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RE: NWB 1AR-NAN – CanZinco Ltd. – Nanisivik Mine Project Amendment

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned amendment application. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Nanisivik Mine (CanZinco Ltd.) has applied for two amendments to their current water license NWB 1AR-NAN0208. The first amendment, dated June 7, 2006, is to consider the West Twin Disposal Area (WTDA) as being in year one of closure, thereby reducing the sampling frequency at SNP 159-4 from daily to weekly. The second amendment, dated June 16, 2006, is to allow for a reduction in the SNP portion of their water license to reflect the latitude allowed under the Metal Mining Effluent Regulations (MMER) of the *Fisheries Act*. The MMER allow for a reduction in testing frequency for any of the parameters listed in items 1-6 of Schedule 4 of the regulations to not less than once in each calendar quarter provided that the substance's monthly mean concentration in the effluent is less than 10% of the value set out in column 2 of the Schedule for the 12 months immediately preceding the most recent test. Nanisivik Mine states that the results of their sampling indicate that Cd, Ni, Cu, Pb, and As are averaging less than 10% of the license maximum for these parameters (which are more stringent than MMER criteria).

Nanisivik Mine achieved recognized closed mine status under the MMER on July 30, 2006. Therefore, they are no longer captured by these regulations and are exempt from the monitoring and reporting requirements set out in the regulations. Any effluent from the mine is now subject to the general prohibition under the *Fisheries Act*, in addition to license limits established in NWB 1AR-NAN0208.

Regarding the proposed amendment to consider the WTDA as being in year one of closure, EC recommends that the Nunavut Water Board (NWB) grant Nanisivik Mine's request and allow for the reduction in frequency of water quality sampling at SNP 159-4 from daily to weekly. It is unclear if the proponent's request also encompasses other aspects of the monitoring plan, such as geothermal monitoring. Environment Canada recommends that if Nanisivik Mine is requesting that all monitoring requirements associated with the WTDA be moved from reclamation to closure phase monitoring, they submit the geothermal monitoring results for review. Environment Canada does not recommend that the geothermal monitoring requirements be reduced until the sampling data are reviewed. Further, it is recommended that all other aspects of the monitoring program remain in place (i.e. daily sampling from East Adit Treatment Facility at SNP 159-12) as the data to substantiate such a reduction has not been submitted as a component of this amendment.

Nanisivik Mine is also requesting that the sampling frequency for Cd, Ni, Cu, Pb and As be further reduced from weekly (as proposed in the first amendment request) to quarterly. It is presumed that this request applies to SNP 159-4, 159-12, and 159-17 (final discharge location from Chris Creek into Stathcoma Sound). Environment Canada notes that the Monitoring Plan included in the Final Closure and Reclamation Plan submitted by Nanisivik Mine in February 2004 and approved by the NWB on July 6, 2004 indicates that the Closure Period Monitoring schedule will proceed as follows:

- Years 1-2 – weekly sampling at SNP 159-4, 159-12 and 159-17
- Years 3-5 – biweekly sampling at SNP 159-4, 159-12 and 159-17
- Further years – to be determined based on past results, likely based on the Comprehensive Performance Review to be submitted in 2007.

Nanisivik Mine has cited the flexibility allowed in the MMER as the rationale behind their request for reduced sampling. However, Nanisivik Mine also stated in their Monitoring Plan that “the objectives of the EEM program will differ somewhat from those of this reclamation performance monitoring program, [however] the information that is generated from the EEM program will clearly be of interest to the ongoing assessment of the performance of the reclamation plan” (page 8). Given that NWB accepted the sampling frequency proposed by Nanisivik Mine in the approved Monitoring Plan, and that Nanisivik Mine themselves have stated that the objectives of the MMER/EEM program are different than that of the reclamation performance monitoring, EC does not recommend that the NWB amend the water license to allow for a reduction in the frequency of monitoring of SNP stations from weekly to quarterly. Additionally, maintaining the current water quality monitoring schedule for the main discharge location at SNP 159-4 will allow for continued monitoring of the progress of freeze back of the WTDA and related pore-water expulsion, thereby ensuring the timely response to any issues which may arise. As Nanisivik Mine has achieved recognized closed mine status, they are no longer subject to the various monitoring and reporting requirements of the MMER. This should help alleviate some of the burden associated with their water quality monitoring program.

Given that Nanisivik Mine has achieved recognized closed mine status under the MMER, it is recommended that the following components of NWB 1AR-NAN0208 be removed from the license:

- Part B, “General Conditions” (Item 6(b) and Item 6(c-3))
- Part H, “Effluent Monitoring” (Items 7-13);
- Part H, “Acute Lethality and *Daphia Magna* Testing” (Items 14-20);
- Part H, “Volume and Effluent Flow Rate” (Items 21-25);
- Part H, “Calculation of Loading” (Items 26-29);
- Part H, “Reporting Requirements” (Items 30-32);
- Part H, “Effluent Characterization” (Items 33-36);
- Part H, “Sublethal Toxicity” (Items 37-39);
- Part H, “Water Quality Monitoring” (Items 40-43); and
- Part H, “Biological Monitoring” (Item 44)

These components of the current water license were included to harmonize the water license with the requirements of the MMER, in order to provide one regulatory instrument for the proponent. However, as Nanisivik Mine has fulfilled the requirements of the MMER, it is recommended that these provisions of the license be removed so as to not place unwarranted monitoring requirements on the proponent. Monitoring of any ongoing discharges would still occur as outlined in the approved Closure and Reclamation Monitoring Plan, with any changes as approved through the current amendment requests.

Thank-you for the opportunity to comment on the proposed amendments to the water license for the Nanisivik Mine. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4639 or by email at colette.spagnuolo@ec.gc.ca.

Yours truly,

Original signed by

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Environmental Assessment / Contaminated Sites Specialist

cc: (Stephen Harbicht, Head, EA North, Environment Canada, Yellowknife)