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December 21, 1999

Mr. David P. Boergers, Secretary
Federal Energy Regulatory Commission
888 First Street, N.W.
Washington, D.C. 20426

RE: Alliant Energy - WP&L Shawano Hydroelectric Project, FERC No. 710-024

Pursuant to the hydro license issued to Alliant Energy - WP&L and the subsequent water quality monitoring plan, enclosed are four (4) copies of the water quality report entitled "1999 Temperature and Dissolved Oxygen Monitoring" for your review. The report describes the methods used to monitor water quality both upstream and downstream of the Shawano hydro facility, includes the data collected, and provides a comparison to Wisconsin's water quality standards.

If you have questions regarding the enclosed report, please contact me at (608) 252-0592.

Sincerely,

Linda Lynch

Linda Lynch

Cc: Doug Cox - MITW
Jim Fossum - FWS
Tom Thuemler - WDNR
Ross Langhurst - WDNR
Linda Hinseth - Alliant Energy

Attachments/RIMS/OHL

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FERC - DOCKETED

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1999 Temperature and Dissolved Oxygen Monitoring
Shawano Hydroelectric Project
FERC Project No. 710-003

Prepared for:

Alliant Energy
Madison, Wisconsin

MEAD & HUNT ENGINEERS ARCHITECTS SCIENTISTS PLANNERS

December 1999

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1999 Temperature and Dissolved Oxygen Monitoring Shawano Hydroelectric Project

1. Introduction

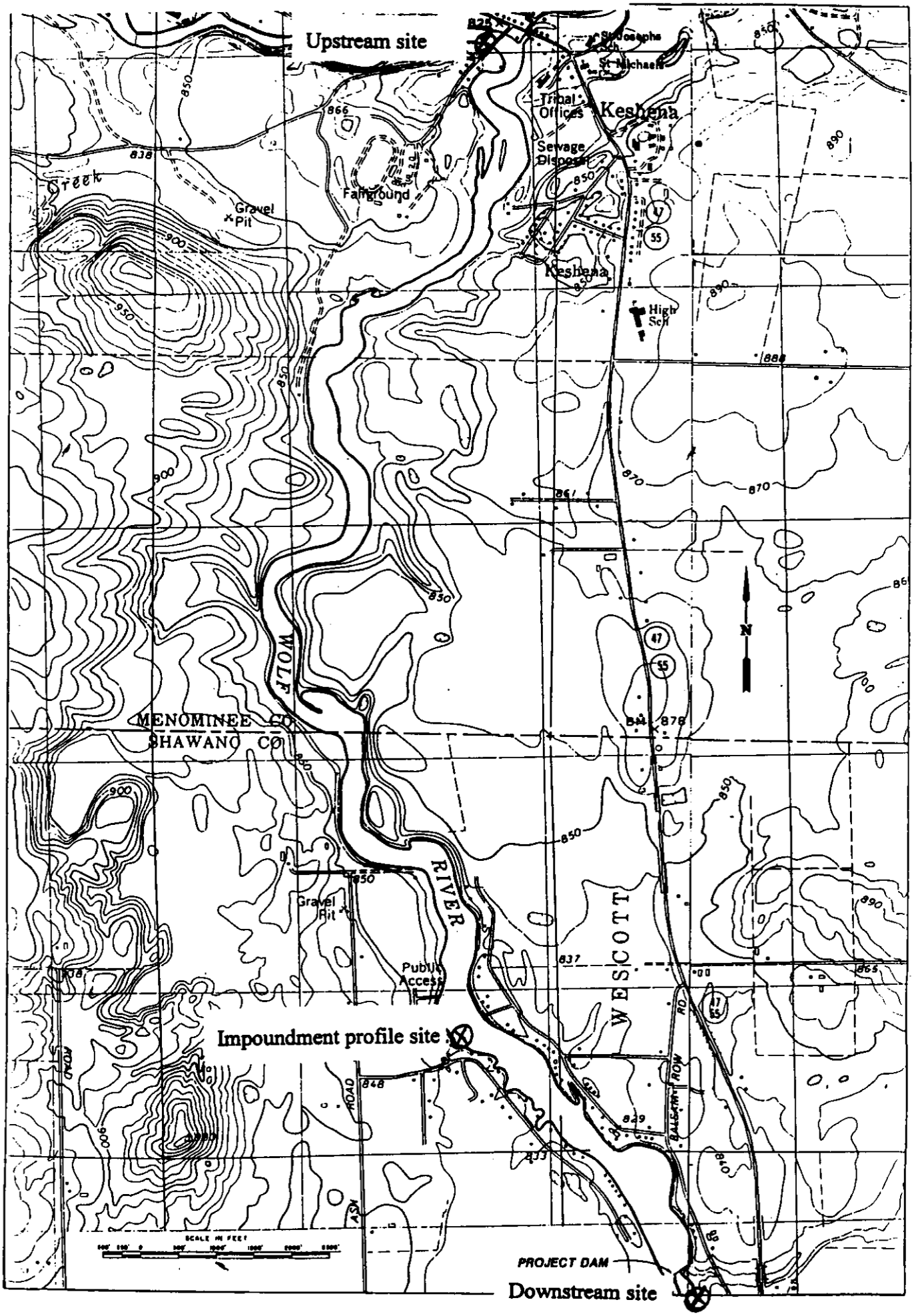
On November 13, 1997, Alliant Energy (formerly Wisconsin Power and Light Company) filed a plan to monitor dissolved oxygen (DO) and temperature pursuant to Article 405 of the license for the Shawano Hydroelectric Project, FERC Project No. 710-003, on the Wolf River. The plan mandated continuous monitoring of the Wolf River upstream and downstream of the project during the critical period of July 1 through September 15, 1999. The monitoring was to ensure that stream flows in these locations maintain a DO concentration of not less than 5.0 milligrams per liter (mg/L) and a water temperature no greater than 89 degrees Fahrenheit (F). In addition to the continuous monitoring, the plan also included provisions for collecting DO and temperature profiles in the Shawano Project impoundment.

2. Methods

The plan required continuous monitoring upstream and downstream of the Shawano Project and biweekly measurements of DO and temperature at the deepest point in the impoundment. The upstream continuous monitoring location was near the west riverbank just upstream of the bridge in the town of Keshena. The downstream continuous monitoring site was off of the east riverbank, about 100 meters from the dam. Each of the monitoring locations are shown in Figure 1.

Continuous monitoring was accomplished through the use of a Hydrolab DataSonde 3 at both the upstream and downstream locations. Each unit was configured to take hourly readings of temperature and DO concentrations beginning at 0100 hours, July 1, 1999. The DO probe used a standard DO membrane and was set for both salinity and temperature compensated. In response to a reduction in flow, stirrers were added to both the upstream and downstream DataSondes on August 2 and July 26, 1999, respectively. The use of stirrers was continued at each location throughout the remainder of the study.

Figure 1. Shawano Hydroelectric Project monitoring locations.



DataSondes were cleaned and air calibrated biweekly, as per manufacturer's guidelines. The barometric pressure readings required for air calibration were obtained through a barometric sensor in a Hydrolab Surveyor 4. Prior to calibration, saturation percentages were recorded to assess calibration drift, after which the unit was calibrated until it maintained its calibration for a minimum of 2 minutes. Temperature calibration of each DataSonde was set by the manufacturer and cannot be readjusted in the field. Initially, however, readings from each unit were compared with the others in a water bath in the Mead & Hunt laboratory prior to deployment. Each unit was initially within 0.2 degree Centigrade prior to initial deployment.

All data was downloaded to a Compaq Pentium laptop computer biweekly.

Profile monitoring of the deepest area of the impoundment was accomplished by using a Hydrolab DataSonde 3. Profile data were collected and stored on a Hydrolab Surveyor 4.

3. Results

The results of the continuous monitoring for DO and temperature at both upstream and downstream locations are shown in Figure Nos. 2 and 3, respectively. In addition, corresponding data is provided in Appendix A. The figures indicate that at no time during the sample period did the waters upstream or downstream of the project fall below the state water quality standard of 5 mg/L for DO or rise above the state water quality standard of 89 degrees F.

The only period where the data showed a concentration of DO below 5 mg/L upstream of the project occurred due to an apparent equipment failure between August 25 and September 8. For reasons unknown, the DO membrane became torn, resulting in a loss of the probe's fluid. This resulted in a precipitous drop in measured DO concentrations. After membrane replacement in the laboratory, the unit maintained an acceptable calibration, indicating that the membrane was the sole problem.

Figure 2. Dissolved oxygen concentrations measured upstream and downstream of the Shawano Hydroelectric Project.

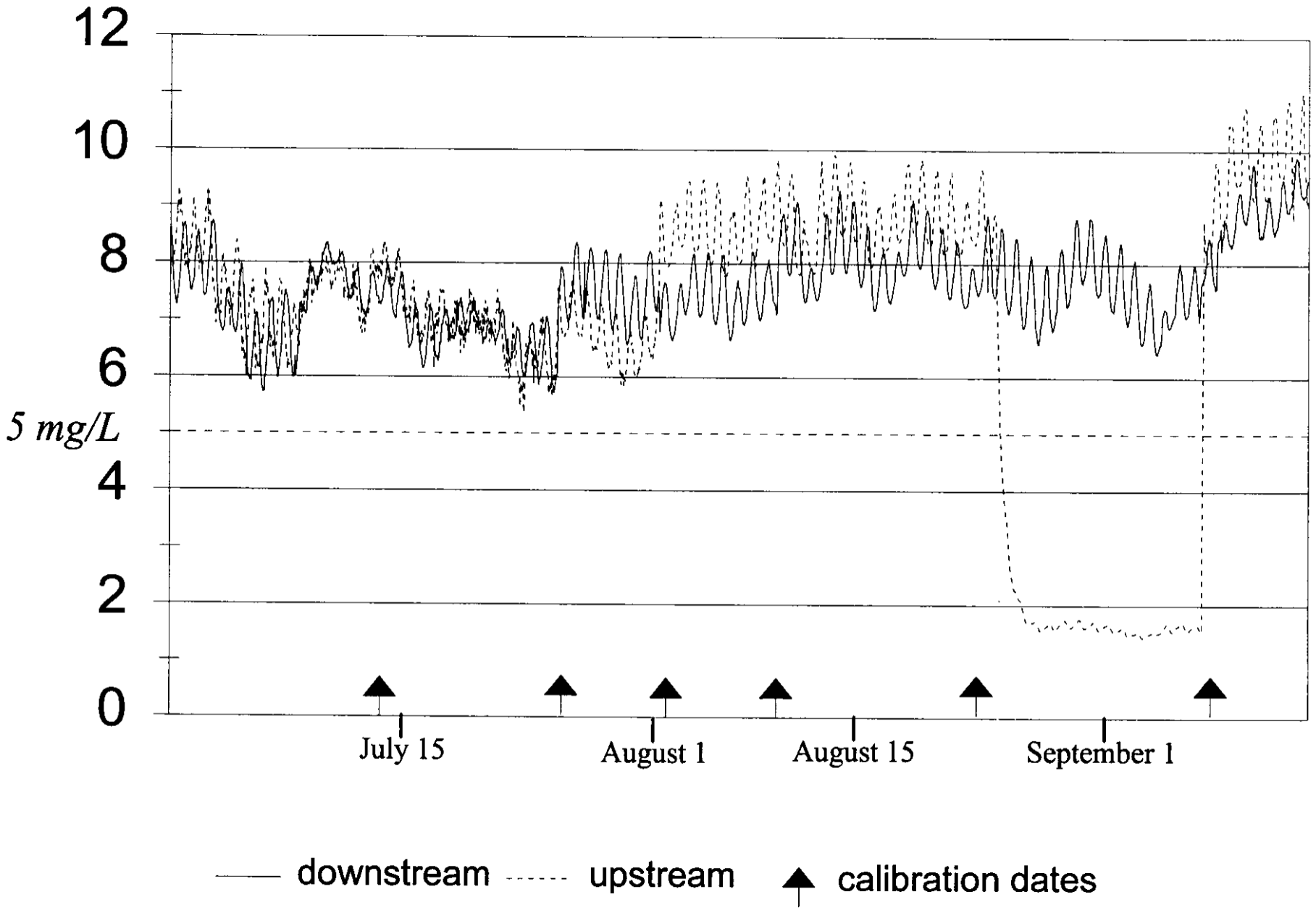
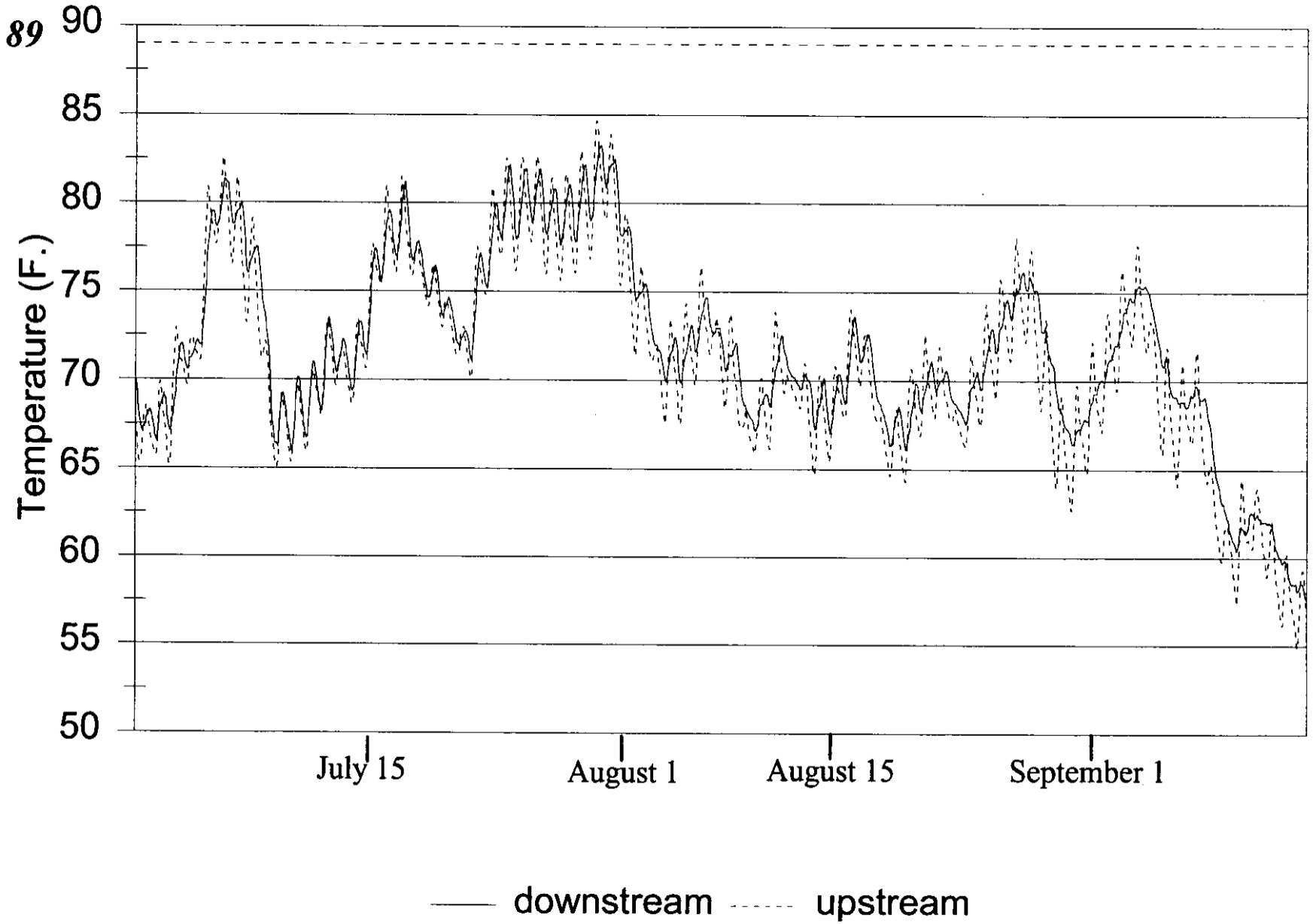


Figure 3. Ambient water temperatures measured upstream and downstream of the Shawano Hydroelectric Project.



A comparison of pre- and post-calibration DO concentration values (shown in Table 1) indicates that the upstream and downstream units maintained a calibration within 1 mg/L, 85 percent of the time.[1] All instances of significant calibration loss (>1.0 mg/L difference) occurred at the upstream site. No instances of loss of temperature calibration were observed in the data.

Table 1
A Comparison of Pre- and Post-calibration Measurements of DO Concentrations

	Downstream			Upstream		
Date	Before	After	Difference	Before	After	Difference
July 13	7.3	7.5	0.2	7.2	8.1	0.9
July 26	6.5	7.5	1.0	6.5	7.6	1.1
August 2	7.5	6.8	-0.7	7.4	9.1	1.7
August 10	7.3	7.1	-0.2	9.5	9.9	0.4
August 23	7.2	7.3	0.1	9.1	8.8	-0.3
September 8	7.0	7.7	0.7	1.5	8.8	7.3*
September 15	9.0	9.3	0.3	9.4	9.6	0.2

* *Data analysis does not include calibration difference due to mechanical failure.*

Number of calibrations with ≤ 1 mg/L change: *11 of 13 or 85 percent*

Table 2 provides the results of a statistical analysis of the data for DO and temperature at both the upstream and downstream sites. There was only a slight increase in average temperature (0.75 degrees F) between the upstream and downstream sites. In addition, the overall average decrease in DO concentration was only 0.4 mg/L. This minimal loss of DO may be directly attributable to the difference in oxygen solubility correlating to the change in temperature. As would be expected, both DO and temperature readings were less variable at the downstream location due to the dampening effect of the impoundment.

[1] Article 45 requires that the sensor should be within 1 mg/L over 70 percent of the sample period.

Table 2
DO and Temperature Statistics on
Data Collected Upstream and Downstream of the
Shawano Hydroelectric Project

	Downstream DO (mg/L)	Upstream DO (mg/L)	Downstream Temperature (°F)	Upstream Temperature (°F)
Mean	7.6	8.0	71.9	71.1
Standard error	0.0	0.0	0.12	0.13
Median	7.6	8.0	71.4	71.0
Mode	7.0	8.4	69.9	67.9
Standard deviation	0.8	1.1	5.2	5.6
Variance	0.6	1.3	27.3	31.1
Range	4.2	5.7	25.6	29.8
Minimum	5.7	5.4*	57.7	54.9
Maximum	9.9	11.0	83.3	84.7

* *Data analysis does not include DO measurements collected between August 25 and September 8, 1999.*

Biweekly profiles of the temperature and DO concentration in the impoundment are shown in Figure Nos. 4 and 5, respectively. Corresponding data is located in Appendix B. These results indicate that the impoundment never had temperature stratification or depleted oxygen concentrations during the sample period.

Figure 4. Temperature profiles in the Shawano Project impoundment measured between July 1 and September 15, 1999.

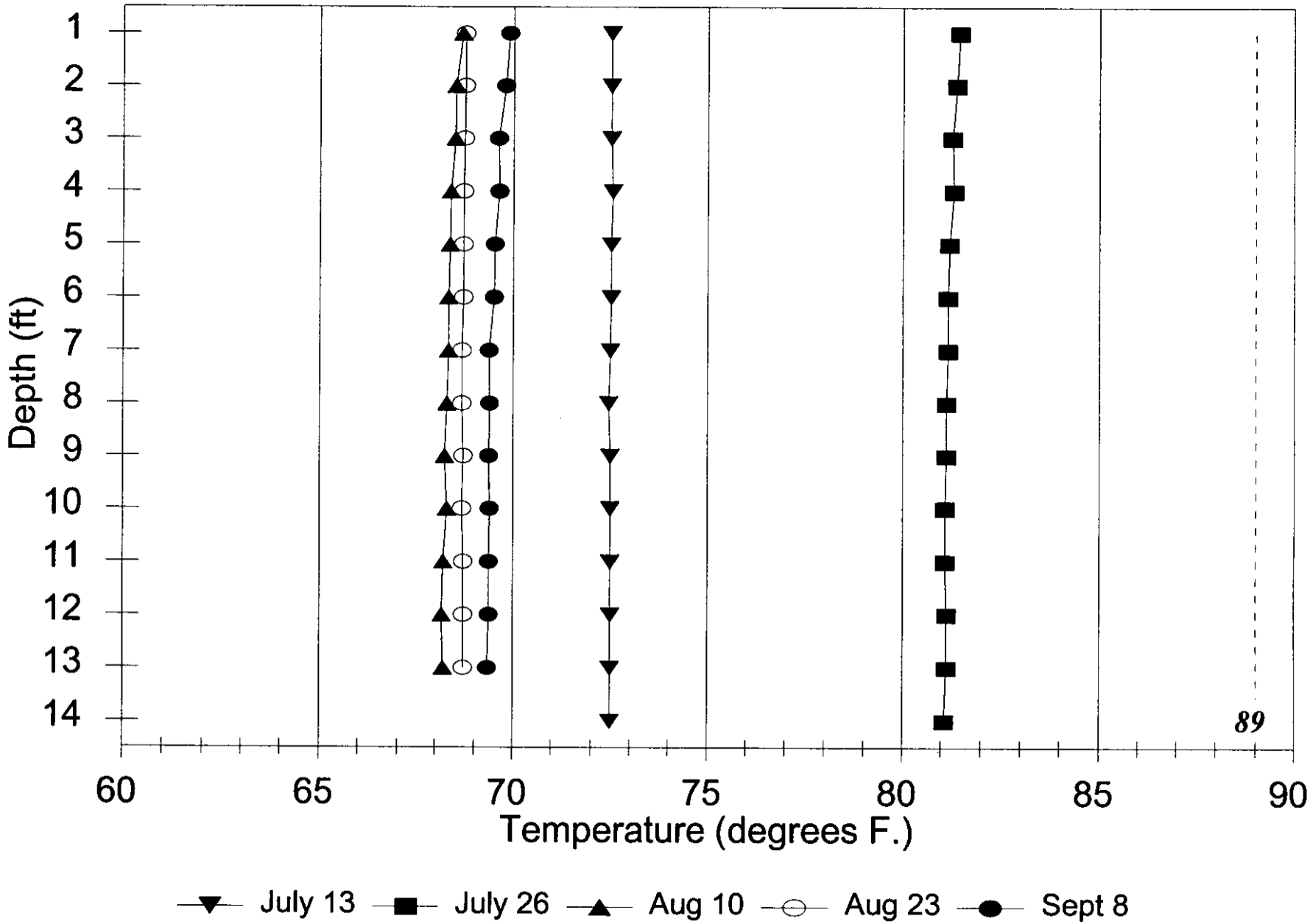
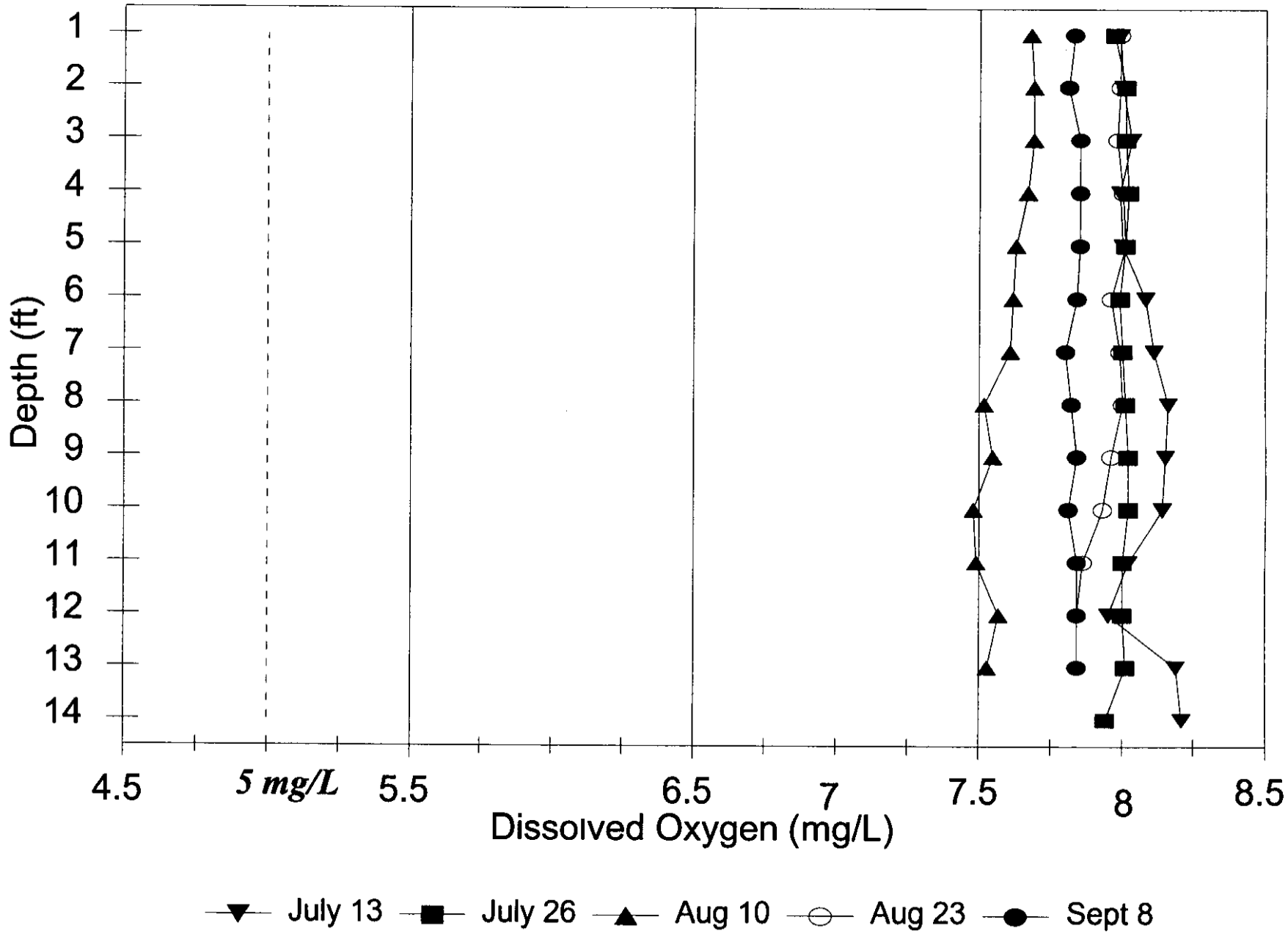


Figure 5. Dissolved oxygen profiles in the Shawano Project impoundment measured between July 1 and September 15, 1999.



4. Discussion

The results of the 1999 monitoring of the Shawano Hydroelectric Project do not indicate any adverse impacts to the Wolf River's ambient temperature or DO concentrations. These results echo the results of similar research performed in 1991. During this previous study, both the temperature and DO concentration data collected below the project were well within the state water quality standards.

Appendix A. Continuous Monitoring Data

Appendix A. Temperature and dissolved oxygen concentrations measured upstream and downstream of the Shawano Hydroelectric Project between July 1 and September 15, 1999.

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
70199	0	68.3	8.7	67.1	7.9
70199	10000	68.3	8.6	66.8	8.1
70199	20000	68.1	8.5	66.7	8.0
70199	30000	68.0	8.5	66.5	7.9
70199	40000	67.7	8.2	66.3	8.0
70199	50000	67.6	8.1	66.2	7.9
70199	60000	67.4	7.9	66.0	8.1
70199	70000	67.1	7.8	65.9	8.0
70199	80000	66.9	7.7	65.7	8.3
70199	90000	66.8	7.6	65.8	8.4
70199	100000	66.6	7.5	65.7	8.2
70199	110000	66.5	7.5	65.9	8.4
70199	120000	66.9	7.5	66.5	8.5
70199	130000	67.3	7.6	67.5	8.8
70199	140000	67.8	7.7	68.8	9.2
70199	150000	68.1	7.7	69.5	8.9
70199	160000	68.4	7.9	69.7	8.9
70199	170000	68.5	8.0	69.9	9.0
70199	180000	68.6	8.2	69.5	8.6
70199	190000	68.8	8.3	69.0	8.5
70199	200000	68.8	8.4	68.7	8.1
70199	210000	69.0	8.5	68.5	8.3
70199	220000	69.0	8.6	68.1	8.2
70199	230000	69.2	8.5	67.8	8.0
70299	0	69.0	8.5	67.5	7.9
70299	10000	68.9	8.3	67.2	8.0
70299	20000	68.6	8.3	66.8	8.0
70299	30000	68.3	8.1	66.5	8.0
70299	40000	68.0	7.9	66.1	7.9
70299	50000	67.7	7.7	65.7	7.9
70299	60000	67.4	7.6	65.3	8.0
70299	70000	67.2	7.5	65.2	8.2
70299	80000	67.1	7.4	65.4	8.3
70299	90000	67.2	7.4	65.9	8.6
70299	100000	67.5	7.4	66.8	8.9
70299	110000	67.5	7.4	67.7	9.0
70299	120000	67.9	7.5	68.7	9.0
70299	130000	68.0	7.6	70.0	9.3
70299	140000	68.3	7.8	70.8	9.0
70299	150000	68.8	7.9	71.4	8.7
70299	160000	69.0	8.0	72.1	9.2
70299	170000	69.3	8.2	72.7	8.9
70299	180000	69.9	8.4	72.9	8.8
70299	190000	70.4	8.6	72.8	8.6
70299	200000	70.6	8.7	72.4	8.1
70299	210000	71.0	8.7	71.9	7.8

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
70299	220000	71.3	8.7	71.6	7.6
70299	230000	71.6	8.7	71.3	7.7
70399	0	71.8	8.7	71.2	7.6
70399	10000	71.9	8.6	71.1	7.5
70399	20000	72.0	8.4	71.0	7.4
70399	30000	72.0	8.2	70.9	6.9
70399	40000	71.9	7.9	70.8	7.2
70399	50000	71.6	7.8	70.6	7.2
70399	60000	71.5	7.5	70.4	7.3
70399	70000	71.2	7.3	70.2	7.2
70399	80000	71.0	7.1	70.0	7.2
70399	90000	70.8	7.1	69.9	7.2
70399	100000	70.6	6.9	69.7	7.2
70399	110000	70.6	6.9	69.6	7.1
70399	120000	70.5	6.9	69.8	7.3
70399	130000	70.9	6.8	70.7	7.8
70399	140000	71.2	6.8	71.5	8.1
70399	150000	71.2	6.8	72.1	8.2
70399	160000	71.2	6.8	72.3	7.9
70399	170000	71.2	6.9	72.4	8.0
70399	180000	71.3	7.1	72.4	7.8
70399	190000	71.4	7.1	72.4	7.9
70399	200000	71.5	7.3	72.3	7.7
70399	210000	71.5	7.4	72.1	7.5
70399	220000	71.7	7.5	71.9	7.3
70399	230000	71.8	7.5	71.7	7.3
70499	0	72.0	7.5	71.5	7.2
70499	10000	72.1	7.5	71.5	7.1
70499	20000	72.2	7.6	71.5	7.3
70499	30000	72.2	7.4	71.4	6.9
70499	40000	72.1	7.3	71.3	7.2
70499	50000	72.1	7.2	71.2	7.2
70499	60000	72.0	7.1	71.1	7.1
70499	70000	71.9	7.0	71.1	7.3
70499	80000	72.0	6.9	71.3	7.5
70499	90000	72.1	6.9	71.9	7.7
70499	100000	72.5	6.8	72.7	8.0
70499	110000	72.9	6.8	73.9	8.1
70499	120000	73.3	6.8	75.2	8.3
70499	130000	73.7	6.8	76.4	8.4
70499	140000	74.3	6.9	77.8	8.4
70499	150000	74.9	7.0	78.8	8.2
70499	160000	75.6	7.2	79.6	8.1
70499	170000	76.5	7.4	80.6	8.1
70499	180000	77.2	7.7	80.9	7.9
70499	190000	77.7	7.7	80.7	7.6
70499	200000	78.0	7.8	80.3	7.3
70499	210000	78.4	8.0	79.8	7.0
70499	220000	78.9	7.9	79.5	6.4
70499	230000	79.3	7.9	79.2	6.7

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
70599	0	79.3	7.6	79.0	6.6
70599	10000	79.5	7.6	78.9	6.6
70599	20000	79.5	7.4	78.7	6.3
70599	30000	79.5	7.1	78.5	6.4
70599	40000	79.4	6.9	78.3	6.3
70599	50000	79.2	6.7	78.0	6.0
70599	60000	79.0	6.5	77.7	6.4
70599	70000	78.7	6.2	77.6	6.6
70599	80000	78.6	6.1	77.8	6.7
70599	90000	78.7	6.0	78.1	6.9
70599	100000	78.9	6.0	78.6	7.3
70599	110000	78.9	5.9	79.0	7.4
70599	120000	79.1	6.0	79.4	7.4
70599	130000	79.3	5.9	80.0	7.4
70599	140000	79.5	6.0	80.5	7.4
70599	150000	79.9	6.2	81.1	7.6
70599	160000	80.2	6.4	81.8	7.7
70599	170000	80.6	6.5	82.6	7.6
70599	180000	81.0	6.8	82.6	7.3
70599	190000	81.2	6.9	82.3	7.1
70599	200000	81.3	7.1	81.9	6.8
70599	210000	81.3	7.0	81.5	6.1
70599	220000	81.2	7.1	81.0	6.2
70599	230000	81.2	7.1	80.4	6.4
70699	0	81.2	7.0	80.0	6.1
70699	10000	81.1	6.9	79.6	6.1
70699	20000	81.1	6.8	79.3	6.1
70699	30000	80.8	6.5	78.9	6.3
70699	40000	80.4	6.4	78.4	6.3
70699	50000	80.0	6.2	77.7	6.2
70699	60000	79.7	6.0	77.1	6.5
70699	70000	79.3	5.8	76.7	6.7
70699	80000	79.0	5.8	76.5	6.5
70699	90000	78.8	5.7	76.6	6.8
70699	100000	78.8	5.7	76.9	7.4
70699	110000	78.8	5.7	77.6	7.4
70699	120000	78.9	5.9	78.5	7.6
70699	130000	79.0	6.0	79.5	7.9
70699	140000	79.3	6.2	80.3	7.4
70699	150000	79.4	6.4	81.0	7.6
70699	160000	79.4	6.5	81.4	7.6
70699	170000	79.5	6.6	81.4	7.4
70699	180000	79.6	6.9	81.1	7.2
70699	190000	79.6	7.1	80.5	7.2
70699	200000	79.7	7.2	79.6	6.8
70699	210000	79.8	7.3	78.8	6.5
70699	220000	80.0	7.3	78.1	6.7
70699	230000	80.1	7.4	77.5	6.7
70799	0	80.0	7.4	77.0	6.6
70799	10000	79.7	7.3	76.5	6.3

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
70799	20000	79.4	7.0	75.9	6.6
70799	30000	78.8	6.8	75.4	6.6
70799	40000	78.3	6.7	74.8	6.7
70799	50000	77.8	6.4	74.2	6.6
70799	60000	77.2	6.3	73.6	6.5
70799	70000	76.7	6.2	73.3	6.6
70799	80000	76.2	6.1	73.2	6.9
70799	90000	76.1	6.0	73.4	7.1
70799	100000	76.0	6.0	73.9	7.1
70799	110000	76.0	6.1	74.8	7.5
70799	120000	76.2	6.2	75.9	7.7
70799	130000	76.4	6.4	76.9	7.6
70799	140000	76.7	6.4	77.7	7.7
70799	150000	76.8	6.6	78.4	7.6
70799	160000	76.8	6.9	79.1	7.2
70799	170000	77.1	7.0	79.1	7.2
70799	180000	77.1	7.1	78.7	7.2
70799	190000	77.2	7.2	78.2	7.0
70799	200000	77.2	7.4	77.5	6.9
70799	210000	77.3	7.5	76.8	6.6
70799	220000	77.4	7.5	76.1	6.5
70799	230000	77.5	7.5	75.5	6.4
70899	0	77.5	7.4	75.0	6.4
70899	10000	77.5	7.4	74.4	6.1
70899	20000	77.3	7.3	73.9	6.3
70899	30000	77.1	7.1	73.3	6.2
70899	40000	76.7	7.0	72.7	6.2
70899	50000	76.3	6.7	72.1	6.3
70899	60000	75.8	6.6	71.6	6.4
70899	70000	75.4	6.4	71.3	6.5
70899	80000	75.0	6.2	71.2	6.7
70899	90000	74.7	6.1	71.2	6.8
70899	100000	74.4	6.0	71.3	6.9
70899	110000	74.2	6.0	71.5	7.3
70899	120000	73.9	6.0	71.9	7.2
70899	130000	73.8	6.4	72.1	7.2
70899	140000	73.5	6.1	72.1	7.1
70899	150000	73.2	6.0	72.0	7.0
70899	160000	72.9	6.1	71.8	6.8
70899	170000	72.6	6.3	71.4	6.8
70899	180000	72.3	6.4	71.0	6.6
70899	190000	71.9	6.7	70.2	6.6
70899	200000	71.3	6.8	69.4	6.5
70899	210000	70.4	7.1	68.4	6.8
70899	220000	70.6	7.3	67.9	6.8
70899	230000	69.5	7.2	67.5	6.9
70999	0	68.5	7.3	67.1	7.2
70999	10000	67.7	7.2	66.8	7.0
70999	20000	67.6	7.1	66.5	7.1
70999	30000	67.2	7.2	66.2	7.4

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
70999	40000	66.7	7.2	65.9	7.5
70999	50000	66.5	7.2	65.6	7.2
70999	60000	66.4	7.1	65.3	7.5
70999	70000	66.4	7.1	65.1	7.5
70999	80000	66.5	7.1	65.1	7.4
70999	90000	66.3	7.3	65.2	7.8
70999	100000	66.2	7.4	65.4	7.8
70999	110000	66.6	7.4	65.9	7.8
70999	120000	66.9	7.6	66.5	7.8
70999	130000	67.7	7.8	67.4	8.1
70999	140000	68.3	8.0	68.3	7.8
70999	150000	68.6	7.9	68.9	8.0
70999	160000	69.0	7.9	69.2	7.8
70999	170000	69.1	7.9	69.1	7.3
70999	180000	69.2	7.9	68.7	7.6
70999	190000	69.3	7.9	68.6	7.4
70999	200000	69.1	7.8	68.5	7.4
70999	210000	68.8	7.7	68.4	7.5
70999	220000	68.6	7.6	68.1	7.7
70999	230000	68.3	7.6	67.8	7.6
71099	0	68.0	7.6	67.5	7.7
71099	10000	67.6	7.6	67.2	7.5
71099	20000	67.5	7.5	66.8	7.8
71099	30000	67.3	7.7	66.5	7.6
71099	40000	67.0	7.6	66.1	7.8
71099	50000	66.7	7.8	65.8	7.8
71099	60000	66.4	7.8	65.5	7.9
71099	70000	66.1	7.9	65.3	7.7
71099	80000	66.0	8.0	65.3	7.9
71099	90000	66.0	8.0	65.6	7.7
71099	100000	66.2	8.2	66.0	7.7
71099	110000	66.6	8.1	66.6	8.0
71099	120000	67.1	8.2	67.2	8.0
71099	130000	67.6	8.3	67.8	7.9
71099	140000	68.2	8.2	68.2	7.9
71099	150000	68.8	8.3	68.7	7.9
71099	160000	69.5	8.3	69.2	8.1
71099	170000	69.9	8.3	69.5	7.9
71099	180000	70.1	8.4	69.6	7.8
71099	190000	70.1	8.3	69.4	8.0
71099	200000	70.0	8.2	69.1	7.9
71099	210000	69.8	8.2	68.8	7.9
71099	220000	69.5	8.1	68.5	7.7
71099	230000	69.2	8.2	68.3	7.7
71199	0	68.8	8.0	68.1	7.5
71199	10000	68.5	8.0	67.8	7.7
71199	20000	68.2	8.0	67.5	7.6
71199	30000	67.9	8.0	67.2	7.7
71199	40000	67.6	8.0	66.9	7.7
71199	50000	67.3	7.9	66.5	7.8

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
71199	60000	67.0	8.0	66.2	7.7
71199	70000	66.8	8.0	66.0	7.7
71199	80000	66.7	8.0	65.9	7.8
71199	90000	66.8	8.0	66.1	7.8
71199	100000	67.0	8.0	66.6	8.0
71199	110000	67.3	8.1	67.2	8.1
71199	120000	67.9	8.1	67.9	8.0
71199	130000	68.5	8.2	68.6	7.8
71199	140000	69.1	8.1	69.2	8.0
71199	150000	69.8	8.1	69.8	8.0
71199	160000	70.4	8.1	70.0	7.9
71199	170000	70.6	8.2	70.3	7.9
71199	180000	70.8	8.1	70.4	7.8
71199	190000	71.0	8.1	70.5	7.7
71199	200000	71.0	8.0	70.4	7.4
71199	210000	70.8	7.9	70.0	7.6
71199	220000	70.5	7.9	69.7	7.5
71199	230000	70.3	7.9	69.5	7.4
71299	0	70.0	7.7	69.3	7.4
71299	10000	69.7	7.6	69.2	7.4
71299	20000	69.4	7.5	69.0	7.4
71299	30000	69.1	7.6	68.9	7.5
71299	40000	68.8	7.5	68.7	7.3
71299	50000	68.6	7.4	68.4	7.5
71299	60000	68.3	7.4	68.1	7.5
71299	70000	68.2	7.4	68.0	7.4
71299	80000	68.2	7.4	68.0	7.6
71299	90000	68.3	7.4	68.3	7.6
71299	100000	68.6	7.5	68.9	7.5
71299	110000	69.1	7.6	69.7	8.0
71299	120000	69.6	7.6	70.5	7.4
71299	130000	70.3	7.7	71.1	7.9
71299	140000	70.9	7.8	72.0	7.5
71299	150000	71.5	7.9	72.6	7.7
71299	160000	72.2	7.9	72.9	7.5
71299	170000	72.7	7.8	73.2	7.6
71299	180000	73.2	7.9	73.3	7.3
71299	190000	73.4	8.0	73.3	7.2
71299	200000	73.5	7.8	73.0	7.2
71299	210000	73.4	7.7	72.6	7.0
71299	220000	73.2	7.5	72.3	7.1
71299	230000	72.9	7.4	72.0	6.8
71399	0	72.7	7.1	71.8	6.9
71399	10000	72.4	7.3	71.4	6.9
71399	20000	72.1	7.3	71.0	6.8
71399	30000	71.8	7.2	70.7	7.0
71399	40000	71.4	7.1	70.3	7.0
71399	50000	71.1	7.1	70.0	7.2
71399	60000	70.7	7.1	69.7	6.8
71399	70000	70.5	7.1	69.6	7.1

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
71399	80000	70.4	7.0	69.7	6.9
71399	90000	70.4	7.0	69.9	7.2
71399	100000	70.4	7.2	70.3	7.2
71399	110000	70.7	7.2	70.8	7.2
71399	120000	70.9	7.3	71.2	7.1
71399	130000			71.4	7.2
071399	140000	71.3	7.5	71.3	7.2
071399	150000	71.6	7.6		
071399	160000	71.9	7.8	71.6	8.1
071399	170000	72.1	7.8	71.9	8.1
071399	180000	72.2	7.8	71.9	8.1
071399	190000	72.3	7.9	71.8	8.2
071399	200000	72.2	7.8	71.4	8.0
071399	210000	72.1	7.7	71.0	8.0
071399	220000	71.9	7.8	70.8	7.9
071399	230000	71.7	7.7	70.5	7.9
071499	0	71.5	7.7	70.3	8.0
071499	10000	71.3	7.6	70.0	7.8
071499	20000	71.0	7.4	69.8	7.9
071499	30000	70.5	7.4	69.6	8.0
071499	40000	70.2	7.4	69.4	7.7
071499	50000	70.0	7.4	69.2	7.9
071499	60000	69.9	7.3	69.0	8.0
071499	70000	69.6	7.3	68.8	7.9
071499	80000	69.4	7.3	68.7	8.0
071499	90000	69.4	7.3	68.6	7.7
071499	100000	69.4	7.3	68.8	7.8
071499	110000	69.5	7.3	69.1	8.1
071499	120000	69.7	7.4	69.6	8.3
071499	130000	70.1	7.5	70.2	8.1
071499	140000	70.6	7.6	71.1	8.4
071499	150000	71.2	7.6	72.1	8.3
071499	160000	71.6	7.7	72.9	8.4
071499	170000	72.2	7.8	73.4	8.3
071499	180000	72.5	7.9	73.5	7.9
071499	190000	72.9	7.9	73.2	8.1
071499	200000	73.0	8.0	72.8	7.9
071499	210000	73.2	8.0	72.5	7.7
071499	220000	73.3	7.9	72.2	7.6
071499	230000	73.3	7.8	72.1	7.8
071599	0	73.2	7.7	71.9	7.7
071599	10000	72.9	7.6	71.8	7.5
071599	20000	72.6	7.4	71.6	7.7
071599	30000	72.3	7.3	71.4	7.7
071599	40000	72.1	7.2	71.2	7.6
071599	50000	71.7	7.2	70.9	7.7
071599	60000	71.6	7.1	70.7	7.7
071599	70000	71.4	7.1	70.6	7.8
071599	80000	71.4	7.1	70.7	7.7
071599	90000	71.5	7.0	71.1	8.1

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
071599	100000	71.8	7.1	71.7	7.9
071599	110000	72.1	7.3	72.5	7.9
071599	120000	72.5	7.3	73.5	8.2
071599	130000	73.1	7.4	74.5	8.1
071599	140000	73.8	7.5	75.5	8.3
071599	150000	74.4	7.6	76.4	8.0
071599	160000	75.2	7.7	77.0	8.1
071599	170000	75.9	7.8	77.5	7.9
071599	180000	76.5	7.8	77.7	7.9
071599	190000	76.9	7.8	77.5	7.7
071599	200000	77.2	7.8	77.2	7.5
071599	210000	77.4	7.8	76.9	7.4
071599	220000	77.4	7.6	76.6	7.1
071599	230000	77.5	7.5	76.5	7.3
071699	0	77.4	7.4	76.3	7.2
071699	10000	77.2	7.2	76.2	7.1
071699	20000	76.8	7.0	76.0	7.0
071699	30000	76.6	7.0	75.9	7.2
071699	40000	76.2	6.8	75.7	7.0
071699	50000	76.0	6.7	75.5	7.0
071699	60000	75.9	6.6	75.4	7.1
071699	70000	75.7	6.6	75.3	7.2
071699	80000	75.7	6.5	75.4	7.3
071699	90000	75.8	6.5	75.7	6.9
071699	100000	76.0	6.6	76.4	7.2
071699	110000	76.4	6.6	77.3	7.5
071699	120000	76.8	6.6	78.3	7.5
071699	130000	77.3	6.7	79.3	7.6
071699	140000	77.6	6.8	79.9	7.5
071699	150000	78.4	6.9	80.5	7.7
071699	160000	78.8	7.1	81.0	7.6
071699	170000	79.0	7.0	81.0	7.0
071699	180000	79.2	7.3	79.9	7.3
071699	190000	79.4	7.2	79.3	7.2
071699	200000	79.5	7.2	78.9	7.0
071699	210000	79.6	7.2	78.6	6.7
071699	220000	79.5	7.1	78.4	6.8
071699	230000	79.4	6.9	78.2	6.8
071799	0	79.2	6.8	77.9	6.9
071799	10000	78.9	6.6	77.7	6.8
071799	20000	78.4	6.5	77.5	6.7
071799	30000	78.1	6.4	77.2	6.6
071799	40000	77.7	6.3	76.9	6.8
071799	50000	77.4	6.3	76.6	6.6
071799	60000	77.2	6.2	76.3	6.7
071799	70000	77.0	6.2	76.1	6.8
071799	80000	76.9	6.2	76.1	6.7
071799	90000	76.9	6.2	76.4	6.8
071799	100000	77.1	6.3	76.9	7.0
071799	110000	77.3	6.4	77.7	7.4

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
071799	120000	77.7	6.4	78.5	7.4
071799	130000	78.4	6.5	79.5	7.2
071799	140000	78.8	6.6	80.1	7.4
071799	150000	79.1	6.8	81.0	7.3
071799	160000	79.8	6.9	81.5	7.5
071799	170000	80.2	7.1	80.9	7.1
071799	180000	80.5	7.2	80.8	7.0
071799	190000	80.9	7.3	80.4	7.0
071799	200000	81.1	7.2	79.8	6.9
071799	210000	81.2	7.2	79.3	6.6
071799	220000	81.1	7.2	78.9	6.7
071799	230000	80.7	7.0	78.5	6.7
071899	0	80.2	6.9	78.2	6.6
071899	10000	79.8	6.7	77.9	6.2
071899	20000	79.1	6.6	77.6	6.8
071899	30000	78.6	6.5	77.2	6.6
071899	40000	78.2	6.4	76.8	7.1
071899	50000	77.8	6.3	76.5	7.1
071899	60000	77.3	6.4	76.2	6.7
071899	70000	77.1	6.3	76.0	7.1
071899	80000	76.9	6.3	75.9	6.9
071899	90000	76.7	6.4	76.0	7.4
071899	100000	76.9	6.3	76.3	7.2
071899	110000	76.8	6.6	76.7	7.5
071899	120000	77.0	6.6	76.9	7.5
071899	130000	77.2	6.8	77.1	7.4
071899	140000	77.4	6.9	77.3	7.5
071899	150000	77.7	6.9	77.5	7.4
071899	160000	77.8	7.0	77.6	7.5
071899	170000	77.8	7.1	77.5	7.4
071899	180000	77.8	7.2	77.3	7.3
071899	190000	77.7	7.2	77.1	7.1
071899	200000	77.6	7.1	76.7	7.0
071899	210000	77.4	7.2	76.5	6.9
071899	220000	77.2	7.2	76.3	6.9
071899	230000	77.0	7.0	76.0	7.0
071999	0	76.6	7.0	75.8	6.6
071999	10000	76.4	6.9	75.6	7.0
071999	20000	76.2	6.8	75.4	7.0
071999	30000	76.0	6.7	75.2	6.7
071999	40000	75.6	6.7	75.0	6.6
071999	50000	75.5	6.7	74.8	7.0
071999	60000	75.2	6.7	74.5	6.8
071999	70000	75.0	6.7	74.3	6.8
071999	80000	74.8	6.7	74.2	7.0
071999	90000	74.7	6.7	74.1	7.1
071999	100000	74.7	6.7	74.1	6.9
071999	110000	74.6	6.8	74.4	7.3
071999	120000	74.8	6.7	74.7	7.2
071999	130000	74.8	6.8	75.1	6.9

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
071999	140000	75.2	6.9	75.5	7.4
071999	150000	75.4	7.0	75.9	7.0
071999	160000	75.6	7.0	76.3	7.3
071999	170000	75.9	7.2	76.5	7.2
071999	180000	76.2	7.3	76.4	6.7
071999	190000	76.4	7.3	76.2	6.9
071999	200000	76.5	7.4	75.8	6.4
071999	210000	76.4	7.4	75.5	6.9
071999	220000	76.3	7.2	75.3	6.7
071999	230000	76.1	7.3	75.0	7.0
072099	0	75.8	7.2	74.8	6.7
072099	10000	75.5	7.1	74.5	6.8
072099	20000	75.1	7.0	74.2	6.5
072099	30000	74.8	6.9	74.0	6.9
072099	40000	74.5	6.9	73.7	6.7
072099	50000	74.1	6.9	73.5	6.6
072099	60000	74.0	6.7	73.2	6.9
072099	70000	73.6	6.8	73.0	7.0
072099	80000	73.6	6.8	73.0	7.3
072099	90000	73.6	6.8	73.2	7.2
072099	100000	73.8	6.8	73.6	7.3
072099	110000	73.8	7.0	74.0	7.6
072099	120000	73.9	7.0	74.3	6.9
072099	130000	74.1	7.1	74.4	7.5
072099	140000	74.2	7.1	74.5	7.5
072099	150000	74.3	7.1	74.4	7.5
072099	160000	74.4	7.2	74.3	7.1
072099	170000	74.6	7.3	74.2	7.2
072099	180000	74.6	7.4	74.0	6.9
072099	190000	74.6	7.3	73.9	7.1
072099	200000	74.5	7.2	73.7	7.3
072099	210000	74.3	7.3	73.5	7.0
072099	220000	74.2	7.1	73.3	6.8
072099	230000	73.9	7.1	73.0	7.1
072199	0	73.8	7.1	72.8	6.8
072199	10000	73.6	7.1	72.5	7.0
072199	20000	73.5	6.9	72.3	6.8
072199	30000	73.2	6.8	72.1	7.2
072199	40000	73.0	6.8	71.9	6.7
072199	50000	72.8	6.8	71.7	6.8
072199	60000	72.6	6.8	71.5	7.0
072199	70000	72.2	6.9	71.4	7.0
072199	80000	72.2	6.7	71.4	7.1
072199	90000	72.1	6.8	71.4	7.0
072199	100000	72.1	6.6	71.5	7.0
072199	110000	71.9	6.6	71.5	6.8
072199	120000	71.9	6.7	71.7	7.2
072199	130000	72.0	6.7	72.0	6.9
072199	140000	72.1	6.7	72.4	7.3
072199	150000	72.2	6.7	72.7	7.2

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
072199	160000	72.4	6.8	72.8	7.1
072199	170000	72.4	6.9	72.9	6.9
072199	180000	72.5	6.9	73.0	7.3
072199	190000	72.6	6.9	73.0	7.0
072199	200000	72.7	6.9	72.8	7.0
072199	210000	72.7	6.9	72.5	6.6
072199	220000	72.7	6.9	72.2	6.9
072199	230000	72.7	6.9	72.0	7.0
072299	0	72.6	6.9	71.7	7.0
072299	10000	72.5	6.9	71.5	6.7
072299	20000	72.4	6.8	71.2	7.0
072299	30000	72.2	6.8	71.0	7.0
072299	40000	71.9	6.8	70.8	7.0
072299	50000	71.7	6.7	70.5	7.0
072299	60000	71.4	6.6	70.2	7.0
072299	70000	71.1	6.7	70.1	6.8
072299	80000	71.1	6.6	70.1	7.0
072299	90000	71.2	6.7	70.5	7.1
072299	100000	71.6	6.7	71.2	7.3
072299	110000	71.9	6.7	72.2	7.5
072299	120000	72.3	6.7	73.3	7.2
072299	130000	72.8	6.8	74.4	7.1
072299	140000	73.5	6.8	75.6	7.2
072299	150000	73.9	7.0	76.6	7.3
072299	160000	74.4	7.0	77.1	7.0
072299	170000	74.9	7.1	77.4	7.0
072299	180000	75.7	7.2	77.5	6.9
072299	190000	76.2	7.2	77.3	6.9
072299	200000	76.6	7.2	76.9	6.4
072299	210000	76.9	7.1	76.5	6.6
072299	220000	77.1	7.2	76.3	6.5
072299	230000	77.2	7.0	76.1	6.4
072399	0	77.1	6.7	75.9	6.2
072399	10000	77.0	6.7	75.7	6.2
072399	20000	76.7	6.5	75.5	6.1
072399	30000	76.4	6.4	75.3	6.4
072399	40000	76.1	6.7	75.2	6.5
072399	50000	75.9	6.6	75.0	6.2
072399	60000	75.6	6.5	74.9	6.3
072399	70000	75.5	6.3	74.8	6.0
072399	80000	75.4	6.2	74.8	6.0
072399	90000	75.3	6.3	74.9	6.2
072399	100000	75.2	6.3	75.0	6.4
072399	110000	75.5	6.3	75.4	6.7
072399	120000	75.7	6.4	76.4	6.3
072399	130000	76.4	6.4	77.6	7.0
072399	140000	76.7	6.4	78.7	6.9
072399	150000	77.1	6.5	79.4	6.6
072399	160000	77.5	6.6	80.2	6.3
072399	170000	78.0	6.6	80.7	6.7

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
072399	180000	78.4	6.7	80.9	6.5
072399	190000	78.8	6.7	80.7	6.1
072399	200000	79.2	6.9	80.2	6.1
072399	210000	79.4	6.9	79.8	6.1
072399	220000	79.8	6.8	79.4	6.0
072399	230000	80.0	6.8	79.2	5.9
072499	0	80.0	6.7	79.0	6.0
072499	10000	79.9	6.5	78.8	5.5
072499	20000	79.6	6.5	78.5	5.9
072499	30000	79.3	6.3	78.1	5.8
072499	40000	78.9	6.3	77.8	5.8
072499	50000	78.5	6.1	77.4	5.7
072499	60000	78.3	6.1	77.1	5.9
072499	70000	78.1	6.0	77.0	5.5
072499	80000	78.0	6.0	77.1	5.4
072499	90000	78.1	6.1	77.4	6.1
072499	100000	78.3	6.1	78.0	6.1
072499	110000	78.6	6.1	78.9	6.6
072499	120000	79.0	6.2	79.9	6.4
072499	130000	79.3	6.3	80.9	6.6
072499	140000	79.7	6.4	81.8	6.4
072499	150000	80.2	6.5	82.4	6.7
072499	160000	80.6	6.6	82.6	6.6
072499	170000	81.1	6.8	82.5	6.6
072499	180000	81.4	6.9	82.3	6.7
072499	190000	81.7	6.9	81.9	6.5
072499	200000	82.0	6.9	81.3	6.5
072499	210000	82.1	7.0	80.7	6.2
072499	220000	82.2	6.9	80.2	6.5
072499	230000	82.1	6.9	79.8	5.9
072599	0	81.5	6.8	79.4	6.4
072599	10000	81.1	6.7	79.0	6.4
072599	20000	80.7	6.5	78.4	6.1
072599	30000	80.3	6.4	77.9	6.3
072599	40000	79.8	6.3	77.4	6.4
072599	50000	79.1	6.2	76.9	6.3
072599	60000	78.6	6.0	76.5	6.1
072599	70000	78.4	6.0	76.2	6.2
072599	80000	78.0	5.9	76.1	6.6
072599	90000	78.0	6.0	76.4	6.5
072599	100000	78.1	6.0	77.0	6.8
072599	110000	78.2	6.1	77.9	7.0
072599	120000	78.3	6.2	79.0	6.7
072599	130000	78.7	6.3	80.0	7.0
072599	140000	79.0	6.3	81.0	7.1
072599	150000	79.6	6.5	81.8	7.0
072599	160000	80.0	6.6	82.3	6.7
072599	170000	80.4	6.7	82.6	6.6
072599	180000	80.7	6.9	82.5	6.5
072599	190000	81.2	7.0	82.0	6.3

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
072599	200000	81.6	7.1	81.4	6.3
072599	210000	81.8	7.0	80.9	6.0
072599	220000	81.9	7.0	80.5	6.1
072599	230000	82.0	7.0	80.2	6.0
072699	0	81.9	6.8	79.9	5.7
072699	10000	81.7	6.7	79.6	5.8
072699	20000	81.4	6.4	79.4	5.9
072699	30000	80.9	6.3	79.1	5.7
072699	40000	80.5	6.2	78.8	6.0
072699	50000	80.2	6.0	78.5	6.1
072699	60000	79.8	5.9	78.2	5.7
072699	70000	79.5	5.8	78.0	5.8
072699	80000	79.1	5.7	77.8	6.0
072699	90000	79.0	5.8	77.8	6.0
072699	100000	78.9	5.9	78.2	6.0
072699	110000	79.0	5.9	78.8	6.4
072699	120000	79.3	6.0	79.6	6.5
072699	130000	79.8	6.0	80.6	6.5
072699	140000	80.2	6.1		
072699	150000	80.7	6.5	81.9	7.6
072699	160000	80.7	7.5	82.3	7.5
072699	170000	81.0	7.6	82.7	7.5
072699	180000	81.2	7.8	82.5	7.4
072699	190000	81.4	7.9	82.3	7.2
072699	200000	81.7	7.9	81.7	6.9
072699	210000	81.8	7.9	81.1	6.8
072699	220000	82.0	7.9	80.7	6.8
072699	230000	81.9	7.8	80.2	6.7
072799	000000	81.6	7.7	79.8	6.7
072799	010000	81.3	7.5	79.3	6.7
072799	020000	80.9	7.4	78.9	6.7
072799	030000	80.3	7.3	78.4	6.8
072799	040000	79.8	7.2	77.8	6.8
072799	050000	79.4	7.1	77.3	6.7
072799	060000	78.9	7.0	76.7	6.8
072799	070000	78.5	7.0	76.3	6.9
072799	080000	78.3	6.9	76.0	7.0
072799	090000	78.2	7.0	76.0	7.2
072799	100000	78.4	7.0	76.5	7.4
072799	110000	78.5	7.1	77.1	7.5
072799	120000	78.6	7.3	78.1	7.5
072799	130000	78.9	7.4	79.0	7.7
072799	140000	79.3	7.6	79.9	7.8
072799	150000	79.5	7.7	80.7	7.7
072799	160000	79.7	7.9	81.2	7.6
072799	170000	80.0	8.1	81.4	7.6
072799	180000	80.2	8.2	81.3	7.4
072799	190000	80.4	8.3	80.8	7.3
072799	200000	80.6	8.3	80.1	7.1
072799	210000	80.8	8.4	79.4	6.9

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
072799	220000	80.8	8.3	78.9	6.9
072799	230000	80.8	8.2	78.5	6.8
072899	000000	80.6	8.1	78.1	6.8
072899	010000	80.3	7.9	77.8	6.7
072899	020000	79.8	7.8	77.4	6.7
072899	030000	79.4	7.6	77.1	6.7
072899	040000	78.9	7.4	76.7	6.7
072899	050000	78.5	7.3	76.3	6.8
072899	060000	78.0	7.2	76.0	6.7
072899	070000	77.8	7.1	75.7	6.8
072899	080000	77.6	7.0	75.6	6.9
072899	090000	77.6	7.1	75.7	7.0
072899	100000	78.0	8.0	76.3	7.2
072899	110000	78.3	7.1	77.1	7.4
072899	120000	78.5	7.3	78.2	7.5
072899	130000	78.7	7.5	79.3	7.5
072899	140000	79.1	7.6	80.3	7.5
072899	150000	79.4	7.8	81.3	7.5
072899	160000	79.7	7.9	81.5	7.5
072899	170000	80.0	8.1	81.7	7.3
072899	180000	80.3	8.2	81.6	7.2
072899	190000	80.6	8.3	81.1	7.1
072899	200000	80.9	8.3	80.5	6.9
072899	210000	81.1	8.2	79.8	6.8
072899	220000	81.1	8.2	79.2	6.6
072899	230000	81.1	8.2	78.8	6.6
072999	000000	80.8	8.0	78.4	6.5
072999	010000	80.6	7.9	78.1	6.4
072999	020000	80.2	7.7	77.7	6.5
072999	030000	79.7	7.5	77.4	6.5
072999	040000	79.2	7.4	77.0	6.6
072999	050000	78.7	7.2	76.7	6.5
072999	060000	78.3	7.1	76.4	6.5
072999	070000	77.9	7.0	76.1	6.5
072999	080000	77.8	7.0	76.1	6.6
072999	090000	77.9	7.0	76.3	6.7
072999	100000	77.9	7.1	76.8	6.8
072999	110000	78.4	7.2	77.6	7.0
072999	120000	78.8	7.3	78.7	7.3
072999	130000	79.3	7.4	80.0	7.4
072999	140000	79.6	7.5	81.2	7.3
072999	150000	80.0	7.7	82.2	7.3
072999	160000	80.3	7.8	82.8	7.2
072999	170000	80.7	7.9	83.0	7.1
072999	180000	81.1	8.1	82.9	7.1
072999	190000	81.4	8.2	82.5	6.9
072999	200000	81.6	8.2	81.8	6.7
072999	210000	81.9	8.2	81.2	6.5
072999	220000	82.1	8.2	80.6	6.5
072999	230000	82.2	8.1	80.2	6.4

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
073099	000000	82.1	8.0	79.9	6.2
073099	010000	81.8	7.8	79.5	6.3
073099	020000	81.4	7.6	79.1	6.2
073099	030000	80.9	7.4	78.7	6.2
073099	040000	80.4	7.2	78.3	6.2
073099	050000	79.9	7.1	77.8	6.2
073099	060000	79.4	7.0	77.3	6.3
073099	070000	79.1	6.9	76.9	6.2
073099	080000	79.0	6.8	76.8	6.5
073099	090000	79.0	6.8	77.0	6.5
073099	100000	79.1	6.9	77.6	6.7
073099	110000	79.3	7.0	78.5	6.9
073099	120000	79.5	7.0	79.6	7.0
073099	130000	79.8	7.2	80.9	7.1
073099	140000	80.5	7.3	82.1	7.1
073099	150000	81.0	7.5	83.3	7.1
073099	160000	81.4	7.7	84.2	7.0
073099	170000	81.8	7.9	84.6	6.9
073099	180000	82.2	8.0	84.7	6.8
073099	190000	82.6	8.1	84.4	6.5
073099	200000	82.9	8.1	83.8	6.3
073099	210000	83.2	8.2	83.3	6.1
073099	220000	83.0	8.1	82.9	6.0
073099	230000	83.1	8.0	82.3	5.9
073199	000000	83.2	7.8	81.8	5.9
073199	010000	83.3	7.7	81.3	6.1
073199	020000	83.0	7.5	80.9	6.1
073199	030000	82.8	7.3	80.5	5.8
073199	040000	82.4	7.1	80.2	6.0
073199	050000	82.0	6.9	79.9	5.9
073199	060000	81.6	6.8	79.6	6.0
073199	070000	81.2	6.7	79.3	6.1
073199	080000	81.0	6.6	79.1	6.1
073199	090000	80.8	6.6	79.1	6.2
073199	100000	81.0	6.6	79.3	6.5
073199	110000	81.2	6.7	80.0	6.6
073199	120000	81.5	6.7	81.0	6.8
073199	130000	81.8	6.8	82.1	7.0
073199	140000	82.0	7.0	83.1	6.9
073199	150000	82.0	7.1	83.8	6.9
073199	160000	82.1	7.3	83.9	6.6
073199	170000	82.2	7.3	83.8	6.6
073199	180000	82.3	7.5	83.6	6.5
073199	190000	82.2	7.6	83.2	6.4
073199	200000	82.3	7.6	82.5	6.3
073199	210000	82.3	7.7	81.7	6.1
073199	220000	82.5	7.8	80.9	6.0
073199	230000	82.5	7.8	80.3	6.0
080199	000000	82.4	7.7	79.9	6.0
080199	010000	82.0	7.6	79.4	6.0

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
080199	020000	81.7	7.4	78.8	6.1
080199	030000	81.1	7.3	78.2	6.2
080199	040000	80.6	7.0	77.6	6.1
080199	050000	80.0	6.9	77.0	6.2
080199	060000	79.3	6.7	76.4	6.1
080199	070000	78.7	6.7	75.8	6.3
080199	080000	78.3	6.7	75.4	6.3
080199	090000	78.2	6.7	75.3	6.5
080199	100000	78.2	6.8	75.6	6.6
080199	110000	78.2	6.8	76.3	6.8
080199	120000	78.2	6.9	77.2	7.0
080199	130000	78.4	7.1	78.0	7.1
080199	140000	78.4	7.2	78.5	7.2
080199	150000	78.5	7.4	79.2	7.0
080199	160000	78.4	7.6	79.4	7.0
080199	170000	78.5	7.7	79.3	7.1
080199	180000	78.5	8.0	79.3	7.0
080199	190000	78.6	8.1	78.8	6.8
080199	200000	78.7	8.1	77.8	6.7
080199	210000	78.7	8.2	77.0	6.5
080199	220000	78.7	8.2	76.4	6.4
080199	230000	78.5	8.2	75.9	6.5
080299	000000	78.4	8.2	75.4	6.4
080299	010000	78.0	8.0	74.9	6.4
080299	020000	77.6	7.9	74.4	6.4
080299	030000	77.1	7.8	73.9	6.3
080299	040000	76.6	7.6	73.4	6.4
080299	050000	76.1	7.4	72.8	6.5
080299	060000	75.5	7.3	72.2	6.7
080299	070000	75.0	7.2	71.7	6.6
080299	080000	74.6	7.2	71.4	6.8
080299	090000	74.4	7.2	71.4	6.8
080299	100000	74.5	7.2	71.8	7.1
080299	110000	74.7	7.3	72.6	7.2
080299	120000	74.6	7.4	73.4	7.5
080299	130000	74.8	7.5	74.4	7.4
080299	140000			75.3	9.1
080299	150000	74.9	6.8	75.6	9.1
080299	160000	74.9	6.9	76.4	9.1
080299	170000	75.0	7.1	76.5	9.1
080299	180000	75.0	7.2	76.4	8.9
080299	190000	75.0	7.4	76.1	8.7
080299	200000	75.1	7.5	75.5	8.5
080299	210000	75.2	7.6	74.9	8.3
080299	220000	75.3	7.7	74.5	8.1
080299	230000	75.4	7.7	74.1	8.1
080399	000000	75.4	7.7	73.8	8.0
080399	010000	75.4	7.7	73.5	8.0
080399	020000	75.3	7.6	73.1	8.0
080399	030000	75.1	7.5	72.8	7.9

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
080399	040000	74.8	7.3	72.5	7.9
080399	050000	74.5	7.2	72.2	8.0
080399	060000	74.1	7.1	71.9	8.0
080399	070000	73.7	6.9	71.6	8.0
080399	080000	73.4	6.8	71.4	8.1
080399	090000	73.2	6.7	71.3	8.2
080399	100000	72.9	6.7	71.2	8.2
080399	110000	72.6	6.7	71.1	8.3
080399	120000	72.5	6.6	71.1	8.5
080399	130000	72.3	6.7	71.2	8.7
080399	140000	72.2	6.7	71.4	8.8
080399	150000	72.1	6.7	71.5	8.9
080399	160000	72.0	6.8	71.5	8.9
080399	170000	72.0	6.9	71.6	9.0
080399	180000	72.0	7.0	71.8	9.1
080399	190000	71.9	7.1	71.8	8.9
080399	200000	71.8	7.2	71.5	8.8
080399	210000	71.7	7.3	71.2	8.6
080399	220000	71.7	7.4	70.8	8.4
080399	230000	71.6	7.5	70.5	8.4
080499	000000	71.5	7.6	70.2	8.3
080499	010000	71.5	7.7	69.9	8.3
080499	020000	71.3	7.6	69.6	8.3
080499	030000	71.1	7.7	69.2	8.3
080499	040000	70.9	7.6	68.8	8.3
080499	050000	70.7	7.4	68.4	8.3
080499	060000	70.3	7.3	68.0	8.4
080499	070000	70.1	7.2	67.7	8.4
080499	080000	69.9	7.1	67.6	8.6
080499	090000	69.9	7.1	67.7	8.7
080499	100000	69.9	7.1	68.3	9.0
080499	110000	70.1	7.1	69.2	9.2
080499	120000	70.4	7.2	70.2	9.3
080499	130000	70.8	7.2	71.4	9.4
080499	140000	70.9	7.3	72.3	9.4
080499	150000	71.1	7.4	73.0	9.4
080499	160000	71.5	7.6	73.5	9.4
080499	170000	71.4	7.6	73.1	9.3
080499	180000	71.6	7.7	73.1	9.2
080499	190000	71.6	7.9	72.4	8.9
080499	200000	71.7	8.0	71.9	8.6
080499	210000	72.0	8.1	71.3	8.5
080499	220000	72.2	8.1	71.0	8.3
080499	230000	72.3	8.2	70.8	8.3
080599	000000	72.4	8.1	70.5	8.2
080599	010000	72.4	8.1	70.2	8.2
080599	020000	72.1	8.0	69.9	8.2
080599	030000	71.9	7.8	69.5	8.2
080599	040000	71.5	7.7	69.0	8.2
080599	050000	71.1	7.5	68.5	8.3

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
080599	060000	70.6	7.4	68.1	8.3
080599	070000	70.2	7.3	67.7	8.4
080599	080000	69.9	7.2	67.5	8.5
080599	090000	69.8	7.1	67.7	8.7
080599	100000	69.9	7.1	68.3	8.9
080599	110000	70.1	7.1	69.2	9.2
080599	120000	70.4	7.1	70.3	9.3
080599	130000	70.7	7.2	71.4	9.4
080599	140000	71.0	7.3	72.6	9.5
080599	150000	71.1	7.3	73.5	9.5
080599	160000	71.3	7.5	74.0	9.4
080599	170000	71.5	7.6	74.4	9.3
080599	180000	71.6	7.7	74.1	9.2
080599	190000	71.7	7.9	73.7	9.0
080599	200000	71.9	8.0	73.1	8.7
080599	210000	72.1	8.2	72.6	8.4
080599	220000	72.4	8.2	72.3	8.3
080599	230000	72.6	8.2	72.1	8.2
080699	000000	72.9	8.2	71.9	8.1
080699	010000	73.1	8.1	71.6	8.0
080699	020000	73.1	8.1	71.4	8.0
080699	030000	73.1	8.0	71.2	8.0
080699	040000	72.9	7.8	70.9	8.0
080699	050000	72.7	7.6	70.6	8.0
080699	060000	72.3	7.5	70.2	8.0
080699	070000	72.0	7.3	69.8	8.1
080699	080000	71.7	7.1	69.7	8.2
080699	090000	71.6	7.0	69.8	8.5
080699	100000	71.6	7.0	70.2	8.8
080699	110000	71.8	6.9	71.0	9.0
080699	120000	72.1	6.9	72.1	9.2
080699	130000	72.2	6.9	73.3	9.4
080699	140000	72.5	7.0	74.4	9.4
080699	150000	72.8	7.1	75.3	9.4
080699	160000	73.1	7.2	75.5	9.2
080699	170000	73.4	7.3	76.4	9.3
080699	180000	73.6	7.5	76.4	9.1
080699	190000	73.8	7.6	75.9	8.8
080699	200000	73.9	7.9	75.2	8.5
080699	210000	74.0	8.0	74.5	8.3
080699	220000	74.1	8.1	74.0	8.1
080699	230000	74.3	8.1	73.6	8.0
080799	000000	74.6	8.2	73.3	7.9
080799	010000	74.7	8.1	73.1	7.9
080799	020000	74.7	8.0	72.9	7.8
080799	030000	74.7	7.9	72.7	7.8
080799	040000	74.5	7.7	72.5	7.8
080799	050000	74.2	7.6	72.2	7.8
080799	060000	73.9	7.3	71.9	7.8
080799	070000	73.5	7.1	71.6	7.9

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
080799	080000	73.2	7.0	71.5	8.0
080799	090000	73.0	6.9	71.5	8.2
080799	100000	73.0	6.8	71.9	8.6
080799	110000	72.8	6.7	72.3	8.8
080799	120000	72.7	6.7	72.5	8.8
080799	130000	72.6	6.7	72.6	8.8
080799	140000	72.6	6.7	72.9	8.9
080799	150000	72.6	6.8	73.1	8.9
080799	160000	72.7	6.9	73.1	8.8
080799	170000	72.8	7.0	73.3	8.9
080799	180000	72.9	7.2	73.5	8.9
080799	190000	73.0	7.3	73.6	8.8
080799	200000	72.9	7.4	73.2	8.6
080799	210000	72.9	7.4	72.9	8.3
080799	220000	73.0	7.6	72.6	8.2
080799	230000	73.0	7.7	72.3	8.1
080899	000000	72.9	7.7	72.0	8.0
080899	010000	72.7	7.6	71.6	8.0
080899	020000	72.5	7.6	71.1	8.0
080899	030000	72.3	7.6	70.6	8.0
080899	040000	72.1	7.5	70.1	8.0
080899	050000	71.7	7.4	69.6	8.1
080899	060000	71.4	7.2	69.2	8.1
080899	070000	71.0	7.1	68.7	8.2
080899	080000	70.7	7.0	68.5	8.3
080899	090000	70.6	7.0	68.4	8.5
080899	100000	70.5	6.9	68.7	8.8
080899	110000	70.7	6.9	69.4	9.2
080899	120000	70.9	7.0	69.9	9.3
080899	130000	70.8	7.0	71.0	9.5
080899	140000	71.0	7.1	72.2	9.6
080899	150000	71.3	7.2	73.0	9.5
080899	160000	71.4	7.3	73.6	9.5
080899	170000	71.5	7.4	73.8	9.4
080899	180000	71.3	7.6	73.5	9.2
080899	190000	71.4	7.8	73.0	8.9
080899	200000	71.5	7.8	72.3	8.7
080899	210000	71.5	8.0	71.7	8.5
080899	220000	71.7	8.1	71.1	8.3
080899	230000	71.8	8.2	70.6	8.3
080999	000000	71.9	8.2	70.2	8.2
080999	010000	72.1	8.2	69.9	8.2
080999	020000	72.1	8.1	69.6	8.1
080999	030000	72.0	8.0	69.3	8.1
080999	040000	71.8	7.9	68.9	8.0
080999	050000	71.4	7.7	68.4	8.0
080999	060000	71.0	7.5	68.0	8.2
080999	070000	70.6	7.4	67.6	8.3
080999	080000	70.2	7.2	67.4	8.4
080999	090000	69.9	7.2	67.4	8.7

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
080999	100000	69.6	7.1	67.5	8.9
080999	110000	69.3	7.0	67.5	9.0
080999	120000	69.0	7.0	67.4	8.9
080999	130000	68.9	7.0	67.4	9.0
080999	140000	68.7	7.0	67.5	9.1
080999	150000	68.6	7.1	67.6	9.3
080999	160000	68.6	7.2	67.8	9.4
080999	170000	68.6	7.3	68.3	9.6
080999	180000	68.5	7.4	68.4	9.5
080999	190000	68.4	7.5	68.3	9.3
080999	200000	68.3	7.7	67.9	9.0
080999	210000	68.2	7.8	67.5	8.8
080999	220000	68.1	7.8	67.2	8.7
080999	230000	68.0	7.9	67.0	8.6
081099	000000	68.0	8.0	66.8	8.5
081099	010000	67.9	8.0	66.7	8.5
081099	020000	67.9	8.1	66.6	8.5
081099	030000	67.9	8.1	66.5	8.4
081099	040000	67.8	8.0	66.3	8.4
081099	050000	67.7	7.9	66.2	8.4
081099	060000	67.6	7.8	66.1	8.4
081099	070000	67.4	7.6	65.9	8.4
081099	080000	67.2	7.5	65.9	8.5
081099	090000	67.2	7.4	66.0	8.8
081099	100000	67.2	7.4	66.4	9.0
081099	110000	67.3	7.3	66.9	9.3
081099	120000	67.4	7.3	67.2	9.4
081099	130000	67.4	7.3	67.6	9.4
081099	140000			67.9	9.5
081099	150000	67.9	7.1		
081099	160000	68.3	7.2	69.2	9.9
081099	170000	68.6	8.0	69.9	9.7
081099	180000	68.6	8.2	70.1	9.5
081099	190000	68.7	8.3	70.1	9.4
081099	200000	68.7	8.4	69.7	9.0
081099	210000	68.8	8.6	69.3	8.8
081099	220000	68.9	8.7	68.9	8.6
081099	230000	69.0	8.8	68.6	8.5
081199	000000	69.1	8.8	68.3	8.4
081199	010000	69.2	8.9	67.9	8.4
081199	020000	69.2	8.9	67.6	8.4
081199	030000	69.2	8.8	67.4	8.3
081199	040000	69.2	8.8	67.1	8.3
081199	050000	69.1	8.6	66.8	8.3
081199	060000	69.0	8.4	66.5	8.3
081199	070000	68.7	8.3	66.2	8.4
081199	080000	68.6	8.1	66.1	8.5
081199	090000	68.5	8.0	66.3	8.8
081199	100000	68.5	7.9	66.9	9.1
081199	110000	68.7	7.8	67.9	9.3

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
081199	120000	69.1	7.8	69.0	9.5
081199	130000	69.6	7.8	70.3	9.5
081199	140000	69.9	7.9	71.4	9.6
081199	150000	70.0	7.9	72.8	9.6
081199	160000	70.3	8.1	73.4	9.5
081199	170000	70.6	8.2	73.9	9.4
081199	180000	70.6	8.3	73.8	9.2
081199	190000	70.8	8.5	73.4	8.9
081199	200000	70.9	8.7	72.9	8.6
081199	210000	71.1	8.8	72.3	8.3
081199	220000	71.3	8.9	71.8	8.1
081199	230000	71.6	9.0	71.4	8.0
081299	000000	71.9	9.1	71.1	8.0
081299	010000	72.2	9.1	70.9	7.9
081299	020000	72.4	9.0	70.8	7.8
081299	030000	72.5	8.9	70.6	7.8
081299	040000	72.5	8.7	70.3	7.8
081299	050000	72.4	8.5	70.0	7.8
081299	060000	72.2	8.3	69.7	7.8
081299	070000	71.9	8.1	69.4	7.9
081299	080000	71.7	7.9	69.3	8.0
081299	090000	71.5	7.7	69.4	8.3
081299	100000	71.4	7.6	69.8	8.6
081299	110000	71.2	7.5	70.2	8.8
081299	120000	71.0	7.4	70.4	8.7
081299	130000	70.9	7.4	70.3	8.6
081299	140000	70.8	7.3	70.1	8.5
081299	150000	70.6	7.3	70.0	8.4
081299	160000	70.5	7.4	69.9	8.4
081299	170000	70.5	7.4	69.9	8.4
081299	180000	70.4	7.5	69.9	8.3
081299	190000	70.3	7.6	69.7	8.2
081299	200000	70.2	7.7	69.6	8.1
081299	210000	70.3	7.8	69.5	8.0
081299	220000	70.2	7.9	69.4	7.9
081299	230000	70.2	7.9	69.3	7.9
081399	000000	70.1	7.9	69.2	7.9
081399	010000	70.1	7.9	69.2	7.9
081399	020000	70.0	7.8	69.0	7.9
081399	030000	70.0	7.7	68.9	7.9
081399	040000	69.9	7.7	68.8	7.9
081399	050000	69.8	7.6	68.7	7.8
081399	060000	69.7	7.5	68.6	7.9
081399	070000	69.7	7.5	68.6	7.9
081399	080000	69.6	7.4	68.5	8.0
081399	090000	69.5	7.4	68.4	8.1
081399	100000	69.5	7.4	68.4	8.4
081399	110000	69.5	7.4	68.6	8.7
081399	120000	69.5	7.4	69.0	9.0
081399	130000	69.7	7.5	69.5	9.2

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
081399	140000	70.0	7.5	70.2	9.4
081399	150000	70.1	7.6		
081399	160000	70.3	7.7	70.9	9.8
081399	170000	70.4	7.9	71.0	9.7
081399	180000	70.3	7.9	70.8	9.5
081399	190000	70.2	8.0	70.5	9.3
081399	200000	70.1	8.1	69.8	9.1
081399	210000	70.1	8.3	69.1	8.8
081399	220000	70.0	8.6	68.5	8.6
081399	230000	70.0	8.7	68.1	8.5
081499	000000	70.0	8.8	67.7	8.5
081499	010000	69.9	8.9	67.4	8.5
081499	020000	69.7	8.9	67.0	8.5
081499	030000	69.4	8.8	66.6	8.5
081499	040000	69.1	8.6	66.1	8.5
081499	050000	68.7	8.5	65.7	8.5
081499	060000	68.3	8.3	65.3	8.6
081499	070000	67.8	8.1	64.9	8.6
081499	080000	67.5	8.0	64.7	8.8
081499	090000	67.3	7.9	64.7	9.0
081499	100000	67.2	7.8	65.2	9.3
081499	110000	67.3	7.8	66.0	9.5
081499	120000	67.6	7.9	67.2	9.8
081499	130000	67.9	7.9	68.1	9.8
081499	140000	68.2	8.0	69.3	9.9
081499	150000	68.6	8.2	70.0	9.9
081499	160000	68.5	8.3	70.3	9.9
081499	170000	68.7	8.5	70.3	9.7
081499	180000	68.8	8.8	70.3	9.5
081499	190000	69.0	9.0	70.1	9.3
081499	200000	69.3	9.1	69.6	9.1
081499	210000	69.6	9.2	69.0	8.9
081499	220000	69.9	9.3	68.6	8.7
081499	230000	70.1	9.3	68.2	8.6
081599	000000	70.1	9.2	67.9	8.6
081599	010000	69.8	9.0	67.6	8.5
081599	020000	69.5	8.8	67.3	8.5
081599	030000	69.1	8.6	67.0	8.5
081599	040000	68.6	8.4	66.6	8.5
081599	050000	68.3	8.3	66.3	8.5
081599	060000	67.8	8.1	65.9	8.6
081599	070000	67.5	8.0	65.6	8.6
081599	080000	67.1	7.9	65.4	8.8
081599	090000	67.0	7.9	65.5	8.9
081599	100000	67.1	7.9	65.9	9.1
081599	110000	67.2	7.9	66.7	9.3
081599	120000	67.5	7.9	67.7	9.4
081599	130000	67.8	8.1	68.7	9.6
081599	140000	67.9	8.2	69.5	9.7
081599	150000	68.3	8.3	69.9	9.8

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
081599	160000	68.7	8.4	70.3	9.8
081599	170000	69.1	8.6	70.8	9.7
081599	180000	69.3	8.8	70.7	9.5
081599	190000	69.6	8.9	70.4	9.2
081599	200000	69.9	9.0	70.0	9.0
081599	210000	70.1	9.1	69.7	8.8
081599	220000	70.3	9.1	69.5	8.5
081599	230000	70.4	9.1	69.4	8.4
081699	000000	70.3	9.0	69.3	8.4
081699	010000	70.3	8.8	69.1	8.4
081699	020000	70.1	8.6	68.9	8.4
081699	030000	69.9	8.4	68.6	8.4
081699	040000	69.6	8.2	68.5	8.4
081699	050000	69.3	8.0	68.3	8.4
081699	060000	69.1	7.9	68.1	8.4
081699	070000	69.0	7.8	67.9	8.4
081699	080000	68.8	7.7	67.9	8.5
081699	090000	68.7	7.6	67.9	8.6
081699	100000	68.9	7.6	68.3	8.8
081699	110000	69.0	7.6	69.0	9.1
081699	120000	69.5	7.7	70.1	9.3
081699	130000	69.8	7.7	71.2	9.4
081699	140000	70.3	7.8	72.2	9.5
081699	150000	70.8	7.9	73.0	9.4
081699	160000	71.1	8.1	73.7	9.3
081699	170000	71.7	8.2	74.0	9.2
081699	180000	72.0	8.4	74.0	9.0
081699	190000	72.3	8.5	73.8	8.8
081699	200000	72.7	8.6	73.3	8.5
081699	210000	73.1	8.7	72.9	8.3
081699	220000	73.4	8.7	72.6	8.1
081699	230000	73.6	8.6	72.4	8.0
081799	000000	73.6	8.4	72.1	8.0
081799	010000	73.5	8.2	71.9	8.0
081799	020000	73.2	8.1	71.5	8.0
081799	030000	72.9	7.9	71.2	8.0
081799	040000	72.5	7.6	70.8	8.0
081799	050000	72.1	7.5	70.4	8.0
081799	060000	71.8	7.4	70.1	8.0
081799	070000	71.4	7.3	69.8	8.1
081799	080000	71.1	7.2	69.6	8.1
081799	090000	71.0	7.2	69.7	8.3
081799	100000	71.1	7.2	70.2	8.6
081799	110000	71.2	7.2	70.8	8.8
081799	120000	71.2	7.3	71.4	8.9
081799	130000	71.3	7.4	72.1	9.0
081799	140000	71.5	7.4	72.5	9.0
081799	150000	71.6	7.5	72.5	9.0
081799	160000	71.9	7.6	72.5	9.0
081799	170000	72.2	7.8	72.7	9.0

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
081799	180000	72.3	8.0	72.8	9.0
081799	190000	72.4	8.0	72.4	8.8
081799	200000	72.6	8.1	72.0	8.6
081799	210000	72.6	8.2	71.5	8.4
081799	220000	72.6	8.2	71.0	8.3
081799	230000	72.5	8.2	70.6	8.3
081899	000000	72.3	8.1	70.3	8.3
081899	010000	72.0	8.2	69.9	8.3
081899	020000	71.7	8.1	69.5	8.2
081899	030000	71.4	7.9	69.2	8.2
081899	040000	71.1	7.8	69.0	8.2
081899	050000	70.8	7.7	68.7	8.3
081899	060000	70.4	7.6	68.5	8.3
081899	070000	70.1	7.5	68.2	8.3
081899	080000	69.8	7.4	68.0	8.3
081899	090000	69.5	7.3	67.9	8.5
081899	100000	69.2	7.4	67.8	8.5
081899	110000	69.1	7.3	67.7	8.7
081899	120000	69.0	7.3	67.9	8.9
081899	130000	68.9	7.4	67.9	9.0
081899	140000	68.8	7.4	67.9	9.0
081899	150000	68.7	7.5	67.9	9.1
081899	160000	68.7	7.6	67.9	9.2
081899	170000	68.6	7.7	68.0	9.3
081899	180000	68.5	7.7	67.8	9.2
081899	190000	68.4	7.9	67.6	8.9
081899	200000	68.3	8.0	67.3	8.8
081899	210000	68.2	8.0	67.0	8.7
081899	220000	68.1	8.1	66.8	8.5
081899	230000	67.9	8.2	66.5	8.4
081999	000000	67.8	8.2	66.3	8.5
081999	010000	67.7	8.2	66.1	8.4
081999	020000	67.6	8.2	65.9	8.4
081999	030000	67.4	8.1	65.7	8.4
081999	040000	67.2	8.1	65.5	8.5
081999	050000	67.0	8.0	65.2	8.6
081999	060000	66.8	7.9	65.0	8.6
081999	070000	66.5	7.9	64.8	8.6
081999	080000	66.3	7.8	64.6	8.7
081999	090000	66.3	7.8	64.7	8.9
081999	100000	66.3	7.8	65.0	9.2
081999	110000	66.5	7.8	65.5	9.4
081999	120000	66.8	7.9	66.2	9.5
081999	130000	67.0	7.9	66.9	9.7
081999	140000	67.2	8.0	67.2	9.7
081999	150000	67.4	8.1	67.5	9.8
081999	160000	67.7	8.2	67.8	9.8
081999	170000	67.9	8.3	68.1	9.7
081999	180000	67.9	8.5	68.4	9.6
081999	190000	68.1	8.6	68.2	9.3

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
081999	200000	68.3	8.8	67.8	9.1
081999	210000	68.4	8.9	67.3	8.9
081999	220000	68.5	9.0	66.9	8.7
081999	230000	68.5	9.1	66.6	8.6
082099	000000	68.3	9.1	66.3	8.6
082099	010000	68.1	9.1	66.0	8.5
082099	020000	67.9	9.0	65.8	8.5
082099	030000	67.7	8.8	65.5	8.5
082099	040000	67.4	8.7	65.3	8.5
082099	050000	67.1	8.5	65.0	8.7
082099	060000	66.7	8.4	64.6	8.7
082099	070000	66.4	8.2	64.4	8.7
082099	080000	66.1	8.1	64.3	8.8
082099	090000	66.1	8.0	64.5	9.1
082099	100000	66.1	8.0	65.0	9.3
082099	110000	66.3	7.9	65.9	9.5
082099	120000	66.6	7.9	67.0	9.7
082099	130000	66.8	8.0	68.4	9.8
082099	140000	67.2	8.0	69.9	9.9
082099	150000	67.1	8.0	70.0	9.8
082099	160000	67.6	8.2	70.5	9.7
082099	170000	67.9	8.3	70.7	9.6
082099	180000	68.1	8.4	70.7	9.4
082099	190000	68.3	8.6	70.6	9.2
082099	200000	68.5	8.7	70.1	8.9
082099	210000	68.7	8.8	69.5	8.7
082099	220000	69.0	8.9	69.0	8.6
082099	230000	69.4	8.9	68.7	8.5
082199	000000	69.7	9.0	68.5	8.4
082199	010000	69.9	8.9	68.2	8.4
082199	020000	69.9	8.8	68.0	8.3
082199	030000	69.8	8.7	67.8	8.3
082199	040000	69.6	8.5	67.6	8.3
082199	050000	69.4	8.4	67.4	8.3
082199	060000	69.0	8.2	67.1	8.3
082199	070000	68.8	8.0	66.9	8.4
082199	080000	68.5	7.9	66.8	8.6
082199	090000	68.3	7.8	67.0	8.8
082199	100000	68.2	7.7	67.3	9.0
082199	110000	68.4	7.6	68.1	9.3
082199	120000	68.7	7.6	69.4	9.6
082199	130000	68.9	7.6	70.1	9.5
082199	140000	69.0	7.6	71.2	9.6
082199	150000	69.3	7.7	72.1	9.7
082199	160000	69.4	7.7	72.6	9.5
082199	170000	69.5	7.9	71.9	9.3
082199	180000	69.7	8.0	71.4	9.0
082199	190000	69.9	8.1	71.0	8.9
082199	200000	70.1	8.3	70.5	8.8
082199	210000	70.2	8.4	70.1	8.6

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
082199	220000	70.4	8.5	69.8	8.4
082199	230000	70.7	8.6	69.6	8.3
082299	000000	70.9	8.6	69.4	8.3
082299	010000	71.0	8.6	69.2	8.2
082299	020000	71.1	8.6	69.0	8.2
082299	030000	71.1	8.4	68.8	8.2
082299	040000	70.8	8.3	68.6	8.2
082299	050000	70.5	8.1	68.3	8.2
082299	060000	70.2	8.0	68.1	8.2
082299	070000	69.8	7.8	67.9	8.3
082299	080000	69.6	7.7	67.9	8.4
082299	090000	69.4	7.6	68.1	8.7
082299	100000	69.4	7.5	68.7	9.0
082299	110000	69.5	7.4	69.4	9.3
082299	120000	69.6	7.4	70.5	9.5
082299	130000	69.8	7.4	71.2	9.6
082299	140000	69.8	7.4	71.9	9.6
082299	150000	70.0	7.5	71.9	9.5
082299	160000	70.0	7.6	71.7	9.2
082299	170000	70.0	7.7	71.4	9.1
082299	180000	70.0	7.8	71.1	8.9
082299	190000	70.1	7.9	70.7	8.7
082299	200000	70.1	8.0	70.3	8.6
082299	210000	70.1	8.2	69.9	8.4
082299	220000	70.2	8.3	69.5	8.3
082299	230000	70.3	8.4	69.3	8.3
082399	000000	70.4	8.4	69.2	8.2
082399	010000	70.6	8.4	69.0	8.2
082399	020000	70.6	8.3	68.9	8.2
082399	030000	70.5	8.2	68.7	8.2
082399	040000	70.3	8.1	68.5	8.2
082399	050000	70.1	7.9	68.3	8.2
082399	060000	69.9	7.8	68.1	8.2
082399	070000	69.6	7.6	67.9	8.2
082399	080000	69.4	7.5	67.8	8.3
082399	090000	69.2	7.4	67.7	8.4
082399	100000	69.0	7.3	67.7	8.6
082399	110000	68.9	7.3	67.7	8.7
082399	120000	68.9	7.3	67.8	8.8
082399	130000	68.8	7.2	68.0	9.0
082399	140000			68.2	9.1
082399	150000			68.3	9.1
				68.4	9.1
082399	170000	68.7	7.3		
082399	180000	68.6	7.3		
082399	190000	68.6	7.5	67.9	8.8
082399	200000	68.5	7.6	67.7	8.7
082399	210000	68.4	7.6	67.6	8.6
082399	220000	68.4	7.8	67.4	8.5
082399	230000	68.3	7.9	67.2	8.5

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
082499	000000	68.3	8.0	67.1	8.4
082499	010000	68.2	7.9	67.0	8.4
082499	020000	68.2	7.9	66.9	8.4
082499	030000	68.1	7.9	66.7	8.4
082499	040000	68.0	7.8	66.6	8.4
082499	050000	67.9	7.7	66.5	8.4
082499	060000	67.8	7.7	66.4	8.3
082499	070000	67.7	7.6	66.3	8.4
082499	080000	67.6	7.5	66.2	8.4
082499	090000	67.6	7.5	66.3	8.6
082499	100000	67.6	7.5	66.5	8.8
082499	110000	67.7	7.5	66.9	9.1
082499	120000	68.0	7.5	67.6	9.3
082499	130000	68.4	7.5	68.4	9.5
082499	140000	68.6	7.6	69.3	9.7
082499	150000	69.0	7.6	70.2	9.7
082499	160000	69.4	7.7	71.1	9.6
082499	170000	69.5	7.8	71.4	9.5
082499	180000	69.6	7.9	71.5	9.3
082499	190000	69.6	8.1	71.1	9.2
082499	200000	69.7	8.3	70.7	8.7
082499	210000	69.7	8.4	70.3	8.6
082499	220000	69.9	8.5	69.9	8.4
082499	230000	70.0	8.7	69.5	8.3
082599	000000	70.1	8.8	69.3	8.2
082599	010000	70.3	8.9	69.2	7.5
082599	020000	70.4	8.8	68.9	8.0
082599	030000	70.5	8.8	68.7	8.0
082599	040000	70.5	8.6	68.4	8.0
082599	050000	70.3	8.4	68.1	8.0
082599	060000	70.0	8.2	67.8	8.0
082599	070000	69.8	8.0	67.6	8.0
082599	080000	69.5	7.8	67.4	8.1
082599	090000	69.5	7.7	67.5	8.3
082599	100000	69.5	7.6	67.9	8.6
082599	110000	69.6	7.5	68.7	8.8
082599	120000	69.9	7.5	69.9	8.9
082599	130000	70.3	7.4	71.1	8.9
082599	140000	70.4	7.4	72.3	8.8
082599	150000	70.7	7.5	73.3	8.4
082599	160000	71.0	7.6	73.8	8.0
082599	170000	71.2	7.7	74.4	7.5
082599	180000	71.4	7.8	74.2	7.0
082599	190000	71.4	7.9	73.8	6.6
082599	200000	71.6	8.2	73.3	6.1
082599	210000	71.8	8.3	72.8	5.6
082599	220000	72.1	8.5	72.2	5.4
082599	230000	72.3	8.6	71.8	5.1
082699	000000	72.6	8.7	71.5	4.8
082699	010000	72.8	8.6	71.3	4.5

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
082699	020000	72.9	8.6	71.0	4.3
082699	030000	73.0	8.4	70.8	4.2
082699	040000	72.9	8.2	70.4	4.1
082699	050000	72.7	8.0	70.1	3.9
082699	060000	72.4	7.8	69.6	3.8
082699	070000	72.1	7.6	69.2	3.7
082699	080000	71.7	7.4	69.0	3.6
082699	090000	71.6	7.3	68.9	3.6
082699	100000	71.6	7.3	69.3	3.4
082699	110000	71.7	7.1	70.2	3.3
082699	120000	72.0	7.1	71.2	3.1
082699	130000	72.2	7.1	72.5	3.0
082699	140000	72.5	7.2	73.7	2.9
082699	150000	72.8	7.3	75.0	2.7
082699	160000	73.0	7.3	75.8	2.6
082699	170000	73.0	7.5	75.6	2.5
082699	180000	73.1	7.6	75.5	2.5
082699	190000	73.1	7.8	75.3	2.4
082699	200000	73.4	8.0	74.8	2.4
082699	210000	73.6	8.2	74.3	2.3
082699	220000	73.8	8.3	73.9	2.3
082699	230000	74.1	8.5	73.4	2.3
082799	000000	74.3	8.5	73.1	2.3
082799	010000	74.4	8.5	72.8	2.2
082799	020000	74.6	8.4	72.5	2.2
082799	030000	74.6	8.3	72.3	2.2
082799	040000	74.6	8.1	72.1	2.2
082799	050000	74.4	7.9	71.8	2.1
082799	060000	74.2	7.7	71.5	2.1
082799	070000	73.9	7.5	71.2	2.1
082799	080000	73.7	7.3	71.1	2.1
082799	090000	73.5	7.1	71.2	2.1
082799	100000	73.4	7.0	71.7	2.1
082799	110000	73.6	7.0	72.4	2.0
082799	120000	73.8	6.9	73.3	2.0
082799	130000	74.1	6.9	74.7	1.9
082799	140000	74.3	6.9	76.0	1.8
082799	150000	74.8	7.0	77.0	1.8
082799	160000	75.0	7.1	77.8	1.8
082799	170000	75.3	7.2	78.1	1.7
082799	180000	75.3	7.3	77.9	1.7
082799	190000	74.9	7.4	77.4	1.7
082799	200000	75.0	7.6	76.9	1.7
082799	210000	75.1	7.8	76.3	1.7
082799	220000	75.3	7.9	75.7	1.7
082799	230000	75.5	8.1	75.2	1.7
082899	000000	75.7	8.1	74.8	1.7
082899	010000	75.8	8.2	74.5	1.7
082899	020000	76.0	8.1	74.2	1.7
082899	030000	76.1	8.0	73.8	1.7

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
082899	040000	76.2	7.8	73.5	1.7
082899	050000	76.2	7.6	73.1	1.7
082899	060000	75.9	7.4	72.8	1.7
082899	070000	75.7	7.2	72.5	1.7
082899	080000	75.4	7.0	72.2	1.7
082899	090000	75.2	6.9	72.1	1.7
082899	100000	75.2	6.8	72.5	1.7
082899	110000	75.1	6.7	73.1	1.7
082899	120000	75.2	6.6	74.1	1.7
082899	130000	75.4	6.6	75.3	1.6
082899	140000	75.7	6.7	76.1	1.6
082899	150000	75.9	6.7	76.7	1.6
082899	160000	75.8	6.8	77.2	1.6
082899	170000	75.7	6.9	77.4	1.6
082899	180000	75.6	7.0	77.2	1.6
082899	190000	75.3	7.1	76.6	1.6
082899	200000	75.3	7.1	75.8	1.6
082899	210000	75.2	7.3	74.9	1.6
082899	220000	75.1	7.5	74.1	1.6
082899	230000	75.1	7.7	73.4	1.6
082999	000000	75.1	7.8	72.8	1.6
082999	010000	75.1	7.9	72.3	1.6
082999	020000	75.1	8.0	71.7	1.6
082999	030000	75.1	8.0	71.2	1.6
082999	040000	75.0	7.9	70.7	1.6
082999	050000	74.8	7.7	70.2	1.7
082999	060000	74.4	7.5	69.6	1.7
082999	070000	73.9	7.4	69.0	1.7
082999	080000	73.4	7.2	68.6	1.7
082999	090000	73.1	7.0	68.3	1.7
082999	100000	72.8	7.0	68.3	1.7
082999	110000	72.7	6.9	68.8	1.7
082999	120000	72.7	6.8	69.6	1.7
082999	130000	72.7	6.8	70.8	1.6
082999	140000	72.9	6.9	71.6	1.6
082999	150000	73.0	6.9	72.7	1.6
082999	160000	72.9	7.0	73.3	1.6
082999	170000	72.5	7.1	73.5	1.6
082999	180000	72.3	7.2	73.2	1.6
082999	190000	71.9	7.2	72.5	1.6
082999	200000	71.7	7.3	71.6	1.6
082999	210000	71.5	7.5	70.6	1.6
082999	220000	71.4	7.9	69.8	1.6
082999	230000	71.3	7.9	69.1	1.6
083099	000000	71.1	8.2	68.4	1.7
083099	010000	71.0	8.2	67.9	1.7
083099	020000	70.9	8.3	67.4	1.7
083099	030000	70.9	8.3	66.8	1.7
083099	040000	70.8	8.3	66.3	1.7
083099	050000	70.7	8.2	65.7	1.7

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
083099	060000	70.5	8.0	65.2	1.7
083099	070000	70.1	7.9	64.6	1.7
083099	080000	69.7	7.7	64.2	1.7
083099	090000	69.3	7.5	64.0	1.7
083099	100000	69.2	7.4	64.2	1.8
083099	110000	68.9	7.3	64.9	1.7
083099	120000	68.7	7.3	65.7	1.7
083099	130000	68.5	7.3	66.2	1.7
083099	140000	68.4	7.3	67.0	1.7
083099	150000	68.4	7.4	67.8	1.6
083099	160000	68.4	7.4	68.6	1.6
083099	170000	68.3	7.5	69.1	1.6
083099	180000	68.2	7.6	69.0	1.6
083099	190000	68.0	7.7	68.5	1.6
083099	200000	67.9	7.9	67.7	1.6
083099	210000	67.7	8.0	67.0	1.6
083099	220000	67.5	8.2	66.4	1.6
083099	230000	67.4	8.3	65.9	1.7
083199	000000	67.4	8.5	65.6	1.7
083199	010000	67.3	8.6	65.2	1.7
083199	020000	67.3	8.7	64.9	1.7
083199	030000	67.3	8.8	64.6	1.7
083199	040000	67.2	8.8	64.2	1.7
083199	050000	67.1	8.7	63.8	1.7
083199	060000	67.1	8.6	63.4	1.7
083199	070000	66.9	8.4	63.0	1.7
083199	080000	66.7	8.2	62.7	1.8
083199	090000	66.5	8.0	62.6	1.8
083199	100000	66.5	7.9	63.0	1.8
083199	110000	66.4	7.8	63.7	1.8
083199	120000	66.4	7.7	64.9	1.7
083199	130000	66.5	7.7	65.9	1.7
083199	140000	66.7	7.7	66.8	1.7
083199	150000	67.0	7.7	67.9	1.7
083199	160000	67.0	7.8	69.0	1.6
083199	170000	67.1	7.8	69.7	1.6
083199	180000	67.2	7.9	69.7	1.6
083199	190000	67.2	8.0	69.3	1.6
083199	200000	67.3	8.1	68.7	1.6
083199	210000	67.3	8.2	68.1	1.6
083199	220000	67.2	8.3	67.6	1.6
083199	230000	67.2	8.4	67.2	1.6
090199	000000	67.3	8.6	66.9	1.7
090199	010000	67.4	8.8	66.7	1.7
090199	020000	67.6	8.8	66.6	1.7
090199	030000	67.6	8.8	66.4	1.7
090199	040000	67.8	8.8	66.2	1.7
090199	050000	67.8	8.7	65.9	1.7
090199	060000	67.9	8.6	65.5	1.7
090199	070000	67.9	8.4	65.1	1.7

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
090199	080000	67.8	8.1	64.8	1.7
090199	090000	67.7	8.0	64.7	1.7
090199	100000	67.8	7.8	65.0	1.7
090199	110000	67.8	7.6	65.8	1.7
090199	120000	67.8	7.5	67.0	1.7
090199	130000	68.1	7.5	68.2	1.7
090199	140000	68.3	7.5	69.5	1.6
090199	150000	68.6	7.5	70.7	1.6
090199	160000	68.8	7.5	71.6	1.6
090199	170000	68.8	7.5	72.2	1.6
090199	180000	68.8	7.5	72.2	1.6
090199	190000	68.9	7.6	71.8	1.6
090199	200000	69.2	7.7	71.0	1.6
090199	210000	69.3	7.9	70.3	1.6
090199	220000	69.2	8.1	69.7	1.6
090199	230000	69.3	8.3	69.2	1.6
090299	000000	69.3	8.4	68.8	1.6
090299	010000	69.4	8.4	68.6	1.6
090299	020000	69.5	8.5	68.4	1.6
090299	030000	69.7	8.5	68.2	1.6
090299	040000	69.9	8.5	68.1	1.6
090299	050000	69.9	8.4	67.8	1.7
090299	060000	70.0	8.3	67.6	1.7
090299	070000	70.1	8.1	67.3	1.7
090299	080000	70.0	7.9	67.1	1.7
090299	090000	70.0	7.7	67.1	1.7
090299	100000	70.1	7.6	67.5	1.7
090299	110000	70.0	7.4	68.3	1.7
090299	120000	70.0	7.3	69.4	1.6
090299	130000	70.0	7.2	70.6	1.6
090299	140000	70.3	7.2	71.6	1.6
090299	150000	70.4	7.2	72.5	1.6
090299	160000	70.4	7.2	73.2	1.6
090299	170000	70.8	7.2	73.7	1.5
090299	180000	71.0	7.3	73.8	1.5
090299	190000	71.1	7.4	73.6	1.5
090299	200000	71.1	7.5	73.2	1.5
090299	210000	71.2	7.7	72.8	1.5
090299	220000	71.2	7.8	72.3	1.6
090299	230000	71.2	8.0	71.9	1.6
090399	000000	71.2	8.1	71.6	1.6
090399	010000	71.3	8.1	71.3	1.6
090399	020000	71.5	8.2	71.2	1.6
090399	030000	71.7	8.4	70.9	1.6
090399	040000	71.9	8.4	70.6	1.6
090399	050000	72.0	8.3	70.3	1.6
090399	060000	72.0	8.2	70.0	1.6
090399	070000	72.0	8.0	69.7	1.6
090399	080000	72.0	7.8	69.4	1.6
090399	090000	72.0	7.6	69.4	1.6

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
090399	100000	72.2	7.5	69.7	1.6
090399	110000	72.3	7.3	70.5	1.6
090399	120000	72.4	7.1	71.7	1.6
090399	130000	72.5	7.0	73.1	1.5
090399	140000	72.7	7.0	74.6	1.5
090399	150000	72.8	7.0	75.6	1.5
090399	160000	72.9	6.9	76.2	1.5
090399	170000	73.3	7.0	76.3	1.5
090399	180000	73.5	7.0	76.2	1.5
090399	190000	73.7	7.1	75.8	1.5
090399	200000	73.9	7.3	75.3	1.5
090399	210000	73.9	7.5	74.8	1.5
090399	220000	73.9	7.6	74.4	1.5
090399	230000	73.9	7.8	74.0	1.5
090499	000000	73.9	7.8	73.7	1.5
090499	010000	74.1	8.0	73.5	1.5
090499	020000	74.2	8.0	73.3	1.5
090499	030000	74.4	8.1	73.2	1.5
090499	040000	74.6	8.1	73.0	1.5
090499	050000	74.8	8.0	72.8	1.5
090499	060000	74.8	7.8	72.6	1.5
090499	070000	74.6	7.6	72.3	1.5
090499	080000	74.6	7.4	72.1	1.5
090499	090000	74.5	7.2	72.0	1.5
090499	100000	74.5	7.0	72.2	1.5
090499	110000	74.5	6.9	72.7	1.5
090499	120000	74.6	6.7	73.6	1.5
090499	130000	74.8	6.7	74.8	1.5
090499	140000	75.0	6.6	76.0	1.5
090499	150000	75.1	6.6	76.9	1.5
090499	160000	75.2	6.6	77.5	1.4
090499	170000	75.3	6.6	77.7	1.4
090499	180000	75.3	6.7	77.6	1.4
090499	190000	75.4	6.8	77.1	1.4
090499	200000	75.4	6.9	76.4	1.4
090499	210000	75.4	7.0	75.7	1.5
090499	220000	75.3	7.1	75.2	1.5
090499	230000	75.3	7.3	74.7	1.5
090599	000000	75.2	7.4	74.2	1.5
090599	010000	75.2	7.5	73.8	1.5
090599	020000	75.2	7.6	73.4	1.5
090599	030000	75.2	7.7	73.1	1.5
090599	040000	75.3	7.7	72.8	1.5
090599	050000	75.3	7.6	72.4	1.5
090599	060000	75.4	7.5	72.1	1.5
090599	070000	75.3	7.4	71.8	1.5
090599	080000	75.2	7.2	71.6	1.5
090599	090000	75.2	7.0	71.6	1.5
090599	100000	75.1	6.9	71.8	1.5
090599	110000	75.0	6.7	72.3	1.5

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
090599	120000	75.0	6.6	72.8	1.5
090599	130000	74.8	6.5	73.1	1.5
090599	140000	74.6	6.4	73.4	1.5
090599	150000	74.4	6.4	73.3	1.5
090599	160000	74.2	6.4	73.2	1.5
090599	170000	74.1	6.5	73.2	1.5
090599	180000	74.0	6.5	73.2	1.5
090599	190000	73.9	6.5	73.0	1.5
090599	200000	73.6	6.6	72.6	1.5
090599	210000	73.4	6.6	72.1	1.5
090599	220000	73.2	6.7	71.4	1.5
090599	230000	72.9	6.8	70.8	1.5
090699	000000	72.7	6.9	70.3	1.6
090699	010000	72.6	7.1	69.7	1.6
090699	020000	72.4	7.1	69.2	1.6
090699	030000	72.2	7.2	68.6	1.6
090699	040000	72.1	7.2	68.1	1.6
090699	050000	71.9	7.2	67.5	1.6
090699	060000	71.7	7.2	67.0	1.6
090699	070000	71.3	7.1	66.5	1.7
090699	080000	71.1	7.1	66.1	1.7
090699	090000	70.9	7.0	65.9	1.7
090699	100000	70.8	6.9	65.9	1.7
090699	110000	70.8	6.9	66.5	1.7
090699	120000	70.8	6.9	67.4	1.7
090699	130000	71.0	6.9	68.6	1.6
090699	140000	71.2	6.9	69.7	1.6
090699	150000	71.3	7.0	70.8	1.6
090699	160000	71.3	7.0	71.6	1.6
090699	170000	71.2	7.0	71.9	1.5
090699	180000	70.8	7.1	71.7	1.5
090699	190000	70.4	7.1	71.1	1.5
090699	200000	70.1	7.1	70.3	1.6
090699	210000	69.8	7.2	69.4	1.6
090699	220000	69.6	7.3	68.6	1.6
090699	230000	69.5	7.5	67.9	1.6
090799	000000	69.3	7.7	67.4	1.6
090799	010000	69.2	7.8	67.0	1.6
090799	020000	69.1	7.9	66.6	1.6
090799	030000	69.1	8.0	66.3	1.6
090799	040000	69.1	8.0	65.9	1.7
090799	050000	69.1	8.0	65.5	1.7
090799	060000	69.1	7.9	65.0	1.7
090799	070000	69.1	7.8	64.6	1.7
090799	080000	69.0	7.7	64.3	1.7
090799	090000	68.9	7.5	64.1	1.7
090799	100000	69.0	7.4	64.3	1.7
090799	110000	68.8	7.2	65.0	1.7
090799	120000	68.8	7.2	66.0	1.7
090799	130000	68.7	7.1	67.4	1.7

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
090799	140000	68.8	7.1	68.7	1.6
090799	150000	68.9	7.1	69.8	1.6
090799	160000	68.8	7.1	70.6	1.6
090799	170000	68.8	7.1	71.0	1.6
090799	180000	68.8	7.1	70.9	1.5
090799	190000	68.8	7.2	70.4	1.6
090799	200000	68.7	7.3	69.6	1.6
090799	210000	68.6	7.4	68.8	1.6
090799	220000	68.6	7.5	68.4	1.6
090799	230000	68.5	7.7	68.0	1.6
090899	000000	68.5	7.7	67.8	1.6
090899	010000	68.5	7.8	67.7	1.6
090899	020000	68.5	7.9	67.6	1.6
090899	030000	68.6	8.0	67.5	1.6
090899	040000	68.7	8.0	67.3	1.6
090899	050000	68.9	8.0	67.2	1.6
090899	060000	69.1	7.9	66.9	1.6
090899	070000	69.2	7.7	66.7	1.6
090899	080000	69.2	7.6	66.5	1.6
090899	090000	69.1	7.4	66.4	1.6
090899	100000	69.1	7.3	66.6	1.6
090899	110000	69.2	7.1	67.2	1.6
090899	120000	69.4	7.0	68.3	1.6
090899	130000			69.4	1.6
090899	140000			70.3	1.6
090899	150000	69.7	7.7	71.2	1.5
090899	160000	69.8	7.7	71.7	1.5
090899	170000	69.6	7.7	71.6	1.5
090899	180000	69.5	7.7		
090899	190000	69.3	7.7	70.6	8.8
090899	200000	69.2	7.8	69.9	8.5
090899	210000	69.1	7.9	69.1	8.3
090899	220000	69.0	8.0	68.4	8.2
090899	230000	68.9	8.1	67.8	8.1
090999	000000	68.9	8.2	67.3	8.1
090999	010000	68.9	8.3	66.8	8.0
090999	020000	68.9	8.4	66.4	8.1
090999	030000	69.0	8.5	66.0	8.1
090999	040000	69.0	8.4	65.7	8.1
090999	050000	69.1	8.4	65.2	8.1
090999	060000	69.1	8.3	64.9	8.1
090999	070000	68.9	8.2	64.5	8.1
090999	080000	68.7	8.1	64.3	8.3
090999	090000	68.5	7.9	64.3	8.5
090999	100000	68.3	7.8	64.2	8.9
090999	110000	68.0	7.7	64.5	9.3
090999	120000	67.8	7.7	64.8	9.4
090999	130000	67.7	7.6	65.1	9.6
090999	140000	67.4	7.6	65.3	9.8
090999	150000	67.2	7.6	65.3	9.8

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
090999	160000	66.9	7.6	65.1	9.8
090999	170000	66.7	8.2	64.9	9.8
090999	180000	66.2	8.4	64.6	9.6
090999	190000	65.9	8.4	64.1	9.4
090999	200000	65.6	8.5	63.7	9.1
090999	210000	65.3	8.5	63.1	9.0
090999	220000	65.1	8.6	62.7	8.8
090999	230000	64.9	8.7	62.3	8.8
091099	000000	64.6	8.2	61.9	8.8
091099	010000	64.5	8.5	61.6	8.8
091099	020000	64.3	8.5	61.3	8.7
091099	030000	64.2	8.5	61.0	8.7
091099	040000	64.0	8.8	60.8	8.7
091099	050000	63.8	8.8	60.5	8.7
091099	060000	63.7	8.8	60.3	8.8
091099	070000	63.4	8.8	60.0	8.8
091099	080000	63.2	8.7	59.8	8.9
091099	090000	63.1	8.6	59.8	9.2
091099	100000	63.0	8.5	59.8	9.6
091099	110000	63.1	8.4	60.3	10.2
091099	120000	63.0	8.4	61.1	10.4
091099	130000	62.8	8.4	61.5	10.5
091099	140000	62.7	8.4	61.6	10.4
091099	150000	62.6	8.4	61.7	10.5
091099	160000	62.4	8.3	61.6	10.5
091099	170000	62.2	8.4	61.8	10.4
091099	180000	62.2	8.4	61.7	10.4
091099	190000	62.0	8.4	61.6	10.2
091099	200000	61.8	8.5	61.4	9.9
091099	210000	61.6	8.6	61.1	9.7
091099	220000	61.5	8.6	60.7	9.5
091099	230000	61.4	8.8	60.5	9.5
091199	000000	61.2	9.0	60.3	9.4
091199	010000	61.1	9.0	60.0	9.4
091199	020000	61.0	9.1	59.7	9.4
091199	030000	61.0	9.2	59.3	9.4
091199	040000	60.9	9.2	58.9	9.4
091199	050000	60.8	9.3	58.6	9.4
091199	060000	60.7	9.3	58.2	9.4
091199	070000	60.5	9.3	57.8	9.5
091199	080000	60.4	9.1	57.5	9.6
091199	090000	60.4	9.1	57.3	9.8
091199	100000	60.5	9.0	57.6	10.1
091199	110000	60.6	8.9	58.4	10.5
091199	120000	60.9	8.8	59.5	10.6
091199	130000	61.4	8.8	60.8	10.7
091199	140000	61.5	8.8	62.2	10.8
091199	150000	61.8	8.7	63.3	10.8
091199	160000	61.8	8.7	64.1	10.7
091199	170000	61.7	8.7	64.5	10.6

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
091199	180000	61.7	8.8	64.4	10.4
091199	190000	61.7	8.9	63.8	10.1
091199	200000	61.6	9.0	63.1	9.8
091199	210000	61.4	9.1	62.3	9.6
091199	220000	61.4	9.2	61.8	9.4
091199	230000	61.4	9.3	61.4	9.4
091299	000000	61.4	9.4	61.1	9.3
091299	010000	61.5	9.5	61.0	9.3
091299	020000	61.5	9.6	61.0	9.2
091299	030000	61.7	9.8	61.0	9.2
091299	040000	61.9	9.8	61.0	9.1
091299	050000	62.2	9.8	60.9	9.1
091299	060000	62.5	9.7	60.8	9.1
091299	070000	62.5	9.5	60.7	9.1
091299	080000	62.6	9.3	60.6	9.2
091299	090000	62.5	9.1	60.5	9.4
091299	100000	62.5	9.0	60.5	9.6
091299	110000	62.4	8.9	60.7	9.8
091299	120000	62.5	8.8	61.5	10.2
091299	130000	62.4	8.6	62.3	10.3
091299	140000	62.2	8.5	63.2	10.3
091299	150000	62.3	8.5	63.6	10.4
091299	160000	62.4	8.5	63.8	10.5
091299	170000	62.4	8.5	64.0	10.4
091299	180000	62.5	8.5	63.9	10.3
091299	190000	62.4	8.5	63.6	10.0
091299	200000	62.3	8.5	63.3	9.7
091299	210000	62.2	8.6	62.9	9.5
091299	220000	62.2	8.6	62.4	9.3
091299	230000	62.2	8.7	62.0	9.2
091399	000000	62.0	8.8	61.7	9.2
091399	010000	62.0	8.9	61.3	9.1
091399	020000	62.0	9.0	61.0	9.1
091399	030000	62.0	9.1	60.7	9.1
091399	040000	62.0	9.2	60.4	9.1
091399	050000	62.1	9.2	60.0	9.1
091399	060000	62.1	9.2	59.7	9.1
091399	070000	62.1	9.2	59.3	9.2
091399	080000	62.0	9.1	59.1	9.3
091399	090000	62.0	8.9	58.9	9.6
091399	100000	62.0	8.9	59.0	9.9
091399	110000	62.0	8.8	59.5	10.2
091399	120000	62.0	8.7	59.9	10.4
091399	130000	62.0	8.6	60.5	10.6
091399	140000	62.0	8.6	61.1	10.6
091399	150000	61.9	8.5	61.6	10.7
091399	160000	61.9	8.6	62.0	10.6
091399	170000	61.8	8.6	62.1	10.6
091399	180000	61.6	8.7	61.8	10.4
091399	190000	61.4	8.6	61.4	10.2

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
091399	200000	61.2	8.7	60.8	9.9
091399	210000	61.0	8.8	60.2	9.7
091399	220000	60.7	8.8	59.6	9.6
091399	230000	60.6	9.0	59.1	9.6
091499	000000	60.5	9.0	58.7	9.5
091499	010000	60.4	9.1	58.4	9.5
091499	020000	60.2	9.4	58.0	9.5
091499	030000	60.2	9.4	57.8	9.5
091499	040000	60.1	9.5	57.5	9.5
091499	050000	60.1	9.5	57.1	9.5
091499	060000	60.0	9.5	56.8	9.6
091499	070000	60.0	9.4	56.5	9.6
091499	080000	59.8	9.3	56.2	9.7
091499	090000	59.7	9.2	56.1	10.0
091499	100000	59.7	9.1	56.3	10.3
091499	110000	59.8	9.0	56.9	10.6
091499	120000	59.8	8.9	57.7	10.8
091499	130000	59.9	8.9	58.7	10.9
091499	140000	59.8	8.9	59.6	10.9
091499	150000	59.7	8.9	59.9	10.8
091499	160000	59.6	9.0	60.2	10.8
091499	170000	59.5	9.0	60.0	10.7
091499	180000	59.3	9.0	59.5	10.6
091499	190000	59.1	9.1	59.1	10.4
091499	200000	58.9	9.1	58.6	9.0
091499	210000	58.7	9.2	58.2	8.9
091499	220000	58.6	9.4	57.8	8.8
091499	230000	58.5	9.4	57.5	9.8
091599	000000	58.5	9.5	57.3	9.8
091599	010000	58.5	9.6	57.1	9.7
091599	020000	58.6	9.8	56.9	9.7
091599	030000	58.5	9.9	56.7	9.7
091599	040000	58.5	9.9	56.4	9.7
091599	050000	58.5	9.9	56.1	9.7
091599	060000	58.6	9.8	55.7	9.8
091599	070000	58.4	9.7	55.3	9.8
091599	080000	58.2	9.6	55.1	9.9
091599	090000	58.1	9.5	54.9	10.2
091599	100000	58.2	9.4	55.1	10.4
091599	110000	58.2	9.3	55.8	10.7
091599	120000	58.4	9.2	56.8	10.9
091599	130000	58.4	9.2	58.0	11.0
091599	140000	58.5	9.2	58.5	11.0
091599	150000	58.5	9.2	58.8	11.0
091599	160000	58.6	9.2	59.1	10.0
091599	170000	58.5	9.2	59.3	9.7
091599	180000	58.4	9.2	59.3	9.5
091599	190000	58.2	9.2	59.0	9.4
091599	200000	58.0	9.3	58.5	9.1
091599	210000	57.9	9.4	58.0	9.2

		Downstream		Upstream	
Date	Time	Temperature	Dissolved Oxygen	Temperature	Dissolved Oxygen
MMDDYY	HHMMSS	°F	mg/l	°F	mg/l
091599	220000	57.8	9.5	57.6	9.2
091599	230000	57.7	9.5	57.2	9.0

Appendix B. Impoundment Profile Data

Appendix B. Profiles of dissolved oxygen and temperature in Shawano Project impoundment collected biweekly between July 1 and September 15, 1999.

Date MMDDYY	Depth ft	Temperature °F	Dissolved Oxygen mg/L
071399	1	72.5	8.0
	2	72.5	8.0
	3	72.5	8.0
	4	72.5	8.0
	5	72.5	8.0
	6	72.5	8.1
	7	72.5	8.1
	8	72.4	8.2
	9	72.5	8.2
	10	72.5	8.1
	11	72.5	8.0
	12	72.5	8.0
	13	72.5	8.2
	14	72.5	8.2
072699	1	81.4	8.0
	2	81.4	8.0
	3	81.3	8.0
	4	81.3	8.0
	5	81.2	8.0
	6	81.2	8.0
	7	81.2	8.0
	8	81.1	8.0
	9	81.1	8.0
	10	81.1	8.0
	11	81.1	8.0
	12	81.1	8.0
	13	81.1	8.0
	14	81.1	7.9
081099	1	68.7	7.7
	2	68.5	7.7
	3	68.5	7.7
	4	68.4	7.7
	5	68.4	7.6
	6	68.3	7.6
	7	68.3	7.6
	8	68.3	7.5
	9	68.2	7.6
	10	68.3	7.5
	11	68.2	7.5
	12	68.2	7.6
	13	68.2	7.5

Date MMDDYY	Depth ft	Temperature °F	Dissolved Oxygen mg/L
082399	1	68.8	8.0
	2	68.8	8.0
	3	68.7	8.0
	4	68.7	8.0
	5	68.7	8.0
	6	68.7	8.0
	7	68.7	8.0
	8	68.7	8.0
	9	68.7	8.0
	10	68.7	7.9
	11	68.7	7.9
	12	68.7	7.8
	13	68.7	7.8
090899	1	69.9	7.8
	2	69.8	7.8
	3	69.6	7.9
	4	69.6	7.9
	5	69.5	7.9
	6	69.5	7.8
	7	69.4	7.8
	8	69.4	7.8
	9	69.4	7.8
	10	69.4	7.8
	11	69.4	7.8
	12	69.4	7.8
	13	69.3	7.8