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Your file - Votre référence  
NWB1NAN0208  
Our file - Notre référence  
9545-3-1-NAN-G

*Via electronic mail to:*  
**licensing@nwb.nunavut.ca**

**Re: Reclamation Activities Quarterly Report (3<sup>rd</sup> Quarter 2004)**

On behalf of Indian and Northern Affairs Canada (INAC), I would like to thank the Nunavut Water Board (NWB) for the opportunity to provide comment on the *Reclamation Activities Quarterly Report for the 3<sup>rd</sup> Quarter, 2004* (the 3<sup>rd</sup> Quarter Report) for the Nanisivik mine site. This report was submitted by CanZinco Ltd. (The Licencee) in accordance with Water Licence NWB1NAN0208 (the Current Licence). INAC's review of this report was undertaken in consultation with EBA Engineering Consultants Ltd. INAC's comments follow below:

**Section 2.1.1 - Earthworks - West Twin Disposal Area**

- The Licencee has noted that 334,000 m<sup>3</sup> of shale were placed on the Surface Cell between August 29 and September 30, 2004. It is recommended that the Licencee provide the results of the Quality Control tests that were to be performed during the placement of the cover, as per the *BGC Engineering Inc. QA/QC Plan for Surface Reclamation Covers* (Appendix 5.5 of the 3<sup>rd</sup> Quarter Report)

**Section 2.2.1 - Building Demolition - Mill**

- The table providing water quality data from the Nanisivik Mill Wash Water does not include units. It is recommended that a revised table be submitted in which units are provided for all parameters measured.

**Section 2.3.2 - Waste Disposal Summary**

- The Licencee has indicated that material being disposed of in the West Open Pit (WOP) was placed in lifts and compacted with earth moving equipment. In the photos of the disposal of construction debris in the WOP (Figure 5; Appendix 5.7), it appears as though the debris is being placed in

relatively thick lifts, is being placed on top of snow existing in the pit, and may not be being mixed with fine grained soils to fill voids in the materials. It is recommended that the Licencee provide confirmation that disposal practices conform to those outlined in the *BGC Engineering Inc. QA/QC Plan for Surface Reclamation Covers* (Appendix 5.5 of the 3<sup>rd</sup> Quarter Report). Specifically, the Licencee should confirm that:

- Snow is not being trapped in with debris;
- Inert construction materials are being placed in lifts not thicker than 1m; and
- Voids, if existing in the construction debris, are being filled with a fine grained fill.

### **Section 3.1 - Effluent Monitoring - West Twin Disposal Area**

- It is noted that monitoring for the 3<sup>rd</sup> Quarter was limited to SNP station 159-4 (WTDA decant structure), and that there are few data points were found in the tables for August and September.
- The mean monthly concentration of zinc was exceeded in July, August, and September, as was the maximum allowable concentration of zinc in the last three days of September.
- The effluent at SNP station 159-4 failed the July 24, 2004, *Daphnia magna* toxicity test.
- It is recommended that discharge from the WTDA continue to undergo careful monitoring to determine if the reported deviations from effluent discharge criteria were anomalous, or if they are indicative of a trend in effluent quality.

### **Appendix 5.5; Section 3.3.2 - Test Pit Investigations**

- While test pits were excavated to evaluate the density of the shale cover, the moisture content of the excavated material was not determined. As a result, the achieved dry densities are estimations. These estimations are, however, useful in determining the appropriate compaction effort. Section 3.3.3, Table 1 provides further test results from the July 2004 test cover, again with estimated moisture contents. The dry densities (2444 kg/m<sup>3</sup>) from the top lift were considerably higher than for the material in the TCTC #1 test pits (1956 kg/m<sup>3</sup>) and from the Standard Proctor Density tests (1870 to 2010 kg/m<sup>3</sup>). As a result, the reviewer suggested that there must be some considerably different material properties in the top lift in this area. This may be an indication of the extremely variable nature of the shale materials, and INAC suggests that the appropriateness of the thermal analysis and hence WTDA cover design may require reevaluation if portions of the WTDA were capped with a material similar to the that of

the top lift of the July 2004 test cover.

**Appendix 5.3 - Revised: Table 8 - Water Quality monitoring - Reclamation period**

- It is recommended that the Licencee provide the water monitoring data for all stations in Appendix 5.3 of the 3<sup>rd</sup> Quarter Report. At present, the 3<sup>rd</sup> Quarter Report provides data for only three of these stations. An explanation should be provided for each identified station where water monitoring did not occur.

Please do not hesitate to contact the undersigned if there are any questions or concerns with respect to this submission.

Best regards,

***Original signed by:***

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