



December 8, 2016

Ms. Cheryl Laatsch
Statewide FERC Coordinator
WDNR, Horicon Service Center
N7725 Highway 28
Horicon, WI 53032

Dear Ms. Laatsch:

SUBJECT: Dairyland Reservoir Annual Water Quality Report for 2016

Please find the enclosed water quality data collected during the 2016 calendar year for Dairyland Power Cooperative's (DPC) Flambeau Hydroelectric Project (FERC Project No. 1960-002).

The data set was collected from a fixed-point location in the lower portion of the Dairyland Reservoir and is submitted to the WDNR in order to comply with Article 401(R) of the Flambeau Hydroelectric Project License.

If you have any questions regarding the data, feel free to contact me at (608) 787-1486. I would be happy to discuss any concerns that you may have.

Sincerely,

Benjamin D. Campbell
Environmental Biologist II

BCA:krm

Enclosure(s)

cc/enc: Jeff Scheirer, WDNR

Brad Foss
Tony Mc Kimmy



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Date (dd-mm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
7-Apr-16	0.20	4.29	5.86	59.6	0.0381	93.3	11.74					110
7-Apr-16	4.00	4.27	6.05	60.0	0.0384	93.2	11.72	113	0.029	<1.01	28.2	
7-Apr-16	7.70	4.28	6.12	59.5	0.0381	93.3	11.74					
7-Apr-16	11.60	4.28	6.21	59.8	0.0383	93.2	11.72					
7-Apr-16	15.80	4.28	6.26	59.5	0.0381	93.0	11.70					
7-Apr-16	19.80	4.27	6.31	59.7	0.0382	92.9	11.69					
7-Apr-16	23.70	4.26	6.34	59.7	0.0382	93.3	11.74					
7-Apr-16	27.60	4.26	6.36	59.7	0.0382	93.2	11.73					
7-Apr-16	31.70	4.25	6.38	59.7	0.0382	93.4	11.75					
7-Apr-16	35.60	4.26	6.39	59.9	0.0383	93.2	11.74					
7-Apr-16	39.00	4.21	6.43	59.9	0.0383	93.0	11.72					
7-Apr-16	43.50	4.19	6.45	59.9	0.0383	93.2	11.75					
7-Apr-16	47.60	4.23	6.45	59.7	0.0382	93.0	11.72					
7-Apr-16	51.30	4.25	6.46	59.7	0.0382	93.4	11.75					
7-Apr-16	54.80	4.19	6.48	60.0	0.0384	93.2	11.75					
7-Apr-16	59.40	4.19	6.49	60.0	0.0384	93.0	11.73					
7-Apr-16	62.80	4.22	6.51	59.6	0.0382	93.0	11.72					
7-Apr-16	66.10	4.19	6.48	60.0	0.0384	89.7	11.31					
Minimum	0.20	4.19	5.86	59.5	0.0381	89.7	11.31	113	0.029	<1.01	28.2	110
Maximum	66.10	4.29	6.51	60.0	0.0384	93.4	11.75	113	0.029	<1.01	28.2	110
Mean	33.46	4.24	6.34	59.8	0.0383	93.0	11.71	113	0.029	<1.01	28.2	110

Date (dd-mm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
12-May-16	0.00	14.43	6.34	65.3	0.0418	94.6	9.33					110
12-May-16	4.60	14.21	6.47	65.0	0.0416	93.8	9.30	110	0.030	8.84	30.5	
12-May-16	8.60	14.15	6.55	65.0	0.0416	93.4	9.27					
12-May-16	12.60	14.14	6.63	65.3	0.0418	93.0	9.23					
12-May-16	16.50	14.03	6.65	64.4	0.0412	92.2	9.18					
12-May-16	20.60	14.02	6.66	65.0	0.0416	92.3	9.19					
12-May-16	24.60	13.98	6.68	65.2	0.0417	91.9	9.16					
12-May-16	28.60	13.92	6.71	65.0	0.0416	91.7	9.15					
12-May-16	32.60	13.88	6.72	64.3	0.0411	91.7	9.16					
12-May-16	36.60	13.19	6.72	62.2	0.0398	90.5	9.18					
12-May-16	40.60	12.19	6.71	61.5	0.0393	88.3	9.16					
12-May-16	44.50	11.97	6.73	61.4	0.0393	87.6	9.13					
12-May-16	48.70	11.81	6.71	61.2	0.0391	87.4	9.14					
12-May-16	52.30	11.65	6.70	61.4	0.0393	86.2	9.05					
12-May-16	56.40	11.18	6.70	60.8	0.0389	85.0	9.02					
12-May-16	60.30	10.86	6.68	61.1	0.0391	80.9	8.65					
12-May-16	64.20	10.34	6.68	60.7	0.0389	75.8	8.21					
Minimum	0.00	10.34	6.34	60.7	0.0389	75.8	8.21	110	0.030	8.84	30.5	110
Maximum	64.20	14.43	6.73	65.3	0.0418	94.6	9.33	110	0.030	8.84	30.5	110
Mean	32.49	12.94	6.65	63.2	0.0405	89.2	9.09	110	0.030	8.84	30.5	110

Date (dd-mm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
21-Jun-16	0.00	23.45	6.37	71.0	0.0454	90.7	7.54					130
21-Jun-16	4.00	23.38	6.56	71.3	0.0456	90.1	7.50	133	0.029	5.07	36.7	
21-Jun-16	7.90	23.36	6.64	71.3	0.0456	89.7	7.46					
21-Jun-16	11.80	23.35	6.70	71.4	0.0457	89.8	7.47					
21-Jun-16	15.80	23.35	6.78	71.3	0.0456	89.8	7.48					
21-Jun-16	19.70	23.32	6.82	71.4	0.0457	89.6	7.47					
21-Jun-16	23.90	23.12	6.85	71.4	0.0457	87.0	7.27					
21-Jun-16	27.90	22.58	6.86	71.0	0.0454	85.1	7.19					
21-Jun-16	31.90	22.21	6.88	70.8	0.0453	84.4	7.18					
21-Jun-16	36.00	22.00	6.88	70.8	0.0453	83.3	7.11					
21-Jun-16	39.70	21.45	6.88	70.2	0.0449	80.6	6.96					
21-Jun-16	43.80	20.84	6.89	69.8	0.0446	78.3	6.84					
21-Jun-16	47.90	20.48	6.89	69.8	0.0447	76.3	6.72					
21-Jun-16	51.60	20.33	6.87	70.0	0.0448	75.1	6.63					
21-Jun-16	55.80	20.13	6.87	69.8	0.0447	72.7	6.44					
21-Jun-16	59.70	20.09	6.87	70.0	0.0448	72.2	6.40					
21-Jun-16	63.70	19.93	6.87	70.3	0.0450	69.3	6.16					
Minimum	0.00	19.93	6.37	69.8	0.0446	69.3	6.16	133	0.029	5.07	36.7	130
Maximum	63.70	23.45	6.89	71.4	0.0457	90.7	7.54	133	0.029	5.07	36.7	130
Mean	31.83	21.96	6.79	70.7	0.0452	82.6	7.05	133	0.029	5.07	36.7	130

Date (dd-mm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
19-Jul-16	2.20	24.22	6.32	85.1	0.0545	87.5	7.24					130
19-Jul-16	6.10	24.26	6.49	85.8	0.0549	87.7	7.26	121	0.026	5.13 *	41.4	
19-Jul-16	10.10	23.56	6.58	86.2	0.0552	84.1	7.05					
19-Jul-16	14.10	23.32	6.62	85.7	0.0548	81.8	6.89					
19-Jul-16	18.10	23.23	6.66	85.5	0.0547	80.8	6.81					
19-Jul-16	22.00	23.00	6.69	84.3	0.0540	78.8	6.67					
19-Jul-16	26.10	22.89	6.72	84.5	0.0541	78.2	6.64					
19-Jul-16	30.20	22.84	6.76	84.9	0.0543	77.7	6.60					
19-Jul-16	34.10	22.77	6.76	84.2	0.0539	76.8	6.53					
19-Jul-16	38.10	22.56	6.77	84.4	0.0540	68.5	5.85					
19-Jul-16	42.10	22.46	6.77	85.5	0.0547	72.2	6.18					
19-Jul-16	46.00	22.29	6.77	86.3	0.0552	69.8	6.00					
19-Jul-16	50.00	22.24	6.79	86.5	0.0554	71.8	6.17					
19-Jul-16	53.90	22.19	6.79	86.1	0.0551	73.4	6.31					
19-Jul-16	57.80	22.07	6.81	86.1	0.0551	73.1	6.31					
19-Jul-16	61.80	22.00	6.82	86.4	0.0553	71.9	6.21					
19-Jul-16	65.80	21.84	6.81	87.3	0.0559	68.4	5.92					
Minimum	2.20	21.84	6.32	84.2	0.0539	68.4	5.85	121	0.026	5.13	41.4	130
Maximum	65.80	24.26	6.82	87.3	0.0559	87.7	7.26	121	0.026	5.13	41.4	130
Mean	34.03	22.81	6.70	85.6	0.0548	76.6	6.51	121	0.026	5.13	41.4	130

* Chlorophyll a sample was analyzed past the hold time.

Date (dd-mm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO ₃)	Secchi Disc Depth (cm)
30-Aug-16	0.10	22.57	6.35	95.8	0.0613	78.8	6.64					185
30-Aug-16	3.60	22.56	6.56	97.0	0.0621	78.4	6.62	133	0.023	4.06	42.2	
30-Aug-16	8.00	22.55	6.67	96.2	0.0616	78.4	6.61					
30-Aug-16	11.90	22.54	6.69	95.8	0.0613	77.6	6.55					
30-Aug-16	15.90	22.39	6.72	95.9	0.0614	74.3	6.29					
30-Aug-16	19.70	22.18	6.76	94.9	0.0607	72.9	6.19					
30-Aug-16	23.90	22.07	6.78	95.3	0.0610	72.1	6.14					
30-Aug-16	27.90	21.98	6.80	95.1	0.0608	71.9	6.14					
30-Aug-16	31.80	21.85	6.84	95.4	0.0610	70.7	6.05					
30-Aug-16	35.80	21.69	6.83	95.9	0.0614	69.9	6.00					
30-Aug-16	40.60	21.58	6.84	96.1	0.0615	68.3	5.87					
30-Aug-16	43.70	21.52	6.88	96.0	0.0615	71.1	6.12					
30-Aug-16	47.70	21.48	6.90	96.5	0.0618	73.1	6.29					
30-Aug-16	51.70	21.39	6.91	96.5	0.0617	72.9	6.29					
30-Aug-16	55.60	21.34	6.91	97.3	0.0623	68.6	5.93					
30-Aug-16	59.60	21.32	6.92	97.5	0.0624	67.2	5.81					
30-Aug-16	63.70	21.28	6.91	97.9	0.0626	64.4	5.57					
Minimum	0.10	21.28	6.35	94.9	0.0607	64.4	5.57	133	0.023	4.06	42.2	185
Maximum	63.70	22.57	6.92	97.9	0.0626	78.8	6.64	133	0.023	4.06	42.2	185
Mean	31.84	21.90	6.78	96.2	0.0616	72.4	6.18	133	0.023	4.06	42.2	185