

Mr. Phillip di Pizzo  
Executive Director  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, Nunavut  
X0B 1J0

March 8, 2005

**Re: Response to Nunavut Water Board Letter dated  
January 17, 2005**

Dear Mr. di Pizzo

The following letter is written in response to the Nunavut Water Board (NWB) letter to the City of Iqaluit dated January 17, 2005 with respect to the City of Iqaluit's Water License Application and specifically information not yet received. For clarity the numbering used will correspond to the NWB letter dated January 17, 2005.

Part II – Information not yet received

**1. The terms of reference for the preparation of an Operations and Maintenance Plan for the Solid Waste Disposal Facility.**

The City of Iqaluit has retained Dillon Consulting to prepare of an Operations and Maintenance Manual for the Solid Waste Disposal Facility. A copy of the draft Table of Contents is being submitted with this letter.

**2. A plan describing what monitoring is proposed for the Solid Waste Disposal Facility, the current Sewage Disposal Lagoon and the proposed Sewage Treatment Plant.**

- A monitoring plan for the Solid Waste Disposal Facility will be included in the Operations and Maintenance Manual currently being completed by Dillon Consulting.
- A monitoring plan for the proposed Sewage Treatment Plant will be included with the Operations and Maintenance Manual created for the Sewage Treatment Plant.
- A monitoring plan for the Sewage Lagoon was submitted to the Nunavut Water Board on November 30, 2004. The monitoring plan is included in the City of Iqaluit's Spill Contingency Plan in Section 4.3. It states the sewage lagoon is routinely checked seven days per week for levels and

leaks. If problems are suspected, the frequency of monitoring will be increased.

In addition, testing of lagoon effluent for parameters including BOD, TSS, TDS, NH<sub>4</sub>, PO<sub>4</sub>, oil and grease, Metals, VOC's and PAH's will be performed on a bi-annual basis.

**3. The terms of reference for the preparation of a plan to address the management of sludge to be produced by the proposed Sewage Treatment Plant.**

The terms of reference to address the management of sludge at the proposed Sewage Treatment Plant is currently being drafted by City of Iqaluit staff and will be submitted to the NWB upon its completion. The timeline for submission of this information is March 18, 2005.

**4. Details of any proposed water conservation measures and/or public awareness programs aiming at reducing water consumption.**

As indicated in the City of Iqaluit Letter to the NWB dated November 9, 2004 the City currently has a number of domestic water bleeds in the utliidor system. The purpose of the bleeds is to ensure the water lines do not freeze in areas where the utilidor is not in a loop. A large number of these bleeds have been removed in the past several years during upgrades to the utilidor. The City will not be in a position to eliminate all of the bleeds until the entire City has been converted to utilidor.

The City does not have a water conservation public education strategy for the general population.

**5. The results of recent analysis of effluent discharged from the current sewage disposal lagoon.**

The City submitted with its letter to the NWB dated November 30, 2005, a Municipal Water Use Inspection Report provided by Indian and Northern Affairs Canada (INAC) which states sewage treatment at the lagoon appears to be unacceptable. The City does not have any recent analysis of effluent discharged from the current sewage disposal lagoon however, we will endeavor to collect an effluent sample and provide the NWB with the results by March 18, 2005.

**6. A summary of repairs completed on the Sewage Disposal Lagoon since the Lagoon Safety Review.**

There have been no repairs to the current sewage lagoon since the Lagoon Safety Review performed in October 2002. However, recent safety

inspections of the Sewage Lagoon and Lake Geraldine Dam have been completed and are being submitted electronically with this letter.

**7. Documentation supporting visual, piezometric, freeboard level and detailed geotechnical and hydrological monitoring results of the Sewage Disposal Lagoon undertaken since the completion of the Lagoon Safety Review.**

Documentation supporting visual, piezometric and freeboard levels at the lagoon has been submitted previously to the NWB with our original application submission. It is included with the sewage lift station monitoring documentation.

A detailed geotechnical and hydrological investigation of the sewage lagoon completed by Trow Associates in October 2003 has been submitted previously to the Nunavut Water Board. The City of Iqaluit requests the NWB to provide details of any specific questions they may have with respect to the information submitted, if any.

**8. Information regarding the proposed WWTP bypass, including the location and capacity of the emergency sewage storage system.**

As indicated in the City of Iqaluit's letter to the NWB dated November 30, 2004, assuming the sewage lagoon will be used for emergency storage, flow will be diverted by closing the knife gate valve at the WWTP and diverted to the lagoon through a new overflow at the existing dump station. The retention volume of the lagoon is estimated in the Trow Associates report titled Geotechnical Investigation of the Sewage Lagoon to range from between 12,000 cubic meters and 25,000 cubic meters, at operating levels of 0.7m and 1.5 meters respectively.

It is anticipated that, should the existing lagoon be utilized during an emergency overflow, upon restoration of the WWTP the wastewater would be pumped over land, using portable pumps, to the existing dump station, downstream manhole or to the Camlok fitting located outside the WWTP.

The design of the WWTP bypass is currently ongoing.

**9. Details on how the High Water Mark (HWM) has been determined.**

The HWM was determined from Trow Associates as-constructed drawing number MD13153A-PP2 which was submitted previously to the NWB on November 30, 2004. It is our understanding from Trow Associates that the high water mark was provided by Hill Murray & Associates Wastewater Treatment Plant site plan and it is an observed HWM.

**10. The Operations and Maintenance Manual and the Emergency Preparedness Manual for the Lake Geraldine Water Supply Facility.**

The City has been unable to locate the O & M Manual. It will have to be prepared by the City or an outside consultant. The timeline for submission of this information is approximately June 2005.

Based on previous discussions with the Government of Nunavut it is our understanding that emergency preparations are their responsibility.

**11. A contingency plan should the proposed WWTP not be commissioned as scheduled.**

The City will continue to use the existing lagoon until the WWTP has been commissioned or another method for treatment of the City's sewage has been identified and commissioned.

As stated in the City of Iqaluit letter to the NWB dated November 9, 2004 the City will likely retain the sewage lagoon upon commissioning of the proposed WWTP. It will likely be partially decommissioned but left in place to be used should the proposed WWTP not be commissioned as scheduled or should there be a catastrophic failure of the WWTP.

**12. A report of the status of the implementation of the Sewage Lift Station Spill Contingency Plan with specific reference to training requirements.**

A copy of the Sewage Lift Station Spill Contingency Plan has been submitted to the NWB with our original application submission.

Sewage Lift Station training was carried out in May of 2003 by Dillon Consulting. A copy of the training presentation as well as daily, monthly quarterly, semi-annual and annual lift station checklists are being submitted electronically with this letter.

**WWTP Construction**

Due to funding constraints the WWTP will now be constructed in three (3) phases. The first phase will provide primary treatment to the City's sewage and is scheduled for construction during the summer of 2005. The second and third phases will provide secondary and tertiary treatment. The completion of the second and third phases are contingent on the City attaining sufficient funding from sources such as Infrastructure Canada, the Gas Tax or potentially re-profiling the City's Capital Plan.

A letter from Earth Tech Canada Inc. discussing Phase 1 Primary Treatment while also utilizing the existing lagoon is being submitted electronically with this letter. It is our understanding from this letter that passing the primary filter effluent through the lagoon would provide no significant additional removal of particulate matter and no significant removal of soluble or suspended BOD. Utilizing the lagoon downstream of the primary filters would also require an additional lift station and force main at a cost of approximately \$500,000. Once Phase 2 of the WWTP is constructed the lift station would be of no use.

## **Conclusion**

The City appreciates the opportunity to respond to the questions and comments raised by the NWB. If you have any questions, concerns or require any clarification to the information contained in this letter please do not hesitate to contact the undersigned.

Regards,

Geoff Baker  
Project Officer  
City of Iqaluit

Brad Sokach, P.Eng.  
Director of Engineering  
City of Iqaluit

Cc. Ian Fremantle, CAO, City of Iqaluit  
Elisapee Sheutiapik, Mayor, City of Iqaluit

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