

**Real Time Water Quality Monthly Report
 Aur Resources Inc.
 July - August 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 July 12th, 2006 for cleaning and calibration and then reinstalled on July 13th. The results from comparing the Minisonde values to the Datasonde values during removal and reinstallation on July 12th/13th, 2006 can be seen in **Table 1**.

Table 1: QA/QC Data Comparison Rankings upon removal/reinstallation on July 12th/13th, 2006

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Tributary to Gills Pond Brook	July 12 th , 2006	Removal	Excellent	Good	Fair	Good
	July 13 th , 2006	Installation	Good	Good	Poor	Excellent

- The instrument was deployed until August 16th (35-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 August 16th, 2006 can be seen in **Table 2**.

Table 2: QA/QC Data Comparison Rankings upon removal on August 16th, 2006

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Tributary to Gills Pond Brook	August 16 th , 2006	Removal	Fair	Excellent	Marginal	Excellent

Data Interpretation

- This monthly report interprets the data from the Gills Pond Brook station for the period of July 13th – August 16th, 2006.
- As can be seen in **Figure 1** the water temperature remained fairly consistent over the deployment period with a very strong diurnal pattern being detected in the data. The temperature ranged from 11.23°C - 26.96 °C.

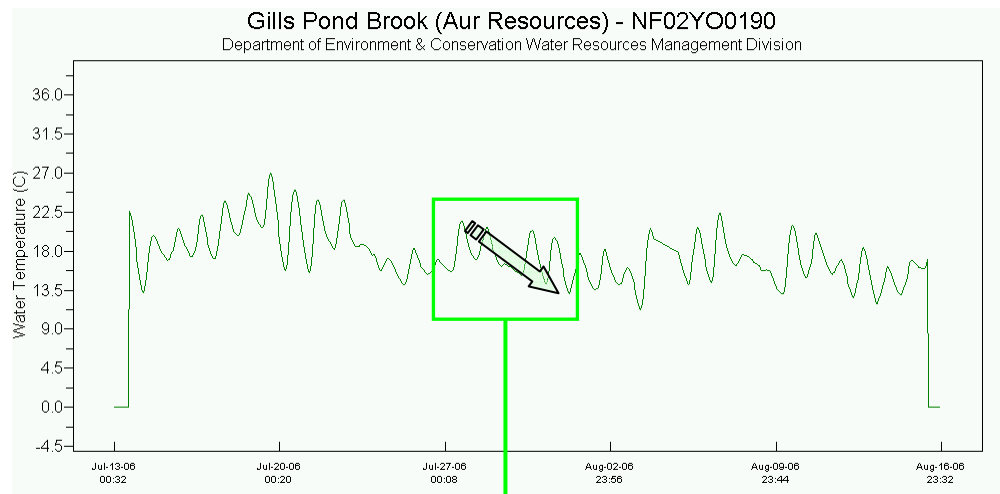


Figure 1

- The dissolved oxygen values remained consistent over the deployment period (**Figure 2**). As the water temperature dropped during the middle of the deployment period, the dissolved oxygen values rose accordingly. The dissolved oxygen values ranged from 9.95 mg/L to 7.09 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 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, the lower values during this period fall below the most conservative limit for cold water/early life stages – 9.5 mg/L.

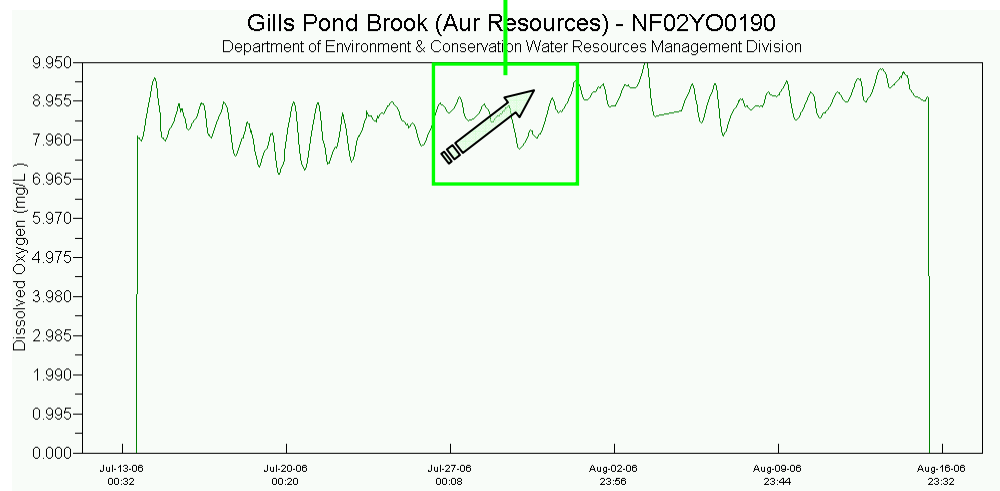


Figure 2

- The pH values for the Gills Pond Brook station remained very consistent between July 13th (installation) and July 23rd (**Figure 3**). There was a significant drop in pH on July 25th and July 30th which corresponds with periods of heavy rainfall (see **Appendix A**). The remainder of the deployment period showed pH values that were slightly lower than the pH values at the beginning of the deployment period but remained relatively consistent thereafter. The pH values ranged from 6.03 – 7.37 with some 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.

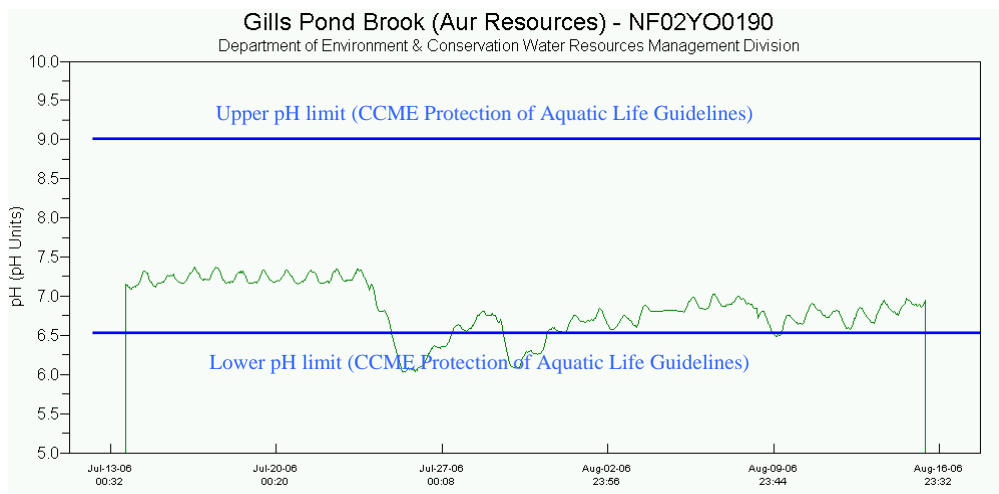


Figure 3

- The conductivity values for the Gills Pond Brook station remained fairly consistent between July 13th (installation) and July 23rd (**Figure 4**). As was the case with the pH values, there was a significant drop in conductivity on July 25th and July 30th which corresponds with periods of heavy rainfall (see **Appendix A**). The remainder of the deployment period showed conductivity values that were lower than the conductivity values at the beginning of the deployment period but remained relatively consistent thereafter. The conductivity values ranged from 23.7 – 54.4 $\mu\text{S/cm}$.

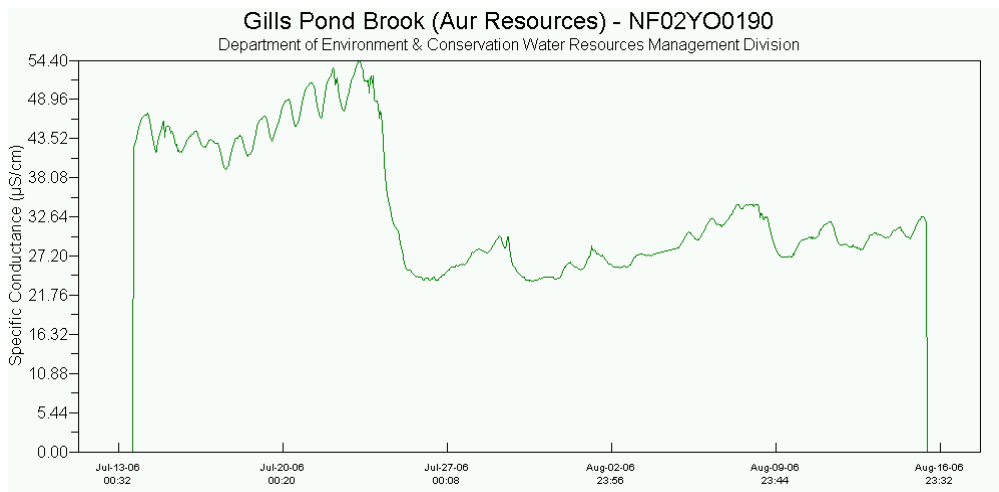


Figure 4

- The turbidity values (**Figure 5**) remained consistent between July 13th and July 27th with the exception of a water quality event on July 15th & 16th and a large spike on July 22nd. The water quality event on July 15th & 16th caused turbidity readings to increase to a maximum of 176.3 NTU due to heavy rainfall experienced from July 12th – 15th. The spike seen on July 22nd (maximum value = 1603.0 NTU) was only measured for one reading with previous and later values below 20 NTU. This was likely due to a disturbance of the sensor from a shifting of the equipment or organic material brushing past the sensor. After July 27th, the turbidity values increased significantly until the removal of the equipment on August 16th. At this point in time, DOEC staff observed that the deployment casing had retained a significant amount of sediment-laden water leading to these increased turbidity values. Consequently, the deployment casing was removed from site and replaced with a retrofitted casing to address this problem.

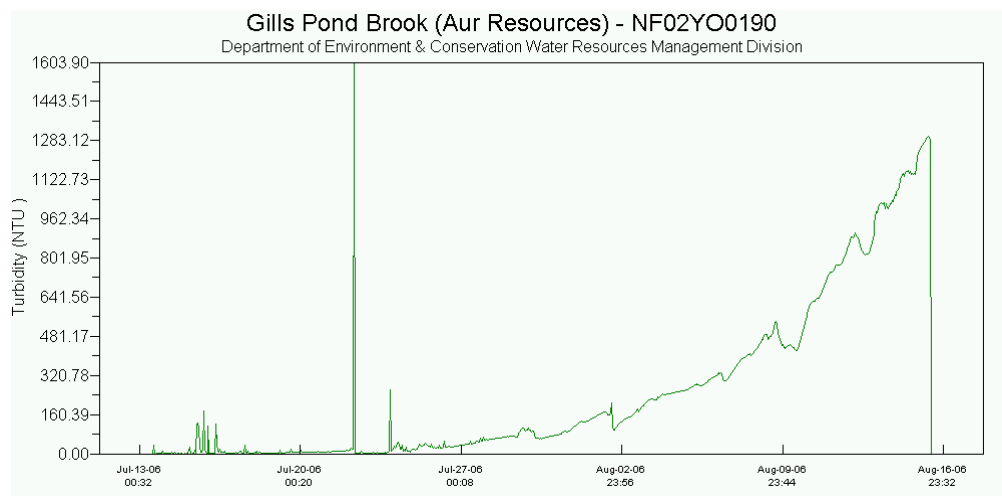
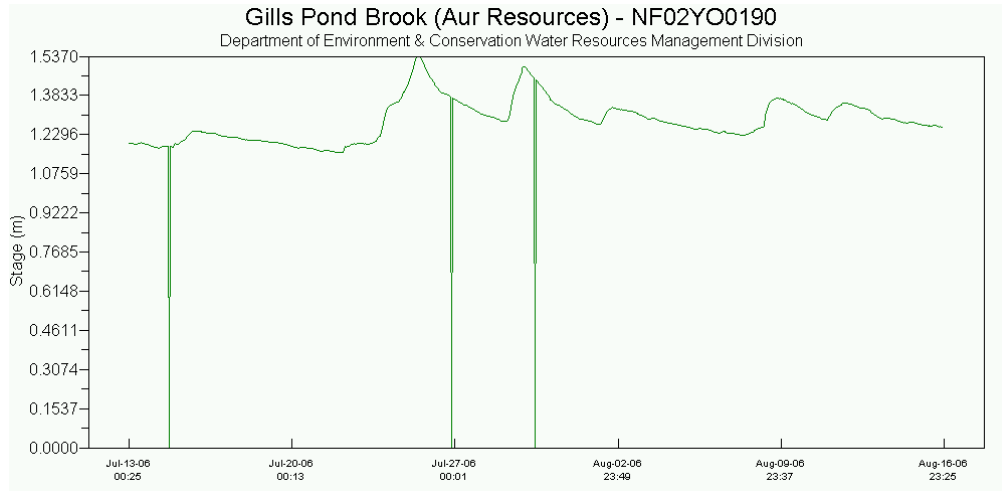


Figure 5

Prepared by: Joanne Sweeney & Annette Tobin
 Environmental Scientists
 Department of Environment and Conservation
 PH: (709) 292-4220 / (709) 637-2431
 FX: (709) 292-4365 / (709) 637-2541
joannesweeney@gov.nl.ca / annettetobin@gov.nl.ca

Appendix A – Stage & Climate Data for Badger, NL (July & August 2006)



Daily Data Report for July 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	26.1	17.6	21.9	0.0	3.9			0.7	0		
02	22.6	10.7	16.7	1.3	0.0			2.0	0		
03	22.2	12.6	17.4	0.6	0.0			1.2	0		
04	23.3	9.2	16.3	1.7	0.0			0.0	0		
05	24.4	6.3	15.4	2.6	0.0			0.0	0		
06	27.6	17.3	22.5	0.0	4.5			0.0	0		
07	26.9	14.6	20.8	0.0	2.8			0.0	0		
08	26.5	5.9	16.2	1.8	0.0			0.0	0		
09	32.1	14.7	23.4	0.0	5.4			0.0	0		
10	26.0	15.7	20.9	0.0	2.9			0.0	0		
11	29.4	12.7	21.1	0.0	3.1			0.0	0		
12	22.8	13.9	18.4	0.0	0.4			12.2	0		
13	22.6	2.9	12.8	5.2	0.0			0.0	0		
14	23.0	0.7	11.9	6.1	0.0			8.0	0		
15	17.3	12.0	14.7	3.3	0.0			6.1	0		
16	22.5	13.4	18.0	0.0	0.0			0.0	0		
17	26.2	14.4	20.3	0.0	2.3			0.0	0		
18	27.2	16.6	21.9	0.0	3.9			0.0	0		
19	28.2	18.2	23.2	0.0	5.2			0.0	0		
20	29.2	5.0	17.1	0.9	0.0			0.0	0		
21	30.4	5.7	18.1	0.0	0.1			9.0	0		
22	24.5	15.9	20.2	0.0	2.2			0.7	0		
23	15.3	13.3	14.3	3.7	0.0			15.2	0		
24	16.4	13.8	15.1	2.9	0.0			55.4	0		
25	24.5	12.1	18.3	0.0	0.3			1.7	0		
26	20.4	13.8	17.1	0.9	0.0			0.0	0		
27	24.5	13.4	19.0	0.0	1.0			0.0	0		
28	22.1	13.5	17.8	0.2	0.0			15.7	0		
29	21.7	15.7	18.7	0.0	0.7			3.6	0		
30	27.0	16.0	21.5	0.0	3.5			0.0	0		
31	22.7	8.8	15.8	2.2	0.0			0.6	0		
Sum				33.4	42.2			132.1			
Avg	24.4	12.1	18.3								
Xtrem	32.1	0.7									

Daily Data Report for August 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	19.0	7.0	13.0	5.0	0.0			6.6E	0		
02	22.0	5.7	13.9	4.1	0.0			0.6E	0		
03	14.5	10.8	12.7	5.3	0.0			0.0	0		
04	19.0	2.5	10.8	7.2	0.0			0.0	0		
05	22.1	12.3	17.2	0.8	0.0			0.6E	0		
06	22.9	7.9	15.4	2.6	0.0			0.0	0		
07	26.5	5.0	15.8	2.2	0.0			0.7E	0		
08	20.7	16.7	18.7	0.0	0.7			11.1E	0		
09	12.9	11.8	12.4	5.6	0.0			0.0	0		
10	23.1	10.0	16.6	1.4	0.0			0.0	0		
11	22.9	9.6	16.3	1.7	0.0			2.6E	0		
12	18.7	13.6	16.2	1.8	0.0			3.0E	0		
13	20.3	7.3	13.8	4.2	0.0			0.0	0		
14	19.1	2.4	10.8	7.2	0.0			0.0	0		
15	21.5	5.8	13.7	4.3	0.0			0.0	0		
16	26.9	17.3	22.1	0.0	4.1			0.0	0		
17	24.2	14.2	19.2	0.0	1.2			0.0	0		
18	25.6	9.8	17.7	0.3	0.0			0.0	0		
19	25.5	7.8	16.7	1.3	0.0			0.0	0		
20	25.4	13.2	19.3	0.0	1.3			0.6E	0		
21	23.0	7.1	15.1	2.9	0.0			2.1E	0		
22	18.9	15.6	17.3	0.7	0.0			0.0	0		
23	23.6	6.8	15.2	2.8	0.0			0.0	0		
24	21.1	6.1	13.6	4.4	0.0			0.0	0		
25	20.9	2.8	11.9	6.1	0.0			1.6E	0		
26	15.5	1.2	8.4	9.6	0.0			0.0	0		
27	16.7	3.0	9.9	8.1	0.0			0.0	0		
28	18.4	-0.9	8.8	9.2	0.0			0.0	0		
29	22.3	0.2	11.3	6.7	0.0			0.0	0		
30	19.1	2.0	10.6	7.4	0.0			7.7E	0		
31	14.8	9.2	12.0	6.0	0.0			9.5E	0		
Sum				118.9	7.3			46.7E			
Avg	20.9	7.9	14.4								
Xtrem	26.9	-0.9									

Days when heavy precipitation was recorded during the deployment period