ORIGINAL

WE Energies

231 W. Michigan Street
Milwaukee, WI 53203
www.we-energies.com

February 8, 2005

Ms. Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

RE: Peavy Falls Hydroelectric Project - FERC No. 11830-000
Article 407 -Year 2004 - Water Quality Monitoring Report

Wisconsin Electric (WE) doing business as We-Energies, is hereby filing one original and eight additional copies of the results of water quality monitoring for the above identified Project performed during 2004 in fulfillment of the monitoring plan approved and incorporated in the article identified above by FERC for this project.

The Commission issued a new license for the above Project on January 12, 2001 and by Order issued March 9, 2001 clarified certain Water Quality Monitoring requirements. The approved monitoring plan assures that the discharges from the above Project meet the state's water quality standards for temperature and dissolved oxygen (DO). The applicable mean temperature standards for the months during which continuous monitoring takes place are shown in the table below:

Month	June	July	August	September
°F	80	83	81	74
°C	26.7	28.3	27.2	23.3

The applicable D.O. standard is 5.0 mg/l at all times.

The Plan as approved by FERC order dated January 12, 2001 was subsequently modified by WE, with approval of consulted state agencies. The modified plan was filed with FERC in correspondence dated May 20, 2003. The modified plan now requires continuous monitoring of temperature and dissolved oxygen for the next three years at only those projects where problems in meeting the water quality standards were encountered during the 2001-2002 period. Peavy Falls was one among three projects where problems were encountered.

In addition, the modified plan also requires the collection of vertical profile measurements in the flowage upstream of any project when continuous monitoring is being conducted in the tailrace waters.

The results of our 2004 monitoring for the Peavy Falls Project are as follows:

I. Continuous water quality monitoring

Appendix A contains summary tables for the continuous monitoring data. In 2004, continuous monitoring at Peavy Falls was conducted in the Plant's tailrace to ascertain the intensity and duration of low DO conditions in the near-plant area of the river segment that connects Peavy discharge with Michigamme Falls flowage.

Temperature and DO were monitored continuously from mid-June through mid- September. As in previous years, the Peavy Falls Project tailrace area failed to meet the dissolved oxygen standard for portions of specific days when the units were offline (e.g., low DO levels were primarily detected in the leakage flow). At no time were DO levels less than 5.0 mg/l during an entire day in 2004. In the tailrace location, approximately 8.2% of all (2381) hourly DO measurements were less than 5.0 mg/l during

the entire monitoring period, but only 0.5% (12 of 2381)of the readings were less than 4.0 mg/l (Table A-1). None were less than 3.0 mg/l

Table A-2 contains the annual monitoring summaries as well as data recovery statistics, by location for each of the multi-function data sondes.

II. Flowage measurements

Appendix B contains the results of the vertical profile measurements made in 2004 for the project. Patterns observed in Peavy Falls flowage were very similar to measurements made during the two previous years.

Consideration of Corrective Measures

The work conducted in 2004 represent WE's latest efforts to understand the extent of the low DO problem that was identified during the initial two-year monitoring period specified by the initial Water Quality Monitoring Plan for this Project. The low DO problems encountered at Peavy Falls during 2001 and 2002 were expected, due to the nature of operations and the location of the intake relative to historic flowage thermocline. Low DO in the tailrace was again encountered during the warmer months in 2003. Our analysis indicates that the Plant's intake structure opening is situated near or below the hypolimnion, which is largely devoid of oxygen during the warmest part of summer. When the plant is operating, water is pulled from a portion of the hypolimnion, which is lower in dissolved oxygen, as well as from the upper portions of the water column in the flowage, which is well oxygenated. However, when the plant is offline, leakage flow through the plant's wicket gates, which originate in the hypolimnion, dominate the flow released to the tailrace area. The monitoring data showed that more than 90 % of the low DO measurements in the tailrace occurred while the plant was off-line. However, as previously reported, based on more extensive monitoring conducted during 2003, the typical leakage flow did not cause the entire river segment to be out of compliance with the DO standard of 5.0mg/l. Most significantly, the total amount of time the discharge was below 4.0 mg/l during 2003 was less than 1.0 percent in the tailrace and at or near zero% at the more downstream stations.

WE is proceeding with discussions involving the state regulatory agencies as to what further studies / mitigation strategies may be justified for the Peavy Fall Project. In 2004, the Company agreed to monitor the discharge at Peavy as it had in the past. In addition, the Company agreed to commence evaluation of mitigation alternatives. To this end, the Company is evaluating the use of an air bubbler system at its Way Dam Project (FERC No. 1759-036) to correct low DO conditions in the leakage flow from that unit. If air bubbling proves to be a feasible alternative for correcting low DO conditions at Way Dam following work scheduled for summer, 2005, tests involving bubbler systems will be evaluated for use at Peavy in 2006.

In the mean time, the company will begin on evaluation of costs associated with spilling at Peavy Project during 2005. While spilling has clearly helped correct much of the low DO problem at Way Dam, the cost of such an alternative for use at Peavy is likely to be much higher than is the case at Way Dam. Work in 2005 will assess the likely cost for spilling water at Peavy as well as how effective the spillage may be for correcting low DO conditions in the immediate tailrace area.

As part of this filing, a diskette containing all the raw data and accompanying explanatory sheets are being submitted to the agencies for their use.

Enclosed is a proof of service to the agencies listed on the copy list.

Please call me at (414) 221-2413, if you have questions on this matter.

Sincerely,

William Rauscher

Manager, Hydroelectric Operations

Enclosures

cc: Mr. .Michael Donofrio, WDNR
Ms. Jessica Mistak, MDNR
Mr. Larry Thompson, USFWS
Mr. John Suppnick, MDEQ

APPENDIX A

Water Quality Monitoring Conducted at Peavy Falls Project
During 2004

Monitoring Results

Table A-1 provides a frequency of occurrence analysis of the continuous recording data base for 2004 monitoring work. By hour of the day, the number of hours during which DO was less than 5.0, 4.0, or 3.0 mg /l during the entire study period (mid-June through mid-September). As can be seen, in the immediate area of the tailrace, DO was less than 5.0 mg / l approximately 195 hours or 8.2% of the time during this study.

Our analysis of plant operating data revealed that approximately 95% of the DO measurements that were less than 5.0 mg/l were associated with the times the plant was off-line (Table A-1). Only twelve measurements out of 2381 hourly measurements were less than 4.0 mg/l.

Table A-2 provides the summary statistics for temperature and DO. No violations of the state's temperature standard were observed at any location.

Table A-1
Peavy 2004 Tailrace Monitoring Data
Data from June 16 - Sept 23, 2004

Hour of Reading	Peavy Tailrace < 5	< 4	< 3	Number of < 5 Readings When Units Off-line	
0	11	1	0	12	10 of 11 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
100	14	1	0	15	12 of 14 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
200	13	1	0	14	12 of 13 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
300	14	1	0	15	12 of 14 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
400	10	1	0	11	9 of 10 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
500	15	1	0	14	12 of 15 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
600	13	0	0	13	10 of 13 < 5 occurred between 7/15-7/29 or 8/12-8/25
700	14	0	0	14	12 of 14 < 5 occurred between 7/15-7/29 or 8/12-8/25
800	14	0	0	14	12 of 14 < 5 occurred between 7/15-7/29 or 8/12-8/25
900	12	0	0	12	10 of 12 < 5 occurred between 7/15-7/29 or 8/12-8/25
1000	10	1	0	11	8 of 11 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
1100	7	0	0	7	5 of 7 < 5 occurred between 7/15-7/29 or 8/12-8/25
1200	5	0	0	5	2 of 5 < 5 occurred between 7/15-7/29 or 8/12-8/25
1300	3	0	0	3	1 of 3 < 5 occurred between 7/15-7/29
1400	3	1	0	1	
1500	1	1	0	0	
1600	1	0	0	0	
1700	2	0	0	0	1 of 2 < 5 occurred between 8/12-8/25
1800	2	0	0	1	1 of 1 < 5 occurred between 8/12-8/25
1900	1	0	0	1	1 of 2 < 5 occurred between 8/12-8/25
2000	5	0	0	2	4 of 5 < 5 occurred between 7/15-7/29 or 8/12-8/25
2100	5	1	0	3	4 of 5 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
2200	9	1	0	8	8 of 9 < 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
2300	11	1	0	10	11 of 11< 5 and only < 4 occurred between 7/15-7/29 or 8/12-8/25
Totals>	195	12	0	186	
	% of readings while plant offline			95%	157 of 195 < 5 readings occurred between 7/15-7/29 or 8/12-8/25.
Total Observations				2381	
Percent of Total Obs Below 5 mg/l				8.2%	
Percent of Total Obs Below 4 mg/l				0.5%	

We experienced a stirrer problem during two time periods (715-7/29 & 8/12-/26), which can result in lower dissolved oxygen readings during low flow or no flow periods. Shown below are the readings below 5 mg/l that occurred during these two periods.
See a more detailed explanation on Summary Table A-2

Units Off-line: For each hourly grouping, this is the number of hours the units were off line compared to the total number of hourly readings < 5.0 mg/l..
At the bottom of the Unit Off-line column is the percent of time the < 5.0 mg/l reading occurred while the units were off line.

R. Rick 1/27/2005

Table A - 2
We Energies Peavy Falls 2004 Hydro Monitoring Data Summary
Temperature and Dissolved Oxygen (D.O.) Stations

Dissolved Oxygen Limit 5.0 mg/l

Monthly Average Temperature Limits:		Degree F	Degree C
	June	80	26.7
	July	83	28.3
	August	81	27.2
	Sept	74	23.3

Peavy Tailrace - 2004 Data Summary

Month	QBS	Temperature (Degrees C)			DO % Saturation			Dissolved Oxygen (mg/l)		
		Mean	Max	Min	Mean	Max	Min	Mean	Max	Min
Jun	350	18.1	20.9	16.9	82.2	95.0	72.0	7.6	8.4	6.8
Jul	744	19.2	22.4	17.0	73.0	92.2	39.7	6.6	8.3	3.6
Aug	744	19.2	22.4	17.6	69.6	96.3	35.9	6.3	8.6	3.4
Sep	543	18.3	20.6	17.5	73.7	93.6	52.1	6.8	8.4	4.9

0800 @ 7/7/04 Deleted one hour of data as sonde became dewatered.

7/15 @ 1700 - 7/29 @1200 & 8/12 @ 1700 - 8/26 @ 1400.
We had two of our older Hydrolab sondes upgraded to internal stirrers in May of 2004. This upgrade resulted in an unforseen and undocumented change in the programing sequence. Due to this, there were two time periods when the stirrer was not enabled and did not run during dissolved oxygen(DO) testing. This problem was minimal when the plant units were running, as adequate flow past the sonde membrane results in reasonbly accurate readings. During periods when there was little or no flow through the units, and therefore in the tailrace, the sonde was most likely reading lower DO than was actually present. For those time periods we have a "worst case scenario".

0.5% of measurements were below 4.0 mg/l
7.7 % of measurements were below 5.0 mg/l

99.9% Data Recovery

Prepared by R. Rock 1/27/2005

Appendix B

Vertical Profile Results

The attached tables provide the results of vertical profile measurement made in Peavy Flowage during 2004. For each measurement, the Table contains the corresponding tailracc measurement for temperature and DO taken by the continuous recording data sondes during the same hour on the same day when the vertical profile measurement was taken. This comparison allows one to observe how operating conditions result in the discharge being in compliance with the DO standard in spite of intense thermal and DO stratification conditions that exist in the flowage during the warmest time of the summer months.

6/17/2004
John Hrobar and Russ Rick
Flowage Vertical

17-Jun-04

Approximate air temp:18.3 C

Secchi Depth:4.5 ft. water depth 64 to 67' *Time: 1145*

ENE winds 8-12 mph *50% clouds*

Taken in flowage

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	21.0	8.6	96.9	94	7.2
0.5	20.8	8.7	96.1	93	7.2
1.0	20.5	8.7	97.3	93	7.2
1.5	20.4	8.5	95.3	93	7.2
2.0	20.2	8.4	93.3	94	7.2
2.5	19.9	8.3	92.4	94	7.2
3.0	19.9	8.3	92.1	94	7.2
3.5	19.9	8.3	91.8	95	7.2
4.0	19.6	8.2	90.5	93	7.2
4.5	19.5	8.0	88.5	94	7.2
5.0	18.8	7.9	85.7	93	7.2
5.5	18.1	7.8	83.2	90	7.2
6.0	17.7	7.7	81.3	89	7.2
6.5	17.2	7.6	79.8	88	7.2
7.0	16.8	7.6	78.9	85	7.2
7.5	16.3	7.6	78.2	85	7.2
8.0	15.9	7.5	77.1	85	7.2
8.5	15.6	7.4	75.5	84	7.2
9.0	15.4	7.4	74.3	82	7.2
9.5	14.2	7.1	69.3	83	7.2
10.0	13.7	7.1	68.8	82	7.2
10.5	13.2	6.9	66.6	84	7.2
11.0	13.0	6.8	65.1	83	7.2
11.5	12.6	6.6	62.7	83	7.1
12.0	12.5	6.5	61.5	83	7.1
12.5	12.4	6.3	59.7	83	7.1
13.0	12.1	6.1	57.7	84	7.1
13.5	11.8	6.0	56.6	86	7.1
14.0	11.7	5.8	54.1	87	6.8
14.5	11.6	5.7	52.7	87	6.8
15.0	11.4	5.6	51.4	88	6.8
15.5	11.0	5.3	49.0	89	6.8
16.0	10.7	5.0	45.6	89	6.9
16.5	10.4	4.8	43.7	92	6.9
17.0	10.2	4.6	41.3	92	6.9
17.5	10.0	4.2	37.7	93	6.9
18.0	9.8	3.8	34.0	90	7.0
18.5	9.4	3.0	26.8	95	7.0
19.0	9.2	2.9	24.4	95	7.0
19.2	bottom				

6/16/2004
John Hrobar and Russ Rick
Hard to get vertical in tailrace, due to a strong current.

16-Jun-04

Approximate air temp:21.1 C

Secchi Depth: 6.0 ft. *Time: 1000*

Winds NE 8-12 mph *cool and breezy*

Taken in Tailrace

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	17.3	7.9	83.2	87	7.8
0.5	17.3	7.9	83.1	87	7.8
1.0	17.3	7.9	82.8	88	7.8
1.5	17.3	7.9	82.8	88	7.8
2.0	17.3	7.8	82.6	88	7.7
2.5	17.3	7.8	82.7	89	7.8

16-Jun-04

Approximate air temp:21.1 C

Secchi Depth: 6.0 ft. *Time: 0945*

Winds NE 8-12 mph *cool and breezy*

Taken on Tainter Gate Side - *No flow*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	17.6	8.0	84.6	87	8.1
0.5	17.4	8.0	84.5	88	8.0
1.0	17.3	8.0	84.4	88	8.0
1.5	17.3	8.0	84.3	88	8.0
2.0	17.3	8.0	83.9	88	8.0
2.5	17.3	8.0	83.7	88	8.0
3.0	16.9	7.9	82.0	87	8.0
3.4	16.8	7.8	81.6	87	7.9

Tailrace data for same time period as the flowage vertical profile on 6/17/04

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1100	18.7	8.0	87.1	89
1200	18.8	8.0	87.8	89
1300	18.7	8.1	88.3	89

pH was not a parameter collected in the tailrace.

Highlighted Depth: Opening of the intake forebay (2 to 10 m)

7/1/2004
John Hrobar and Russ Rick
Flowage Vertical

1-Jul-04

Approximate air temp:23.8 C

Secchi Depth:6.5 ft. water depth 63 to 67' *Time: 1330*

Winds near calm Slightly south 0-3 mph *less than 5% clouds*

Taken in flowage

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	20.6	9.0	102.0	96	7.7
0.5	20.6	8.9	100.4	96	7.7
1.0	19.9	8.9	99.0	96	7.7
1.5	19.6	8.6	95.7	96	7.7
2.0	19.4	8.5	93.6	96	7.6
2.5	19.1	8.2	90.0	96	7.6
3.0	18.9	8.2	89.6	96	7.5
3.5	18.9	8.1	89.1	97	7.5
4.0	18.6	8.0	86.9	97	7.5
4.5	18.5	7.9	85.7	96	7.4
5.0	18.3	7.9	85.5	97	7.4
5.5	18.2	7.9	85.1	96	7.4
6.0	18.0	7.7	83.2	97	7.4
6.5	17.8	7.5	80.5	96	7.4
7.0	17.4	7.3	78.2	97	7.3
7.5	17.3	7.3	77.6	96	7.3
8.0	17.3	7.2	76.8	96	7.2
8.5	17.0	7.1	74.2	97	7.2
9.0	16.9	7.0	73.4	96	7.2
9.5	16.7	6.8	71.7	96	7.2
10.0	16.4	6.5	67.5	96	7.1
10.5	16.0	6.1	63.3	94	7.1
11.0	14.8	5.0	50.8	88	7.0
11.5	13.6	4.9	47.6	86	7.0
12.0	12.9	4.7	46.0	83	7.0
12.5	12.7	4.5	43.2	84	6.9
13.0	12.4	4.5	42.7	84	6.9
13.5	12.3	4.3	40.8	87	6.9
14.0	12.0	4.3	40.3	85	6.9
14.5	11.9	4.1	39.1	86	6.8
15.0	11.6	4.4	38.2	88	6.8
15.5	11.5	4.0	37.6	86	6.8
16.0	11.3	3.9	36.4	87	6.8
16.5	11.1	3.7	34.2	89	6.8
17.0	10.8	3.2	29.3	91	6.8
17.5	10.5	2.9	26.7	92	6.8
18.0	10.3	2.7	24.1	91	6.7
18.5	9.9	1.9	16.6	97	6.7
19.0	9.6	1.3	11.2	102	6.7
19.4	9.5	1.1	9.7	104	6.7

7/1/2004
John Hrobar and Russ Rick
Good flow looks like two units running, no flow from tainter gates.

1-Jul-04

Approximate air temp:23.8 C

No secchi due to current. *Time: 1515*

Winds near calm Slightly south 0-3 mph *less than 5% clouds*

Taken in Tailrace *Good flow, 2 units in?*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	18.7	8.0	86.8	97	7.3
0.5	18.7	7.9	86.5	96	7.4
1.0	18.7	7.9	86.4	96	7.4
1.5	18.7	7.9	86.4	96	7.4
2.0	18.7	7.9	86.2	97	7.3
2.5	18.7	7.9	86.1	96	7.3

1-Jul-04

Approximate air temp:23.8 C

Secchi Depth:6.5 ft. *Time: 1509*

Winds near calm Slightly south 0-3 mph *less than 5% clouds*

Taken on Tainter gate side - *No flow* *bright blue sky*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.4	8.2	90.1	97	7.5
0.5	19.4	8.1	90.5	97	7.4
1.0	19.3	8.1	89.7	97	7.4
1.5	19.1	8.1	89.0	97	7.4
2.0	19.1	8.1	88.9	97	7.4
2.5	19.1	8.1	88.9	96	7.4
3.0	19.1	8.0	88.4	96	7.4
3.5	19.0	8.0	88.0	96	7.4

Tailrace data for same time period as the flowage vertical profile on 7/1/04

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1300	18.7	7.7	84.4	96
1400	18.7	7.7	84.2	96
1500	18.7	8.2	88.6	93

pH was not a parameter collected in the tailrace.

Highlighted Depth: Opening of the intake forebay (2 to 10 m)

7/15/2004
John Hrobar and Meghan Count
Flowage Vertical

15-Jul-04

Approximate air temp:23.8 C

Secchi Depth:5.5 ft. water depth 60 to 66' *Time: 1420*

Winds northerly 7-14 mph *40 % clouds*

Taken in flowage

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	22.9	9.1	107.8	102	7.8
0.5	22.6	9.0	105.4	102	7.9
1.0	22.1	8.9	103.9	102	7.9
1.5	21.9	8.9	103.2	103	7.8
2.0	21.8	8.8	102.6	102	7.9
2.5	21.8	8.7	101.5	102	7.8
3.0	21.6	8.7	100.8	103	7.8
3.5	21.4	8.6	98.5	103	7.8
4.0	20.6	8.2	93.1	104	7.7
4.5	20.4	8.2	93.1	104	7.7
5.0	20.1	8.0	88.6	105	7.6
5.5	19.6	7.7	83.7	104	7.6
6.0	18.3	7.0	75.2	103	7.5
6.5	17.7	6.7	70.8	102	7.5
7.0	17.2	6.5	68.3	102	7.4
7.5	17.2	6.3	66.6	101	7.4
8.0	17.1	6.3	66.1	102	7.4
8.5	17.0	6.2	65.3	103	7.3
9.0	16.9	6.1	63.3	103	7.3
9.5	16.7	5.9	61.3	107	7.3
10.0	16.4	5.7	58.7	108	7.2
10.5	16.1	5.4	54.1	110	7.2
11.0	15.8	4.7	46.1	111	7.2
11.5	15.3	4.3	42.7	106	7.2
12.0	14.8	3.6	35.4	99	7.1
12.5	14.4	3.3	32.3	96	7.1
13.0	13.0	3.1	29.9	88	7.1
13.5	12.6	3.0	28.6	87	7.1
14.0	12.3	2.8	26.5	88	7.0
14.5	12.1	2.8	26.2	86	6.9
15.0	11.8	2.8	25.7	88	6.9
15.5	11.5	2.5	23.3	88	6.9
16.0	11.3	2.3	20.6	90	6.9
16.5	11.0	1.8	16.7	91	6.9
17.0	10.8	1.6	14.4	92	6.8
17.5	10.6	1.4	11.8	95	6.8
18.0	10.3	1.1	9.2	98	6.8
18.5	10.0	0.8	6.3	102	6.8
19.0	9.7	0.4	2.9	105	6.8

7/15/2004
John Hrobar and Meghan Count

15-Jul-04

Approximate air temp:23.8 C

Secchi Depth:6.5 ft. *Time: 1730*

Winds calm *80 % clouds*

Taken in Tailrace *No Flow from plant*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	20.6	7.8	88.3	104	7.4
0.5	20.6	7.8	87.9	104	7.4
1.0	20.5	7.8	87.6	104	7.4
1.5	20.4	7.8	87.5	104	7.3
2.0	20.4	7.7	87.0	104	7.3
2.5	20.3	7.6	85.5	103	7.3
3.0	19.9	7.7	85.6	104	7.3
3.5	19.9	7.6	85.4	104	7.3
4.0	19.6	7.6	83.4	104	7.3
4.5	19.4	7.6	83.6	104	7.3

15-Jul-04

Approximate air temp:23.8 C

Secchi Depth:6.5 ft. *Time: 1700*

Winds calm *80 % clouds*

Taken on Tainter Gate side *No flow*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	21.1	7.9	89.7	104	7.4
0.5	20.7	7.7	87.0	104	7.4
1.0	20.4	7.7	86.0	104	7.4
1.5	20.4	7.7	86.1	104	7.4
2.0	20.3	7.6	85.8	104	7.3
2.5	20.3	7.6	85.8	104	7.3
3.0	20.1	7.6	85.7	104	7.3

Tailrace data for same time period as the flowage vertical profile on 7/15/04

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1300	19.8	7.2	80.5	100
1400	20.0	7.4	82.4	100
1500	20.1	7.4	82.6	99

pH was not a parameter collected in the tailrace.

Highlighted Depth: Opening of the intake forebay (2 to 10 m)

7/28/2004
John Hrobar and Noel Cutright

Flowage Vertical

28-Jul-04

Approximate air temp:26.7 C

Secchi Depth:8.0 ft. water depth 60 to 66' *Time: 1730*

Westerly winds 8-12 mph *occasional gusts*

Taken in flowage

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	23.6	8.9	107.2	107	8.1
0.5	23.2	8.9	107.0	107	8.1
1.0	22.4	8.2	96.4	106	8.1
1.5	20.7	7.4	82.5	107	7.9
2.0	20.4	6.9	77.5	106	7.8
2.5	20.3	6.8	76.3	105	7.7
3.0	19.8	5.7	62.6	104	7.6
3.5	19.2	5.6	61.1	103	7.6
4.0	19.0	5.5	60.7	103	7.5
4.5	18.5	5.4	57.8	102	7.5
5.0	18.4	5.2	56.8	102	7.4
5.5	18.2	4.5	48.3	102	7.4
6.0	17.9	4.3	46.3	102	7.4
6.5	17.8	4.2	45.2	103	7.3
7.0	17.7	4.1	44.2	102	7.3
7.5	17.4	3.7	31.3	103	7.3
8.0	17.2	3.6	38.3	103	7.2
8.5	16.7	3.5	37.9	103	7.2
9.0	16.6	3.6	37.7	101	7.2
9.5	16.5	3.6	37.0	102	7.2
10.0	16.3	3.5	36.0	101	7.2
10.5	15.5	2.6	26.3	102	7.2
11.0	14.9	2.1	21.1	101	7.1
11.5	14.4	1.7	16.3	98	7.1
12.0	14.0	1.5	14.3	96	7.1
12.5	13.2	1.5	14.4	91	7.1
13.0	12.8	1.4	13.5	90	7.1
13.5	12.7	1.4	13.3	89	7.0
14.0	12.5	1.3	11.2	88	7.0
14.5	12.2	1.2	11.4	89	7.0
15.0	12.1	1.3	12.6	88	6.9
15.5	11.7	1.3	11.7	88	6.9
16.0	11.3	0.9	8.2	89	6.9
16.5	10.9	0.5	3.2	93	6.9
17.0	10.8	0.3	2.2	91	6.9
17.5	10.7	0.2	1.6	96	6.9
18.0	10.6	0.3	2.0	98	6.8
18.5	10.3	0.2	1.5	100	6.9
19.0	10.2	0.2	1.3	104	6.9
19.5	9.8	0.1	1.3	112	6.9

7/29/2004
John Hrobar and Noel Cutright
Water level in Michigamme Falls is low.
Flow from one or more units, here at Peavy.

29-Jul-04

Approximate air temp:23.8 C

No secchi *Time: 1300*

100% overcast

Taken in Tailrace *some drizzle*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.2	5.6	62.0	104	7.0
0.5	19.2	5.6	61.9	104	7.0
1.0	19.2	5.6	61.7	104	7.0
1.5	19.2	5.6	61.7	104	7.0
2.0	19.2	5.6	61.7	103	6.9
2.5	19.2	5.6	61.5	103	7.0
3.1	19.2	5.6	61.6	104	6.9

29-Jul-04

Approximate air temp:23.8 C

No secchi *Time: 1300*

100% overcast

Taken on Tainter gate side *some drizzle*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	20.4	7.3	82.0	106	7.2
0.5	19.7	6.5	72.0	105	7.1
1.0	19.5	6.4	70.9	105	7.1
1.5	19.3	6.0	66.6	105	7.0
2.0	19.0	5.8	64.2	105	7.1
2.5	18.0	4.9	53.4	103	6.9
3.0	18.0	4.8	51.9	103	6.9
3.5	17.9	4.8	51.8	103	6.9

Tailrace data for same time period as the flowage vertical profile on 7/28/04

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1700	19.2	5.4	59.7	103
1800	19.1	5.2	57.7	103
1900	19.1	5.2	57.8	103

pH was not a parameter collected in the tailrace.

Highlighted Depth. Opening of the intake forebay (2 to 10 m)

8/12/2004
John Hrobar and Annie Salmons

Flowage Vertical

12-Aug-04

Approximate air temp:18.3 C

Secchi Depth:6.5 ft. water depth 60 to 66' *Time: 1430*

NNE Winds 12-18 mph *Sunny day*

Taken in flowage *very windy*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.7	8.1	99.5	108	7.5
0.5	19.7	8.1	99.2	108	7.5
1.0	19.6	8.1	99.6	108	7.5
1.5	19.5	8.1	99.4	108	7.5
2.0	19.5	8.0	99.1	108	7.5
2.5	19.5	8.0	99.0	108	7.5
3.0	19.5	8.0	99.1	108	7.5
3.5	19.5	8.0	98.9	108	7.5
4.0	19.4	7.9	98.1	108	7.5
4.5	19.3	7.9	97.7	108	7.5
5.0	19.2	7.8	96.4	108	7.5
5.5	19.2	7.8	95.5	108	7.5
6.0	19.1	7.7	95.3	108	7.5
6.5	19.1	7.7	95.2	108	7.7
7.0	19.1	7.7	95.0	107	7.4
7.5	19.1	7.7	94.6	107	7.4
8.0	19.0	7.6	93.0	107	7.4
8.5	19.0	7.5	92.8	108	7.4
9.0	19.0	7.6	93.2	108	7.4
9.5	18.9	7.5	91.9	107	7.4
10.0	18.9	7.4	91.1	107	7.3
10.5	18.9	7.3	90.1	107	7.3
11.0	18.8	7.3	79.4	106	7.3
11.5	18.5	6.8	70.0	107	7.3
12.0	17.4	1.6	16.5	103	7.1
12.5	15.4	1.0	8.0	100	7.1
13.0	14.3	0.7	5.0	99	7.0
13.5	13.6	0.4	3.5	93	6.9
14.0	12.9	0.3	2.8	91	6.9
14.5	12.0	0.4	3.4	89	6.7
15.0	11.8	0.3	3.1	91	6.8
15.5	11.2	0.5	3.1	94	6.8
16.0	11.1	0.2	1.7	95	6.7
16.5	11.0	0.1	0.9	95	6.8
17.0	10.6	0.1	0.9	101	6.8
17.5	10.5	0.1	1.2	101	6.8
18.0	10.2	0.1	1.3	104	6.9
18.5	10.1	0.2	1.3	105	6.9
19.0	9.9	0.2	1.5	112	6.9
19.3	9.8	0.2	1.7	117	6.8

8/12/2004
John Hrobar and Annie Salmons

12-Aug-04

Approximate air temp:18.3 C

No seechi due to strong current *Time: 1645*

NNE Winds 12-18 mph *Sunny day*

Taken in Tailrace *1 or 2 units in*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.6	7.8	87.1	107	7.4
0.5	19.6	7.8	86.8	107	7.4
1.0	19.6	7.8	86.9	107	7.4
1.5	19.6	7.8	86.6	107	7.3
2.0	19.6	7.8	86.6	107	7.3

Could only get to 2 meters due to strong current.

12-Aug-04

Approximate air temp:18.3 C C

Seechi Depth: 6.0 ft. *Time: 1640*

NNE Winds 12-18 mph *Sunny day*

Taken on Tainter Gate side

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.6	8.3	91.7	107	7.5
0.5	19.6	8.2	90.3	107	7.5
1.0	19.6	8.1	90.3	107	7.5
1.5	19.6	8.1	90.2	107	7.5
2.0	19.6	8.1	90.2	107	7.5
2.5	19.5	8.1	89.7	107	7.5
3.1	19.2	8.2	89.2	106	7.5

Tailrace data for same time period as the flowage vertical profile on 8/12/04

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond.
1300	19.3	7.9	86.7	106
1400	19.3	8.1	88.4	106
1500	19.6	7.6	83.3	107

pH was not a parameter collected in the tailrace.

Highlighted Depth: Opening of the intake forebay (2 to 19 m).

8/26/2004
John Hrobar and Bill Braunschweig
Flowage Vertical

26-Aug-04

Approximate air temp:23.8 C

Secchi Depth:7.5 ft. water depth 60 to 66' *Time: 1300*

SSE winds 8-12 mph gusty *60-70 % clouds*

Taken in flowage

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.8	8.9	98.2	109	7.6
0.5	19.0	8.6	94.2	109	7.6
1.0	18.6	8.4	92.1	109	7.6
1.5	18.5	8.2	89.0	109	7.6
2.0	18.5	8.2	88.9	109	7.6
2.5	18.5	8.1	88.9	109	7.6
3.0	18.5	8.1	87.4	109	7.5
3.5	18.4	8.0	86.7	109	7.5
4.0	18.3	7.8	84.5	109	7.5
4.5	18.2	7.6	82.5	109	7.5
5.0	18.2	7.5	80.8	109	7.5
5.5	18.1	7.4	79.8	109	7.4
6.0	18.1	7.4	79.0	108	7.4
6.5	18.0	7.2	77.3	108	7.4
7.0	18.0	7.1	76.9	108	7.4
7.5	17.9	6.9	74.0	109	7.4
8.0	17.7	6.5	68.9	109	7.3
8.5	17.6	6.3	67.3	108	7.3
9.0	17.5	6.1	64.9	107	7.3
9.5	17.5	6.0	63.8	107	7.2
10.0	17.3	5.5	58.0	106	7.2
10.5	17.0	4.2	44.9	106	7.1
11.0	16.3	2.7	25.6	105	7.1
11.5	15.2	0.3	2.5	102	7.0
12.0	14.7	0.3	2.6	103	7.0
12.5	14.2	0.2	1.9	102	6.9
13.0	13.9	0.2	1.6	102	6.9
13.5	13.2	0.2	1.5	99	6.9
14.0	13.1	0.2	1.5	98	6.9
14.5	12.7	0.2	1.3	99	6.9
15.0	12.4	0.2	1.4	97	6.9
15.5	12.1	0.2	1.3	97	6.9
16.0	11.8	0.1	1.4	97	6.8
16.5	11.3	0.1	1.3	99	6.8
17.0	11.0	0.1	1.2	102	6.8
17.5	10.8	0.1	1.2	103	6.8
18.0	10.4	0.1	1.3	107	6.8
18.5	10.2	0.1	1.2	111	6.8
19.0	10.0	0.1	1.2	118	6.9

8/26/2004
John Hrobar and Bill Braunschweig

26-Aug-04

Approximate air temp:26.6 C

No seechi due to strong current *Time: 1445*

SSE winds 8-12 mph gusty *40 % clouds*

Taken in Tailrace

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	18.3	7.4	79.7	108	7.4
0.5	18.3	7.4	79.6	109	7.4
1.0	18.3	7.4	79.4	108	7.4
1.5	18.3	7.3	79.1	108	7.3
2.0	17.5	7.6	80.7	110	7.3

Could only get to 2 meters due to strong current

26-Aug-04

Approximate air temp:26.6 C

Time: 1440

SSE winds 8-12 mph gusty *40 % clouds*

Taken on Tainter Gate side

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.4	8.0	88.4	109	7.5
0.5	19.2	7.9	86.9	109	7.5
1.0	18.9	7.8	85.0	109	7.5
1.5	18.8	7.7	84.2	109	7.5
2.0	18.7	7.7	83.9	109	7.5
2.5	18.7	7.7	83.6	109	7.5
3.0	18.6	7.7	83.5	109	7.4
3.5	18.6	7.6	83.2	109	7.4

Tailrace data for same time period as the flowage vertical profile on 8/26/04

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond.
1200	18.4	6.7	73.1	108
1300	18.3	7.4	79.9	108
1400	18.3	7.3	78.9	108

pH was not a parameter collected in the tailrace.

Highlighted Depth: Opening of the intake forebay (2 to 10 m)

9/9/2004
John Hrobar and Russ Rick
Flowage Vertical

9-Sep-04

Approximate air temp:21.1 C

Secchi Depth:8.0 ft. water depth 60 to 65' *Time: 1330*

Light variable winds almost calm *Clear skies*

Taken in flowage

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	21.2	7.9	89.5	106	7.7
0.5	19.9	8.8	88.8	106	7.6
1.0	19.2	8.1	88.2	106	7.6
1.5	19.1	8.0	87.5	106	7.6
2.0	18.8	8.0	86.5	106	7.5
2.5	18.7	7.9	84.9	107	7.4
3.0	18.7	7.9	85.2	107	7.4
3.5	18.6	7.7	83.5	107	7.4
4.0	18.6	7.7	83.3	107	7.4
4.5	18.6	7.7	83.0	107	7.4
5.0	18.5	7.6	82.2	107	7.3
5.5	18.6	7.6	82.0	107	7.3
6.0	18.6	7.6	82.2	107	7.3
6.5	18.5	7.5	80.3	107	7.2
7.0	18.9	7.2	77.9	107	7.2
7.5	18.4	7.2	77.3	106	7.2
8.0	18.4	7.1	76.5	106	7.2
8.5	18.4	7.1	76.1	106	7.2
9.0	18.3	7.0	75.1	106	7.1
9.5	18.2	6.9	74.1	106	7.1
10.0	18.1	6.8	72.5	106	7.1
10.5	17.9	6.4	68.7	106	7.0
11.0	17.4	4.8	50.5	106	6.8
11.5	16.9	3.5	36.8	105	6.7
12.0	15.9	1.7	17.3	103	6.5
12.5	15.2	0.8	8.1	102	6.5
13.0	14.6	0.6	6.3	102	6.5
13.5	14.1	0.6	6.4	102	6.6
14.0	13.7	0.5	5.2	102	6.6
14.5	13.4	0.5	4.9	102	6.6
15.0	12.7	0.5	4.6	101	6.6
15.5	12.2	0.4	4.2	101	6.5
16.0	11.9	0.4	4.1	100	6.5
16.5	11.6	0.4	4.0	105	6.5
17.0	11.3	0.4	3.8	107	6.6
17.5	10.8	0.4	3.5	111	6.6
18.0	10.5	0.4	3.5	114	6.6
18.5	10.3	0.4	3.4	116	6.6
19.0	10.1	0.4	3.2	142	7.5

Highlighted Depth: Opening of the intake forebay (2 to 10 m)

9/9/2004
John Hrobar and Russ Rick

9-Sep-04

Approximate air temp:21.1 C

No secchi due to stong current *Time: 1530*

Light variable winds almost calm *Clear skies*

Taken in Tailrace *Strong current*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	18.9	7.6	83.4	109	7.7
0.5	18.9	7.7	83.9	109	7.5
1.0	18.9	7.6	83.1	109	7.5
1.5	18.9	7.7	83.3	109	7.5
2.0	18.9	7.7	87.1	108	7.6

9-Sep-04

Approximate air temp:21.1 C

Secchi Depth:8.0 ft. *Time: 1530*

Light variable winds almost calm *Clear skies*

Taken on Tainter Gate side

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.5	8.0	87.6	109	7.5
0.5	18.8	7.8	84.7	109	7.5
1.0	18.7	7.8	84.5	109	7.5
1.5	18.5	7.8	84.5	109	7.4
2.0	18.1	7.8	83.8	109	7.4
2.5	17.7	8.0	84.8	109	7.4
3.0	17.4	8.1	85.8	108	7.5

Tailrace data for same time period as the flowage vertical profile on 9/9/04

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1300	18.4	7.9	85.3	109
1400	18.5	8.1	88.2	109
1500	18.8	7.8	84.8	109

pH was not a parameter collected in the tailrace.

9/23/2004
John Hrobar and Russ Rick
Flowage Vertical

23-Sep-04

Approximate air temp:21.1 C
Secchi Depth:11.0ft water depth 60 to 66' *Time: 1315*
SSW 8-12 mph *50% clouds*
Taken in Flowage

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.2	8.1	88.4	115	7.8
0.5	18.6	8.1	87.9	114	7.8
1.0	18.5	8.1	88.1	115	7.8
1.5	18.5	7.9	85.1	115	7.8
2.0	18.4	7.8	84.4	114	7.8
2.5	18.4	7.8	84.0	114	7.8
3.0	18.3	7.8	84.0	114	7.8
3.5	18.3	7.8	83.5	114	7.8
4.0	18.3	7.6	82.2	114	7.7
4.5	18.3	7.6	81.4	114	7.7
5.0	18.2	7.4	79.8	114	7.6
5.5	18.2	7.4	79.8	114	7.6
6.0	18.1	7.2	77.6	114	7.6
6.5	18.1	7.2	76.7	114	7.6
7.0	18.0	7.1	76.0	114	7.6
7.5	18.0	7.0	74.9	114	7.6
8.0	18.0	7.0	74.3	114	7.6
8.5	17.9	7.0	74.9	114	7.6
9.0	17.9	7.1	76.1	113	7.6
9.5	17.8	6.8	72.3	113	7.6
10.0	17.8	6.7	71.7	113	7.5
10.5	17.6	6.5	68.9	112	7.5
11.0	17.5	6.3	66.9	111	7.5
11.5	17.2	5.8	60.7	111	7.4
12.0	16.8	3.8	41.2	110	7.3
12.5	15.9	1.6	15.0	108	7.1
13.0	15.5	0.8	9.0	108	7.0
13.5	14.8	0.8	8.1	110	7.0
14.0	14.2	0.7	6.8	110	7.0
14.5	13.7	0.6	5.9	110	7.0
15.0	13.2	0.6	5.6	108	7.0
15.5	12.6	0.5	5.0	106	7.0
16.0	12.0	0.5	4.7	111	7.0
16.5	11.5	0.4	3.9	113	7.0
17.0	11.3	0.5	4.3	114	7.0
17.5	11.1	0.4	4.2	115	7.0
18.0	10.7	0.4	4.0	120	7.0
18.5	10.4	0.4	3.9	126	7.0
19.0	10.3	0.5	3.9	140	7.4

9/23/2004
John Hrobar and Russ Rick

23-Sep-04

Approximate air temp.21.1 C
No secchi taken *Time: 1500*
Southerly winds 8-12 mph *80% clouds*
Taken in Tailrace *No flow, no units in*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	20.3	8.0	89.4	115	7.7
0.5	20.0	7.8	86.5	115	7.7
1.0	18.9	7.5	81.4	115	7.7
1.5	18.4	7.5	80.9	115	7.7
2.0	18.4	7.4	79.6	115	7.6
2.5	18.1	7.4	79.5	115	7.7
3.0	18.1	7.4	79.0	115	7.7
3.5	18.1	7.4	78.9	115	7.6
4.0	18.0	7.4	78.9	115	7.6

Approximate air temp.21.1 C
No seechi taken *Time. 1510*
Southerly winds 8-12 mph *50% clouds*
Taken on Tainter Gate side

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	20.0	7.9	87.1	115	7.8
0.5	19.8	7.7	85.4	115	7.6
1.0	19.1	7.7	84.6	116	7.7
1.5	18.1	7.9	84.7	116	7.7
2.0	17.7	8.2	87.0	115	7.7
2.5	17.4	8.1	85.4	116	7.7

Tailrace data for same time period as the flowage vertical profile on 9/23/04

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1200	18.2	7.3	78.6	115
1300	19.1	7.5	82.0	115
1400	19.0	7.6	82.9	114

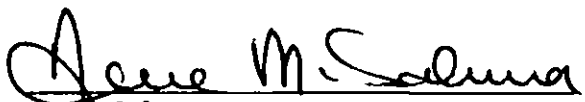
pH was not a parameter collected in the tailrace.

Highlighted Depth: Opening of the intake forebay (2 to 10 m)

Certificate of Service

I hereby certify that I have this day served the foregoing document upon all entities specified in the order to issue license to be consulted on matters related to the Commission filing. Service was done pursuant to Rule 2010 of FERC's Rules of Practice and Procedure 18 CFR, Section 385.2010

Dated this day Tuesday, February 08, 2005



Annie Salmona
We Energies

Annie Salmona
We Energies
333 W. Everett Street
Milwaukee, WI 53203
(414) 221-4151