

**Application for Renewal of the Municipality of Iqaluit's Water Licence
NWB File Number: NWB31QA9900**

**WRITTEN EVIDENCE OF
THE MUNICIPALITY OF IQALUIT**

The Municipality of Iqaluit has applied to the Nunavut Water Board for a renewal of Water Licence No. NWB31QA9900 for a five year term commencing January 1, 2001. The Application, if granted, would permit the use of water and the disposal of waste into water for municipal purposes.

At a pre-hearing meeting held in Iqaluit on September 25, 2000, the Applicant and the Interveners reached a consensus on issues for the hearing, subject to any Intervener's right to raise additional issues after review of the Municipality's submissions. The following issues were provided to NWB staff at the conclusion of the hearing:

Use of Water for Municipal Purposes

- long-term water supply
- integrity and stability of the Lake Geraldine dam

Deposit of Waste into Water

- status of new sewage treatment plant
- disposal of sludge produced by the new sewage treatment plant
- integrity and stability of the sewage lagoon dykes
- closure, abandonment and restoration of lagoon
- status of new solid waste disposal facilities
- waste disposal contingency plan during the transition from the old site to a new facility
- operations at current waste disposal site as they relate to the deposit of waste into water
- closure of old waste disposal sites for which the Municipality has responsibility

This written evidence addresses each of these issues and supplements the information found in the Application and Supplementary Questionnaire. It will form the basis of oral evidence by municipal staff at the hearing scheduled for November 22, 23 and 24, 2000.

USE OF WATER FOR MUNICIPAL PURPOSES

1. Long Term Supply of Water for the Municipality of Iqaluit

In the year 2000, water use is averaging approximately 1.1 million litres per day in Iqaluit. As the population grows, water use is expected to grow proportionately. The Municipality recognizes that, while it may be possible to take more water, Lake Geraldine has finite capacity. It is currently planning on the basis that new long-term sources of water will be needed within the next five years.

Condition C7 in the December 31, 1999 licence required submission of a detailed hydrological assessment on the Lake Geraldine watershed. It has not been completed within the time period specified by the Board. However, the Municipality of Iqaluit plans to retain a consultant next year to study and make recommendations on its long-term water supply options. As a first step it is expected that the consultant will assess the capabilities of Lake Geraldine. If a study indicates that there is inadequate water supply from Lake Geraldine to meet Iqaluit's needs, then alternative water sources will be researched. If Lake Geraldine is adequate, then an additional storage facility at the current water treatment plant will be planned. The current schedule is to retain the consultant by March 2001.

The Municipality is committed to planning for new long-term water supplies. If it fails to do so, water will become a significant constraint to the development of Iqaluit.

Should the Board feel that it is necessary to impose a new condition regarding water supplies, the Municipality recommends that any such condition require it to submit a report on long-term water supply options by December 31, 2001.

2. Integrity of the Lake Geraldine Dam

The integrity of the Lake Geraldine Dam was raised as an issue by DIAND at the 1999 hearing. The Municipality did not address that issue in its submissions to the Board at or after the hearing. In light of Condition C5, it regrets that it did not do so.

The level of Lake Geraldine Dam was raised in 1997 with improvements to the concrete dam and the earthen berms. Since that time the work has been inspected several times by the consulting engineers for this project. Final inspections were completed in July 2000. No problems with the alterations to the dam, or the dam itself, were noted. Superficial cracks on the surface of the concrete wall will be grouted.

A risk assessment has been commissioned by the Government of Nunavut to evaluate the risk involved in building a hospital at the bottom of the hill beneath the dam. The goal of the study is to prove whether or not a new hospital would be damaged if the dam failed. The overall condition of the dam is being considered as part of this study.

In light of the work that has recently taken place on the dam, and the risk assessment study currently underway, the Municipality of Iqaluit respectfully requests that Conditions C5 and C6 be deleted from any new Water Licence that the Board may issue.

DEPOSIT OF WASTE INTO WATER – SEWAGE TREATMENT

1. Status of New Sewage Treatment Plant

The construction of the Iqaluit Wastewater Reclamation Plant reached 90% completion in February 2000. During the hydrostatic test, leaks were noticed in the tank walls. As such, work was stopped on the project and a structural investigation completed. This investigation revealed significant structural flaws in the walls of the tanks. The Municipality is currently working to repair the tanks before completing construction of the plant. It is expected that the repairs will be completed by the end of December 2000. Without further delay, the plant is expected to be operational in the Spring of 2001.

In its 1999 Decision, the Board imposed Condition D1, which required that sewage be directed to the new plant no later than February 15, 2000. The Municipality has a significant investment in the plant and wishes to see it operational as soon as possible. However, nothing is gained by imposing artificial deadlines over which a Licensee has little effective control. Should the Board feel that it is necessary to impose a new condition regarding commissioning of the new Sewage Treatment Plant, the Municipality recommends that any such condition require simply that it be done as soon as reasonably possible.

2. Disposal of Sewage Treatment Plant Sludge

Condition D9 in the December 1999 licence required the submission of a plan for the interim treatment and disposal of sludge generated by the new sewage treatment plant. As the plant is not yet operational, the disposal of sludge has yet to become an issue for the Town.

The current plan is that the sludge from the treatment plant will be taken to the current dump, placed on a HDPE liner, covered, and composted. Regular tests will be undertaken to ensure that the material is not dangerous to workers or to the environment. Once the material is in a suitable form, it is to be used as cover at the landfill or on the tundra. As a long-term measure, it is hoped that the new incinerator will be able to incinerate the sludge.

Prior to the commissioning of the plant the Municipality is committed to preparing a more detailed plan for the disposal of sludge both in the short and long term. Should the Board feel that it is necessary to impose a new condition regarding the treatment and disposal of sludge, the Municipality recommends that any such condition require it to submit a report prior to the commissioning of the sewage treatment plant.

3. Integrity of Lagoon Dykes

Condition D6 and D7 required the Municipality to have the sewage lagoon dykes inspected by an engineer. The Municipality has not commissioned such a study and believes that it is not necessary to investigate the integrity of the dykes.

The dyke at the west end of the lagoon facility failed in 1993. Following this event the dykes were reengineered and rebuilt. The dykes are approximately double the size of the dykes that failed and a spillway was constructed to ensure that the risk of a catastrophic failure was greatly reduced.

There are no signs of problems with the dykes at the sewage lagoon. Freeboard limits are maintained by staff through inspections on a daily basis. Only once in the last year has the lagoon come close to breaching the spillway. The level of the dam was quickly lowered by opening the runoff valve.

The lagoon will be closed soon after the sewage treatment plan is commissioned. The Municipality of Iqaluit believes that it would be a better use of time and money preparing the closure plans than investigating the integrity of the dykes.

4. Closure, Abandonment and Restoration of the Sewage Lagoon

The planned closure, abandonment and restoration of the sewage lagoon is scheduled to take place after the commissioning of the sewage treatment plant.

The preliminary plan for the closure of the sewage lagoon is to drain the lagoon through the treatment plant. The sewage would be treated as per the specifications of the treatment plant. The sludge lining the lagoon would likely be allowed to dry and then removed in an appropriate fashion. The lagoon would be left empty as a back up for the treatment plant.

A formal abandonment and restoration plan will be prepared and submitted to the Board within six months of the commissioning of the new sewage treatment plant, in accordance with the requirements of Part I of the 1999 Water Licence.

DEPOSIT OF WASTE INTO WATER – SOLID WASTE

1. Status of New Solid Waste Disposal Facilities

The Solid Waste Management Plan has been completed. The Water Board and all parties have now been provided with copies.

The recommendation of the consultants to construct an incinerator and a small landfill for ash and metal waste was accepted and approved by Council in September. The Municipality is currently doing an assessment of proposed solid waste sites. Design of facilities will be undertaken early next year for construction in the summer of 2001.

The assessment of sites and technologies is being undertaken under the guidance of the Solid Waste Management Steering Committee, a subcommittee of Council. That Committee is also examining waste reduction and diversion programs.

2. Contingency Plan

As the current dump is expected to be full by October 2001, the new incinerator facility may not be ready in time to service the Town. The Municipality is currently preparing a contingency plan. This plan is considered as a last resort.

The contingency plan will likely involve earthwork at the current dump site. Expansion of the site towards the old metal dump at the East end of the facility will be examined as well as the construction of berms to increase the height of the dump. The intent of such a plan would be to restrict the disturbance of land to present dump sites. No change in operations would be part of this plan.

3. Operations at Current Site

The current method of solid waste disposal in Iqaluit has been used on a continuous basis since the military presence of the late 1940's. This year the Municipality, through the compilation of a Solid Waste Management Plan, has taken its first step toward adopting a new disposal method.

Town Council has made it a priority to consider all issues involved in instituting a new waste disposal process. Unfortunately, the cessation of burning is not an option right now. A volume reduction of 85% is achieved through burning. Without this reduction the current dump would be full in just a few months time.

Allowing garbage to collect at the present site without burning would result in a much worse health hazard. The accumulation of garbage would be a danger to the planes at the nearby airport due to the congregation of birds at the site. Land filling at the dump would be a long-term environmental concern as the site is not a modern landfill with earthworks

suitable for a food waste landfill. The long-term generation of leachate would detrimentally affect ground water in the area.

Municipal staff have improved the management of the dump considerably in the last two years. Staff burn Tuesday through Friday. No material is added to the burn after 3:30 p.m. Wind direction is always taken into consideration when burning. Unpredictable weather in Iqaluit makes staff's task a difficult one. Occasionally smoke is unavoidably blown into Town due to sudden shifts in wind direction. When this occurs, it is not possible to simply stop the burn.

The Municipality has recently undertaken a variety of repairs and clean up at the dump site.

4. Closure of Waste Disposal Sites

The Municipality is responsible for the closure of three waste sites in the community. The Apex dump and the two metal waste sites situated east of the current dump have been identified for closure. The metal dump in the West 40 area of town is the responsibility of Transport Canada and is slated for clean up in the summer of 2001. The Municipality believes the metal dump in the North 40 area of town to be the responsibility of the Federal Government. The Town will be lobbying the government to close that site.

The preliminary plans for the closure of the municipal sites include the removal of all above ground waste from the area and use of earthworks to berm and cover the remaining site. Schedule for clean up will depend upon available funds.