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Via email: [licensing@nunavutaterboard.org](mailto:licensing@nunavutaterboard.org)

**RE: 2BB-BOS0712 G1 Notice of Modification to Sewage Disposal Facility**

Environment Canada (EC) has reviewed the information submitted with the above-mentioned notice to the Nunavut Water Board (NWB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Hope Bay Mining Ltd. (HBML) has provided an Operation and Maintenance (O&M) Manual for the Sewage Disposal Facility, facility drawings, and a Sewage Sludge Management Alternatives document to the NWB as part of water license 2BB-BOS0712. Upon review of the documents, EC provides the following comments and recommendations for the NWB's consideration:

**O&M Manual**

- HBML must ensure that any effluent discharged must be in compliance with Section 36(3) of the *Fisheries Act*. The proponent shall not deposit, nor permit the deposit of any wastes, chemicals or sediment into any water body. According to the *Fisheries Act*, Section 36(3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited (i.e., the Tundra Treatment Area should be located above the high water mark of any water body and in such a manner to as prevent the contents from entering any water body frequented by fish).
- EC notes that the CCME Strategy for the Management of Municipal Wastewater has been signed, and that northern jurisdictions can expect performance standards for BOD5 and TSS to be regulated following a five year period which started in 2009. We anticipate that the standards for these parameters may be higher than the 25 mg/L for each that is proposed for the southern jurisdictions and the Yukon. Also, it should be noted that carbonaceous Biological Oxygen Demand (cBOD) will be the regulated parameter, and it would be prudent to add this to the list of license parameters now, in order to gain some idea of the system's track record over the next four years.
- EC recommends that the manual include an emergency/contingency plan (expanded Section 3.16.2) that describes what measures should be taken if the facility was unable to operate. There should also be safety and emergency contact information provided at the facility should an environmental emergency occur.

## **Sewage Sludge Alternatives Document**

- EC commends HBML for their commitment to work to eliminate the incineration of sewage and therefore reduce the potential for the formation of dioxins and furans in their stack gases.
- EC commends HBML on their programs to educate camp staff on the proper disposal of pharmaceutical and personal care products and HBML's selection of cleaners that are biologically compatible.
- EC recommends that sludges are characterized prior to disposal to ensure disposal options are appropriate.
- In Section 6 Beneficial Uses, it states that "Sewage sludge will be blended with other materials to be identified to produce a top-dress medium for use in reclamation programs". In Canada, the use of biosolids or sewage sludge is regulated under provincial/territorial jurisdictions and usually in the context of application to agricultural land. Although there is no available territorial legislation, most provinces have specific guidelines for using sludge to enhance soil nutrient quality. In Alberta for example, the Guidelines for the Application of Municipal Wastewater Sludges to Agricultural Lands (Government of Alberta, 2001) states that application of sludge to agricultural land is an acceptable practice provided that it meets the provincial guidelines. The issues associated with using biosolids involve contamination of receiving soils with metals, chemicals and pharmaceuticals, as well as changes to soil properties and chemistry from repeated applications. Another issue is that these guidelines are not written for continuous permafrost areas and state that the application of biosolids should not be permitted on ice or snow covered or frozen soils. EC suggests that HBML set up a study plot to determine if indeed this method can be done under northern conditions. The plot should meet the criteria and standards outlined in the Guidelines for Alberta. It should be bermed and fenced in to avoid environmental contamination and to keep out wildlife.

Comments previously submitted on behalf of EC regarding water license 2BE-BOS0712 would still apply to this project. If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at [Paula.C.Smith@ec.gc.ca](mailto:Paula.C.Smith@ec.gc.ca).

Yours truly,



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