



Inspection Report

License #: 3BM-CAP

Inspector: A. Keim

CIDMS # 364512

Client	Municipality of Cape Dorset		
Mailing Address	Box 30		
Inspection site location	Cape Dorset , Nunavut		
Contact name	John Ivey	Title	SAO
Last inspection date	August 16, 2008		
Inspection start date	July 24, 2009		
Region	Qikiqtani		



Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

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Submitted Via E-Mail
Our File: 3BM-CAP0810
Your File: _____
CIDM # 364512

November 2, 2009

John Ivey
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Cape Dorset, Nunavut
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RE: July 24, 2009 Municipal Water Licence 3BM-CAP0810

The following inspection report was generated on an inspection conducted to determine compliance with the terms and conditions of the water license issued to the Municipality of Cape Dorset by the Nunavut Water Board (NWB).

The report references the applicable parts of the current Water License (3BM-CAP0810) and the findings observed under each of those Parts. During the writing of this report a review was undertaken of the documents located on the Nunavut Water Board's FTP site.

The Inspector would like to thank John Ivey Senior Administrative officer for taking the time to meet during the inspection period and both Mike Hayward and Steve Weedmark for acting as guides and provide input and comments into the ongoing issues with the Sewage lagoons systems in place within the community.

Previous findings:

2002 – Direction issued by Environment Canada

2004 – Direction issued by Environment Canada

2007 – Direction issued by Indian and Northern Affairs Canada

2008 – Direction recommended by Inspector

2009 – Recommendation to Issue a Direction and require a Compliance Plan submission

Issues identified by the Inspector during the 2008 Inspection were as follows;

Issues with a known or anticipated human health impacts;

- Sewage treatment in the community continues to be below an acceptable standard. (License criteria)
- Failure to collect and submit for analysis the samples required under the Monitoring Program.
- Failure to complete required works as necessary to ensure commissioning of the new lagoon system is undertaken before the period of the next inspection.
- Undertake such works as are necessary to prevent the failure of the three tier lagoon system.

Issues where there is a known or anticipated environmental impairment;

- Failure to undertake such works so to prevent, mitigate and remediate such lands and waters as were effected by the run off and erosion noted on the roadway to the new lagoon.
- Failure to undertake such work as required to prevent the failure and erosion of the new lagoon system into lakes and waters downstream of the new lagoon system.



Issues where there is a known or suspected violation of a requirement of the Water License;

- Failure to implement the requirements listed under the Monitoring Program. (Part H – all parts that apply currently and not subject to the commissioning of the new lagoon (2007)).
- Failure to submit a Summary Report including revised as-built plans for the New Lagoon (2007) (Part E (5)).
- Failure to develop and submit an *Operation and Maintenance Manual, Sewage Treatment System, Hamlet of Cape Dorset, November 7, 2007* subject to the requirements of Schedule 2. (Part F (1))
- Failure to develop and submit an Operation and Maintenance Manual for the Water Supply Facilities and the Solid Waste Disposal Facilities.(Part F(2))
- Failure to develop and submit to the Nunavut Water Board a Compliance Plan. (Part B (6))
- Failure to install as required Thermistors and ground monitoring wells as per the Monitoring Plan. (Part H)

During the period of the 2009 Inspection the following issues were identified;

- The Licensee has filed the required 2008 Annual report. It is unclear if reports were filed for the years 2003, 2005, 2006, and 2007.
 - The 2008 report was found to be deficient and failed to include the requisite information as outlined in Part B Item 1 (i through viii).
- Work had been undertaken to address the failure and subsidence issues with Cell 3 of the 3 tier lagoon. This work was found to be in place during the period of inspection.
- Signage has been installed at locations around the three tier lagoon system.
- A lack of overall capacity in the 3-tier lagoon system has previously resulted in a failure to meet specific metals criteria for discharge as evidenced by observations made during the Inspection and the results of sampling conducted during the Inspection of July 24, 2009.

Parameter:	Result	NWTELS ¹ Criteria
Arsenic	55.9 µg/L	50 µg/L
Iron	2000 µg/L	300 µg/L
Manganese	2360 µg/L	50 µg/L

- Work completed in 2007 to address run off and leaching of ground water around the waste metals area was completed as required.
- Hazardous wastes are to be properly consolidated, packaged and transported off site to an approved disposal area.
- The Municipal Waste Management Area requires fencing to be installed to prevent transport of wastes off site and the deposit of hazardous wastes from the community.

With specific reference to the 2007 lagoon construction and the requirements contained within Part H and item 25 of the current license the Inspector noted as follows;

- The Inspector was not provided advance notice of when the required thermistors were to be installed and was only informed that the Thermistors had been installed after the fact. During the period of inspection each of the four thermistors was inspected. Three of four were noted to have wires not connected to the body of the data logger and appeared to have been vandalized.
- The Government of Nunavut submitted on September 4th, 2009 a report containing data collected during the period of December 15th 2008 to May 15th 2009. From these four months of data the Department of Community and Government Services, Government of Nunavut has attempted to validate the assumptions of the geothermal analysis employed in the design and construction phase

¹ NWT Limits for Effluent Parameters for specific Discharges Criteria



of the East and West berms of the 2007 lagoon. A summary review of the information provided is as follows;

- The License (3BC-CAP0810) Part H item 6 required the Thermistors to be set at a depth of between 20 to 25 meters. Information provided by the GN reflects the depths to be at 18 meters only. This may not be sufficient and the Inspector requires clarification from a qualified engineer, licensed to work in Nunavut on why this depth was chosen over that required in the license.
- The amount of data submitted (four incomplete months) is in the opinion of the Inspector insufficient to accurately validate the assumptions of the Geothermal analysis employed in the design and construction of the East and West berms of the 2007 lagoon.
- The time of year that the data was collected (December through April/ May) are the coldest months of the year. It would be, in the opinion of the Inspector, unacceptable to suggest that this time period adequately reflects information needed to model summer freeze back to validate the assumptions of the geothermal analysis employed in the design and construction of the East and West berms of the 2007 lagoon.

During the Inspection of July 24th 2009 on the New Lagoon (2007) the Inspector documented the following;

- Ground water noted and photographed entering the new lagoon from three locations.
- A flow of water exiting the berm from underneath the wall of the berm.
- Two to three feet of water within the Access hatch. Water had recently been pumped out of the “Man-hole”. At that time the depth had been estimated at over four feet.
- The roadway to the lagoon was washed out in numerous places and only barely passable by pick-up truck. It was inaccessible by a vacuum truck.
- Wash-out below the road way continued in 2009. Water management from the road must be addressed and water diverted to prevent the roadway and quarry sites from being flooded.
- Thermistors installed on site appeared to be vandalized.
- No ground water monitoring wells could be located during the period of Inspection. The Monitoring wells are required under Part H items 12 and 14.

Non-Compliance: Issues identified during the July 24th 2009 inspection and/or review of relevant material

Issues with a known or anticipated human health impacts;

- Sewage treatment in the community continues to return sampling results which exceed the NWT Limits for Effluent Parameters for Specific Discharges criteria.
- The Licensee failed to collect and submit for analysis the samples required on the Monitoring Program.

Issues where there is a known or anticipated environmental impairment;

- Failure to undertake works to mitigate and remediate such lands and waters as were effected by the run off and erosion noted on the roadway to the new lagoon.
- Failure to undertake such works as required preventing the failure and erosion of the new lagoon system into lakes and waters downstream of the new lagoon system. (Licensee or designate)

Issues where there is a known or suspected violation of a requirement of the Water License;

- Submit as required a complete Annual report. (Part B(1))
- Submit as required a Plan for Compliance. (Part B (6))
- Submission of a completed Summary Report including revised as-built plans for the New Lagoon (2007). (Part E (5))
- Develop and submit an *Operation and Maintenance Manual, Sewage Treatment System, Hamlet of Cape Dorset, November 7, 2007* subject to the requirements of Schedule 2. (Part F (1))
- Operation and Maintenance Manual for the Water Supply Facilities and the Solid Waste Disposal Facilities. (Part F(2))
- Submission of a geotechnical Inspection report to be completed annually in July. (Part F(5))



- Submit as required all Abandonment and Restoration Plans. (Part G)
- Implement the requirements listed under the Monitoring Program. (Part H – all parts that apply currently and not subject to the commissioning of the New lagoon (2007))

The Municipality of Cape Dorset continues to operate in Non-conformity with those terms and conditions of the Water License issued in 2008. A plan to address these issues of Non-compliance is required to be submitted prior to the next Inspection and in accordance with the issued Licence. Failure to provide the required plan will result in further enforcement action being undertaken.

Further, to ensure the future enforceability of the currently issued License the Inspector requires those works, as outlined in the current license, which have not been completed by the Government of Nunavut, Department of Community and Government Services, acting as agent for the Licensee, to be undertaken prior to the period of the next Inspection to ensure the Licensee is able to bring themselves into compliance with the issued License.

A. Keim

Inspector's Name

Inspector's Signature

Cc:

Peter Kusugak – Manager Field Operations Section- Indian and Northern Affairs Canada

Phyllis Beaulieu – Manager Licensing – Nunavut Water Board

Bhabesh Roy, Regional Engineer - Qikiqtani – Dept of Community and Government Services, Government of Nunavut



































