

**Real Time Water Quality Monthly Report
Rattling Brook below Bridge (VBNC)
March 2007—April 2007**

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.
- Voisey’s Bay Nickel Company (VBNC) will be informed of any significant water quality events in the future in the form of a monthly report.
- The initial installation of the RTWQ instrumentation at Rattling Brook below Bridge occurred on December 12th, 2006. Pictures of the installation site are in **Appendix A**.

Maintenance and Calibration of Instrumentation

- The instrument was reinstalled on March 9th, 2007. The instrument was not reinstalled after January 23rd removal for a number of reasons
 - The steel casing needed to be retrofitted with a screen on the open end
 - The instrument was used at a Hydrolab Training course and needed the firmware updated
 - Attempts were made on two occasions to reinstall but the weather was too bad for travel

QA/QC data comparison with the Minisonde values taken at the time of reinstallation can be seen in Table 1. All parameters except pH fell into the Excellent range. No explanation for the Poor rating of the pH QA/QC could be determined. As such, pH data for this period will be looked at with caution.

Table 1: QA/QC Data Comparison Rankings upon reinstallation on March 9th, 2007

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Rattling Brook (Long Harbour)	March 9 th	Reinstallation	Excellent	Poor	Excellent	Excellent

- The Rattling Brook instrument was deployed until April 16th, 2007 (38-day deployment period) at which point it was removed for maintenance and calibration. Due to technical difficulties with the datalogger, no water quality data was transmitted from April 13th to April 20th. As such, QA/QC could not be completed for removal of the instrument due to lack of Datasonde data on April 16th.
- The Datasonde had moved somewhat downstream, and was near the bank on the day of removal, April 16th (see Picture 3 in Appendix A).

Data Interpretation

- This monthly report interprets the data from the Rattling Brook RTWQ station in Long Harbour for the period of March 9th, 2007 – April 13th, 2007 (at which point the datalogger was no longer transmitting data).
- The water temperature (**Figure 1**) readings for Rattling Brook remained fairly consistent over the deployment period with a slight increase in temperatures. This is expected at this time of the year with a temperature range of -0.31 – 1.86 °C.

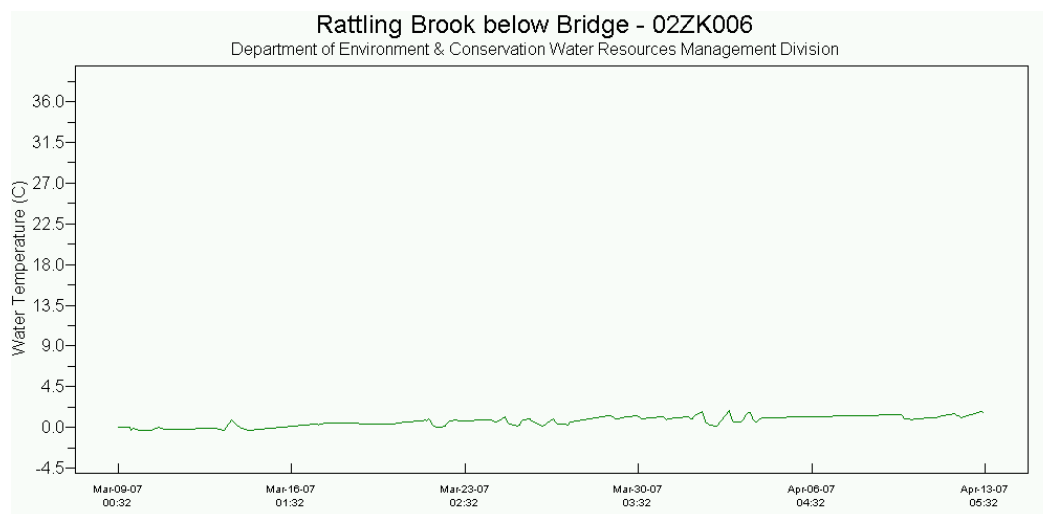


Figure 1

- The dissolved oxygen values (**Figure 2**) remained fairly consistent over the deployment period with a slight decrease in values. This is consistent with the slight increase in temperature seen in **Figure 1**. The dissolved oxygen values ranged from 14.07 mg/L to 15.17 mg/L. 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 – above 9.5 mg/L).

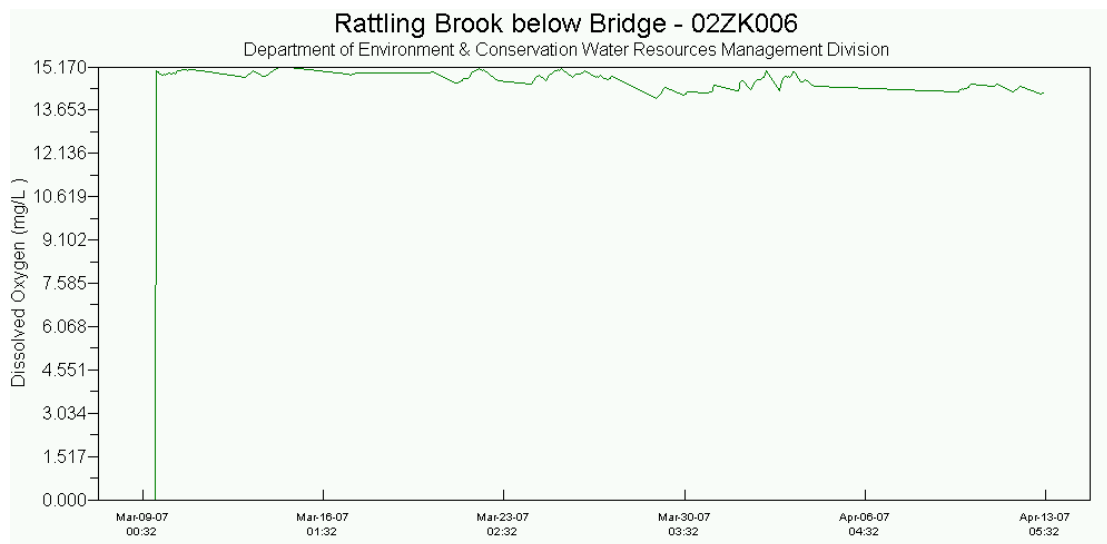


Figure 2

- The pH values (**Figure 3**) for Rattling Brook station remained consistent throughout the deployment period. The pH values ranged from 5.86 – 6.3 with all values falling 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.

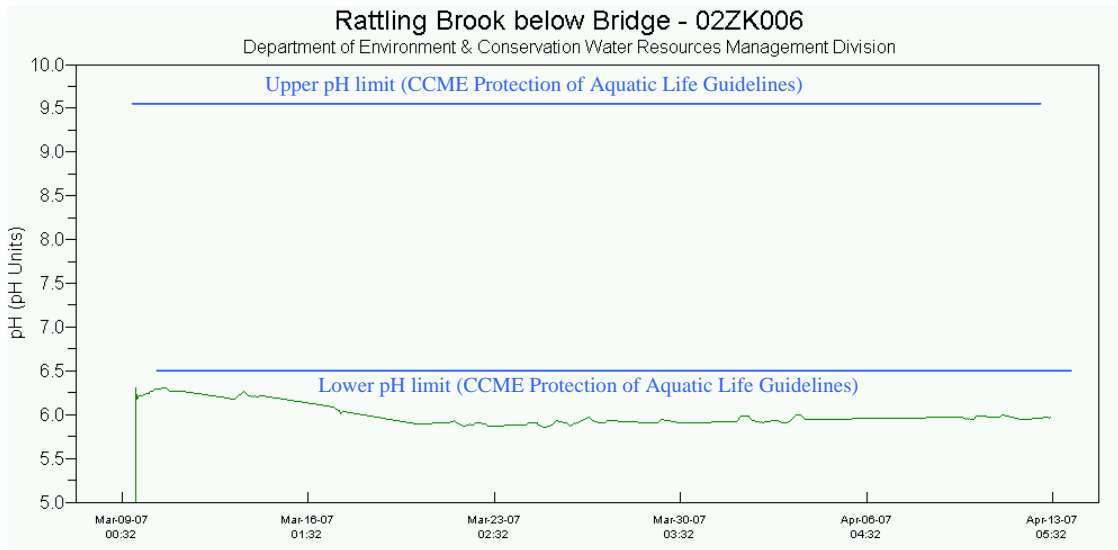


Figure 3

- The specific conductivity values (**Figure 4**) remained consistent throughout the deployment period with values ranged from 34.7 – 40.4 $\mu\text{S}/\text{cm}$. Levels remained below 38 $\mu\text{S}/\text{cm}$ for the most part, with the exception of a small peak to 40.4 on March 13th.

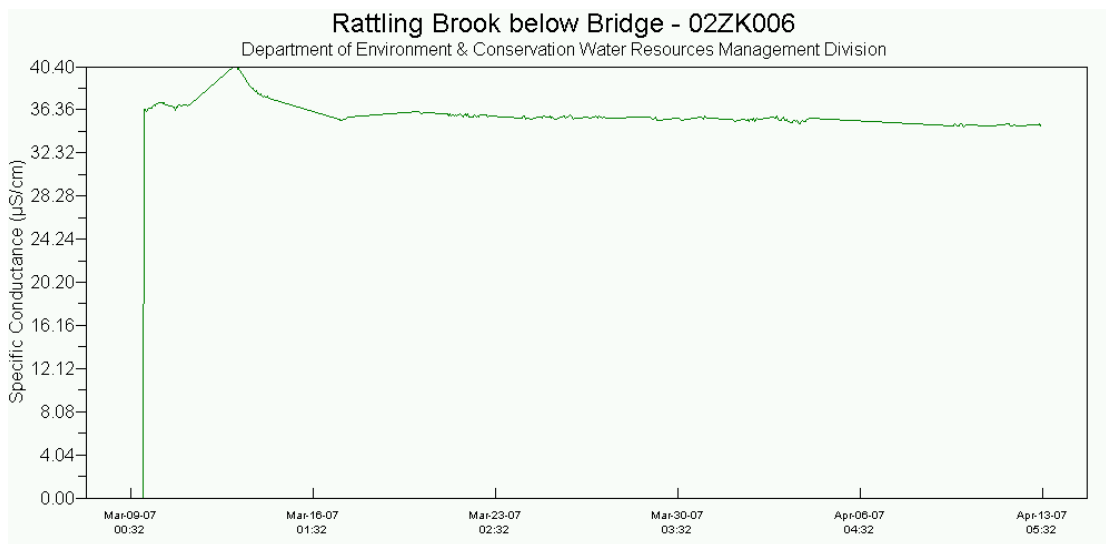


Figure 4

- The turbidity values (**Figure 5**) remained near 0 NTU until March 17th, 2007. The turbidity values reached a small peak of 19.10 NTU, which may have been related to a rise in stage (**Figure 6**). Smaller peaks followed on March 21st, April 1st and April 3rd. The peak on March 21st may have been related to a small rainfall event on March 20th (see Appendix B for climate data for the Argenta Station).

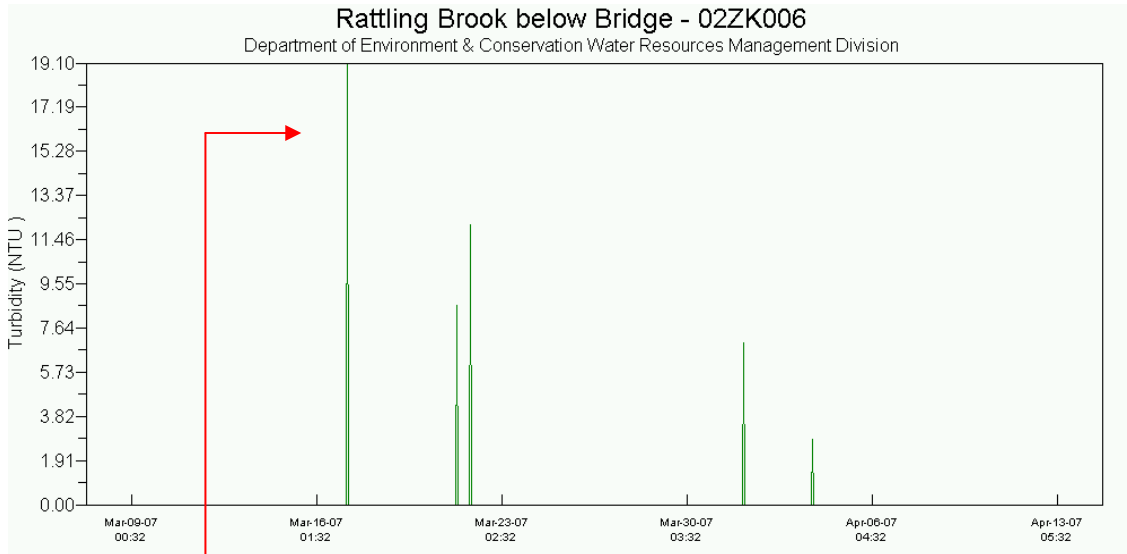


Figure 5

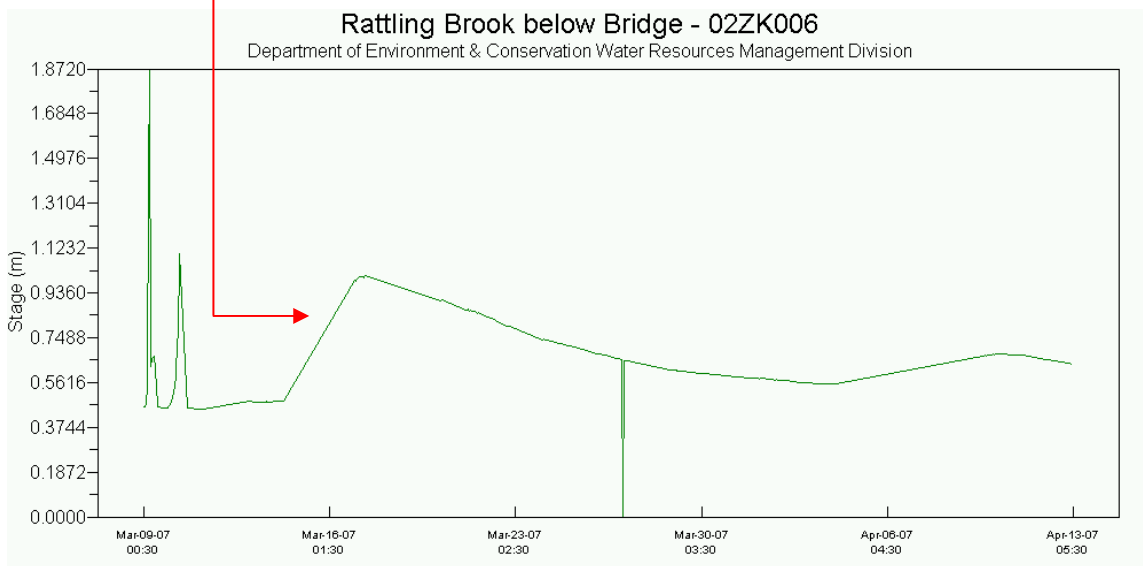


Figure 6

Prepared by: Jennifer Bonnell
 Regional Water Quality Officer
 Department of Environment and Conservation
 PH: (709) 729-4048
 FX: (709) 729-0320

Appendix A – Pictures of Rattling Brook RTWQ Station



Picture 1: Rattling Brook below Bridge RTWQ Station Location



Picture 2: Hydrometric Hut at Rattling Brook below Bridge



Picture 3: Position of Datasonde on April 16th, 2007

