

Real Time Water Quality Monthly Report for Voisey's Bay Nickel Company Ltd. September 2003

General

- The Water Resources Management Division staff analyses the real-time web page on a daily basis.
- Voisey's Bay Nickel Company Ltd. will continue to be informed of any significant water quality events in the future in the form of a monthly report.

Maintenance and Calibration of Instrumentation

- Two Department of Environment staff members (Amir Ali Khan and Paula Dawe) flew to Voisey's Bay on September 22nd, 2003 to visit the real-time water quality stations and ensure the equipment was functioning properly. It was also necessary to ensure that all maintenance/calibration procedures were being carried out accurately by the Environmental Officer (on-site).
- On September 22nd, 2003, the Environmental Officer on-site (Perry) along with the Department of Environment staff flew by helicopter to the three sites and retrieved the Datasondes for routine monthly maintenance and calibration.
- At each site, the Environmental Officer took water quality readings with a Minisonde prior to removal of the Datasonde from the water as this procedure is a required part of the QA/QC protocol. The Minisonde was calibrated before use.
- As noted in the August report, the Minisonde was not functioning properly and was sent to Edmonton for repair. There was a malfunction in the electronics. The repair was made quickly and the instrument was returned in time for the September calibration.
- On September 22nd, 2003, each of the three Datasondes were maintained and prepared for reinstallation.
- The Datasondes were calibrated and then reinstalled the next day on September 23rd, 2003.
- The Environmental Officer performed all the required QA/QC checking and sampling as outlined in the QA/QC protocols. All required forms were completed and sent to the Department of Environment.
- There is a break in the graphs on the real-time water quality monitoring web page corresponding with the time-frame the Datasondes were out of the water for routine monthly calibration and maintenance.
- The water quality data collected on a real-time basis from mid-August to mid-September did not drift significantly according to the QA/QC measurements taken when the Datasondes were retrieved and reinstalled. It appears as though the Datasondes are performing very well.

Data Interpretation

- Throughout the month of September most water quality parameters remained at expected background levels. An example of this steady-state can be seen in the dissolved oxygen levels at the Outlet of Reid Pond into Reid Brook (**Figure 1**).

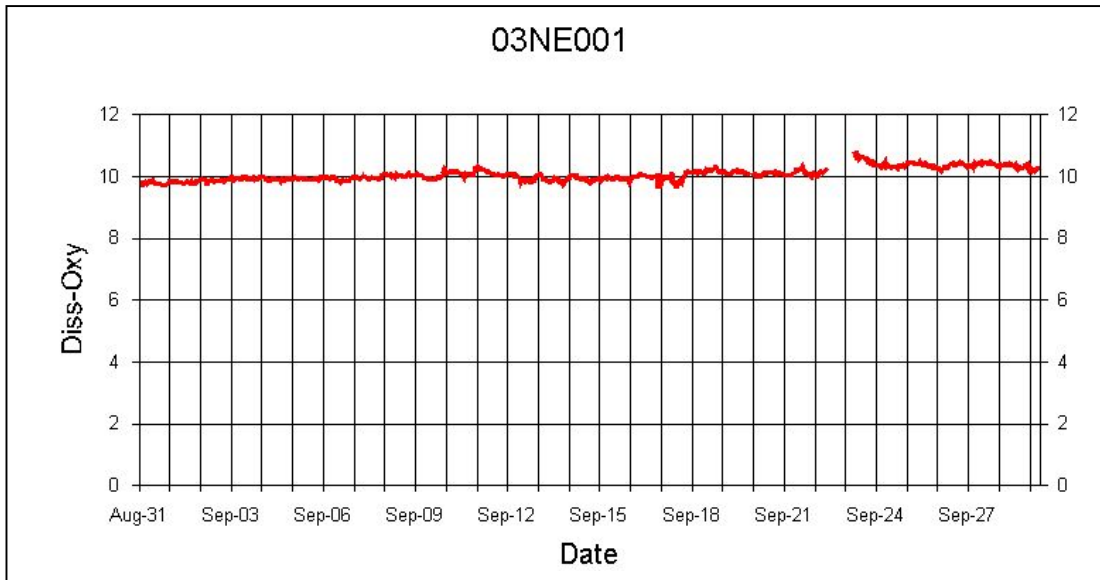


Figure 1

- There were a number of significant spikes in the turbidity levels in Camp Pond Brook below Camp Pond throughout the month of September (**Figure 2**). Each of these spikes was reported to the Environmental Officer (on-site) by email or telephone. This issue of high turbidity in this area has been investigated by numerous parties (on-site) throughout the past few weeks and is presently being mitigated. It appears as though the real-time station located on Camp Pond Brook will be the station most likely to pick up any rise in turbidity levels due to the close proximity of construction of the mill site.

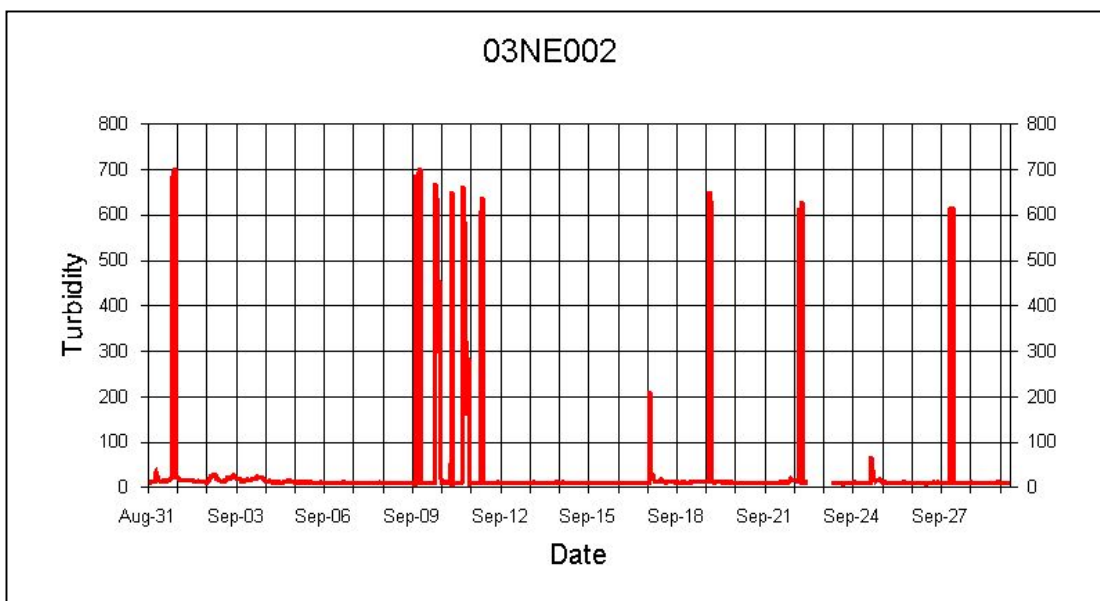


Figure 2

- As a result of the increased turbidity at Camp Pond Brook, other parameters such as conductivity and total dissolved solids also showed slight increases (**Figures 3 and 4**).

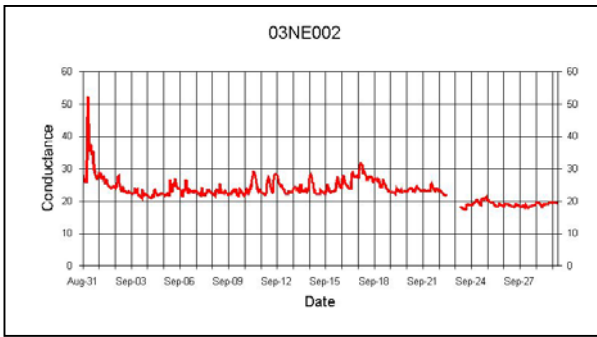


Figure 3

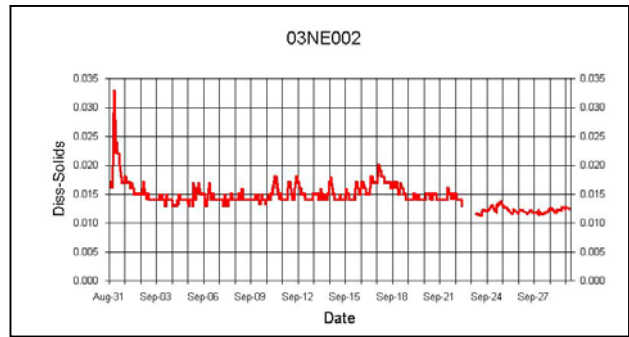


Figure 4

- It is important to note that turbidity levels at the Lower Reid Brook site did not rise in accordance to those at Camp Pond Brook. This is an indication that the sediment is settling out before it reaches the station on Lower Reid Brook.
- There was an interesting increase in conductivity values for the station at the Outlet of Reid Pond the week before the calibration was scheduled to take place (**Figure 5**). It is difficult to give an explanation for this increase, however, it is possible that the instrument began to lose its calibration. It remained steady after it was maintained and calibrated.

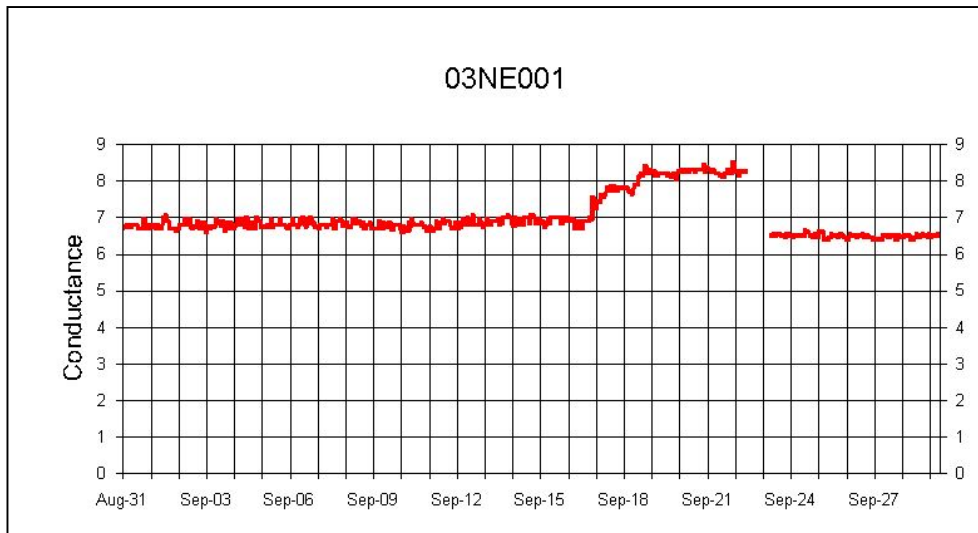


Figure 5

Additional Information

- As stated in the previous monthly report, there was a transmission problem with the Lower Reid Brook below Tributary station. This problem was looked at when the Environment Canada and Department of Environment staff traveled to Voisey's Bay this past month. The problem was not able to be fixed during the September trip, however, will be fixed in the upcoming month.

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