

Real Time Water Quality Monthly Report
Aur Resources Inc.
September - October 2006

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.
- Aur Resources Inc. will be informed of any significant water quality events in the future in the form of a monthly report.

Maintenance and Calibration of Instrumentation

- The instrument at Gills Pond Brook was removed on September 18th, 2006 for cleaning and calibration and then reinstalled on September 21st. The results from comparing the Minisonde values to the Datasonde values during removal and reinstallation on September 18th/21st can be seen in **Table 1**.
- The instrument at East Pond Brook was removed on September 21st, 2006 for cleaning and calibrating and then reinstalled on the same day September 21st, 2006. The results from comparing the Minisonde values to the Datasonde values during removal and reinstallation on September 21st can be seen in **Table 1**.

Table 1: QA/QC Data Comparison Rankings upon removal/reinstallation on September 18th/21st, 2006

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Tributary to Gills Pond Brook	September 18 th , 2006	Removal	Poor	Good	Good	Poor
	September 21 st , 2006	Installation	Good	Excellent	Poor	Excellent
East Pond Brook	September 21 th , 2006	Removal	Excellent	Excellent	Marginal	Good
	September 21 th , 2006	Installation	Good	Excellent	Poor	Fair

- The Gills Pond Brook instrument was deployed until October 26th, 2006 (36-day deployment period) at which point it was removed for maintenance and calibration. The results from comparing the Minisonde values to the Datasonde values during removal on October 26th can be seen in **Table 2**.
- The East Pond Brook instrument was deployed until October 26th, 2006 (36-day deployment period) at which point it was removed for maintenance and calibration. The results from comparing the Minisonde values to the Datasonde values during removal on October 26th can be seen in **Table 2**.

Table 2: QA/QC Data Comparison Rankings upon removal on October 26th, 2006

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Tributary to Gills Pond Brook	September 18 th , 2006	Removal	Excellent	Poor	Good	Excellent
East Pond Brook	September 21 st , 2006	Removal	Excellent	Excellent	Fair	Poor

Data Interpretation

- This monthly report interprets the data from the Gills Pond Brook station and East Pond Brook station for the period of September 21st – October 26th, 2006.

TRIBUTARY TO GILLS POND BROOK

- The water temperature (**Figure 1**) fluctuated between 2.45°C – 16.18 °C but showed a decrease in temperature readings over the deployment period. A very strong diurnal pattern is detected in the data.

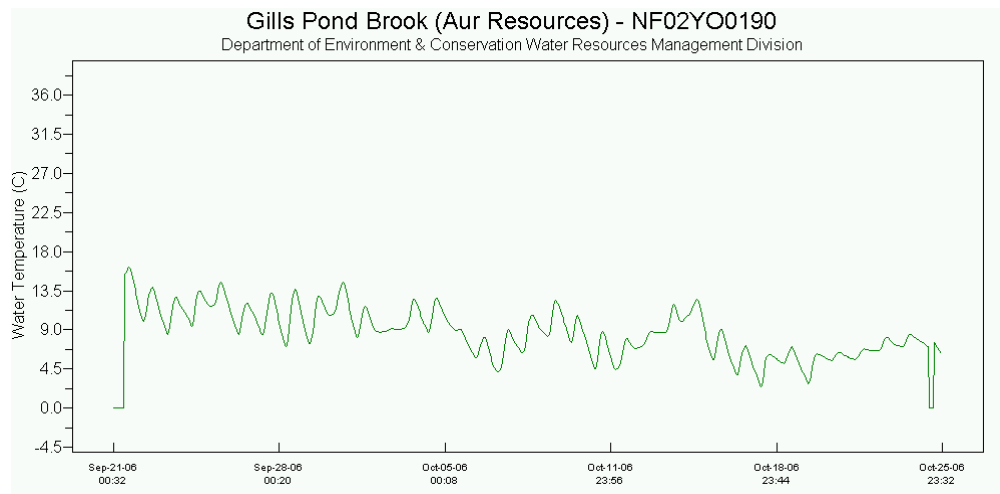


Figure 1

- The dissolved oxygen values (**Figure 2**) fluctuated throughout the deployment period as was also seen in temperature depicted in Figure 1. The dissolved oxygen values ranged from 9.43 mg/L to 13.14 mg/L. There is an obvious increase in dissolved oxygen levels throughout the deployment period as would be expected during this time of the year. As is the case in most NL water, these values fall within the recommended CCME Protection of Aquatic Life guidelines for dissolved oxygen in most cases (cold water/other life stages – above 6.5; warm water/other life stages – above 5.5; warm water/early life stages – above 6); however, a few of the lower values during this period fall below the most conservative limit for cold water/early life stages – 9.5 mg/L.

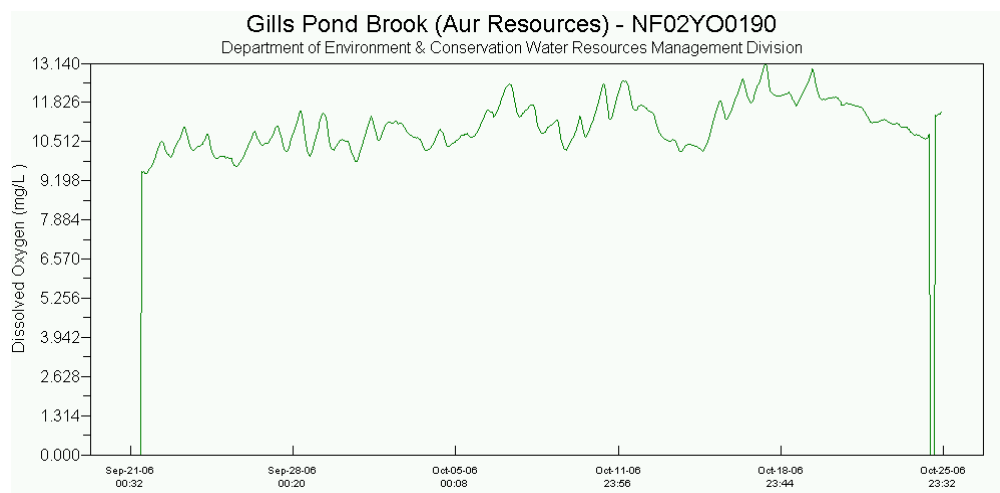


Figure 2

- The pH values (**Figure 3**) for the Gills Pond Brook station remained fairly consistent between September 21st and October 5th, 2006. There is a drop in pH on October 5th with a subsequent slight increase until October 12th. There is a second drop on October 12th with another subsequent increase until October 22nd. There is a third drop in pH values on October 22nd which remains consistent until removal of the equipment. The time periods when the pH values drop correspond to period of heavy rainfall (**Appendix A**). The pH values ranged from 5.71 – 6.89 with many of the values falling slightly outside the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines due to the naturally acidic nature of NL waters.

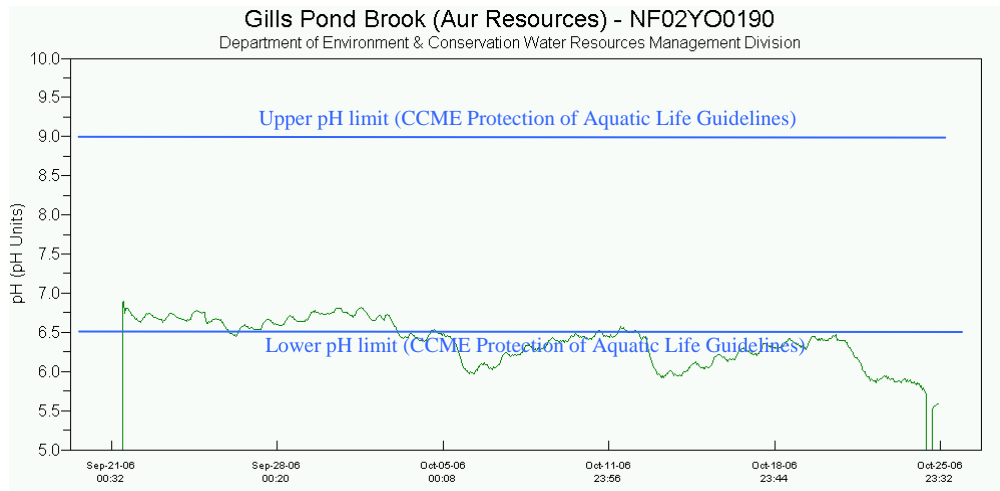


Figure 3

- The specific conductivity values (**Figure 4**) fluctuated throughout the deployment period with an decrease in conductivity values between September 21st and October 26th. The conductivity values decreased from 37.1 to 14.6 $\mu\text{S}/\text{cm}$ over the deployment period. The stage graph (**Appendix A**) for Gill’s Pond Brook shows fluctuations throughout the deployment period with an increase in stage from 1.212 m to 1.529 m. This is likely the cause of the decrease in conductivity values.

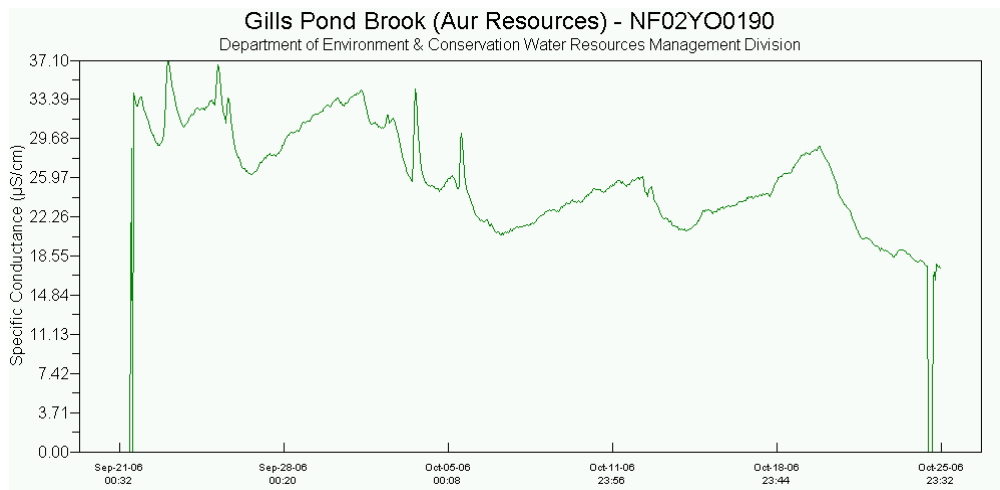


Figure 4

- The turbidity values (**Figure 5**) remained consistent around 0 NTU throughout the deployment period. There was one turbidity value of 2355 NTU on September 21, 2006 shortly after the instrument was installed. With the exception of this one value, turbidity readings ranged from 0.0 – 177.1 NTU during the deployment period. The one extreme turbidity value was likely due to suspended material in the water that disturbed the sensor while reading. The turbidity spikes seen throughout the deployment period correspond with period of heavy rainfall (**Appendix A**).

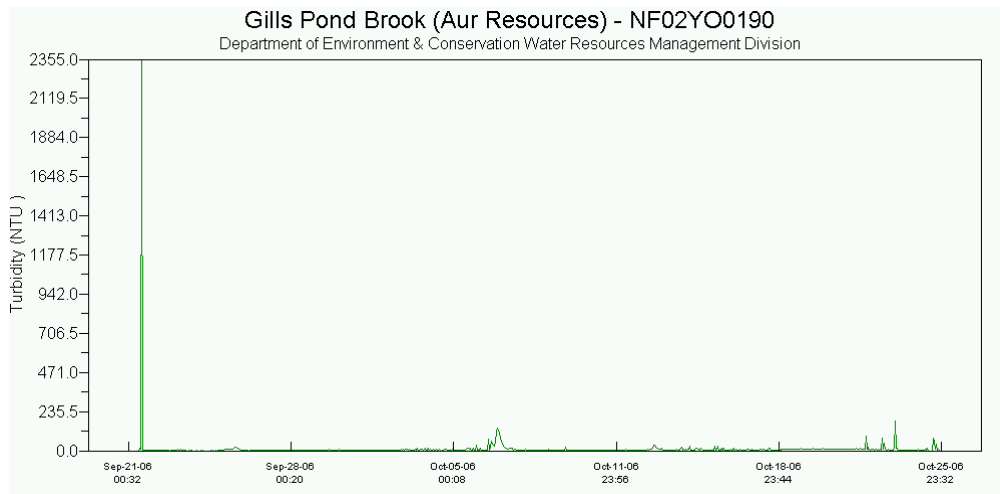


Figure 5

EAST POND BROOK

- Water temperatures (**Figure 6**) for East Pond Brook decrease over the deployment period with a range of 4.21°C – 15.96 °C. There was a very strong diurnal pattern being detected in the data.

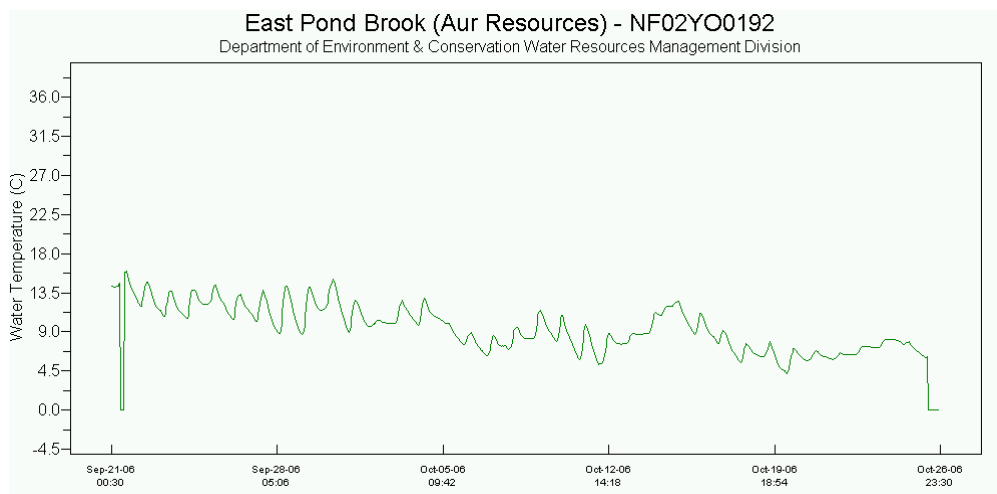


Figure 6

- The dissolved oxygen values (**Figure 7**) show an increase over the deployment period. This is consistent with the decrease of temperature values in Figure 8 which is expected for this time of year. The dissolved oxygen values ranged from 12.65 mg/L to 9.62 mg/L. As is the case in most NL water, these values fall within the recommended CCME Protection of Aquatic Life guidelines for dissolved oxygen (cold water/other life stages – above 6.5; warm water/other life stages – above 5.5; warm water/early life stages – above 6; cold water/early life stages – 9.5 mg/L).

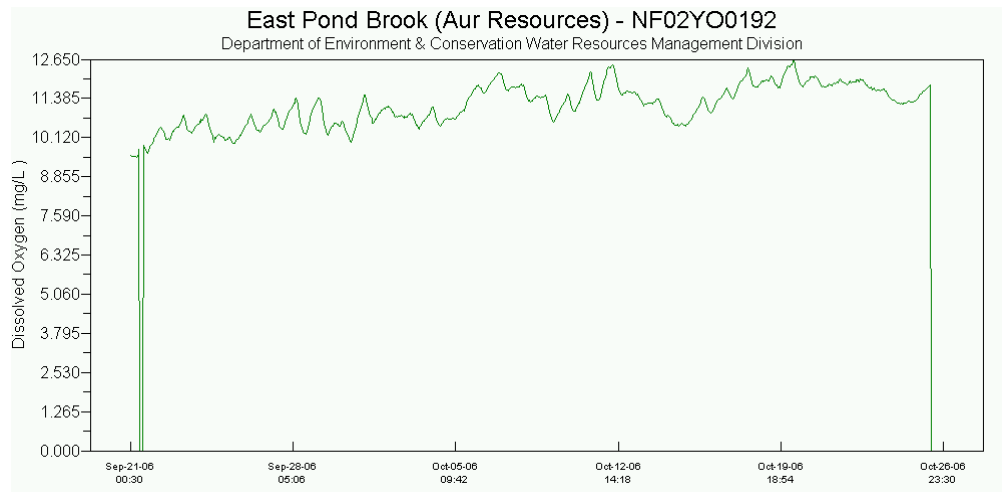


Figure 7

- The pH values for the East Pond Brook station (**Figure 8**) remained fairly stable over the deployment period until October 21st. There was a significant decrease in pH values after October 21st until the equipment was removed. This decrease in pH corresponds to a heavy rainfall event from October 21st – 24th (**Appendix A**). The pH values ranged from 5.62 – 6.75 with many of the values falling slightly outside the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines due to the naturally acidic nature of NL waters.

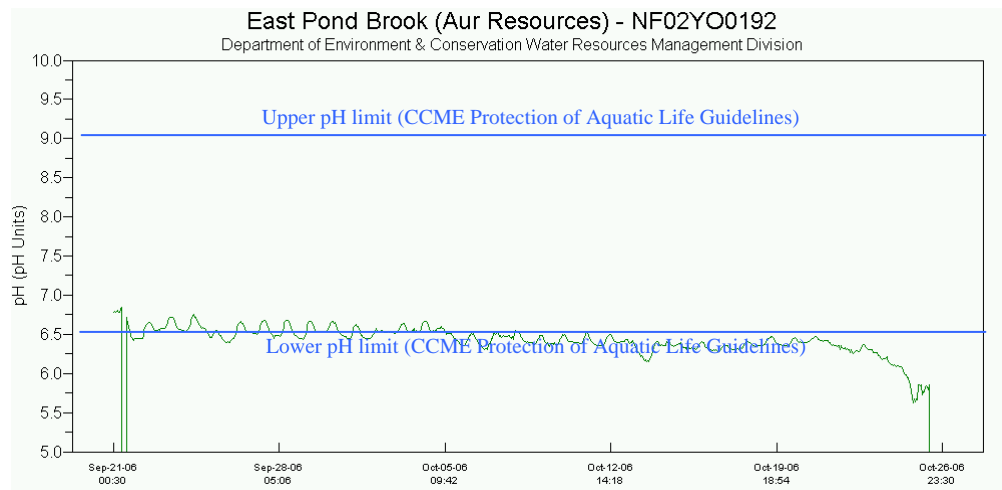


Figure 8

- The specific conductivity values (**Figure 9**) fluctuated throughout the deployment period with a decrease in conductivity values between September 21st and October 26th. The conductivity values decreased from 37.1 to 17.46 $\mu\text{S/cm}$ over the deployment period. This decrease in conductivity was also evident in Gills Pond Brook (**Figure 4**). The stage graph (**Appendix A**) for East Pond Brook shows fluctuations throughout the deployment period with an increase in stage from 1.009 m to 1.709 m. This is likely the cause of the decrease in conductivity values.

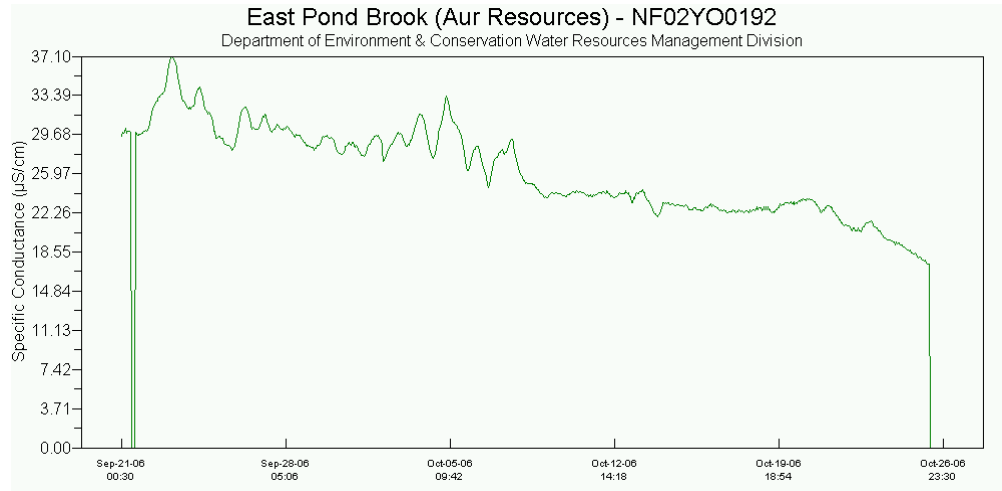


Figure 9

- The turbidity values (**Figure 10**) remained consistently low throughout the deployment period. The range of values were between 0.0 – 24.8 NTU with three obvious spikes (24.8 NTU on September 22nd; 19.6 NTU on September 26th; 13.3 NTU on October 24th). The turbidity spikes and fluctuations in turbidity values seen throughout the deployment period correspond with periods of heavy rainfall (**Appendix A**). With the exception of these three spikes, turbidity values remained below 10 NTU.

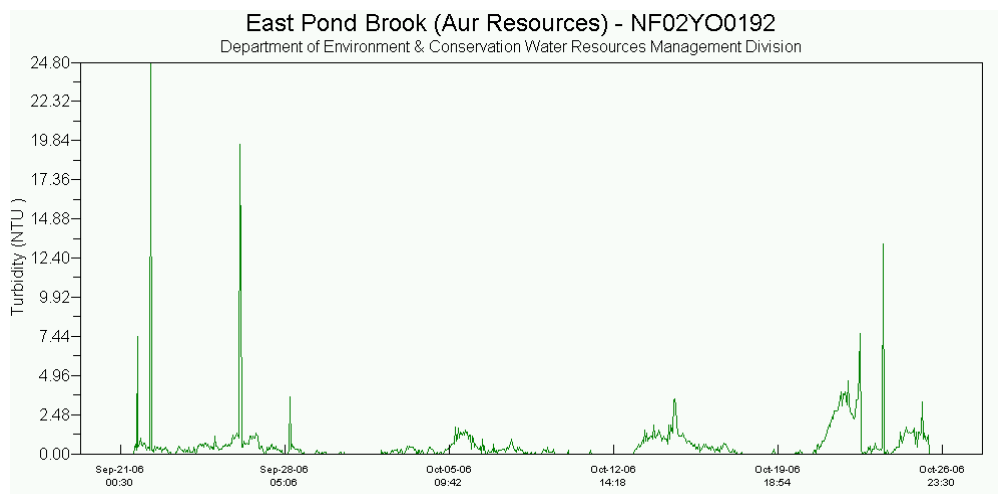
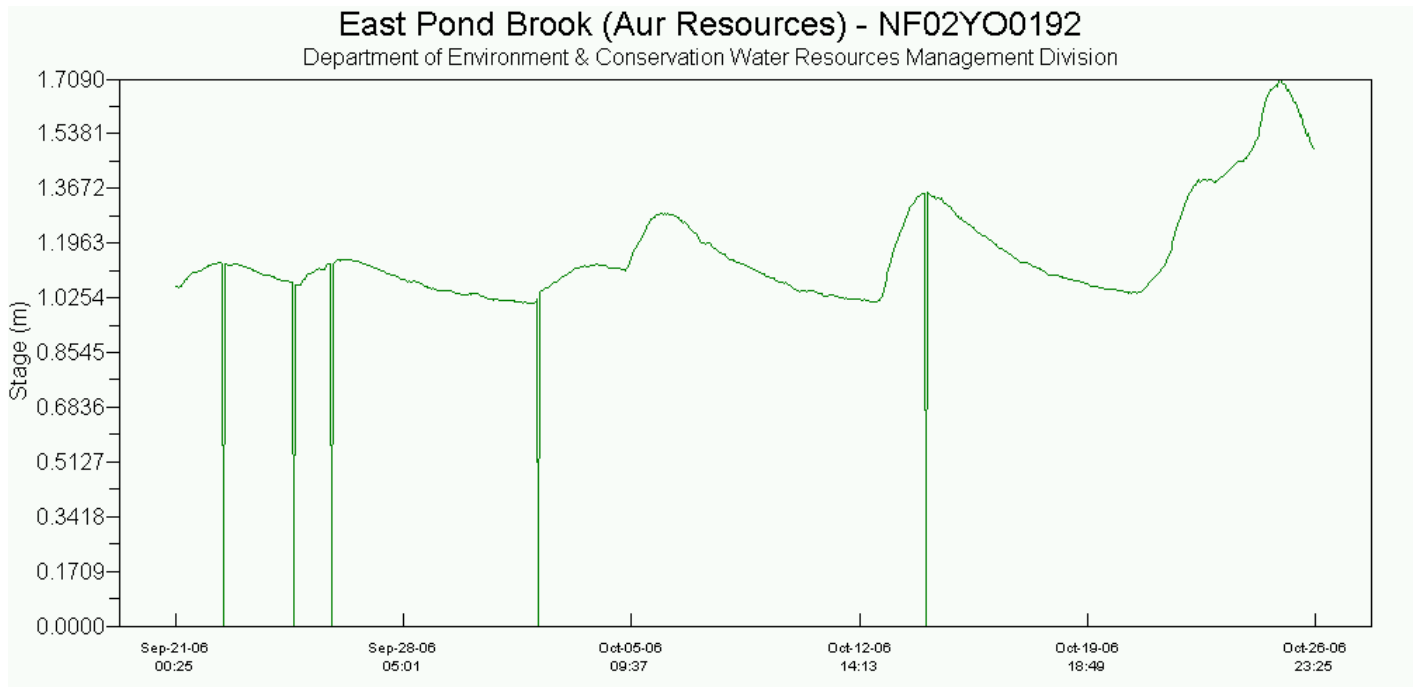
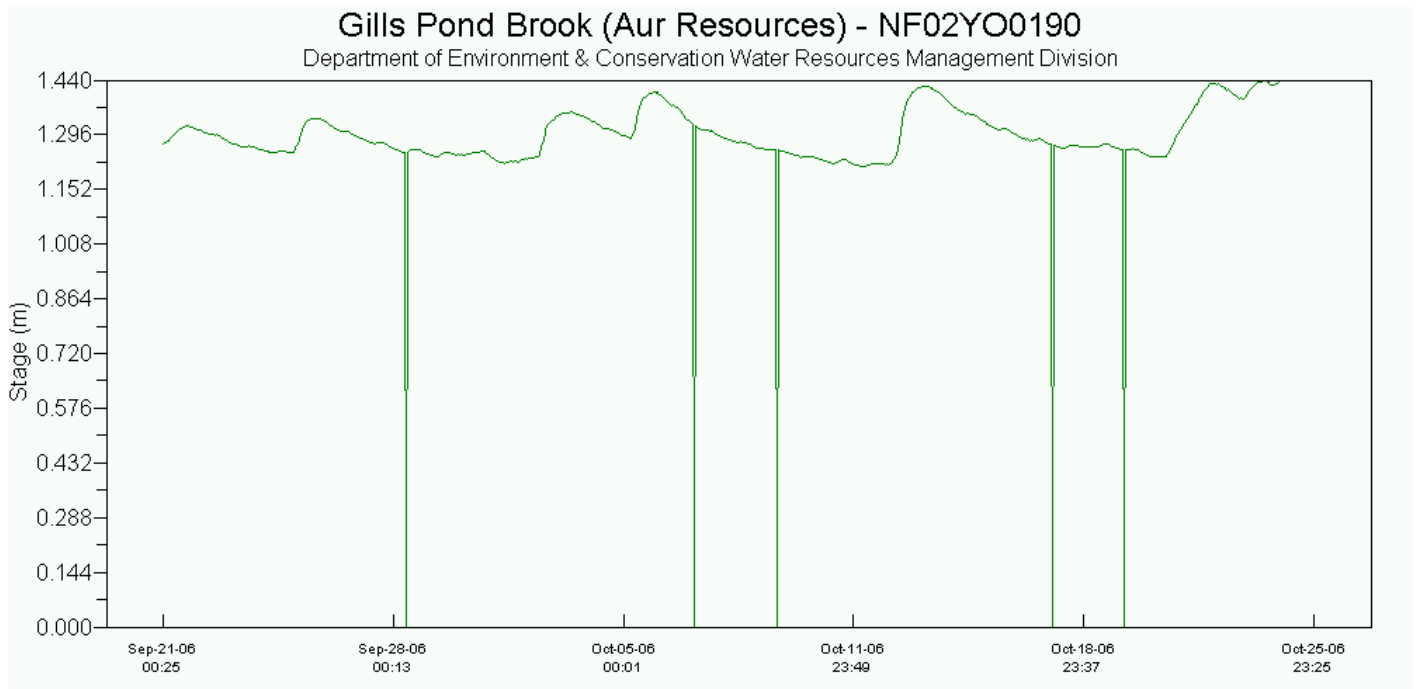


Figure 10

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Appendix A – Stage & Climate Data for Badger, NL (September & October 2006)



Daily Data Report for September 2006											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days C	Cool Deg Days C	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01	12.2	9.6	10.9	7.1	0.0			0.0	0		
02	18.7	2.9	10.8	7.2	0.0			0.0	0		
03	27.5	2.3	14.9	3.1	0.0			0.0	0		
04	23.1	5.2	14.2	3.8	0.0			7.4E	0		
05	18.7	12.7	15.7	2.3	0.0			0.0	0		
06	21.7	8.4	15.1	2.9	0.0			0.0	0		
07	19.5	10.9	15.2	2.8	0.0			0.0	0		
08	23.4	-0.1	11.7	6.3	0.0			0.6E	0		
09	24.8	8.8	16.8	1.2	0.0			3.2E	0		
10	10.8	9.8	10.3	7.7	0.0			5.7E	0		
11	15.2	2.4	8.8	9.2	0.0			0.0	0		
12	17.4	-1.1	8.2	9.8	0.0			0.0	0		
13	15.3	6.8	11.1	6.9	0.0			2.4E	0		
14	23.9	7.5	15.7	2.3	0.0			0.0	0		
15	24.7	4.2	14.5	3.5	0.0			0.0	0		
16	18.0	11.6	14.8	3.2	0.0			0.6E	0		
17	18.9	3.4	11.2	6.8	0.0			7.3E	0		
18	10.7	4.6	7.7	10.3	0.0			0.0	0		
19	12.9	5.1	9.0	9.0	0.0			0.6E	0		
20	19.5	8.5	14.0	4.0	0.0			3.1E	0		
21	19.2	16.8	18.0	0.0	0.0			0.0	0		
22	15.1	2.5	8.8	9.2	0.0			0.0	0		
23	16.5	2.1	9.3	8.7	0.0			0.0	0		
24	17.6	4.5	11.1	6.9	0.0			3.3E	0		
25	19.4	11.0	15.2	2.8	0.0			0.0	0		
26	15.8	1.1	8.5	9.5	0.0			0.0	0		
27	16.4	-0.1	8.2	9.8	0.0			0.0	0		
28	18.1	-1.5	8.3	9.7	0.0			0.6E	0		
29	18.3	-1.3	8.5	9.5	0.0			0.6E	0		
30	19.0	8.5	13.8	4.2	0.0			0.0	0		
Sum				179.7	0.0			35.4E			
Avg	18.4	5.6	12.0								
Xtbn	27.5	-1.5									

Daily Data Report for October 2006											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days C	Cool Deg Days C	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01	14.3	-1.5	6.4	11.6	0.0			0.0	0		
02	10.8	-2.6	6.7	11.3	0.0			5.2	0		
03	14.9	8.6	11.8	6.2	0.0			0.0	0		
04	17.1	4.4	10.8	7.2	0.0			0.7	0		
05	7.4	6.3	6.9	11.1	0.0			0.0	0		
06	9.1	-1.1	4.0	14.0	0.0			0.0	0		
07	15.2	-3.7	5.8	12.2	0.0			0.0	0		
08	13.7	6.1	9.9	8.1	0.0			0.0	0		
09	18.1	4.3	11.2	6.8	0.0			0.0	0		
10	12.6	3.5	8.1	9.9	0.0			0.0	0		
11	11.6	-2.1	4.8	13.2	0.0			0.0	0		
12	10.1	-2.8	3.7	14.3	0.0			9.2	0		
13	13.6	6.9	10.3	7.7	0.0			28.1	0		
14	20.3	11.8	16.1	1.9	0.0			0.0	0		
15	17.8	7.1	12.5	5.5	0.0			0.6	0		
16	13.1	-2.2	5.5	12.5	0.0			0.0	0		
17	9.9	-3.8	3.1	14.9	0.0			0.0	0		
18	9.7	-3.9	2.9	15.1	0.0			0.0	0		
19	9.0	1.6	5.3	12.7	0.0			0.0	0		
20	7.4	-3.5	2.0	16.0	0.0			0.0	0		
21	10.0	3.2	6.6	11.4	0.0			13.9	0		
22	8.5	5.4	7.0	11.0	0.0			3.9	0		
23	10.7	7.0	8.9	9.1	0.0			13.2	0		
24	12.1	7.3	9.7	8.3	0.0			16.8	0		
25	6.8	3.8	5.3	12.7	0.0			1.7	0		
26	7.7	4.1	5.9	12.1	0.0			3.2	0		
27	5.4	2.5	4.0	14.0	0.0			1.9	0		
28	6.6	-3.3	1.7	16.3	0.0			0.0	0		
29	9.8	-1.5	4.2	13.8	0.0			9.8	0		
30	7.9	1.8	4.9	13.1	0.0			1.8	0		
31	7.8	-1.5	3.2	14.8	0.0			0.0	0		
Sum				348.8	0.0			110.0			
Avg	11.3	2.2	6.7								
Xtbn	20.3	-3.9									

Days when heavy precipitation was recorded during the deployment period