

**Real Time Water Quality Monthly Report  
Southwest Brook below Southwest Pond (Conne River)  
January - February 2007**

**General**

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.
- The Miawpukek First Nation 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 Southwest Brook was removed on January 16, 2007 for cleaning and calibration and then reinstalled. A second, freshly calibrated datasonde was used for QA/QC. The results from comparing the QA/QC datasonde values to the Southwest Brook datasonde values during removal and reinstallation on January 16, 2007 can be seen in **Table 1**.

**Table 1: QA/QC Data Comparison Rankings upon removal/reinstallation on January 16, 2007**

Station	Date	Action	Main River Datasonde vs. Southwest Brook Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Southwest Brook below Southwest Pond	January 16, 2007	Removal	Excellent	Good	Poor	Excellent
	January 16, 2007	Installation	Good	Fair	Excellent	Excellent

- The instrument was deployed until February 22<sup>nd</sup> (37-day deployment period) at which point it was removed for maintenance and calibration. A second, freshly calibrated datasonde was used for QA/QC. The results from comparing the QA/QA datasonde values to the Southwest Brook datasonde values during removal on February 22, 2007 can be seen in **Table 2**.

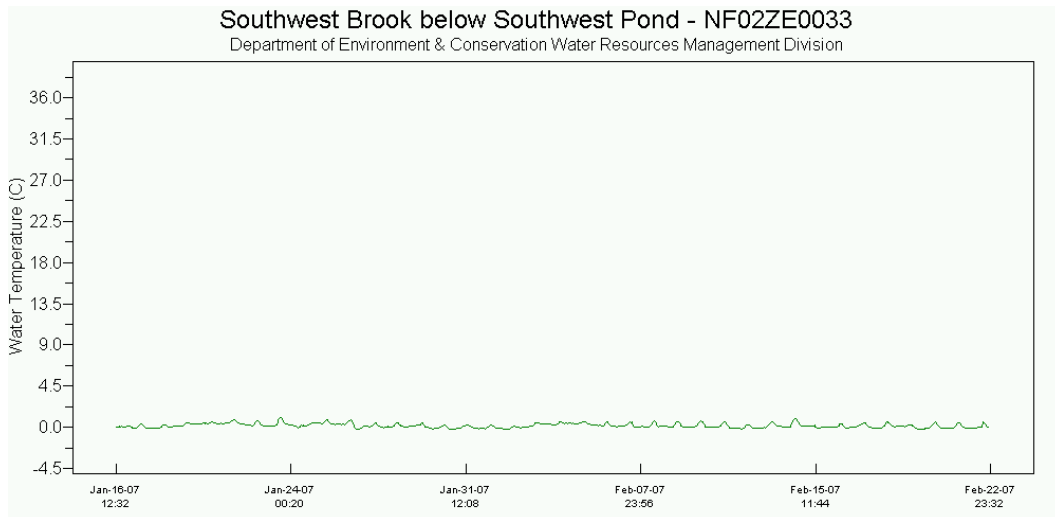
**Table 2: QA/QC Data Comparison Rankings upon removal on February 22, 2007**

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Southwest Brook below Southwest Pond	February 22, 2007	Removal	Good	Good	Good	Fair

- A water sample was taken for laboratory analysis as part of QA/QC procedures upon reinstallation.

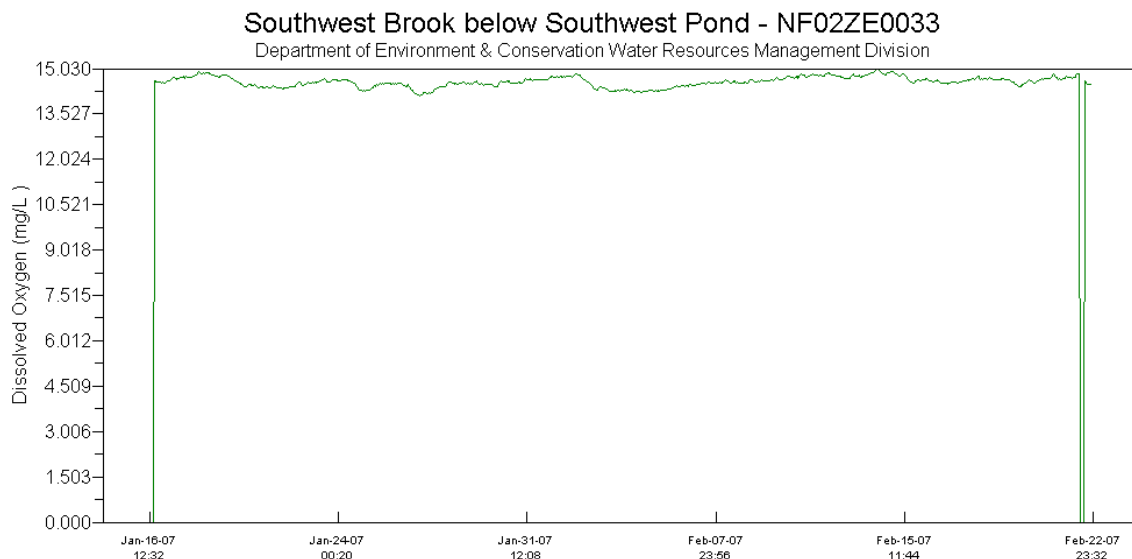
## Data Interpretation

- During the deployment period of January 16<sup>th</sup> – February 22<sup>nd</sup>, 2007 the water quality remained relatively stable for most parameters.
- The water temperature (**Figure 1**) remained fairly consistent throughout the deployment period, ranging from -0.19°C to 1.08°C.



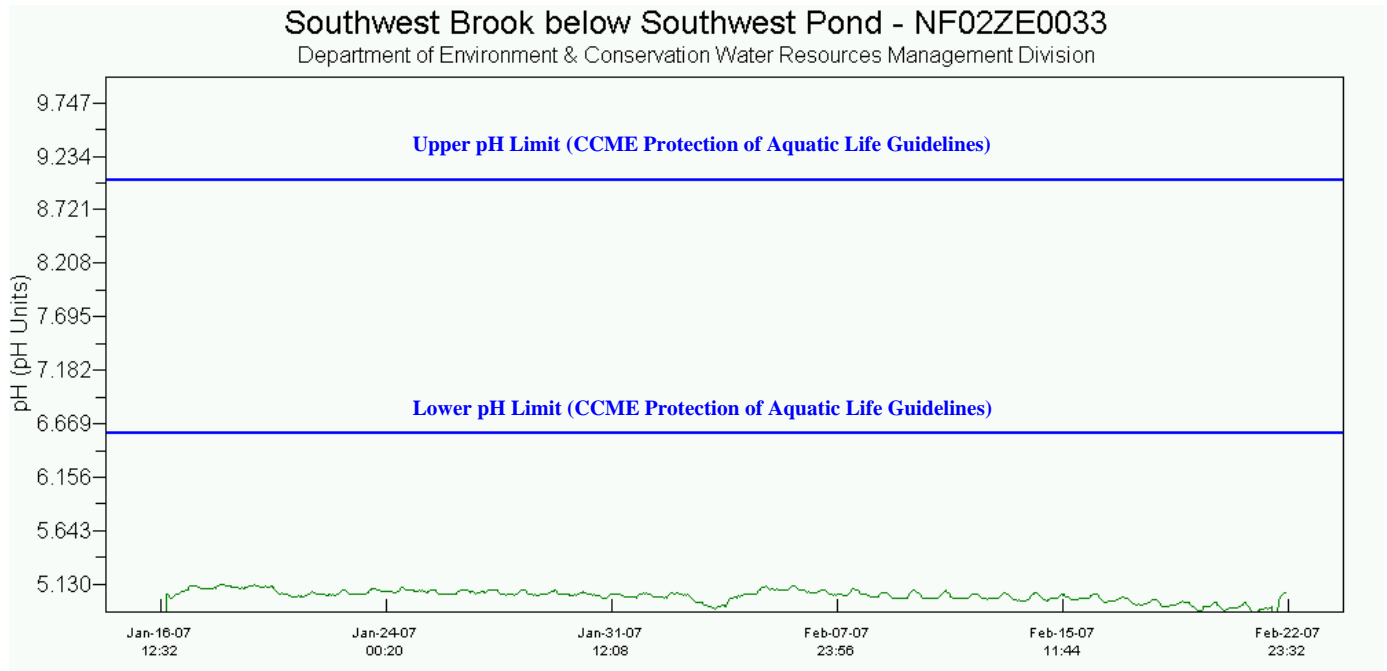
**Figure 1**

- Dissolved oxygen values (**Figure 2**) fluctuated during this deployment, ranging from 13.97 mg/L to 15.03 mg/L. Subtle increases in dissolved oxygen levels correspond with subtle decreases in water temperature on the same dates. All dissolved oxygen values fall within the recommended CCME Protection of Aquatic Life guidelines for dissolved oxygen (cold water/other life stages – above 6.5 mg/L; cold water/early life stages – above 9.5 mg/L; warm water/other life stages – above 5.5 mg/L; warm water/early life stages – above 6 mg/L).



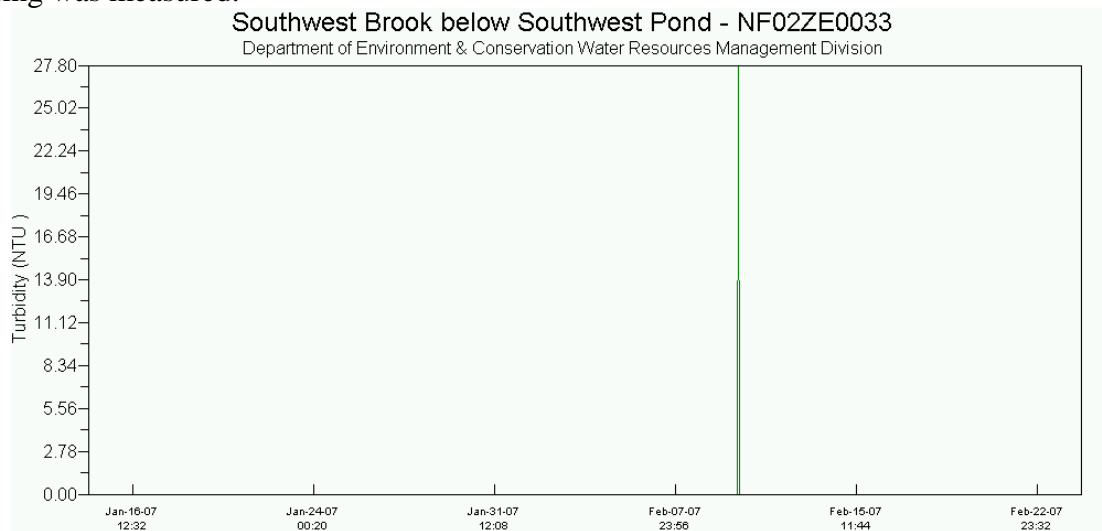
**Figure 2**

- pH values (**Figure 3**) remained fairly consistent with a slight decrease during the period of deployment. There was a drop in pH on February 2<sup>nd</sup> and 3<sup>rd</sup>, which corresponds to a period of high precipitation (**Appendix A**). The pH values ranged from 4.88 to 5.13 with all the values falling below the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life Guidelines, due to the apparent naturally acidic nature of Southwest Brook. This is a relatively new RTWQ station and more data needs to be collected to understand background and seasonal pH values.



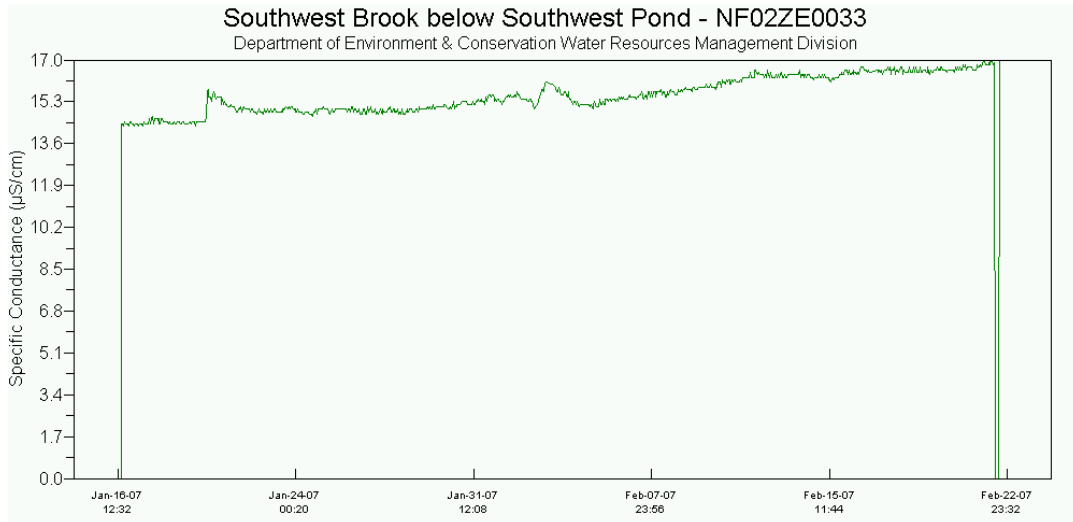
**Figure 3**

- There was one spike in turbidity (**Figure 4**) during the deployment period. This turbidity spike of 27.8 NTU occurred on February 10<sup>th</sup> and was evident for only one reading. This spike was probably due to a suspended particle passing in front of the turbidity sensor at the exact time the reading was measured.



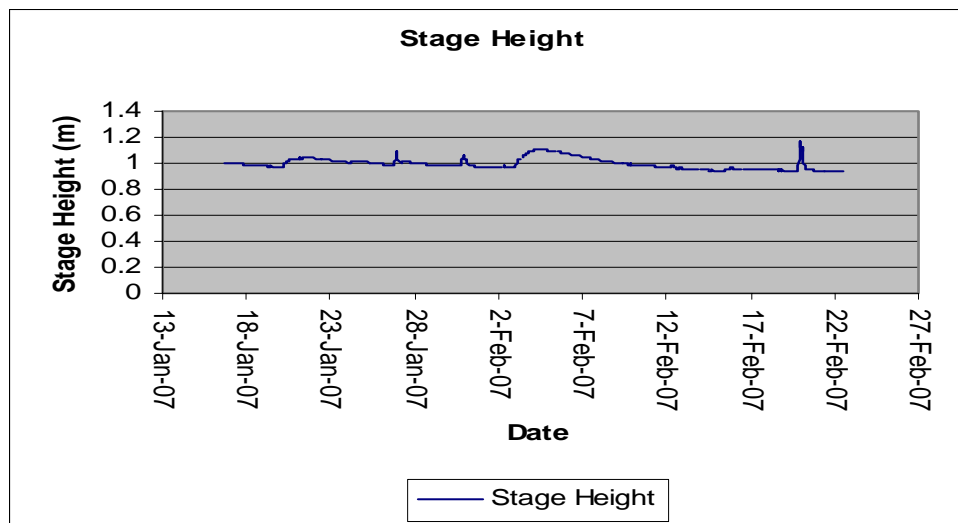
**Figure 4**

- The conductivity graph (**Figure 5**) showed fluctuations in specific conductance values over the deployment period with an increase in conductivity values between January 16<sup>th</sup> and February 22<sup>nd</sup>. Conductivity ranged from 14.3 $\mu$ S/cm to 18.3 $\mu$ S/cm. There were two subtle peaks in conductivity which occurred on January 20<sup>th</sup> and February 2<sup>nd</sup> most likely due to large amounts of precipitation (**Appendix A**) on those dates.



**Figure 5**

- Stage height displayed only minor variations during this deployment period. Small peaks occurred on February 3<sup>rd</sup> and 20<sup>th</sup>, in response to significant precipitation that occurred around those dates.



**Figure 6**

## Appendix A: Climate Data for Argentina (January & February 2007)

Daily Data Report for January 2007											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days	Cool Deg Days	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	0.3	-6.4	-3.1	21.1	0.0			0.0			
02	7.6	-3.4	2.1	15.9	0.0			12.9			
03	2.1	-2.1	0.0	18.0	0.0			0.0			
04	2.8	-2.0	0.4	17.6	0.0			0.0			
05	4.2	1.0	2.6	15.4	0.0			9.2			
06	6.6	1.8	4.2	13.8	0.0			22.7			
07	4.1	2.6	3.4	14.6	0.0			0.0			
08	9.9	1.7	5.8	12.2	0.0			11.9			
09	5.6	0.9	3.3	14.7	0.0			3.8			
10	2.5	1.9	2.2	15.8	0.0			1.3			
11	0.6	-1.0	-0.2	18.2	0.0			1.1			
12	2.5	-2.1	0.2	17.8	0.0			2.4			
13	2.1	0.7	1.4	16.6	0.0			3.7			
14	0.0	-6.4	-3.2	21.2	0.0			0.7			
15	-3.1	-6.1	-4.6	22.6	0.0			1.9			
16	-2.1	-8.4	-5.3	23.3	0.0			0.7			
17	-11.0	-12.5	-11.8	29.8	0.0			0.0			
18	-0.8	-14.2	-7.5	25.5	0.0			0.0			
19	4.9	-8.5	-1.8	19.8	0.0			2.9			
20	5.9	-0.2	2.9	15.1	0.0			10.6			
21	0.2	-0.5	-0.2	18.2	0.0			4.2			
22	-3.0	-5.3	-4.2	22.2	0.0			0.0			
23	-1.1	-6.0	-3.6	21.6	0.0			3.8			
24	1.2	-4.2	-1.5	19.5	0.0			7.6			
25	-0.3	-1.0	-0.7	18.7	0.0			0.7			
26	2.4	-4.4	-1.0	19.0	0.0			6.9			
27	0.8	-0.6	0.1	17.9	0.0			2.6			
28	-1.5	-2.6	-2.1	20.1	0.0			0.6			
29	-2.8	-4.4	-3.6	21.6	0.0			6.9			
30	-3.6	-7.3	-5.5	23.5	0.0			0.6			
31	-4.7	-6.6	-5.7	23.7	0.0			0.0			
Sum				595.0	0.0			119.7			
Avg	1.0	-3.4	-1.2								
Xtrm	9.9	-14.2									

Daily Data Report for February 2007											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days	Cool Deg Days	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	-3.5	-10.0	-6.8	24.8	0.0			0.6	M		
02	5.8	-6.5	-0.4	18.4	0.0			23.2	M		
03	4.1	-0.5	1.8	16.2	0.0			4.1	M		
04	-2.5	-5.5	-4.0	22.0	0.0			0.0	M		
05	-3.1	-6.2	-4.7	22.7	0.0			1.3	M		
06	-6.9	-10.0	-8.5	26.5	0.0			0.0	M		
07	-4.8	-9.5	-7.2	25.2	0.0			0.0	M		
08	-6.0	-9.3	-7.7	25.7	0.0			0.7	M		
09	-5.8	-8.7	-7.3	25.3	0.0			0.0	M		
10	-4.6	-9.4	-7.0	25.0	0.0			1.3	M		
11	-4.9	-7.5	-6.2	24.2	0.0			0.0	M		
12	-3.9	-6.2	-5.1	23.1	0.0			0.6	M		
13	-0.8	-6.0	-3.4	21.4	0.0			0.0	M		
14	-0.8	-4.5	-2.7	20.7	0.0			0.0	M		
15	2.5	-5.5	-1.5	19.5	0.0			7.5	M		
16	0.3	-2.7	-1.2	19.2	0.0			0.0	M		
17	-2.5	-5.7	-4.1	22.1	0.0			0.6	M		
18	-1.2	-6.8	-4.0	22.0	0.0			6.9	M		
19	-1.4	-2.9	-2.2	20.2	0.0			8.0	M		
20	-0.2	-4.0	-2.1	20.1	0.0			0.0	M		
21	-2.8	-4.6	-3.7	21.7	0.0			0.0	M		
22	-3.0	-5.6	-4.3	22.3	0.0			0.0	M		
23	-2.1	-6.0	-4.1	22.1	0.0			2.6	14		
24	-1.5	-5.0	-3.3	21.3	0.0			0.0	13		
25	0.0	-3.6	-1.8	19.8	0.0			0.0	12		
26	1.5	-1.3	0.1	17.9	0.0			0.6	13		
27	-0.3	-2.1	-1.2	19.2	0.0			0.0	13		
28	0.0	-3.1	-1.6	19.6	0.0			0.0	13		
Sum				608.2	0.0			58.0			
Avg	-1.7	-5.7	-3.7								
Xtrm	5.8	-10.0									

Days when heavy precipitation was recorded during the deployment period of January 16<sup>th</sup> to February 22<sup>nd</sup>, 2007 are highlighted in red.

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