

Real Time Water Quality Report Peter's River near Botwood Deployment Period 2007-11-30 to 2007-12-18

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis. Any unusual observations are investigated, with site visits being carried out as warranted.
- *In-situ* measurements of ambient water quality were undertaken with a freshly calibrated Minisonde each time a Datasonde was installed or removed.
- Raw (uncorrected) data has been used in the preparation of the graphs and subsequent discussion below.

Maintenance and Calibration of Instrumentation

- Following regular cleaning and calibration of the Datasonde the instrument was installed at Peter's River on November 30, 2007 and remained deployed until December 18, 2007 (18 day period) where it was subsequently removed again for regular cleaning and calibration. The comparative results between the Minisonde and Datasonde values at the beginning and end of the deployment period are shown in **Table 1**.

Table 1: QA/QC Data Comparison Rankings During Deployment Period

Station	Date (YYYY-MM-DD)	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Peter's River near Botwood	2007-11-30	Installation	Excellent	Marginal	Fair	Excellent
	2007-12-18	Removal	Excellent	Good	Poor	Good

Data Interpretation

- The water temperature (**Figure 1**) remained fairly constant throughout the deployment period. Temperature values ranged from 1.56°C to 0.21°C over the deployment period.

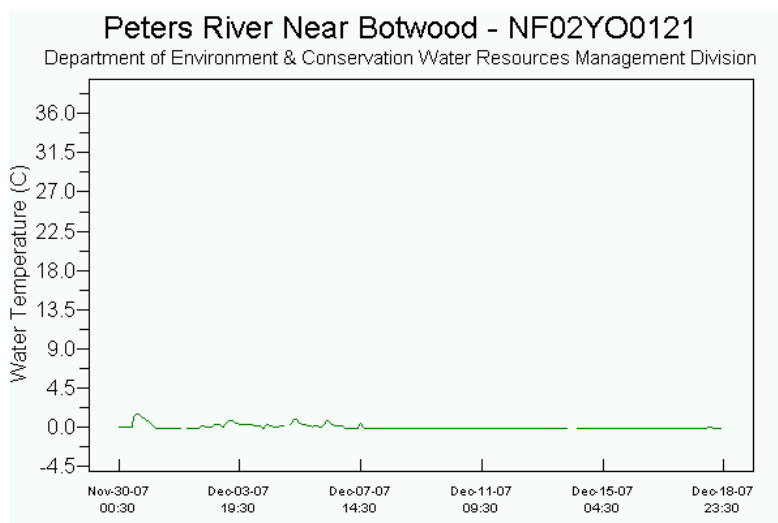


Figure 1

- pH values (**Figure 2**) decreased slightly throughout the deployment period. The pH values ranged from a minimum of 4.73 to a maximum of 5.84 with all of the values falling below the recommended range (6.5 – 9.0) for the CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life*. pH levels in this range are not uncommon for this river, and can be considered a natural occurrence.

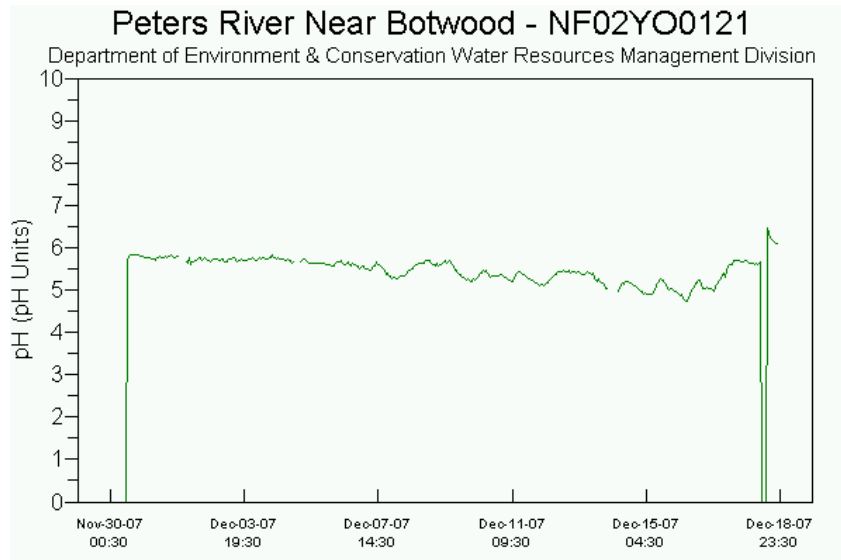


Figure 2

- The specific conductance (**Figure 3**) ranged from a minimum of 24 $\mu\text{S}/\text{cm}$ to a maximum of 51 $\mu\text{S}/\text{cm}$ over the deployment period. These values are typical for this river under normal conditions. These minor fluctuations are normal for this time frame, varying with changes in streamflow.

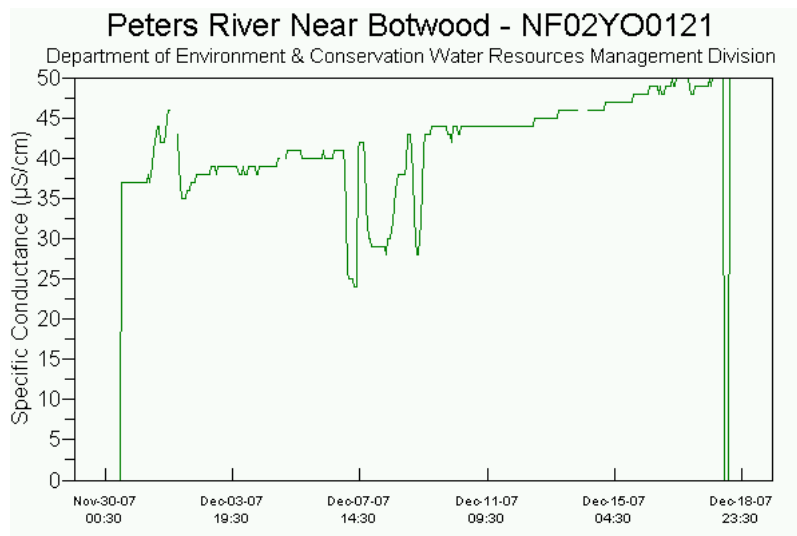


Figure 3

- The dissolved oxygen (**Figure 4**) values ranged from 12.42 mg/L to 14.25 mg/L over the deployment period. All dissolved oxygen values fall within the recommended CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life* 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).

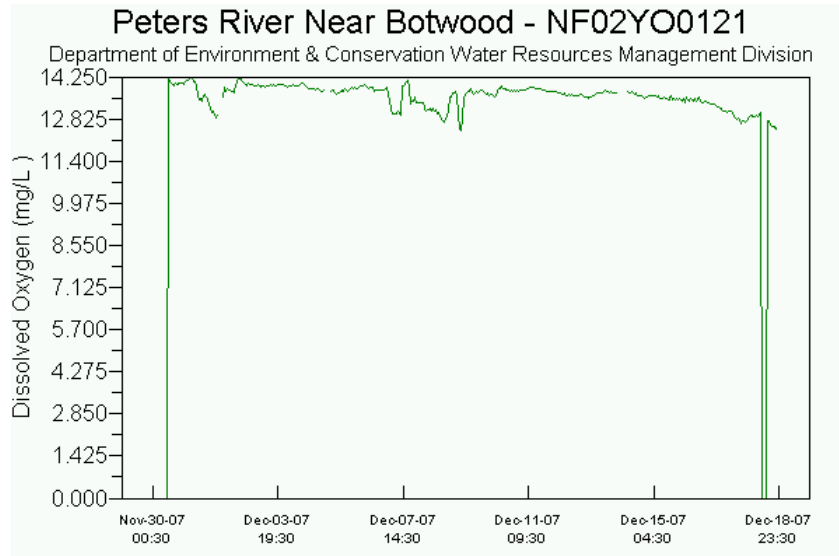


Figure 4

- The turbidity values (**Figure 5**) generally remained at 0 NTU for most of the deployment period which is the typical background level for this station. There were two minor spikes in turbidity (2 NTU on December 10, 2007 and 8 NTU on December 15, 2007) which coincided with precipitation events, and changes in runoff. These short lived turbidity spikes are of no concern and do not indicate any degree of water quality impairment.

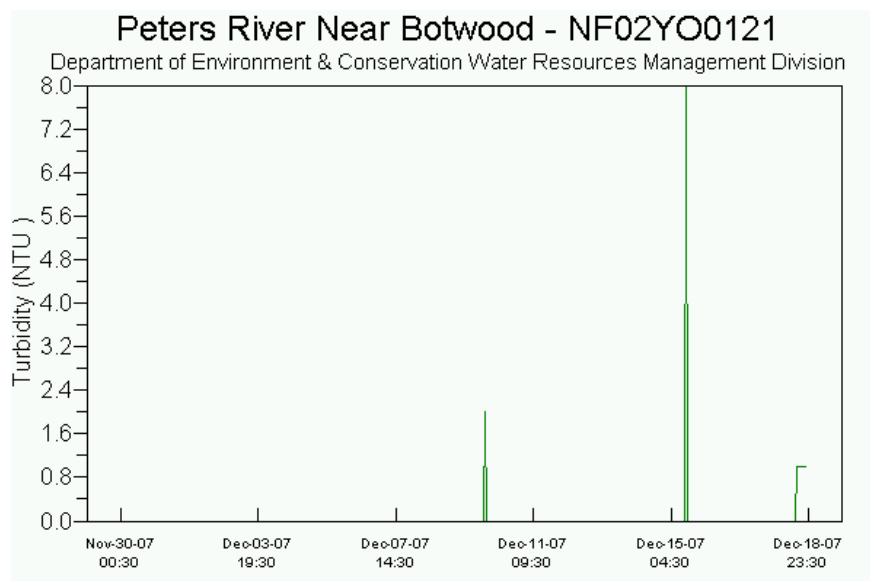


Figure 5

- The streamflow or discharge ranged from 2.78 m³/s to 11.5 m³/s (peak on December 12, 2007). This is certainly within the normal range for this stream with the rising and falling legs of the hydrograph being typical of the flashy nature of this stream. During this period, lower temperatures resulted in the formation of a continuous ice cover across the river at this station. This ice cover would alter the hydrograph.

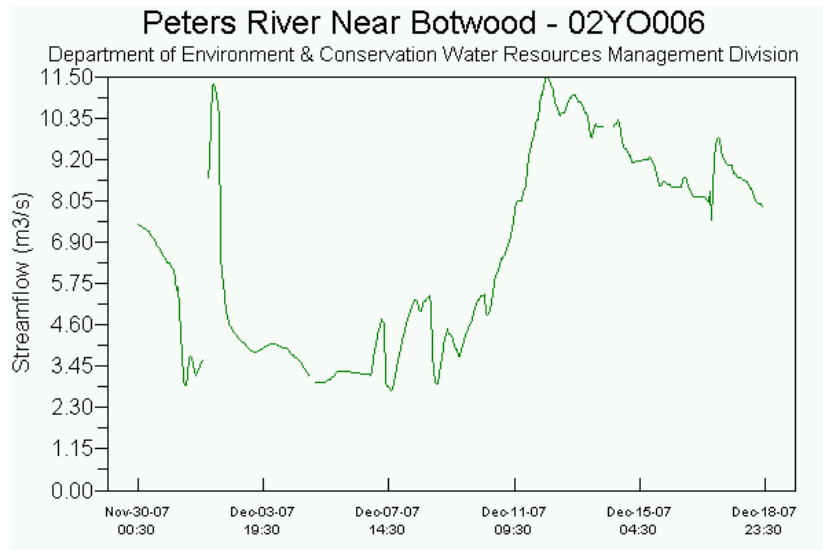


Figure 6