



Government of Nunavut  
Department of  
Sustainable Development  
Ikupigvilirijikkut  
Environmental Protection Service

November 2, 2000

Mr. Phillippe di Pizzo  
Executive Director  
Nunavut Water Board

Dear Mr. Di Pizzo

### **Iqaluit Water Licence**

The Environmental Protection Service (EPS) of the Department of Sustainable Development, Government of Nunavut, has a mandate to protect and enhance the environment of Nunavut on behalf of all of its citizens. EPS derives its regulatory authority from the *Nunavut Environmental Protection Act* which prohibits the discharge of a contaminant into the environment. The Act applies to the whole of Nunavut, however, by convention and by agreement with other regulatory agencies, our jurisdiction encompasses Commissioner's Lands, which is essentially comprised of those areas occupied by the communities of Nunavut.

EPS has the following comments to offer, which are based upon our review of the water licence application, the information provided at the pre-hearing meeting of September 25<sup>th</sup>, 2000, and the J.L. Richards/Golder Associates Report:<sup>1</sup>

### **Use of Water For Municipal Purposes**

#### **1. Long Term Water Supply**

EPS has little to say about this matter except to ask if there have been any in-house discussions regarding alternative supplies of potable water; any suggested locations. Or does the Municipality of Iqaluit intend to defer this question entirely to their consultants?

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<sup>1</sup> *Solid Waste Management Planning Study: Municipality of Iqaluit*. September 5, 2000. J.L. Richards Ltd. & Golder Associates Ltd. Kingston, Ontario.

## 2. Integrity of Lake Geraldine Dam

Again, EPS has nothing to offer on this issue, as it is a matter for structural engineers to discuss. EPS is, however, puzzled by the Municipality of Iqaluit's request to have section C5 and C6 deleted from the next licence. Considering the important function that the Lake Geraldine Dam serves for residents of Iqaluit, should there not be a requirement for annual structural inspections?

### **Deposit of Waste into Water -Sewage Treatment**

#### 1. Status of New Sewage Treatment Plant

In our 1999 intervention, EPS supported the Municipality of Iqaluit's plan to install a modern sewage treatment system. This support has not changed, however, EPS is concerned about the delays and the difficulties that the Municipality of Iqaluit seems to be experiencing (this has been extensively covered in the media) with the contractor and with the project in general.

EPS hopes that the Municipality of Iqaluit will be able to overcome these problems and that the large expenditures that went into this new treatment plant will finally come to fruition.

**EPS requests that the water licence include a condition that requires the Municipality of Iqaluit to submit a status report to the Nunavut Water Board (NWB), before the system goes on line, outlining the reasons for the modifications and repairs that have been made to the system, as well as how these are expected to affect the efficiency of the operation, the overall effluent quality, and the life expectancy of the plant.**

EPS agrees with the Municipality of Iqaluit's contention that: "nothing is gained by (the water board) imposing artificial deadlines over which the licensee has little effective control..." EPS suggests that if any deadline is imposed on the Municipality of Iqaluit with regard to the commissioning of the new sewage treatment plant, that the timeline be realistic and flexible.

#### 2. Disposal of Sewage Treatment Sludge

Quote from the Municipality of Iqaluit's Written Evidence:

"...As the plant is not yet operational, the disposal of sludge has yet to become an issue for the Town..."

EPS believes that the time to think about the means by which this sludge is to be treated and disposed of is now, not when the new sewage treatment plant is in operation and generating significantly large amounts of sludge.

The Municipality of Iqaluit's proposal to compost the sludge in the current landfill site has one major flaw: this method has yet to be tested and proven in an Arctic environment.

In our presentation to the NWB at the 1999 intervention hearings, EPS suggested that while we were (and still are) in favour of composting as a means of treating the sludge, we recommended that the Municipality conduct a pilot-scale composting experiment during the summer of 1999 to determine if this option would be feasible. We further suggested that the sludge should be characterized to determine if composting would be an appropriate means of treatment<sup>2</sup>. Finally, we advised the Municipality to investigate other treatment and disposal options in the event that composting proved to be inappropriate or unsuccessful.

To the best of our knowledge, the Municipality of Iqaluit has not fulfilled its obligation under Part D, section 9 of their water licence, which required them to submit a plan for the interim treatment and disposal of sludge generated by the new sewage treatment plant.

**EPS recommends that the water licence include a condition that directs the Municipality of Iqaluit to address this problem before the new sewage treatment plant becomes operational. The Municipality of Iqaluit should have, in the very least, a technically-sound short-term plan for managing sewage sludge until such time as they can develop a long-term plan. Furthermore, this long-term plan should be in place by the end of the summer season immediately following the commencement of the operation of the new sewage treatment plant. The sludge management plan should be subject to review and approval by the appropriate regulatory agencies.**

### 3. Integrity of the Lagoon Dykes

The Municipality of Iqaluit has indicated that they did not fulfill the requirements of Part D, sections 6 & 7 of their water licence, which obliged them to have the lagoon dykes inspected by a geotechnical engineer. They stated (clipped quote): “The Municipality...believes that it is not necessary...” The Municipality substantiated this statement by providing anecdotal information as well as a brief description of standard operational practices.

**EPS is of the opinion that, until such time as the current sewage lagoon is taken off line, the dykes should be inspected - by a qualified engineer - for structural integrity. This is an important consideration given the ever-increasing population and the commensurate increased loading on the existing system, which already has a history of failures. Unless the Municipality of Iqaluit is able to provide compelling evidence that suggests that an inspection is not necessary, EPS recommends that this condition remain a part of the licence requirements.**

EPS is concerned by the fact that the Municipality of Iqaluit chose to ignore this, and a number of other conditions of their water licence. EPS is concerned that the Municipality of Iqaluit appears to be in a position where they can selectively choose those conditions of their water licence with which they intend to comply.

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<sup>2</sup> Determining the appropriate treatment process is largely dependent upon the constituents contained within the sludge.

#### 4. Closure, Abandonment and Restoration of the Sewage Lagoon

EPS is pleased that the Municipality of Iqaluit intends to follow the advice that we proffered at last year's intervention: that is, to retain the old sewage lagoon and use it as an emergency repository-backup to the new system once the latter is fully operational.

The plan to use the present facility as an emergency repository to the new system further justifies the need for a proper dyke inspection, as discussed in the previous section. Furthermore, the Municipality of Iqaluit's intention to drain the lagoon through the new sewage treatment plant provides yet another compelling reason to focus on the disposal and treatment of sludge *before* the new system is on line.

EPS cannot comment on the final plan for the abandonment and restoration of the existing lagoon, until a detailed plan is presented for review and approval.

#### **Solid Waste**

##### 1. Status of New Solid Waste Disposal Facilities

EPS supports the Municipality's goal of installing a municipal waste incinerator. Given the limitations of a traditional landfill system in an Arctic setting and the land use constraints in the Iqaluit area, we believe that an incinerator is a step in the right direction. While it is true that municipal waste incinerators have a somewhat jaded track record, the technology of these devices has advanced and improved considerably over the past 20 years.

EPS recommends that the Municipality of Iqaluit consider incorporating a heat recovery system into the new incinerator. This will not only make good use of the waste heat but will greatly offset the high fuel costs normally associated with municipal waste incinerators.

The above-mentioned comments should not be interpreted as a blanket approval of the Municipality of Iqaluit's long-term solid waste management plan. The application presents a rough overview of the intent of the plan, however, EPS will need to review the plan in its entirety before we can assess its merit.

**EPS recommends that the water licence include a condition that requires the Municipality of Iqaluit to submit their long-term solid waste management plan, once it is finalized, for review and approval, within four months of the issuance of the water licence or by no later than May 1<sup>st</sup> 2001. The Municipality of Iqaluit should strive to commence construction of the new facility by the summer of 2001 and have it completed by the fall of that same year. Depending on the circumstances, this may or may not be a reasonable expectation. NWB is advised to exercise some flexibility in this regard while at the same time, setting definite timelines for the completion of the project. The Municipality of Iqaluit is advised to proceed with caution during the development of the incineration facility in order to avoid a repeat of the sewage treatment plant experience.**

**The Municipality of Iqaluit should be further required to provide regular updates to the NWB on the progress of the long-term solid waste facility plan.**

## 2. Contingency Plan

EPS applauds the Municipality of Iqaluit for considering the idea of having a contingency plan in place should the new solid waste facility not be in operation by the time the current temporary site reaches capacity. Nevertheless, it should be pointed out that the present site was also touted as an emergency/temporary facility and that the Municipality was supposed to have had a long term solid waste management plan in place in 1996. EPS wants assurances that this “emergency facility” will not be used as a convenient pretext to further delay the construction of a long-term facility.

**EPS recommends that the water licence include a requirement for the Municipality of Iqaluit to provide the NWB with a detailed contingency plan six months prior to the current site reaching capacity if it becomes apparent that the new solid waste management facility will not be ready on time. The contingency plan should be subject to review and approval by the appropriate regulatory agencies.**

## 3. Operations at the Current Site

The practice of open garbage fires is still source of extreme aggravation for the public. This past summer, EPS received numerous complaints from the public about garbage fire smoke drifting into the town. EPS issued a written warning (Sept 7, 2000) to the Municipality in response to these public complaints.

EPS recognizes that under the circumstances, the Municipality has no choice but to open burn garbage in order to buy enough time to plan and construct the long-term solid waste management facility. We strongly believe, however, that this present situation could have been avoided through better planning.

**EPS recommends that the water licence direct the Municipality of Iqaluit to be extremely diligent in monitoring short-term and long-term weather conditions and wind patterns before igniting garbage fires. If conditions become such that smoke drifts into the community, steps should be taken – immediately - to extinguish the fire.**

EPS disagrees with the Municipality of Iqaluit’s statement that open garbage fires achieve an 85% volume reduction. This is only 5% below that which is achievable from the most state-of-the-art-incinerators, which is improbable.

**EPS, like other regulatory agencies and especially the public, would like to see an end to the practice of garbage fires as soon as possible. EPS supports the development of a new facility. EPS recommends that stringent timelines be included in the water licence, together with realistic delivery dates for completion of the new facility.**

The Municipality of Iqaluit is to be commended for recently instituting a segregation rule at the landfill.

### 3a. Hazardous Waste

EPS would like to repeat a suggestion which was proffered at the last NWB meetings in 1999 and which we believe is important enough to repeat a second time: The population of Iqaluit is growing in leaps and bounds and as a result, we can expect a corresponding increase in industrial activities. This in turn, results in more exotic materials and chemicals being deposited into the sewage treatment and solid waste disposal facilities. **The Municipality of Iqaluit is strongly advised to ensure, before issuing business licences, that they determine the characteristics of the waste that will be generated and how such wastes will impact the Municipality's waste management systems, the environment and the human population. It is in the best interests of the Municipality to ensure, prior to the issuance of a licence, that the proponent has a suitable hazardous waste management plan in place. Under certain circumstances, the proponent should be prepared to assume, or share with the Municipality, the cost for managing any wastes generated by their business. Proper Management of any wastes – especially hazardous waste - is part of the cost of doing business.**

A more comprehensive system must be established for the management of household hazardous wastes. The Municipality appears to have made an honest attempt at addressing this problem, however, more emphasis should be placed on public education and on training municipal employees to safely handle and dispose of hazardous waste and hazardous materials. The current system that the Municipality has in place appears to be geared for long-term storage rather than actual disposal and/or treatment. This current operation should be further developed into a proper management, treatment and disposal system.

EPS is ready and willing to assist the Municipality of Iqaluit in this regard.

### 3b. Recycling

EPS encourages the Municipality of Iqaluit to investigate re-cycling options as a means of reducing the volume of solid waste. The Iqaluit Solid Waste Management Committee will presumably pursue this option in earnest.

The Municipality of Iqaluit is strongly advised to consider the idea of screening business licences to ensure that the applicant has in place, a recycling and/or a waste management plan that will prevent the proponent from contributing significantly to the accumulation of locally-manufactured waste packaging and other bulk material.

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### 3c. Disposal of Fuel-Contaminated Materials

Fuel spills are a regular and inevitable occurrence in most Nunavut communities. Unfortunately, once the spill has been cleaned up, there often remains a considerable amount of fuel-soaked soil and/or snow. Under the present circumstances, a private homeowner could

go bankrupt in trying to manage his/her fuel-contaminated soil, as there are no facilities in this community where the material can be brought for treatment and disposal. EPS suggests that the Municipality of Iqaluit consider developing and maintaining a dedicated area for land farming and/or incinerating fuel-soaked soil and snow. The entire burden need not be placed on the Municipality but could be a joint effort between the federal and territorial governments, the private sector, and the Municipality. A user-pay system would also help to offset operating costs. Several years ago, our department developed simple generic plans for just such a facility. We will be happy to pass these along to the Municipality if they are interested.

#### 4. Closure of Waste Disposal Sites

EPS agrees that the old solid waste sites in question must be decommissioned and remediated, however, we will reserve comment on this until such time as the Municipality of Iqaluit submits a detailed plan for review. It should be noted that any acceptance of such a plan should be subject to the approval of the appropriate regulatory agencies.

#### Suggested Time Span for the Proposed the Water Licence

The Municipality of Iqaluit has requested that their water licence be renewed for a five-year term. **EPS recommends that the water licence be renewed for a 2 year term for the simple reason that several issues remain unresolved:**

1. Sewage treatment system: the plan is in place but regrettably the system is not yet up and running and there seems to be some evidence to suggest that there are inherent problems with the system itself.
2. Solid waste management facility: the Municipality has tentatively chosen the incinerator option, but no plans have been developed, nor is this facility expected to be in operation for at least one year.
3. Abandonment and restoration plans for the existing sites have yet to be developed.
4. The long-term water supply is still in the pre-planning stages.

EPS believes that the public interest would be better served by issuing a short-term licence until such time as all of the outstanding issues have been resolved and when the state of those parts of the Municipal infrastructure that are governed by the water licence, have been stabilized.

#### General Comments

The Municipality of Iqaluit appears to be operating under tremendous pressure. Parts of its infrastructure are in disarray. It seems that the Municipality has not yet caught up with its new status as a capital city. It would be convenient to assign the blame to the Municipality for this situation, however, this would not be entirely fair. All three levels of government should have anticipated, when Iqaluit was designated as the capital of Nunavut, that there

would be a large influx of people over a very short period of time, which in turn, would result in significant added stresses to the antiquated solid waste management and sewage treatment systems that were already at the breaking point prior to April 1, 1999.

A lot of energy and attention has been devoted to the construction of office buildings and other edifices to our new territory, yet regrettably, it appears that few people have considered the less glamorous but equally - if not more - important matters pertaining to waste management. Several centuries ago, many European cities made the same mistakes in establishing their priorities. The history books are rife with details of the sorry results.

It is time to start focusing on the more mundane and sometimes odious matters relating the operation of a community: that is, the proper management of water, sewage and solid waste. It is incumbent upon all levels of government to take these issues into serious consideration, and allocate resources accordingly.

Finally, EPS is pleased note that, over the past few years, there has been a marked improvement in the attitude and practices of Iqaluit's Senior Municipal Officials; most of whom are new to the job. We are hopeful that we will be able to work with them and with the newly-elected Mayor and Town Council, towards the common goal of a cleaner, healthier community.

Thanks to the members and staff of the Nunavut Water Board for providing an opportunity to comment on this very important matter.

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