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March 21, 2003

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## **Clyde River Water Licence Application**

On behalf of Indian and Northern Affairs Canada (INAC), I am pleased to submit the following comments on the water licence application for the Municipality of Clyde River.

### **1. Introduction**

This submission, on the application for a municipal water licence by the Municipality of Clyde River, is submitted on behalf of the Water Resources division of INAC.

This submission will be based on the water licence application received by the Nunavut Water Board (NWB) on February 17, 2003. Past inspection reports have also been taken into consideration.

### **2. Conditions Applying to Water Use**

The Municipality currently receives water from Water Source Lake, located approximately 3 km northwest of the community. Water Source Lake has a truck fill station. The water receives a chlorine treatment and is then distributed to the community by truck. Water consumption will reach 32,086 m<sup>3</sup>/year in 2003. By 2008, consumption is expected to reach 36,638 m<sup>3</sup>/year, while a consumption rate of 40,794 m<sup>3</sup>/year is expected by 2012.

As requested by the Municipality, assuming a 5 year water licence (2003 to 2008), INAC recommends that the annual volume of water pumped from Water Source Lake should not exceed 37,000 m<sup>3</sup>/year for the term of the licence.

SNP station 1 should be designated as “raw water supply from Water Source Lake,”

to be measured at the truck fill point. It should be used to measure the monthly quantity of water pumped from Water Source Lake.

INAC also recommends the installation of warning signs along Water Source Lake indicating that the lake is the source of the Municipality's drinking water.

### **3. Conditions Applying to Waste Disposal**

Sewage is trucked from the residential holding tanks to the sewage disposal area located approximately 1.5 km west of the Municipality. The lagoon is a single-cell lagoon with a capacity of 19,500 m<sup>3</sup>. However, the amount of sewage generated by the community is 31,252 m<sup>3</sup>/year in 2002, and will increase to just under 37,000 m<sup>3</sup>/year by 2008.

Since the sewage lagoon capacity is significantly less than the amount of sewage generated in a year, it is likely that the sewage lagoon must be discharged multiple times during the year to avoid overflowing. Alternatively, perhaps the sewage lagoon continuously discharges during the warmer months. Either way, this would limit the retention time and treatment provided by the lagoon. Recent inspection reports have also indicated that the capacity of the lagoon to hold the sewage is near its limit. INAC therefore recommends that the sewage treatment facilities of the Municipality be upgraded so as to better meet the current and future needs of the community.

INAC recommends that SNP station 2 be designated as "raw sewage from the pumpout truck." Station 2 should be used for the monthly measure of sewage generated by the Municipality.

Also, SNP station 3 should read as "runoff below the sewage disposal area prior to discharge into the marine environment." This should include sampling of the sewage effluent prior to reaching the marine environment in the area of greatest flow. The sewage effluent at SNP station 3 should be sampled monthly during periods of flow for the following parameters and limitations:

|                               |                   |
|-------------------------------|-------------------|
| <b>Total Suspended Solids</b> | 180 mg/L          |
| <b>BOD</b>                    | 120 mg/L          |
| <b>Fecal Coliform</b>         | 10,000 CFU/100 mL |
| <b>pH</b>                     | 6 to 9            |
| <b>Oil and Grease</b>         | no visible sheen  |
| <b>Ammonia</b>                | monitor only      |

Warning signs should be posted along the flow path of the sewage effluent.

The Municipality of Clyde River's solid waste management site is located adjacent to the sewage lagoon. Although the solid waste site has a fence, it is not entirely surrounded

and wind blown debris has managed to leave the site. The Municipality practices on site burning of municipal waste. Although there is apparently a separation of the solid waste site into an area for bulky waste and another for household waste, the 2002 inspection report indicates that the waste aren't properly segregated and can be found mixed in both areas. Likewise, hazardous waste such as batteries and drummed waste oil are scattered throughout both areas of the dump site. There is also no method for the proper storage of these hazardous wastes.

INAC recommends that a proper fence be installed around the perimeter of the solid waste disposal area.

INAC recommends that hazardous waste be segregated and separated from the normal waste and stored within an appropriate method of containment and/or disposal. This should apply both to future hazardous waste generated by the community, as well as to the hazardous waste currently scattered throughout the facility.

INAC also recommends that SNP station 4 read as "runoff below the solid waste disposal area and prior to discharge into the bay." Monitoring should take place at station 4 on a monthly basis during periods of flow. The parameters to be monitored should not be too onerous for the Municipality.

#### **4. Conditions Applying to Abandonment and Restoration**

The Municipality does not plan to abandon any of their current waste treatment facilities. Should the recommended upgrade of the sewage treatment facility involve the abandonment of the current sewage lagoon, an Abandonment and Restoration Plan should be submitted to the NWB prior to abandoning that facility.

#### **5. Conditions Applying to Operation and Maintenance**

INAC recommends a requirement for an Operation and Maintenance (O&M) Plan for the waste disposal facilities be submitted to the NWB for approval within a suitable period after the issuance of the licence. In particular, the O&M Plan for the waste disposal facilities of Clyde River should most definitely include - but not be limited to - provisions for the segregation and storage/disposal of hazardous waste such as petroleum or batteries.

#### **6. Recommended Terms of Licence**

INAC recommends a 5 year term to allow enough time for the Municipality to establish a consistent compliance record.

Finally, INAC recommends allowing all interested parties to review and comment on the draft licence prior to it being issued. This will allow the Municipality of Clyde River to express any reservations they may have at this point. Hopefully, any reservations can be resolved early in the process and minimize any non-compliance issues in the future.

If you have any concerns or questions, please feel free to contact me.

Sincerely,

***Original Signed By: Michael Roy***

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