectric Project records, was approximately 1000 cubic feet per second during the July 14, 2014 sampling event. Sampling occurred between 11:00 a.m. and 11:30 a.m. Samples were taken without incident. No unusual D.O. or Temperature readings were observed. Samples for laboratory analysis were delivered to Northern Lake Service, Inc. in Crandon, WI on July 15, 2014. Northern Lake Service, Inc. issued a laboratory report on August July 22, 2014. No unusual levels of Chlorophyll a, True Color, or Total Phosphorus were noted in the laboratory reports.

River flow, based on Flambeau (Pixley) Hydroelectric Project records, was approximately 770 cubic feet per second during the August 12, 2014 sampling event. Sampling occurred between 11:30 a.m. and 11:54 a.m. Samples were taken without incident. No unusual D.O. or Temperature readings were observed. Samples for laboratory analysis were delivered to Northern Lake Service, Inc in Crandon, WI on August 13, 2014. Northern Lake Service, Inc issued a laboratory report on August 18, 2014. No unusual levels of Chlorophyll a, True Color, or Total Phosphorus were noted in the laboratory reports.

In general, the weather (temperature and rainfall) during the 2014 monitoring season appeared cooler in April, slightly warmer in May, June, July, and August with higher than normal precipitation in the months of April, May, June, and August. Temperatures in May, June, July, and August were about .5 degrees warmer than normal but precipitation was

slightly (11%) below normal for July. (**Refer to 2014 Monthly Temperature and Precipitation Table page 7**)

A summary of a comparison between the 2011 thru 2014 (**Refer to 2014 Flambeau Pixley Project Sampling Comparison Table 2011-2014 page 8**) sampling results are as follows:

1. Water Clarity – Decreased Ice-Out – Normal July – Increased August
2. Chlorophyll a – Decreased Ice-Out/July/August
3. Color – Increased Ice-Out/July – Decreased August
4. Total Phosphorus – Decreased Slightly Ice-Out – Increased July – Decreased August
5. Overall D.O. – Decreased Ice-Out/August – Increased July
6. Water Temperatures – Increased Ice-Out/August – Decreased July

Correspondence from the agencies during 2010 indicated they would prefer that notifications of incidents be by e-mail only and that telephone contacts are not needed. All other correspondence can be found on page 13, **Appendix D**. The next scheduled Water Quality Monitoring at the Pixley Hydroelectric Project is set to take place in 2015 beginning with the Ice-Out sampling event.

**2014  
Sampling Results  
Table**

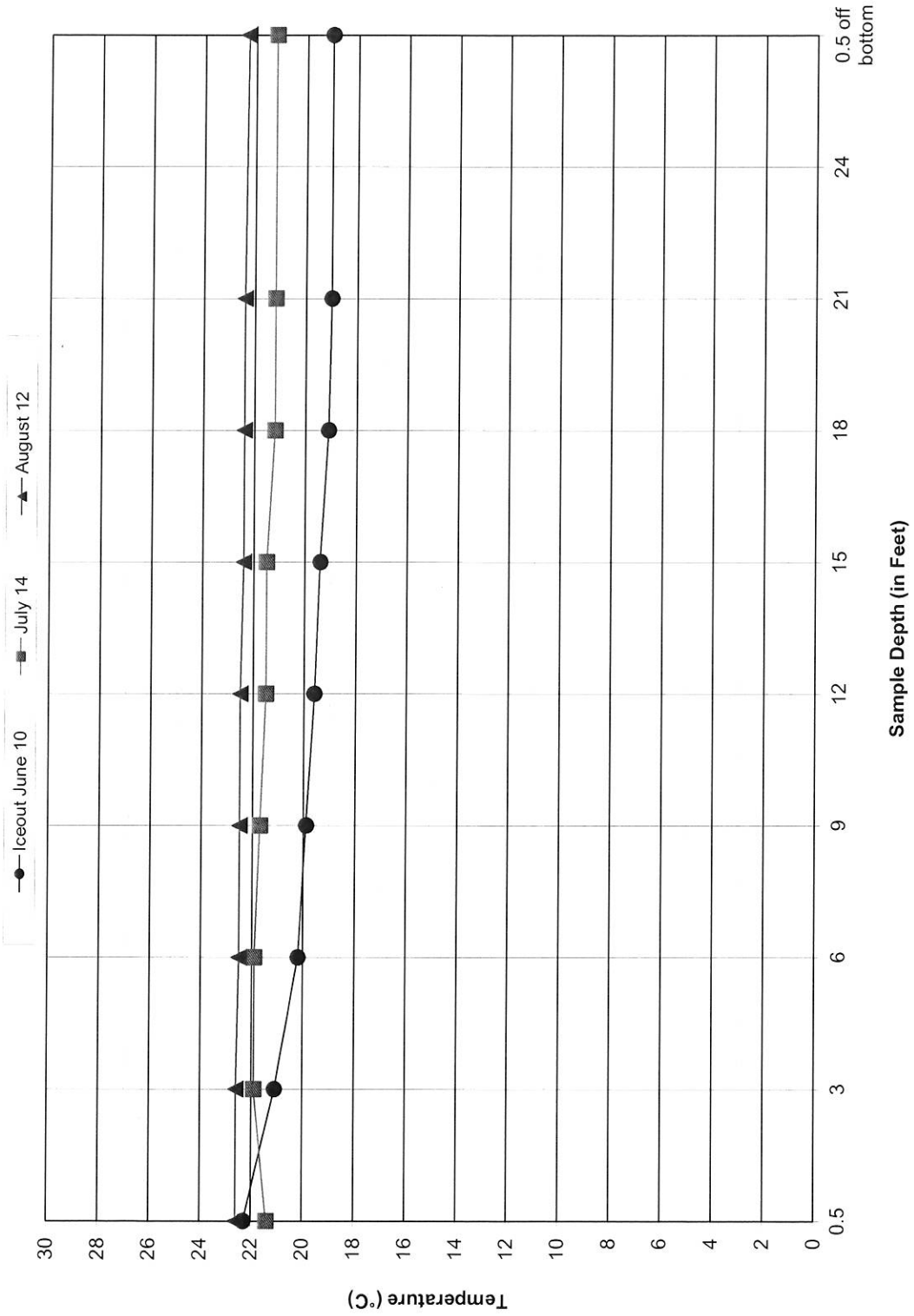
**Pixley Hydroelectric Project - FERC Project # 2395  
2014 Water Quality Sampling Data**

		June 10, 2014			July 14, 2014			August 12, 2014		
<b>Project Flow (c.f.s.)</b>		1319			1000			770		
<b>Dissolved Oxygen</b>		<b>Time</b>	<b>D.O. (mg/L)</b>	<b>Water Temp. (°C)</b>	<b>Time</b>	<b>D.O. (mg/L)</b>	<b>Water Temp. (°C)</b>	<b>Time</b>	<b>D.O. (mg/L)</b>	<b>Water Temp. (°C)</b>
	0.5 feet below surface	11:25 AM	6.94	22.30	11:21 AM	7.21	21.40	11:46 AM	6.56	22.60
	3 feet below surface	11:26 AM	6.82	21.10	11:22 AM	7.28	21.90	11:47 AM	6.51	22.60
	6 feet below surface	11:27 AM	6.80	20.20	11:23 AM	7.18	21.90	11:48 AM	6.47	22.50
	9 feet below surface	11:29 AM	6.84	19.90	11:24 AM	7.00	21.70	11:49 AM	6.43	22.50
	12 feet below surface	11:30 AM	6.81	19.60	11:25 AM	6.59	21.50	11:50 AM	6.41	22.50
	15 feet below surface	11:31 AM	6.81	19.40	11:26 AM	6.43	21.50	11:51 AM	6.44	22.40
	18 feet below surface	11:32 AM	6.75	19.10	11:27 AM	6.31	21.20	11:52 AM	6.45	22.40
	21 feet below surface	11:33 AM	6.75	19.00	11:28 AM	6.02	21.20	11:53 AM	6.34	22.40
	24 feet below surface	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	0.5 feet above bottom	11:34 AM	6.70	19.00	11:30 AM	6.02	21.20	11:54 AM	6.18	22.30
<b>Secchi Disk</b>		<b>Time</b>	<b>Depth (ft)</b>		<b>Time</b>	<b>Depth (ft)</b>		<b>Time</b>	<b>Depth (ft)</b>	
	3 feet below surface	11:17 AM	3.00		11:10 AM	3.00		11:35 AM	3.70	
<b>Chlorophyll a</b>		<b>Time</b>	<b>ug/L</b>		<b>Time</b>	<b>ug/L</b>		<b>Time</b>	<b>ug/L</b>	
	3 feet below surface	11:19 AM	1.40		11:15 AM	5.40		11:40	6.20	
<b>Color (True)</b>		<b>Time</b>	<b>C.P.U. Units</b>	<b>LOD</b>	<b>Time</b>	<b>C.P.U. Units</b>	<b>LOD</b>	<b>Time</b>	<b>C.P.U. Units</b>	<b>LOD</b>
	3 feet below surface	11:21 AM	130.00	25*	11:16 AM	130.00	25*	11:41 AM	100.00	25*
<b>Total Phosphorus</b>		<b>Time</b>	<b>mg/L</b>	<b>LOD</b>	<b>Time</b>	<b>mg/L</b>	<b>LOD</b>	<b>Time</b>	<b>mg/L</b>	<b>LOD</b>
	3 feet below surface	11:22 AM	0.030	0.0070*	11:17 AM	0.047	0.0070*	11:43 AM	0.037	0.0070*
	3 feet above bottom	11:24 AM	0.029	0.0070*	11:20 AM	0.050	0.0070*	11:45 AM	0.035	0.0070*

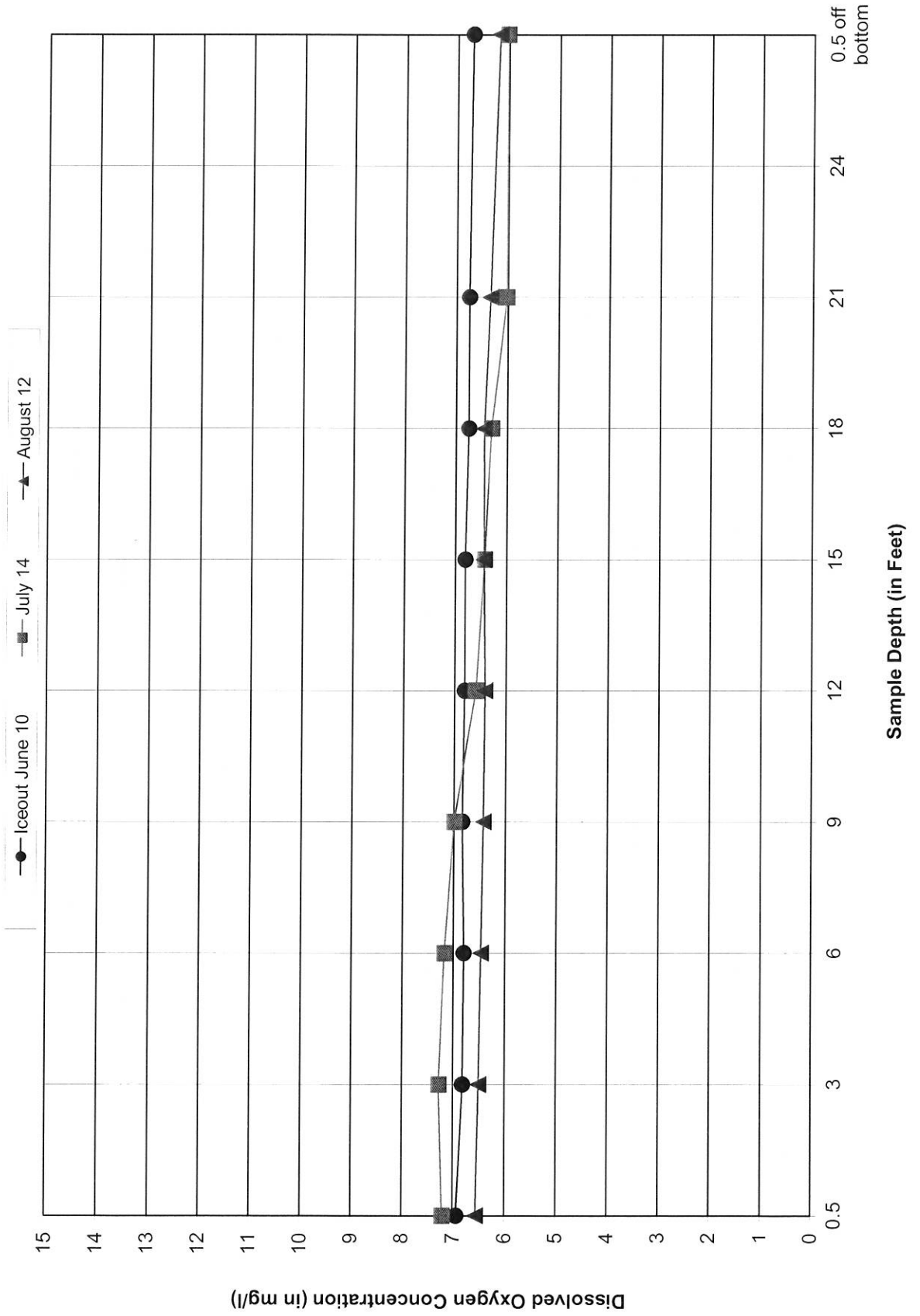
\* Considered Reporting Limits

**2014  
Temperature  
and  
Dissolved Oxygen  
Graphs**

# Pixley Impoundment - FERC # 2395 2014 Temperature Samples



# Pixelley Impoundment - FERC # 2395 2014 Dissolved Oxygen Samples





**2014  
Monthly Temperature  
and  
Precipitation  
Table**

## 2014 Water Year Monthly Temperature and Precipitation for Park Falls, Wisconsin

Month	Highest Temp.	Lowest Temp.	Average Temp.	Departure From Normal	Heating Degree Days	Normal Degree Days	Total Precip.	Total Snowfall	Normal Precip.	% of Normal Precipitation
October-13	74	21	45.0	1.8	610	678	3.93	0.3	5.01	78%
November-13	50	-3	27.9	-0.9	1105	1088	0.82	4.7	2.09	39%
December-13	35	-21	4.6	-10.2	1866	1556	2.88	39.9	1.21	238%
January-14	34	-28	1.6	-8.6	1955	1699	0.73	9.4	0.96	76%
February-14	41	-22	5.3	-9.8	1663	1399	2.12	29.5	0.81	262%
March-14	52	-23	18.4	-7.5	1439	1210	1.91	20.9	1.49	128%
April-14	66	11	35.1	-4.5	886	762	3.30	26.3	2.43	136%
May-14	85	31	51.9	0.5	414	426	4.37	T	3.23	135%
June-14	82	42	60.3	0.2	162	179	4.47	T	4.23	106%
July-14	88	45	66.3	0.5	40	63	3.42	0.0	3.85	89%
August-14	83	48	64.7	0.4	37	86	4.63	0.0	3.70	125%
September-14	81	34	57.4	1.8	227	298	1.64	0.0	4.11	40%

Source: NOAA/Duluth,  
MN

**2014  
Flambeau Pixley  
Sampling Comparison Table  
2011—2014**

## Flambeau Pixley

## Project Sampling Comparison Table

2011 Thru Current Year

Year	Month	Secchi Depth (m)	Chlorophyll a ug/l	Color (True) C.P.U. Units	Total Phosphorus Below Surface mg/l	Total Phosphorus Above Bottom mg/l	Low D.O. mg/l	High D.O. mg/l	Low Water Temp. °C	High Water Temp. °C
2011	April	3.20	2.10	80.00	0.033	0.031	11.64	12.05	6.60	11.70
2012	April	3.10	1.70	140.00	0.039		10.94	11.26	9.30	10.00
2013	May									
2014	June	3.00	1.40	130.00	0.030	0.031	6.70	6.94	19.00	22.30
<b>Minimum</b>	April/June	3.00	1.40	80.00	0.030	0.031	6.70	6.94	6.60	10.00
<b>Maximum</b>	April/June	3.20	2.10	140.00	0.039	0.031	11.64	12.05	19.00	22.30
<b>Average</b>	April/June	3.10	1.73	116.67	0.034	0.031	9.76	10.08	11.63	14.67
2011	July	3.00	16.00	70.00	0.057	0.041	6.62	8.25	25.40	25.80
2012	July	3.10	8.80	100.00	0.057	0.041	5.52	6.40	25.70	27.20
2013	July	2.10	6.20	150.00	0.044	0.043	5.24	5.85	25.10	25.30
2014	July	3.00	5.40	130.00	0.047	0.050	6.02	7.28	21.20	21.90
<b>Minimum</b>	July	2.10	5.40	70.00	0.044	0.041	5.24	5.85	21.20	21.90
<b>Maximum</b>	July	3.10	16.00	150.00	0.057	0.050	6.62	8.25	25.70	27.20
<b>Average</b>	July	2.80	9.10	112.50	0.051	0.044	5.85	6.95	24.35	25.05
2011	August	3.10	14.00	140.00	0.052	0.047	7.74	7.44	23.50	26.00
2012	August	2.50	26.00	100.00	0.048	0.050	5.93	9.32	23.80	24.60
2013	August	3.33	6.30	150.00	0.110	0.071	6.41	6.84	20.10	20.60
2014	August	3.70	6.20	100.00	0.037	0.035	6.18	6.56	22.30	22.60
<b>Minimum</b>	August	2.50	6.20	100.00	0.037	0.035	5.93	6.56	20.10	20.60
<b>Maximum</b>	August	3.70	26.00	150.00	0.110	0.071	7.74	9.32	23.80	26.00
<b>Average</b>	August	3.16	13.13	122.50	0.062	0.051	6.57	7.54	22.43	23.45
No Sample										

**Pixley Impoundment**  
**Sampling Location**  
**Map**

LAKE SURVEY MAP

WISCONSIN CONSERVATION DEPARTMENT

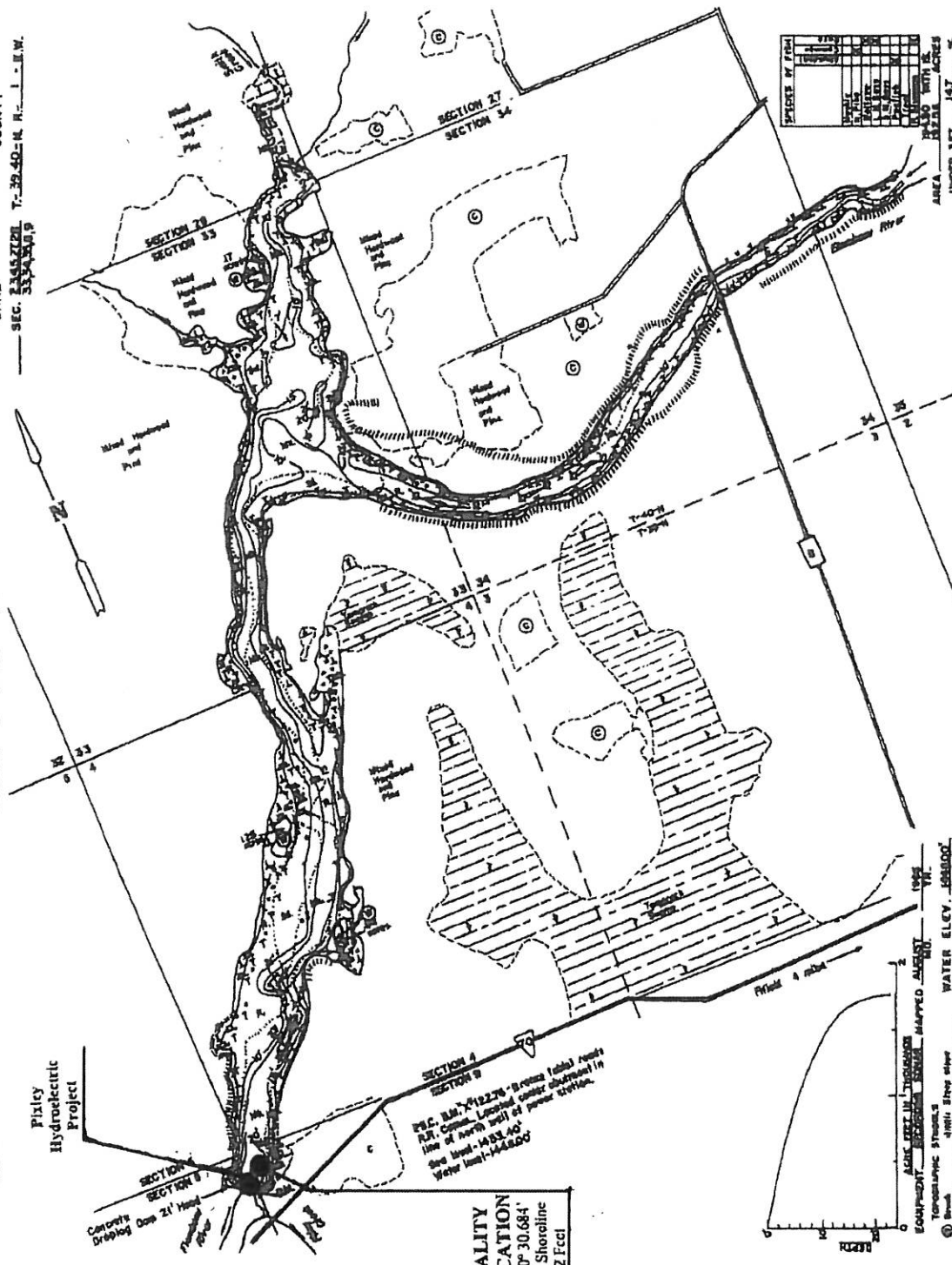
PRINCE COUNTY  
 LAKE PRINCE FLOWAGE  
 SEC. 33, 34, 35, 36, 37, 38, 39, 40 - N. R. 1 - E.W.

Pixley Hydroelectric Project

SECTION 33  
 SECTION 34  
 SECTION 35  
 SECTION 36  
 SECTION 37  
 SECTION 38  
 SECTION 39  
 SECTION 40

SECTION 4  
 SECTION 9  
 P.C. 88-141-1278 - Revised (total) lands  
 R.M. 10000 - Located corner situated in  
 line of north end of power station.  
 See map 1483-400  
 Water map 1483-400

**WATER QUALITY**  
**SAMPLE LOCATION**  
 N44° 52.838' W90° 30.684'  
 150 Feet From E. Shoreline  
 Depth = 19.92 Feet



AREA	ACRES	PERCENT
UNDER 3 FT.	147	%
OVER 3 FT.	17	%
TOTAL ALC.	23	%
TOTAL ALC.	23	%
SHORELINE	1507	FEET
MARK POINTS	23	FEET

SCALE  
 0 500 1000 1500 2000 FEET  
 0 500 1000 1500 METERS  
 Plot used by J. Hansen, E. Hansen, and others by D. L. Lohr

**EQUIPMENT**  
 1. 10000  
 2. 10000  
 3. 10000  
 4. 10000  
 5. 10000  
 6. 10000  
 7. 10000  
 8. 10000  
 9. 10000  
 10. 10000

**WATER ELEV. - 188000'**  
 1. 188000  
 2. 188000  
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 10. 188000

## **Appendix A**

June 10, 2014 Ice-Out Sampling Documents



# IMPOUNDMENT SAMPLING LOG

2014 Water Quality Study - Flambeau Pixley Hydroelectric Project - FERC #2395

Pre-Sampling Data: HWL-1448.55 Date: 6/10/14  
TWL-1427.80 CFS-1319

Time: 11:15 Barometer: 30.02 Air Temp: 20.0 °C Wind Speed: SE 5 MPH

Sky Conditions: FAIR, CLEAR, & BRIGHT SUN

Precipitation within Last 24 Hours: TRACE

D.O. Meter Calibration: Instrument Model Used: Hach HQ40d

Were The Batterys Changed?  Yes  No If Yes, When Changed: \_\_\_\_\_

Battery Status: 80% Charge

Calibration Time: FEB. 2014 Method: \_\_\_\_\_ Factory \_\_\_\_\_

Sampling Depth Profile: Measured Depth to Bottom of the Impoundment: 22.0 Feet

Secchi Disk Depth: (E0.1 Foot) 3.0 Feet Time: 11:17

### Chlorophyll a (3 Feet Below Surface)

Lab Sample I.D.#: <u>20140610-3A</u>		
Time	Quantity (ml)	Filtered
<u>11:19</u>	<u>1000</u>	<u>NO</u>

### True Color (3 Feet Below Surface)

Lab Sample I.D.#: <u>20140610-3B</u>	
Time	Quantity (ml)
<u>11:21</u>	<u>250</u>

### D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
.5 Ft Below Surface	<u>11:25</u>	<u>6.94</u>	<u>22.3</u>
3 Feet	<u>11:26</u>	<u>6.82</u>	<u>21.1</u>
6 Feet	<u>11:27</u>	<u>6.80</u>	<u>20.2</u>
9 Feet	<u>11:29</u>	<u>6.84</u>	<u>19.9</u>
12 Feet	<u>11:30</u>	<u>6.81</u>	<u>19.6</u>
15 Feet	<u>11:31</u>	<u>6.81</u>	<u>19.4</u>
18 Feet	<u>11:32</u>	<u>6.75</u>	<u>19.1</u>
21 Feet	<u>11:33</u>	<u>6.75</u>	<u>19.0</u>
24 Feet	<u>11:33</u>	<u>6.75</u>	<u>19.0</u>
.5 Ft Above Bottom	<u>11:34</u>	<u>6.70</u>	<u>19.0</u>

### Phosphorus

Lab Sample I.D.#: <u>20140610-3C</u>	
(3 Feet Below Surface)	
Time	Preserved?
<u>11:22</u>	<u>H2504</u>

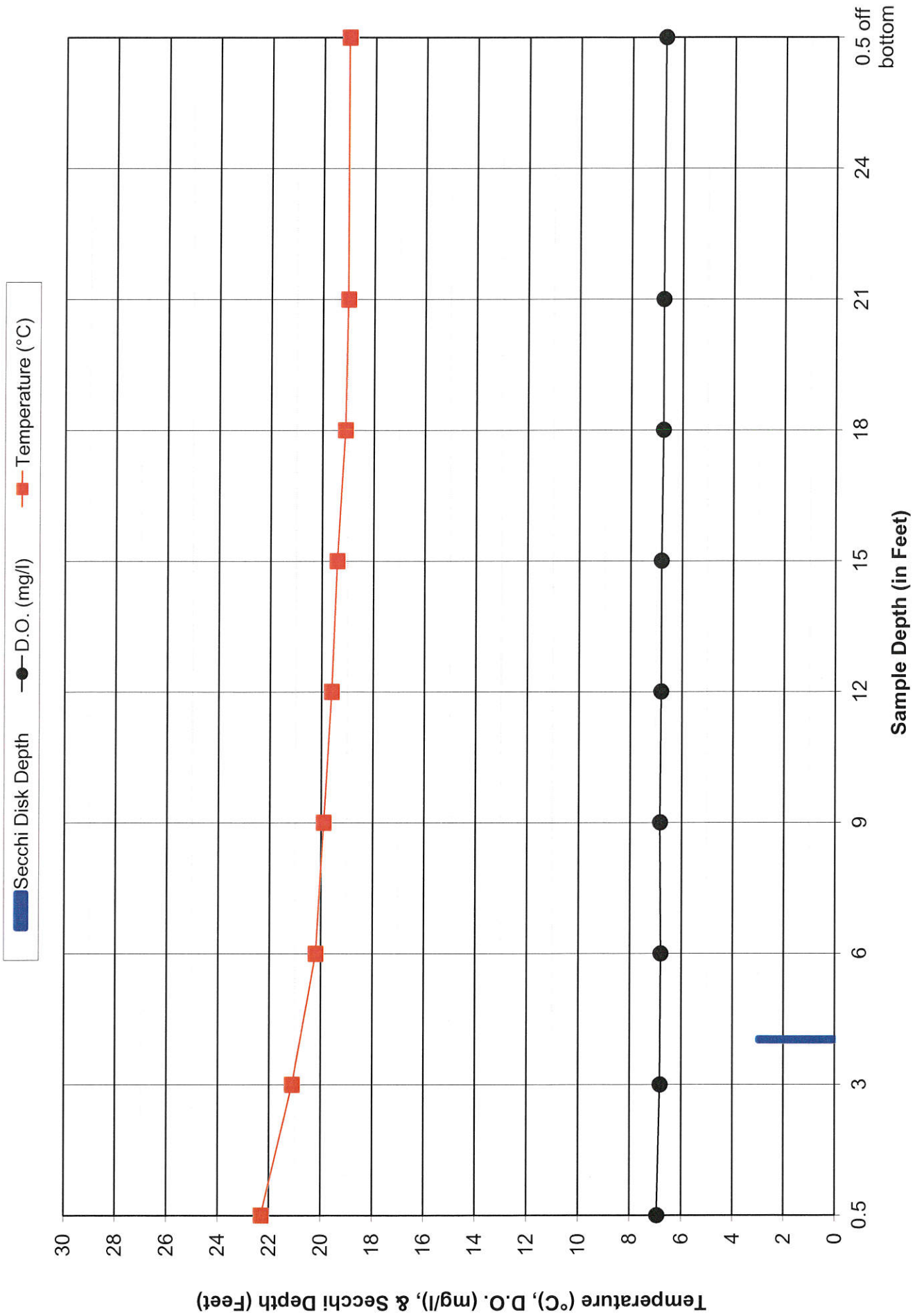
Lab Sample I.D.#: <u>20140610-3D</u>	
(3 Feet Above Bottom)	
Time	Preserved?
<u>11:24</u>	<u>H2504</u>

Sample Location: N45° 52.838' W90° 30.684'

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Performed By: GARY RAST

# Pixley Impoundment - FERC # 2395 June 10, 2014 Iceout Sampling Event





# ANALYTICAL REPORT

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

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

**Client:** Renewable World Energies  
**Affn:** Gary Rast  
 100 State Street  
 P.O. Box 264  
 Neshkoro, WI 54960

Printed: 06/19/14 Code: NNNN-S Page 2 of 3  
**NLS Project:** 220578  
**NLS Customer:** 102823  
 Phone: 855 994 9376

**Project:** Flambeau (4)

<b>20140610-4B NLS ID: 795612</b>									
COC: 174085:2 Matrix: SW									
Collected: 06/10/14 13:20 Received: 06/11/14									
<b>Parameter</b>	<b>Result</b>	<b>Units</b>	<b>Dilution</b>	<b>LOD</b>	<b>LOQ</b>	<b>Analyzed</b>	<b>Method</b>	<b>Lab</b>	
Color, APHA (true)	150	C.P.U.	5	25*		06/12/14	SM 2120-B 20ed	721026460	
Lab filtration	yes					06/12/14	NA	721026460	
<b>20140610-1C NLS ID: 795613</b>									
COC: 174085:3 Matrix: SW									
Collected: 06/10/14 13:22 Received: 06/11/14									
<b>Parameter</b>	<b>Result</b>	<b>Units</b>	<b>Dilution</b>	<b>LOD</b>	<b>LOQ</b>	<b>Analyzed</b>	<b>Method</b>	<b>Lab</b>	
Phosphorus, tot. as P	0.024	mg/L	1	0.0070*		06/12/14	SM 4500P-E 20ed	721026460	
<b>20140610-2C NLS ID: 795614</b>									
COC: 174085:3 Matrix: SW									
Collected: 06/10/14 13:22 Received: 06/11/14									
<b>Parameter</b>	<b>Result</b>	<b>Units</b>	<b>Dilution</b>	<b>LOD</b>	<b>LOQ</b>	<b>Analyzed</b>	<b>Method</b>	<b>Lab</b>	
Phosphorus, tot. as P	0.025	mg/L	1	0.0070*		06/12/14	SM 4500P-E 20ed	721026460	
<b>20140610-3C NLS ID: 795615</b>									
COC: 174085:3 Matrix: SW									
Collected: 06/10/14 13:22 Received: 06/11/14									
<b>Parameter</b>	<b>Result</b>	<b>Units</b>	<b>Dilution</b>	<b>LOD</b>	<b>LOQ</b>	<b>Analyzed</b>	<b>Method</b>	<b>Lab</b>	
Phosphorus, tot. as P	0.030	mg/L	1	0.0070*		06/12/14	SM 4500P-E 20ed	721026460	
<b>20140610-4C NLS ID: 795616</b>									
COC: 174085:3 Matrix: SW									
Collected: 06/10/14 13:22 Received: 06/11/14									
<b>Parameter</b>	<b>Result</b>	<b>Units</b>	<b>Dilution</b>	<b>LOD</b>	<b>LOQ</b>	<b>Analyzed</b>	<b>Method</b>	<b>Lab</b>	
Phosphorus, tot. as P	0.031	mg/L	1	0.0070*		06/12/14	SM 4500P-E 20ed	721026460	
<b>20140610-2D NLS ID: 795618</b>									
COC: 174085:4 Matrix: SW									
Collected: 06/10/14 13:25 Received: 06/11/14									
<b>Parameter</b>	<b>Result</b>	<b>Units</b>	<b>Dilution</b>	<b>LOD</b>	<b>LOQ</b>	<b>Analyzed</b>	<b>Method</b>	<b>Lab</b>	
Phosphorus, tot. as P	0.027	mg/L	1	0.0070*		06/12/14	SM 4500P-E 20ed	721026460	
<b>20140610-3D NLS ID: 795619</b>									
COC: 174085:4 Matrix: SW									
Collected: 06/10/14 13:25 Received: 06/11/14									
<b>Parameter</b>	<b>Result</b>	<b>Units</b>	<b>Dilution</b>	<b>LOD</b>	<b>LOQ</b>	<b>Analyzed</b>	<b>Method</b>	<b>Lab</b>	
Phosphorus, tot. as P	0.031	mg/L	1	0.0070*		06/12/14	SM 4500P-E 20ed	721026460	
<b>20140610-4D NLS ID: 795620</b>									
COC: 174085:4 Matrix: SW									
Collected: 06/10/14 13:25 Received: 06/11/14									
<b>Parameter</b>	<b>Result</b>	<b>Units</b>	<b>Dilution</b>	<b>LOD</b>	<b>LOQ</b>	<b>Analyzed</b>	<b>Method</b>	<b>Lab</b>	
Phosphorus, tot. as P	0.029	mg/L	1	0.0070*		06/12/14	SM 4500P-E 20ed	721026460	

# ANALYTICAL REPORT

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

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

Printed: 06/19/14 Code: NNNN-S Page 3 of 3

NLS Project: 220578

NLS Customer: 102823

Phone: 855 994 9376

Client: Renewable World Energies  
Attn: Gary Rast  
100 State Street  
P.O. Box 264  
Neshkoro, WI 54960

Project: Flambeau (4)

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.

LOD = Limit of Detection      LOQ = Limit of Quantitation      ND = Not Detected (< LOD)      1000 ug/L = 1 mg/L  
DWB = Dry Weight Basis      NA = Not Applicable      %DWB = (mg/kg DWB) / 10000  
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:  
R. T. Krueger  
President

Northern Lake Service, Inc.  
Chlorophyll Results

Customer: Renewable World Energies  
Project: 220578  
Flambeau (4)

Sample	Description	CC a	Pheo a	TC a	TC b	TC c
795605	20140610-1A	1.9	0.0*	1.9	0.14	0.16
795606	20140610-2A	0.83	0.43	1.1	0.064	0.11
795607	20140610-3A	1.2	0.2	1.4	0.032	0.024
795608	20140610-4A	0.0*	4.1	0.047	0.82	0.38

CC a = Corrected Chlorophyll a  
Pheo a = Pheophytin a  
TC a = Trichromatic Chlorophyll a  
TC b = Trichromatic Chlorophyll b  
TC c = Trichromatic Chlorophyll c  
Units = ug/L for Water, ug/cm<sup>2</sup> for periphyton samplers

\*: The complex calculations used to differentiate the various chlorophyll species magnify error at low concentrations and sometimes produce negative values, which are reported as 0.0 on this report.



**NORTHERN LAKE SERVICE, INC.**  
 Analytical Laboratory and Environmental Services  
 400 North Lake Avenue • Crandon, WI 54520-1298  
 Tel: (715) 478-2777 • Fax: (715) 478-3060

**SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD**  
 Wisconsin Lab Cert. No. 721026460  
 WISCONSIN WPC 105-000330

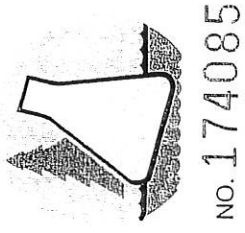
CLIENT: RENEWABLE WORLD ENERGIES LLC  
 ADDRESS: 100 S STATE STREET  
 CITY: WEST KORO WI 54960  
 PROJECT DESCRIPTION: FLAMBEAU (S)  
 QUOTATION NO.  
 DNR FID # DNR LICENSE #

CONTACT: CARY  
 PHONE: 855-994-9376  
 PURCHASE ORDER NO.: VERBAL  
 QUOTE: 200-283-4100

MATRIX:  
 SW = surface water  
 WW = waste water  
 GW = groundwater  
 DW = drinking water  
 TIS = tissue  
 AIR = air  
 SOIL = soil  
 SED = sediment  
 PROD = product  
 SL = sludge  
 OTHER

USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered.  
 Indicate G or C if WW Sample is Grab or Composite.

ITEM NO.	DATE	TIME	MATRIX (See above)	ANALYZE PER ORDER OF ANALYSIS		COLLECTION REMARKS (i.e. DNR Well ID #)
				FIELD FILTERED	GRAB OR COMPOSITE	
1.	7/9/10	7:35-1:19	RIVER WATER			
2.	6/10/14	7:36-120	"			
3.	6/10/14	7:37-120	"			
4.	6/10/14	9:35-125	"			
5.						
6.						
7.						
8.						
9.						
10.						



NO. 174085

REPORT TO: SAME AS ABOVE  
 ATTN: GARY  
 INVOICE TO: RENEWABLE WORLD OPERATIONS,  
1001 STEPHENSON STREET  
NORWAY MI 49870

COLLECTED BY (signature): [Signature] DATE/TIME: 1:35-1:25

RELINQUISHED BY (signature): [Signature] DATE/TIME: 6/10/14

DISPATCHED BY (signature): [Signature] DATE/TIME: 3:00PM

RECEIVED AT (signature): [Signature] DATE/TIME: 6/11/14 - 10:15 AM

CONDITION: OK

REMARKS & OTHER INFORMATION: OK

COOLER #

WDNR FACILITY NUMBER

E-MAIL ADDRESS

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM **MUST** BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.  
 2. PLEASE USE ONE LINE PER SAMPLE, **NOT** PER BOTTLE.  
 3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.  
 4. PARTIES COLLECTING SAMPLE, LISTED AS **REPORT TO** AND LISTED AS **INVOICE TO** AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.



## **Appendix B**

July 14, 2014 Sampling Documents

# IMPOUNDMENT SAMPLING LOG

2014 Water Quality Study - Flambeau Pixley Hydroelectric Project - FERC #2395

HWL - 1448.65 Date: 7/14/14  
 Pre-Sampling Data: TWL - 1427.70 CFS - 1000  
 Time: 11:00 Barometer: 29.84 Air Temp: 13.3 °C Wind Speed: W 3 MPH  
 Sky Conditions: CLOUDY, OVERCAST  
 Precipitation within Last 24 Hours: NO-CURRENTLY MISTING / LIGHT RAIN  
 D.O. Meter Calibration: Instrument Model Used: Hach HQ40d  
 Were The Batterys Changed?  Yes  No If Yes, When Changed: \_\_\_\_\_  
 Battery Status: 70% Charge  
 Calibration Time: FEB. 2014 Method: \_\_\_\_\_ Factory \_\_\_\_\_  
 Sampling Depth Profile: Measured Depth to Bottom of the Impoundment: 22.0 Feet  
 Secchi Disk Depth: (E0.1 Foot) 3.0 Feet Time: 11:10

### Chlorophyll a (3 Feet Below Surface)

Lab Sample I.D.# : <u>07142014 3A</u>		
Time	Quantity (ml)	Filtered
<u>11:15</u>	<u>1000</u>	<u>NO</u>

### True Color (3 Feet Below Surface)

Lab Sample I.D.# : <u>07142014 3B</u>	
Time	Quantity (ml)
<u>11:16</u>	<u>250</u>

### D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
.5 Ft Below Surface	<u>11:21</u>	<u>7.21</u>	<u>21.4</u>
3 Feet	<u>11:22</u>	<u>7.28</u>	<u>21.9</u>
6 Feet	<u>11:23</u>	<u>7.18</u>	<u>21.9</u>
9 Feet	<u>11:24</u>	<u>7.0</u>	<u>21.7</u>
12 Feet	<u>11:25</u>	<u>6.59</u>	<u>21.5</u>
15 Feet	<u>11:26</u>	<u>6.43</u>	<u>21.5</u>
18 Feet	<u>11:27</u>	<u>6.31</u>	<u>21.2</u>
21 Feet	<u>11:28</u>	<u>6.102</u>	<u>21.2</u>
24 Feet			
.5 Ft Above Bottom	<u>11:30</u>	<u>6.02</u>	<u>21.2</u>

### Phosphorus

Lab Sample I.D.# : <u>07142014 3C</u>	
(3 Feet Below Surface)	
Time	Preserved?
<u>11:17</u>	<u>H2SO4</u>

Lab Sample I.D.# : <u>07142014 3A</u>	
(3 Feet Above Bottom)	
Time	Preserved?
<u>11:20</u>	<u>H2SO4</u>

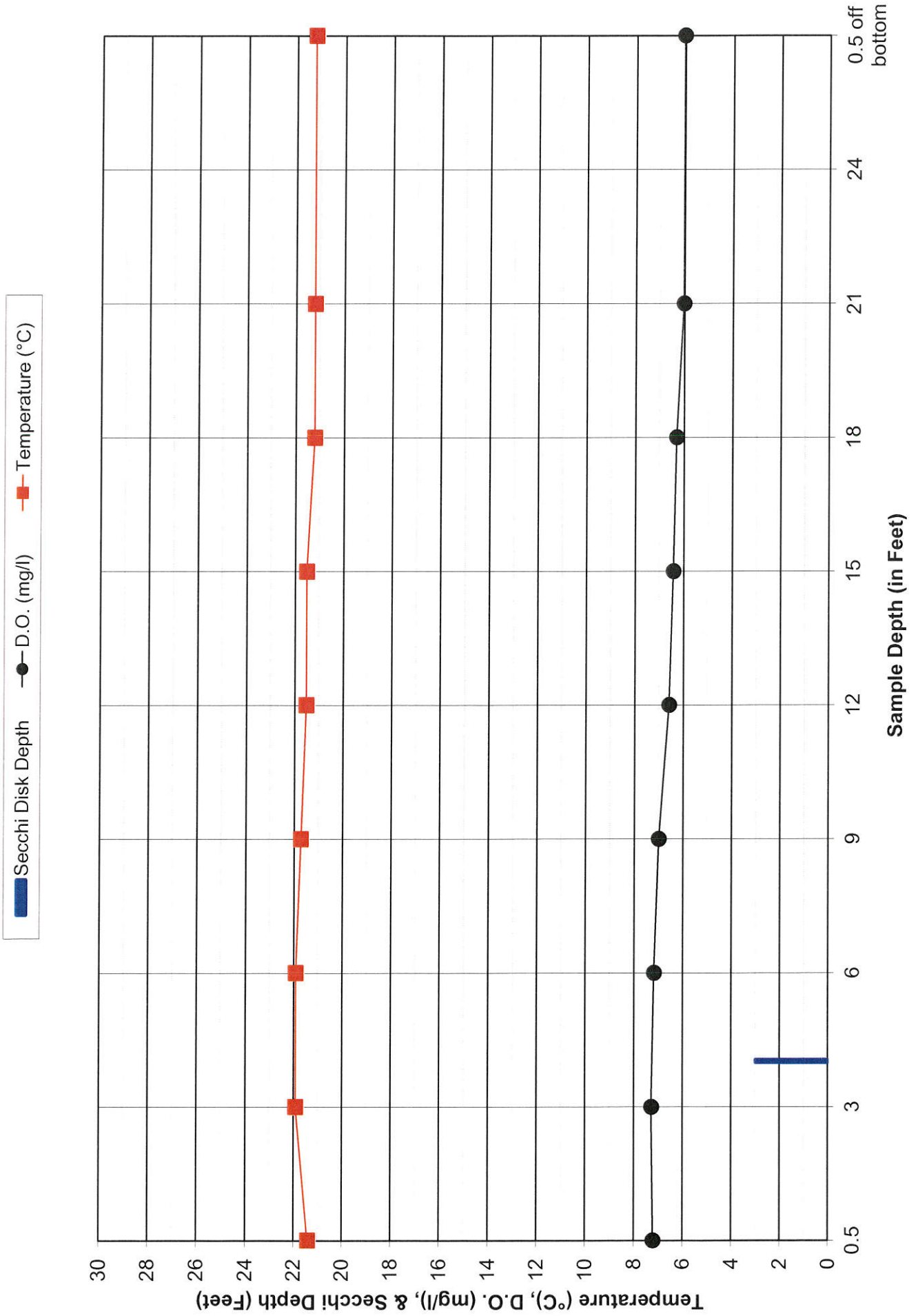
Sample Location: N45° 52.838' W90° 30.684'

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Performed By: Gary Rost

# Pixley Impoundment - FERC # 2395

## July 14, 2014 Sampling Event



# ANALYTICAL REPORT

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

WDNR Laboratory ID No. 721026460  
 WDATCP Laboratory Certification No. 105-330  
 EPA Laboratory ID No. WI000034

Printed: 07/22/14 Code: NNNN-S Page 1 of 3  
 NLS Project: 222726  
 NLS Customer: 102823  
 Phone: 855 994 9376

**Client:** Renewable World Energies  
 Attn: Gary Rast  
 100 State Street  
 P.O. Box 264  
 Neshkoro, WI 54960

Project:	FLAM (4)	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
<b>07142014 1A NLS ID: 802602</b>									
COC: 154999:1 Matrix: SW									
Collected: 07/14/14 13:12 Received: 07/15/14									
<b>Parameter</b>									
Chlorophyll, all species									
Lab filtration for Chlorophyll									
<b>07142014 2A NLS ID: 802603</b>									
COC: 154999:1 Matrix: SW									
Collected: 07/14/14 13:12 Received: 07/15/14									
<b>Parameter</b>									
Chlorophyll, all species									
Lab filtration for Chlorophyll									
<b>07142014 3A NLS ID: 802604</b>									
COC: 154999:1 Matrix: SW									
Collected: 07/14/14 13:12 Received: 07/15/14									
<b>Parameter</b>									
Chlorophyll, all species									
Lab filtration for Chlorophyll									
<b>07142014 4A NLS ID: 802605</b>									
COC: 154999:1 Matrix: SW									
Collected: 07/14/14 13:12 Received: 07/15/14									
<b>Parameter</b>									
Chlorophyll, all species									
Lab filtration for Chlorophyll									
<b>07142014 1B NLS ID: 802606</b>									
COC: 154999:2 Matrix: SW									
Collected: 07/14/14 13:14 Received: 07/15/14									
<b>Parameter</b>									
Color, APHA (true)									
Lab filtration									
<b>07142014 2B NLS ID: 802607</b>									
COC: 154999:2 Matrix: SW									
Collected: 07/14/14 13:14 Received: 07/15/14									
<b>Parameter</b>									
Color, APHA (true)									
Lab filtration									
<b>07142014 3B NLS ID: 802608</b>									
COC: 154999:2 Matrix: SW									
Collected: 07/14/14 13:14 Received: 07/15/14									
<b>Parameter</b>									
Color, APHA (true)									
Lab filtration									

# ANALYTICAL REPORT

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

WDR Laboratory ID No. 721026460  
 WDATCP Laboratory Certification No. 105-330  
 EPA Laboratory ID No. W100034

Printed: 07/22/14 Code: NNNN-S Page 2 of 3  
 NLS Project: 222726  
 NLS Customer: 102823  
 Phone: 855 994 9376

**Client:** Renewable World Energies  
 Attn: Gary Rast  
 100 State Street  
 P.O. Box 264  
 Neshkoro, WI 54960

Project:	FLAM (4)
<b>07142014 4B NLS ID: 802609</b>	
COC: 154999:2 Matrix: SW	
Collected: 07/14/14 13:14 Received: 07/15/14	
<b>Parameter</b>	
Color, APHA (true)	
Lab filtration	
<b>Result</b>	130
	yes
<b>Units</b>	C.P.U.
<b>Dilution</b>	5
<b>LOD</b>	25*
<b>LOQ</b>	
<b>Analyzed</b>	07/15/14
<b>Method</b>	SM 2120-B 20ed
<b>Lab</b>	721026460
	721026460
<b>07142014 1C NLS ID: 802610</b>	
COC: 154999:3 Matrix: SW	
Collected: 07/14/14 13:15 Received: 07/15/14	
<b>Parameter</b>	
Phosphorus, tot. as P	
<b>Result</b>	0.035
<b>Units</b>	mg/L
<b>Dilution</b>	1
<b>LOD</b>	0.0070*
<b>LOQ</b>	
<b>Analyzed</b>	07/17/14
<b>Method</b>	SM 4500P-E 20ed
<b>Lab</b>	721026460
	721026460
<b>07142014 2C NLS ID: 802611</b>	
COC: 154999:3 Matrix: SW	
Collected: 07/14/14 13:15 Received: 07/15/14	
<b>Parameter</b>	
Phosphorus, tot. as P	
<b>Result</b>	0.037
<b>Units</b>	mg/L
<b>Dilution</b>	1
<b>LOD</b>	0.0070*
<b>LOQ</b>	
<b>Analyzed</b>	07/17/14
<b>Method</b>	SM 4500P-E 20ed
<b>Lab</b>	721026460
	721026460
<b>07142014 3C NLS ID: 802612</b>	
COC: 154999:3 Matrix: SW	
Collected: 07/14/14 13:15 Received: 07/15/14	
<b>Parameter</b>	
Phosphorus, tot. as P	
<b>Result</b>	0.047
<b>Units</b>	mg/L
<b>Dilution</b>	1
<b>LOD</b>	0.0070*
<b>LOQ</b>	
<b>Analyzed</b>	07/17/14
<b>Method</b>	SM 4500P-E 20ed
<b>Lab</b>	721026460
	721026460
<b>07142014 4C NLS ID: 802613</b>	
COC: 154999:3 Matrix: SW	
Collected: 07/14/14 13:15 Received: 07/15/14	
<b>Parameter</b>	
Phosphorus, tot. as P	
<b>Result</b>	0.046
<b>Units</b>	mg/L
<b>Dilution</b>	1
<b>LOD</b>	0.0070*
<b>LOQ</b>	
<b>Analyzed</b>	07/17/14
<b>Method</b>	SM 4500P-E 20ed
<b>Lab</b>	721026460
	721026460
<b>07142014 2D NLS ID: 802614</b>	
COC: 154999:4 Matrix: SW	
Collected: 07/14/14 13:17 Received: 07/15/14	
<b>Parameter</b>	
Phosphorus, tot. as P	
<b>Result</b>	0.038
<b>Units</b>	mg/L
<b>Dilution</b>	1
<b>LOD</b>	0.0070*
<b>LOQ</b>	
<b>Analyzed</b>	07/17/14
<b>Method</b>	SM 4500P-E 20ed
<b>Lab</b>	721026460
	721026460
<b>07142014 3D NLS ID: 802615</b>	
COC: 154999:4 Matrix: SW	
Collected: 07/14/14 13:17 Received: 07/15/14	
<b>Parameter</b>	
Phosphorus, tot. as P	
<b>Result</b>	0.050
<b>Units</b>	mg/L
<b>Dilution</b>	1
<b>LOD</b>	0.0070*
<b>LOQ</b>	
<b>Analyzed</b>	07/17/14
<b>Method</b>	SM 4500P-E 20ed
<b>Lab</b>	721026460
	721026460
<b>07142014 4D NLS ID: 802616</b>	
COC: 154999:4 Matrix: SW	
Collected: 07/14/14 13:17 Received: 07/15/14	
<b>Parameter</b>	
Phosphorus, tot. as P	
<b>Result</b>	0.044
<b>Units</b>	mg/L
<b>Dilution</b>	1
<b>LOD</b>	0.0070*
<b>LOQ</b>	
<b>Analyzed</b>	07/17/14
<b>Method</b>	SM 4500P-E 20ed
<b>Lab</b>	721026460
	721026460

# ANALYTICAL REPORT

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

WDNR Laboratory ID No. 721026460  
WDATCP Laboratory Certification No. 105-330  
EPA Laboratory ID No. W100034  
Printed: 07/22/14 Code: NNNN-S Page 3 of 3

Client: Renewable World Energies  
Attn: Gary Rast  
100 State Street  
P.O. Box 264  
Neshkoro, WI 54960

NLS Project: 222726  
NLS Customer: 102823  
Phone: 855 994 9376

**Project: FLAM (4)**

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.

LOD = Limit of Detection  
DWB = Dry Weight Basis  
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

LOQ = Limit of Quantitation  
NA = Not Applicable  
ND = Not Detected (< LOD)  
%DWB = (mg/kg DWB) / 10000  
1000 ug/L = 1 mg/L

Reviewed by:



Authorized by:  
R. T. Krueger  
President

Northern Lake Service, Inc.  
Chlorophyll Results

Customer: Renewable World Energies  
Project: 222726  
FLAM (4)

<u>Sample</u>	<u>Description</u>	<u>CC a</u>	<u>Pheo a</u>	<u>IC a</u>	<u>IC b</u>	<u>IC c</u>
802602	07142014 1A	2.8	0.56	3.2	0.08	0.35
802603	07142014 2A	2.5	0.71	3	0.062	0.24
802604	07142014 3A	4.5	1.1	5.4	0.083	0.51
802605	07142014 4A	4.5	0.95	5.3	0.15	0.57

CC a = Corrected Chlorophyll a  
Pheo a = Pheophytin a  
TC a = Trichromatic Chlorophyll a  
TC b = Trichromatic Chlorophyll b  
TC c = Trichromatic Chlorophyll c  
Units = ug/L for Water, ug/cm<sup>2</sup> for periphyton samplers

\*: The complex calculations used to differentiate the various chlorophyll species magnify error at low concentrations and sometimes produce negative values, which are reported as 0.0 on this report.



**NUKIEHN LAKE SERVICE, INC.**

Analytical Laboratory and Environmental Services  
 400 North Lake Avenue • Crandon, WI 54520-1298  
 Tel: (715) 478-2777 • Fax: (715) 478-3060

**SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD**

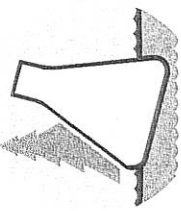
Wisconsin Lab Cert. No. 721026460  
 WI DATCP 105-000330

CLIENT: **RENEWABLE WORLD ENERGIES**  
 ADDRESS: **PO BOX 264 100 S. STATES STREET**  
 CITY: **NESHKORO WI 54960**

PROJECT DESCRIPTION: **PHM (L)**  
 DNR FID #: **---**  
 DNR LICENSE #: **---**  
 CONTACT: **GARY RAST**  
 PHONE: **855-994-9376**  
 PURCHASE ORDER NO.: **VERBAL**  
 QUOTATION NO.: **920-293-4100**

MATRIX:  
 SW = surface water  
 WW = waste water  
 GW = groundwater  
 DW = drinking water  
 TIS = tissue  
 AIR = air  
 SOIL = soil  
 SED = sediment  
 PROD = product  
 SL = sludge  
 OTHER

USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered.  
 Indicate G or C if WW Sample is Grab or Composite.



NO. 154999

ITEM NO.	NLS LAB. No.	SAMPLE ID	COLLECTION		MATRIX (See above)	ANALYZE PER ORDER OF ANALYSIS	COLLECTION REMARKS (i.e. DNR Well ID #)
			DATE	TIME			
1.	07142014-4A	11	7/14/14	7:40-1:12	RIVER	X Chlorophyll A X Phos X TSS X Phtos	
2.	606-609	11	7/14-1/14	11	"	X	
3.	610-613	11	7/14-1/15	11	"	X	
4.	614-616	11	9/15-1/17	11	"	X	
5.							
6.							
7.							
8.							
9.							
10.							

COLLECTED BY (signature): *[Signature]* DATE/TIME: 7/14/14 7:40-1:17

RECEIVED BY (signature): *[Signature]* DATE/TIME: 7/15-14 10:00

DISPATCHED BY (signature): *[Signature]* DATE/TIME: 7/14/14 3:00

RECEIVED AT NLS BY (signature): *[Signature]* DATE/TIME: 7/15-14 10:00

CUSTODY SEAL NO. (IF ANY):

REPORT TO: SAME AS ABOVE ATTN: GARY

INVOICE TO: RENEWABLE WORLD OPERATIONS, 1001 STEPHENSON STREET, NORWAY MICH 49870

CONDITION: ON WELLS

REMARKS & OTHER INFORMATION:

WDNR FACILITY NUMBER: E-MAIL ADDRESS:

COOLER #

PRESERVATIVE:  
 NP = no preservative  
 S = sulfuric acid

N = nitric acid  
 Z = zinc acetate  
 M = methanol

OH = sodium hydroxide  
 HA = hydrochloric & ascorbic acid  
 H = hydrochloric acid

**IMPORTANT!**

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM **MUST** BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.
2. PLEASE USE ONE LINE PER SAMPLE. **NOT** PER BOTTLE.
3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.
4. PARTIES COLLECTING SAMPLE, LISTED AS **REPORT TO** AND LISTED AS **INVOICE TO** AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.

## Appendix C

August 12, 2014 Sampling Documents

# IMPOUNDMENT SAMPLING LOG

2014 Water Quality Study - Flambeau Pixley Hydroelectric Project - FERC #2395

Pre-Sampling Data: HWL - 1448.75 Date: 8/12/14  
TWL - 1427.6  
 Time: 11:30 Barometer: 29.99 Air Temp: 17.77°C Wind Speed: 116MPH GUST 21MPH  
 Sky Conditions: SUNNY, PARTLY CLOUDY, VERY BREEZY  
 Precipitation within Last 24 Hours: YES

D.O. Meter Calibration: Instrument Model Used: Hach HQ40d  
 Were The Batterys Changed?  Yes  No If Yes, When Changed: \_\_\_\_\_

Battery Status: 50% Charge

Calibration Time: FEB. 2014 Method: Factory

Sampling Depth Profile: Measured Depth to Bottom of the Impoundment: 22.0 Feet

Secchi Disk Depth: (E0.1 Foot) 3.7 Feet Time: 11:35

### Chlorophyll a (3 Feet Below Surface)

Lab Sample I.D.#: <u>20140812-3A</u>		
Time	Quantity (ml)	Filtered
<u>11:40</u>	<u>1000</u>	<u>NO</u>

### True Color (3 Feet Below Surface)

Lab Sample I.D.#: <u>20140812-3B</u>	
Time	Quantity (ml)
<u>11:41</u>	<u>250</u>

### D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
.5 Ft Below Surface	<u>11:46</u>	<u>6.56</u>	<u>22.6</u>
3 Feet	<u>11:47</u>	<u>6.51</u>	<u>22.6</u>
6 Feet	<u>11:48</u>	<u>6.47</u>	<u>22.5</u>
9 Feet	<u>11:49</u>	<u>6.43</u>	<u>22.5</u>
12 Feet	<u>11:50</u>	<u>6.41</u>	<u>22.5</u>
15 Feet	<u>11:51</u>	<u>6.44</u>	<u>22.4</u>
18 Feet	<u>11:52</u>	<u>6.45</u>	<u>22.4</u>
21 Feet	<u>11:53</u>	<u>6.34</u>	<u>22.4</u>
24 Feet			
.5 Ft Above Bottom	<u>11:54</u>	<u>6.18</u>	<u>22.3</u>

### Phosphorus

Lab Sample I.D.#: <u>20140812-3C</u>	
(3 Feet Below Surface)	
Time	Preserved?
<u>11:43</u>	<u>H2504</u>

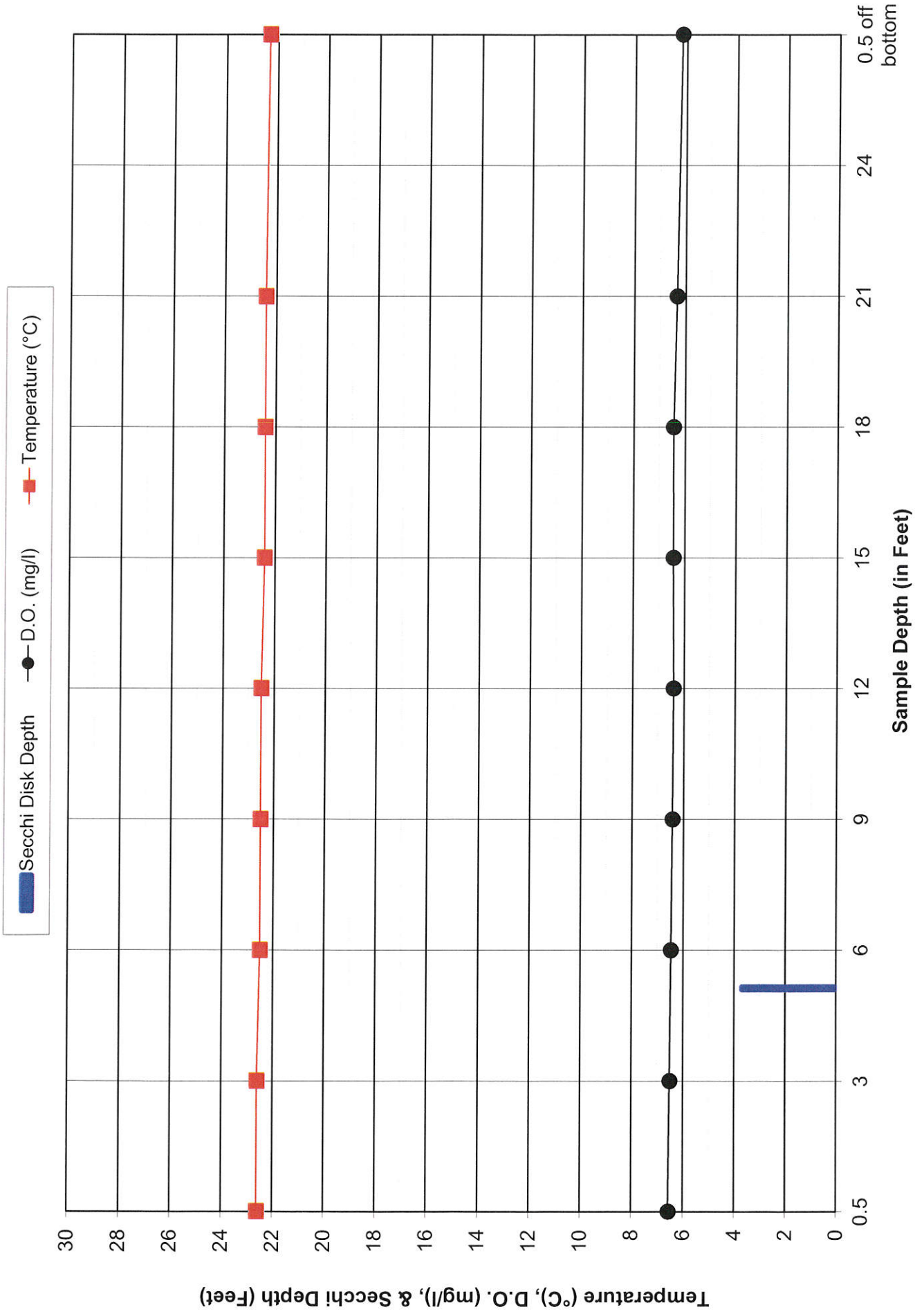
Lab Sample I.D.#: <u>20140812-3D</u>	
(3 Feet Above Bottom)	
Time	Preserved?
<u>11:45</u>	<u>H2504</u>

Sample Location: N45° 52.838' W90° 30.684'

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Performed By: GARY RAST + BEN RICHARD

# Pixley Impoundment - FERC # 2395 August 12, 2014 Sampling Event







# ANALYTICAL REPORT

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

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

Client: Renewable World Energies  
 Attn: Gary Rast  
 100 State Street  
 P.O. Box 264  
 Neshkoro, WI 54960

Printed: 08/18/14 Code: NNNN-S Page 2 of 3  
 NLS Project: 224853  
 NLS Customer: 102823  
 Phone: 855 994 9376

Project	Flambeau (4)	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
<b>20140812 4-B NLS ID: 809778</b>		100	C.P.U.	5	25*		08/13/14	SM 2120-B 20ed	721026460
COC: 160942:2 Matrix: SW									
Collected: 08/12/14 13:40 Received: 08/13/14									
<b>Parameter</b>		yes					08/13/14	NA	721026460
Lab filtration									
<b>20140812 1-C NLS ID: 809779</b>		0.024	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
COC: 160942:3 Matrix: SW									
Collected: 08/12/14 13:42 Received: 08/13/14									
<b>Parameter</b>		0.029	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
Phosphorus, tot. as P									
<b>20140812 2-C NLS ID: 809780</b>		0.029	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
COC: 160942:3 Matrix: SW									
Collected: 08/12/14 13:42 Received: 08/13/14									
<b>Parameter</b>		0.037	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
Phosphorus, tot. as P									
<b>20140812 3-C NLS ID: 809781</b>		0.047	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
COC: 160942:3 Matrix: SW									
Collected: 08/12/14 13:42 Received: 08/13/14									
<b>Parameter</b>		0.033	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
Phosphorus, tot. as P									
<b>20140812 4-C NLS ID: 809782</b>		0.033	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
COC: 160942:4 Matrix: SW									
Collected: 08/12/14 13:45 Received: 08/13/14									
<b>Parameter</b>		0.035	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
Phosphorus, tot. as P									
<b>20140812 2-D NLS ID: 809783</b>		0.051	mg/L	1	0.0070*		08/14/14	SM 4500P-E 20ed	721026460
COC: 160942:4 Matrix: SW									
Collected: 08/12/14 13:45 Received: 08/13/14									
<b>Parameter</b>									
Phosphorus, tot. as P									
<b>20140812 3-D NLS ID: 809784</b>									
COC: 160942:4 Matrix: SW									
Collected: 08/12/14 13:45 Received: 08/13/14									
<b>Parameter</b>									
Phosphorus, tot. as P									
<b>20140812 4-D NLS ID: 809785</b>									
COC: 160942:4 Matrix: SW									
Collected: 08/12/14 13:45 Received: 08/13/14									
<b>Parameter</b>									
Phosphorus, tot. as P									

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

Client: Renewable World Energies  
Attn: Gary Rast  
100 State Street  
P.O. Box 264  
Neshkoro, WI 54960

# ANALYTICAL REPORT

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

Printed: 08/18/14 Code: NNNN-S Page 3 of 3

NLS Project: 224853

NLS Customer: 102823

Phone: 855 994 9376

Project: Flambeau (4)

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.

LOD = Limit of Detection

DWB = Dry Weight Basis

MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

LOQ = Limit of Quantitation

NA = Not Applicable

%DWB = (mg/kg DWB) / 10000

ND = Not Detected (< LOD)

1000 ug/L = 1 mg/L

Reviewed by:

Authorized by:



R. T. Krueger  
President

Northern Lake Service, Inc.  
Chlorophyll Results

Customer: Renewable World Energies  
Project: 224853  
Flambeau (4)

<u>Sample</u>	<u>Description</u>	<u>CC a</u>	<u>Pheo a</u>	<u>TC a</u>	<u>TC b</u>	<u>TC c</u>
809771	20140812 1-A	5.2	0.26	5.6	0.0*	0.44
809772	20140812 2-A	5.1	0.3	5.5	0.0*	0.37
809773	20140812 3-A	5.7	0.53	6.2	0.0*	0.36
809774	20140812 4-A	6.2	0.74	6.9	0.00082	0.48

CC a = Corrected Chlorophyll a  
Pheo a = Pheophytin a  
TC a = Trichromatic Chlorophyll a  
TC b = Trichromatic Chlorophyll b  
TC c = Trichromatic Chlorophyll c  
Units = ug/L for Water, ug/cm<sup>2</sup> for periphyton samplers

\*: The complex calculations used to differentiate the various chlorophyll species magnify error at low concentrations and sometimes produce negative values, which are reported as 0.0 on this report.

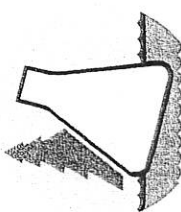


**NORTHERN LAKE SERVICE, INC.**

Analytical Laboratory and Environmental Services  
 400 North Lake Avenue • Crandon, WI 54520-1298  
 Tel: (715) 478-2777 • Fax: (715) 478-3060

**SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD**

Wisconsin Lab Cert. No. 721026460  
 ANALYTICAL LABORATORY DATE 105-000330



NO. 160942

CLIENT: RENEWABLE WORLD ENERGY  
 ADDRESS: PO BOX 264 100 S. STATE STREET  
 CITY: NESHKORO WI 54960  
 PROJECT DESCRIPTION / NO.: FLAMBEAU (4)  
 QUOTATION NO. \_\_\_\_\_  
 DNR FID # \_\_\_\_\_  
 DNR LICENSE # \_\_\_\_\_  
 CONTACT: GARY  
 PHONE: 855-994-9376  
 PURCHASE ORDER NO.: VERBAL  
 FAX: 820-293-4100

MATRIX:  
 SW = surface water  
 WW = waste water  
 GW = groundwater  
 DW = drinking water  
 TIS = tissue  
 AIR = air  
 SOIL = soil  
 SED = sediment  
 PROD = product  
 SL = sludge  
 OTHER \_\_\_\_\_

USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered.  
 Indicate G or C if WW Sample is Grab or Composite.  
 ANALYZE PER ORDER OF ANALYSIS

ITEM NO.	NLS LAB NO.	SAMPLE ID	COLLECTION DATE	TIME	MATRIX (See above)	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	771-774	20140812-1,2,3,4-A	8/12/14	9:37-1:35	River Water	
2.	775-778	11	8/12/14	7:35-1:40	"	
3.	779-782	11	8/12/14	7:40-1:42	"	
4.	783-785	11	8/12/14	7:45-1:45	"	
5.						
6.						
7.						
8.						
9.						
10.						

CHLOROPHYLL A  
 TRUE COLOR  
 PHOS  
 PHOS

\* NO TEMP BLANK SENT OR FOLLOWS

REPORT TO: SAME AS ABOVE  
 INVOICE TO: ATTN: GARY  
RENEWABLE WORLD OPERATIONS  
1001 STEPHENSON STREET  
NORWAY, MI 49870

COLLECTED BY (signature): [Signature] DATE/TIME: 8/12/14 7:37-1:45  
 RECEIVED BY (signature): [Signature] DATE/TIME: \_\_\_\_\_  
 DISPATCHED BY (signature): [Signature] DATE/TIME: 8/12/14 5:15  
 RECEIVED AT NLS BY (signature): [Signature] DATE/TIME: 8-13-14 10:00  
 REMARKS & OTHER INFORMATION: ON W  
 COOLER # \_\_\_\_\_  
 PRESERVATIVE: N = nitric acid, OH = sodium hydroxide, NP = no preservative, Z = zinc acetate, HA = hydrochloric & ascorbic acid, S = sulfuric acid, M = methanol, H = hydrochloric acid

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM MUST BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.  
 2. PLEASE USE ONE LINE PER SAMPLE, NOT PER BOTTLE.  
 3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.  
 4. PARTIES COLLECTING SAMPLE, LISTED AS REPORT TO AND LISTED AS INVOICE TO AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.




## **Appendix D**

### Agency Correspondence

**Gary Rast**

---

  
**COPY**

**From:** Gary Rast  
**Sent:** Wednesday, October 29, 2014 8:33 AM  
**To:** 'Laatsch, Cheryl - DNR'; Utrup, Nick  
**Cc:** Aneta Rietveld  
**Subject:** 4 Flam 2014 Draft WQ Reports Message 3  
**Attachments:** 14-10-29 GGR Flam In Ag Comment Draft 14 WQ Rpts.pdf; 14-10-28 GGR PXY Draft Report 2014 WQM Data.pdf

**Flambeau Pixley**

Gary Rast  
Regulatory/Compliance Manager



Renewable World Energies, LLC  
100 S. State Street  
P.O. Box 264  
Neshkoro, WI 54960  
Phone: 855-994-9376 Ext. 105  
Fax: 920-293-4100  
Cell: 920-570-0995  
E-mail: [grast@rwehydro.com](mailto:grast@rwehydro.com)

**Gary Rast**

---

 **COPY**

**From:** Gary Rast  
**Sent:** Wednesday, October 29, 2014 8:30 AM  
**To:** 'Laatsch, Cheryl - DNR'; Utrup, Nick  
**Cc:** Aneta Rietveld  
**Subject:** 4 Flam 2014 Draft WQ Reports Message 1  
**Attachments:** 14-10-29 GGR Flam In Ag Comment Draft 14 WQ Rpts.pdf; 14-10-27 GGR FLUP Draft Report 2014 WQM Data.pdf

Cheryl & Nick,

**Flambeau Upper**

RWE is submitting the 4 Flambeau 2014 Draft WQ Reports for comment should you have any to offer. Because the files are large I will be sending 4 e-mail messages each with 1 project report and letter (October 29) attached. This message has Flambeau Upper attached. Submittal list is found below:

- Message 1 – Flambeau Upper (Dated October 27)
- Message 2 – Flambeau Lower (Dated October 27)
- Message 3 – Flambeau Pixley (Dated October 28)
- Message 4 – Flambeau Crowley (Dated October 29)

Gary

Gary Rast  
Regulatory/Compliance Manager



Renewable World Energies, LLC  
100 S. State Street  
P.O. Box 264  
Neshkoro, WI 54960  
Phone: 855-994-9376 Ext. 105  
Fax: 920-293-4100  
Cell: 920-570-0995  
E-mail: [grast@rwehydro.com](mailto:grast@rwehydro.com)



 COPY

October 29, 2014

Mr. Nick Utrup  
U.S. Fish and Wildlife Service  
WLMN Ecological Services Field Office  
4101 American Boulevard East  
Bloomington, MN 55425

Ms. Cheryl Laatsch  
Statewide FERC Coordinator  
Wisconsin Dept. of Natural Resources  
N7725 HWY 28  
Horicon, WI 53032

Re: **Flambeau Hydroelectric Projects**  
**FERC Project Numbers-Upper FERC # 2640, Lower FERC # 2421,**  
**Pixley FERC # 2395, Crowley FERC # 2473**  
**Flambeau Hydro LLC**  
**Draft Reports 2014 Water Quality Monitoring Data**

Dear Agencies:

On behalf of Flambeau Hydro LLC ("Flambeau"), Licensee, Renewable World Energies, LLC is submitting a copy of its Draft Report 2014 Water Quality Monitoring Data for each of the Flambeau Projects. No problems were encountered with equipment, data, or the monitoring schedule in general. The report is a requirement of Flambeau's Federal license pursuant to article 406 and 408 and the approved Water Quality Monitoring Plans. The purpose of this letter is to formally invite you to comment on the draft reports. The Federal Energy Regulatory Commission's regulations allow for a 30 day formal review and comment period. Nothing out of the ordinary was experienced during the 2014 monitoring season except as noted in the reports. Thank you in advance for providing your responses in a timely manner so we can include your comments and recommendations, as appropriate, into our reports.

If you have any questions concerning the report, please contact Mr. Gary Rast at the Renewable World Energies, LLC offices @ 855-994-9376 ext. 105, or by email at: [grast@rwehydro.com](mailto:grast@rwehydro.com)

**Corporate Office**  
P.O. Box 264  
100 S. State Street  
Neshkoro, WI 54960  
Fax: 920-293-4100

Phone: 855-99HYDRO  
(855-994-9376)  
[www.renewableworldenergies.com](http://www.renewableworldenergies.com)

**Administrative Office**  
1001 Stephenson Street  
Norway, MI 49870  
Fax: 906-563-9344



Sincerely,  
Renewable World Energies, LLC  
Agent For Licensee

  
Mr. Jason Kreuzscher  
Vice President, Operations

Attachments: Draft Report 2014 Water Quality Monitoring Data Flambeau Upper Hydroelectric Project  
– October 27, 2014

Draft Report 2014 Water Quality Monitoring Data Flambeau Lower Hydroelectric  
Project – October 27, 2014

Draft Report 2014 Water Quality Monitoring Data Flambeau Pixley Hydroelectric  
Project – October 28, 2014

Draft Report 2014 Water Quality Monitoring Data Flambeau Crowley Hydroelectric  
Project – October 29, 2014

Cc: RWE, Corporate

**Gary Rast**

---

 COPY

**From:** Gary Rast  
**Sent:** Wednesday, October 29, 2014 8:33 AM  
**To:** 'Laatsch, Cheryl - DNR'; Utrup, Nick  
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**Subject:** 4 Flam 2014 Draft WQ Reports Message 3  
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**Flambeau Pixley**

Gary Rast  
Regulatory/Compliance Manager



Renewable World Energies, LLC  
100 S. State Street  
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Neshkoro, WI 54960  
Phone: 855-994-9376 Ext. 105  
Fax: 920-293-4100  
Cell: 920-570-0995  
E-mail: [grast@rwehydro.com](mailto:grast@rwehydro.com)

## Gary Rast

---

**From:** Gary Rast  
**Sent:** Wednesday, October 29, 2014 8:30 AM  
**To:** 'Laatsch, Cheryl - DNR'; Utrup, Nick  
**Cc:** Aneta Rietveld  
**Subject:** 4 Flam 2014 Draft WQ Reports Message 1  
**Attachments:** 14-10-29 GGR Flam In Ag Comment Draft 14 WQ Rpts.pdf; 14-10-27 GGR FLUP Draft Report 2014 WQM Data.pdf



Cheryl & Nick,

### Flambeau Upper

RWE is submitting the 4 Flambeau 2014 Draft WQ Reports for comment should you have any to offer. Because the files are large I will be sending 4 e-mail messages each with 1 project report and letter (October 29) attached. This message has Flambeau Upper attached. Submittal list is found below:

Message 1 – Flambeau Upper (Dated October 27)  
Message 2 – Flambeau Lower (Dated October 27)  
Message 3 – Flambeau Pixley (Dated October 28)  
Message 4 – Flambeau Crowley (Dated October 29)

Gary

Gary Rast  
Regulatory/Compliance Manager




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100 S. State Street  
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Neshkoro, WI 54960  
Phone: 855-994-9376 Ext. 105  
Fax: 920-293-4100  
Cell: 920-570-0995  
E-mail: [grast@rwehydro.com](mailto:grast@rwehydro.com)



## Gary Rast

---

**From:** Gary Rast  
**Sent:** Tuesday, May 27, 2014 8:58 AM  
**To:** 'Laatsch, Cheryl - DNR'; Utrup, Nick  
**Subject:** RE: water quality data collection

 COPY

Everyone,

Just sending an update on water sample collections (Ice-Out) at Winter and Flambeau projects. Nothing collected to this point. Flows have come down quite a bit in the last two weeks. However, the boat barriers are not in at Winter, Flambeau Upper or Flambeau Lower. Two of the three sites have access just slightly above the dams and sample points near the dams at most a couple hundred feet (Winter & Flambeau Lower). I will not attempt any sampling unless they are installed. A side note is that the 4 Flambeau projects must be done in sequence and on the same day. Sampling is on hold until at least the week of June 2<sup>nd</sup> or June 9<sup>th</sup> if you still want it done. I need to schedule Turtle/Eagle/Erosion and KBB surveys from now on as well.

Gary

Gary Rast  
Regulatory/Compliance Manager



Renewable World Energies, LLC  
100 S. State Street  
P.O. Box 264  
Neshkoro, WI 54960  
Phone: 855-994-9376 Ext. 105  
Fax: 920-293-4100  
Cell: 920-570-0995  
E-mail: [grast@rwehydro.com](mailto:grast@rwehydro.com)

---

**From:** Laatsch, Cheryl - DNR [<mailto:Cheryl.Laatsch@wisconsin.gov>]  
**Sent:** Tuesday, May 13, 2014 11:38 AM  
**To:** Gary Rast  
**Subject:** FW: water quality data collection

I have asked for clarification from Craig. Here is his response.

Thanks, Cheryl

---


**From:** Roesler, Craig P - DNR  
**Sent:** Tuesday, May 13, 2014 11:12 AM  
**To:** Laatsch, Cheryl - DNR; Hansen, James P - DNR  
**Cc:** Aartila, Tom P - DNR  
**Subject:** RE: water quality data collection

I would have them collect the samples as soon as conditions become safe. If it isn't possible in May, try for early June.

**Gary Rast**

---

**From:** Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>  
**Sent:** Tuesday, May 13, 2014 11:38 AM  
**To:** Gary Rast  
**Subject:** FW: water quality data collection

 **COPY**

I have asked for clarification from Craig. Here is his response.

Thanks, Cheryl

---

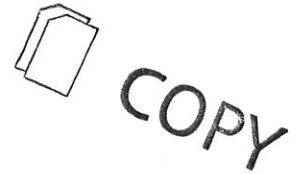
**From:** Roesler, Craig P - DNR  
**Sent:** Tuesday, May 13, 2014 11:12 AM  
**To:** Laatsch, Cheryl - DNR; Hansen, James P - DNR  
**Cc:** Aartila, Tom P - DNR  
**Subject:** RE: water quality data collection

I would have them collect the samples as soon as conditions become safe. If it isn't possible in May, try for early June.

## Gary Rast

---

**From:** Gary Rast  
**Sent:** Tuesday, May 13, 2014 9:52 AM  
**To:** 'Laatsch, Cheryl - DNR'  
**Cc:** 'Jason Kreuzer'; Cindy Skowronski; Aneta Rietveld  
**Subject:** RE: water quality data collection



Cheryl,

Thanks for the response. However, last year a similar situation occurred at the Flambeau projects and we abandoned the sampling with agency consult. Why the inconsistency from year to year? Below is exact content of an e-mail sent to the agencies on May 22, 2013 addressing same type of issue and agencies agreed. Just asking where is the difference. **FYI – As of this morning, the flows at the Winter project are now 3,000 CFS as opposed to 2,000 CFS last week and the flows at the (4) Flambeau projects are at 6,500 CFS as opposed to 3,500 - 4,000 CFS last week.** We can try to check back together but next week is the last full week of May because Memorial Day is the following Monday. Gary

Everyone,

About 1 to 1.5 weeks ago I notified you that because of water conditions and no boat barriers being installed at the Flambeau projects the Ice-Out WQ monitoring would or could not be performed during the 2 week time period following Ice-Out. On Monday 5/20 I was notified that the barriers were installed and river conditions were approaching more normal conditions. Because weather looked favorable for Thursday 5/23 I made plans for that day. I was not aware that the area had received so much rain in the past couple of days and that runoff from surrounding areas were contributing so much. River conditions today 5/22 are horrible to say the least, about 1000 CFS more than when you were originally notified. I believe they are slightly one side or the other of 4000 CFS. I have been informed that another 500 CFS is to be released from the flowage later today, so conditions will worsen. I spoke to Jeff less than an hour ago and discussed doing some sort of modified monitoring while I am here. We agreed that was not a good thing because comparison to other years Ice-Out results would be very hard to make and the effort would not be worth much. Jeff and I agreed to skip the Ice-Out sampling all together because the effort would not yield good results and the safety concerns involving the monitoring. RWE asks for your understanding and agreement. Thanks

Gary

Gary Rast  
Regulatory/Compliance Manager



Renewable World Energies, LLC  
100 S. State Street  
P.O. Box 264  
Neshkoro, WI 54960  
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Fax: 920-293-4100  
Cell: 920-570-0995  
E-mail: [grast@rwehydro.com](mailto:grast@rwehydro.com)

---

**From:** Laatsch, Cheryl - DNR [<mailto:Cheryl.Laatsch@wisconsin.gov>]

**Sent:** Tuesday, May 13, 2014 8:28 AM

**To:** Gary Rast

**Subject:** water quality data collection

Staff agree that the sampling should be postponed. They have requested that you try to collect samples before the end of May. Lets check back with each other at the end of May to see how things are going. Thanks

Cheryl Laatsch

Statewide FERC Coordinator

Wisconsin Dept of Natural Resources

N7725 Hwy 28


Horicon WI 53032

(T) 920-387-7869 (Fax) 920-387-7888

[Cheryl.laatsch@wisconsin.gov](mailto:Cheryl.laatsch@wisconsin.gov)

**Gary Rast**

---

 **COPY**

**From:** Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>  
**Sent:** Tuesday, May 13, 2014 8:28 AM  
**To:** Gary Rast  
**Subject:** water quality data collection

Staff agree that the sampling should be postponed. They have requested that you try to collect samples before the end of May. Lets check back with each other at the end of May to see how things are going. Thanks

Cheryl Laatsch  
Statewide FERC Coordinator  
Wisconsin Dept of Natural Resources  
N7725 Hwy 28  
Horicon WI 53032  
(T) 920-387-7869 (Fax) 920-387-7888  
[Cheryl.laatsch@wisconsin.gov](mailto:Cheryl.laatsch@wisconsin.gov)

**Gary Rast**

---

**From:** Reinecke, Sue -FS <sreinecke@fs.fed.us>  
**Sent:** Thursday, May 08, 2014 12:00 PM  
**To:** Gary Rast  
**Cc:** Higgins, Dale -FS  
**Subject:** RE: Winter Ice Out WQ

 COPY

Hi Gary, FS concurs with your decision to not sample for safety reason due to high flows.

thanks  
sue

\*\*\*\*\*

Sue Reinecke, Forest Fisheries Biologist  
Chequamegon-Nicolet NF  
1170 4<sup>th</sup> Ave South  
Park Falls, WI 54552  
715-762-5185  
[sreinecke@fs.fed.us](mailto:sreinecke@fs.fed.us)  
\*\*\*\*\*

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**From:** Gary Rast [<mailto:grast@rwehydro.com>]  
**Sent:** Thursday, May 08, 2014 10:42 AM  
**To:** Laatsch, Cheryl - DNR; Utrup, Nick; Higgins, Dale -FS; Reinecke, Sue -FS  
**Cc:** Jason Kreuzscher; Cindy Skowronski; Aneta Rietveld; David Anderson  
**Subject:** Winter Ice Out WQ

Everyone,


I traveled up to the Winter Hydro this week to perform the Ice Out WQ sampling. The photos were taken May 7, 2014. The 1<sup>st</sup> photo shows the discharge (2004) CFS and 2<sup>nd</sup> photo is looking upstream from the dam. As you can see it is wild and no buoys are installed yet because of dangerous conditions. Sample site is just upstream of the buoys and just to the right of the large evergreen on left side of photo. The power canal is not shown but is on left side of the photo. According to WQ plan, the sampling can be done within 3 weeks of Ice Out. This week was the 2<sup>nd</sup> week since Ice Out. We do not expect conditions to improve in the near future which would put the Ice Out sampling outside of the 3 week window. **The licensee proposes to abandon the Ice Out sampling for 2014 because of these conditions and asks for your agreement.** If you require sampling to be performed, we can do it outside the timeframe when conditions improve but not until then. As a side note sampling was accomplished at the Clam River and Danbury projects this week. Please respond as soon as possible.

Gary

Gary Rast  
Regulatory/Compliance Manager



Gary Rast

 COPY

**From:** Gary Rast  
**Sent:** Thursday, May 08, 2014 10:42 AM  
**To:** 'Laatsch, Cheryl - DNR'; Utrup, Nick; Higgins, Dale -FS (dhiggins@fs.fed.us); 'Reinecke, Sue -FS'  
**Cc:** 'Jason Kreuzscher'; Cindy Skowronski; Aneta Rietveld; David Anderson  
**Subject:** Winter Ice Out WQ  
**Attachments:** WNTR Discharge May 7 (1).JPG; WNTR Upstream May 7.JPG

Everyone,

I traveled up to the Winter Hydro this week to perform the Ice Out WQ sampling. The photos were taken May 7, 2014. The 1<sup>st</sup> photo shows the discharge (2004) CFS and 2<sup>nd</sup> photo is looking upstream from the dam. As you can see it is wild and no buoys are installed yet because of dangerous conditions. Sample site is just upstream of the buoys and just to the right of the large evergreen on left side of photo. The power canal is not shown but is on left side of the photo. According to WQ plan, the sampling can be done within 3 weeks of Ice Out. This week was the 2<sup>nd</sup> week since Ice Out. We do not expect conditions to improve in the near future which would put the Ice Out sampling outside of the 3 week window. **The licensee proposes to abandon the Ice Out sampling for 2014 because of these conditions and asks for your agreement.** If you require sampling to be performed, we can do it outside the timeframe when conditions improve but not until then. As a side note sampling was accomplished at the Clam River and Danbury projects this week. Please respond as soon as possible.

Gary

Gary Rast  
Regulatory/Compliance Manager



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