



Inspection Report

License #: 3BM-CLY

Inspector: A.Keim

CIDMS # 268990

Client	Municipality of Clyde River		
Mailing Address	Box 89		
Inspection site location	Clyde River, Nunavut		
Contact name	Bill Buckell	Title	SAO
Last inspection date	July 13,2007		
Inspection start date	August 18,2008		
Region	Qikiqtani		



INAC, Nunavut District
P.O. Box 100
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Submitted Via E-Mail

Our File: 3BM-CLY0909

Your File: _____

CIDM # 268990

May 22, 2009

Bill Buckell
Senior Administrative Officer
Box 89
Clyde River, Nunavut
XOA OEO

RE: August 18th, 2008 Municipal Water Licence 3BM-CLY0909

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 Hamlet of Clyde River by the Nunavut Water Board (NWB). The report references the applicable Parts of the water license 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 David Arreak, Municipal Works Foreman for the Municipality of Clyde River for taking the time to meet during the inspection period and for acting as guide while conducting the inspection of the potable water source, waste treatment system and waste management areas.

Part A: Scope and Definitions

No issues were found with respect to the information contained within the current license. It is noted that the Municipality's Water License was valid during the period of Inspection, has since expired and been reissued for a period of one year by the Nunavut Water Board. A review of the documents on file notes that a new application has been submitted by the Government of Nunavut on behalf of the Municipality of Clyde River.

The license is classed as water use and waste disposal for Municipal Undertakings as indicated on the license.

Part B: General Conditions

It was noted that the Municipality of Clyde River was operating under a current water license during the period of Inspection. That license was issued the 15th of September 2003 and expired on September 15th, 2008. A review of the Nunavut water Board FTP site noted that the Nunavut Water Board granted an extension of the existing License to March 15, 2009.

As is common practice in the Territory, the Government of Nunavut - Community and Government Services (GN-CGS) applied for the license renewal on behalf of the Hamlet. Both parties are advised that the general conditions of the expired license still apply, ie., monitoring, operation, etc., pursuant to Sec 46 of the Act. The Hamlet was advised in the 2007 Inspection Report to apply for the license renewal with sufficient lead time to avoid this current situation.

A review of the Nunavut Water Board FTP site located an application, review documents and comments supplied by Environment Canada, the Department of Environment, Government of Nunavut and Indian and Northern Affairs Canada. Supporting documents are still required in the application process for a renewal of the water license. The Municipality and the Government of Nunavut, Department of Community and Government Services are reminded that any use of water or deposition of waste into any place where it may enter water in Nunavut requires a valid and current license issued pursuant to the Nunavut Water and Nunavut Surface Rights Tribunal Act.



Additionally, during the same review of the Nunavut Water Board FTP site the Inspector failed to find the required annual reports which were to have been filed in accordance with the license. The licensee is reminded that an annual report is required to be filed by March 31st 2009 for the year ending December 31st 2008. This report is to include all items noted in this Part under Section 1 (I through viii). The Licensee is also cautioned that this is the same finding as from the 2007 Inspection and continued non-compliance will result in compliance and enforcement actions being undertaken by the Regulator in an effort to satisfy the conditions of the Act and the license.

The Licensee is also reminded that included in the annual reports are the results of the Monitoring Program as outlined in Part H of the current license. As per section 2 of this Part the Licensee is required to comply with the Monitoring program and submit the results of samples collected under the monitoring program.

During the inspection it was also noted that the license holder has not installed signage at many of the stations noted under the Surveillance Network Program.

Part C: Conditions Applying to Water Use

A visual inspection of the raw water intake from Water Source Lake determined that it is pumped through the pipeline to the pumping station where it is to be chlorinated before being piped into the water delivery trucks for the community. This complies with license requirements.

During the period of Inspection however, it was noted that the Community had not had any chlorine for use in the system for a period of up to three months prior to the Inspection. As an alternative the Municipality has been adding bleach to the trucks prior to the dispensing of water in the community. A document posted on the wall inside the pumping station and produced by the Department of Health and Social Services provided information on the quantity of household bleach to be added to a specific volume of water to ensure its safety for drinking.

It was however noted that neither records of this treatment alternative (including the amount of bleach used or any quality testing) nor any chlorine residual tests dating from prior to running out of the Chlorine were available for review during the inspection period. A copy of this report and the analysis results of my raw water sampling will be made available to the GN - Department of Health and Social Services for their review.

A visual inspection of the in-take pipe line and intake facilities was conducted during the period of inspection. No issues were noted. Water samples were collected near the intake pipe from Water Source Lake.

Part D: Conditions Applying to Waste Disposal

Sewage treatment;

The Licensee is responsible for ensuring that effluent entering the environment meets the following standards;

Parameter:	Max Concentration
Faecal Coliform	1X 10 CFU/dl
BOD	120 mg/L
TSS	180 mg/L
Oil & Grease	No visible sheen
PH	

The licensee is reminded that these parameters are set by the Nunavut Water Board and are included in the terms and conditions of the issued water license. Compliance with these terms is an obligation of the Municipality.

Samples collected from the receiving environment adjacent and downstream of the lagoon returned the following results in excess of the NWT Limits for Effluent Parameters for Specific Discharges.

<u>Parameter</u>	<u>Result</u>	<u>LEPSD</u>
(Trace metals -Total)		
Iron	2910 µg/L	300 µg/L
Manganese	75.6 µg/L	50 µg/L



Additionally, a visible sheen indicating the presence of Oil & Grease was noted and upon extraction and testing by the lab was found to have Hexane Extractable Materials returning a value of **30.1 mg/L**.

Pursuant to Section 5 of this Part which reads;

5. The Sewage Disposal Facility shall be maintained and operated, to the satisfaction of an Inspector in such a manner as to prevent structural failure.

The Inspector has concerns that this section of the license was not being followed by the Licensee in the year following the last inspection and continues to pose problems for the licensee currently. During the period of inspection the inspector noted and photographed the following continuing structural issues with the Clyde River sewage lagoon;

1. Stress cracks continue to be visible on top of the walls running parallel to the walls of the Lagoon
2. Obvious erosion to the inside walls of the lagoon
3. Areas of erosion along the outside walls of the lagoon resulting in leakage from both the wall of the lagoon and toe
4. A large overflow culvert installed at 1.5 meters below the top of the lagoon and extending through the berm has caused erosion to the outside slope of the lagoon wall.
5. An obvious flow originating from the overflow pipe (culvert) continues downhill and into the grasslands area below the lagoon.
6. The walls of the lagoon system appear to consist of nothing more than sand which is susceptible to erosion and exfiltration.
7. The overflow pipe (culvert) is allowing the release of raw untreated sewage from the lagoon.

(Photos have been included with this report for your reference)

This was noted during the inspection and it appears that the facility is not being maintained or operated in a manner that would prevent structural failure as required by Section 5, Part D of the water license. It should be pointed out that there was a recent failure (date) of the lagoon which supports these observations. Mr Arreak advised that work was scheduled prior to the end of the construction season however he did not provide details on how the work was going to be done.

Solid Waste Management Area;

Within the Solid Waste disposal facilities the Inspector noted the following;

- Segregation of materials into Bulk Metals and Hazardous wastes was being carried out by the municipality.

A further inspection of the hazardous wastes area found a number of 45 gallon drums containing what looked like waste oil were leaking and overturned within the area. There was no secondary containment noted and no spill kits available to address the releases. Also a red dye was found to be leaching from a sea-can containing a number of buckets of an unknown substance.

The Municipality (Mr. David Arreak) was provided a verbal direction to consolidate and remediate the area. It was suggested that some form of secondary containment was required to ensure these spills were not migrating into the environment and water was necessary and that the consolidation of the batteries found to be scattered throughout the area was also necessary.



Part E: Conditions Applying to Modifications and Construction

During the inspection it could not be determined if any activity was undertaken by the Hamlet. There were no notifications in this regard found on the NWB FTP site.

No notification of omission has been received by this office from the Nunavut Water Board.

Part F: Conditions Applying to Operation and Maintenance

Part F of the water license requires that an Operation and Maintenance Manual be prepared. During my review of the NWB FTP site there a number of references to such documents submitted by a consultant - Trow Associated on behalf of GN-CGS. The documents refer to the need for site specific Operation and Maintenance Manuals for the Hamlet of Clyde River. The documents are dated Mar 31, 2004. It could not be determined during the inspection if the required manual had been prepared. No manual was produced during my inspection.

This is a condition of the license and must be addressed in correspondence as being completed; the inspector will look to the Water Board for confirmation of compliance.

Part G: Conditions Applying to Abandonment and Restoration

A search the Nunavut Water Board FTP site was not able to locate any documents related to this file. References to the up-grade and construction of a second cell to the existing lagoon structure have not yet been approved or accepted by the Nunavut Water Board according to documents found on the FTP site.

An Abandonment and Restoration plan is a requirement of the license and must be submitted to the Nunavut water Board for approval.

The Nunavut Water Board will determine if this part has been complied with and if not advise this office for further action.

Part H: Conditions Applying to the Surveillance Network Program (Monitoring Program)

The Inspector identified in this inspection and that of 2007 and 2006 the lack of signage and warnings at all of the SNP stations within the Municipality.

The Licensee, according to the terms of the water license is required to sample, during the months of May to August inclusive for the following parameters;

<u>Parameters</u>	
BOD	Faecal Coliforms
pH	Conductivity
Total Suspended Solids	Ammonia Nitrogen
Nitrate-Nitrite	Oil and Grease (visual)
Total Phenols	Sulphate
Sodium	Potassium
Magnesium	Calcium
Total Arsenic	Total Cadmium
Total Copper	Total Chromium
Total Iron	Total Lead
Total Mercury	Total Nickel
Total Zinc	



As noted in 2006, 2007 and again this Inspection the Municipality has not undertaken the required sampling and continues to operate in Non-conformity with the current (although now expired) license.

In addition to this, the previous license stated that the NWB would provide the Hamlet, within 60 days of issuance of the license, an appropriate QA/QC Plan to be implemented for sample monitoring procedures. A review of the applicable material on the NWB FTP site found no such plan has been issued to the Hamlet.

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

Issues with a known or anticipated human health impacts;

- Sewage treatment in the community continues to be below an acceptable standard.
- Collect and submit for analysis the samples required on the Monitoring Program.
- Complete required works as necessary to ensure commissioning of a new lagoon system.
- Undertake such works as are necessary to prevent the failure of the existing lagoon system until such time as a new Lagoon is commissioned.

Issues where there is a known or anticipated environmental impairment;

- Undertake such works so to mitigate and remediate such lands and waters as were effected by the failure of the current lagoon.
- Undertake such works as required to prevent the failure and erosion of the existing lagoon system.

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

- Install and maintain the appropriate signage, and Surveillance Network Program. (SNP)
- Develop a Quality Assurance/ Quality Control Plan. (contact the Nunavut Water Board)
- Develop a Solid Waste Disposal Operations and Maintenance Manual.
- Develop and submit for approval a Sewage Sludge Waste Management Procedure or manual as required.
- Address concerns identified by the Inspector concerning the Sewage Lagoon.
- Submit Abandonment and Restoration plans as required.
- Collect and submit for analysis the samples required on the Monitoring Program.

The Municipality of Clyde River has continued to operate in Non-conformity with the terms and conditions of the issued Water License.

A. Keim
Inspector's Name

Original signed
Inspector's Signature

Attached under separate cover;
Photos taken during Inspection of August 18th, 2008

Cc:

Bernie MacIsaac – A/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



Unknown Red power in Municipal waste area





Water License Inspection photos Clyde River August 18, 2008: CIDM 268991



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