Environment Canada **Environnement Canada**

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Tel: (867) 975-8501
Fax: (867) 975-8505 *Via Email at b.sokach@city.iqaluit.nu.ca*

Dear Mr. Sokach:

RE: Iqaluit Sewage Treatment Plant, Snowfluent and Water License

Environment Canada (EC) would like to thank you for the opportunity to provide input to the Iqaluit City Council regarding the potential for changes to the planned approach to municipal wastewater treatment in the City of Iqaluit. The City of Iqaluit currently has a water license application under review with the Nunavut Water Board (NWB) which identifies a mechanical treatment system utilizing an activated sludge process as the proposed wastewater treatment method. However, recent discussions with Northern Watertek Corporation have given rise to the possibility of implementing Envapocrystallization (EVC) as the wastewater treatment process. The City of Iqaluit has requested input from EC regarding our receptiveness to the use of this technology and any concerns EC may have regarding this approach.

Environment Canada has been an active participant in the review of the City of Iqaluit's Type A Municipal Water License application. In this forum, EC has provided the NWB with our current thinking on a long term strategy for maximum allowable limits for BOD_5 and TSS in municipal wastewater effluent (please see letter from EC to the NWB dated April 15, 2004). Environment Canada encourages the City of Iqaluit to implement a wastewater treatment technology that will meet these standards. Provided that the provisions of Section 36(3) of the *Fisheries Act* are met, EC's preferences regarding the technology that the City of Iqaluit implements to treat municipal wastewater effluent would be based on an evaluation of performance, reliability, and environmental life cycle costs.

Environment Canada encourages the City to consider the full cost of implementing any wastewater treatment technology, including construction, operation and maintenance, and decommissioning and reclamation. This calculation should also include the cost of mitigating any potential impacts on the environment, as well as the potential costs should the system fail to meet the provisions of the *Fisheries Act*.

With respect to reliability issues, EC recommends that caution be exercised in considering the use of a new technology which is not routinely used in municipal applications or in the Eastern Arctic. Recent experiences with such new technologies have not been positive, and EC would like to see a wastewater treatment system in place without unnecessary delay and with minimal uncertainties.

After reviewing the documents provided by the City of Iqaluit regarding the EVC technology, EC offers the following comments for consideration in your decision-making process:

- Environment Canada shares the City of Iqaluit's concerns regarding the suitability of the existing sewage lagoon facility for continued long-term use. The Dam Safety Inspection report included in the current water license application recommends that if the sewage lagoon is to remain in service in the future, it should be redesigned or rebuilt. Further, as the current lagoon is designed as a facultative lagoon, EC has concerns regarding the use of the structure as a zero discharge facility, as indicated in the Watertek Corp. Response Memo dated April 5, 2005.

- Given the issues surrounding the continued use of the existing lagoon, if the EVC technology was implemented and a new lagoon constructed, EC would require an abandonment and restoration plan for the current sewage lagoon, including the sludge contained therein.

- The Response Memo dated April 5, 2005 from Watertek Corp. does not address the performance of this technology in an area of continuous permafrost. Environment Canada recommends that the City of Iqaluit investigate whether or not continuous permafrost conditions will affect the performance of the EVC technology.

- Environment Canada agrees with the City of Iqaluit that a 4-6 month time frame for public consultation and regulatory approvals within Nunavut is unrealistically short. The City of Iqaluit should also consider that if federal funding is secured for the capital costs of the EVC technology, it is likely that an environmental assessment under the *Canadian Environmental Assessment Act* will be required.

Environment Canada hopes that these comments are of assistance to the City of Iqaluit during the decision-making process. Environment Canada would also like to remind the City of Iqaluit that the implementation of the EVC technology would likely constitute a significant change to the existing Type A water license application, requiring either an amendment to the current application, or resubmission of a new application. Environment Canada looks forward to continuing to work with the City of Iqaluit and the NWB in ensuring that the wastewater treatment system adopted in Iqaluit is both environmentally sound and protective of water quality. Please don't hesitate to contact me with respect to the foregoing at (867) 975-4639 or by email at colette.spagnuolo@ec.gc.ca.

Yours truly,

Original signed by

Colette Spagnuolo
Environmental Assessment / Contaminated Sites Specialist

cc: (Stephen Harbicht, Head, Assessment and Monitoring, Environment Canada, Yellowknife)
(Jim Wall, Technical Advisor - Municipal, Nunavut Water Board)
(Stephanie Hawkins, Qikiqtani Regional Coordinator, Water Resources, Indian and Northern Affairs Canada)