ORIGINAL

Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, WI 54495-8050
Telephone 715 422 3111

November 20, 2001

Secretary David Boergers
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

054

Little Quinnesec Falls Hydroelectric Project – FERC No. 2536, Article 406 – Water Quality Monitoring Report

Dear Secretary Boergers:

Enclosed is the revised Water Quality Monitoring Plan for the above Project. In accordance with the approved plan issued July 1, 1999, Stora Enso North America (SENA) conducted a two-year monitoring program. We filed interim reports during the course of this study via e-mail to the resource agencies and Ms. Patricia Grant of your Chicago Regional Office. The contracted environmental firm produced a final report after the 2001-monitoring period (Titled Little Quinnesec Falls Hydroelectric Facility Water Quality Study, dated 14 August 2001, Attachment 1). This report summarizes the results from 1999 and 2000 while providing detailed results for 2001. Along with the report, we requested that the agencies consider removal of Article 406 since no adverse impacts have been observed from relicensing studies and the water quality study (Attachment 2). The agencies responded by concurring with the results but declining to eliminate the Article due to the relative short duration the new license has been in effect (Attachments 3-5). In consultation with the agencies, we modified the plan twice before reaching an agreement (Attachments 6-14). The revised plan is enclosed, dated November 19, 2001.

Sincerely,

STORA ENSO NORTH AMERICA

Mark E. Anderson
Resources Coordinator

STORAENSO

November 20, 2001

Secretary David Boergers
Federal Energy Regulatory Commission
Page 2.

Enclosures: Water Quality Monitoring Plan dated November 19, 2001
Attachment 1 - Little Quinnesec Falls Hydroelectric Facility Water Quality Study, dated 14 August 2001
Attachment 2 – SENA Consultation dated August 24, 2001
Attachment 3 – MDNR Consultation dated September 13, 2001
Attachment 4 – USFWS Consultation dated September 24, 2001
Attachment 5 – WDNR Consultation dated September 25, 2001
Attachment 6 – SENA Consultation dated September 26, 2001 (via e-mail)
Attachment 7 - USFWS Consultation dated September 26, 2001 (via e-mail)
Attachment 8 – SENA Consultation dated October 12, 2001 (via e-mail)
Attachment 9 – WDNR Consultation dated October 16, 2001
Attachment 10 – MDNR Consultation dated October 16, 2001
Attachment 11 – SENA Consultation dated October 19, 2001
Attachment 12 – MDNR Consultation dated October 30, 2001
Attachment 13 – USFWS Consultation dated October 31, 2001
Attachment 14 – WDNR Consultation dated November 19, 2001 (via e-mail)

Route: T.G. Scharff – File (Little Quinnesec Falls, LG-90-30 – Article 406)

CC: D.W. Schmutzler – N
Ms. Peggy A. Harding, Director, FERC—CRO
Mr. Tom Meronek, Wisconsin Department of Natural Resources, 101 North Ogden, P.O. Box 208, Peshtigo, WI 54157
Ms. Jessica Mistak, Michigan Department of Natural Resources, Habitat Protection Unit, Fisheries Division, P.O. Box 30028, Lansing, MI 48909-7528
Mr. James Fossum, U.S. Fish & Wildlife Service, 1015 Challenger Court, Green Bay, WI 54311-8331

1. PURPOSE.

To ensure that releases from the Little Quinnesec Falls Project, FERC No. 2536, maintain State water quality standards immediately below the Project except when river flow in the Menominee River is < 95% exceedance flow or when natural conditions prohibit attainment of those standards. As indicated in the new license issued May 7, 1997, these are:

Temperature	< 89°F
Dissolved Oxygen	> 5.0 mg/L
pH	6.0 - 9.0

A two-year study revealed no water quality problems associated with the Project area. Consequently, this modified plan calls for only periodic monitoring based upon an agreed upon timetable.

2. SCOPE.

The monitoring station will remain located in the Little Quinnesec Project tailrace, upstream of the Stora Enso North America (SENA) - Niagara mill wastewater treatment discharge point. Continuous monitoring equipment will record on an hourly basis—temperature, dissolved oxygen, and pH. The test parameters and monitoring schedule are consistent with the previous study.

Monitoring will occur during the months of May through September. The first monitoring year will occur in 2006 at a frequency of every five years for a twenty-year period (2006, 2011, 2016, and 2021). This schedule is a reflection of existing evidence from the two-year study and data gathered during the relicensing of the Project showing no water quality problems at the Project along with consultation with the US Fish & Wildlife Service, Wisconsin Department of Natural Resources, and Michigan Department of Natural Resources. If no adverse water quality issues are observed during this twenty-year monitoring effort, the agencies agree to allow elimination of the Article from the license.

3. LOW D.O. EVENTS.

If, during continuous monitoring, a low D.O. event is recorded, one-meter intervals will be taken throughout the water column in a deep part of the impoundment immediately upstream from the Project. This measure is to determine if water entering the Project is contributing to the event. The state and federal agencies will be notified by telephone or e-mail that an event has occurred within five working days. The results of the profile sampling and any circumstances that may have caused the event will be reported to the resource agencies within thirty working days and summarized in the monitoring report filed by the end of November.

If data supports the conclusion that the low D.O. event is related to the operation of the Little Quinnesec Falls Project, SENA will consult with the agencies on any revisions to the monitoring plan considered appropriate and approved by the FERC.

4. QUALITY ASSURANCE PROGRAM.

Continuous monitoring equipment will be calibrated periodically during the monitoring period using appropriate methodology noted in "Standard Methods for the Examination of Water and Wastewater", 18th Edition.

Temperature	Method 2550 B
Dissolved Oxygen	Method 4500-0 C
pH	Method 4500 - H+

5. REPORTING.

Data from the continuous monitoring will be electronically recorded and stored at SENA's Niagara mill. The FERC, USFWS, WDNR, MDNR, and MDEQ will receive a report with supporting data no later than November 30 of the monitoring year.

As noted in section three above, the agencies will be notified of low D.O. events within five working days from the date of the occurrence with results of the profile sampling within thirty days.

WHITE WATER ASSOCIATES, INC.

Little Quinnesec Falls Hydroelectric Facility
Water Quality Study (FERC Project No. 2536-021)

Report Submitted to:
Stora Enso North American Corp.

David Schmutzler
1101 Mill St.
Niagara WI 54141
Phone: (715) 251-8253

Mark Anderson
P.O. Box 8050
Wisconsin Rapids, WI 54495-8050
Phone: (715) 422-3927

Submitted by:
White Water Associates, Inc.
429 River Lane, P.O. Box 27
Amasa, Michigan 49903
Phone: (906) 822-7373
Fax: (906) 822-7977
E-mail: whitewtr@up.net

Prepared by:
Kent Premo, M.S.

INTRODUCTION

White Water Associates, Inc. (White Water) is a full-service laboratory and ecological consulting firm located in Amasa, Michigan. In 1999, White Water was contracted by the operator of the Little Quinnesec Falls (LQF) Hydroelectric Facility in Niagara, Wisconsin, to carry out a two-year water quality monitoring study outlined in a Federal Regulatory Commission (FERC) order issued July 1 of that year (Appendix A). At the time, Consolidated Papers Inc., Niagara Division, was the operator; since then, Stora Enso North America Corporation (SENA) has been responsible for operating the facility. This report summarizes work fulfilling the water quality monitoring plan approved by FERC order under Project No. 2536-021, including data collected for the 2001 monitoring season, as well a summary of past work and findings since the order approving the plan.

BACKGROUND

Article 406 of the license for the LQF Project issued May 7, 1997, specified that the licensee file a plan to monitor dissolved oxygen concentration (DO), water temperature, and pH of the Menominee River at the project. The purpose of the monitoring was to ensure that releases from the project maintain state standards for water temperature, dissolved oxygen (DO) concentration, and pH in the Menominee River immediately downstream of the project. The plan, provided in Appendix A, was developed after consultation with the Michigan Department of Natural Resources, the Wisconsin Department of Natural Resources, and the U.S. Fish and Wildlife Service.

The point designated for the monitoring station was upstream of the wastewater treatment discharge point. Continuous monitoring equipment was to be installed there for measuring the three water quality parameters of concern. Monitoring also involved special provisions in the case of a low DO event, defined to be less than 5.0 mg/L. These provisions included taking a vertical measurement (i.e., profile) of the deepest part of the project reservoir and contacting the agencies within two days of the event.

In addition to the DO limit, the proposed plan also indicated that temperature readings be less than 32°C (89°F) and pH readings be between 6.0 and 9.0 (standard units).

Sampling was to take place during the summer months, when high ambient temperatures and local streamflows were most likely to lead to high water temperatures and low DO concentrations. To fulfill the order, White Water undertook monitoring from May through September for the equivalent of two years. (Data collection for 1999 and 2000 actually went well beyond September 30.)

METHODS

A Hydrolab Datasonde 3 (DS3) was used to measure temperature, DO, and pH. The DS3 unit is basically a plastic cannister equipped with various environmental probes on one end and an external connector on the other. The temperature probe was factory calibrated; probes for the latter two parameters were calibrated according to manufacturer's specifications. The DS3 unit was deployed in an open aluminum tube with a perforated bottom fixed to a concrete deck structure directly below the tailrace abutting the dam operations building.

The DS3 unit was controlled by a programmable Campbell Scientific datalogger (Model CR-510) mounted in a weatherproof cabinet, powered by a solar panel, and attached by underwater cable to the DS3's external connector. The datalogger was programmed to (1) prompt the DS3 to take measurements every hour then (2) store and process the data. The datalogger was programmed to have an attached voice synthesizer modem dial a prescribed phone number and deliver a warning message if the DO approached the level of concern (within 0.5 of the 5.0 mg/L limit).

The datalogger was called by computer approximately weekly to allow downloading data acquired during that period and to assess that the equipment was functioning properly. The deployed DS3s were also programmed to measure and record data as a backup in case of system failure. During all of the first year (1999) and part of the second (2000), we had to depend on the internal storage capacity of the DS3s as the Campbell datalogger was either not yet installed or not programmed to acquire all the needed parameters (specifically, pH).

FINDINGS

1999 Results

By August 4, 1999, a DS3 unit was deployed below the LQF Dam. Due to the July timing of the order approving the water quality monitoring plan, the datalogger had not yet been ordered, programmed, or installed. As a result, personnel had to regularly capture and analyze readings for low DO events. Results on parameters of interest, including dissolved oxygen, pH, and temperature were collected for more than two months and reported to the client and the agencies at the end of the season. DO, temperature, and pH were all within standards set by the water quality monitoring plan.

2000 Results

The DS3/datalogger combination was deployed in late April to prepare for collection from May through September. On May 9, however, the deployed unit was lost when the protective aluminum tube and securing chain became disconnected from the concrete deck structure directly below the tailrace at the dam operations building. With the loss of the unit and its connecting structure, there was a delay in deployment until June 6. The DS3 unit was never rescued.

During the 2000 season, we decided to change the type of membrane used for the DO probe from a LoFlow™ membrane to a standard type. DS3s equipped with standard membranes showed slightly more variation in DO from reading to reading, but performed dependably with fewer maintenance problems. DO, temperature, and pH were all within standards set by the water quality monitoring plan, although some lapses in pH calibration required post-calibration correction of data.

2001 Results

The DS3/datalogger combination was deployed in April 27, 2001, for a planned monitoring period from May through August 5, fulfilling the requirement for two years of data collection during the summer months. (This shortened season in 2001 was supported in correspondence by the Michigan and Wisconsin Departments of Natural Resources, copies of which appear in Appendix A.)

The combination has worked reliably, collecting data on the hour. The only quirk has been an occasional failure by the datalogger to capture data for a given hourly reading on a somewhat predictable basis (usually every 3 days at either 0700 or 1500). The regularity of this failure points to a likely problem with the datalogger. Correspondence with the manufacturer (Campbell Scientific) resulted in the following message from their technical support staff: "This looks very similar to something that we ran across with our CR10X dataloggers with a certain operating system. We dubbed it the 12-hour SDI-12 bug as the error would occur exactly every 12 hours. The CR510 and CR10X have almost identical operating system so I'm suspecting that is it in one form or another."

The fix for the problem involved upgrading the datalogger's operating system, in the process wiping out the unit's memory and programming. Rather than risk a stable installation with an uncertain fix, we decided to keep the equipment running as is. The failure was minor (only 29 occurrences between deployment and August 3) and readings on either side of the failure indicated monitored parameters are well within compliance ranges.

At no time during the deployment have records shown any DO readings approaching the level of concern. Data for 2001 appear at the end of this report in Appendix B as tables summarizing monthly and weekly results, monthly graphs of DO and temperature, and a graph showing the three-month course of pH readings, both actual and corrected. Results for pH were corrected as a result of a post-deployment calibration, which showed the readings given by the probe to be high by the end of the deployment. This difference was subtracted from the results in a linear manner, starting with no correction at the beginning of the deployment and incrementing to a full correction (0.65) by the time the unit was retrieved. The complete data set for 2001 is included (Appendix C), and an Excel spreadsheet is also provided.

CONCLUSIONS

The FERC order specified that data be collected for two years during the summer months; our plan considered this period to be May through September. With very few interruptions and only one late start (due to equipment loss), we collected data hourly for these months, spanning from August 4, 1999 to August 5, 2001. Water quality data indicated that during periods of deployment from 1999 through 2001, dissolved oxygen readings were always well above the level of concern (5.0 mg/L). Temperature and post-corrected pH data during the period of measurement were also within the range of compliance.

White Water has seen no data to suggest that water quality standards below the hydroelectric facility are being compromised by the project.

APPENDIX A:

Background Documents and Correspondence

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Consolidated Papers, Inc.) Project No. 2536-021

ORDER APPROVING WATER QUALITY MONITORING PLAN

(Issued July 1, 1999)

On December 3, 1997, Consolidated Papers, Inc., licensee for the Little Quinnesec Project (FERC No. 2536), filed its Water Quality Monitoring Plan. The plan was required by article 406 of the project license. 1/ The project is located on the Menominee River, in Dickinson County, Michigan, and Marinette County, Wisconsin.

BACKGROUND

A new license for the Little Quinnesec Project was issued on May 7, 1997. Article 406 of that license required the licensee to file a plan, for Commission approval, to monitor dissolved oxygen concentration (DO), water temperature, and pH of the Menominee River at the Project. The purpose of the monitoring is to ensure that releases from the project maintain state standards for water temperature, dissolved oxygen (DO) concentration, and pH in the Menominee River immediately downstream of the project, whenever river flows are greater than the 95 percent exceedence flow, or when natural conditions prohibit attainment of the standards. The plan was to be developed after consultation with the Michigan Department of Natural Resources (MDNR), the Wisconsin Department of Natural Resources (WDNR), and the U.S Fish and Wildlife Service (FWS).

THE PROPOSED PLAN

The licensee proposes to establish a monitoring station at the Little Quinnesec Project tailrace, upstream of the Consolidated Papers, Inc. - Niagara Division, wastewater treatment discharge point. Continuous monitoring equipment would record water temperature, DO concentration, and pH at hourly intervals.

1/ 79 FERC ¶ 62,095 (1997)

Monitoring would be conducted from May through September for two years. If, after two years, data suggests that water quality problems do not exist, the licensee, in consultation with the agencies, would pursue modification or elimination of this article from the license.

If the continuous monitoring indicated a low DO event, the licensee would conduct an in-situ vertical measurement (i.e., profile) of water temperature and DO concentration in a deep part of the project reservoir, to determine whether project operation was contributing to the low DO event. The licensee proposes to notify the agencies of the occurrence of any such event within two business days. The licensee would include in this notification the results of any profile sampling or other information that might indicate the cause of the event.

The licensee proposes to store the continuous monitoring data in electronic format at its corporate office. The licensee would provide the resource agencies with data summary sheets via email by July 30 and October 30 of each year.

AGENCY COMMENTS

The licensee consulted with the agencies in the development of its proposal on October 22, 1997. All but two of the agency recommendations were adopted by the licensee in its proposed plan. The licensee did not agree to MDNR's request that it conduct continuous monitoring for DO at the upstream Big Quinnesec Falls Project (FERC No. 1980). The licensee stated that that it did not feel this was appropriate since it did not own the Big Quinnesec Project and can not control their operations. Also, the licensee did not agree to conduct once-per week in-situ vertical profiles of water temperature and DO concentration in the project reservoir. Instead, the licensee proposed to conduct such profiles only when the continuous monitoring below the Little Quinnesec Dam indicated that a low DO event was occurring.

DISCUSSION AND CONCLUSION

The licensee's plan outlines a program that is adequate for monitoring whether releases from the Little Quinnesec Project maintain state standards for water temperature, DO, and pH in the Menominee River below the project, in acordance with the requirements of article 406. Sampling is proposed for the summer months, during which high ambient temperatures and low streamflows may lead to high water temperatures and low DO concentrations.

WATER QUALITY MONITORING PLAN - ARTICLE 406

CONSOLIDATED PAPERS, INC.
NIAGARA DIVISION

HYDRO PROJECT NO. 2536
LITTLE QUINNESEC FALLS

I. Purpose

To ensure that releases from Project No. 2536 maintain State water quality standards below the project except when river flow in the Menominee River is <95% exceedance flow or when natural conditions prohibit attainment of those standards.

Temperature	<89°F ~32°C
Dissolved oxygen	>5.0 mg/l
pH	6.0 - 9.0

II. Scope

A monitoring station will be established at the Little Quinnesec Project Tailrace, upstream of the CPI, Niagara Division, wastewater treatment outfall.

"Summertime" dissolved oxygen profiles will be taken at one meter intervals in the deep location of the impoundment during low D.O. events to verify water quality as it enters the project.

III. Quality Assurance Program

Continuous recording equipment will be calibrated periodically during the monitoring period using appropriate methodology noted in "Standard Methods for the Examination of Water and Wastewater", 18th Edition.

Temperature	Method	2550 B
Dissolved Oxygen	Method	4500-0 C
pH	Method	4500-H+

IV. Timetable and Reporting

Continuous recording equipment for temperature, dissolved oxygen, and pH will be installed at the Little Quinnesec Tailrace site. Data will be recorded on an hourly basis for a two year period (May-September) commencing in 1998.

Data summary reports will be submitted to MDNR, MDEQ, WDNR, USFWS, and the Commission electronically (E-mail with cover sheet) within 30 days from the end of the quarter (by July 30 and October 30).

Notice of water quality standard exceedance will be provided to the Agencies noted above within one working day.

V. Consultation with Agencies

During consultation with the Agencies, it was determined that no factual data existed to indicate a water quality problem at Little Quinnesec. Based on this information, it was agreed upon between CPI and the Agencies to maintain water quality, based on the above plan, for two years. Based on the data received during these two years, and after consultation with the Agencies, CPI may file to modify or possibly eliminate water quality monitoring if it is determined no impacts are being caused by Project operation.

DWS:sd

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T MASON BUILDING, PO BOX 30028, LANSING MI 48909-7528
WEBSITE www.dnr.state.mi.us
K. L. COOL, Director

REPLY TO

MARQUETTE FISHERIES STATION
488 CHERRY CREEK RD
MARQUETTE MI 49855-8999

TEL (906) 249-1611
FAX (906) 249-3190

Refer to: 4202.2.32

November 15, 2000

Mr. Kent Premo
White Water Associates, Inc.
429 River Lane
PO Box 27
Amasa, MI 49903

Dear Mr. Premo:

Subject: Little Quinnesec Falls Dam, FERC No. 2536
Water Quality Monitoring

The Little Quinnesec Project (FERC No. 2536) was ordered on July 1, 1999 to conduct water quality monitoring. The purpose of the monitoring was to ensure that releases from the project maintain the state standards for water temperature (<89F), dissolved oxygen (DO) (>5.0mg/L), and pH (6.0-9.0) in the Menominee River immediately downstream of the project. This monitoring was to be conducted from May through September for two years. If, after two years, data suggested that water quality problems did not exist, the licensee, in consultation with the agencies, could pursue modification or elimination of this article from the license.

On November 3, 2000, White Water Associates, Inc. provided the final 2000 report for the water quality monitoring below Little Quinnesec Dam. They have requested on behalf of their client that the MDNR advise whether further sampling needs done.

Water quality data submitted from August and September of 1999, along with data from June through September of 2000 appears to meet minimum standards. However, there is an obvious lack of data, especially in the months of May, June, and July. I propose that water quality, including water temperature, DO, and pH be monitored in May, June, and July of 2001. This monitoring will fulfill the requirements as stated in the FERC order.

If you have any questions, please contact me.

Sincerely,

Jessica Mistak

Jessica Mistak
Habitat Protection Unit
Fisheries Division
906/249-1611

cc: Dr. Kurt Newman, MDNR, Supervisor, HPU
Mr. Jim Fossum, USFWS
Mr. Tom Meronek, Wisconsin DNR

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
Ronald W. Kazmierczak, Regional Director

Peshtigo Service Center
PO Box 208
101 N. Ogden Rd.
Peshtigo, Wisconsin 54157
Telephone 715-582-5052
FAX 715-582-5005

December 13, 2000

8

Mr. Kent Premo
White Water Associates, Inc.
429 River Lane
Amasa, MI 49903

RE: Little Quinnesec Falls Dam, FERC No. 2536, Water Quality Monitoring

The Wisconsin Department of Natural Resources has no comments on the water quality monitoring. However, we support the comments of the Michigan Department of Natural Resources, which were submitted by MDNR to you on November 15, 2000.

Sincerely,

Thomas G. Meronek
Fisheries Biologist/NER FERC Coordinator

cc: Mr. Kurt Newman, MDNR, Supervisor, HPU
Ms. Jessica Mistak, MDNR, HPU
Mr. Jim Fossum, USFWS

TM/LittleQ/WQ_2000

APPENDIX B:

Summary Tables and Graphs

Monthly Average, Minimum, Maximum, Standard Deviation, 2001 Monitoring
Below Little Quinnesec Falls Hydroelectric Dam, Niagara, WI

Temperature	Average	Minimum	Maximum	Std Dev
May	15.22	12.63	18.89	1.31
June	19.22	14.16	25.43	2.77
July	23.72	21.12	26.73	1.13
Aug. (through 8/6, 800)	24.40	23.00	26.09	0.86
OVERALL	23.72	12.63	26.73	4.02

Dissolved Oxygen	Average	Minimum	Maximum	Std Dev
May	8.83	7.61	10.03	0.52
June	7.52	6.12	9.32	0.64
July	6.88	6.02	8.05	0.35
Aug. (through 8/6, 800)	6.81	6.04	7.71	0.46
OVERALL	7.70	6.02	10.03	0.96

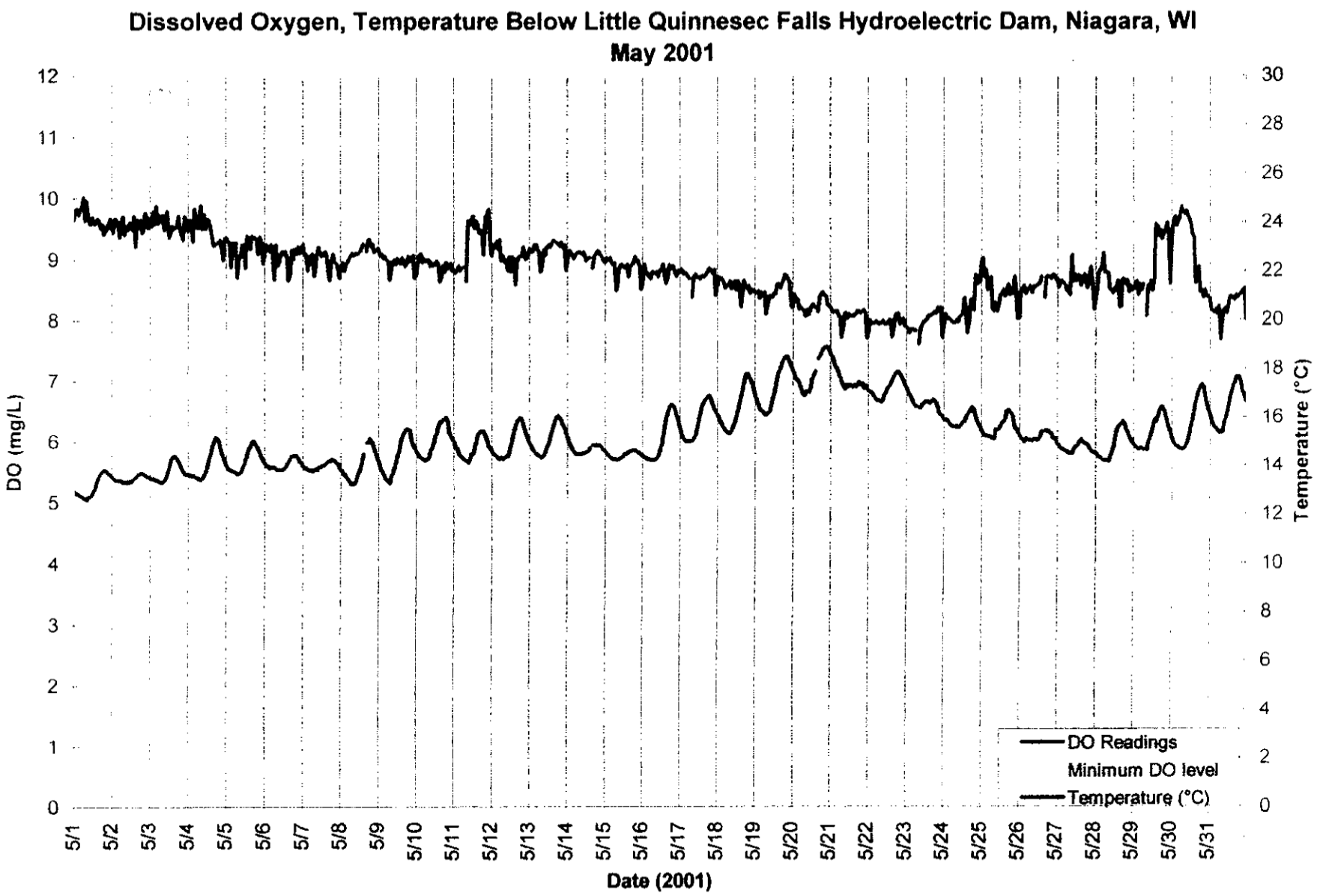
pH	Average	Minimum	Maximum	Std Dev
May	7.67	7.55	7.91	0.07
June	7.84	7.71	8.01	0.06
July	8.18	7.90	8.53	0.13
Aug. (through 8/6, 800)	8.28	8.09	8.56	0.13
OVERALL	7.92	7.55	8.56	0.24

Standards:
Temp. < 32°C (89°F)
DO > 5.0 mg/L
pH = 6.0 -9.0

Weekly Minimums and Maximums, 2001 Monitoring
Below Little Quinnesec Falls Hydroelectric Dam, Niagara, WI

Begin	End	Temp. (°C)		DO (mg/L)		pH (s.u.)	
Date	Date	Max.	Min.	Max.	Min.	Max.	Min.
April 30	May 6	15.19	11.56	10.31	8.66	7.69	7.56
May 7	May 13	16.06	13.25	9.82	8.59	7.77	7.55
May 14	May 20	18.89	14.24	9.14	8.06	7.72	7.60
May 21	May 27	18.57	14.51	9.07	7.61	7.84	7.61
May 28	June 3	17.66	14.16	9.86	7.66	7.91	7.70
June 4	June 10	19.44	14.16	9.32	7.48	7.89	7.73
June 11	June 17	21.29	17.49	7.90	6.97	7.88	7.74
June 18	June 24	21.49	18.84	7.65	6.52	7.99	7.77
June 25	July 1	25.43	19.83	7.28	6.12	8.11	7.81
July 2	July 8	23.98	21.12	7.64	6.02	8.23	7.90
July 9	July 15	24.56	22.09	8.05	6.30	8.45	8.03
July 16	July 22	26.33	22.68	7.53	6.19	8.44	8.03
July 23	July 29	26.73	22.84	7.50	6.10	8.53	8.14
July 30	Aug 5	26.09	22.68	7.71	6.04	8.56	8.09

Standards:
Temp. < 32°C (89°F)
DO > 5.0 mg/L
pH = 6.0 -9.0


Dissolved Oxygen, Temperature Below Little Quinnesec Falls Hydroelectric Dam, Niagara, WI
May 2001
DO (mg/L)
Temperature (°C)
Date (2001)
DO Readings
Minimum DO level
Temperature (°C)
0
1
2
3
4
5
6
7
8
9
10
11
12
0
2
4
6
8
10
12
14
16
18
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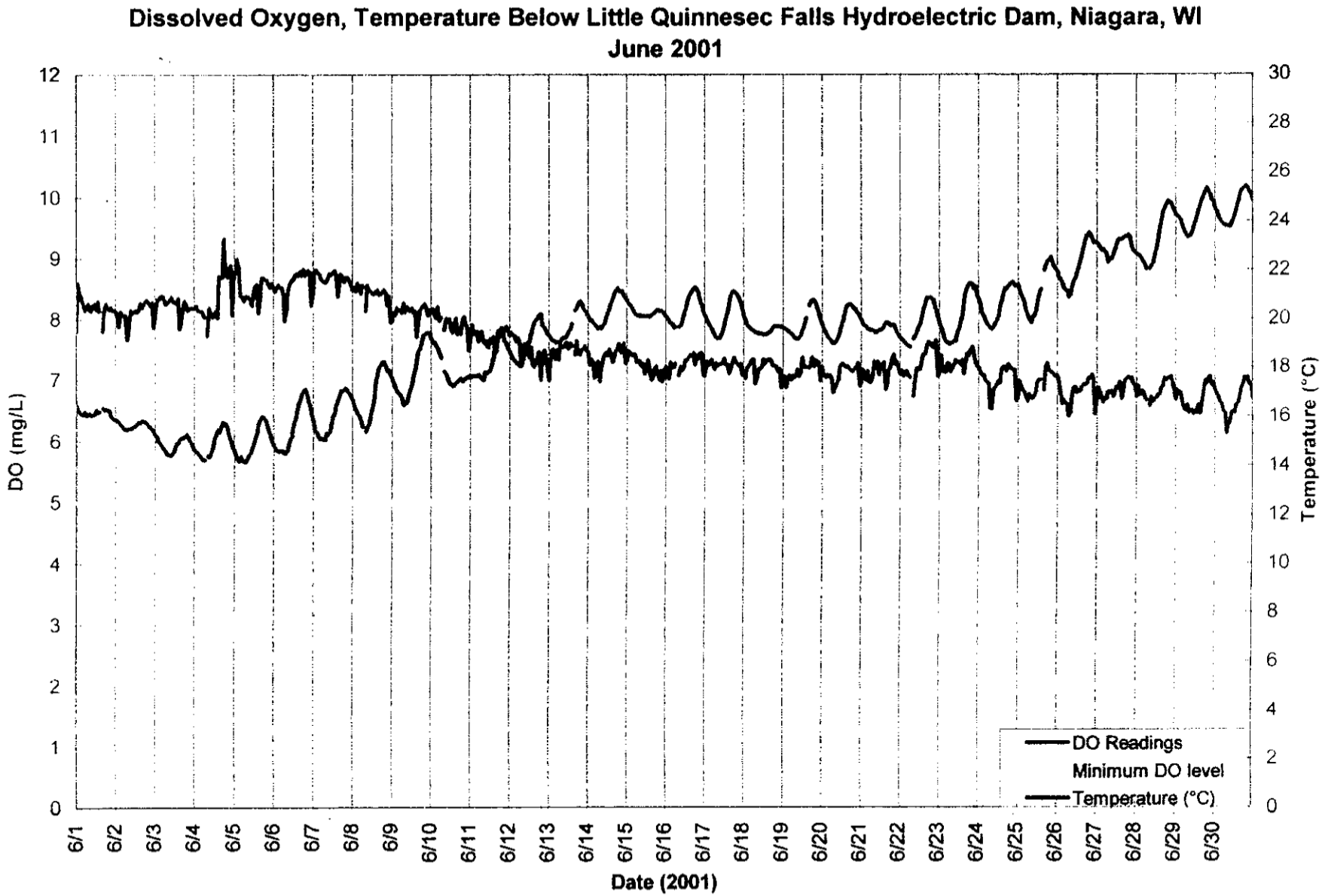
Dissolved Oxygen, Temperature Below Little Quinnesec Falls Hydroelectric Dam, Niagara, WI
June 2001
DO (mg/L)
Temperature (°C)
Date (2001)
DO Readings
Minimum DO level
Temperature (°C)
0
1
2
3
4
5
6
7
8
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2
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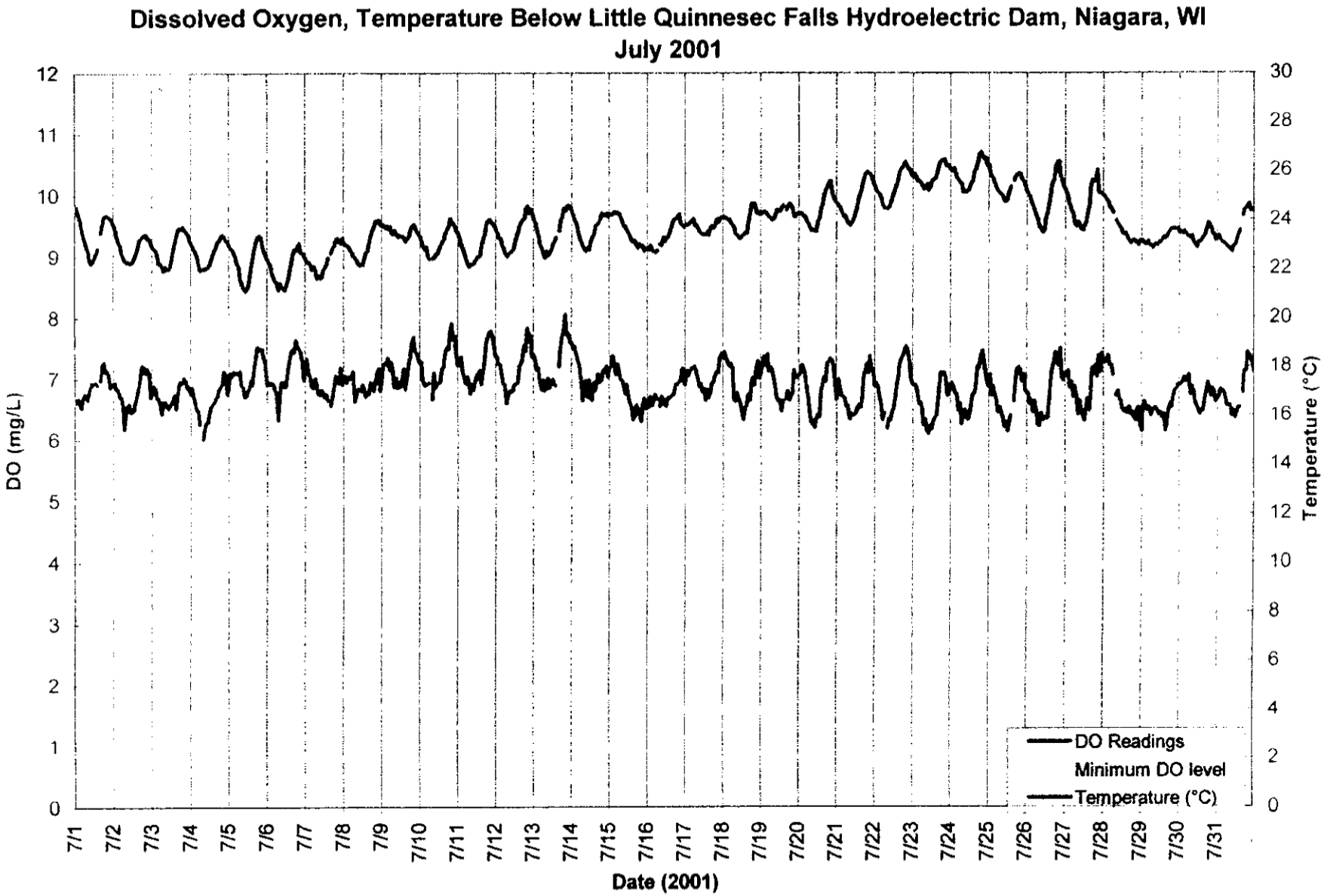
Dissolved Oxygen, Temperature Below Little Quinnesec Falls Hydroelectric Dam, Niagara, WI
July 2001
DO (mg/L)
Temperature (°C)
Date (2001)
DO Readings
Minimum DO level
Temperature (°C)
0
1
2
3
4
5
6
7
8
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12
0
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4
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7/22
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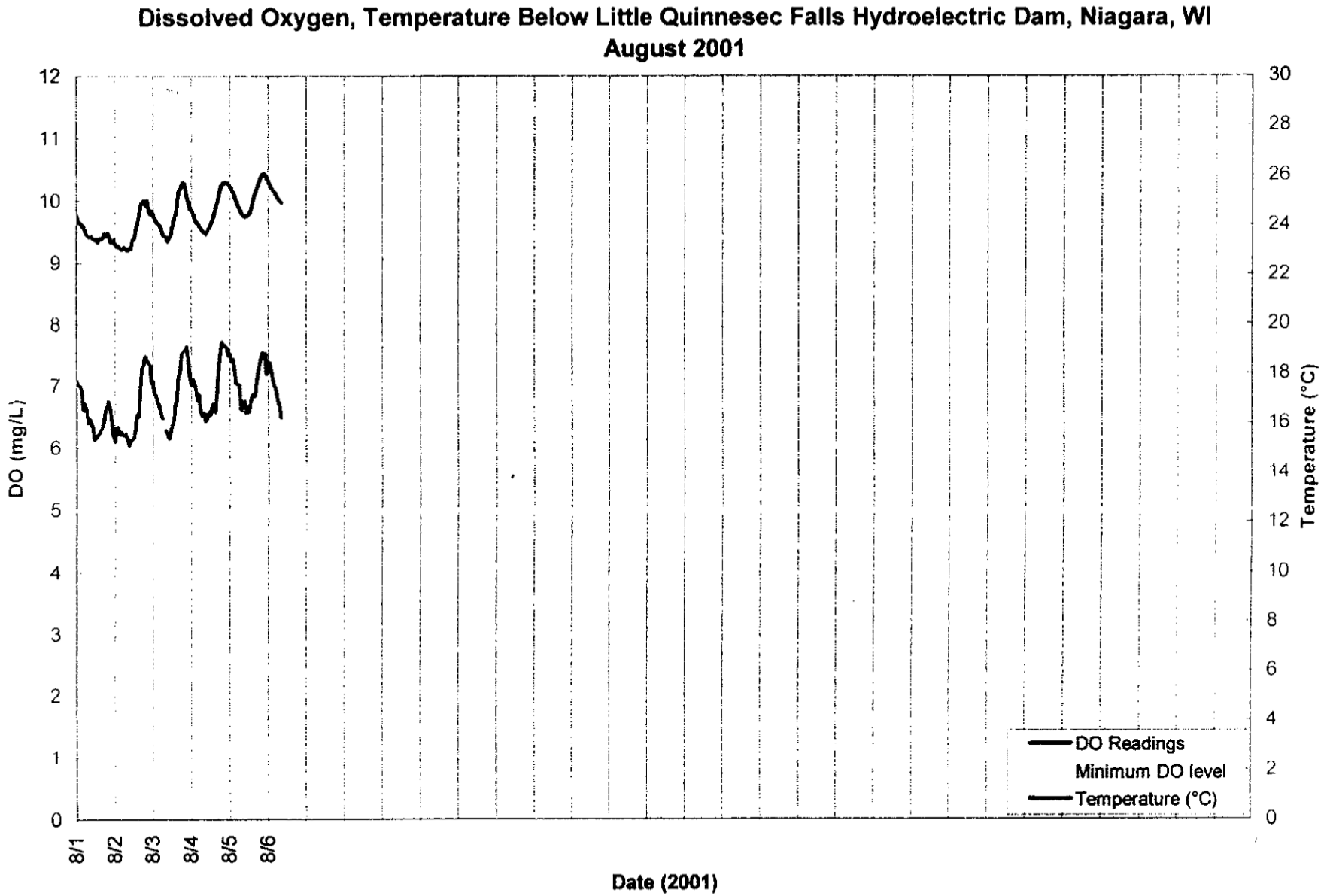
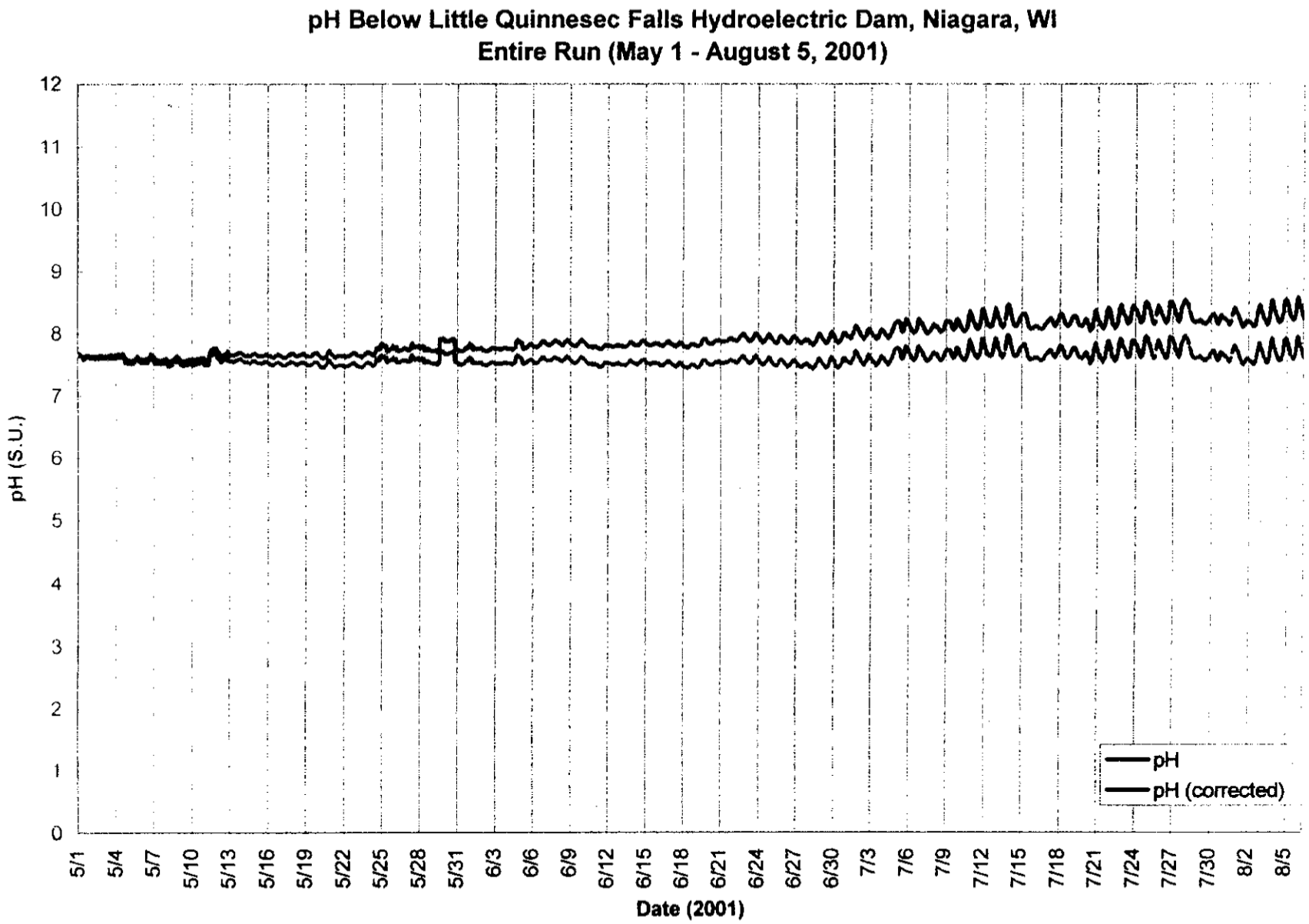
7/29
7/30
7/31


Dissolved Oxygen, Temperature Below Little Quinnesec Falls Hydroelectric Dam, Niagara, WI
August 2001
DO (mg/L)
Temperature (°C)
Date (2001)
8/1
8/2
8/3
8/4
8/5
8/6
DO Readings
Minimum DO level
Temperature (°C)


pH Below Little Quinnesec Falls Hydroelectric Dam, Niagara, WI
Entire Run (May 1 - August 5, 2001)
pH (S.U.)
0
1
2
3
4
5
6
7
8
9
10
11
12
5/1
5/4
5/7
5/10
5/13
5/16
5/19
5/22
5/25
5/28
5/31
6/3
6/6
6/9
6/12
6/15
6/18
6/21
6/24
6/27
6/30
7/3
7/6
7/9
7/12
7/15
7/18
7/21
7/24
7/27
7/30
8/2
8/5
Date (2001)
pH
pH (corrected)

APPENDIX C:

Complete 2001 Results

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
4/27/01	1500	11.28	7.65	11.76	4/29/01	1800	12.86	7.69	9.95
4/27/01	1600	11.41	7.69	11.38	4/29/01	1900	12.86	7.69	9.67
4/27/01	1700	11.38	7.72	11.01	4/29/01	2000	12.72	7.69	9.99
4/27/01	1800	11.35	7.71	10.82	4/29/01	2100	12.59	7.69	9.89
4/27/01	1900	11.23	7.70	10.80	4/29/01	2200	12.44	7.68	9.85
4/27/01	2000	11.00	7.71	10.77	4/29/01	2300	12.21	7.68	10.12
4/27/01	2100	10.81	7.74	10.63	4/30/01	0	12.03	7.66	9.86
4/27/01	2200	10.62	7.75	10.69	4/30/01	100	11.89	7.67	10.22
4/27/01	2300	10.54	7.75	10.58	4/30/01	200	11.80	7.66	10.17
4/28/01	0	10.40	7.74	10.64	4/30/01	300	11.82	7.64	9.97
4/28/01	100	10.30	7.69	10.63	4/30/01	400	11.72	7.65	10.08
4/28/01	200	10.20	7.69	10.66	4/30/01	500	11.66	7.64	10.15
4/28/01	300	10.17	7.68	10.62	4/30/01	600	11.56	7.64	10.31
4/28/01	400	10.09	7.70	10.82	4/30/01	700	11.58	7.62	9.80
4/28/01	500	10.02	7.71	10.79	4/30/01	800	11.56	7.64	10.06
4/28/01	600	9.95	7.68	10.71	4/30/01	900	11.62	7.62	9.87
4/28/01	700	9.92	7.69	10.66	4/30/01	1000	11.73	7.64	9.98
4/28/01	800	9.95	7.64	10.69	4/30/01	1100	11.93	7.65	10.03
4/28/01	900	10.07	7.70	10.61	4/30/01	1200	12.23	7.66	10.11
4/28/01	1000	10.27	7.71	10.66	4/30/01	1300	12.59	7.65	9.72
4/28/01	1100	10.56	7.67	10.65	4/30/01	1400	12.92	7.68	9.91
4/28/01	1200	10.90	7.72	10.52	4/30/01	1500	13.22	7.68	9.72
4/28/01	1300	11.20	7.75	10.59	4/30/01	1600	13.45	7.68	9.48
4/28/01	1400	11.52	7.76	10.33	4/30/01	1700	13.57	7.67	9.73
4/28/01	1500	11.84	7.77	10.52	4/30/01	1800	13.55	7.69	9.71
4/28/01	1600	12.03	7.76	10.77	4/30/01	1900	13.47	7.68	9.70
4/28/01	1700	12.13	7.77	10.54	4/30/01	2000	13.35	7.68	9.56
4/28/01	1800	12.15	7.76	10.39	4/30/01	2100	13.20	7.68	9.76
4/28/01	1900	11.98	7.75	10.52	4/30/01	2200	13.09	7.67	9.75
4/28/01	2000	11.85	7.72	10.36	4/30/01	2300	12.99	7.68	9.88
4/28/01	2100	11.62	7.68	10.26	5/1/01	0	12.96	7.65	9.65
4/28/01	2200	11.44	7.66	10.28	5/1/01	100	12.89	7.67	9.82
4/28/01	2300	11.27	7.67	10.38	5/1/01	200	12.86	7.68	9.84
4/29/01	0	11.15	7.67	10.33	5/1/01	300	12.82	7.68	9.73
4/29/01	100	11.09	7.64	10.30	5/1/01	400	12.79	7.66	9.81
4/29/01	200	10.97	7.69	10.45	5/1/01	500	12.76	7.67	9.87
4/29/01	300	10.97	7.63	10.28	5/1/01	600	12.71	7.66	10.03
4/29/01	400	10.87	7.62	10.34	5/1/01	700	12.69	7.65	9.64
4/29/01	500	10.86	7.62	10.29	5/1/01	800	12.63	7.65	9.97
4/29/01	600	10.77	7.64	10.27	5/1/01	900	12.72	7.62	9.79
4/29/01	700	10.71	7.64	10.31	5/1/01	1000	12.76	7.61	9.59
4/29/01	800	10.74	7.62	10.28	5/1/01	1100	12.81	7.60	9.58
4/29/01	900	10.79	7.62	10.40	5/1/01	1200	12.93	7.61	9.69
4/29/01	1000	10.87	7.65	10.54	5/1/01	1300	13.07	7.63	9.59
4/29/01	1100	11.05	7.66	10.34	5/1/01	1400	13.29	7.62	9.60
4/29/01	1200	11.33	7.68	10.25	5/1/01	1500	13.50	7.62	9.67
4/29/01	1300	11.66	7.69	10.27	5/1/01	1600	13.62	7.66	9.65
4/29/01	1400	12.02	7.69	10.15	5/1/01	1700	13.73	7.65	9.51
4/29/01	1500	12.36	7.70	10.10	5/1/01	1800	13.80	7.66	9.58
4/29/01	1600	12.61	7.68	9.96	5/1/01	1900	13.85	7.65	9.42
4/29/01	1700	12.82	7.68	10.01	5/1/01	2000	13.81	7.66	9.46

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
5/1/01	2100	13.73	7.65	9.57	5/4/01	0	13.65	7.66	9.48
5/1/01	2200	13.68	7.65	9.52	5/4/01	100	13.62	7.66	9.65
5/1/01	2300	13.63	7.64	9.67	5/4/01	200	13.62	7.66	9.62
5/2/01	0	13.53	7.64	9.53	5/4/01	300	13.63	7.66	9.30
5/2/01	100	13.50	7.63	9.45	5/4/01	400	13.57	7.66	9.84
5/2/01	200	13.43	7.63	9.67	5/4/01	500	13.53	7.67	9.60
5/2/01	300	13.42	7.63	9.66	5/4/01	600	13.50	7.65	9.52
5/2/01	400	13.42	7.64	9.61	5/4/01	700	13.47	7.66	9.71
5/2/01	500	13.42	7.64	9.37	5/4/01	800	13.45	7.66	9.89
5/2/01	600	13.37	7.63	9.64	5/4/01	900	13.52	7.66	9.50
5/2/01	700	13.33	7.63	9.71	5/4/01	1000	13.67	7.66	9.74
5/2/01	800	13.35	7.63	9.41	5/4/01	1100	13.81	7.66	9.50
5/2/01	900	13.32	7.63	9.55	5/4/01	1200	14.05	7.67	9.67
5/2/01	1000	13.38	7.62	9.49	5/4/01	1300	14.28	7.68	9.65
5/2/01	1100	13.33	7.64	9.61	5/4/01	1400	14.56	7.66	9.53
5/2/01	1200	13.38	7.63	9.60	5/4/01	1500	14.83	7.67	9.38
5/2/01	1300	13.45	7.63	9.49	5/4/01	1600	15.04	7.62	9.23
5/2/01	1400	13.50	7.64	9.72	5/4/01	1700	15.19	7.57	9.25
5/2/01	1500	13.55	7.64	9.22	5/4/01	1800	15.16	7.58	9.27
5/2/01	1600	13.65	7.62	9.65	5/4/01	1900	15.04	7.57	9.30
5/2/01	1700	13.68	7.64	9.62	5/4/01	2000	14.79	7.57	9.32
5/2/01	1800	13.71	7.63	9.65	5/4/01	2100	14.51	7.59	9.18
5/2/01	1900	13.71	7.64	9.44	5/4/01	2200	14.31	7.58	9.00
5/2/01	2000	13.67	7.64	9.47	5/4/01	2300	14.16	7.58	9.35
5/2/01	2100	13.62	7.65	9.77	5/5/01	0	14.01	7.57	9.37
5/2/01	2200	13.58	7.64	9.68	5/5/01	100	13.90	7.57	9.30
5/2/01	2300	13.57	7.63	9.52	5/5/01	200	13.85	7.57	9.27
5/3/01	0	13.52	7.64	9.68	5/5/01	300	13.83	7.57	8.88
5/3/01	100	13.50	7.64	9.55	5/5/01	400	13.80	7.57	9.28
5/3/01	200	13.47	7.64	9.79	5/5/01	500	13.76	7.57	9.13
5/3/01	300	13.45	7.64	9.58	5/5/01	600	13.73	7.56	9.28
5/3/01	400	13.43	7.64	9.88	5/5/01	700	13.67	7.57	8.71
5/3/01	500	13.40	7.63	9.60	5/5/01	800	13.73	7.56	9.06
5/3/01	600	13.35	7.63	9.72	5/5/01	900	13.76	7.57	9.04
5/3/01	700	13.31	7.64	9.65	5/5/01	1000	13.95	7.57	9.24
5/3/01	800	13.33	7.64	9.73	5/5/01	1100	14.10	7.58	9.25
5/3/01	900	13.44	7.63	9.49	5/5/01	1200	14.28	7.60	8.87
5/3/01	1000	13.55	7.64	9.70	5/5/01	1300	14.53	7.60	9.39
5/3/01	1100	13.73	7.65	9.80	5/5/01	1400	14.71	7.62	9.31
5/3/01	1200	14.00	7.65	9.37	5/5/01	1500	14.86	7.63	9.18
5/3/01	1300	14.28	7.66	9.44	5/5/01	1600	15.01	7.64	9.39
5/3/01	1400	14.39	7.66	9.55	5/5/01	1700	15.03	7.63	9.35
5/3/01	1500	14.41	7.66	9.50	5/5/01	1800	14.93	7.62	9.37
5/3/01	1600	14.41	7.65	9.53	5/5/01	1900	14.83	7.62	9.31
5/3/01	1700	14.31	7.65	9.57	5/5/01	2000	14.66	7.61	9.10
5/3/01	1800	14.16	7.65	9.72	5/5/01	2100	14.53	7.60	9.38
5/3/01	1900	14.05	7.64	9.51	5/5/01	2200	14.33	7.60	9.28
5/3/01	2000	13.85	7.64	9.39	5/5/01	2300	14.18	7.59	8.94
5/3/01	2100	13.73	7.65	9.33	5/6/01	0	14.13	7.59	9.07
5/3/01	2200	13.67	7.66	9.71	5/6/01	100	14.00	7.59	9.25
5/3/01	2300	13.65	7.65	9.60	5/6/01	200	14.00	7.59	9.22

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
5/6/01	300	13.91	7.58	9.14	5/8/01	600	13.25	7.55	9.07
5/6/01	400	13.95	7.58	9.25	5/8/01	700	13.25	7.55	9.11
5/6/01	500	13.96	7.58	9.16	5/8/01	800	13.27	7.56	9.07
5/6/01	600	13.95	7.58	8.68	5/8/01	900	13.35	7.56	9.11
5/6/01	700	13.90	7.59	9.24	5/8/01	1000	13.57	7.56	9.09
5/6/01	800	13.85	7.59	8.90	5/8/01	1100	13.73	7.57	9.11
5/6/01	900	13.86	7.59	8.94	5/8/01	1200	13.93	7.57	9.14
5/6/01	1000	13.86	7.58	9.11	5/8/01	1300	14.15	7.59	9.21
5/6/01	1100	13.86	7.60	9.13	5/8/01	1400	14.48	7.60	9.26
5/6/01	1200	13.90	7.60	9.09	5/8/01	1500	*		
5/6/01	1300	13.96	7.59	9.14	5/8/01	1600	14.96	7.61	9.14
5/6/01	1400	14.10	7.61	9.02	5/8/01	1700	14.98	7.62	9.32
5/6/01	1500	14.21	7.62	8.66	5/8/01	1800	15.13	7.63	9.33
5/6/01	1600	14.34	7.65	8.76	5/8/01	1900	15.03	7.64	9.22
5/6/01	1700	14.43	7.64	9.16	5/8/01	2000	14.89	7.64	9.25
5/6/01	1800	14.43	7.67	9.01	5/8/01	2100	14.71	7.63	9.13
5/6/01	1900	14.44	7.66	9.17	5/8/01	2200	14.51	7.62	9.14
5/6/01	2000	14.41	7.64	9.10	5/8/01	2300	14.28	7.62	9.18
5/6/01	2100	14.31	7.65	9.22	5/9/01	0	14.13	7.60	9.16
5/6/01	2200	14.16	7.65	9.11	5/9/01	100	13.93	7.59	9.07
5/6/01	2300	14.13	7.63	9.16	5/9/01	200	13.75	7.58	9.09
5/7/01	0	13.98	7.63	9.26	5/9/01	300	13.65	7.57	9.03
5/7/01	100	13.91	7.58	9.08	5/9/01	400	13.47	7.57	9.05
5/7/01	200	13.93	7.59	9.10	5/9/01	500	13.42	7.56	9.00
5/7/01	300	13.85	7.59	8.82	5/9/01	600	13.37	7.56	8.97
5/7/01	400	13.84	7.58	9.05	5/9/01	700	13.30	7.56	8.67
5/7/01	500	13.86	7.58	9.02	5/9/01	800	13.62	7.55	8.78
5/7/01	600	13.80	7.58	9.10	5/9/01	900	13.70	7.56	8.97
5/7/01	700	13.86	7.58	8.73	5/9/01	1000	13.93	7.56	8.99
5/7/01	800	13.90	7.57	8.85	5/9/01	1100	14.15	7.56	8.92
5/7/01	900	13.86	7.57	9.10	5/9/01	1200	14.43	7.56	9.02
5/7/01	1000	13.95	7.57	9.20	5/9/01	1300	14.64	7.57	8.98
5/7/01	1100	13.96	7.57	9.10	5/9/01	1400	15.03	7.57	8.93
5/7/01	1200	14.03	7.57	9.06	5/9/01	1500	15.21	7.58	9.03
5/7/01	1300	14.02	7.57	9.11	5/9/01	1600	15.36	7.58	8.98
5/7/01	1400	14.11	7.57	9.13	5/9/01	1700	15.49	7.58	8.89
5/7/01	1500	14.16	7.57	9.07	5/9/01	1800	15.53	7.59	8.95
5/7/01	1600	14.21	7.57	8.79	5/9/01	1900	15.49	7.59	9.05
5/7/01	1700	14.21	7.58	8.66	5/9/01	2000	15.48	7.59	8.97
5/7/01	1800	14.28	7.58	9.00	5/9/01	2100	14.99	7.59	9.00
5/7/01	1900	14.24	7.59	9.09	5/9/01	2200	14.86	7.59	9.07
5/7/01	2000	14.20	7.58	8.98	5/9/01	2300	14.73	7.58	8.70
5/7/01	2100	14.10	7.58	8.93	5/10/01	0	14.58	7.58	8.74
5/7/01	2200	14.08	7.59	8.83	5/10/01	100	14.49	7.57	8.93
5/7/01	2300	13.90	7.60	8.70	5/10/01	200	14.41	7.59	9.07
5/8/01	0	13.85	7.58	8.90	5/10/01	300	14.34	7.58	9.09
5/8/01	100	13.70	7.57	8.95	5/10/01	400	14.29	7.58	8.96
5/8/01	200	13.68	7.56	8.81	5/10/01	500	14.24	7.58	9.01
5/8/01	300	13.55	7.56	8.91	5/10/01	600	14.24	7.58	8.97
5/8/01	400	13.48	7.55	8.95	5/10/01	700	14.28	7.59	9.00
5/8/01	500	13.38	7.55	9.03	5/10/01	800	14.38	7.59	8.99

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
5/10/01	900	14.63	7.59	8.89	5/12/01	1200	14.88	7.65	8.80
5/10/01	1000	14.74	7.59	8.94	5/12/01	1300	15.14	7.66	9.04
5/10/01	1100	14.98	7.59	8.91	5/12/01	1400	15.46	7.67	9.01
5/10/01	1200	15.26	7.60	8.94	5/12/01	1500	15.71	7.67	8.59
5/10/01	1300	15.33	7.60	8.97	5/12/01	1600	15.86	7.67	8.96
5/10/01	1400	15.66	7.60	8.94	5/12/01	1700	15.98	7.67	9.05
5/10/01	1500	15.84	7.60	8.64	5/12/01	1800	15.98	7.66	9.05
5/10/01	1600	15.84	7.61	8.70	5/12/01	1900	15.88	7.71	9.06
5/10/01	1700	15.91	7.61	8.90	5/12/01	2000	15.66	7.71	9.20
5/10/01	1800	15.98	7.61	8.80	5/12/01	2100	15.41	7.69	9.01
5/10/01	1900	15.99	7.61	8.95	5/12/01	2200	15.23	7.66	9.02
5/10/01	2000	15.83	7.61	8.85	5/12/01	2300	15.08	7.66	9.07
5/10/01	2100	15.36	7.61	8.92	5/13/01	0	14.93	7.66	9.18
5/10/01	2200	15.19	7.61	8.93	5/13/01	100	14.78	7.66	9.13
5/10/01	2300	15.08	7.60	8.81	5/13/01	200	14.66	7.66	9.14
5/11/01	0	15.01	7.58	8.83	5/13/01	300	14.58	7.66	9.24
5/11/01	100	14.78	7.58	8.78	5/13/01	400	14.49	7.65	9.24
5/11/01	200	14.73	7.58	8.82	5/13/01	500	14.46	7.65	9.17
5/11/01	300	14.49	7.58	8.89	5/13/01	600	14.41	7.65	9.12
5/11/01	400	14.43	7.58	8.82	5/13/01	700	14.36	7.64	8.80
5/11/01	500	14.34	7.58	8.85	5/13/01	800	14.38	7.65	8.89
5/11/01	600	14.28	7.58	8.88	5/13/01	900	14.44	7.66	9.16
5/11/01	700	*			5/13/01	1000	14.61	7.66	9.07
5/11/01	800	14.21	7.59	8.65	5/13/01	1100	14.78	7.67	9.20
5/11/01	900	14.15	7.66	9.63	5/13/01	1200	14.94	7.66	9.24
5/11/01	1000	14.24	7.71	9.57	5/13/01	1300	15.18	7.67	9.20
5/11/01	1100	14.48	7.72	9.64	5/13/01	1400	15.46	7.67	9.26
5/11/01	1200	14.51	7.74	9.71	5/13/01	1500	15.69	7.68	9.31
5/11/01	1300	14.74	7.74	9.51	5/13/01	1600	15.88	7.68	9.30
5/11/01	1400	14.96	7.74	9.63	5/13/01	1700	16.01	7.69	9.28
5/11/01	1500	15.28	7.74	9.58	5/13/01	1800	16.06	7.69	9.26
5/11/01	1600	15.38	7.76	9.43	5/13/01	1900	15.98	7.69	9.22
5/11/01	1700	15.44	7.77	9.46	5/13/01	2000	15.86	7.70	9.28
5/11/01	1800	15.43	7.77	9.47	5/13/01	2100	15.69	7.69	9.20
5/11/01	1900	15.43	7.75	9.08	5/13/01	2200	15.53	7.68	9.24
5/11/01	2000	15.19	7.77	9.71	5/13/01	2300	15.34	7.68	8.82
5/11/01	2100	15.03	7.76	9.72	5/14/01	0	15.18	7.67	8.95
5/11/01	2200	14.79	7.77	9.82	5/14/01	100	14.99	7.66	9.14
5/11/01	2300	14.74	7.73	9.24	5/14/01	200	14.83	7.66	9.13
5/12/01	0	14.58	7.72	9.07	5/14/01	300	14.69	7.65	9.08
5/12/01	100	14.53	7.69	9.23	5/14/01	400	14.58	7.65	9.02
5/12/01	200	14.46	7.68	9.20	5/14/01	500	14.51	7.64	9.07
5/12/01	300	14.39	7.69	9.30	5/14/01	600	14.48	7.64	9.11
5/12/01	400	14.31	7.68	9.17	5/14/01	700	14.48	7.64	9.12
5/12/01	500	14.29	7.68	9.32	5/14/01	800	14.49	7.64	9.12
5/12/01	600	14.34	7.63	8.98	5/14/01	900	14.51	7.64	9.09
5/12/01	700	14.29	7.63	9.06	5/14/01	1000	14.53	7.65	9.12
5/12/01	800	14.33	7.63	8.96	5/14/01	1100	14.54	7.64	9.07
5/12/01	900	14.41	7.64	8.99	5/14/01	1200	14.56	7.64	8.98
5/12/01	1000	14.41	7.64	8.82	5/14/01	1300	14.63	7.64	9.02
5/12/01	1100	14.63	7.65	9.04	5/14/01	1400	14.74	7.63	9.03

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
5/14/01	1500	*			5/16/01	1800	16.50	7.66	8.84
5/14/01	1600	14.86	7.64	8.86	5/16/01	1900	16.50	7.66	8.89
5/14/01	1700	14.86	7.66	9.07	5/16/01	2000	16.40	7.66	8.88
5/14/01	1800	14.86	7.66	9.09	5/16/01	2100	16.23	7.65	8.76
5/14/01	1900	14.86	7.67	9.14	5/16/01	2200	16.01	7.64	8.73
5/14/01	2000	14.86	7.67	9.12	5/16/01	2300	15.78	7.64	8.82
5/14/01	2100	14.81	7.67	9.07	5/17/01	0	15.51	7.63	8.79
5/14/01	2200	14.73	7.67	9.04	5/17/01	100	15.28	7.63	8.84
5/14/01	2300	14.64	7.68	8.97	5/17/01	200	15.11	7.62	8.77
5/15/01	0	14.58	7.67	8.95	5/17/01	300	15.03	7.62	8.78
5/15/01	100	14.48	7.67	9.02	5/17/01	400	15.01	7.62	8.77
5/15/01	200	14.43	7.66	8.99	5/17/01	500	15.01	7.61	8.72
5/15/01	300	14.34	7.65	9.03	5/17/01	600	15.01	7.61	8.69
5/15/01	400	14.31	7.65	8.95	5/17/01	700	*		
5/15/01	500	14.26	7.64	8.91	5/17/01	800	15.04	7.61	8.38
5/15/01	600	14.26	7.64	8.94	5/17/01	900	15.13	7.62	8.71
5/15/01	700	14.26	7.64	8.49	5/17/01	1000	15.29	7.62	8.75
5/15/01	800	14.26	7.64	8.59	5/17/01	1100	15.56	7.63	8.70
5/15/01	900	14.29	7.64	8.85	5/17/01	1200	15.88	7.63	8.71
5/15/01	1000	14.33	7.64	8.91	5/17/01	1300	16.18	7.64	8.68
5/15/01	1100	14.39	7.63	8.91	5/17/01	1400	16.45	7.65	8.73
5/15/01	1200	14.48	7.64	8.87	5/17/01	1500	16.60	7.65	8.72
5/15/01	1300	14.49	7.64	8.86	5/17/01	1600	16.70	7.65	8.72
5/15/01	1400	14.53	7.64	8.92	5/17/01	1700	16.78	7.65	8.76
5/15/01	1500	14.59	7.64	8.72	5/17/01	1800	16.87	7.67	8.82
5/15/01	1600	14.61	7.64	8.86	5/17/01	1900	16.89	7.68	8.85
5/15/01	1700	14.64	7.65	8.92	5/17/01	2000	16.75	7.68	8.83
5/15/01	1800	14.64	7.66	8.93	5/17/01	2100	16.50	7.67	8.77
5/15/01	1900	14.64	7.66	9.04	5/17/01	2200	16.31	7.67	8.83
5/15/01	2000	14.61	7.67	8.99	5/17/01	2300	16.20	7.67	8.41
5/15/01	2100	14.56	7.66	8.98	5/18/01	0	16.08	7.67	8.57
5/15/01	2200	14.51	7.65	8.89	5/18/01	100	15.94	7.66	8.70
5/15/01	2300	14.44	7.64	8.51	5/18/01	200	15.81	7.65	8.69
5/16/01	0	14.41	7.64	8.59	5/18/01	300	15.68	7.65	8.68
5/16/01	100	14.36	7.64	8.92	5/18/01	400	15.54	7.64	8.62
5/16/01	200	14.31	7.64	8.79	5/18/01	500	15.46	7.63	8.53
5/16/01	300	14.28	7.64	8.74	5/18/01	600	15.38	7.63	8.56
5/16/01	400	14.26	7.63	8.76	5/18/01	700	15.34	7.63	8.58
5/16/01	500	14.24	7.63	8.69	5/18/01	800	15.36	7.63	8.64
5/16/01	600	14.24	7.62	8.79	5/18/01	900	15.48	7.64	8.51
5/16/01	700	14.24	7.62	8.78	5/18/01	1000	15.66	7.64	8.60
5/16/01	800	14.26	7.62	8.77	5/18/01	1100	15.86	7.65	8.64
5/16/01	900	14.33	7.62	8.79	5/18/01	1200	16.08	7.65	8.50
5/16/01	1000	14.43	7.61	8.72	5/18/01	1300	16.30	7.66	8.64
5/16/01	1100	14.64	7.62	8.81	5/18/01	1400	16.58	7.66	8.59
5/16/01	1200	14.93	7.62	8.85	5/18/01	1500	16.89	7.67	8.22
5/16/01	1300	15.28	7.63	8.92	5/18/01	1600	17.19	7.67	8.44
5/16/01	1400	15.63	7.64	8.77	5/18/01	1700	17.46	7.67	8.65
5/16/01	1500	15.94	7.65	8.61	5/18/01	1800	17.80	7.67	8.55
5/16/01	1600	16.23	7.66	8.68	5/18/01	1900	17.80	7.67	8.51
5/16/01	1700	16.40	7.66	8.91	5/18/01	2000	17.65	7.66	8.56

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
5/18/01	2100	17.56	7.66	8.44	5/21/01	0	18.57	7.67	8.21
5/18/01	2200	17.33	7.65	8.50	5/21/01	100	18.48	7.66	8.14
5/18/01	2300	17.11	7.64	8.49	5/21/01	200	18.24	7.65	8.13
5/19/01	0	16.90	7.64	8.45	5/21/01	300	18.09	7.64	8.15
5/19/01	100	16.68	7.64	8.45	5/21/01	400	17.94	7.63	8.15
5/19/01	200	16.50	7.63	8.47	5/21/01	500	17.78	7.62	8.06
5/19/01	300	16.28	7.63	8.36	5/21/01	600	17.63	7.62	8.05
5/19/01	400	16.26	7.63	8.45	5/21/01	700	17.44	7.61	7.72
5/19/01	500	16.18	7.63	8.39	5/21/01	800	17.26	7.61	7.87
5/19/01	600	16.08	7.63	8.46	5/21/01	900	17.16	7.63	8.11
5/19/01	700	16.11	7.63	8.10	5/21/01	1000	17.33	7.63	8.12
5/19/01	800	16.15	7.63	8.22	5/21/01	1100	17.26	7.63	8.03
5/19/01	900	16.25	7.63	8.39	5/21/01	1200	17.34	7.63	8.09
5/19/01	1000	16.46	7.64	8.39	5/21/01	1300	17.29	7.63	8.07
5/19/01	1100	16.75	7.65	8.37	5/21/01	1400	17.26	7.64	8.07
5/19/01	1200	16.99	7.65	8.44	5/21/01	1500	17.31	7.64	8.08
5/19/01	1300	17.29	7.67	8.43	5/21/01	1600	17.26	7.64	8.09
5/19/01	1400	17.61	7.67	8.59	5/21/01	1700	17.29	7.64	8.15
5/19/01	1500	17.87	7.68	8.59	5/21/01	1800	17.46	7.64	8.15
5/19/01	1600	18.00	7.68	8.53	5/21/01	1900	17.33	7.64	8.12
5/19/01	1700	18.24	7.68	8.61	5/21/01	2000	17.39	7.63	8.15
5/19/01	1800	18.35	7.68	8.65	5/21/01	2100	17.19	7.64	8.16
5/19/01	1900	18.47	7.68	8.74	5/21/01	2200	17.29	7.64	8.12
5/19/01	2000	18.50	7.68	8.73	5/21/01	2300	17.14	7.63	7.71
5/19/01	2100	18.38	7.68	8.67	5/22/01	0	17.09	7.63	7.81
5/19/01	2200	18.24	7.66	8.62	5/22/01	100	17.05	7.62	8.00
5/19/01	2300	18.04	7.65	8.21	5/22/01	200	17.00	7.62	7.95
5/20/01	0	17.89	7.64	8.22	5/22/01	300	16.89	7.63	7.95
5/20/01	100	17.73	7.63	8.42	5/22/01	400	16.80	7.63	7.95
5/20/01	200	17.56	7.63	8.35	5/22/01	500	16.70	7.63	7.98
5/20/01	300	17.51	7.62	8.33	5/22/01	600	16.68	7.63	7.95
5/20/01	400	17.36	7.61	8.18	5/22/01	700	16.68	7.63	7.94
5/20/01	500	17.19	7.61	8.21	5/22/01	800	16.62	7.63	7.95
5/20/01	600	16.99	7.61	8.18	5/22/01	900	16.73	7.64	7.99
5/20/01	700	16.89	7.60	8.15	5/22/01	1000	16.94	7.65	7.94
5/20/01	800	17.04	7.60	8.06	5/22/01	1100	17.02	7.64	7.94
5/20/01	900	17.04	7.60	8.16	5/22/01	1200	17.19	7.65	7.94
5/20/01	1000	17.04	7.61	8.09	5/22/01	1300	17.27	7.66	8.00
5/20/01	1100	17.19	7.61	8.18	5/22/01	1400	17.39	7.67	8.00
5/20/01	1200	17.58	7.61	8.24	5/22/01	1500	17.55	7.68	7.73
5/20/01	1300	17.66	7.62	8.25	5/22/01	1600	17.65	7.68	7.84
5/20/01	1400	17.87	7.64	8.20	5/22/01	1700	17.80	7.69	8.09
5/20/01	1500	*			5/22/01	1800	17.85	7.69	8.09
5/20/01	1600	18.43	7.67	8.14	5/22/01	1900	17.87	7.69	8.11
5/20/01	1700	18.53	7.69	8.39	5/22/01	2000	17.75	7.69	7.93
5/20/01	1800	18.67	7.71	8.44	5/22/01	2100	17.63	7.68	7.98
5/20/01	1900	18.81	7.72	8.46	5/22/01	2200	17.51	7.67	8.03
5/20/01	2000	18.86	7.72	8.41	5/22/01	2300	17.34	7.66	7.90
5/20/01	2100	18.89	7.71	8.39	5/23/01	0	17.19	7.66	7.89
5/20/01	2200	18.88	7.69	8.24	5/23/01	100	17.05	7.65	7.86
5/20/01	2300	18.76	7.68	8.22	5/23/01	200	16.94	7.64	7.79

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
5/23/01	300	16.78	7.64	7.85	5/25/01	600	15.16	7.80	8.70
5/23/01	400	16.63	7.64	7.85	5/25/01	700	15.16	7.77	8.17
5/23/01	500	16.53	7.63	7.84	5/25/01	800	15.11	7.80	8.15
5/23/01	600	16.45	7.63	7.83	5/25/01	900	15.49	7.71	8.28
5/23/01	700	*			5/25/01	1000	15.49	7.71	8.15
5/23/01	800	16.40	7.63	7.61	5/25/01	1100	15.53	7.72	8.25
5/23/01	900	16.38	7.62	7.83	5/25/01	1200	15.66	7.72	8.41
5/23/01	1000	16.53	7.62	7.91	5/25/01	1300	15.79	7.72	8.43
5/23/01	1100	16.57	7.63	7.97	5/25/01	1400	15.83	7.73	8.50
5/23/01	1200	16.65	7.64	7.98	5/25/01	1500	15.93	7.74	8.39
5/23/01	1300	16.65	7.65	8.00	5/25/01	1600	16.25	7.74	8.45
5/23/01	1400	16.62	7.65	8.07	5/25/01	1700	16.28	7.75	8.58
5/23/01	1500	16.58	7.66	8.08	5/25/01	1800	16.21	7.75	8.42
5/23/01	1600	16.67	7.67	8.08	5/25/01	1900	16.15	7.75	8.46
5/23/01	1700	16.72	7.67	8.10	5/25/01	2000	16.03	7.75	8.43
5/23/01	1800	16.68	7.68	8.13	5/25/01	2100	15.54	7.80	8.71
5/23/01	1900	16.57	7.69	8.11	5/25/01	2200	15.53	7.76	8.47
5/23/01	2000	16.41	7.69	8.20	5/25/01	2300	15.38	7.77	8.02
5/23/01	2100	16.15	7.70	8.19	5/26/01	0	15.23	7.76	8.04
5/23/01	2200	16.08	7.70	8.20	5/26/01	100	15.14	7.76	8.50
5/23/01	2300	15.99	7.69	7.72	5/26/01	200	15.08	7.77	8.53
5/24/01	0	15.89	7.69	7.90	5/26/01	300	14.99	7.78	8.56
5/24/01	100	15.89	7.68	8.09	5/26/01	400	15.13	7.72	8.43
5/24/01	200	15.88	7.67	8.02	5/26/01	500	15.08	7.72	8.51
5/24/01	300	15.79	7.67	8.03	5/26/01	600	15.06	7.72	8.53
5/24/01	400	15.69	7.66	8.01	5/26/01	700	15.06	7.72	8.55
5/24/01	500	15.64	7.66	7.97	5/26/01	800	15.03	7.72	8.45
5/24/01	600	15.61	7.65	7.96	5/26/01	900	15.08	7.72	8.55
5/24/01	700	15.61	7.66	7.96	5/26/01	1000	15.09	7.72	8.54
5/24/01	800	15.64	7.65	8.00	5/26/01	1100	15.06	7.73	8.57
5/24/01	900	15.58	7.67	7.97	5/26/01	1200	15.09	7.73	8.60
5/24/01	1000	15.63	7.67	8.05	5/26/01	1300	15.18	7.73	8.60
5/24/01	1100	15.71	7.68	8.08	5/26/01	1400	15.41	7.74	8.71
5/24/01	1200	15.81	7.69	8.12	5/26/01	1500	*		
5/24/01	1300	15.84	7.77	8.36	5/26/01	1600	15.44	7.75	8.37
5/24/01	1400	16.01	7.75	8.12	5/26/01	1700	15.44	7.75	8.71
5/24/01	1500	16.13	7.76	7.79	5/26/01	1800	15.43	7.76	8.72
5/24/01	1600	16.21	7.77	7.99	5/26/01	1900	15.36	7.76	8.70
5/24/01	1700	16.35	7.75	8.32	5/26/01	2000	15.33	7.75	8.68
5/24/01	1800	16.40	7.74	8.35	5/26/01	2100	15.13	7.75	8.74
5/24/01	1900	16.31	7.74	8.16	5/26/01	2200	15.13	7.75	8.73
5/24/01	2000	15.99	7.80	8.74	5/26/01	2300	14.99	7.74	8.66
5/24/01	2100	15.83	7.81	8.73	5/27/01	0	14.88	7.74	8.68
5/24/01	2200	15.68	7.82	8.60	5/27/01	100	14.81	7.73	8.54
5/24/01	2300	15.56	7.82	8.64	5/27/01	200	14.71	7.73	8.64
5/25/01	0	15.41	7.82	8.98	5/27/01	300	14.68	7.73	8.63
5/25/01	100	15.29	7.83	9.02	5/27/01	400	14.64	7.73	8.61
5/25/01	200	15.26	7.81	8.71	5/27/01	500	14.58	7.75	8.56
5/25/01	300	15.24	7.80	8.82	5/27/01	600	14.58	7.74	8.47
5/25/01	400	15.21	7.78	8.50	5/27/01	700	14.51	7.81	8.46
5/25/01	500	15.21	7.78	8.58	5/27/01	800	14.52	7.80	8.41

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
5/27/01	900	14.51	7.84	9.07	5/29/01	1200	15.61	7.72	8.48
5/27/01	1000	14.68	7.77	8.63	5/29/01	1300	15.89	7.73	8.67
5/27/01	1100	14.78	7.78	8.75	5/29/01	1400	15.81	7.90	9.57
5/27/01	1200	14.81	7.79	8.64	5/29/01	1500	16.06	7.90	9.53
5/27/01	1300	14.91	7.79	8.73	5/29/01	1600	16.28	7.90	9.38
5/27/01	1400	15.03	7.79	8.72	5/29/01	1700	16.40	7.90	9.47
5/27/01	1500	15.08	7.77	8.57	5/29/01	1800	16.40	7.91	9.33
5/27/01	1600	14.99	7.78	8.71	5/29/01	1900	16.26	7.91	9.44
5/27/01	1700	14.91	7.78	8.74	5/29/01	2000	16.06	7.91	9.47
5/27/01	1800	14.88	7.78	8.65	5/29/01	2100	15.78	7.90	9.59
5/27/01	1900	14.86	7.78	8.53	5/29/01	2200	15.53	7.88	9.46
5/27/01	2000	14.69	7.79	8.72	5/29/01	2300	15.34	7.87	8.60
5/27/01	2100	14.63	7.80	8.87	5/30/01	0	15.11	7.88	9.29
5/27/01	2200	14.54	7.77	8.68	5/30/01	100	14.94	7.87	9.62
5/27/01	2300	14.53	7.78	8.17	5/30/01	200	14.84	7.87	9.69
5/28/01	0	14.48	7.78	8.33	5/30/01	300	14.79	7.87	9.54
5/28/01	100	14.43	7.77	8.48	5/30/01	400	14.76	7.87	9.62
5/28/01	200	14.34	7.77	8.76	5/30/01	500	14.71	7.87	9.67
5/28/01	300	14.31	7.78	8.84	5/30/01	600	14.68	7.87	9.86
5/28/01	400	14.24	7.78	8.89	5/30/01	700	14.68	7.87	9.76
5/28/01	500	14.20	7.80	9.10	5/30/01	800	14.74	7.87	9.74
5/28/01	600	14.21	7.77	8.78	5/30/01	900	14.89	7.89	9.79
5/28/01	700	14.23	7.76	8.79	5/30/01	1000	15.08	7.89	9.70
5/28/01	800	14.16	7.78	8.77	5/30/01	1100	15.33	7.89	9.65
5/28/01	900	14.38	7.72	8.51	5/30/01	1200	15.63	7.90	9.58
5/28/01	1000	14.56	7.73	8.48	5/30/01	1300	15.96	7.90	9.39
5/28/01	1100	14.78	7.73	8.44	5/30/01	1400	16.31	7.91	9.35
5/28/01	1200	15.11	7.73	8.51	5/30/01	1500	16.65	7.91	8.61
5/28/01	1300	15.43	7.73	8.53	5/30/01	1600	16.84	7.91	8.67
5/28/01	1400	15.61	7.75	8.64	5/30/01	1700	17.12	7.87	8.87
5/28/01	1500	15.69	7.75	8.21	5/30/01	1800	17.26	7.82	8.46
5/28/01	1600	15.74	7.74	8.22	5/30/01	1900	17.34	7.76	8.49
5/28/01	1700	15.84	7.74	8.66	5/30/01	2000	17.26	7.75	8.37
5/28/01	1800	15.71	7.73	8.66	5/30/01	2100	16.84	7.75	8.49
5/28/01	1900	15.49	7.73	8.59	5/30/01	2200	16.53	7.75	8.38
5/28/01	2000	15.33	7.72	8.65	5/30/01	2300	16.28	7.74	8.38
5/28/01	2100	15.16	7.72	8.46	5/31/01	0	16.11	7.73	8.35
5/28/01	2200	15.04	7.71	8.56	5/31/01	100	15.86	7.73	8.17
5/28/01	2300	14.93	7.71	8.48	5/31/01	200	15.71	7.72	8.14
5/29/01	0	14.86	7.71	8.50	5/31/01	300	15.58	7.72	8.12
5/29/01	100	14.76	7.71	8.52	5/31/01	400	15.53	7.71	8.17
5/29/01	200	14.73	7.71	8.63	5/31/01	500	15.41	7.71	8.09
5/29/01	300	14.69	7.72	8.42	5/31/01	600	15.36	7.71	8.22
5/29/01	400	14.74	7.72	8.58	5/31/01	700	15.38	7.71	7.68
5/29/01	500	14.71	7.71	8.49	5/31/01	800	15.38	7.72	7.94
5/29/01	600	14.66	7.72	8.58	5/31/01	900	15.69	7.72	8.16
5/29/01	700	*			5/31/01	1000	15.93	7.72	8.19
5/29/01	800	14.64	7.73	8.07	5/31/01	1100	16.16	7.73	8.11
5/29/01	900	14.98	7.70	8.55	5/31/01	1200	16.46	7.73	8.25
5/29/01	1000	15.14	7.71	8.49	5/31/01	1300	16.80	7.75	8.38
5/29/01	1100	15.34	7.71	8.64	5/31/01	1400	17.05	7.75	8.38

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
5/31/01	1500	17.31	7.76	8.35	6/2/01	1800	15.78	7.76	8.30
5/31/01	1600	17.39	7.77	8.32	6/2/01	1900	15.74	7.76	8.32
5/31/01	1700	17.65	7.77	8.40	6/2/01	2000	15.61	7.76	8.27
5/31/01	1800	17.66	7.77	8.37	6/2/01	2100	15.58	7.76	8.23
5/31/01	1900	17.63	7.77	8.40	6/2/01	2200	15.48	7.75	8.28
5/31/01	2000	17.43	7.81	8.45	6/2/01	2300	15.38	7.75	7.86
5/31/01	2100	17.07	7.79	8.47	6/3/01	0	15.24	7.75	8.00
5/31/01	2200	16.85	7.83	8.52	6/3/01	100	15.19	7.75	8.33
5/31/01	2300	16.62	7.82	8.01	6/3/01	200	14.99	7.75	8.32
6/1/01	0	16.46	7.80	7.80	6/3/01	300	14.94	7.75	8.37
6/1/01	100	16.31	7.80	8.59	6/3/01	400	14.81	7.75	8.38
6/1/01	200	16.16	7.81	8.41	6/3/01	500	14.69	7.75	8.38
6/1/01	300	16.08	7.80	8.36	6/3/01	600	14.61	7.74	8.26
6/1/01	400	16.11	7.74	8.24	6/3/01	700	14.46	7.74	8.26
6/1/01	500	16.21	7.74	8.15	6/3/01	800	14.46	7.74	8.28
6/1/01	600	16.05	7.74	8.21	6/3/01	900	14.44	7.74	8.34
6/1/01	700	16.10	7.74	8.26	6/3/01	1000	14.43	7.74	8.37
6/1/01	800	16.13	7.76	8.16	6/3/01	1100	14.53	7.74	8.30
6/1/01	900	16.05	7.75	8.14	6/3/01	1200	14.69	7.74	8.28
6/1/01	1000	16.11	7.75	8.24	6/3/01	1300	14.91	7.75	8.26
6/1/01	1100	16.11	7.75	8.26	6/3/01	1400	14.93	7.76	8.35
6/1/01	1200	16.28	7.74	8.16	6/3/01	1500	15.09	7.76	7.84
6/1/01	1300	16.18	7.75	8.30	6/3/01	1600	15.13	7.76	7.92
6/1/01	1400	16.21	7.75	8.13	6/3/01	1700	15.14	7.76	8.17
6/1/01	1500	*			6/3/01	1800	15.18	7.77	8.30
6/1/01	1600	16.36	7.75	7.80	6/3/01	1900	15.29	7.77	8.22
6/1/01	1700	16.28	7.75	8.14	6/3/01	2000	15.21	7.76	8.15
6/1/01	1800	16.30	7.76	8.26	6/3/01	2100	15.03	7.76	8.19
6/1/01	1900	16.28	7.76	8.18	6/3/01	2200	14.93	7.75	8.18
6/1/01	2000	16.25	7.76	8.16	6/3/01	2300	14.78	7.75	8.19
6/1/01	2100	16.01	7.76	8.20	6/4/01	0	14.64	7.75	8.19
6/1/01	2200	15.94	7.75	8.15	6/4/01	100	14.58	7.75	8.22
6/1/01	2300	15.89	7.74	8.16	6/4/01	200	14.51	7.75	8.16
6/2/01	0	15.88	7.72	8.14	6/4/01	300	14.41	7.75	8.14
6/2/01	100	15.83	7.72	8.03	6/4/01	400	14.36	7.74	8.14
6/2/01	200	15.76	7.72	7.88	6/4/01	500	14.23	7.74	8.12
6/2/01	300	15.68	7.72	8.13	6/4/01	600	14.23	7.74	8.04
6/2/01	400	15.61	7.72	8.07	6/4/01	700	*		
6/2/01	500	15.53	7.71	8.06	6/4/01	800	14.39	7.73	7.73
6/2/01	600	15.48	7.71	8.07	6/4/01	900	14.36	7.74	8.19
6/2/01	700	15.48	7.71	7.66	6/4/01	1000	14.53	7.75	8.07
6/2/01	800	15.53	7.71	7.76	6/4/01	1100	14.74	7.75	8.04
6/2/01	900	15.53	7.72	8.16	6/4/01	1200	15.08	7.76	8.09
6/2/01	1000	15.54	7.72	8.09	6/4/01	1300	15.24	7.77	8.14
6/2/01	1100	15.61	7.73	8.12	6/4/01	1400	15.46	7.77	8.02
6/2/01	1200	15.63	7.73	8.15	6/4/01	1500	15.36	7.84	8.71
6/2/01	1300	15.73	7.74	8.12	6/4/01	1600	15.61	7.87	8.69
6/2/01	1400	15.79	7.75	8.15	6/4/01	1700	15.78	7.87	8.70
6/2/01	1500	15.76	7.75	8.27	6/4/01	1800	15.69	7.89	9.32
6/2/01	1600	15.84	7.75	8.19	6/4/01	1900	15.71	7.87	8.78
6/2/01	1700	15.81	7.76	8.26	6/4/01	2000	15.51	7.88	8.70

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
6/4/01	2100	15.24	7.86	8.71	6/7/01	0	15.81	7.83	8.42
6/4/01	2200	14.99	7.86	8.89	6/7/01	100	15.44	7.83	8.81
6/4/01	2300	14.79	7.84	8.07	6/7/01	200	15.36	7.82	8.81
6/5/01	0	14.61	7.85	8.71	6/7/01	300	15.18	7.82	8.76
6/5/01	100	14.43	7.84	8.78	6/7/01	400	15.09	7.82	8.74
6/5/01	200	14.26	7.84	8.99	6/7/01	500	15.11	7.81	8.65
6/5/01	300	14.18	7.84	8.85	6/7/01	600	15.06	7.81	8.63
6/5/01	400	14.38	7.75	8.38	6/7/01	700	15.06	7.81	8.61
6/5/01	500	14.21	7.76	8.37	6/7/01	800	15.33	7.81	8.61
6/5/01	600	14.18	7.76	8.30	6/7/01	900	15.29	7.82	8.68
6/5/01	700	14.16	7.75	8.38	6/7/01	1000	15.38	7.82	8.75
6/5/01	800	14.31	7.76	8.36	6/7/01	1100	15.68	7.83	8.73
6/5/01	900	14.43	7.76	8.37	6/7/01	1200	16.01	7.83	8.77
6/5/01	1000	14.51	7.76	8.33	6/7/01	1300	16.16	7.84	8.80
6/5/01	1100	14.73	7.77	8.23	6/7/01	1400	16.50	7.85	8.74
6/5/01	1200	14.91	7.77	8.43	6/7/01	1500	16.70	7.86	8.37
6/5/01	1300	15.18	7.78	8.56	6/7/01	1600	16.92	7.87	8.56
6/5/01	1400	15.39	7.80	8.58	6/7/01	1700	17.05	7.88	8.74
6/5/01	1500	15.73	7.80	8.10	6/7/01	1800	17.07	7.88	8.68
6/5/01	1600	15.91	7.81	8.35	6/7/01	1900	17.14	7.88	8.62
6/5/01	1700	16.01	7.82	8.68	6/7/01	2000	17.16	7.88	8.69
6/5/01	1800	15.99	7.82	8.68	6/7/01	2100	17.00	7.86	8.69
6/5/01	1900	15.89	7.82	8.65	6/7/01	2200	16.94	7.86	8.64
6/5/01	2000	15.69	7.82	8.65	6/7/01	2300	16.77	7.86	8.57
6/5/01	2100	15.43	7.81	8.56	6/8/01	0	16.68	7.85	8.48
6/5/01	2200	15.24	7.80	8.52	6/8/01	100	16.40	7.85	8.52
6/5/01	2300	15.03	7.79	8.59	6/8/01	200	16.26	7.84	8.46
6/6/01	0	14.84	7.79	8.53	6/8/01	300	16.13	7.83	8.59
6/6/01	100	14.73	7.78	8.46	6/8/01	400	15.98	7.83	8.55
6/6/01	200	14.64	7.78	8.52	6/8/01	500	15.83	7.82	8.43
6/6/01	300	14.58	7.78	8.57	6/8/01	600	15.59	7.81	8.56
6/6/01	400	14.61	7.78	8.53	6/8/01	700	*		
6/6/01	500	14.61	7.78	8.52	6/8/01	800	15.41	7.81	8.13
6/6/01	600	14.53	7.77	8.42	6/8/01	900	15.59	7.81	8.56
6/6/01	700	14.49	7.78	7.97	6/8/01	1000	15.73	7.82	8.47
6/6/01	800	14.58	7.78	8.14	6/8/01	1100	16.10	7.83	8.47
6/6/01	900	14.81	7.78	8.49	6/8/01	1200	16.43	7.84	8.42
6/6/01	1000	15.09	7.79	8.59	6/8/01	1300	16.77	7.84	8.42
6/6/01	1100	15.18	7.80	8.65	6/8/01	1400	17.41	7.86	8.46
6/6/01	1200	15.63	7.80	8.63	6/8/01	1500	17.78	7.87	8.48
6/6/01	1300	15.89	7.81	8.73	6/8/01	1600	18.04	7.88	8.40
6/6/01	1400	16.13	7.82	8.74	6/8/01	1700	18.11	7.89	8.42
6/6/01	1500	16.45	7.84	8.72	6/8/01	1800	18.24	7.88	8.45
6/6/01	1600	16.70	7.84	8.78	6/8/01	1900	18.24	7.88	8.48
6/6/01	1700	16.92	7.86	8.72	6/8/01	2000	18.04	7.87	8.44
6/6/01	1800	17.05	7.87	8.82	6/8/01	2100	17.87	7.86	8.23
6/6/01	1900	17.12	7.87	8.72	6/8/01	2200	17.90	7.84	8.39
6/6/01	2000	17.00	7.87	8.74	6/8/01	2300	17.65	7.83	7.95
6/6/01	2100	16.62	7.87	8.81	6/9/01	0	17.55	7.82	7.96
6/6/01	2200	16.45	7.85	8.78	6/9/01	100	17.34	7.82	8.11
6/6/01	2300	16.11	7.84	8.23	6/9/01	200	17.17	7.81	8.07

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
6/9/01	300	17.02	7.81	8.19	6/11/01	600	17.61	7.75	7.78
6/9/01	400	16.94	7.80	8.15	6/11/01	700	17.51	7.75	7.79
6/9/01	500	16.89	7.80	8.16	6/11/01	800	17.49	7.74	7.62
6/9/01	600	16.75	7.79	8.11	6/11/01	900	17.82	7.74	7.65
6/9/01	700	16.48	7.79	8.26	6/11/01	1000	17.77	7.75	7.56
6/9/01	800	16.52	7.79	8.12	6/11/01	1100	17.85	7.75	7.53
6/9/01	900	16.60	7.79	8.20	6/11/01	1200	17.87	7.75	7.67
6/9/01	1000	16.87	7.80	8.16	6/11/01	1300	18.07	7.76	7.67
6/9/01	1100	17.07	7.80	8.14	6/11/01	1400	18.38	7.77	7.71
6/9/01	1200	17.31	7.81	8.19	6/11/01	1500	18.76	7.79	7.49
6/9/01	1300	17.66	7.82	8.11	6/11/01	1600	19.08	7.80	7.46
6/9/01	1400	17.95	7.83	8.13	6/11/01	1700	19.20	7.81	7.81
6/9/01	1500	18.28	7.84	7.71	6/11/01	1800	19.27	7.81	7.77
6/9/01	1600	18.67	7.85	7.89	6/11/01	1900	19.41	7.81	7.86
6/9/01	1700	18.83	7.86	8.16	6/11/01	2000	19.48	7.81	7.75
6/9/01	1800	19.03	7.87	8.18	6/11/01	2100	19.08	7.80	7.82
6/9/01	1900	19.31	7.88	8.23	6/11/01	2200	19.01	7.81	7.88
6/9/01	2000	19.38	7.89	8.25	6/11/01	2300	18.79	7.81	7.83
6/9/01	2100	19.43	7.89	8.19	6/12/01	0	18.65	7.81	7.73
6/9/01	2200	19.44	7.88	8.06	6/12/01	100	18.50	7.80	7.78
6/9/01	2300	19.44	7.88	8.15	6/12/01	200	18.36	7.80	7.74
6/10/01	0	19.20	7.86	8.16	6/12/01	300	18.29	7.80	7.72
6/10/01	100	19.05	7.86	8.17	6/12/01	400	18.19	7.79	7.63
6/10/01	200	19.05	7.85	8.08	6/12/01	500	18.18	7.79	7.69
6/10/01	300	18.93	7.84	8.02	6/12/01	600	18.07	7.79	7.65
6/10/01	400	18.79	7.83	8.20	6/12/01	700	18.06	7.78	7.29
6/10/01	500	18.60	7.82	7.97	6/12/01	800	18.33	7.78	7.35
6/10/01	600	18.41	7.81	8.03	6/12/01	900	18.60	7.78	7.59
6/10/01	700	*			6/12/01	1000	18.62	7.78	7.52
6/10/01	800	17.85	7.80	7.82	6/12/01	1100	18.84	7.78	7.62
6/10/01	900	17.73	7.78	8.01	6/12/01	1200	19.10	7.79	7.37
6/10/01	1000	17.55	7.79	7.99	6/12/01	1300	19.38	7.79	7.54
6/10/01	1100	17.36	7.78	8.00	6/12/01	1400	19.65	7.80	7.24
6/10/01	1200	17.33	7.78	7.83	6/12/01	1500	19.86	7.80	7.21
6/10/01	1300	17.26	7.78	7.78	6/12/01	1600	19.98	7.80	7.31
6/10/01	1400	17.29	7.78	7.87	6/12/01	1700	20.03	7.80	7.37
6/10/01	1500	17.38	7.78	8.01	6/12/01	1800	20.17	7.81	7.46
6/10/01	1600	17.44	7.78	7.75	6/12/01	1900	20.21	7.81	7.00
6/10/01	1700	17.53	7.77	7.84	6/12/01	2000	19.74	7.80	7.40
6/10/01	1800	17.55	7.77	7.76	6/12/01	2100	19.63	7.80	7.49
6/10/01	1900	17.44	7.78	8.00	6/12/01	2200	19.51	7.80	7.42
6/10/01	2000	17.53	7.78	8.04	6/12/01	2300	19.38	7.80	7.20
6/10/01	2100	17.55	7.78	7.92	6/13/01	0	19.29	7.79	6.99
6/10/01	2200	17.61	7.78	7.85	6/13/01	100	19.22	7.79	7.34
6/10/01	2300	17.65	7.78	7.48	6/13/01	200	19.12	7.79	7.50
6/11/01	0	17.61	7.78	7.64	6/13/01	300	19.10	7.79	7.49
6/11/01	100	17.66	7.77	7.90	6/13/01	400	19.05	7.79	7.34
6/11/01	200	17.66	7.77	7.75	6/13/01	500	19.07	7.78	7.49
6/11/01	300	17.65	7.77	7.79	6/13/01	600	19.07	7.78	7.32
6/11/01	400	17.68	7.77	7.80	6/13/01	700	19.05	7.78	7.57
6/11/01	500	17.72	7.76	7.63	6/13/01	800	19.22	7.78	7.54

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
6/13/01	900	19.22	7.78	7.54	6/15/01	1200	20.14	7.82	7.22
6/13/01	1000	19.24	7.78	7.60	6/15/01	1300	20.14	7.82	7.32
6/13/01	1100	19.36	7.79	7.61	6/15/01	1400	20.10	7.82	7.17
6/13/01	1200	19.48	7.80	7.51	6/15/01	1500	20.15	7.82	7.00
6/13/01	1300	19.58	7.81	7.60	6/15/01	1600	20.22	7.83	7.02
6/13/01	1400	19.79	7.81	7.55	6/15/01	1700	20.26	7.83	7.19
6/13/01	1500	*			6/15/01	1800	20.36	7.84	7.22
6/13/01	1600	20.35	7.84	7.41	6/15/01	1900	20.38	7.83	7.09
6/13/01	1700	20.45	7.85	7.64	6/15/01	2000	20.33	7.83	7.00
6/13/01	1800	20.68	7.85	7.43	6/15/01	2100	20.35	7.83	7.15
6/13/01	1900	20.73	7.85	7.41	6/15/01	2200	20.31	7.83	6.97
6/13/01	2000	20.64	7.85	7.48	6/15/01	2300	20.22	7.83	7.17
6/13/01	2100	20.42	7.85	7.51	6/16/01	0	20.12	7.83	7.21
6/13/01	2200	20.35	7.84	7.55	6/16/01	100	20.03	7.82	7.18
6/13/01	2300	20.21	7.83	7.47	6/16/01	200	19.91	7.81	7.01
6/14/01	0	20.10	7.82	7.45	6/16/01	300	19.84	7.81	7.28
6/14/01	100	19.95	7.82	7.24	6/16/01	400	19.79	7.80	7.21
6/14/01	200	19.95	7.81	7.34	6/16/01	500	19.65	7.80	7.20
6/14/01	300	19.86	7.81	7.28	6/16/01	600	19.67	7.80	7.27
6/14/01	400	19.77	7.81	7.03	6/16/01	700	*		
6/14/01	500	19.69	7.81	7.13	6/16/01	800	19.67	7.79	7.07
6/14/01	600	19.60	7.81	7.30	6/16/01	900	19.74	7.80	7.21
6/14/01	700	19.67	7.80	6.97	6/16/01	1000	19.89	7.80	7.15
6/14/01	800	19.62	7.81	7.18	6/16/01	1100	20.15	7.81	7.19
6/14/01	900	19.72	7.81	7.29	6/16/01	1200	20.42	7.82	7.32
6/14/01	1000	19.81	7.81	7.42	6/16/01	1300	20.64	7.83	7.32
6/14/01	1100	20.05	7.82	7.44	6/16/01	1400	20.94	7.84	7.37
6/14/01	1200	20.24	7.83	7.39	6/16/01	1500	21.03	7.84	7.41
6/14/01	1300	20.43	7.83	7.50	6/16/01	1600	21.15	7.85	7.39
6/14/01	1400	20.64	7.84	7.41	6/16/01	1700	21.26	7.86	7.44
6/14/01	1500	20.85	7.85	7.28	6/16/01	1800	21.29	7.85	7.24
6/14/01	1600	21.03	7.87	7.37	6/16/01	1900	21.22	7.86	7.39
6/14/01	1700	21.17	7.87	7.47	6/16/01	2000	21.05	7.86	7.35
6/14/01	1800	21.26	7.88	7.50	6/16/01	2100	20.73	7.85	7.44
6/14/01	1900	21.15	7.88	7.59	6/16/01	2200	20.54	7.84	7.43
6/14/01	2000	21.12	7.87	7.45	6/16/01	2300	20.28	7.83	7.07
6/14/01	2100	21.15	7.87	7.52	6/17/01	0	20.15	7.83	7.06
6/14/01	2200	20.96	7.87	7.60	6/17/01	100	20.00	7.82	7.30
6/14/01	2300	20.85	7.85	7.27	6/17/01	200	19.86	7.82	7.23
6/15/01	0	20.75	7.84	7.31	6/17/01	300	19.74	7.81	7.26
6/15/01	100	20.64	7.84	7.47	6/17/01	400	19.62	7.80	7.33
6/15/01	200	20.57	7.83	7.44	6/17/01	500	19.46	7.80	7.24
6/15/01	300	20.47	7.82	7.40	6/17/01	600	19.29	7.81	7.17
6/15/01	400	20.31	7.82	7.41	6/17/01	700	19.22	7.80	7.27
6/15/01	500	20.22	7.82	7.42	6/17/01	800	19.19	7.79	7.23
6/15/01	600	20.17	7.81	7.28	6/17/01	900	19.22	7.79	7.25
6/15/01	700	20.14	7.81	7.30	6/17/01	1000	19.34	7.79	7.25
6/15/01	800	20.17	7.81	7.31	6/17/01	1100	19.55	7.80	7.29
6/15/01	900	20.14	7.80	7.22	6/17/01	1200	19.79	7.81	7.35
6/15/01	1000	20.12	7.81	7.26	6/17/01	1300	20.05	7.81	7.24
6/15/01	1100	20.12	7.81	7.09	6/17/01	1400	20.36	7.83	7.24

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
6/17/01	1500	20.68	7.84	7.10	6/19/01	1800	20.77	7.90	7.36
6/17/01	1600	20.98	7.85	7.17	6/19/01	1900	20.75	7.90	7.21
6/17/01	1700	21.13	7.85	7.28	6/19/01	2000	20.63	7.88	7.32
6/17/01	1800	21.13	7.85	7.36	6/19/01	2100	20.42	7.87	7.24
6/17/01	1900	21.05	7.84	7.29	6/19/01	2200	20.19	7.86	7.28
6/17/01	2000	20.98	7.84	7.26	6/19/01	2300	19.95	7.85	6.98
6/17/01	2100	20.84	7.83	7.23	6/20/01	0	19.76	7.84	7.20
6/17/01	2200	20.64	7.82	7.26	6/20/01	100	19.57	7.84	7.08
6/17/01	2300	20.40	7.80	7.08	6/20/01	200	19.41	7.83	7.04
6/18/01	0	20.15	7.80	7.15	6/20/01	300	19.29	7.83	7.08
6/18/01	100	19.91	7.78	7.02	6/20/01	400	19.19	7.83	7.05
6/18/01	200	19.76	7.78	7.19	6/20/01	500	19.12	7.83	7.06
6/18/01	300	19.65	7.78	7.23	6/20/01	600	19.03	7.83	7.00
6/18/01	400	19.60	7.78	7.27	6/20/01	700	19.00	7.83	6.79
6/18/01	500	19.55	7.78	7.32	6/20/01	800	19.03	7.83	6.88
6/18/01	600	19.50	7.77	7.33	6/20/01	900	19.13	7.83	6.93
6/18/01	700	19.44	7.77	6.93	6/20/01	1000	19.29	7.84	6.99
6/18/01	800	19.41	7.77	7.03	6/20/01	1100	19.51	7.85	7.21
6/18/01	900	19.39	7.77	7.16	6/20/01	1200	19.76	7.86	7.25
6/18/01	1000	19.39	7.78	7.17	6/20/01	1300	20.00	7.87	7.25
6/18/01	1100	19.38	7.78	7.20	6/20/01	1400	20.29	7.87	7.21
6/18/01	1200	19.36	7.79	7.34	6/20/01	1500	20.52	7.88	7.21
6/18/01	1300	19.36	7.80	7.26	6/20/01	1600	20.57	7.88	7.20
6/18/01	1400	19.38	7.81	7.32	6/20/01	1700	20.59	7.88	7.16
6/18/01	1500	19.43	7.82	7.32	6/20/01	1800	20.54	7.89	7.14
6/18/01	1600	19.46	7.82	7.33	6/20/01	1900	20.45	7.89	7.14
6/18/01	1700	19.57	7.82	7.30	6/20/01	2000	20.43	7.89	7.18
6/18/01	1800	19.65	7.82	7.23	6/20/01	2100	20.28	7.88	7.20
6/18/01	1900	19.70	7.82	7.22	6/20/01	2200	20.21	7.88	7.27
6/18/01	2000	19.70	7.82	7.21	6/20/01	2300	20.05	7.87	6.89
6/18/01	2100	19.69	7.81	7.13	6/21/01	0	19.98	7.87	6.95
6/18/01	2200	19.67	7.80	7.17	6/21/01	100	19.79	7.86	7.16
6/18/01	2300	19.67	7.80	6.87	6/21/01	200	19.72	7.86	7.07
6/19/01	0	19.63	7.80	6.97	6/21/01	300	19.67	7.86	6.99
6/19/01	100	19.60	7.80	7.05	6/21/01	400	19.58	7.86	7.14
6/19/01	200	19.55	7.79	6.87	6/21/01	500	19.55	7.86	6.96
6/19/01	300	19.50	7.79	7.00	6/21/01	600	19.53	7.86	6.96
6/19/01	400	19.44	7.79	7.07	6/21/01	700	19.51	7.87	7.06
6/19/01	500	19.38	7.79	7.00	6/21/01	800	19.46	7.87	7.30
6/19/01	600	19.31	7.79	7.06	6/21/01	900	19.46	7.87	7.26
6/19/01	700	19.22	7.80	7.04	6/21/01	1000	19.48	7.87	7.29
6/19/01	800	19.17	7.81	7.07	6/21/01	1100	19.53	7.88	7.08
6/19/01	900	19.17	7.82	7.16	6/21/01	1200	19.53	7.88	7.24
6/19/01	1000	19.22	7.84	7.05	6/21/01	1300	19.60	7.88	7.22
6/19/01	1100	19.34	7.86	7.11	6/21/01	1400	19.72	7.89	7.28
6/19/01	1200	19.53	7.88	7.36	6/21/01	1500	19.83	7.90	6.84
6/19/01	1300	19.76	7.89	7.20	6/21/01	1600	19.84	7.90	6.93
6/19/01	1400	20.03	7.90	7.20	6/21/01	1700	19.81	7.91	7.15
6/19/01	1500	*			6/21/01	1800	19.72	7.91	7.22
6/19/01	1600	20.54	7.90	7.19	6/21/01	1900	19.76	7.91	7.34
6/19/01	1700	20.70	7.90	7.24	6/21/01	2000	19.74	7.92	7.41

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
6/21/01	2100	19.57	7.91	7.25	6/24/01	0	20.80	7.94	7.20
6/21/01	2200	19.41	7.90	7.28	6/24/01	100	20.54	7.93	7.12
6/21/01	2300	19.29	7.89	7.18	6/24/01	200	20.24	7.91	7.08
6/22/01	0	19.20	7.89	7.09	6/24/01	300	20.05	7.90	7.08
6/22/01	100	19.15	7.89	7.15	6/24/01	400	19.91	7.89	6.99
6/22/01	200	19.08	7.89	7.06	6/24/01	500	19.77	7.88	6.96
6/22/01	300	19.00	7.89	7.12	6/24/01	600	19.67	7.87	6.93
6/22/01	400	18.93	7.88	7.13	6/24/01	700	19.62	7.86	6.53
6/22/01	500	18.88	7.88	7.06	6/24/01	800	19.57	7.85	6.52
6/22/01	600	18.84	7.88	7.04	6/24/01	900	19.67	7.86	6.84
6/22/01	700	*			6/24/01	1000	19.81	7.86	6.87
6/22/01	800	19.17	7.88	6.73	6/24/01	1100	19.93	7.87	6.92
6/22/01	900	19.29	7.89	6.96	6/24/01	1200	20.12	7.87	6.97
6/22/01	1000	19.46	7.90	7.18	6/24/01	1300	20.50	7.88	6.94
6/22/01	1100	19.63	7.91	7.16	6/24/01	1400	20.77	7.90	7.18
6/22/01	1200	19.81	7.93	7.16	6/24/01	1500	21.05	7.91	7.20
6/22/01	1300	20.05	7.94	7.29	6/24/01	1600	21.24	7.92	7.20
6/22/01	1400	20.35	7.95	7.41	6/24/01	1700	21.24	7.94	7.14
6/22/01	1500	20.61	7.96	7.41	6/24/01	1800	21.36	7.95	7.25
6/22/01	1600	20.85	7.97	7.51	6/24/01	1900	21.43	7.97	7.22
6/22/01	1700	20.85	7.98	7.62	6/24/01	2000	21.49	7.97	7.17
6/22/01	1800	20.87	7.98	7.61	6/24/01	2100	21.49	7.97	7.16
6/22/01	1900	20.85	7.98	7.59	6/24/01	2200	21.35	7.96	7.16
6/22/01	2000	20.77	7.98	7.53	6/24/01	2300	21.36	7.93	6.65
6/22/01	2100	20.52	7.97	7.62	6/25/01	0	21.36	7.93	6.71
6/22/01	2200	20.33	7.95	7.65	6/25/01	100	21.12	7.91	6.97
6/22/01	2300	20.03	7.94	7.05	6/25/01	200	20.99	7.90	6.90
6/23/01	0	19.81	7.93	7.11	6/25/01	300	20.78	7.89	6.82
6/23/01	100	19.62	7.92	7.39	6/25/01	400	20.63	7.88	6.80
6/23/01	200	19.41	7.91	7.16	6/25/01	500	20.33	7.87	6.73
6/23/01	300	19.20	7.90	7.12	6/25/01	600	20.14	7.86	6.65
6/23/01	400	19.07	7.90	7.12	6/25/01	700	19.95	7.85	6.76
6/23/01	500	19.05	7.88	7.27	6/25/01	800	19.83	7.84	6.71
6/23/01	600	18.96	7.88	7.26	6/25/01	900	20.10	7.84	6.69
6/23/01	700	19.00	7.87	7.13	6/25/01	1000	20.10	7.84	6.72
6/23/01	800	19.03	7.87	7.19	6/25/01	1100	20.31	7.85	6.80
6/23/01	900	19.10	7.88	7.24	6/25/01	1200	20.71	7.85	6.96
6/23/01	1000	19.10	7.88	7.32	6/25/01	1300	20.99	7.87	7.00
6/23/01	1100	19.44	7.89	7.29	6/25/01	1400	21.20	7.89	7.00
6/23/01	1200	19.65	7.90	7.28	6/25/01	1500	*		
6/23/01	1300	19.89	7.91	7.25	6/25/01	1600	21.98	7.92	6.83
6/23/01	1400	20.22	7.93	7.32	6/25/01	1700	22.18	7.93	7.16
6/23/01	1500	20.78	7.94	7.09	6/25/01	1800	22.34	7.95	7.27
6/23/01	1600	21.10	7.96	7.26	6/25/01	1900	22.43	7.95	7.16
6/23/01	1700	21.33	7.98	7.43	6/25/01	2000	22.52	7.95	7.12
6/23/01	1800	21.42	7.99	7.39	6/25/01	2100	22.27	7.94	7.11
6/23/01	1900	21.45	7.99	7.48	6/25/01	2200	22.11	7.93	7.08
6/23/01	2000	21.40	7.99	7.54	6/25/01	2300	22.02	7.92	7.05
6/23/01	2100	21.22	7.98	7.47	6/26/01	0	21.93	7.91	7.07
6/23/01	2200	21.33	7.96	7.26	6/26/01	100	21.66	7.90	6.98
6/23/01	2300	20.94	7.95	7.22	6/26/01	200	21.63	7.88	6.82

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
6/26/01	300	21.45	7.88	6.61	6/28/01	600	22.04	7.83	6.66
6/26/01	400	21.24	7.87	6.66	6/28/01	700	*		
6/26/01	500	21.15	7.86	6.60	6/28/01	800	22.04	7.81	6.57
6/26/01	600	21.15	7.85	6.59	6/28/01	900	22.16	7.82	6.71
6/26/01	700	20.87	7.85	6.40	6/28/01	1000	22.28	7.82	6.64
6/26/01	800	21.01	7.84	6.45	6/28/01	1100	22.57	7.83	6.67
6/26/01	900	21.35	7.84	6.74	6/28/01	1200	22.87	7.84	6.70
6/26/01	1000	21.54	7.84	6.86	6/28/01	1300	23.25	7.86	6.75
6/26/01	1100	21.66	7.85	6.88	6/28/01	1400	23.65	7.88	6.75
6/26/01	1200	21.91	7.85	6.78	6/28/01	1500	24.03	7.90	6.86
6/26/01	1300	22.16	7.86	6.82	6/28/01	1600	24.40	7.92	6.88
6/26/01	1400	22.39	7.88	6.81	6/28/01	1700	24.51	7.94	7.02
6/26/01	1500	22.68	7.89	6.88	6/28/01	1800	24.69	7.96	6.99
6/26/01	1600	22.98	7.91	6.92	6/28/01	1900	24.82	7.98	7.02
6/26/01	1700	23.25	7.92	6.92	6/28/01	2000	24.75	7.98	7.03
6/26/01	1800	23.43	7.93	6.93	6/28/01	2100	24.71	7.97	7.05
6/26/01	1900	23.52	7.94	7.02	6/28/01	2200	24.56	7.97	6.96
6/26/01	2000	23.47	7.94	7.03	6/28/01	2300	24.40	7.95	6.79
6/26/01	2100	23.29	7.94	7.08	6/29/01	0	24.22	7.93	6.67
6/26/01	2200	23.09	7.93	7.01	6/29/01	100	24.20	7.92	6.83
6/26/01	2300	23.14	7.92	6.43	6/29/01	200	24.12	7.91	6.80
6/27/01	0	23.09	7.91	6.68	6/29/01	300	24.03	7.90	6.78
6/27/01	100	23.04	7.90	6.86	6/29/01	400	23.74	7.89	6.61
6/27/01	200	22.89	7.90	6.78	6/29/01	500	23.60	7.88	6.51
6/27/01	300	22.80	7.89	6.70	6/29/01	600	23.47	7.87	6.50
6/27/01	400	22.82	7.87	6.63	6/29/01	700	23.33	7.85	6.58
6/27/01	500	22.73	7.86	6.69	6/29/01	800	23.36	7.84	6.46
6/27/01	600	22.61	7.86	6.69	6/29/01	900	23.40	7.84	6.49
6/27/01	700	22.30	7.85	6.80	6/29/01	1000	23.56	7.84	6.49
6/27/01	800	22.43	7.84	6.79	6/29/01	1100	23.78	7.85	6.43
6/27/01	900	22.43	7.84	6.81	6/29/01	1200	24.01	7.85	6.48
6/27/01	1000	22.64	7.84	6.72	6/29/01	1300	24.23	7.87	6.45
6/27/01	1100	22.79	7.85	6.79	6/29/01	1400	24.47	7.89	6.58
6/27/01	1200	23.04	7.85	6.87	6/29/01	1500	24.71	7.91	6.44
6/27/01	1300	23.22	7.86	6.87	6/29/01	1600	24.90	7.93	6.62
6/27/01	1400	23.24	7.87	6.96	6/29/01	1700	25.10	7.96	6.82
6/27/01	1500	23.25	7.87	6.69	6/29/01	1800	25.23	7.98	6.98
6/27/01	1600	23.29	7.88	6.80	6/29/01	1900	25.36	8.00	6.94
6/27/01	1700	23.34	7.88	6.98	6/29/01	2000	25.17	8.01	7.04
6/27/01	1800	23.36	7.88	7.01	6/29/01	2100	25.08	8.00	7.05
6/27/01	1900	23.42	7.89	7.04	6/29/01	2200	24.82	7.99	6.91
6/27/01	2000	23.36	7.89	7.02	6/29/01	2300	24.77	7.97	6.94
6/27/01	2100	22.95	7.89	7.03	6/30/01	0	24.47	7.96	6.82
6/27/01	2200	22.77	7.88	6.93	6/30/01	100	24.38	7.94	6.76
6/27/01	2300	22.71	7.88	6.89	6/30/01	200	24.14	7.91	6.73
6/28/01	0	22.66	7.87	6.72	6/30/01	300	24.03	7.89	6.63
6/28/01	100	22.61	7.86	6.89	6/30/01	400	23.91	7.88	6.60
6/28/01	200	22.55	7.84	6.75	6/30/01	500	23.85	7.87	6.49
6/28/01	300	22.48	7.85	6.81	6/30/01	600	23.78	7.86	6.44
6/28/01	400	22.34	7.84	6.81	6/30/01	700	23.80	7.85	6.12
6/28/01	500	22.21	7.83	6.72	6/30/01	800	23.76	7.85	6.25

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
6/30/01	900	23.76	7.85	6.31	7/2/01	1200	22.32	7.93	6.47
6/30/01	1000	23.92	7.85	6.45	7/2/01	1300	22.50	7.93	6.50
6/30/01	1100	24.07	7.86	6.48	7/2/01	1400	22.64	7.96	6.65
6/30/01	1200	24.29	7.87	6.46	7/2/01	1500	22.89	7.98	6.78
6/30/01	1300	24.53	7.88	6.58	7/2/01	1600	23.20	8.01	6.90
6/30/01	1400	24.80	7.90	6.62	7/2/01	1700	23.25	8.04	7.07
6/30/01	1500	25.06	7.92	6.72	7/2/01	1800	23.33	8.06	7.23
6/30/01	1600	25.23	7.94	6.84	7/2/01	1900	23.38	8.06	7.20
6/30/01	1700	25.32	7.97	6.92	7/2/01	2000	23.40	8.06	7.11
6/30/01	1800	25.38	7.99	7.04	7/2/01	2100	23.25	8.04	7.18
6/30/01	1900	25.43	8.00	6.99	7/2/01	2200	23.24	8.03	7.10
6/30/01	2000	25.36	8.00	7.04	7/2/01	2300	23.07	8.02	6.70
6/30/01	2100	25.15	8.00	6.92	7/3/01	0	22.89	8.01	6.77
6/30/01	2200	25.03	8.00	6.93	7/3/01	100	22.86	7.99	6.89
6/30/01	2300	24.80	7.98	6.69	7/3/01	200	22.75	7.98	6.85
7/1/01	0	24.55	7.97	6.68	7/3/01	300	22.55	7.97	6.69
7/1/01	100	24.53	7.95	6.62	7/3/01	400	22.23	7.96	6.68
7/1/01	200	24.22	7.95	6.68	7/3/01	500	22.23	7.95	6.60
7/1/01	300	24.00	7.94	6.60	7/3/01	600	22.12	7.94	6.43
7/1/01	400	23.65	7.94	6.53	7/3/01	700	21.93	7.93	6.63
7/1/01	500	23.40	7.93	6.68	7/3/01	800	22.09	7.91	6.63
7/1/01	600	23.13	7.93	6.76	7/3/01	900	22.02	7.90	6.59
7/1/01	700	22.95	7.92	6.74	7/3/01	1000	22.02	7.90	6.52
7/1/01	800	22.77	7.91	6.66	7/3/01	1100	22.12	7.91	6.56
7/1/01	900	22.36	7.93	6.80	7/3/01	1200	22.41	7.92	6.61
7/1/01	1000	22.23	7.95	6.93	7/3/01	1300	22.84	7.93	6.67
7/1/01	1100	22.32	7.97	6.90	7/3/01	1400	23.13	7.95	6.75
7/1/01	1200	22.48	7.97	6.93	7/3/01	1500	23.38	7.97	6.51
7/1/01	1300	22.66	7.99	6.94	7/3/01	1600	23.63	7.99	6.74
7/1/01	1400	22.84	8.01	6.91	7/3/01	1700	23.67	8.01	6.96
7/1/01	1500	*			7/3/01	1800	23.63	8.03	6.93
7/1/01	1600	23.49	8.06	6.98	7/3/01	1900	23.72	8.04	6.94
7/1/01	1700	23.85	8.10	7.24	7/3/01	2000	23.61	8.05	7.03
7/1/01	1800	24.14	8.11	7.28	7/3/01	2100	23.52	8.05	6.97
7/1/01	1900	24.18	8.11	7.12	7/3/01	2200	23.40	8.03	6.86
7/1/01	2000	24.18	8.10	7.15	7/3/01	2300	23.24	8.03	6.88
7/1/01	2100	24.12	8.09	7.08	7/4/01	0	23.05	8.01	6.76
7/1/01	2200	24.09	8.06	6.87	7/4/01	100	22.95	8.00	6.86
7/1/01	2300	23.98	8.04	6.89	7/4/01	200	22.82	7.98	6.73
7/2/01	0	23.78	8.02	6.93	7/4/01	300	22.70	7.97	6.62
7/2/01	100	23.61	8.02	6.94	7/4/01	400	22.52	7.96	6.50
7/2/01	200	23.33	8.00	6.84	7/4/01	500	22.20	7.95	6.48
7/2/01	300	23.14	7.98	6.84	7/4/01	600	21.96	7.94	6.26
7/2/01	400	22.98	7.96	6.71	7/4/01	700	*		
7/2/01	500	22.66	7.95	6.70	7/4/01	800	22.04	7.92	6.02
7/2/01	600	22.52	7.94	6.59	7/4/01	900	22.02	7.92	6.19
7/2/01	700	22.37	7.93	6.18	7/4/01	1000	22.05	7.93	6.28
7/2/01	800	22.30	7.92	6.48	7/4/01	1100	22.09	7.94	6.30
7/2/01	900	22.32	7.91	6.57	7/4/01	1200	22.23	7.96	6.45
7/2/01	1000	22.25	7.90	6.59	7/4/01	1300	22.39	7.98	6.54
7/2/01	1100	22.28	7.92	6.46	7/4/01	1400	22.64	8.00	6.59

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
7/4/01	1500	22.82	8.02	6.62	7/6/01	1800	22.77	8.23	7.64
7/4/01	1600	22.93	8.05	6.69	7/6/01	1900	22.98	8.22	7.55
7/4/01	1700	23.16	8.07	6.71	7/6/01	2000	23.05	8.20	7.50
7/4/01	1800	23.18	8.09	6.83	7/6/01	2100	22.70	8.19	7.46
7/4/01	1900	23.36	8.11	6.89	7/6/01	2200	22.66	8.18	7.30
7/4/01	2000	23.38	8.13	6.92	7/6/01	2300	22.55	8.17	6.99
7/4/01	2100	23.31	8.15	7.13	7/7/01	0	22.41	8.16	7.09
7/4/01	2200	23.18	8.16	7.08	7/7/01	100	22.30	8.15	7.34
7/4/01	2300	23.14	8.16	6.76	7/7/01	200	22.28	8.13	7.09
7/5/01	0	22.98	8.17	6.83	7/7/01	300	22.20	8.11	7.04
7/5/01	100	22.87	8.18	7.10	7/7/01	400	22.00	8.09	6.87
7/5/01	200	22.79	8.19	7.05	7/7/01	500	22.12	8.06	6.85
7/5/01	300	22.66	8.19	7.12	7/7/01	600	21.96	8.05	7.01
7/5/01	400	22.52	8.19	7.09	7/7/01	700	21.65	8.03	6.92
7/5/01	500	22.23	8.18	7.11	7/7/01	800	21.75	8.01	6.76
7/5/01	600	22.09	8.17	7.08	7/7/01	900	21.65	8.00	6.74
7/5/01	700	21.59	8.14	7.13	7/7/01	1000	21.66	8.00	6.82
7/5/01	800	21.42	8.08	6.90	7/7/01	1100	21.98	8.00	6.79
7/5/01	900	21.20	8.04	6.85	7/7/01	1200	22.04	8.01	6.70
7/5/01	1000	21.12	8.02	6.71	7/7/01	1300	22.21	8.00	6.75
7/5/01	1100	21.17	8.02	6.72	7/7/01	1400	22.45	8.01	6.65
7/5/01	1200	21.29	8.02	6.78	7/7/01	1500	*		
7/5/01	1300	21.72	8.04	6.87	7/7/01	1600	22.66	8.02	6.56
7/5/01	1400	22.12	8.07	6.99	7/7/01	1700	22.89	8.03	6.72
7/5/01	1500	22.50	8.11	6.90	7/7/01	1800	22.96	8.05	6.89
7/5/01	1600	22.84	8.16	7.15	7/7/01	1900	23.20	8.07	7.05
7/5/01	1700	23.13	8.19	7.37	7/7/01	2000	23.25	8.09	6.95
7/5/01	1800	23.33	8.22	7.53	7/7/01	2100	23.16	8.11	6.94
7/5/01	1900	23.36	8.21	7.49	7/7/01	2200	23.05	8.13	7.19
7/5/01	2000	23.29	8.21	7.50	7/7/01	2300	23.25	8.12	6.91
7/5/01	2100	22.95	8.19	7.50	7/8/01	0	23.02	8.13	7.05
7/5/01	2200	22.73	8.17	7.35	7/8/01	100	23.02	8.11	7.05
7/5/01	2300	22.55	8.14	7.28	7/8/01	200	22.95	8.11	6.94
7/6/01	0	22.39	8.11	6.91	7/8/01	300	22.95	8.10	7.04
7/6/01	100	22.30	8.10	6.96	7/8/01	400	22.77	8.11	7.01
7/6/01	200	22.18	8.09	6.92	7/8/01	500	22.70	8.11	7.04
7/6/01	300	21.86	8.08	6.93	7/8/01	600	22.53	8.10	7.12
7/6/01	400	21.66	8.06	6.92	7/8/01	700	22.45	8.08	6.63
7/6/01	500	21.52	8.04	6.82	7/8/01	800	22.39	8.06	6.73
7/6/01	600	21.47	8.03	6.78	7/8/01	900	22.21	8.05	6.84
7/6/01	700	21.15	8.02	6.33	7/8/01	1000	22.16	8.04	6.83
7/6/01	800	21.42	8.01	6.64	7/8/01	1100	22.20	8.03	6.81
7/6/01	900	21.26	8.00	6.95	7/8/01	1200	22.18	8.02	6.91
7/6/01	1000	21.22	8.01	6.96	7/8/01	1300	22.46	8.03	6.84
7/6/01	1100	21.15	8.01	6.88	7/8/01	1400	22.68	8.02	6.71
7/6/01	1200	21.35	8.01	6.88	7/8/01	1500	22.73	8.03	6.78
7/6/01	1300	21.52	8.03	7.10	7/8/01	1600	23.11	8.04	6.76
7/6/01	1400	21.86	8.06	7.24	7/8/01	1700	23.36	8.06	6.94
7/6/01	1500	22.21	8.10	7.44	7/8/01	1800	23.60	8.07	6.85
7/6/01	1600	22.59	8.16	7.48	7/8/01	1900	23.72	8.10	6.81
7/6/01	1700	22.79	8.21	7.44	7/8/01	2000	23.94	8.12	6.97

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
7/8/01	2100	23.94	8.14	7.07	7/11/01	0	23.42	8.26	7.23
7/8/01	2200	23.98	8.16	7.17	7/11/01	100	23.20	8.24	7.32
7/8/01	2300	23.81	8.18	6.81	7/11/01	200	22.96	8.20	7.36
7/9/01	0	23.76	8.18	6.94	7/11/01	300	22.82	8.18	7.14
7/9/01	100	23.80	8.19	7.22	7/11/01	400	22.66	8.16	7.04
7/9/01	200	23.69	8.18	7.27	7/11/01	500	22.36	8.14	6.92
7/9/01	300	23.74	8.18	7.24	7/11/01	600	22.21	8.12	7.04
7/9/01	400	23.65	8.18	7.35	7/11/01	700	22.09	8.09	6.96
7/9/01	500	23.72	8.17	7.15	7/11/01	800	22.18	8.08	6.76
7/9/01	600	23.45	8.18	7.28	7/11/01	900	22.20	8.07	6.91
7/9/01	700	23.42	8.16	7.14	7/11/01	1000	22.23	8.07	6.82
7/9/01	800	23.56	8.14	6.87	7/11/01	1100	22.36	8.07	6.95
7/9/01	900	23.38	8.12	7.02	7/11/01	1200	22.48	8.08	7.07
7/9/01	1000	23.31	8.08	6.85	7/11/01	1300	22.53	8.09	7.10
7/9/01	1100	23.36	8.07	6.94	7/11/01	1400	22.55	8.11	7.14
7/9/01	1200	23.33	8.06	6.88	7/11/01	1500	22.95	8.14	6.91
7/9/01	1300	23.31	8.05	7.01	7/11/01	1600	23.22	8.17	7.13
7/9/01	1400	23.27	8.06	7.17	7/11/01	1700	23.43	8.21	7.30
7/9/01	1500	23.13	8.07	6.83	7/11/01	1800	23.83	8.26	7.58
7/9/01	1600	23.24	8.08	7.08	7/11/01	1900	23.96	8.32	7.68
7/9/01	1700	23.33	8.11	7.25	7/11/01	2000	24.00	8.38	7.77
7/9/01	1800	23.60	8.16	7.37	7/11/01	2100	23.92	8.38	7.78
7/9/01	1900	23.74	8.20	7.58	7/11/01	2200	23.81	8.36	7.72
7/9/01	2000	23.78	8.22	7.69	7/11/01	2300	23.76	8.32	7.53
7/9/01	2100	23.65	8.20	7.46	7/12/01	0	23.61	8.28	7.37
7/9/01	2200	23.52	8.20	7.43	7/12/01	100	23.47	8.25	7.36
7/9/01	2300	23.45	8.18	7.36	7/12/01	200	23.25	8.23	7.24
7/10/01	0	23.31	8.16	7.26	7/12/01	300	23.22	8.20	7.23
7/10/01	100	23.13	8.14	7.28	7/12/01	400	22.98	8.18	7.06
7/10/01	200	22.91	8.11	7.00	7/12/01	500	22.86	8.16	6.92
7/10/01	300	22.79	8.10	6.89	7/12/01	600	22.64	8.14	6.90
7/10/01	400	22.89	8.08	6.90	7/12/01	700	22.52	8.12	6.60
7/10/01	500	22.52	8.07	6.92	7/12/01	800	22.59	8.11	6.72
7/10/01	600	22.41	8.05	6.93	7/12/01	900	22.68	8.10	6.80
7/10/01	700	*			7/12/01	1000	22.71	8.10	6.79
7/10/01	800	22.43	8.04	6.66	7/12/01	1100	22.79	8.10	6.81
7/10/01	900	22.45	8.03	7.10	7/12/01	1200	23.04	8.10	6.91
7/10/01	1000	22.62	8.03	6.85	7/12/01	1300	23.27	8.11	6.92
7/10/01	1100	22.61	8.03	6.92	7/12/01	1400	23.52	8.12	6.94
7/10/01	1200	22.82	8.04	6.94	7/12/01	1500	23.76	8.16	7.20
7/10/01	1300	22.98	8.06	6.95	7/12/01	1600	23.91	8.18	7.25
7/10/01	1400	23.11	8.08	7.18	7/12/01	1700	23.98	8.22	7.31
7/10/01	1500	23.20	8.12	7.20	7/12/01	1800	24.07	8.26	7.55
7/10/01	1600	23.49	8.15	7.42	7/12/01	1900	24.49	8.31	7.46
7/10/01	1700	23.58	8.20	7.51	7/12/01	2000	24.55	8.36	7.83
7/10/01	1800	23.74	8.26	7.50	7/12/01	2100	24.27	8.39	7.73
7/10/01	1900	24.05	8.31	7.76	7/12/01	2200	24.42	8.37	7.71
7/10/01	2000	23.89	8.35	7.90	7/12/01	2300	24.27	8.35	7.36
7/10/01	2100	23.87	8.32	7.65	7/13/01	0	24.01	8.33	7.40
7/10/01	2200	23.72	8.31	7.70	7/13/01	100	23.87	8.30	7.30
7/10/01	2300	23.54	8.29	7.41	7/13/01	200	23.56	8.27	7.15

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
7/13/01	300	23.31	8.24	7.18	7/15/01	600	24.22	8.29	7.13
7/13/01	400	23.00	8.21	6.95	7/15/01	700	24.11	8.26	6.99
7/13/01	500	22.84	8.18	6.82	7/15/01	800	23.89	8.24	6.97
7/13/01	600	22.62	8.16	6.98	7/15/01	900	23.72	8.21	6.86
7/13/01	700	22.45	8.13	6.81	7/15/01	1000	23.72	8.17	6.75
7/13/01	800	22.71	8.12	6.83	7/15/01	1100	23.54	8.14	6.91
7/13/01	900	22.55	8.10	7.01	7/15/01	1200	23.43	8.11	6.69
7/13/01	1000	22.71	8.09	6.85	7/15/01	1300	23.29	8.09	6.59
7/13/01	1100	22.73	8.10	6.92	7/15/01	1400	23.14	8.08	6.53
7/13/01	1200	23.04	8.11	6.99	7/15/01	1500	23.09	8.07	6.33
7/13/01	1300	23.11	8.12	6.91	7/15/01	1600	23.14	8.07	6.38
7/13/01	1400	23.27	8.15	6.89	7/15/01	1700	22.96	8.08	6.57
7/13/01	1500	*			7/15/01	1800	22.86	8.08	6.51
7/13/01	1600	23.54	8.22	7.20	7/15/01	1900	23.00	8.08	6.43
7/13/01	1700	24.00	8.27	7.51	7/15/01	2000	22.93	8.08	6.30
7/13/01	1800	24.12	8.32	7.69	7/15/01	2100	22.93	8.09	6.56
7/13/01	1900	24.45	8.38	7.81	7/15/01	2200	22.73	8.10	6.68
7/13/01	2000	24.36	8.45	8.05	7/15/01	2300	22.84	8.10	6.51
7/13/01	2100	24.55	8.45	7.72	7/16/01	0	22.80	8.11	6.64
7/13/01	2200	24.56	8.44	7.74	7/16/01	100	22.79	8.11	6.54
7/13/01	2300	24.53	8.42	7.59	7/16/01	200	22.93	8.10	6.70
7/14/01	0	24.36	8.40	7.60	7/16/01	300	22.73	8.10	6.56
7/14/01	100	24.18	8.37	7.50	7/16/01	400	22.71	8.10	6.66
7/14/01	200	24.01	8.33	7.53	7/16/01	500	22.68	8.10	6.74
7/14/01	300	23.81	8.29	7.39	7/16/01	600	22.73	8.09	6.66
7/14/01	400	23.52	8.26	7.30	7/16/01	700	*		
7/14/01	500	23.27	8.22	7.23	7/16/01	800	23.00	8.08	6.55
7/14/01	600	23.13	8.19	7.02	7/16/01	900	22.95	8.07	6.71
7/14/01	700	22.95	8.16	6.64	7/16/01	1000	23.27	8.07	6.65
7/14/01	800	22.79	8.14	6.86	7/16/01	1100	23.11	8.07	6.57
7/14/01	900	22.73	8.12	6.97	7/16/01	1200	23.25	8.07	6.55
7/14/01	1000	22.86	8.11	6.70	7/16/01	1300	23.27	8.07	6.68
7/14/01	1100	22.77	8.11	6.98	7/16/01	1400	23.47	8.08	6.69
7/14/01	1200	23.11	8.11	6.67	7/16/01	1500	23.67	8.08	6.71
7/14/01	1300	23.27	8.12	6.65	7/16/01	1600	23.89	8.09	6.74
7/14/01	1400	23.43	8.14	6.93	7/16/01	1700	24.00	8.10	6.74
7/14/01	1500	23.74	8.14	6.81	7/16/01	1800	24.05	8.12	6.91
7/14/01	1600	23.78	8.16	6.94	7/16/01	1900	24.14	8.13	6.91
7/14/01	1700	23.87	8.18	7.08	7/16/01	2000	24.23	8.15	6.93
7/14/01	1800	24.00	8.20	6.95	7/16/01	2100	23.81	8.16	7.00
7/14/01	1900	24.27	8.22	6.98	7/16/01	2200	23.76	8.17	7.17
7/14/01	2000	24.18	8.24	7.13	7/16/01	2300	23.71	8.18	6.95
7/14/01	2100	24.18	8.26	7.16	7/17/01	0	23.76	8.18	6.90
7/14/01	2200	24.27	8.27	7.21	7/17/01	100	23.78	8.18	7.13
7/14/01	2300	24.12	8.28	7.03	7/17/01	200	23.81	8.20	7.05
7/15/01	0	24.20	8.28	7.16	7/17/01	300	23.87	8.22	7.12
7/15/01	100	24.20	8.30	7.22	7/17/01	400	23.94	8.23	7.17
7/15/01	200	24.23	8.30	7.38	7/17/01	500	24.03	8.23	7.19
7/15/01	300	24.33	8.31	7.27	7/17/01	600	23.74	8.23	7.20
7/15/01	400	24.27	8.31	7.08	7/17/01	700	23.76	8.22	7.12
7/15/01	500	24.29	8.31	7.24	7/17/01	800	23.61	8.20	6.99

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
7/17/01	900	23.49	8.18	6.87	7/19/01	1200	24.34	8.13	6.65
7/17/01	1000	23.43	8.17	6.92	7/19/01	1300	24.49	8.12	6.47
7/17/01	1100	23.38	8.14	6.78	7/19/01	1400	24.56	8.12	6.63
7/17/01	1200	23.38	8.13	6.83	7/19/01	1500	*		
7/17/01	1300	23.38	8.12	6.65	7/19/01	1600	24.40	8.12	6.67
7/17/01	1400	23.49	8.11	6.82	7/19/01	1700	24.56	8.12	6.80
7/17/01	1500	23.36	8.12	6.69	7/19/01	1800	24.64	8.11	6.65
7/17/01	1600	23.71	8.13	6.79	7/19/01	1900	24.55	8.13	6.72
7/17/01	1700	23.71	8.15	6.93	7/19/01	2000	24.42	8.14	6.76
7/17/01	1800	23.67	8.17	6.94	7/19/01	2100	24.12	8.15	7.14
7/17/01	1900	23.83	8.19	7.06	7/19/01	2200	24.14	8.17	7.04
7/17/01	2000	24.00	8.20	7.12	7/19/01	2300	24.23	8.19	7.02
7/17/01	2100	23.89	8.24	7.10	7/20/01	0	24.25	8.21	7.05
7/17/01	2200	24.05	8.27	7.34	7/20/01	100	24.25	8.22	7.08
7/17/01	2300	24.09	8.30	7.42	7/20/01	200	24.23	8.22	7.23
7/18/01	0	24.11	8.29	7.35	7/20/01	300	24.11	8.21	7.16
7/18/01	100	24.09	8.30	7.44	7/20/01	400	24.12	8.19	7.08
7/18/01	200	24.05	8.30	7.34	7/20/01	500	23.92	8.16	6.88
7/18/01	300	23.98	8.30	7.27	7/20/01	600	23.83	8.14	6.67
7/18/01	400	23.98	8.28	7.21	7/20/01	700	23.69	8.11	6.42
7/18/01	500	23.85	8.26	7.24	7/20/01	800	23.54	8.08	6.28
7/18/01	600	23.76	8.24	7.16	7/20/01	900	23.54	8.05	6.24
7/18/01	700	23.63	8.22	6.65	7/20/01	1000	23.54	8.03	6.20
7/18/01	800	23.40	8.19	6.63	7/20/01	1100	23.52	8.05	6.33
7/18/01	900	23.34	8.16	6.77	7/20/01	1200	23.91	8.06	6.40
7/18/01	1000	23.22	8.14	6.65	7/20/01	1300	24.09	8.08	6.37
7/18/01	1100	23.25	8.13	6.59	7/20/01	1400	24.47	8.12	6.79
7/18/01	1200	23.33	8.12	6.46	7/20/01	1500	24.62	8.17	6.89
7/18/01	1300	23.38	8.11	6.33	7/20/01	1600	24.99	8.22	7.02
7/18/01	1400	23.47	8.11	6.53	7/20/01	1700	25.21	8.26	6.96
7/18/01	1500	23.45	8.12	6.56	7/20/01	1800	25.36	8.30	7.26
7/18/01	1600	23.85	8.13	6.74	7/20/01	1900	25.53	8.34	7.29
7/18/01	1700	24.33	8.13	6.65	7/20/01	2000	25.55	8.36	7.33
7/18/01	1800	24.64	8.15	6.94	7/20/01	2100	25.04	8.34	7.30
7/18/01	1900	24.60	8.16	7.02	7/20/01	2200	24.88	8.31	7.20
7/18/01	2000	24.64	8.18	6.89	7/20/01	2300	24.73	8.27	6.90
7/18/01	2100	24.27	8.19	7.18	7/21/01	0	24.66	8.24	6.66
7/18/01	2200	24.33	8.22	7.29	7/21/01	100	24.56	8.22	6.99
7/18/01	2300	24.23	8.24	7.01	7/21/01	200	24.49	8.19	6.84
7/19/01	0	24.25	8.26	7.08	7/21/01	300	24.31	8.18	6.72
7/19/01	100	24.29	8.27	7.27	7/21/01	400	24.14	8.16	6.70
7/19/01	200	24.33	8.27	7.36	7/21/01	500	24.14	8.14	6.67
7/19/01	300	24.29	8.27	7.22	7/21/01	600	24.00	8.12	6.55
7/19/01	400	24.18	8.27	7.40	7/21/01	700	23.87	8.10	6.55
7/19/01	500	24.11	8.27	7.12	7/21/01	800	23.76	8.09	6.34
7/19/01	600	24.07	8.25	7.19	7/21/01	900	23.83	8.08	6.43
7/19/01	700	23.98	8.23	7.16	7/21/01	1000	23.94	8.07	6.39
7/19/01	800	24.03	8.21	7.01	7/21/01	1100	24.11	8.09	6.41
7/19/01	900	24.18	8.19	6.86	7/21/01	1200	24.36	8.10	6.44
7/19/01	1000	24.38	8.16	6.70	7/21/01	1300	24.62	8.11	6.53
7/19/01	1100	24.34	8.14	6.63	7/21/01	1400	24.93	8.13	6.57

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
7/21/01	1500	25.14	8.16	6.53	7/23/01	1800	26.37	8.41	7.10
7/21/01	1600	25.43	8.22	6.70	7/23/01	1900	26.39	8.43	7.09
7/21/01	1700	25.68	8.28	7.01	7/23/01	2000	26.43	8.42	7.10
7/21/01	1800	25.86	8.34	7.12	7/23/01	2100	26.18	8.41	7.03
7/21/01	1900	25.92	8.38	7.25	7/23/01	2200	26.18	8.40	6.73
7/21/01	2000	25.88	8.40	7.10	7/23/01	2300	26.13	8.38	6.77
7/21/01	2100	25.84	8.40	7.37	7/24/01	0	26.01	8.38	6.91
7/21/01	2200	25.73	8.38	7.17	7/24/01	100	25.96	8.37	6.93
7/21/01	2300	25.47	8.36	7.15	7/24/01	200	26.07	8.35	6.86
7/22/01	0	25.34	8.32	6.88	7/24/01	300	25.88	8.33	6.76
7/22/01	100	25.15	8.28	6.93	7/24/01	400	25.68	8.31	6.75
7/22/01	200	25.08	8.23	6.86	7/24/01	500	25.60	8.28	6.48
7/22/01	300	24.99	8.19	6.70	7/24/01	600	25.49	8.26	6.60
7/22/01	400	24.86	8.16	6.59	7/24/01	700	25.43	8.22	6.26
7/22/01	500	24.58	8.13	6.33	7/24/01	800	25.10	8.21	6.40
7/22/01	600	24.47	8.12	6.43	7/24/01	900	25.14	8.17	6.49
7/22/01	700	*			7/24/01	1000	25.10	8.16	6.37
7/22/01	800	24.44	8.09	6.19	7/24/01	1100	25.15	8.17	6.33
7/22/01	900	24.49	8.08	6.34	7/24/01	1200	25.28	8.19	6.40
7/22/01	1000	24.67	8.10	6.32	7/24/01	1300	25.49	8.20	6.58
7/22/01	1100	24.90	8.11	6.46	7/24/01	1400	25.56	8.24	6.74
7/22/01	1200	25.06	8.13	6.51	7/24/01	1500	25.94	8.29	6.75
7/22/01	1300	25.32	8.16	6.70	7/24/01	1600	26.02	8.35	6.84
7/22/01	1400	25.45	8.20	6.91	7/24/01	1700	26.30	8.42	7.20
7/22/01	1500	25.73	8.25	7.03	7/24/01	1800	26.64	8.46	7.18
7/22/01	1600	25.98	8.30	7.25	7/24/01	1900	26.73	8.49	7.36
7/22/01	1700	26.11	8.35	7.34	7/24/01	2000	26.54	8.50	7.46
7/22/01	1800	26.18	8.39	7.38	7/24/01	2100	26.45	8.49	7.31
7/22/01	1900	26.33	8.42	7.49	7/24/01	2200	26.49	8.48	7.14
7/22/01	2000	26.22	8.44	7.53	7/24/01	2300	26.18	8.48	6.96
7/22/01	2100	26.03	8.44	7.45	7/25/01	0	26.20	8.45	6.86
7/22/01	2200	26.01	8.41	7.28	7/25/01	100	25.83	8.43	7.07
7/22/01	2300	25.81	8.38	7.01	7/25/01	200	25.73	8.40	6.73
7/23/01	0	25.71	8.35	6.90	7/25/01	300	25.64	8.36	6.88
7/23/01	100	25.83	8.32	6.90	7/25/01	400	25.40	8.33	6.72
7/23/01	200	25.73	8.30	6.89	7/25/01	500	25.25	8.29	6.65
7/23/01	300	25.55	8.28	6.80	7/25/01	600	25.14	8.26	6.45
7/23/01	400	25.55	8.25	6.58	7/25/01	700	25.03	8.23	6.53
7/23/01	500	25.49	8.24	6.61	7/25/01	800	24.99	8.19	6.44
7/23/01	600	25.34	8.21	6.51	7/25/01	900	24.90	8.17	6.35
7/23/01	700	25.23	8.19	6.24	7/25/01	1000	24.73	8.15	6.21
7/23/01	800	25.28	8.17	6.33	7/25/01	1100	24.73	8.15	6.28
7/23/01	900	25.41	8.15	6.13	7/25/01	1200	24.91	8.15	6.14
7/23/01	1000	25.17	8.16	6.10	7/25/01	1300	25.15	8.16	6.29
7/23/01	1100	25.30	8.16	6.23	7/25/01	1400	25.32	8.18	6.39
7/23/01	1200	25.58	8.16	6.17	7/25/01	1500			
7/23/01	1300	25.60	8.17	6.30	7/25/01	1600	25.58	8.29	6.63
7/23/01	1400	25.64	8.20	6.35	7/25/01	1700	25.77	8.35	6.94
7/23/01	1500	25.84	8.26	6.39	7/25/01	1800	25.81	8.40	7.16
7/23/01	1600	26.07	8.32	6.62	7/25/01	1900	25.88	8.43	7.19
7/23/01	1700	26.28	8.37	6.88	7/25/01	2000	25.83	8.41	7.15

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
7/25/01	2100	25.62	8.40	6.96	7/28/01	0	24.97	8.51	7.30
7/25/01	2200	25.53	8.40	7.07	7/28/01	100	24.90	8.50	7.27
7/25/01	2300	25.38	8.36	6.82	7/28/01	200	24.80	8.48	7.28
7/26/01	0	25.15	8.34	6.77	7/28/01	300	24.67	8.48	7.38
7/26/01	100	25.01	8.32	6.77	7/28/01	400	24.47	8.47	7.22
7/26/01	200	24.90	8.30	6.58	7/28/01	500	24.45	8.45	7.22
7/26/01	300	24.67	8.28	6.64	7/28/01	600	24.27	8.40	7.06
7/26/01	400	24.53	8.26	6.45	7/28/01	700	*		
7/26/01	500	24.36	8.24	6.63	7/28/01	800	23.94	8.34	6.72
7/26/01	600	24.11	8.23	6.47	7/28/01	900	23.81	8.31	6.80
7/26/01	700	23.96	8.20	6.24	7/28/01	1000	23.71	8.27	6.68
7/26/01	800	23.67	8.19	6.23	7/28/01	1100	23.61	8.23	6.62
7/26/01	900	23.56	8.17	6.43	7/28/01	1200	23.42	8.21	6.49
7/26/01	1000	23.47	8.16	6.33	7/28/01	1300	23.38	8.19	6.46
7/26/01	1100	23.54	8.16	6.34	7/28/01	1400	23.42	8.18	6.50
7/26/01	1200	24.05	8.17	6.37	7/28/01	1500	23.25	8.18	6.43
7/26/01	1300	24.33	8.19	6.35	7/28/01	1600	23.13	8.17	6.53
7/26/01	1400	24.67	8.24	6.60	7/28/01	1700	23.04	8.18	6.42
7/26/01	1500	25.01	8.31	6.91	7/28/01	1800	23.09	8.18	6.45
7/26/01	1600	25.43	8.37	7.14	7/28/01	1900	23.16	8.17	6.36
7/26/01	1700	25.64	8.45	7.28	7/28/01	2000	23.05	8.18	6.31
7/26/01	1800	26.14	8.50	7.43	7/28/01	2100	23.07	8.18	6.48
7/26/01	1900	26.30	8.49	7.25	7/28/01	2200	22.96	8.19	6.53
7/26/01	2000	26.35	8.47	7.21	7/28/01	2300	23.14	8.19	6.24
7/26/01	2100	25.73	8.48	7.50	7/29/01	0	23.09	8.19	6.14
7/26/01	2200	25.64	8.48	7.02	7/29/01	100	23.11	8.18	6.58
7/26/01	2300	25.38	8.48	6.97	7/29/01	200	23.00	8.20	6.62
7/27/01	0	25.19	8.46	7.09	7/29/01	300	23.00	8.19	6.49
7/27/01	100	25.03	8.42	7.08	7/29/01	400	23.09	8.20	6.54
7/27/01	200	24.82	8.39	7.13	7/29/01	500	22.96	8.19	6.52
7/27/01	300	24.56	8.36	6.85	7/29/01	600	22.93	8.17	6.39
7/27/01	400	24.34	8.33	6.94	7/29/01	700	22.84	8.17	6.49
7/27/01	500	24.20	8.30	6.70	7/29/01	800	22.95	8.17	6.51
7/27/01	600	23.78	8.28	6.87	7/29/01	900	22.98	8.15	6.52
7/27/01	700	23.71	8.25	6.72	7/29/01	1000	22.95	8.15	6.48
7/27/01	800	23.89	8.22	6.41	7/29/01	1100	23.07	8.15	6.41
7/27/01	900	23.76	8.21	6.64	7/29/01	1200	23.07	8.14	6.44
7/27/01	1000	23.60	8.19	6.50	7/29/01	1300	23.13	8.15	6.36
7/27/01	1100	23.54	8.18	6.37	7/29/01	1400	23.29	8.15	6.42
7/27/01	1200	23.74	8.19	6.31	7/29/01	1500	23.22	8.16	6.15
7/27/01	1300	23.89	8.22	6.52	7/29/01	1600	23.27	8.17	6.26
7/27/01	1400	24.22	8.27	6.67	7/29/01	1700	23.42	8.18	6.47
7/27/01	1500	24.60	8.33	6.48	7/29/01	1800	23.54	8.18	6.59
7/27/01	1600	25.36	8.38	6.79	7/29/01	1900	23.61	8.20	6.53
7/27/01	1700	25.58	8.41	7.17	7/29/01	2000	23.61	8.21	6.71
7/27/01	1800	25.55	8.44	7.09	7/29/01	2100	23.61	8.23	6.80
7/27/01	1900	25.66	8.47	7.22	7/29/01	2200	23.61	8.25	6.83
7/27/01	2000	25.99	8.49	7.03	7/29/01	2300	23.60	8.26	6.91
7/27/01	2100	25.10	8.51	7.38	7/30/01	0	23.45	8.26	6.90
7/27/01	2200	25.06	8.51	7.11	7/30/01	100	23.49	8.27	6.90
7/27/01	2300	25.01	8.53	7.42	7/30/01	200	23.40	8.29	6.95

Date	Hour	Temp	pH	DO	Date	Hour	Temp	pH	DO
7/30/01	300	23.51	8.29	7.02	8/1/01	600	23.63	8.21	6.62
7/30/01	400	23.42	8.30	6.96	8/1/01	700	23.56	8.20	6.41
7/30/01	500	23.31	8.30	7.03	8/1/01	800	23.52	8.17	6.48
7/30/01	600	23.31	8.29	7.07	8/1/01	900	23.56	8.14	6.42
7/30/01	700	23.22	8.27	6.74	8/1/01	1000	23.47	8.11	6.33
7/30/01	800	23.31	8.24	6.88	8/1/01	1100	23.42	8.09	6.13
7/30/01	900	23.02	8.21	6.79	8/1/01	1200	23.47	8.09	6.15
7/30/01	1000	22.95	8.16	6.61	8/1/01	1300	23.34	8.10	6.21
7/30/01	1100	22.86	8.16	6.56	8/1/01	1400	23.47	8.11	6.23
7/30/01	1200	23.07	8.14	6.49	8/1/01	1500	23.47	8.12	6.27
7/30/01	1300	23.07	8.15	6.42	8/1/01	1600	23.47	8.13	6.32
7/30/01	1400	23.16	8.16	6.49	8/1/01	1700	23.67	8.15	6.43
7/30/01	1500	23.27	8.18	6.47	8/1/01	1800	23.56	8.18	6.61
7/30/01	1600	23.34	8.23	6.68	8/1/01	1900	23.69	8.19	6.65
7/30/01	1700	23.60	8.27	6.81	8/1/01	2000	23.67	8.19	6.75
7/30/01	1800	23.85	8.28	6.94	8/1/01	2100	23.33	8.18	6.64
7/30/01	1900	23.80	8.28	6.86	8/1/01	2200	23.34	8.18	6.42
7/30/01	2000	23.67	8.26	6.71	8/1/01	2300	23.40	8.17	6.20
7/30/01	2100	23.36	8.26	6.84	8/2/01	0	23.24	8.17	6.10
7/30/01	2200	23.36	8.24	6.79	8/2/01	100	23.16	8.16	6.31
7/30/01	2300	23.16	8.24	6.62	8/2/01	200	23.18	8.16	6.34
7/31/01	0	23.31	8.23	6.66	8/2/01	300	23.11	8.15	6.22
7/31/01	100	23.31	8.23	6.71	8/2/01	400	23.04	8.15	6.25
7/31/01	200	23.16	8.21	6.82	8/2/01	500	23.07	8.14	6.20
7/31/01	300	23.05	8.22	6.81	8/2/01	600	23.11	8.12	6.21
7/31/01	400	23.02	8.21	6.78	8/2/01	700	23.05	8.11	6.23
7/31/01	500	22.96	8.20	6.71	8/2/01	800	23.00	8.10	6.14
7/31/01	600	22.89	8.19	6.56	8/2/01	900	23.09	8.10	6.04
7/31/01	700	22.80	8.17	6.55	8/2/01	1000	23.05	8.11	6.12
7/31/01	800	22.84	8.16	6.56	8/2/01	1100	23.45	8.11	6.14
7/31/01	900	22.68	8.14	6.39	8/2/01	1200	23.45	8.13	6.17
7/31/01	1000	22.89	8.13	6.48	8/2/01	1300	23.83	8.16	6.30
7/31/01	1100	22.95	8.13	6.36	8/2/01	1400	24.05	8.20	6.54
7/31/01	1200	23.14	8.14	6.43	8/2/01	1500	24.45	8.25	6.51
7/31/01	1300	23.34	8.16	6.52	8/2/01	1600	24.88	8.30	6.92
7/31/01	1400	23.54	8.19	6.53	8/2/01	1700	24.93	8.37	7.29
7/31/01	1500	*			8/2/01	1800	25.01	8.40	7.32
7/31/01	1600	24.14	8.28	6.77	8/2/01	1900	24.82	8.44	7.49
7/31/01	1700	24.38	8.33	7.13	8/2/01	2000	25.01	8.44	7.42
7/31/01	1800	24.49	8.37	7.12	8/2/01	2100	24.60	8.43	7.39
7/31/01	1900	24.56	8.39	7.43	8/2/01	2200	24.45	8.40	7.34
7/31/01	2000	24.64	8.39	7.37	8/2/01	2300	24.58	8.35	7.05
7/31/01	2100	24.34	8.39	7.38	8/3/01	0	24.40	8.34	7.08
7/31/01	2200	24.40	8.36	7.24	8/3/01	100	24.27	8.30	6.87
7/31/01	2300	24.31	8.35	7.11	8/3/01	200	24.12	8.29	6.84
8/1/01	0	24.40	8.33	7.09	8/3/01	300	24.07	8.25	6.72
8/1/01	100	24.12	8.32	7.01	8/3/01	400	24.00	8.23	6.67
8/1/01	200	24.11	8.30	6.99	8/3/01	500	23.87	8.22	6.56
8/1/01	300	23.98	8.29	6.93	8/3/01	600	23.61	8.20	6.48
8/1/01	400	24.00	8.26	6.61	8/3/01	700	*		
8/1/01	500	23.80	8.24	6.71	8/3/01	800	23.54	8.15	6.28

Date	Hour	Temp	pH	DO
8/3/01	900	23.38	8.13	6.24
8/3/01	1000	23.49	8.13	6.15
8/3/01	1100	23.63	8.14	6.25
8/3/01	1200	23.91	8.15	6.35
8/3/01	1300	24.29	8.18	6.44
8/3/01	1400	24.45	8.22	6.71
8/3/01	1500	24.82	8.27	6.75
8/3/01	1600	25.38	8.34	7.13
8/3/01	1700	25.49	8.42	7.25
8/3/01	1800	25.71	8.47	7.53
8/3/01	1900	25.73	8.51	7.56
8/3/01	2000	25.66	8.52	7.58
8/3/01	2100	25.15	8.50	7.64
8/3/01	2200	24.93	8.46	7.48
8/3/01	2300	24.66	8.42	7.17
8/4/01	0	24.60	8.37	7.02
8/4/01	100	24.47	8.35	7.11
8/4/01	200	24.33	8.31	7.07
8/4/01	300	24.12	8.29	6.96
8/4/01	400	24.07	8.26	6.77
8/4/01	500	23.96	8.24	6.85
8/4/01	600	23.87	8.21	6.59
8/4/01	700	23.76	8.19	6.52
8/4/01	800	23.71	8.17	6.56
8/4/01	900	23.67	8.17	6.43
8/4/01	1000	23.78	8.16	6.45
8/4/01	1100	23.91	8.18	6.56
8/4/01	1200	24.05	8.18	6.53
8/4/01	1300	24.20	8.18	6.65
8/4/01	1400	24.38	8.20	6.71
8/4/01	1500	24.71	8.24	6.58
8/4/01	1600	24.91	8.27	6.87
8/4/01	1700	25.14	8.33	7.19
8/4/01	1800	25.45	8.42	7.46
8/4/01	1900	25.68	8.50	7.71
8/4/01	2000	25.71	8.52	7.65
8/4/01	2100	25.71	8.53	7.66
8/4/01	2200	25.71	8.53	7.62
8/4/01	2300	25.66	8.52	7.50
8/5/01	0	25.58	8.51	7.52
8/5/01	100	25.47	8.50	7.40
8/5/01	200	25.32	8.47	7.43
8/5/01	300	25.15	8.44	7.27
8/5/01	400	24.99	8.40	7.04
8/5/01	500	24.82	8.36	7.03
8/5/01	600	24.66	8.33	7.01
8/5/01	700	24.53	8.27	6.62
8/5/01	800	24.42	8.25	6.61
8/5/01	900	24.34	8.23	6.75
8/5/01	1000	24.38	8.21	6.56
8/5/01	1100	24.40	8.20	6.59
8/5/01	1200	24.49	8.20	6.58
8/5/01	1300	24.66	8.21	6.74
8/5/01	1400	24.91	8.23	6.85
8/5/01	1500	25.15	8.25	6.84
8/5/01	1600	25.36	8.28	6.84
8/5/01	1700	25.55	8.33	7.11
8/5/01	1800	25.73	8.39	7.27
8/5/01	1900	25.92	8.46	7.39
8/5/01	2000	26.07	8.53	7.54
8/5/01	2100	26.09	8.56	7.47
8/5/01	2200	26.03	8.55	7.53
8/5/01	2300	25.88	8.52	7.20
8/6/01	0	25.77	8.47	7.25
8/6/01	100	25.64	8.43	7.38
8/6/01	200	25.51	8.39	7.25
8/6/01	300	25.41	8.37	7.11
8/6/01	400	25.32	8.33	6.99
8/6/01	500	25.21	8.31	6.92
8/6/01	600	25.10	8.27	6.78
8/6/01	700	25.01	8.25	6.67
8/6/01	800	24.93	8.22	6.49

* Indicates equipment failed to acquire a reading.

Attachment 2

STORAENSO

Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, WI 54495-8050

Telephone 715 422 3111

August 24, 2001

Mr. Tom Meronek
Wisconsin Department of Natural Resources
101 North Ogden, P.O. Box 208
Peshtigo, WI 54157

Ms. Jessica Mistak
Michigan Department of Natural Resources
Habitat Protection Unit, Fisheries Division
P.O. Box 30028
Lansing, MI 48909-7528

Mr. James Fossum
U.S. Fish & Wildlife Service
1015 Challenger Court
Green Bay, WI 54311-8331

Little Quinnesec Falls Hydroelectric Project – Article 406, Water Quality Monitoring Plan Final Report

Dear Messrs. Meronek, Fossum, and Ms. Mistak:

The Federal Energy Regulatory Commission issued an order approving a plan filed by Stora Enso North America Corporation (formerly Consolidated Papers, Inc.) on July 1, 1999. The plan called for a two-year monitoring program of the tailwater below the above Project. If, after the two years, data suggests that water quality problems do not exist, the order allows Stora Enso (SENA) to pursue modification or elimination of the order after consultation with the agencies. SENA contracted with White Water Associates, an environmental engineering firm, to setup, compile, and develop the monitoring reports as well as provide an analysis of the impacts observed.

SENA completed the two-year study in early August 2001 and is submitting the results of the 2001 data analysis for your review. Additionally, White Water Associates, Inc. included in this report a Findings section to provide a summary analysis of 1999–2001 with their professional opinion on what conclusions can be determined from the study. As you will notice, they conclude that the project has no impact upon the water quality of the Menominee River. SENA concurs with this conclusion and believes that further monitoring is not needed.

STORAENSO

August 24, 2001

Messrs. Meronek, Fossum, and Ms. Mistak
Page 2.

This is based upon the fact that in no instance during the two-year study did the tailwater approach the state standard of 5.0 mg/L minimum dissolved oxygen or exhibit any pH values outside the ranges normal for the Menominee River. We ask you to review the enclosed report and concur with our conclusion to eliminate this article from our hydroelectric license. In accordance with FERC guidelines concerning consultation, we ask for your response within thirty days of this request. After that time, we will be filing the final report with the FERC to include any responses we receive from the agencies.

Please direct questions regarding this request to the undersigned at (715) 422-3927 or via e-mail at mark.anderson@storaenso.com.

Sincerely,

STORA ENSO NORTH AMERICA

Mark E. Anderson/bk

Mark E. Anderson
Resources Coordinator

Enclosure: White Water Associates, Inc. Report—August 14, 2001

Route: T.G. Scharff – File (Little Quinnesec Falls, LG-90-30, Article 406)

CC: D.W. Schmutzler – N

REPLY TO:

MARQUETTE FISHERIES STATION
488 CHERRY CREEK RD
MARQUETTE MI 49855-8999

TEL: (906) 249-1611
FAX: (906) 249-3190

Refer to: 4202.2.32

September 13, 2001

Mr. Mark Anderson, Resource Coordinator
Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, WI 54495-8050

Dear Mr. Anderson:

Subject: Little Quinnesec Falls Dam, FERC No. 2536
Water Quality Monitoring

The Little Quinnesec Project (FERC No. 2536) was ordered on July 1, 1999 to conduct water quality monitoring. The purpose of the monitoring was to ensure that releases from the project maintain the state standards for water temperature (<89F), dissolved oxygen (DO) (>5.0mg/L), and pH (6.0-9.0) in the Menominee River immediately downstream of the project. This monitoring was to be conducted from May through September for two years. If, after two years, data suggested that water quality problems did not exist, the licensee, in consultation with the agencies, could pursue modification or elimination of this article from the license.

Your letter of August 24, 2001, requested Michigan Department of Natural Resources (MDNR) review of Stora Enso North America's (SENA) final water quality monitoring report, pursuant to Article 406 of the Little Quinnesec license. MDNR is pleased to find that the water quality study results showed that the Little Quinnesec Falls Hydro Project was operated within Michigan and Wisconsin state water quality standards. However, we concur with the U.S. Fish and Wildlife Service (FWS) that Article 406 should be retained in the license and that further water quality monitoring is necessary. The license for the Little Quinnesec Falls Project was issued on May 7, 1997. To date, the project is only in its fifth year of a 40-year license term. We believe that to eliminate all future water quality monitoring would be overly presumptuous. It is incorrect to assume that, within the next 35 years, water quality in the Menominee River in the immediate vicinity of the hydro project would neither change nor be potentially affected by project operations. Clearly, 35 years into the future is too long to predict.

MDNR would support restructuring Article 406 such that, over the remaining term of the license, the frequency of water quality monitoring be reduced (e.g., every three to five years) as necessary to confirm that the project is being operated within state standards. Further, we would add the condition that if water quality levels are detected that exceed state standards, SENA should develop a plan for remedial action, in consultation with MDNR, Wisconsin DNR, and the FWS. We recommend that SENA consult with the resource agencies and develop a new water quality monitoring plan for the remaining

term of the license and submit it to the Federal Energy Regulatory Commission for approval.

We appreciate the opportunity to review the water quality monitoring report for the Little Quinnesec Falls Hydro Project. If you have any questions, please contact me.

Sincerely,

Jessica Mistak
Habitat Management Unit
Fisheries Division
906/249-1611
mistakjl@state.mi.us

cc: Dr. Kurt Newman, MDNR
Mr. Jim Fossum, FWS
Mr. Tom Meronek, Wisconsin DNR

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Green Bay ES Field Office
1015 Challenger Court
Green Bay, Wisconsin 54311-8331
Telephone 920/465-7440
FAX 920/465-7410

September 24, 2001

Mr. Mark E. Anderson
Resources Coordinator
Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, Wisconsin 54495-8050

re: Little Quinnesec Falls Hydroelectric Project
(FERC No. 2536) Menominee River,
Water Quality Monitoring

Dear Mr. Anderson:

Your letter of August 24, 2001, requested U.S. Fish and Wildlife Service (FWS) review of Stora Enso North America's (SENA) final water quality monitoring report, pursuant to Article 406 of the license for the referenced hydroelectric (hydro) project. Further, SENA requested that the FWS concur with its conclusions that:

- during the1999-2001 sampling period, water quality parameters in the tailwater did not exceed the Wisconsin and Michigan State standards for dissolved oxygen ([DO] > 5 milligrams per liter [mg/l]), temperature (<89 degrees Fahrenheit) and the allowable pH range (6.0 to 9.0 units).

- the FWS concur with SENA's proposal to eliminate Article 406 from the license and thus, eliminate the need for any additional water quality monitoring over the term of the license.

We are pleased, and concur, that the water quality study results showed that the Little Quinnesec Falls Hydro Project was operated within Michigan and Wisconsin State water quality standards. However, we do not concur that Article 406 should be deleted from the license and, most specifically, we do not concur that no further water quality monitoring is necessary. The Federal Energy Regulatory Commission (FERC) license for the Little Quinnesec Falls Project was issued on May 7, 1997. To date, the project is only in its fifth year of a 40-year license term. We believe that to eliminate all future water quality monitoring would be overly presumptuous; further, it is incorrect to assume that in the next 35 years, water quality in the Menominee River

in the immediate vicinity of the hydro project would not change nor be potentially affected by project operations. Clearly, 35 years into the future is too long to predict.

The FWS would support restructuring Article 406 such that, over the remaining term of the license, the frequency of water quality monitoring be reduced (e.g., every 3 to 5 years) as necessary to confirm that the project is being operated within State water quality standards. Further, we would add the condition that if water quality levels are detected which exceed State standards, then SENA would develop a plan for remedial action, in consultation with the Michigan Department of Natural Resources (DNR), Wisconsin DNR, and FWS (Agencies). We recommend that SENA consult with the Agencies and develop a new water quality monitoring plan for the remaining term of the license and submit it to the FERC for approval.

We appreciate the opportunity to review the water quality monitoring report for the Little Quinnesec Falls Hydro Project. If you need to discuss this further, please contact Jim Fossum of my staff at (920) 465-7421.

Sincerely,

Janet M. Smith
Field Supervisor

cc: Jessica Mistak, Michigan DNR, Marquette, MI
Dr. Kurt Newman, Michigan DNR, Lansing, MI
Tom Meronek, Wisconsin DNR, Peshtigo, WI
David P. Boergers, Secretary, FERC, Washington, D.C.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott McCallum, Governor
Darrell Bazzell, Secretary
Ronald W. Kazmierczak, Regional Director

Peshtigo Service Center
PO Box 208
101 N. Ogden Rd.
Peshtigo, Wisconsin 54157
Telephone 715-582-5052
FAX 715-582-5005

September 25, 2001

Mr. Mark Anderson
Resources Coordinator
Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, WI 54495-8050

re: Little Quinnesec Falls Hydroelectric Project (FERC No.2536) Menominee River, Water Quality Monitoring.

Dear Mr. Anderson:

We received your letter of August 24, 2001, and are pleased with the final water quality monitoring report, pursuant to Article 406 of the license for project No. 2536. However we do not concur with your conclusion that further water quality monitoring is not necessary for the remainder of the license period (35 years).

Considering that the project is only in the fifth year of a 40 year license term, we believe it is premature to eliminate Article 406 from the license. The Department will be happy to work with you on the revision of this article, however will stop short of recommending its elimination.

If you have questions concerning this please feel free to contact me at (715) 582-5052. We look forward to working with you on the revision of this article.

Sincerely,

Thomas G. Meronek
Fisheries Biologist

cc: Jim Fossum, USFWS
Jessica Mistak, MDNR
David P. Boergers, FERC

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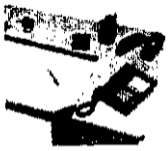

Mark Anderson
09/26/2001 10:57 AM

To: Tom Meronek, Jessica Mistak, Jim Fossum
cc:
cc:
bcc:
Subject: Little Quinnesec Falls - Water Quality Monitoring

I have received comments from all three of you relevant to my consultation letter dated August 24th. I appreciate you timely response to my letter and your comments.

I will be reviewing your comments to determine options for a modified plan. Because of everyone's busy schedule I would like to attempt to complete this consultation via email. This forms a paper record for filing with FERC and doesn't force us to work around everyone's schedules for a meeting. If necessary, we can complete any small details via telephone but my major concern is keeping all four in the loop on all conversations.

I hope to be able to reach a consensus and file with the FERC along with our final report. This is due in Washington D.C. on October 24th so realistically we have to have agreement no later than the week of the 15th. Please let me know if there are any scheduling conflicts (long vacations, etc.) that would preclude meeting this deadline.

I'm sure the fall colors starting to really show themselves about this time.

Mark E. Anderson
Resources Coordinator
Consolidated Water Power Company
PO Box 8050
Wisconsin Rapids, WI 54495-8050

715-422-3927 office
mark.anderson@storaenso.com

Jim_Fossum@fws.gov
v
09/26/2001 02:58 PM

To: Mark Anderson/CPI@CPI
cc: Mistakjl@state.mi.us@SMTP@Eservices
bcc:
Subject: Re: Little Quinnesec Falls - Water Quality Monitoring

Mark

I am about to go on 2 weeks vacation, then one week (at least) of business
travel. I support your initiative for a modified water quality plan but it may be hard to coordinate comments from me in time for your FERC filing.
If you receive input from Michigan and Wisconsin and they concur to a new
water quality monitoring plan, I will defer to them. Send me all the stuff and if I can get to it I will but if not, go without FWS response. Perhaps you could say to FERC that the FWS had to "no action" the proposal because
of other work load constraints.

Thanks

Jim

Mark.Anderson@storaenso.com
09/26/2001 11:33 AM

To: meront@dnr.state.wi.us, mistakjl@state.mi.us, jim_fossum@fws.gov
cc:
Subject: Little Quinnesec Falls - Water Quality Monitoring

I have received comments from all three of you relevant to my consultation
letter dated August 24th. I appreciate you timely response to my letter and your comments.

I will be reviewing your comments to determine options for a modified plan.
Because of everyone's busy schedule I would like to attempt to complete
this consultation via email. This forms a paper record for filing with FERC and doesn't force us to work around everyone's schedules for a meeting. If necessary, we can complete any small details via telephone but
my major concern is keeping all four in the loop on all conversations.

I hope to be able to reach a consensus and file with the FERC along with

our final report. This is due in Washington D.C. on October 24th so realistically we have to have agreement no later than the week of the 15th.
Please let me know if there are any scheduling conflicts (long vacations, etc.) that would preclude meeting this deadline.

I'm sure the fall colors starting to really show themselves about this time.

Mark E. Anderson
Resources Coordinator
Consolidated Water Power Company
PO Box 8050
Wisconsin Rapids, WI 54495-8050

715-422-3927 office
mark.anderson@storaenso.com

Mark Anderson

10/12/2001 02:43 PM

To: Tom Meronek, Jessica Mistak, Jim Fossum
cc: Dave Schmutzler/CPI
cc:
bcc:
Subject: Little Quinnesec Falls - Article 406 (Water Quality) Consulation

Attached is a proposed water quality monitoring plan for the above hydroelectric project. The plan mirrors the two-year study in regards to testing parameters, instrument location and actions if a low D.O. event occurs. Initial relicensing data suggested no concerns with water quality. The results from the two-year study confirms this fact. Therefore, we believe it is appropriate to remonitor the site in five years (2006) and thereafter every ten years up to 2036. This will provide the periodic monitoring asked for in your response to our initial letter dated August 24, 2001.

I look forward to your comments and approval of the modified plan.

Modified 2001 Plan.doc

Mark E. Anderson
Resources Coordinator
Consolidated Water Power Company
PO Box 8050
Wisconsin Rapids, WI 54495-8050

715-422-3927 office
mark.anderson@storaenso.com

1. PURPOSE.

To ensure that releases from the Little Quinnesec Falls Project, FERC No. 2536, maintain State water quality standards immediately below the Project except when river flow in the Menominee River is < 95% exceedance flow or when natural conditions prohibit attainment of those standards. As indicated in the new license issued May 7, 1997 these are:

Temperature	< 89°F
Dissolved Oxygen	> 5.0 mg/L
pH	6.0 - 9.0

A two-year study revealed no water quality problems associated with the project area. Consequently this modified plan calls for only periodic monitoring based upon an agreed upon timetable.

2. SCOPE.

The monitoring station will remain located in the Little Quinnesec Project tailrace, upstream of the Stora Enso North America (SENA) - Niagara mill wastewater treatment discharge point. Continuous monitoring equipment will record on an hourly basis; temperature, dissolved oxygen and pH. The test parameters and monitoring schedule are consistent with the previous study.

Monitoring will occur during the months of May through September. The first monitoring year will occur in 2006. Thereafter, SENA will monitor the tailwater every ten years. Therefore, the schedule will require monitoring for the following years (2006, 2016, 2026, 2036). This schedule is a reflection of existing evidence from the previous two-year study and data gathered during the relicensing of the project showing no water quality problems at the project.

3. LOW D.O. EVENTS.

If, during continuous monitoring, a low D.O. event is recorded, one-meter intervals will be taken throughout the water column in a deep part of the impoundment immediately upstream from the Project. This measure is to determine if water entering the Project is contributing to the event. The state and federal agencies will be notified by telephone or email that an event has occurred within five working days. The results of the profile sampling and any circumstances that may have caused the event will be reported to the resource agencies within thirty working days and summarized in the monitoring report filed by the end of November.

4. QUALITY ASSURANCE PROGRAM.

Continuous monitoring equipment will be calibrated periodically during the monitoring period using appropriate methodology noted in "Standard Methods for the Examination of Water and Wastewater", 18th Edition.

Temperature	Method 2550 B
Dissolved Oxygen	Method 4500-0 C
pH	Method 4500 - H+

5. REPORTING.

Data from the continuous monitoring will be electronically recorded and stored at SENA's Niagara mill. The FERC, USFWS, WDNR, MDNR and MDEQ will receive a report with supporting data no later than November 30 of the monitoring year.

As noted in section three above, the agencies will be notified of low D.O. events within five working days from the date of the occurrence with results of the profile sampling within thirty days.

6. CONSULTATION WITH AGENCIES. (See Attachment 1)

{Attach consultation emails}

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

Scott McCallum, Governor
Darrell Bazzell, Secretary
Ronald W. Kazmierczak, Regional Director

Peshtigo Service Center
PO Box 208
101 N. Ogden Rd.
Peshtigo, Wisconsin 54157
Telephone 715-582-5052
FAX 715-582-5005

October 16, 2001

Mr. Mark Anderson
Resources Coordinator
Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, WI 54495-8050

re: Little Quinnesec Falls Hydroelectric Project (FERC No.2536) Menominee River, Water Quality Monitoring Plan.

Dear Mr. Anderson:

We were pleased to receive the new water quality monitoring plan developed by Stora Enso North America (SENA) and required by Article 406 of your FERC license. After consultation we believe it will be inadequate to monitor once every ten years after 2006. In order to protect the aquatic resources of the Menominee River the Department recommends water quality monitoring be scheduled every five years. We believe this change would require little additional effort on the part of SENA. Otherwise we concur with this plan.

If you have further questions regarding this recommendation please contact me at (715) 582-5052.

Sincerely,

Thomas G. Meronek
Fisheries Biologist

cc: Jim Fossum, USFWS
Jessica Mistak, MDNR
David P. Boergers, FERC

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Attachment 10

STATE OF MICHIGAN
JOHN ENGLER, Governor
DEPARTMENT OF NATURAL RESOURCES
STEVENS T MASON BUILDING, PO BOX 30028, LANSING MI 48909-7528
WEBSITE: www.michigandnr.com
K. L. COOL, Director

REPLY TO:
MARQUETTE FISHERIES STATION
488 CHERRY CREEK RD
MARQUETTE MI 49855-8999
TEL: (906) 249-1611
FAX: (906) 249-3190

Refer to: 4202.2.32

October 16, 2001

Mr. Mark Anderson, Resource Coordinator
Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, WI 54495-8050

Dear Mr. Anderson:

Subject: Little Quinnesec Falls Dam, FERC No. 2536
Revised Water Quality Monitoring Plan

The Little Quinnesec Project (FERC No. 2536) was ordered on July 1, 1999 to conduct water quality monitoring. The purpose of the monitoring was to ensure that releases from the project maintain the state standards for water temperature (<89F), dissolved oxygen (DO) (>5.0mg/L), and pH (6.0-9.0) in the Menominee River immediately downstream of the project. This monitoring was to be conducted from May through September for two years. According to Article 406, if, after two years, data suggested that water quality problems did not exist, the licensee, in consultation with the agencies, could pursue modification or elimination of this article from the license.

Although no water quality problems were detected after two years, per the resource agencies request, Stora Enso North America (SENA) developed a new water quality monitoring plan for the remaining term of the license. MDNR is pleased with the level of cooperation exressed by SENA regarding this matter and finds the revised plan to be well written. However, MDNR believes it would be more appropriate to conduct water quality monitoring every 5 years (beginning in 2006), as opposed to every 10 years. Monitoring at this frequency will not present a significant burden to SENA's workload and would provide adequate resource protection. In addition, a stipulation should be included in the plan stating that tailwater monitoring every 5 years is only appropriate if no problems with water quality are detected. If problems, such as non-compliance with state standards should occur, the licensee should consult with the resource agencies to develop a plan for remedial action.

Thank you for the opportunity to comment. If you have any questions, please contact me.

Sincerely,

Jessica Mistak

Jessica Mistak
Habitat Management Unit
Fisheries Division
906/249-1611
mistakjl@state.mi.us

cc: Dr. Kurt Newman, MDNR
Mr. Jim Fossum, USFWS
Mr. Tom Meronek, WDNR

Mark Anderson

10/19/2001 09:13 AM

To: Tom Meronek, Jessica Mistak, Jim Fossum
cc: Dave Schmutzler/CPI
cc:
bcc:
Subject: Little Quinnesec Falls Hydroelectric Project - Water Quality Monitoring Plan, Article 406

We have received comments from the WDNR and MDNR regarding our proposed plan to monitor water quality in 2006 (5 yrs from now) plus every 10 years thereafter for the term of the license. You are proposing we monitor every 5 years for the term of the license citing that this schedule will not be a significant burden upon SENA.

We disagree with your proposal for a couple of reasons and would like to explain them further.

1. To-date, relicensing and post-licensing studies have not exhibited any evidence that a water quality problem exists. Moreover, we believe that should a problem ever occur in the future that it is just as likely to be the result of a natural event or other upstream occurrence as it is to be the result of Little Quinnesec Falls project operations. To arbitrarily assume we should develop a remedial action plan or change monitoring efforts due to one of the water quality parameters exceeding a limit assumes that our project is the problem. We believe it is more appropriate to attempt to determine if the problem was truly project-related before discussing whether a remedial action plan prepared by us is even necessary. If it is determined that Little Quinnesec Falls operations are affecting water quality we believe consultation on a proposed remedial action plan is appropriate.

2. Article 406 allowed for its modification or elimination if the water quality study showed no adverse effects from project operations. That study concluded with absolutely no occurrences outside state standards for DO, temperature and pH. We believe this was sufficient evidence to show that water quality monitoring was no longer necessary. You disagreed citing that we were only five years into a forty-year license. We understand this concern and therefore, taking into consideration the history of no previous water quality problems, believe that monitoring every ten years for the duration of the license is sufficient effort and covered the duration of the license. Asking for monitoring every five years for the duration is overly burdensome, and unneccessary when data up to this point shows no water quality problems.

As an alternative we propose the following:

1. Monitor every five years for the next twenty years (2006, 2011, 2016, 2021). Monitoring, reporting, etc. would stay the same as conducted in the study and proposed in the first draft modification plan. In return, the agencies agree that if no project-related water quality problems (DO, pH, temperature) are detected during this time period, Article 406 is automatically eliminated for the balance of the license. This program meets your initial concern relating to a monitoring effort beyond the first five years by conducting more frequent monitoring for a combined twenty-five years. We believe this duration of monitoring is sufficient to demonstrate that the project is not adversely affecting water quality standards.

As a reminder, copies of these emails will be included in the filing to the FERC along with our proposed water quality plan. In an effort to reach an agreement we have asked for and been granted an extension to file the final report to the FERC from the original due date of 10/24/01. The extension is only for thirty days and as such we believe email will help expedite the consultation process. If we are unable to reach an agreement by November 12th, we will need to file a plan to the FERC, along with all consultation documents, and await their decision.

Sincerely,

Mark E. Anderson
Resources Coordinator
Consolidated Water Power Company
PO Box 8050
Wisconsin Rapids, WI 54495-8050

Attachment 12

STATE OF MICHIGAN
JOHN ENGLER, Governor
DEPARTMENT OF NATURAL RESOURCES
STEVENS T MASON BUILDING, PO BOX 30028, LANSING MI 48909-7528
WEBSITE: www.michigandnr.com
K. L. COOL, Director

REPLY TO:
MARQUETTE FISHERIES STATION
488 CHERRY CREEK RD
MARQUETTE MI 49855-8999
TEL: (906) 249-1611
FAX: (906) 249-3190

Refer to: 4202.2.32

October 30, 2001

Mr. Mark Anderson, Resource Coordinator
Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, WI 54495-8050

Dear Mr. Anderson:

Subject: Little Quinnesec Falls Dam, FERC No. 2536
Revised Water Quality Monitoring Plan

The Little Quinnesec Project (FERC No. 2536) was ordered on July 1, 1999 to conduct water quality monitoring. The purpose of the monitoring was to ensure that releases from the project maintain the state standards for water temperature (<89F), dissolved oxygen (DO) (>5.0mg/L), and pH (6.0-9.0) in the Menominee River immediately downstream of the project. This monitoring was to be conducted from May through September for two years. According to Article 406, if, after two years, data suggested that water quality problems did not exist, the licensee, in consultation with the agencies, could pursue modification or elimination of this article from the license.

Although no water quality problems were detected after two years, per the resource agencies request, Stora Enso North America (SENA) developed a new water quality monitoring plan for the remaining term of the license. The Michigan Department of Natural Resources (MDNR) is in agreement with the proposal to monitor water quality every five years for the next 20 years (monitoring in 2006, 2011, 2016, and 2021). SENA will monitor the tailwater temperature, Dissolved Oxygen (DO), and pH between May and September for each of the above years. MDNR agrees that no further monitoring is necessary if project-related water quality violations do not occur during the next 20 years. However, for resource protection, we recommend that the project continue to maintain State water quality standards after the monitoring period ends.

Thank you for the opportunity to comment. If you have any questions, please contact me.

Sincerely,

Jessica Mistak
Habitat Management Unit
Fisheries Division
906/249-1611
mistakjl@state.mi.us

cc: Dr. Kurt Newman, MDNR
Mr. Jim Fossum, USFWS
Mr. Tom Meronek, WDNR
Mr. John Suppnick, MDEQ

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Green Bay Ecological Services Field Office
1015 Challenger Court
Green Bay, Wisconsin 54311-8331
Telephone 920/465-7440
Fax 920/465-7410

October 31, 2001

Mr. Mark E. Anderson
Resources Coordinator
Stora Enso North America
P.O. Box 8050
Wisconsin Rapids, Wisconsin 54495-8050

re: Little Quinnesec Falls Hydroelectric Project
(FERC No. 2536) Menominee River,
Water Quality Monitoring

Dear Mr. Anderson:

The U.S. Fish and Wildlife Service (FWS) has reviewed Stora Enso North America's (SENA) final water quality monitoring report, pursuant to Article 406 of the license, for the referenced hydroelectric (hydro) project. The SENA requested that the FWS concur with its conclusions that:

- during the 1999-2001 sampling period, water quality parameters in the tailwater did not exceed the Wisconsin and Michigan state standards for dissolved oxygen: > 5 milligrams per liter, temperature:<89 degrees Fahrenheit, and the allowable pH range :6.0 to 9.0 units.

- SENA submit a proposal to eliminate Article 406 from the license and thus, eliminate the need for any additional water quality monitoring over the term of the license.

We concur that the water quality study results showed that the Little Quinnesec Falls Hydro Project was operated within Michigan and Wisconsin state water quality standards. However, we do not concur that Article 406 should be deleted from the license at this time. In response to this concern expressed by the resource agencies, SENA prepared a revised water quality monitoring plan. The FWS concurs with SENA's proposal to monitor water quality every five years for the next 20 years (monitoring in 2006, 2011, 2016, and 2021), in accordance with the sampling protocol outlined in the existing water quality monitoring plan. Further, the FWS agrees that no further monitoring beyond 2021 is necessary if project-related water quality violations do not occur during the 20 years. However, for protection of the Menominee River, we recommend that the project continue to maintain state water quality standards after the monitoring ends.

We appreciate the opportunity to review the water quality monitoring report and the revised water quality monitoring plan for the Little Quinnesec Falls Hydro Project. If you need to discuss this further, please contact Mr. Jim Fossum of my staff at (920) 465-7421.

Sincerely,

for James D. Fossum

Janet M. Smith
Field Supervisor

cc: Ms. Jessica Mistak, Michigan DNR, Marquette, MI
Dr. Kurt Newman, Michigan DNR, Lansing, MI
Mr. Tom Meronek, Wisconsin DNR, Peshtigo, WI
Mr. David P. Boergers, Secretary, FERC, Washington, D.C.

"Meronek, Thomas" <meront@mail01.dnr.state.wi.us>
11/19/2001 03:49 PM

To: Mark Anderson/CPI@CPI
cc:
bcc:
Subject: RE: Little Quinnesec Falls Water Quality

Mark,

I am not sure that I have even received the revised WQ plan. However, I have seen Jessica and Jims letters. And, I will concur with their analysis in the interest of time. Please send me a copy of the revision, I cannot find it if I did receive it. Thanks.

Tom.

> -----
> From:
> Mark.Anderson@storaenso.com[SMTP:Mark.Anderson@storaenso.com]
> Sent: Monday, November 19, 2001 11:09 AM
> To: meront@dnr.state.wi.us
> Subject: Little Quinnesec Falls Water Quality
>
> Tom:
>
> I have received letters of concurrence from Jim Fossum and Jessica Mistak
> on my proposed revised water quality plan allowing for 5-year monitoring
> for the next 20 years, etc. Have not heard a response from you yet. I
> need to have this out of my office tomorrow to get to FERC no later than
> 21
> November. Pls email me your comments if you have any otherwise I will
> simply state that I did not receive any other comments from the WDNR.
> Sorry for not querying you sooner but hoped I would have received
> something
> from you late last week.
>
> If you wish, call me directly.
>
>
>
> Mark E. Anderson
> Resources Coordinator
> Consolidated Water Power Company
> PO Box 8050
> Wisconsin Rapids, WI 54495-8050
>
> 715-422-3927 office
> mark.anderson@storaenso.com
>
> **********