

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 3rd 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.

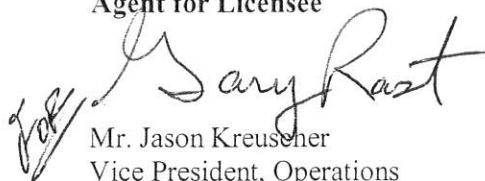
Corporate Office
P.O. Box 264
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Neshkoro, WI 54960
Fax: 920-293-4100

Phone: 855-99HYDRO
(855-994-9376)
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

Flambeau (Lower) Hydroelectric Project
FERC Project #2421
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

Table of Contents

I.	Summary.....	3
II.	2014 Sampling Results Table	5
III.	2014 Temperature and Dissolved Oxygen Sampling Event Graphs	6
IV.	2014 Monthly Temperature and Precipitation Table	7
V.	2014 Flambeau Lower Sampling Comparison Table	8
VI.	Sampling Location Map.....	9
	APPENDIX A - June 10, 2014 Ice-Out Sampling Documents.....	10
	APPENDIX B - July 14, 2014 Sampling Documents.....	11
	APPENDIX C - August 12, 2014 Sampling Documents.....	12
	APPENDIX D - Agency Correspondence.....	13

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 (Lower) Hydroelectric Project – FERC Project # 2421 – Flambeau Hydro, LLC.

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 Flambeau Lower 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 2nd or June 9th. The Ice-Out sampling event occurred on June 10, 2014. River flow, based on the Flambeau (Lower) Hydroelectric Project records, was approximately 1234 cubic feet per second. Sampling occurred between 9:30 a.m. and 9:49 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 (Lower) Hydroelectric Project records, was approximately 909 cubic feet per second during the July 14, 2014 sampling event. Sampling occurred between 9:00 a.m. and 9:35 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 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 (Lower) Hydroelectric Project records, was approximately 636 cubic feet per second during the August 12, 2014 sampling event. Sampling occurred between 9:30 a.m. and 9:55 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 Lower Project Sampling Comparison Table 2011-2014 page 8**) sampling results are as follows:

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

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 Lower Hydroelectric Project is set to take place in 2015 beginning with the Ice-Out sampling event.

**2014
Sampling Results
Table**

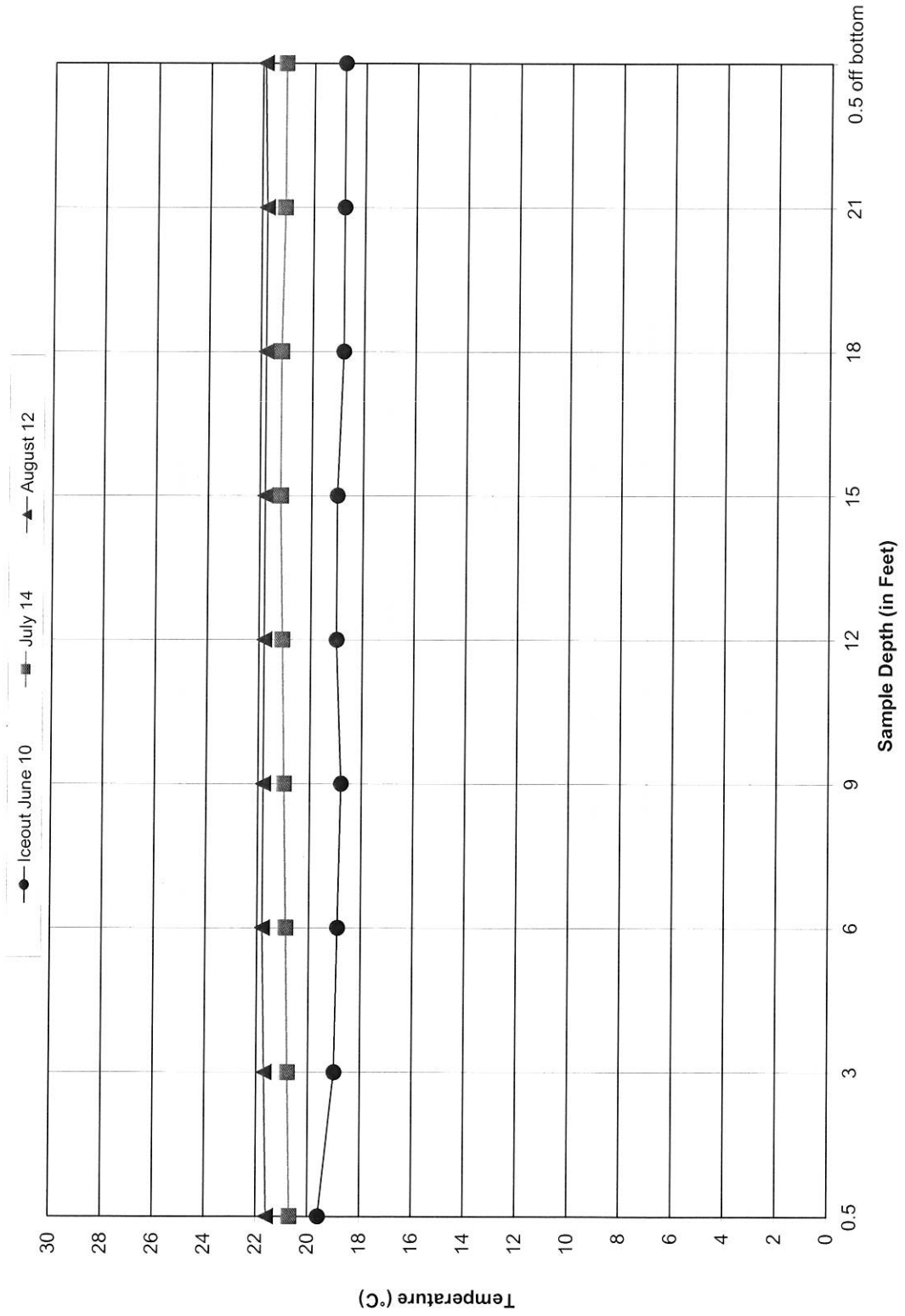
Flambeau (Lower) Hydroelectric Project - FERC Project # 2421 2014 Water Quality Sampling Data

	June 10, 2014	July 14, 2014	August 12, 2014																																																																																										
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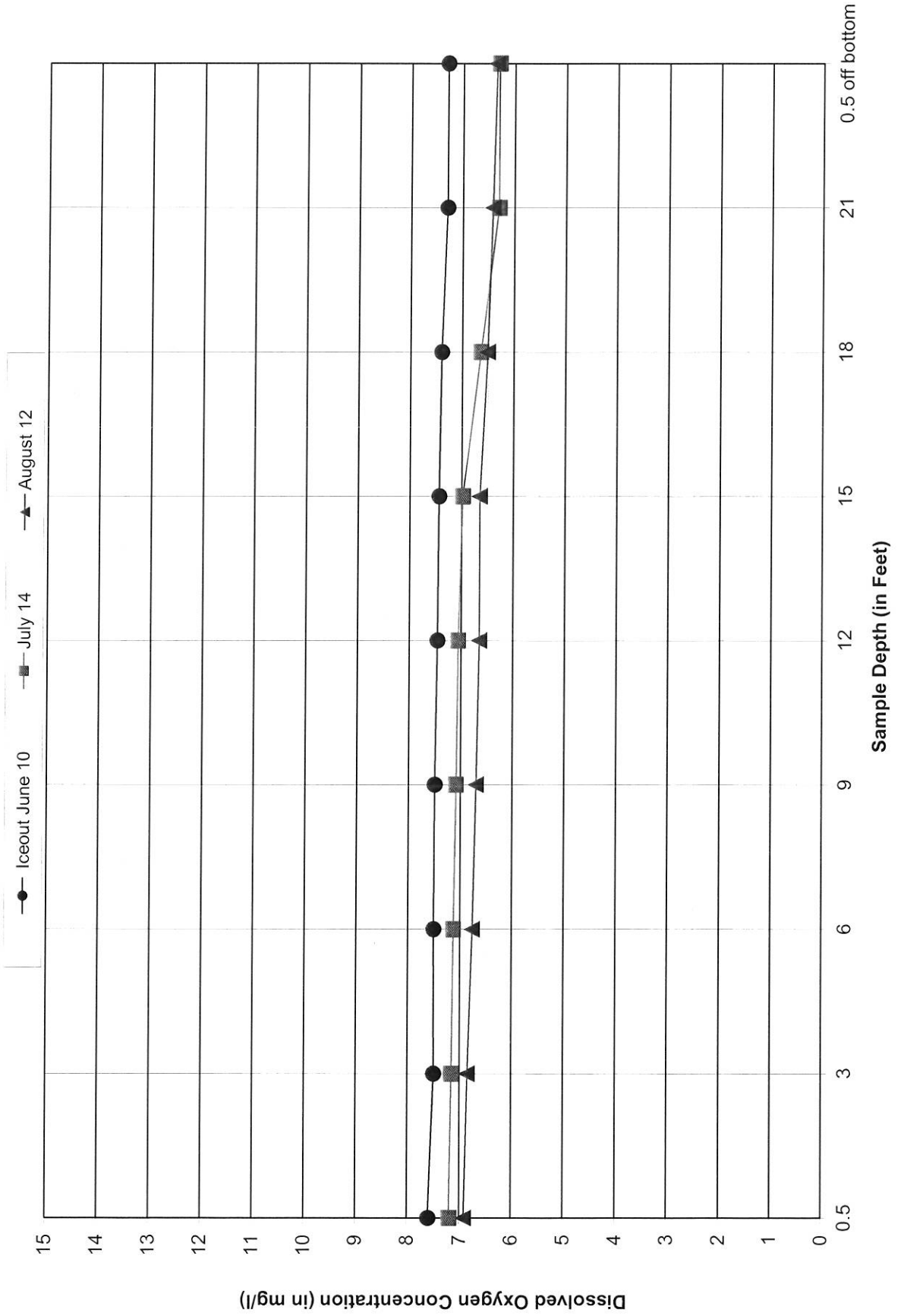
* Considered Reporting Limits

**2014
Temperature
And
Dissolved Oxygen
Graphs**

Lower Impoundment - FERC # 2421 2014 Temperature Samples



Lower Impoundment - FERC # 2421 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 Lower
Sampling Comparison Table
2011—2014**

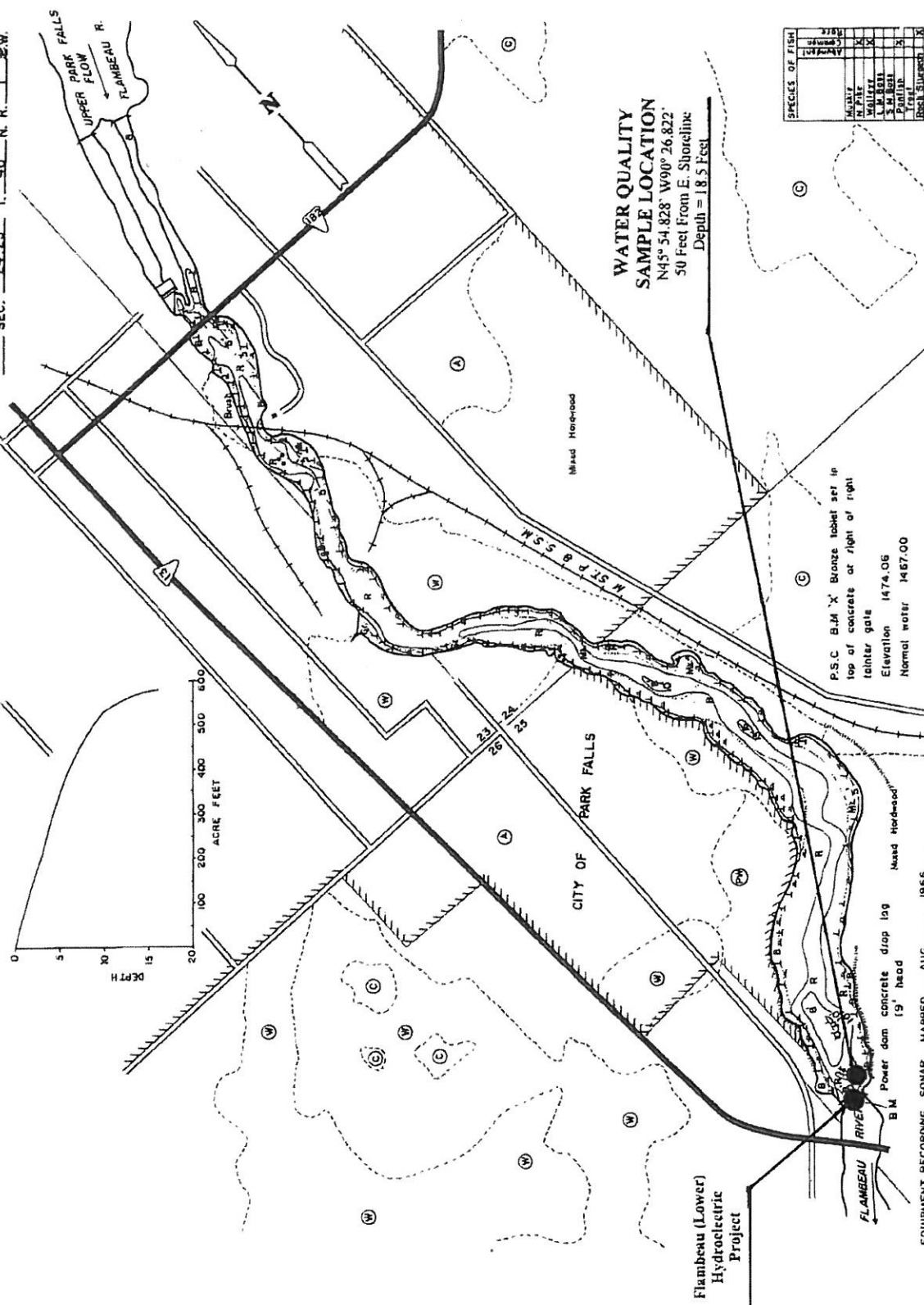
Flambeau Lower

**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	2.70	0.77	80.00	0.028	0.031	11.64	12.48	5.90	8.00
2012	April	2.60	2.10	120.00	0.038	0.055	10.94	11.35	8.80	9.00
2013	May									
2014	June	3.80	1.10	130.00	0.025	0.027	7.30	7.60	18.80	19.60
Minimum	April/June	2.60	0.77	80.00	0.025	0.027	7.30	7.60	5.90	8.00
Maximum	April/June	3.80	2.10	130.00	0.038	0.055	11.64	12.48	18.80	19.60
Average	April/June	3.03	1.32	110.00	0.030	0.038	9.96	10.48	11.17	12.20
2011	July	3.70	5.60	80.00	0.042	0.041	6.62	6.91	24.90	25.30
2012	July	4.70	4.00	80.00	0.038	0.041	5.52	6.15	25.30	25.90
2013	July	3.50	3.20	150.00	0.041	0.041	5.91	6.04	25.00	25.00
2014	July	3.30	3.00	100.00	0.037	0.038	6.30	7.20	20.70	21.20
Minimum	July	3.30	3.00	80.00	0.037	0.038	5.52	6.04	20.70	21.20
Maximum	July	4.70	5.60	150.00	0.042	0.041	6.62	7.20	25.30	25.90
Average	July	3.80	3.95	102.50	0.040	0.040	6.09	6.58	23.98	24.35
2011	August	3.25	13.00	120.00	0.048	0.047	7.74	7.14	23.20	24.30
2012	August	2.75	14.00	80.00	0.051	0.050	5.93	6.75	23.50	23.70
2013	August	3.20	5.30	130.00	0.071	0.110	7.06	7.24	19.90	20.00
2014	August	3.00	5.50	100.00	0.029	0.033	6.35	6.91	21.60	21.90
Minimum	August	2.75	5.30	80.00	0.029	0.033	5.93	6.75	19.90	20.00
Maximum	August	3.25	14.00	130.00	0.071	0.110	7.74	7.24	23.50	24.30
Average	August	3.05	9.45	107.50	0.050	0.060	6.77	7.01	22.05	22.48
No Sample										

**Lower Impoundment
Sampling Location
Map**

WISCONSIN CONSERVATION DEPARTMENT
 LAKE SURVEY MAP
 LOWER PARK FALLS FLOW
 LAKE
 COUNTY
 SEC. 24.25 T. 40 N. R. 1 W.



**WATER QUALITY
 SAMPLE LOCATION**
 N45° 54.828' W90° 26.822'
 50 Feet from E. Shoreline
 Depth = 18.5 Feet

SPECIES OF FISH	
Bluegill	1
Crappie	1
Rock Bass	1
Smallmouth Bass	1
Walleye	1
Whitefish	1
Yellow Perch	1
Brook Silverside	1

AREA 70.6 ACRES
 UNDER 3 FT. 2.5 %
 OVER 20 FT. 0 %
 VOLUME 570.9 ACRE FT.
 TOTAL ALK. 36 P.P.M.
 SHORELINE 4.2 MILES
 MAX. DEPTH 16 FEET

SCALE
 0 500 1000 1500 2000 2500
 Access with Parking
 Access
 Boat Livery
 Field work by L. Sauer, C. Buck, G. Walker, drawn by C. Hall

P.S.C. B.M. 'X' Bronze label set in
 top of concrete at right of right
 fairlane gate
 Elevation 1474.06
 Normal water 1467.00

Flambeau (Lower)
 Hydroelectric
 Project

- EQUIPMENT RECORDING SYMBOLS MAPPED AUG. 1985
 WATER ELEV. 1467.00
- TOPOGRAPHIC SYMBOLS
 (1) Barely wooded
 (2) Cleared
 (3) Pastured
 (4) Agricultural
 (5) Bare Rock
 (6) Barely
 (7) River
- LAKE BOTTOM SYMBOLS
 P. Post or Gravel
 M. Muck
 C. Clay
 S. Sand
 Sl. Silt
- LAKE SYMBOLS
 S. Stumps & Snags
 R. Rubble
 B. Boulder
 Y. Emergent vegetation
 T. Submerged vegetation
 F. Floating vegetation

Appendix A

June 10, 2014 Ice-Out Sampling Documents

IMPOUNDMENT SAMPLING LOG

2014 Water Quality Study - Flambeau Lower Hydroelectric Project - FERC #2421

Pre-Sampling Data: HWL - 1467.15 Date: 6/10/14
TWL - 1448.6 CFS - 1234

Time: 9:30 Barometer: 30.03 Air Temp: 18.6 °C Wind Speed: SE 3MPH

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: 21.7 Feet

Secchi Disk Depth: (E0.1 Foot) 3.8 Feet Time: 9:32

Chlorophyll a (3 Feet Below Surface)

Lab Sample I.D.#: <u>20140610-2A</u>		
Time	Quantity (ml)	Filtered
<u>9:35</u>	<u>1000</u>	<u>NO</u>

True Color (3 Feet Below Surface)

Lab Sample I.D.#: <u>20140610-2B</u>	
Time	Quantity (ml)
<u>9:36</u>	<u>250</u>

D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
.5 Ft Below Surface	<u>9:41</u>	<u>7.60</u>	<u>19.6</u>
3 Feet	<u>9:42</u>	<u>7.50</u>	<u>19.0</u>
6 Feet	<u>9:43</u>	<u>7.51</u>	<u>18.9</u>
9 Feet	<u>9:44</u>	<u>7.50</u>	<u>18.8</u>
12 Feet	<u>9:45</u>	<u>7.46</u>	<u>19.0</u>
15 Feet	<u>9:46</u>	<u>7.44</u>	<u>19.0</u>
18 Feet	<u>9:47</u>	<u>7.40</u>	<u>18.8</u>
21 Feet	<u>9:48</u>	<u>7.30</u>	<u>18.2</u>
24 Feet			
.5 Ft Above Bottom	<u>9:49</u>	<u>7.30</u>	<u>18.8</u>

Phosphorus

Lab Sample I.D.#: <u>20140610-2C</u>	
(3 Feet Below Surface)	
Time	Preserved?
<u>9:37</u>	<u>H2504</u>

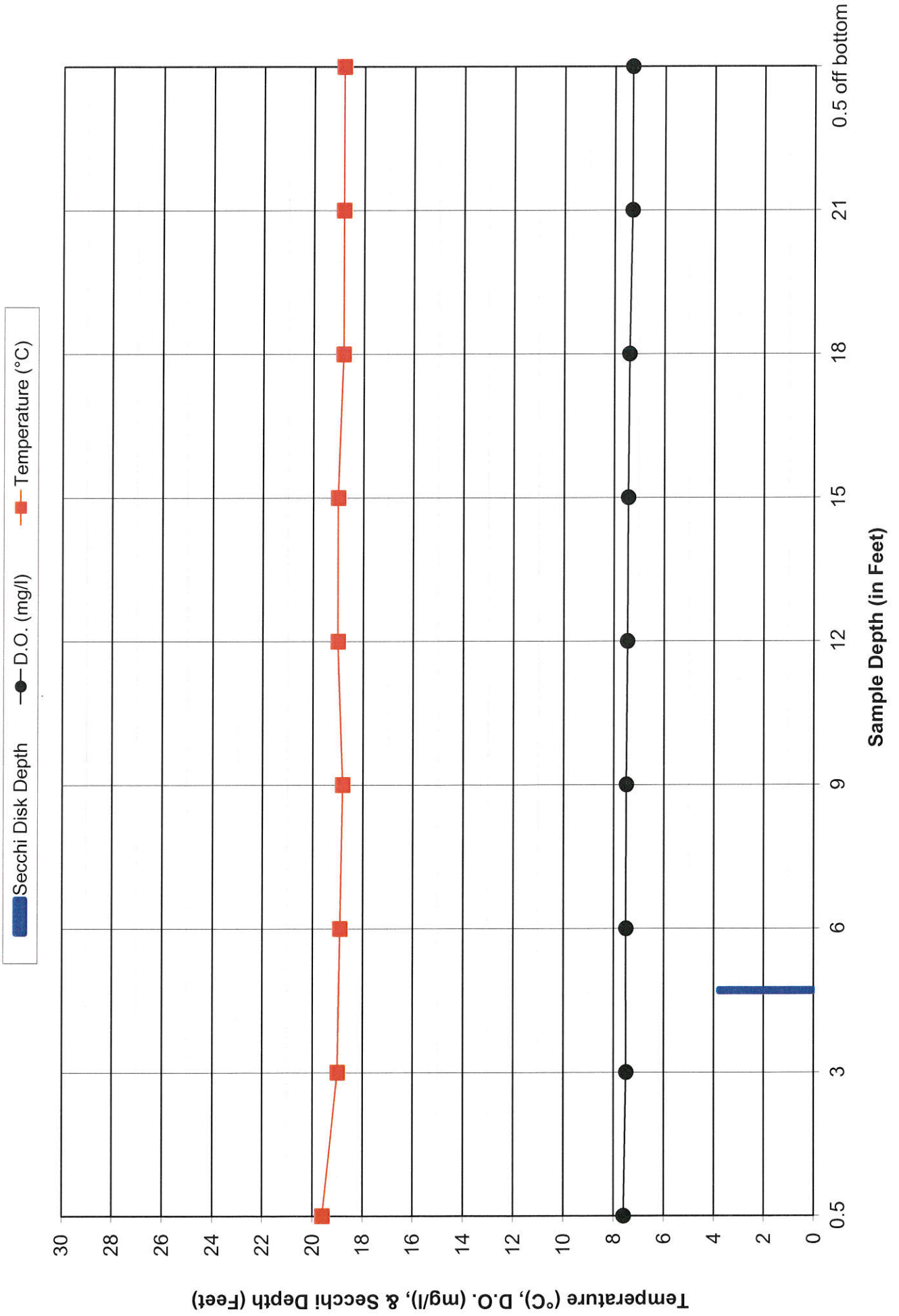
Lab Sample I.D.#: <u>20140610-2D</u>	
(3 Feet Above Bottom)	
Time	Preserved?
<u>9:39</u>	<u>H2504</u>

Sample Location: N45° 54.828' W90° 26.822'

Comments: _____

Performed By: GARY RAST

Lower Impoundment - FERC # 2421 June 10, 2014 Iceout Sampling Even



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: 06/19/14 Code: NNNN-S Page 1 of 3
 NLS Project: 220578
 NLS Customer: 102823
 Phone: 855 994 9376

Project	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
20140610-1A NLS ID: 795605								
COC: 174085:1 Matrix: SW								
Collected: 06/10/14 13:19 Received: 06/11/14								
Parameter								
Chlorophyll, all species								
Lab filtration for Chlorophyll								
Result	see attached	yes				06/17/14	10200-H	721026460
Units						06/12/14	NA	721026460
20140610-2A NLS ID: 795606								
COC: 174085:1 Matrix: SW								
Collected: 06/10/14 13:19 Received: 06/11/14								
Parameter								
Chlorophyll, all species								
Lab filtration for Chlorophyll								
Result	see attached	yes				06/17/14	10200-H	721026460
Units						06/12/14	NA	721026460
20140610-3A NLS ID: 795607								
COC: 174085:1 Matrix: SW								
Collected: 06/10/14 13:19 Received: 06/11/14								
Parameter								
Chlorophyll, all species								
Lab filtration for Chlorophyll								
Result	see attached	yes				06/17/14	10200-H	721026460
Units						06/12/14	NA	721026460
20140610-4A NLS ID: 795608								
COC: 174085:1 Matrix: SW								
Collected: 06/10/14 13:19 Received: 06/11/14								
Parameter								
Chlorophyll, all species								
Lab filtration for Chlorophyll								
Result	see attached	yes				06/17/14	10200-H	721026460
Units						06/12/14	NA	721026460
20140610-1B NLS ID: 795609								
COC: 174085:2 Matrix: SW								
Collected: 06/10/14 13:20 Received: 06/11/14								
Parameter								
Color, APHA (true)								
Lab filtration								
Result	130	yes				06/17/14	10200-H	721026460
Units	C.P.U.		5	25*		06/12/14	NA	721026460
20140610-2B NLS ID: 795610								
COC: 174085:2 Matrix: SW								
Collected: 06/10/14 13:20 Received: 06/11/14								
Parameter								
Color, APHA (true)								
Lab filtration								
Result	130	yes				06/17/14	SM 2120-B 20ed	721026460
Units	C.P.U.		5	25*		06/12/14	NA	721026460
20140610-3B NLS ID: 795611								
COC: 174085:2 Matrix: SW								
Collected: 06/10/14 13:20 Received: 06/11/14								
Parameter								
Color, APHA (true)								
Lab filtration								
Result	130	yes				06/17/14	SM 2120-B 20ed	721026460
Units	C.P.U.		5	25*		06/12/14	NA	721026460
20140610-4B NLS ID: 795612								
COC: 174085:2 Matrix: SW								
Collected: 06/10/14 13:20 Received: 06/11/14								
Parameter								
Color, APHA (true)								
Lab filtration								
Result	130	yes				06/17/14	SM 2120-B 20ed	721026460
Units	C.P.U.		5	25*		06/12/14	NA	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

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

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

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

Project	Flambeau (4)	Result	Units	Dilution	LOD	LOQ	Method	Lab
20140610-4B NLS ID: 795612								
COC: 174085:2	Matrix: SW							
Collected: 06/10/14 13:20	Received: 06/11/14							
Parameter								
Color, APHA (true)		150	C.P.U.	5	25*		SM 2120-B 20ed	721026460
Lab filtration		yes					NA	721026460
20140610-1C NLS ID: 795613								
COC: 174085:3	Matrix: SW							
Collected: 06/10/14 13:22	Received: 06/11/14							
Parameter								
Phosphorus, tot. as P		0.024	mg/L	1	0.0070*		SM 4500P-E 20ed	721026460
20140610-2C NLS ID: 795614								
COC: 174085:3	Matrix: SW							
Collected: 06/10/14 13:22	Received: 06/11/14							
Parameter								
Phosphorus, tot. as P		0.025	mg/L	1	0.0070*		SM 4500P-E 20ed	721026460
20140610-3C NLS ID: 795615								
COC: 174085:3	Matrix: SW							
Collected: 06/10/14 13:22	Received: 06/11/14							
Parameter								
Phosphorus, tot. as P		0.030	mg/L	1	0.0070*		SM 4500P-E 20ed	721026460
20140610-4C NLS ID: 795616								
COC: 174085:3	Matrix: SW							
Collected: 06/10/14 13:22	Received: 06/11/14							
Parameter								
Phosphorus, tot. as P		0.031	mg/L	1	0.0070*		SM 4500P-E 20ed	721026460
20140610-2D NLS ID: 795618								
COC: 174085:4	Matrix: SW							
Collected: 06/10/14 13:25	Received: 06/11/14							
Parameter								
Phosphorus, tot. as P		0.027	mg/L	1	0.0070*		SM 4500P-E 20ed	721026460
20140610-3D NLS ID: 795619								
COC: 174085:4	Matrix: SW							
Collected: 06/10/14 13:25	Received: 06/11/14							
Parameter								
Phosphorus, tot. as P		0.031	mg/L	1	0.0070*		SM 4500P-E 20ed	721026460
20140610-4D NLS ID: 795620								
COC: 174085:4	Matrix: SW							
Collected: 06/10/14 13:25	Received: 06/11/14							
Parameter								
Phosphorus, tot. as P		0.029	mg/L	1	0.0070*		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. W100034

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

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: 220578
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>
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/cm² 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.

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

NORTHERN LAKE SERVICE, INC.

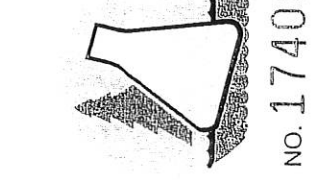
Analytical Laboratory and Environmental Services
 400 North Lake Avenue • Crandon, WI 54520-1298
 Tel: (715) 478-2777 • Fax: (715) 478-3060

Wisconsin Lab Cert. No. 721026460
 WIDRGP 105-000330

CLIENT: RENEWABLE WORLD ENERGIES
 ADDRESS: 100 S STATE STREET
 CITY: WESHKORO WI STATE: WI ZIP: 54960
 PROJECT DESCRIPTION NO.: FLAMBEAU (4) QUOTATION NO.
 DNR FID #: _____ DNR LICENSE # _____
 CONTACT: CARY PHONE: 855-994-9376
 PURCHASE ORDER NO.: VERBAL 920-293-4100

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

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



NO. 174085

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

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

COLLECTED BY (signature): _____ DATE/TIME: 1:35-1:25
 RECEIVED BY (signature): _____ DATE/TIME: _____
 METHOD OF TRANSPORT: UPS DATE/TIME: 6/10/14 3:00PM
 DATE/TIME: 6-11-14 - 10:15 CONDITION: OK TEMP: _____
 REMARKS & OTHER INFORMATION: _____
 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.

IMPORTANT

Appendix B

July 14, 2014 Sampling Documents

IMPOUNDMENT SAMPLING LOG

2014 Water Quality Study - Flambeau Lower Hydroelectric Project - FERC #2421

HWL - 1467.10

Date: 7/14/14

Pre-Sampling Data: TWL - 1448.4 CFS - 909

Time: 9:00 Barometer: 29.84 Air Temp: 15.0 °C Wind Speed: NW 5 MPH

Sky Conditions: CLOUDY, MISTING, OVERCAST

Precipitation within Last 24 Hours: NO - CURRENTLY MISTING

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: 21.5 Feet

Secchi Disk Depth: (E0.1 Foot) 3.3 Feet Time: 9:10

Chlorophyll a (3 Feet Below Surface)

Lab Sample I.D.# : <u>07142014 2A</u>		
Time	Quantity (ml)	Filtered
<u>9:15</u>	<u>1000</u>	<u>NO</u>

True Color (3 Feet Below Surface)

Lab Sample I.D.# : <u>07142014 2B</u>	
Time	Quantity (ml)
<u>9:16</u>	<u>250</u>

D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
.5 Ft Below Surface	<u>9:25</u>	<u>7.20</u>	<u>20.7</u>
3 Feet	<u>9:26</u>	<u>7.16</u>	<u>20.8</u>
6 Feet	<u>9:27</u>	<u>7.13</u>	<u>20.9</u>
9 Feet	<u>9:28</u>	<u>7.09</u>	<u>21.0</u>
12 Feet	<u>9:29</u>	<u>7.06</u>	<u>21.1</u>
15 Feet	<u>9:30</u>	<u>6.98</u>	<u>21.2</u>
18 Feet	<u>9:31</u>	<u>6.64</u>	<u>21.2</u>
21 Feet	<u>9:32</u>	<u>6.30</u>	<u>21.1</u>
24 Feet	<u>9:33</u>	<u>6.30</u>	<u>21.1</u>
.5 Ft Above Bottom	<u>9:35</u>	<u>6.30</u>	<u>21.1</u>

Phosphorus

Lab Sample I.D.# : <u>07142014 2C</u>	
(3 Feet Below Surface)	
Time	Preserved?
<u>9:17</u>	<u>H2SO4</u>

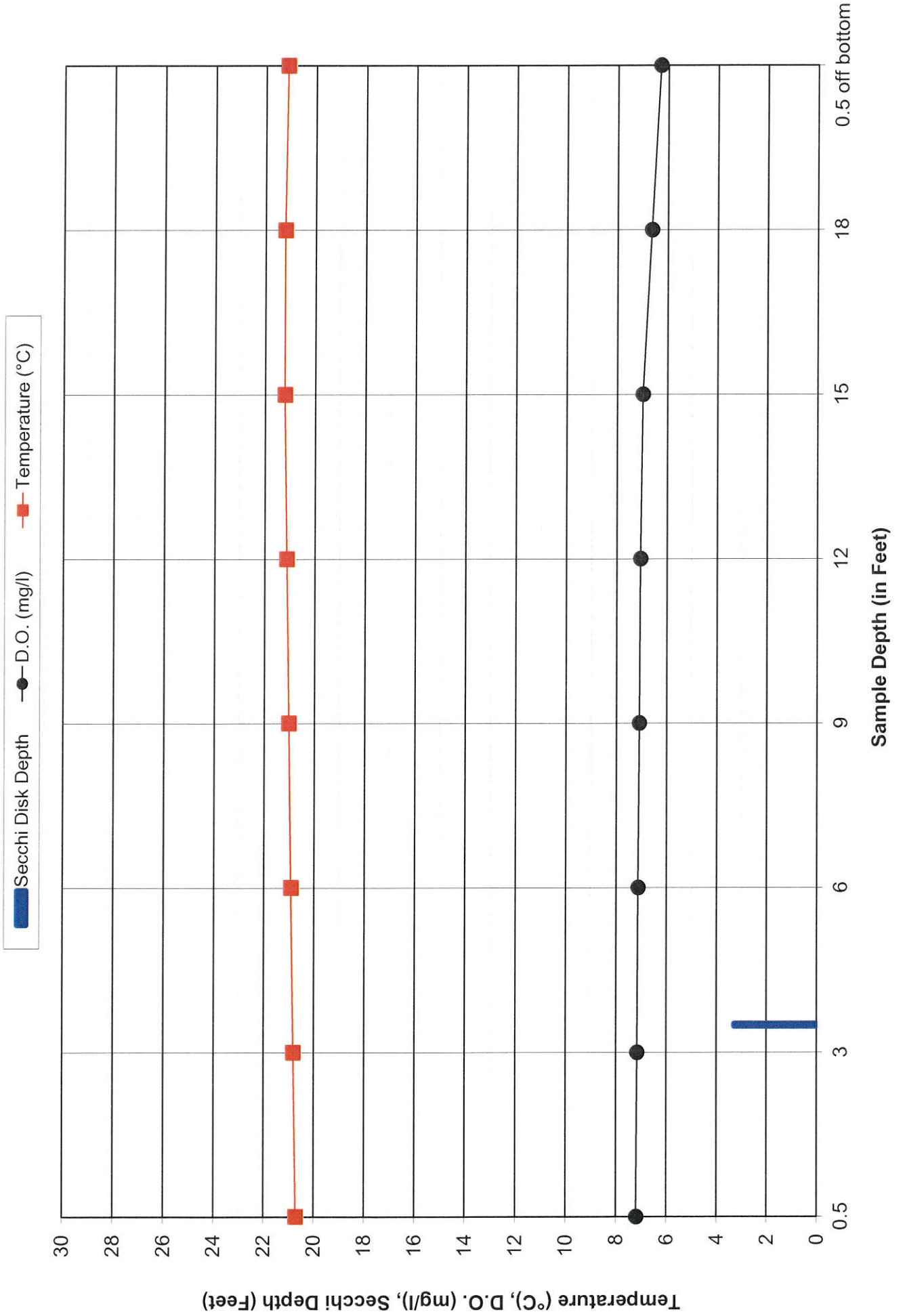
Lab Sample I.D.# : <u>07142014 2D</u>	
(3 Feet Above Bottom)	
Time	Preserved?
<u>9:20</u>	<u>H2SO4</u>

Sample Location: N45° 54.828' W90° 26.822'

Comments: _____

Performed By: Gary Rast

Lower Impoundment - FERC # 2421 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. WI00034

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	Method	Lab
07142014 1A NLS ID: 802602								
COC: 154999:1 Matrix: SW								
Collected: 07/14/14 13:12 Received: 07/15/14								
Parameter	Chlorophyll, all species	see attached					10200-H	721026460
	Lab filtration for Chlorophyll	yes					NA	721026460
07142014 2A NLS ID: 802603								
COC: 154999:1 Matrix: SW								
Collected: 07/14/14 13:12 Received: 07/15/14								
Parameter	Chlorophyll, all species	see attached					10200-H	721026460
	Lab filtration for Chlorophyll	yes					NA	721026460
07142014 3A NLS ID: 802604								
COC: 154999:1 Matrix: SW								
Collected: 07/14/14 13:12 Received: 07/15/14								
Parameter	Chlorophyll, all species	see attached					10200-H	721026460
	Lab filtration for Chlorophyll	yes					NA	721026460
07142014 4A NLS ID: 802605								
COC: 154999:1 Matrix: SW								
Collected: 07/14/14 13:12 Received: 07/15/14								
Parameter	Chlorophyll, all species	see attached					10200-H	721026460
	Lab filtration for Chlorophyll	yes					NA	721026460
07142014 1B NLS ID: 802606								
COC: 154999:2 Matrix: SW								
Collected: 07/14/14 13:14 Received: 07/15/14								
Parameter	Color, APHA (true)	100	C.P.U.	5	25*		SM 2120-B 20ed	721026460
	Lab filtration	yes					NA	721026460
07142014 2B NLS ID: 802607								
COC: 154999:2 Matrix: SW								
Collected: 07/14/14 13:14 Received: 07/15/14								
Parameter	Color, APHA (true)	100	C.P.U.	5	25*		SM 2120-B 20ed	721026460
	Lab filtration	yes					NA	721026460
07142014 3B NLS ID: 802608								
COC: 154999:2 Matrix: SW								
Collected: 07/14/14 13:14 Received: 07/15/14								
Parameter	Color, APHA (true)	130	C.P.U.	5	25*		SM 2120-B 20ed	721026460
	Lab filtration	yes					NA	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: 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 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: 222726
FLAM (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>
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/cm² for periphyton samplers

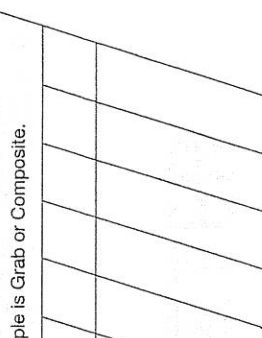
*: The complex calculations used to differentiate the various chlorophyll species magnify error at low concentrations and sometimes produce negative values, which are reported as 0.0 on this report.

NUKITEKN 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 KECUKU
 Wisconsin Lab Cert. No. 721026460
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue • Crandon, WI 54520-1298
 Tel: (715) 478-2777 • Fax: (715) 478-3060

RENEWABLE WORLD ENERGIES
 100 S. STATES STREET
 NESHKORO WI 54960

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

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

ANALYZE PER ORDER OF ANALYSIS
 Chlorophyll a
 Chlorophyll b
 Chlorophyll c
 Chlorophyll d
 Chlorophyll e
 Chlorophyll f
 Chlorophyll g
 Chlorophyll h
 Chlorophyll i
 Chlorophyll j
 Chlorophyll k
 Chlorophyll l
 Chlorophyll m
 Chlorophyll n
 Chlorophyll o
 Chlorophyll p
 Chlorophyll q
 Chlorophyll r
 Chlorophyll s
 Chlorophyll t
 Chlorophyll u
 Chlorophyll v
 Chlorophyll w
 Chlorophyll x
 Chlorophyll y
 Chlorophyll z

ITEM NO.	NIS LAB #	SAMPLE ID	COLLECTION DATE	TIME	MATRIX (See above)	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	071420141A-4A	11	7/14/14	7:40-1:12	SW	
2.	606-609	11	7/14/14	7:41-1:14	SW	
3.	610-613	11	7/14/14	7:42-1:15	SW	
4.	614-616	11	7/15/14	9:15-1:17	SW	
5.						
6.						
7.						
8.						
9.						
10.						

REPORT TO
 SAME AS ABOVE
 ATTN: GARY

INVOICE TO
 RENEWABLE WORLD OPERATIONS
 1001 STEPHENSON STREET
 NORWAY MICH 49870

CUSTODY SEAL NO. (IF ANY)

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

METHOD OF TRANSPORT UPS DATE/TIME 7/14/14 3:00

DATE/TIME 7-15-14 10:00 CONDITION ON W

REMARKS & OTHER INFORMATION

WDNR FACILITY NUMBER E-MAIL ADDRESS

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

RECEIVED AT NIS BY (signature) *[Signature]*

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 - CLIENT MAY KEEP PINK COPY.
 3. RETURN THIS FORM WITH SAMPLES - LISTED AS REPORT TO AND LISTED AS INVOICE TO AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.
 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 Lower Hydroelectric Project - FERC #2421

HWL-1467.22

Date: 8/12/14

Pre-Sampling Data: TWL-1448.4 PROJECT FLOW-636 CFS

Time: 9:30 Barometer: 29.99 Air Temp: 16.11 °C Wind Speed: N 12 MPH ^{GUST 26 MPH}

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: 21.8 Feet

Secchi Disk Depth: (E0.1 Foot) 3.0 Feet Time: 9:35

Chlorophyll a (3 Feet Below Surface)

Lab Sample I.D.#: <u>20140812-2A</u>		
Time	Quantity (ml)	Filtered
<u>9:40</u>	<u>1000</u>	<u>NO</u>

True Color (3 Feet Below Surface)

Lab Sample I.D.#: <u>20140812-2B</u>	
Time	Quantity (ml)
<u>9:41</u>	<u>250</u>

D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
.5 Ft Below Surface	<u>9:47</u>	<u>6.91</u>	<u>21.6</u>
3 Feet	<u>9:48</u>	<u>6.85</u>	<u>21.7</u>
6 Feet	<u>9:49</u>	<u>6.76</u>	<u>21.7</u>
9 Feet	<u>9:50</u>	<u>6.70</u>	<u>21.8</u>
12 Feet	<u>9:51</u>	<u>6.65</u>	<u>21.8</u>
15 Feet	<u>9:52</u>	<u>6.65</u>	<u>21.8</u>
18 Feet	<u>9:53</u>	<u>6.51</u>	<u>21.8</u>
21 Feet	<u>9:54</u>	<u>6.72</u>	<u>21.8</u>
24 Feet	<u>9:55</u>	<u>6.35</u>	<u>21.9</u>
.5 Ft Above Bottom	<u>9:55</u>	<u>6.35</u>	<u>21.9</u>

Phosphorus

Lab Sample I.D.#: <u>20140812-2C</u>	
(3 Feet Below Surface)	
Time	Preserved?
<u>9:42</u>	<u>112504</u>

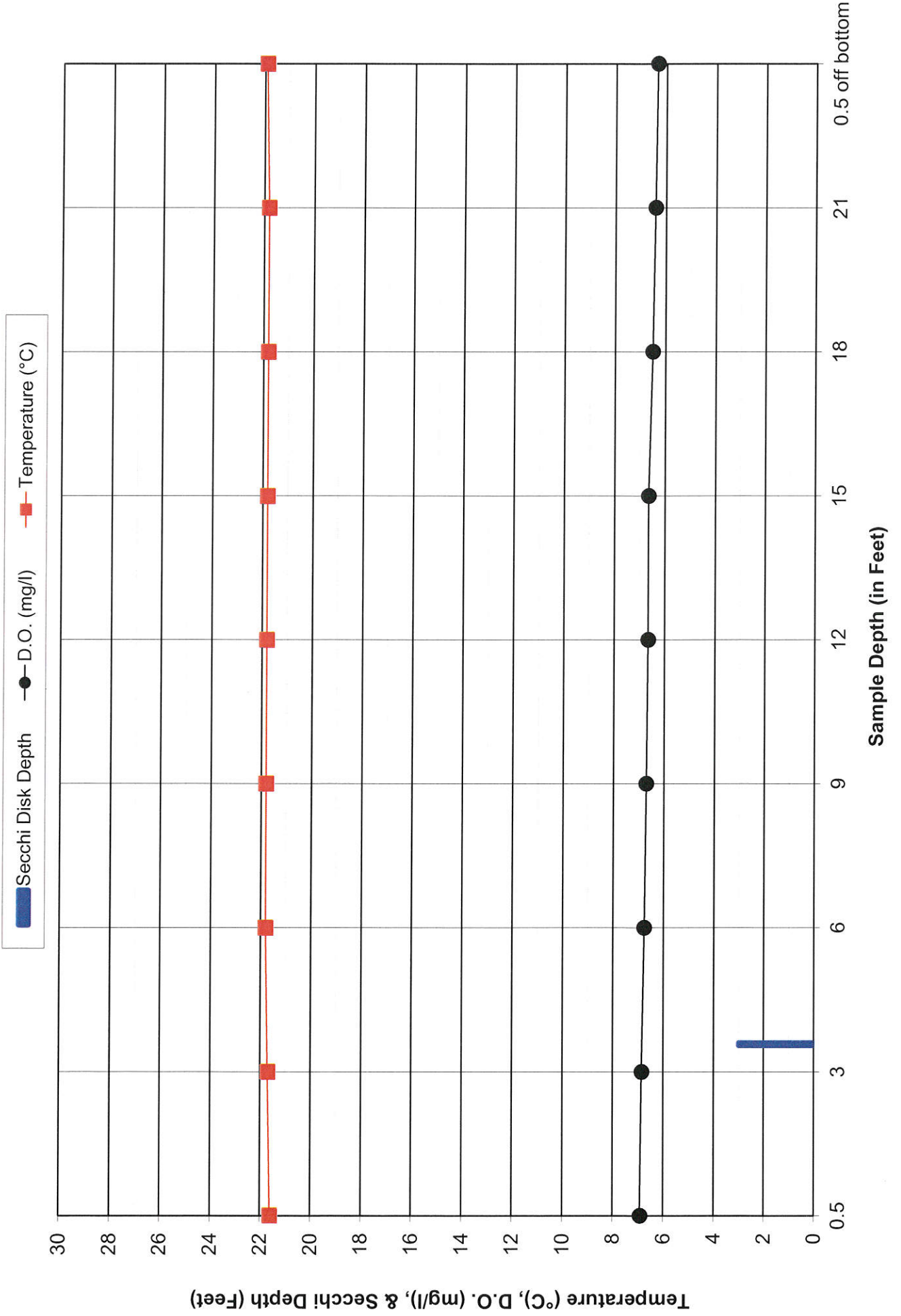
Lab Sample I.D.#: <u>20140812-2D</u>	
(3 Feet Above Bottom)	
Time	Preserved?
<u>9:45</u>	<u>112504</u>

Sample Location: N45° 54.828' W90° 26.822'

Comments: _____

Performed By: GARY RAST + BEN RICHARD

Lower Impoundment - FERC # 2421 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

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

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI000034
 Printed: 08/18/14 Code: NNNN-S Page 1 of 3
 NLS Project: 224853
 NLS Customer: 102823
 Phone: 855 994 9376

Project	Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
20140812 1-A NLS ID: 809771									
COC: 160942:1 Matrix: SW									
Collected: 08/12/14 13:35 Received: 08/13/14									
Parameter									
Chlorophyll, all species									
Lab filtration for Chlorophyll									
20140812 2-A NLS ID: 809772									
COC: 160942:1 Matrix: SW									
Collected: 08/12/14 13:35 Received: 08/13/14									
Parameter									
Chlorophyll, all species									
Lab filtration for Chlorophyll									
20140812 3-A NLS ID: 809773									
COC: 160942:1 Matrix: SW									
Collected: 08/12/14 13:35 Received: 08/13/14									
Parameter									
Chlorophyll, all species									
Lab filtration for Chlorophyll									
20140812 4-A NLS ID: 809774									
COC: 160942:1 Matrix: SW									
Collected: 08/12/14 13:35 Received: 08/13/14									
Parameter									
Chlorophyll, all species									
Lab filtration for Chlorophyll									
20140812 1-B NLS ID: 809775									
COC: 160942:2 Matrix: SW									
Collected: 08/12/14 13:40 Received: 08/13/14									
Parameter									
Color, APHA (true)									
Lab filtration									
20140812 2-B NLS ID: 809776									
COC: 160942:2 Matrix: SW									
Collected: 08/12/14 13:40 Received: 08/13/14									
Parameter									
Color, APHA (true)									
Lab filtration									
20140812 3-B NLS ID: 809777									
COC: 160942:2 Matrix: SW									
Collected: 08/12/14 13:40 Received: 08/13/14									
Parameter									
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

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

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 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 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: 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/cm² 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 AND ENVIRONMENTAL SERVICES

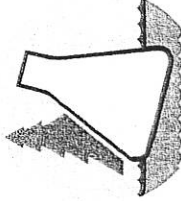
CLIENT: **RENEWABLE WORLD ENERGY**
 ADDRESS: **PO BOX 264 100 S. STATE STREET**
 CITY: **NESHKORO WI 54960**
 PROJECT DESCRIPTION / NO.: **FLAMBEAU (4)**
 QUOTATION NO.: _____
 DNR FID #: _____
 DNR LICENSE #: _____
 CONTACT: **GARY**
 PHONE: **855-994-9376**
 PURCHASE ORDER NO.: **VERBAL**
 FAX: **820-293-4100**

- 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

*Chlorophyll a
 TRUE COLOR
 PHOS
 PHOS*



NO. 160942

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

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

CUSTOMER SEAL NO. (IF ANY): _____
 DATE/TIME: **8/12/14 7:37-1:45**
 RECEIVED BY (signature): _____
 METHOD OF TRANSPORT: **UPS**
 DATE/TIME: **8/12/14 5:15**
 DATE/TIME: **8-13-14 10:00**
 CONDITION: **OK in**
 REMARKS & OTHER INFORMATION: _____
 WDNR FACILITY NUMBER: _____
 E-MAIL ADDRESS: _____

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

RECEIVED AT NLS BY (signature): *[Signature]*


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.

IMPORTANT!

Appendix D

Agency Correspondence

Gary Rast

 **COPY**

From: Gary Rast
Sent: Wednesday, October 29, 2014 8:32 AM
To: 'Laatsch, Cheryl - DNR'; Utrup, Nick
Cc: Aneta Rietveld
Subject: 4 Flam 2014 Draft WQ Reports Message 2
Attachments: 14-10-29 GGR Flam In Ag Comment Draft 14 WQ Rpts.pdf; 14-10-27 GGR FLLW Draft Report 2014 WQM Data.pdf

Flambeau Lower

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

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:

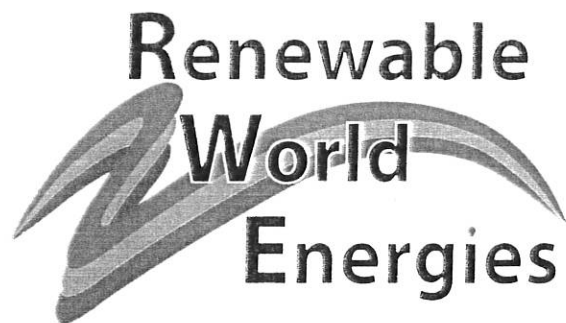
- Message 1 – Flambeau Upper (Dated October 27)
- Message 2 – Flambeau Lower (Dated October 27)
- Message 3 – Flambeau Pixley (Dated October 28)
- Message 4 – Flambeau Crowley (Dated October 29)

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



 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:

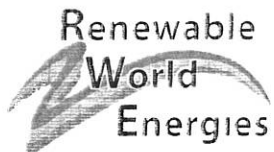
On behalf of Flambeau Hydro LLC ("Flambeau"), Licensee, Renewable World Energies, LLC is submitting a copy of its Draft Report 2014 Water Quality Monitoring Data for each of the Flambeau Projects. No problems were encountered with equipment, data, or the monitoring schedule in general. The report is 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

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

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



Sincerely,
Renewable World Energies, LLC
Agent For Licensee


Mr. Jason Kreuscher
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

From: Gary Rast
Sent: Wednesday, October 29, 2014 8:32 AM
To: 'Laatsch, Cheryl - DNR'; Utrup, Nick
Cc: Aneta Rietveld
Subject: 4 Flam 2014 Draft WQ Reports Message 2
Attachments: 14-10-29 GGR Flam In Ag Comment Draft 14 WQ Rpts.pdf; 14-10-27 GGR FLLW Draft Report 2014 WQM Data.pdf



COPY

Flambeau Lower

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

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



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

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 2nd or June 9th if you still want it done. I need to schedule Turtle/Eagle/Erosion and KBB surveys from now on as well.

Gary

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Regulatory/Compliance Manager



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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

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Gary Rast

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

 COPY

Cheryl,

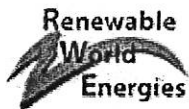
Thanks for the response. However, last year a similar situation occurred at the Flambeau projects and we abandoned the sampling with agency consult. Why the inconsistency from year to year? Below is exact content of an e-mail sent to the agencies on May 22, 2013 addressing same type of issue and agencies 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



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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

Gary Rast

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N7725 Hwy 28
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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 4th Ave South
Park Falls, WI 54552
715-762-5185
sreinecke@fs.fed.us

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 1st photo shows the discharge (2004) CFS and 2nd 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 2nd 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



Renewable World Energies, LLC

Gary Rast

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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

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Document Content(s)

14-12-03 GGR FLAM LOWER FINAL 14 WQ TO FERC.PDF.....1-55