

## Real Time Water Quality Monthly Report: Lower Humber River @ Humber Village Bridge December 2003

### General

- The Water Resources Management Division staff monitor the real-time web page on a daily basis.

### Maintenance and Calibration of Instrumentation

- On December 11th, 2003, provincial Department of Environment and Environment Canada staff installed the Hydrolab multi-parameter water quality probe at the Lower Humber River site on the Humber Village Bridge (see **Figure 1**).

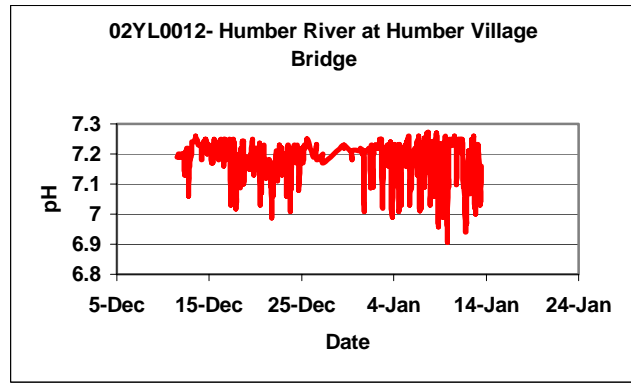
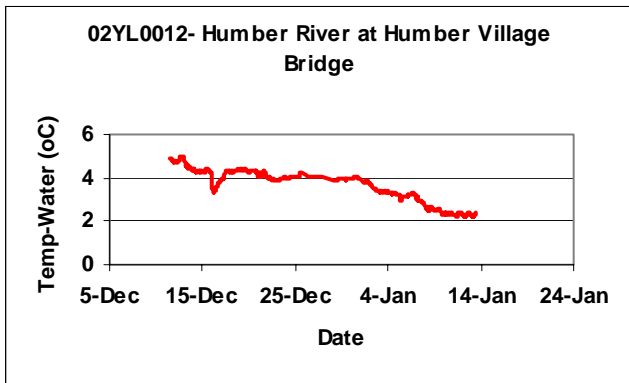


**Figure 1**

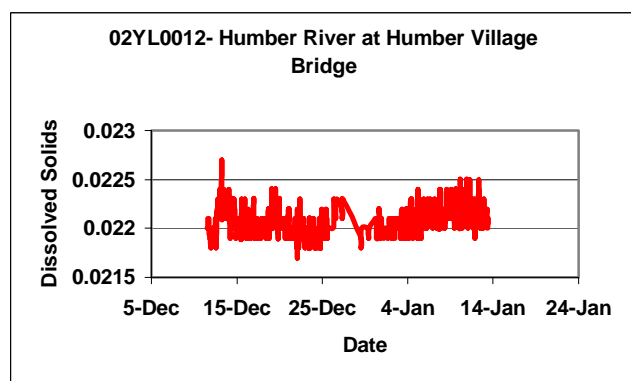
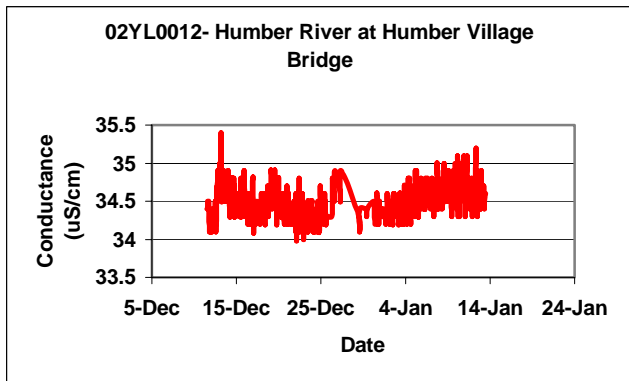
- Comparative water quality readings were taken with a Minisonde during the installation of the Datasonde to ensure readings were correct. This procedure is also required as part of the QA/QC protocol. The Minisonde was calibrated before use.
- Problems were encountered trying to calibrate the DO sensor to a barometric pressure of 760 mmHg. By calibrating to small increments, the DO sensor was eventually calibrated up to 759 mmHg.

### Data Interpretation

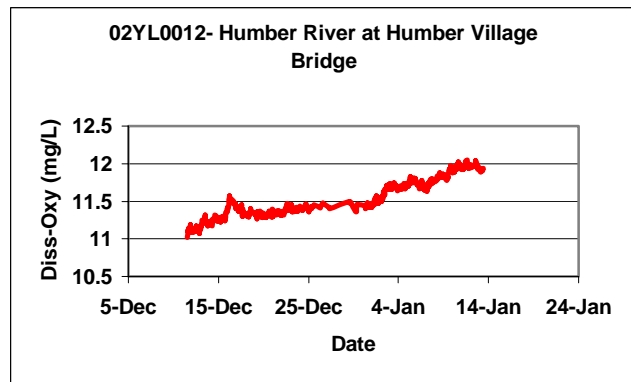
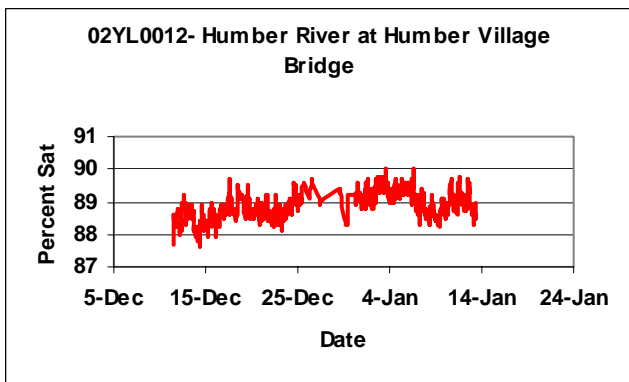
- During the period from Dec 12<sup>th</sup>, 2003 to Jan 13<sup>th</sup>, 2004 most parameters displayed normal behaviour. Water temperature decreased into January, however, a mild December and early January left water above the freezing point. pH displayed normal fluctuations in range with typical pH values for the Humber River.



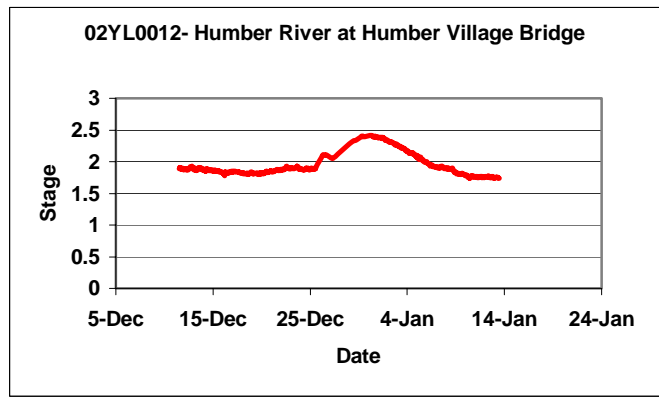
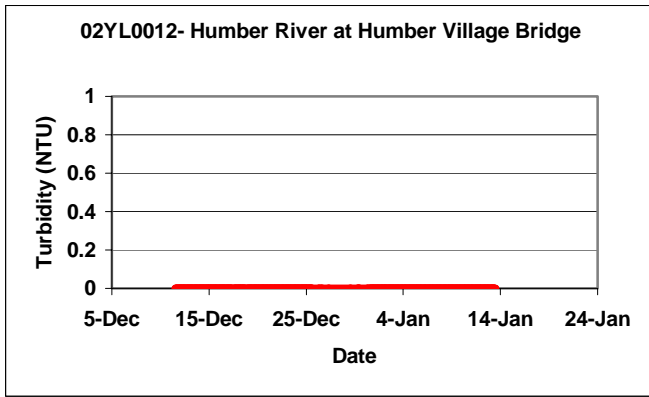
- Conductivity values for this period were within normal range for the Humber River and remained fairly constant.



- Dissolved oxygen levels increased over this period, corresponding to decreased water temperatures. There were problems calibrating the DO sensor prior to these readings, which might account for the lower than expected percent saturation values.



- Turbidity during this period remained at 0 NTU. Other real time water quality stations have also consistently indicated zero turbidity, so this result was not entirely out of the ordinary. However, with the increase in stage or streamflow at the beginning of January, a corresponding increase in turbidity was expected. As it was not, some problem with the turbidity sensor is suspected.



**Additional Information**

- The above data was the first from the new real time water quality station on the Humber River at the Humber Village Bridge. Some probes were working fine, others indicated problems that may require further attention. Overall, the installation set up appears to be working well.

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