



Indian and Northern
Affairs Canada

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Water Resources Division
Nunavut Regional Office
P.O. Box 100
Iqaluit, NU X0A 0H0

Our File: / CIDMS
3BM-CAP0207
191394

January 8, 2008

Phyllis Beaulieu
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0A 1J0

Dear Ms. Beaulieu:

**Refer: 3BM-CAP0207 Final Submissions for the Hamlet of Cape Dorset Type B
Water License Amendment Application**

Indian and Northern Affairs Canada (INAC) reviewed the Hamlet of Cape Dorset Type B Water License Amendment Application submitted by the Government of Nunavut for the Hamlet of Cape Dorset to the Nunavut Water Board (NWB). The following advice has been provided pursuant to INAC's mandated responsibilities for the enforcement of the Nunavut Waters and Nunavut Surface Rights Tribunal Act (NW&NSRT), the Arctic Waters Pollution Prevention Act (AWPPA) and the Department of Indian Affairs and Northern Development Act (DIAND Act). In conducting our review, INAC referred to the documents on the NWB's FTP-site under 3BM-CAP. An application for the renewal of the Hamlet's municipal water licence for the existing facilities was also filed by the Hamlet of Cape Dorset and INAC provided comments to the Nunavut Water Board on December 13, 2007.

The application to amend the water licence was filed by the Hamlet of Cape Dorset but technical support was provided by the Community and Government Services (CGS) of the Government of Nunavut. CGS contracted the design and construction of the facility to Dillon Consultant's Ltd. and sub-consultants. This application is for an amendment for the construction of a sewage lagoon at P Lake to replace the three-tier lagoon site and the old lagoon, also referred to as the emergency lagoon. The two existing lagoons systems have either failed in the past, causing leaking from the cells and untreated wastewater entering Telik Inlet, including an issued Inspector's Direction under the Fisheries Act by Environment Canada, or have insufficient to contain annually generated wastewater volume with sufficient holding time needed (winter storage) to achieve compliance.

Since the original request for the amendment for the sewage lagoon at P Lake in 2005, the Nunavut Water Board, CGS and other interveners have participated in extensive correspondence and meetings, including a site visit. However, issues raised by the

Board staff and the interveners have not been resolved, as well as construction of the sewage lagoon was undertaken in the summer of 2007. At the prehearing, CGS agreed to submit as-built information to the Board by than November 15, 2008.

The Nunavut Water Board decided to hold a Public Hearing on the application so interveners and hamlet residents could have a better understanding of the outstanding issues, the final design and construction of the lagoon and probable treatment levels to be achieved.

The technical issues that still remain and should be satisfied at the public hearing include:

1. Ownership of the Lagoon, normally the Hamlet is the owner and operator of their wastewater treatment facilities, however, the Hamlet staff have indicate some unwillingness to take ownership of the lagoon;
2. Design criteria, including whether additional treatment is to be considered by Pi Lake, annual volumes into and out of the lagoon, upstream flow rates (overland flow), and permafrost encouragement
3. Geothermal Assessment of the berms and floor of the lagoon; which further relates to :
 - a. Seepage, both through the berms and beneath the lagoon;
 - b. Stability Assessment of the berms.
4. Identification of Geotechnical Engineer of Record and provision of As-built drawings, especially for the berms, liner, parallel canal;
5. Operation and Maintenance of the lagoon, including:
 - a. Discharge Criteria such as decant rates and decant times;
 - b. Sludge Management;
 - c. Monitoring.
6. Use of current treatments system as contingency measures; and
7. Abandonment and Reclamation plans.

Although the applicant and its technical support team has not provide the additional information, INAC recommends that the Board approve the amendment, but suggests that the Board include in the licence the following requirements:

- to confirm, in writing, to the Board as to the operator and owner of the lagoon, including responsibility for operation and maintenance;
- to monitor and/or estimate seepage into and out of the lagoon and report in their annual report;
- to install thermistors in the berms and downstream of the berms to monitor ground temperatures and verify the geo-thermal analysis, and report to the Board annually for 3 years;
- to confirm with Environment Canada and the INAC inspector the compliance point for lagoon releases and to inform the Board;
- to provide “as built” drawings within 90 days of issuance of the amendment; and

- to provide an wastewater operation plan to the Board within 90 days of the amendment, including a long-term sludge management and a discharge criteria.

INAC is also concerned about the level of treatment that will be attained in the lagoon and discharge criteria. Therefore, INAC recommends that the Board suggests that the applicant consider the use of Pi Lake and downstream wetlands as additional treatment for lagoon releases, including slow releases over the growing season. However, if the wetlands are to be used for additional treatment, Hamlet and/or CGS would need to apply, with adequate designs, to amend the Cape Dorset licence for approval of the wetland treatment.

INAC will attend and participate in the public hearing to be held by the Nunavut Water Board on January 23 and 24, 2008 in Cape Dorset.

Sincerely,

Jim Rogers,
Manager, Water Resources