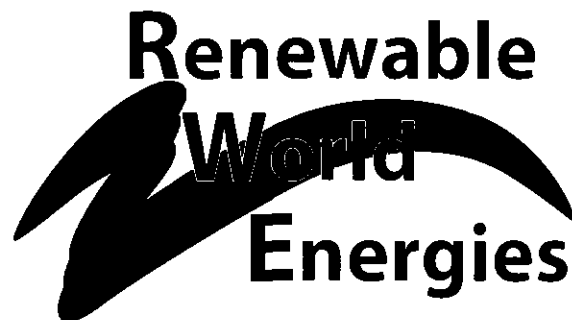




ORIGINAL

December 7, 2012

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

FILED
SECRETARY OF THE
COMMISSION
2012 DEC 10 P 2:47
FEDERAL ENERGY
REGULATORY COMMISSION

**RE: Winter Hydroelectric Project
FERC Project Number P-2064
Flambeau Hydro LLC
Final Report 2012 Water Quality Monitoring Data**

Dear Ms. Bose:

On behalf of Flambeau Hydro LLC, "Flambeau" (Licensee), Renewable World Energies, LLC (RWE) is submitting one (1) original and eight (8) copies of the Final Report 2012 Water Quality Monitoring Data for the Winter Hydroelectric Project. The Federal Energy Regulatory Commission "FERC" issued a License to Flambeau on August 12, 2005. A revised Water Quality Certification was issued August 19, 2008. This report is submitted as a requirement of that License pursuant to License Article 401 Condition N, Appendix A. 2012 was the sixth year monitoring was conducted since the license was issued, but is the first year of submittal by RWE on the behalf of the Licensee.

Monitoring was conducted on April 3, July 9, and August 6, 2012. The only issue encountered was some below standard D O measurements taken on the July 9th date. USFWS and WDNR were notified by e-mail dated July 9, 2012 of the issue. However, USFS was mistakenly omitted from that notice and will be included in the future. The draft report was sent to the agencies by letter dated November 5, 2012 for review and comment. Correspondence was received from WDNR and USFWS on November 19th and 27th respectively. Both agencies indicated they had reviewed the report and had no comment to offer. USFS comments were received on November 28th and indicated they had no major comment or suggested changes but requested to be notified of events just as USFWS and WDNR had been on July 9th mentioned above. They also noted possible mistakes on the Temperature Precipitation Table found on page 6 of the report. It was found that incorrect data had been entered for the months of April and September and the corrections were made. The next scheduled monitoring event will be conducted in 2013.

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

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.

Sincerely,
Renewable World Energies, LLC
Agent for Licensee


Mr. Jason Kreuscher
Vice President, Operations

Attachment: Final Report 2012 Water Quality Monitoring Data – December 7, 2012

Cc: Mr. Paul Strong, USFS
Mr. Dale Higgins, USFS
Ms. Cheryl Laatsch, WDNR
Mr. Craig Roesler, WDNR
Mr. Nick Utrup, USFWS
RWE, Corporate

Final Report

2012 Water Quality Monitoring Data

for the

Winter Hydroelectric Project

FERC Project #2054

Flambeau Hydro, LLC

East Fork of the Chippewa River, Sawyer County, Wisconsin

Respectfully Submitted by:

Renewable World Energies, LLC

100 State Street - P.O. Box 254

Neshkoro, Wisconsin 54960

Final -- December 7, 2012

Table of Contents

I.	Summary	2
II.	2012 Tabular Data.....	4
III.	2012 Graphed Data	5
IV.	Monthly Temperature and Precipitation Table	6
V.	2012 Winter Sampling Comparison Table	7
VI.	Sampling Location Map.....	8
APPENDIX A - April 03, 2012 Sampling Documents		9
APPENDIX B - July 09, 2012 Sampling Documents.....		10
APPENDIX C - August 06, 2012 Sampling Documents		11
APPENDIX D - Agency Correspondence.....		12

Summary

2012 marked the sixth year of water quality sampling under the FERC License issued August 12, 2005 Per Article 401, Water Quality Certification Condition N, Appendix A for the Winter Hydroelectric Project – FERC Project # 2064 – Flambeau Hydro, LLC”.

In general, the weather (temperature and rainfall) received over the summer months appears on average somewhat above normal. No one test result stands out as out of the ordinary. Sampling and testing of the samples was coordinated with the sampling done at the Flambeau Projects (Upper, Lower, Pixley, Crowley). These projects are located on the North Fork of the Flambeau River, Price County, Wisconsin. Protocol, procedures, and sampling design followed that of the Flambeau Projects.

The definition for Ice-Out occurred on the East Fork of the Chippewa during the 3rd full week of March 2012. The Ice-Out sampling event occurred on April 3, 2012. River flow, based on Winter Hydroelectric Project records, was approximately 140 cubic feet per second. Sampling occurred between 12:30 p.m. 1:15 p.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 April 04, 2012. Northern Lake Service, Inc. issued a laboratory report on April 05, 2012. No unusual levels of Chlorophyll a, true color, or total phosphorus were noted in the laboratory reports.

The July sampling event occurred on July 9, 2012. River flow, based on Winter Hydroelectric Project records was approximately 214 cubic feet per second. Sampling occurred between 1:15 p.m. and 1:41 p.m. Samples were taken without incident. No unusual Temperature readings were observed. However, D.O. was below the state standard of 5 mg/l. throughout the entire water column. Agencies were notified by e-mail on July 9, 2012. Samples for laboratory analysis were delivered to Northern Lake Service, Inc in Crandon, WI on July 10, 2012. Northern Lake Service, Inc. issued a laboratory report on July 19, 2012. No unusual levels of chlorophyll a, true color, or phosphorus were noted in the laboratory reports.

River flow, based on Winter Hydroelectric Project records, was 73 cubic feet per second during the August 06, 2012 sampling event. Sampling occurred between 1:15 p.m. and 1:50 p.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 07, 2012. Northern Lake Service, Inc issued a laboratory report on August 13, 2012. No unusual levels of Chlorophyll a, true color, or total phosphorus were noted in the laboratory reports.

In general, the weather during the 2012 monitoring season was somewhat above normal. Average temperatures were approximately 3 - 10° above normal. Precipitation was on average above normal but August was very dry. **(Refer to 2012 Monthly Temperature and Precipitation Table page 6)**

A summary of a comparison between the 2011 and 2012 (**Refer to 2012 Winter Project Sampling Comparison Table 2011-2012 page 7**) sampling results are as follows:

1. Water Clarity – Increased August – Decreased April/May
2. Chlorophyll a – Increased April – Decreased July/August
3. Color – Increased April/July – Decreased August
4. Total Phosphorus – Increased April/July – Decreased August
5. Overall D.O. – Increased August – Decreased April/July
6. Water Temperatures – Increased April – 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 12, **Appendix D**. The next Water Quality Monitoring at the Winter Hydroelectric Project is scheduled for 2013 beginning with the Ice-Out sampling event.

2012 Tabular Data

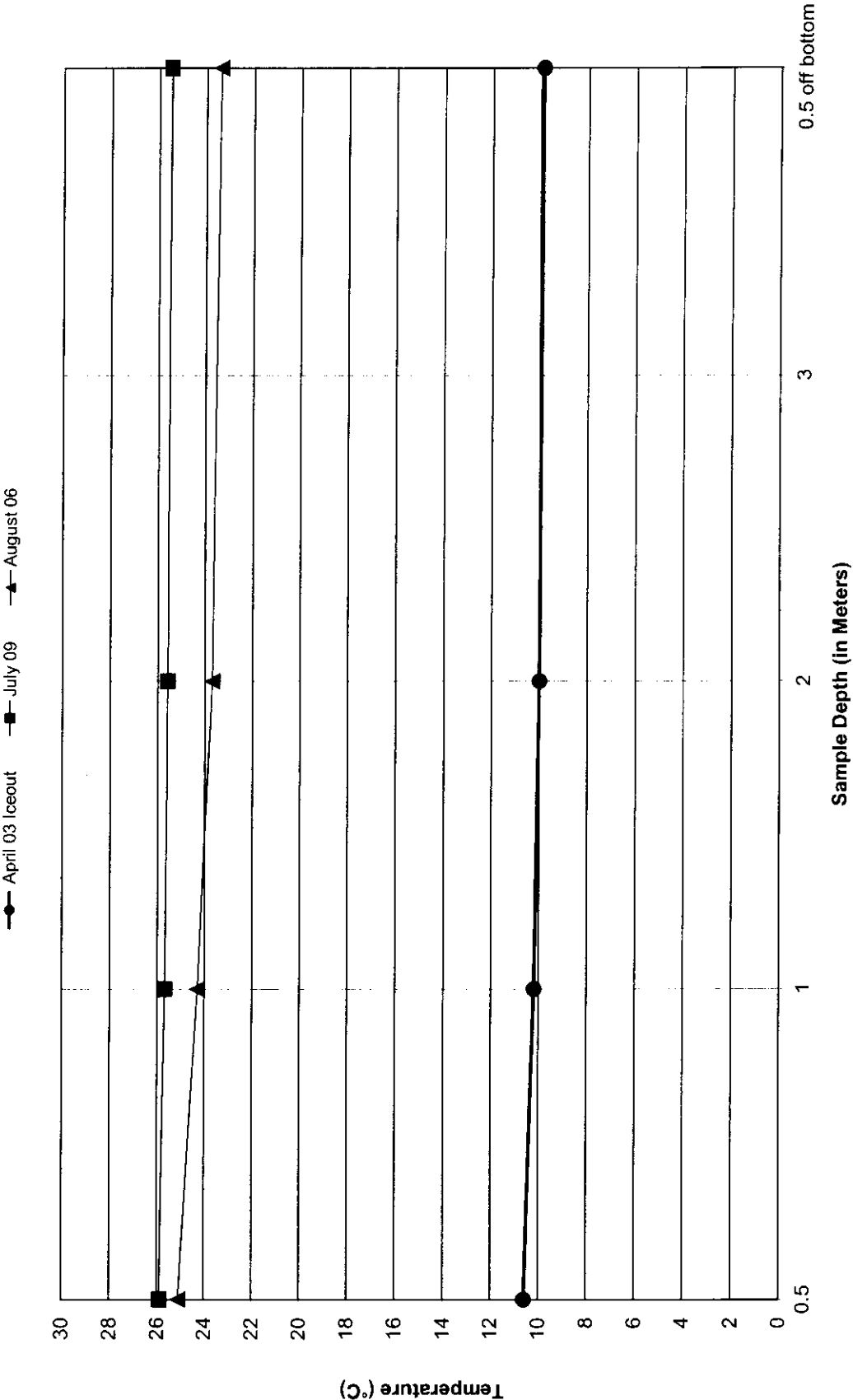
April 03, July 09, August 06

*** Considered Reporting Limits**

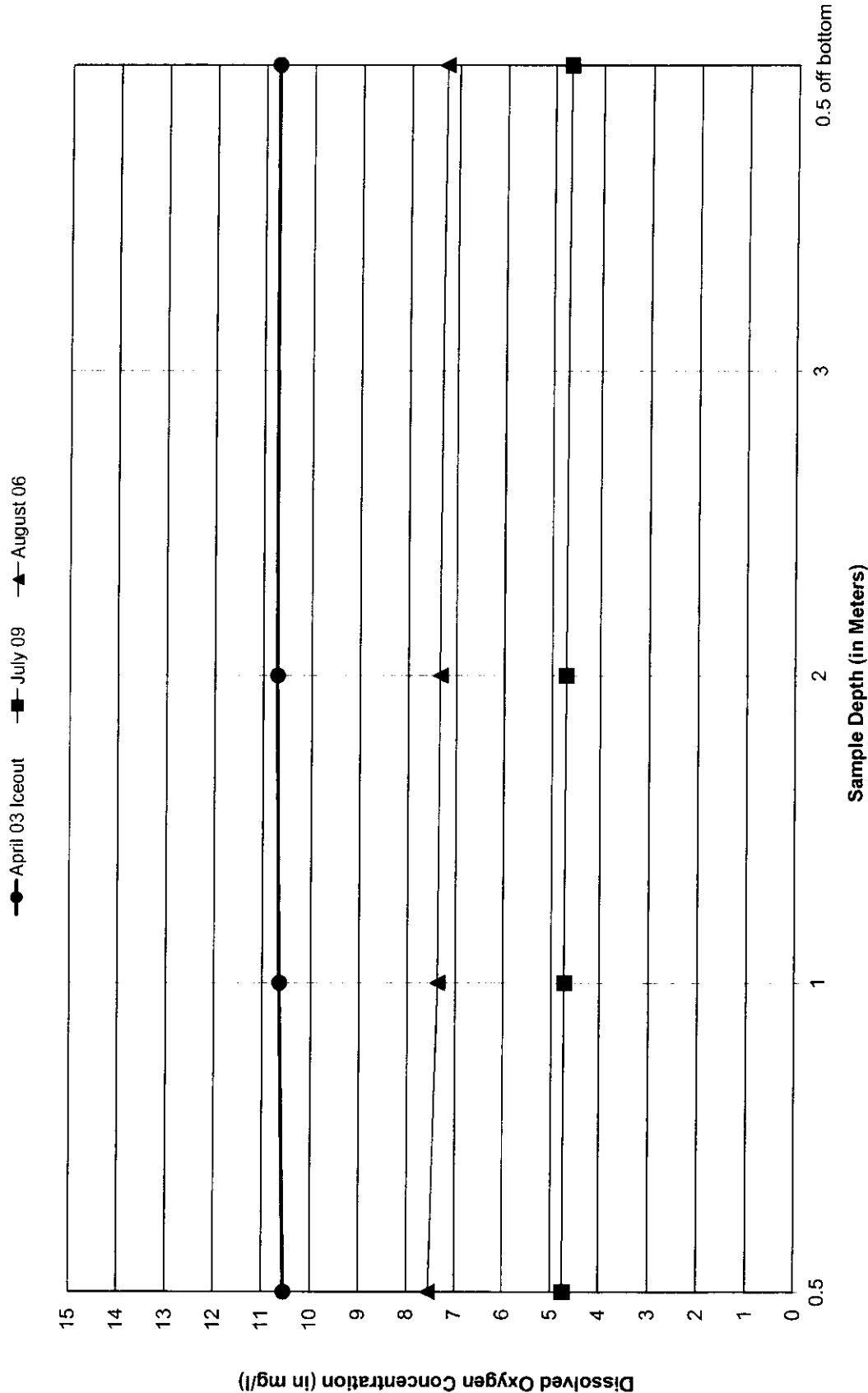
2012 Graphed Data

Temperature and Dissolved Oxygen

Winter Impoundment - FERC # 2064
2012 Temperature Samples



Winter Impoundment - FERC # 2064
2012 Dissolved Oxygen Samples



Monthly

Temperature and Precipitation

Table

2012 Water Year Monthly Temperature and Precipitation for Winter, 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-11	80	24	48.5	5.3	513	678	1.13	T	2.85	40%
November-11	54	9	33.1	4.3	950	1088	0.60	3.7	2.09	29%
December-11	43	-1	21.7	6.9	1334	1556	0.55	8.1	1.21	45%
January-12	48	-18	31.1	7.8	1449	1699	0.37	5.1	0.96	39%
February-12	43	-7	23.7	8.6	1190	1399	1.41	19.7	0.81	174%
March-12	75	-1	39.2	13.3	793	1210	1.62	11.9	1.49	109%
April-12	72	21	42.4	2.8	671	762	3.70	0.6	2.43	152%
May-12	87	34	55.0	3.6	320	426	6.61	0.0	3.23	205%
June-12	88	37	64.2	4.1	77	179	10.03	0.0	4.23	237%
July-12	92	53	71.9	6.1	0	63	3.09	0.0	3.85	80%
August-12	87	42	66.1	1.8	47	86	1.42	0.0	3.70	38%
September-12	87	33	56.2	0.6	281	298	0.84	0.1	4.11	24%

Source: NOAA/Duluth,
MN

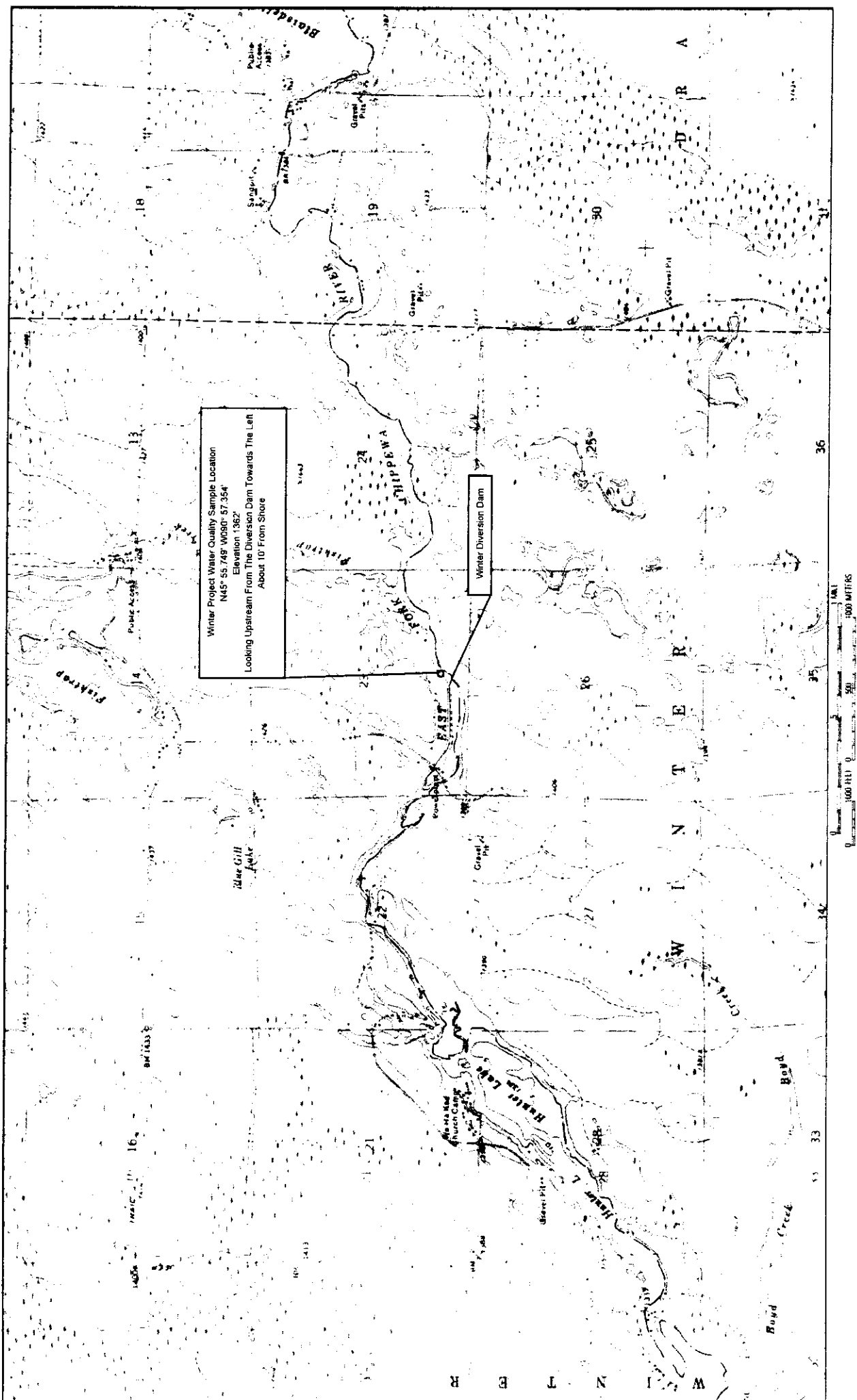
To calculate HDD or Heating Degree Days--If the departure from normal is a negative number (-) you add this to the total below the HDD column
If the departure from normal is a plus number (+) you subtract this from the total below the HDD column
Calculations for NDD or Normal Degree Days follow the same formula

**2012
Winter
Sampling Comparison Table
2011—2012**

**2012 Winter
Project Sampling Comparison Table
To Previous Year**

Year	Month	Secchi Disk Depth (m)	Chlorophyll a ug/l	Color (True) C.P.U. Units	Total Phosphorus Below Surface mg/l	Total Phosphorus Above Bottom mg/l	Lowest D.O. mg/l	Highest D.O. mg/l	Lowest Water Temp. °C	Highest Water Temp. °C
2011	April	1.0	0.0	150	0.028	N/A	11.85	12.10	8.1	8.6
2012	April	.5	2.3	250	0.048	N/A	10.55	10.73	9.9	10.6
2011	July	.80	4.3	250	0.055	N/A	5.84	6.44	26.1	27.7
2012	July	.60	1.8	400	0.082	N/A	4.67	4.75	25.5	25.9
2011	August	.7	3.7	250	0.055	N/A	7.25	7.27	24.7	25.1
2012	August	1.1	3.0	200	0.047	N/A	7.27	7.55	23.4	25.1

Winter Impoundment Sampling Location Map



Appendix A

April 03, 2012 Sampling Documents

IMPOUNDMENT SAMPLING LOG

2012 Water Quality Study - Winter Hydroelectric Project - FERC #2064

HWL - 1370.48
PROJECT Flow - 286 CFS

Date: 4/3/12

Pre-Sampling Data:

Time: 12:15 Barometer: 30.07 Air Temp: 14.4 °C Wind Speed: VAR @ 6 MPH

Sky Conditions: BRIGHT SUN - COOL - SLIGHT BREEZE

Precipitation within Last 24 Hours: YES .1"

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

Where The Batterys Changed?

☐ Yes ☒ No If Yes, When Changed:

Battery Status: 70% Charge

Calibration Time: February 2012

Method: Factory

Sampling Depth Profile: Measured Depth to Bottom of the Impoundment: 3.1 Meter

Secchi Disk Depth: (E0.1 Meter): .5 Meter Time: 12:30

Chlorophyll a (1 Meter below surface)

Lab Sample I.D. #: 201204031A		
Time	Quantity (ml)	Filtered
1:00	1000 ML	NO

True Color (1 Meter below surface)

Lab Sample I.D. #: 201204031B	
Time	Quantity (ml)
1:03	250

D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
0.5 Meter below surface	1:07	10.55	10.6
1 Meter	1:09	10.65	10.2
2 Meter	1:10	10.71	10.0
3 Meter			
4 Meter			
5 Meter			
6 Meter			
7 Meter			
8 Meter			
0.5 Meter above bottom	1:15	10.73	9.9

Phosphorus

Lab Sample I.D. #: 201204031C	
(1 Meter below surface)	
Time	Preserved?
1:05	H2SO4

Lab Sample I.D. #:	
(1 Meter above bottom)	
Time	Preserved?

Comments: Sampling location is N45 55.749 W90 57.354

Performed By: GARY RAST & Aneta Rietveld Reg. Rep. & Act. PWT

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

ANALYTICAL REPORT

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

Printed: 04/05/12 Code: NNNN-S Page 1 of 1
NLS Project: 176190
NLS Customer: 102823



Client: Renewable World Energies
Attn: Gary Rast
PO Box 264
Neshkoro, WI 54960

Project: Winter

20120403 1A NLS ID: 657038

COC: 141405:1 Matrix: SW

Collected: 04/03/12 13:00 Received: 04/04/12

Parameter

Chlorophyll, all species
Lab filtration for Chlorophyll

Result
see attached
yes

Units

Dilution

LOD

LOQ

Analyzed
04/05/12
04/04/12

Method
10200-H
NA

Lab
721026460
721026460

20120403 1B NLS ID: 657039

COC: 141405:2 Matrix: SW

Collected: 04/03/12 13:03 Received: 04/04/12

Parameter

Color, APHA (true)

Result
250

Units
C.P.U.

Dilution
5

LOD
25*

LOQ

Analyzed
04/04/12

Method
SM 2120-B 20ed

Lab
721026460

20120403 1C NLS ID: 657040

COC: 141405:3 Matrix: SW

Collected: 04/03/12 13:05 Received: 04/04/12

Parameter

Phosphorus, tot. as P

Result
0.048

Units
mg/L

Dilution
1

LOD
0.0070*

LOQ

Analyzed
04/05/12

Method
SM 4500P-E 20ed

Lab
721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

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:

[Signature]

Authorized by:
R. T. Krueger
President

Northern Lake Service, Inc.
Chlorophyll Results

Customer: Renewable World Energies
Project: 176190
Winter

Sample	Description	CC a	Pheo a	TC a	TC b	TC c
657038	20120403 1A	2	0.51	2.3	0.14	0.42

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/cm³ 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.

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

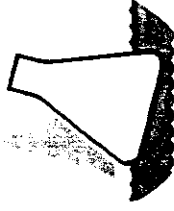
Analytical Laboratory and Environmental Services

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

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		USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered. Indicate G or C if WW Sample is Grab or Composite.	
DATE	TIME	Y/N	G/C
4/12/12	10:00		
4/12/12	11:00		
4/12/12	12:00		
4/12/12	13:00		
4/12/12	14:00		
4/12/12	15:00		
4/12/12	16:00		
4/12/12	17:00		
4/12/12	18:00		
4/12/12	19:00		
4/12/12	20:00		
4/12/12	21:00		
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4/12/12	00:00		
4/12/12	01:00		
4/12/12	02:00		
4/12/12	03:00		
4/12/12	04:00		
4/12/12	05:00		
4/12/12	06:00		
4/12/12	07:00		
4/12/12	08:00		
4/12/12	09:00		



NO.

ITEM NO.	NLS LAB. NO.	SAMPLE ID	COLLECTION DATE	TIME	MATRIX (See above)	COLLECTION REMARKS (i.e. DNR Well ID #)
1.			4/12/12	10:00	SW	
2.			4/12/12	11:00	SW	
3.			4/12/12	12:00	SW	
4.			4/12/12	13:00	SW	
5.			4/12/12	14:00	SW	
6.			4/12/12	15:00	SW	
7.			4/12/12	16:00	SW	
8.			4/12/12	17:00	SW	
9.			4/12/12	18:00	SW	
10.			4/12/12	19:00	SW	

CLIENT: State of Wisconsin Dept. of Natural Resources

ADDRESS: 1000 Wisconsin Ave.

CITY: Madison STATE: WI ZIP: 53706

PROJECT DESCRIPTION / NO.: Water Quality Assessment QUOTATION NO.: 1000

DNR FID # 1000 DNR LICENSE # 1000

CONTACT: John Doe PHONE: 608-261-1234

PURCHASE ORDER NO.: 1000 FAX: 608-261-1234

COLLECTED BY (signature) John Doe CUSTODY SEAL NO. (IF ANY) 1000 DATE/TIME 4/12/12 10:00

RELINQUISHED BY (signature) John Doe RECEIVED BY (signature) John Doe DATE/TIME 4/12/12 10:00

DISPATCHED BY (signature) John Doe METHOD OF TRANSPORT 4/12/12 10:00 DATE/TIME 4/12/12 10:00

RECEIVED AT NLS BY (signature) John Doe DATE/TIME 4/12/12 10:00 CONDITION Good TEMP. 50°F

COOLER # 1000 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

WONR FACILITY NUMBER 1000 E-MAIL ADDRESS john.doe@dnr.wisconsin.gov

REMARKS & OTHER INFORMATION Water Quality Assessment

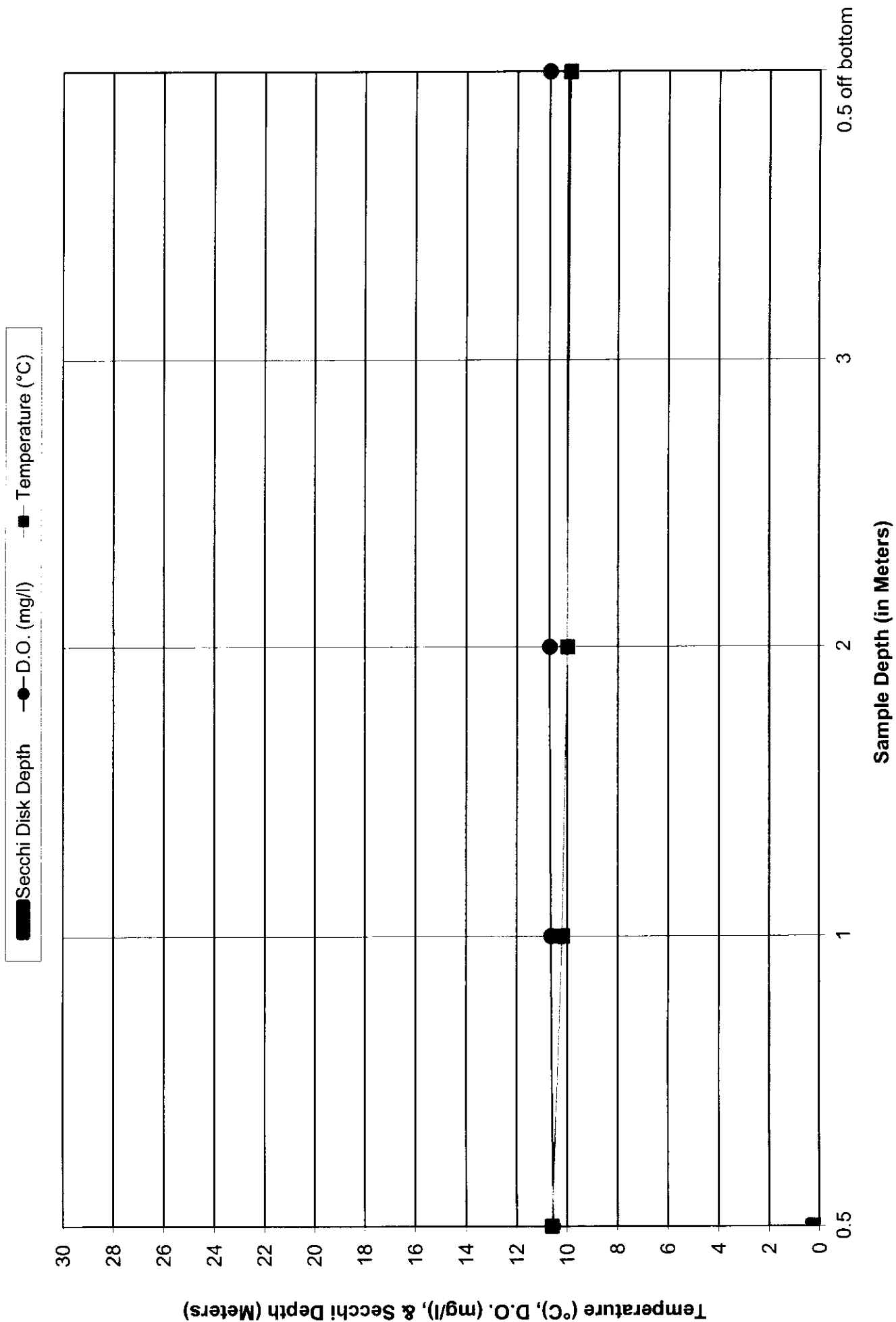
1. TO MEET REGULATORY REQUIREMENTS, THIS FORM **MUST** BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.
2. PLEASE USE ONE LINE PER SAMPLE. **NOT** PER BOTTLE.
3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.
4. PARTIES COLLECTING SAMPLE, LISTED AS **REPORT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

IMPORTANT:

DUPLICATE COPY

Winter Impoundment - FERC # 2064

April 03, 2012 Iceout Sampling Event



Appendix B

July 09, 2012 Sampling Documents

IMPOUNDMENT SAMPLING LOG

2012 Water Quality Study - Winter Hydroelectric Project - FERC #2064

HWL - 1370.55 TWL - 1345.26
CFS - 2.14

Date: 7/9/12

Pre-Sampling Data:

Time: 1:15 Barometer: 30.14 Air Temp: 26.6 °C Wind Speed: 6 MPH VARIABLE

Sky Conditions: BRIGHT SUN, HOT, + A FEW CLOUDS

Precipitation within Last 24 Hours: NO

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

Where The Batterys Changed?

☐ Yes ☒ No If Yes, When Changed:

Battery Status: 80% Charge

Calibration Time: February 2012

Method: Factory

Sampling Depth Profile: Measured Depth to Bottom of the Impoundment: 2.7 Meter

Secchi Disk Depth: (E0.1 Meter): .60 Meter Time: 1:55

Chlorophyll a (1 Meter below surface)

Lab Sample I.D. #: 20120709-1A		
Time	Quantity (ml)	Filtered
1:30	1000	NO

True Color (1 Meter below surface)

Lab Sample I.D. #: 20120709-1B	
Time	Quantity (ml)
1:32	250

D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
0.5 Meter below surface	1:38	4.75	25.9
1 Meter	1:39	4.73	25.7
2 Meter	1:40	4.71	25.6
3 Meter			
4 Meter			
5 Meter			
6 Meter			
7 Meter			
8 Meter			
0.5 Meter above bottom	1:41	4.67	25.5

Phosphorus

Lab Sample I.D. #: 20120709-1C	
(1 Meter below surface)	
Time	Preserved?
1:35	H2SO4

Lab Sample I.D. #:	
(1 Meter above bottom)	
Time	Preserved?

Comments: Sampling location is N45 55.749 W90 57.354

Performed By:

GARY RAST / ANDI SCHNEIDER

[Signature]

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
1001 Stephenson Street
Norway, MI 49870

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

Printed: 07/19/12 Code: NNNN-S Page 1 of 1
NLS Project: 180960
NLS Customer: 102823
Phone: 855 994 9376



RECEIVED

JUL 23 2012

Project: Winter

20120709-1A NLS ID: 671689

COC: 144730:1 Matrix: SW

Collected: 07/09/12 13:30 Received: 07/10/12

Parameter

Chlorophyll, all species

Lab filtration for Chlorophyll

20120709-1B NLS ID: 671690

COC: 144730:2 Matrix: SW

Collected: 07/09/12 13:32 Received: 07/10/12

Parameter

Color, APHA (true)

20120709-1C NLS ID: 671691

COC: 144730:3 Matrix: SW

Collected: 07/09/12 13:35 Received: 07/10/12

Parameter

Phosphorus, tot. as P

Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
see attached yes					07/16/12 07/10/12	10200-H NA	721026460 721026460

Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
400	C.P.U.	10	50*		07/10/12	SM 2120-B 20ed	721026460

Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
0.082	mg/L	1	0.0070*		07/18/12	SM 4500P-E 20ed	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection LOQ = Limit of Quantitation ND = Not Detected (< LOD)
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: 1000 ug/L = 1 mg/L

Authorized by:
R. T. Krueger
President

Northern Lake Service, Inc.
Chlorophyll Results

Customer: Renewable World Energies
Project: 180960
Winter

Sample	Description	CC a	Pheo a	TC a	TC b	TC c
671689	20120709-1A	1.4	0.68	1.8	0.24	0.36

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/cm³ 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

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

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

CLIENT **RENEWABLE WORLD ENERGIES, LLC**

CITY	STATE	ZIP
NESAKORO	WI	54960
PROJECT DESCRIPTION / NO.	QUOTATION NO.	
WINTER	VERBAL	

DNR FID #	DNR LICENSE #

CONTACT	PHONE
122	555-9941

PURCHASE ORDER NO. *1017*

2017: CHD-202 15th June

MATRIX:
 SW = surface water
 WW = waste water
 GW = groundwater
 DW = drinking water
 TTIS = 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



NO 144730

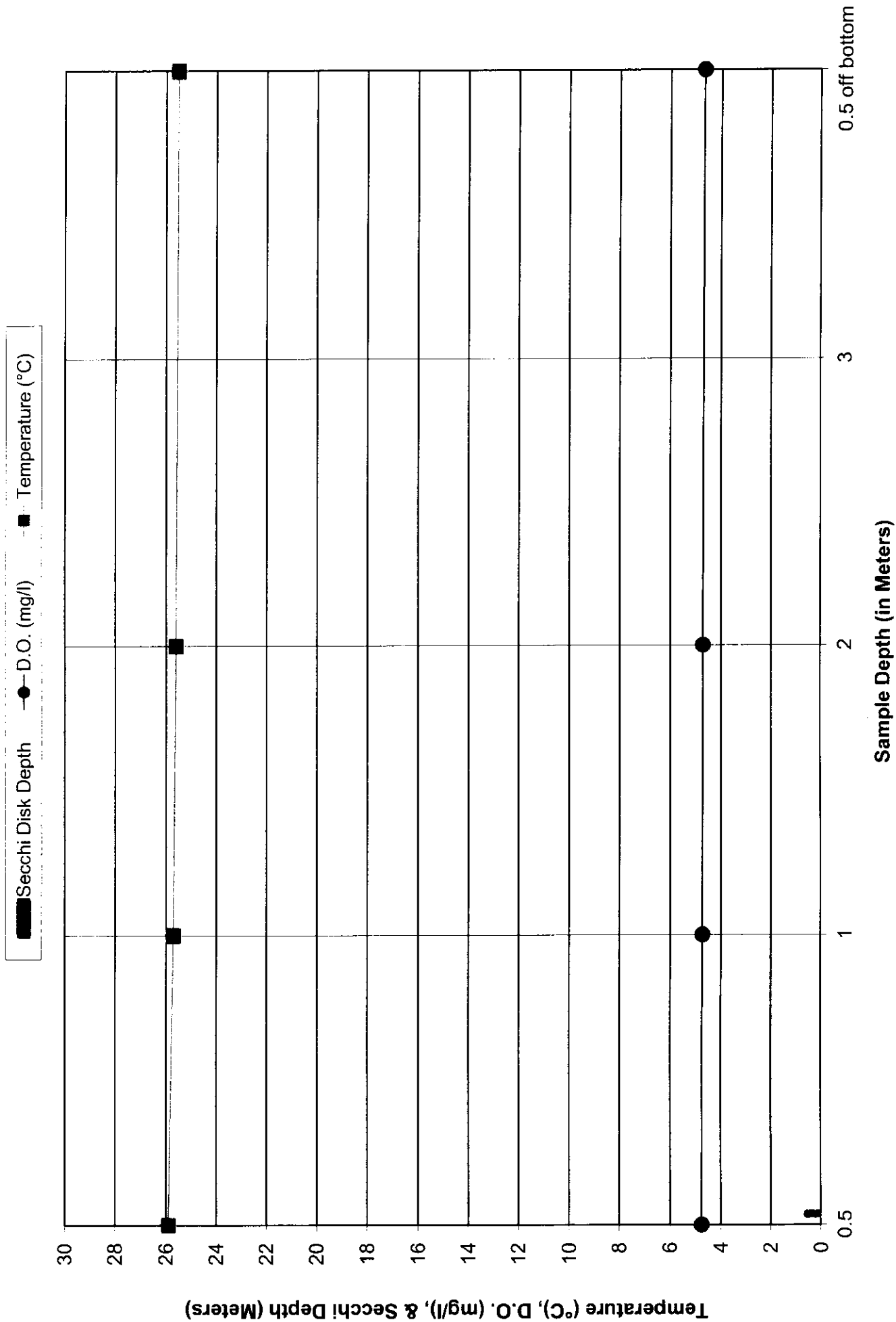
ITEM NO.	NLS LAB. NO.	SAMPLE ID	DATE	COLLECTION TIME	MATRIX (See above)	ANALYSIS	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	6711689	20120709-1A	7/9/12	1:30	RIVER WATER	X	
2.	690	20120709-1B	7/9/12	1:32	"	X	
3.	691	20120709-1C	7/9/12	1:35	"	X	
4.							
5.							
6.							
7.							
8.							
9.							
10.							

COLLECTED BY (signature) <i>[Signature]</i>		CUSTODY SEAL NO. (IF ANY)		DATE/TIME 7/9/12 1:30-1:35		REPORT TO SAME AS ABOVE	
RELINQUISHED BY (signature) <i>[Signature]</i>		RECEIVED BY (signature)		DATE/TIME			
DISPATCHED BY (signature) <i>[Signature]</i>		METHOD OF TRANSPORT UPS		DATE/TIME 7/9/12 3:30pm		INVOICE TO SAME AS ABOVE	
RECEIVED BY (signature) <i>[Signature]</i>		DATE/TIME 7/16/12		CONDITION on ice		TEMP.	
REMARKS Annamarie Combs		REMARKS & OTHER INFORMATION					
COOLER #		WDNR FACILITY NUMBER		E-MAIL ADDRESS			
PRESERVATIVE NP = no preservative N = nitric acid Z = zinc acetate M = methanol S = sulfuric acid		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

Winter Impoundment - FERC # 2064 July 09, 2012 Sampling Event



Appendix C

August 06, 2012 Sampling Documents

T⁰ FLOW - 73 CFS
H₂O - 1370.60 T₂O - 1344.36

IMPOUNDMENT SAMPLING LOG

2012 Water Quality Study - Winter Hydroelectric Project - FERC #2064

Date: 8/6/12

Pre-Sampling Data:

Time: 1:15 Barometer: 30.05 Air Temp: 26.1 °C Wind Speed: VARIBLE - 6 MPH

Sky Conditions: FAIR CLEAR HOT & FREEZY

Precipitation within Last 24 Hours: NO

D.O. Meter Calibration: Instrument Model Used: H040d

Where The Batterys Changed? ☐ Yes ☒ No If Yes, When Changed: _____

Battery Status: 60% Charge

Calibration Time: APRIL Method: Factory

Sampling Depth Profile: Measured Depth to Bottom of the Impoundment: 3.0 Meter

Secchi Disk Depth: (E0.1 Meter): 1.1 Meter Time: 1:40

Chlorophyll a (1 Meter below surface)

Lab Sample I.D. #: <u>201208061A</u>		
Time	Quantity (ml)	Filtered
<u>1:30</u>	<u>1000</u>	<u>NO</u>

True Color (1 Meter below surface)

Lab Sample I.D. #: <u>201208061B</u>	
Time	Quantity (ml)
<u>1:32</u>	<u>250</u>

D.O. Sample Data

Depth	Time	D.O. (mg/l)	°C
0.5 Meter below surface	<u>1:45</u>	<u>7.55</u>	<u>25.1</u>
1 Meter	<u>1:46</u>	<u>7.37</u>	<u>24.3</u>
2 Meter	<u>1:47</u>	<u>7.34</u>	<u>23.7</u>
3 Meter	X		
4 Meter			
5 Meter			
6 Meter			
7 Meter			
8 Meter			
0.5 Meter above bottom	<u>1:50</u>	<u>7.27</u>	<u>23.4</u>

Phosphorus

Lab Sample I.D. #: <u>201208061C</u>	
(1 Meter below surface)	
Time	Preserved?
<u>1:35</u>	<u>H₂SO₄</u>

Lab Sample I.D. #:	
(1 Meter above bottom)	
Time	Preserved?

Comments: Sampling location is N45 55.749 W90 57.354

Performed By: GARY & ANITA

Ray R. F.

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. W100034

Printed: 08/13/12 Code: NNNN-S Page 1 of 1
NLS Project: 182504
NLS Customer: 102823
Phone: 855 994 9376



RECEIVED

AUG 14 2012

Project: Winter

201208061A NLS ID: 676410

COC: 160056:1 Matrix: SW

Collected: 08/06/12 13:30 Received: 08/07/12

Parameter

Chlorophyll, all species
Lab filtration for Chlorophyll

201208061B NLS ID: 676411

COC: 160056:2 Matrix: SW

Collected: 08/06/12 13:32 Received: 08/07/12

Parameter

Color, APHA (true)

201208061C NLS ID: 676412

COC: 160056:3 Matrix: SW

Collected: 08/06/12 13:35 Received: 08/07/12

Parameter

Phosphorus, tot. as P

Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
see attached yes					08/09/12 08/07/12	10200-H NA	721026460 721026460
200	C.P.U.	10	50*		08/07/12	SM 2120-B 20ed	721026460
0.047	mg/L	1	0.0070*		08/08/12	SM 4500P-E 20ed	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

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

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: 182504
Winter

Sample	Description	CC a	Pheo a	TC a	TC b	TC c
676410	201208061A	2.7	0.49	3	0.27	0.73

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.

CLIENT	RENEWABLE WORLD ENTERPRISES, LLC		
ADDRESS	1005 STATE STREET BOX 269		
CITY	STATE	ZIP	
PROJECT DESCRIPTION/NO.	WINTER		
DNR FID #	DNR LICENSE #		
CONTACT	PHONE		
PURCHASE ORDER NO.	FAX		

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

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

MATRIX:
 SW = surface water
 WW = waste water
 GW = groundwater
 DW = drinking water
 TTIS = 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



No. 160056

ITEM NO.	LAB. NO.	SAMPLE ID	DATE	COLLECTION TIME	MATRIX (See above)	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	676410	201208061A	8/6/12	1:30	River water	
2.	411	" 1B	8/6/12	1:32	"	
3.	412	" 1C	8/6/12	1:35	"	
4.						
5.						
6.						
7.						
8.						
9.						
10.						

COLLECTED BY (signature) <i>[Signature]</i>	CUSTODY SEAL NO. (IF ANY)		DATE/TIME 8/6/12 1:30-1:35	
RELINQUISHED BY (signature) <i>[Signature]</i>	RECEIVED BY (signature)		DATE/TIME	
DISPATCHED BY (signature) <i>[Signature]</i>	METHOD OF TRANSPORT UPS		DATE/TIME 8/6/12 3:00	
RECEIVED AT S BY (signature) <i>[Signature]</i>	DATE/TIME 8/7/12	CONDITION 10	TEMP.	
REMARKS & OTHER INFORMATION all ice				
CODER # 10-1143		WDNR FACILITY NUMBER		
PRESERVATIVE: NP = no preservative N = nitric acid Z = zinc acetate		E-MAIL ADDRESS		
OH = sodium hydroxide HA = hydrochloric & ascorbic acid U = hydrochloric acid				

REPORT TO SAME AS ABOVE-ATTN GARY

INVOICE TO Ogilvy & Mather

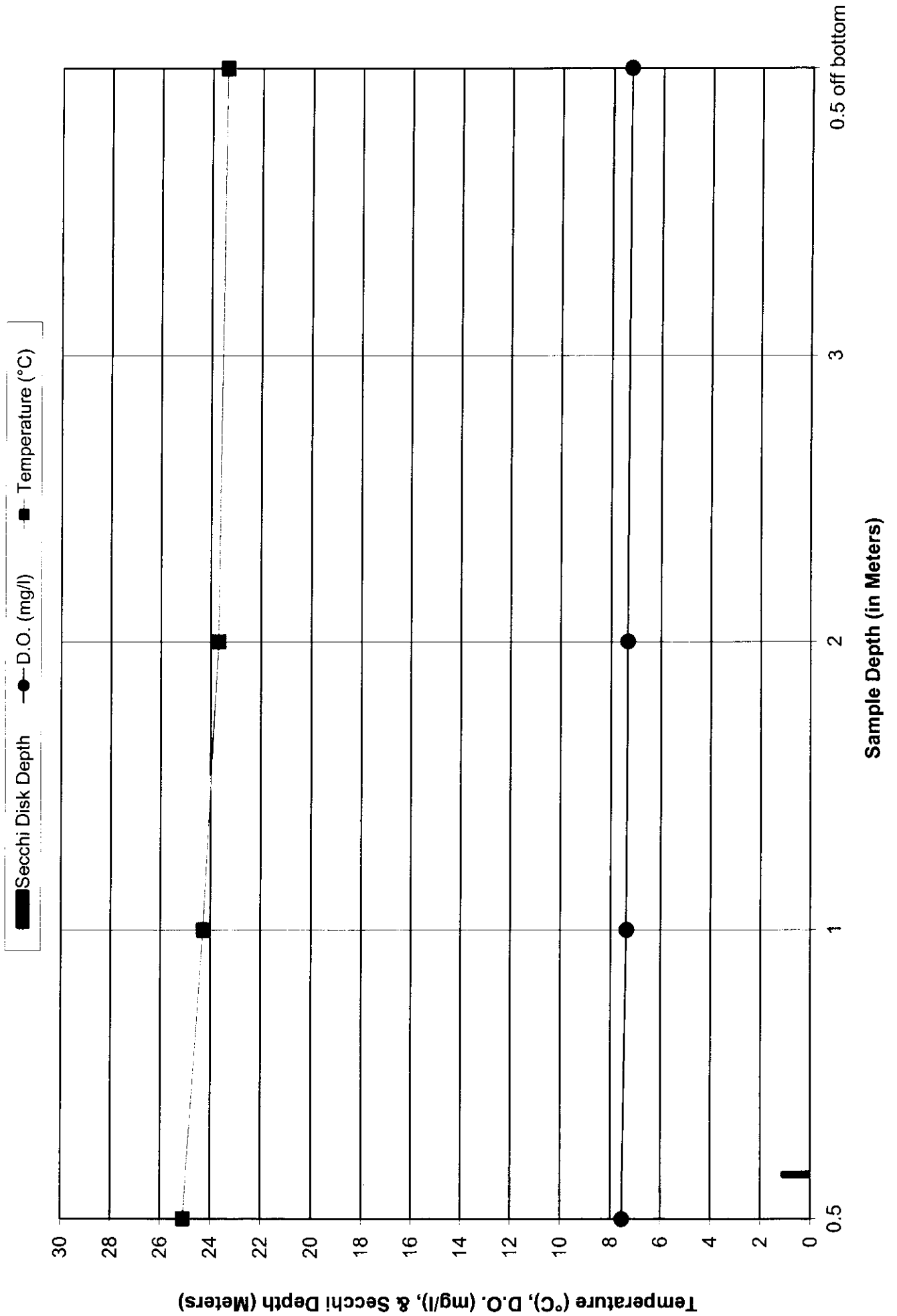
ST BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.

3. RETURN THIS FORM WITH SAMPLES. CLIENT MAY KEEP LINK COPY.
4. PARTIES COLLECTING SAMPLE, LISTED AS **REPORT TO** AND LISTED AS **INVOICE TO** AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.

IMPORTANT:

Winter Impoundment - FERC # 2064

August 06, 2012 Sampling Event



Appendix D

Agency Correspondence

Gary Rast

From: Gary Rast
Sent: Wednesday, November 28, 2012 10:43 AM
To: 'Higgins, Dale -FS'
Subject: RE: Winter Hydro Draft 2012 WQ Report

Dale,
I'll check the numbers.
All info comes from the NOAA site (Duluth)

Gary Rast
Regulatory Compliance Manager



Renewable World Energies, LLC
100 S. State Street
P.O. Box 264
Neshkoro, WI 54940
Phone: 855-994-9376 Ext. 105
Fax: 920-293-4110
Cell: 920-576-0995
E-mail: grast@rwehydro.com

From: Higgins, Dale -FS [<mailto:dhiggins@fs.fed.us>]
Sent: Wednesday, November 28, 2012 10:35 AM
To: Gary Rast
Subject: Winter Hydro Draft 2012 WQ Report

Gary – I have an additional “informal” comment. You may want to review the Monthly Temp/Ppt table. The normal ppt for April looks incorrect and the % of normal for Sept also appears to be wrong. Also, not sure where you got the normals, but I have a copy of the 1971-2000 normals for WI and the numbers for the Winter site are similar but not exactly the same (see attached). Please let me know if you have any questions. thanks

Dale Higgins, Hydrologist
Chequamegon-Nicolet National Forest
1170 S. 4th Ave
Park Falls, WI 54552
715-762-5181
dhiggins@fs.fed.us

Gary Rast

COPY RECEIVED

From: Higgins, Dale -FS <dhiggins@fs.fed.us>
Sent: Wednesday, November 28, 2012 10:35 AM
To: Gary Rast
Subject: Winter Hydro Draft 2012 WQ Report
Attachments: clim_81_WI_norm.pdf

NOV 28 2012

Gary – I have an additional “informal” comment. You may want to review the Monthly Temp/Ppt table. The normal ppt for April looks incorrect and the % of normal for Sept also appears to be wrong. Also, not sure where you got the normals, but I have a copy of the 1971-2000 normals for WI and the numbers for the Winter site are similar but not exactly the same (see attached). Please let me know if you have any questions. thanks

Dale Higgins, Hydrologist
Chequamegon-Nicolet National Forest
1170 S. 4th Ave
Park Falls, WI 54552
715-762-5181
dhiggins@fs.fed.us

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Gary Rast

From: Higgins, Dale -FS <dhiggins@fs.fed.us>
Sent: Wednesday, November 28, 2012 10:29 AM
To: Gary Rast
Cc: Strong, Paul -FS; Reinecke, Sue -FS; Mineau, Jim -FS; Cummins, Constance -FS
Subject: Draft Report 2012 Water Quality Monitoring Report for Winter Hydroelectric Project

NOV 28 2012

Gary – We have reviewed the draft report and have no major comments or suggested changes. We did note that dissolved oxygen was just below 5 mg/l during the July sample and suspect it was a natural occurrence. Although not critical, we would appreciate being notified about such events in the future just as you notified the US Fish and Wildlife Service and Wisconsin Department of Natural Resources. Paul Strong, Forest Supervisor, should remain the official contact for the Forest Service, but if you would cc Sue Reinecke or me with future correspondence it would help us to initiate reviews and coordinate responses in a timely manner. Thanks

Dale Higgins, Hydrologist
Chequamegon-Nicolet National Forest
1170 S. 4th Ave
Park Falls, WI 54552
715-762-5181
dhiggins@fs.fed.us

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Gary Rast

From: Utrup, Nick <nick_utrup@fws.gov>
Sent: Tuesday, November 27, 2012 12:57 PM
To: Gary Rast
Subject: Re: FW: WDNR comments for Winter, Clam, and Danbury 2012 WQ data

NOV 27 2012

Gary,

The USFWS has no comments on the Winter, Clam, and Danbury 2012 WQ data.

Nick

On Tue, Nov 27, 2012 at 12:49 PM, Gary Rast <grast@rwehydro.com> wrote:

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

From: Laatsch, Cheryl - DNR [mailto:Cheryl.Laatsch@Wisconsin.gov]

Sent: Monday, November 19, 2012 1:33 PM

To: Gary Rast

Subject: WDNR comments for Winter, Clam, and Danbury 2012 WQ data

Hi Gary –

Staff have reviewed the reports above, and have no concerns or comments.

Cheryl Laatsch, Wisconsin DNR

Cheryl.Laatsch@Wisconsin.gov

(608) 224-1111, ext. 1112

(608) 224-1112

(608) 445-3121 (4011)

e-mail: Cheryl.Laatsch@wisconsin.gov

Website: dnr.wi.gov

www.facebook.com/WIDNR

--

Nicholas J. Utrup

U.S. Fish and Wildlife Service

Wisconsin Ecological Services Office

2661 Scott Tower Drive

New Franken, WI 54229

Office: (920) 866-1736

Cell: (920) 530-9937

FAX: (920) 866-1710

Email: Nick.Utrup@fws.gov



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Gary Rast

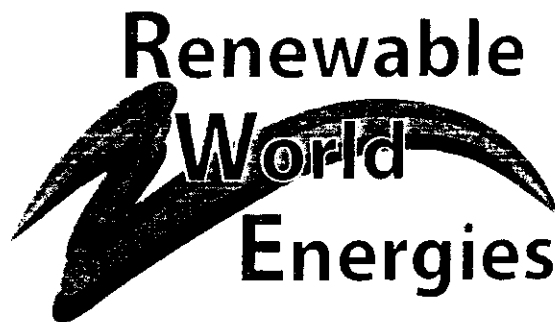
From: Laatsch, Cheryl - DNR <Cheryl.Laatsch@Wisconsin.gov>
Sent: Monday, November 19, 2012 1:33 PM
To: Gary Rast
Subject: WDNR comments for Winter, Clam, and Danbury 2012 WQ data



Hi Gary –

Staff have reviewed the reports above, and have no concerns or comments.

e-mail: Cheryl.laatsch@wisconsin.gov
Website: dnr.wi.gov
www.facebook.com/WIDNR



COPY

November 5, 2012

Mr. Craig Roesler
Water Quality Biologist, Upper Chippewa Basin
Wisconsin Dept. of Natural Resources
10220 State Hwy. 27
Hayward, WI 54843

Mr. Nick Utrup
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
2661 Scott Tower Drive
New Franken, WI 54229

Ms. Cheryl Laatsch
Water Regulations & Zoning Specialist
Wisconsin Dept. of Natural Resources
P O Box 7921
Madison, WI 53707-7921

Mr. Paul Strong, Forest Supervisor
USDA Forest Service Chequamegon, Nicolet NF
Forest Headquarters Offices
500 Hanson Lake R
Rhineland, WI 54501

**Re: Winter Hydroelectric Project
FERC Project Number P-2064
Flambeau Hydro LLC
Draft Report 2012 Water Quality Monitoring Data**

Dear Agency:

Purpose

On behalf of Flambeau Hydro LLC "Flambeau" (Licensee), Renewable World Energies, LLC is submitting (2) copies of the Draft Report 2012 Water Quality Monitoring Data for the Winter Hydroelectric Project for review and comment.

Background

The Federal Energy Regulatory Commission "FERC" issued a License to Flambeau on August 12, 2005. Portions of the original Certification were contested by the Licensee. The Wisconsin Department of Natural Resources (WDNR) submitted a revised Water Quality Certification, Dated at Park Falls, WI: August 19, 2008 that replaced the original certification of June 21, 2005. Only conditions E, F, and J were modified and a footnote was added to condition D according to the Final Settlement Agreement. The submitted report is a requirement of the License pursuant to Article 401 Condition N, Appendix A.

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

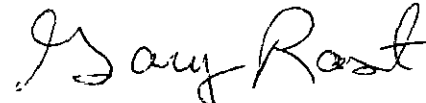
Phone: 855-99HYDRO
(855-994-9376)
www.renewableworldenergies.com

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

Conclusion

The Federal Energy Regulatory Commission's regulations allow for a 30 day formal review and comment period. Thank you in advance for providing your responses in a timely manner so we can include your comments and recommendations, as appropriate, into our report. 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.

Sincerely,
Renewable World Energies, LLC
Agent for Licensee


for Mr. Jason Kreuscher
Vice President, Operations

Attachment: Draft Report 2012 Water Quality Monitoring Data – November 2, 2012

Cc: RWE, Corporate

 **COPY**

Gary Rast

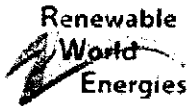
From: Gary Rast
Sent: Monday, July 09, 2012 5:29 PM
To: Jeffrey.Scheirer@Wisconsin.gov; Nick Utrup (nick_utrup@fws.gov);
'craig.roesler@dnr.state.wi.us'
Cc: Laatsch, Cheryl - DNR (Cheryl.Laatsch@Wisconsin.gov)
Subject: WNTR July Below Std. WQ Measurements - FERC #2064

Everyone,

Just returned from performing the July WQ survey at the Winter Hydro Project. All DO measurements were below state standard of 5 mg/l. The highest was 4.75 mg/l at .5 meter below surface and temp of 25.9 °C, 1 meter measurement was 4.73 mg/l and 25.7 °C, 2 meter measurement was 4.71 mg/l and 25.6°C, and .5 meter above bottom measurement was 4.67 mg/l and 25.5 °C. Not unusual for this time of year. Plan to be on the Flambeau on Tuesday and Clam River/Yellow River on Wednesday and Thursday. I expect there may be some results like the above at these projects as well. Will have to wait and see. Talk to you later.

Gary

Gary Rast
Regulatory/Compliance Manager



Renewable World Energies, LLC
100 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

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