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Department of Environment

Ministère de l'Environnement

February 14, 2008

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board

via Email to: licensing@nunavutwaterboard.org

RE: NWB FILE # 3BM-PAN — WATER LICENSE RENEWAL APPLICATION

Dear Ms. Beaulieu:

The Government of Nunavut, Department of Environment (DOE) has reviewed the water license renewal application from the Hamlet of Pangirtung. Based on DOE's mandate under the *Environmental Protection Act* we have the following comments.

Sewage Treatment

The applicant has submitted a report titled 'Pangnirtung *Waste Water Treatment Plant: Comprehensive Performance Evaluation, August 2007*'. Having studied the performance and operation of the effluent treatment process over a period between January 15 and January 23, 2007, along with an examination of historical effluent performance data; the report has concluded that the existing plant and operation will result in periodic exceedance of the license criteria. Furthermore, the report examined the ability of the existing infrastructure and operation to meet future population growth and likely effluent limits contained in CCME's *Canada-wide Strategy for the Management of Municipal Waste Water*, again highlighting the inadequacy of the system. To achieve compliance, the report has proposed upgrades in three phases over the next seven to nine years. Based on the information provided in the application it would appear that the applicant has accepted this report's recommendations and these will be implemented within the timescale outlined.

DOE anticipates that the short-term measures proposed for plant performance optimization and the 'Operator *on-site Technical Assistance Program*' will result in more consistent compliance with effluent quality criteria contained in the existing license; and the longer-term measures will result in improvement of effluent quality below license requirements. In summary, DOE supports the component of the renewal application related to treatment of sewage effluent,

subject to the implementation of measures proposed in the report discussed above.

Waste Management

Construction of new facilities

The applicant states in the *Technical Summary of Pangnirtung Water, Sewer and Solid Waste Management* that there are three possible options to address problems associated with the current solid waste management facility. A feasibility study has been prepared to support the three options and a preferred option identified, which appears to be supported by the community. The applicant further indicates that a design phase will follow shortly; however, it is not clear if the preferred option is the option that will ultimately be implemented by the applicant.

After communicating with the applicant in February 2008, the applicant indicates that due to funding constraints, the options proposed will not be implemented until after 5 or 6 years from now. Consequently, the construction of new solid waste facilities discussed above are no longer subject to this licensing review. Nevertheless, DOE has some general comments to make for future reviews. We recommend in the future that the scope of reviews and implementation plans for project components are clearly identified in a water license application, and that the application be supported by necessary information such as engineering and design drawings, and procedures for operation and maintenance and monitoring.

Sewage Sludge

It is noted in the application documents that bagged sludge is currently disposed of in the landfill; however, the applicant in the license application has not committed to test the sludge prior to landfilling. Based on our communication with the applicant in Feb. 2008, the applicant indicates that sludge quality will be monitored regularly prior to landfilling to meet appropriate guidelines such as the ones outlined in the Schedule III and IV of DOE's *Guideline for Industrial Waste Discharges in Nunavut*.

Leachate

The INAC inspection report dated October 10, 2007 identifies a concern with leachate escaping from the landfill at the North West corner due to a wash out. This leachate was sampled by INAC and shown to have elevated levels of selenium, strontium, manganese and iron.

After communicating with the applicant this February, the applicant indicates that the following proposed solutions, based on their July 2006 report titled *Planning and Design of Sludge Disposal Facility Pangnirtung, Nunavut* will be assessed

and then implemented to address the leachate issue. This report provides options such as a perimeter berm to contain and limit surface water infiltration into the landfill, a liner to contain leachate, and/or a sump to collect leachate with the leachate subsequently treated. The applicant is in the process of assessing the options. The proposed options may be sufficient to address the issue; however, the applicant should indicate a preferred option once their assessment is completed, and submit this option for review.

DOE thanks the NWB for giving us the opportunity to review and provide comments on the Hamlet of Pangnirtung's water license renewal application. Please contact us if you have any questions or comments.

Yours sincerely,

Original signed by

Helen Yeh
Coordinator, Environmental Assessment
Department of Environment
Government of Nunavut