



Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

March 24, 2009

Re: 3BM-CAP0207/ 3BM-CAP0810 – Hamlet of Cape Dorset – Submission of 2008 Annual Report

Indian and Northern Affairs Canada (INAC) has completed a review of the above referenced report. The Hamlet of Cape Dorset submitted the Annual Report on January 26, 2009.

The NWB distributed the Annual Report on February 12, 2009 for information purposes only.

Our File #: 9545-3-3CAPG
Doc. CIDMS #:316391

Technical Review Memorandum

To: Phyllis Beaulieu, Manager of Licensing - Nunavut Water Board
Bernie MacIsaac, Manager, Field Operations, Indian and Northern Affairs Canada

From: Tanya Trenholm, Pollution Policy Specialist - Indian and Northern Affairs Canada – Water Resources Division

Background Information:

The Hamlet of Cape Dorset submitted an Annual Report for the 2008 calendar year, as per Part B of licence 3BM-CAP0810.

The Hamlet was issued the licence on March 7, 2008. Previously, the Hamlet was operating pursuant to the conditions of licence 3BM-CAP0207.

As a result of a 2007 inspection by an INAC Water Resources Officer, an Inspectors Direction was issued on September 25, 2007 (with respect to the previous license referenced above). The Direction required the Hamlet to;

- Maintain the appropriate signage, and Surveillance Network Program (SNP)
- Develop a Quality Assurance / Quality Control Plan
- Develop a Solid Waste Disposal Operations and Maintenance Manual
- Submit an Abandonment and Restoration Plan, if the Hamlet chooses to abandon the 3 tier lagoon system (the old system).

Further, a 2008 inspection by an INAC Water Resources Officer revealed several significant issues with respect to the waste disposal system. Specifically, the



structural integrity of the new lagoon (2007 Sewage Disposal Facility) and the access road to the new lagoon were of concern. These issues included;

- Ground water entering and pooling within the new lagoon, in 3 places
- A flow exiting the berm from the East side and flowing into the lake adjacent to the new lagoon.
- Water contained within the access hatch, at a depth that was covering the valve controls to the new lagoon for decant.
- The access road was washed out in places
- Water covered the access road at places where culverts had been installed.
- Flooding of the lower borrow site / sand area as a result of water being channelled to that area by way of the installed culverts.

The Inspector also noted that the Emergency Lagoon was at capacity. The “3 tier lagoon is leaching” and Cell #3 (of the three tier lagoon) has “failed in an area that threatens the integrity of the entire third cell”.

A review of the annual report revealed that the Hamlet responded by repairing Cell #3 (raised the berm 2 feet to prevent cell collapse) as per the inspectors verbal direction (2008).

Monitoring Program:

The Hamlet stated that a sampling program was not undertaken this past year, citing “sewage seeping into the ground at the bottom of cell 3 caused the 10 day retention time not to be met”.

After reviewing the licence, there are no conditions concerning a 10 day retention time. Notwithstanding, the Hamlet must comply with all conditions of the licence, including those relating to the Monitoring Program, such as Part D, Item 4, and Part H, items 1, 2 and 3. These conditions require the proponent to undertake sampling of the effluent discharge from the old Sewage Disposal Facilities and the Emergency Sewage Disposal Facility and specify specific parameters not to be exceeded as well as sampling frequencies.

Unauthorized Discharge:

Ice was removed from cell 1 and 2 from January – May 2008 to increase capacity. An estimate of the volume of ice removed and the location where the ice was disposed of was not reported by the Hamlet. The “ice” is likely contaminated with sewage and this disposal activity is not approved by the current water license. The Hamlet should note that the unapproved discharge of untreated effluent directly or indirectly into waters in Nunavut is a violation of Sec. 12 NWNSRTA. The Hamlet should consider applying for an amendment to the current license to allow for this activity. The other option is for the Hamlet to ensure that the ice is not contaminated with sewage, ie., confirmatory sampling prior to removal.



Required Plans, related to the verification of the structural integrity of the New Lagoon:

As per condition Part H, Item 6, the Hamlet installed thermistors in the fall of 2008.

The Hamlet was required to submit a Plan for the ongoing collection of ground temperatures within each berm structure, and include data collected from this Plan in the Annual Report. No such information was provided in the 2008 Annual Report. The following is a list of other outstanding plans related to the verification of the structural integrity of the new lagoon system.

Part H, Item 6	The Licensee shall install thermistors for the purpose of validating assumptions made in the geothermal analyses for the 2007 Sewage Disposal Facilities	
Part H, Item 7	Results of thermistor monitoring	Prior to commissioning of the 2007 sewage disposal facility.
Part H, Item 9	Temperature Monitoring Program and Implementation Plan	Within 90 days of issuance to the Licence
Part H, item 12	Installation of groundwater monitoring wells at the 2007 SDF, and obtain at least one monitoring season of data	Monitoring to be completed prior to the expiry of the Licence (2010)
Part H, item 14	Installation of groundwater monitoring wells at the SWDF and obtain at least one monitoring season	Monitoring to be completed prior to the expiry of the licence (March 2010)
Part H, Item 24	The Licensee shall include all data and information required by the 'Monitoring Program' in the Annual Report.	Annually



Expiration of Licence:

The following is a list of other outstanding plans and reports as required by the existing licence. None of these reports were found on the NWB ftp site.

Condition of Licence	Type of Plan	Due
Part B, Item 6	Plan for full compliance with the conditions of the existing licence	Submit for approval of Board within the lesser of 90 days, or with the filing of any application in relation to the licence.
Part E, item 5	Summary Report re: as-built plans and record drawings of the 2007 Sewage Disposal Facility (SDF)	Within 60 days of issuance of the licence
Part F, item 1	Revised O&M Plan for the 2007 Sewage Disposal Facilities	Within 90 days of issuance of the Licence
Part F, item 2	O&M Plan for the Water Supply Facilities and the Solid Waste Disposal Facilities (SWDF)	Within 90 days of issuance of the Licence
Part G, item 1	A&R Plan for the 2001 Sewage Disposal Facility and Emergency Sewage Disposal Facility.	Within 90 days of issuance of this Licence
Part G, item 2	Conceptual A&R Plan for the Hamlet of Cape Dorset Water and Waste Disposal Facilities and all associated structures not covered under Part G, item 1	Within 6 months of issuance of this licence.
Part H, Item 20	QA/QC Plan	Within 90 days of issuance of the licence.

Actions

This review will be forwarded to the field operations division of Indian and Northern Affairs for follow-up. The results of this review should be forwarded to the Inspector for consideration in the 2009 Site Inspection.

Please feel free to contact me at your convenience should you wish to further discuss any part of this submission to the Board. I can be reached at 867-975-4566 or via email, tanya.trenholm@inac.gc.ca.

Sincerely,

Tanya Trenholm



Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

Pollution Policy Specialist
Indian and Northern Affairs Canada
Nunavut Regional Office – Water Resources Division

Cc. Kevin Buck, Manager, Water Resources Division – Indian and Northern
Affairs Canada;