

## **Executive Summary**

### **2008 Water License Annual Report**

Under Water License 3AM-IQA0611 (License), which was issued by the Nunavut Water Board in 2006, the City of Iqaluit (City):

- Extracts water from Lake Geraldine for municipal use,
- Manages its solid waste at the West 40 Landfill, and
- Manages its wastewater at the West 40 Wastewater Treatment Plant and backup Sewage Lagoon.

The Water Treatment Plant (WTP) receives raw water from Lake Geraldine and provides the residents of Iqaluit with potable water. In 2008, the City used 929,130 m<sup>3</sup> of water from the Lake Geraldine, which is below the quantity of water not to be exceeded under the License (1,100,000 m<sup>3</sup>).

The Wastewater Treatment Plant (WWTP) provides the City with primary sewage treatment and the City manages its solid waste and sewage sludge at the West 40 Landfill. In 2008, the City initiated a Sewage Sludge Composting Pilot Project at the Landfill to treat sludge that is generated at the WWTP.

On June 27, 2008, the Nunavut Water Board acknowledged the City's submission of a Water License Monitoring Program that identified the recommended water quality parameters and sampling frequency for raw water, wastewater, sewage sludge and landfill run-off.

This 2008 Annual Report was completed in 2013, with the information available at the time. The City has made an effort to ensure that everything is included; however due to staff turn-over, some information may be missing.

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(1,100,000 m<sup>3</sup>).

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Water License No. 3AM-IQA0611  
**2008 Annual Report**  
City of Iqaluit

In July of 2006, the City of Iqaluit was issued Water License number 3AM-IQA0611 by the Nunavut Water Board (NWB). This license was issued for a five year period commencing on May 15, 2006. A requirement of the license is an annual report due March 31 of each year summarizing activities governed by the license for the previous calendar year. In accordance with Schedule B of the Water License, this Annual Water License Report summarizes the activities conducted by the City of Iqaluit in 2008.

**A. The monthly and annual quantities in cubic meters of water obtained from Lake Geraldine**

Table 1 summarizes the monthly and annual quantities of water drawn from Lake Geraldine, the City of Iqaluit's raw water source. The total water usage for 2008 was 929,130 m<sup>3</sup>, which is within the allowed usage of 1,100,000 m<sup>3</sup>.

**Table 1. Raw Water Drawn from Lake Geraldine Reservoir (2008)**

<b>Month</b>	<b>Volume(m<sup>3</sup>)</b>
January	81,310
February	77,530
March	84,110
April	85,570
May	88,790
June	81,810
July	79,370
August	79,790
September	77,950
October	66,850
November	64,030
December	62,020
<b>Total</b>	<b>929,130</b>

**B. The monthly and annual quantities in cubic meters of discharge from the Wastewater Treatment Facility in 2008**

Table 2 summarizes the approximate monthly and annual quantities of discharge from the City of Iqaluit's Wastewater Treatment Plant (WWTP) during 2008.

**Table 2. Discharge from the Wastewater Treatment Plant (2008)**

<b>Month</b>	<b>Volume(m<sup>3</sup>)</b>
January	81,310
February	77,530
March	84,110
April	85,570
May	88,790
June	81,810
July	79,370
August	79,790
September	77,950
October	66,850
November	64,030
December	62,020
<b>Total</b>	<b>929,130</b>

Although the City's operations staff normally records flow quantities at the WWTP, this data is currently not available for 2008. As such, the potable water production is assumed to be equivalent to the amount of wastewater treated. This is a reasonable approximation for systems which do not treat storm water flow at the wastewater treatment plant.

**C. The monthly and annual quantities in cubic meters of sludge removed from the Wastewater Treatment Facility**

Table 3 summarizes an estimate of the monthly and annual quantities of sewage sludge removed from the City of Iqaluit's WWTP and deposited at a designated area in the West 40 Landfill.

**Table 3. Sewage Sludge Removed from the Wastewater Treatment Facility and Deposited at the West 40 Landfill (2008)**

<b>Month</b>	<b>Volume (m<sup>3</sup>)</b>
January	27.2
February	23.8
March	25.5
April	25.5
May	27.2
June	25.5
July	25.5
August	27.2
September	25.5
October	25.5
November	25.5
December	27.2
<b>Total</b>	<b>311.1</b>

The sludge that is removed by the Salsnes Filter in the WWTP falls into a trailer in a room below the primary treatment room. The trailer that is used to catch the sludge from the Salsnes Filter has 3.4 cubic meters of storage and is approximately 50% full each time it is unloaded. The trailer is unloaded at the West 40 Landfill every second day including weekends and holidays.

**D. A summary report which includes all data and information generated under the Monitoring Program, including the QA/QC program, in an electronic and printed format acceptable to the Board**

On June 27, 2008, the City of Iqaluit submitted a *Water License Monitoring Program* to the Nunavut Water Board. This program, which was completed by Earth Tech, identifies the recommended water quality parameters and sampling frequency for raw water, wastewater, sewage sludge and landfill run-off. The Water License Monitoring Program is included in Appendix A.

The formal water monitoring program was not implemented in 2008 as it was pending approval from the NWB.

One sample of the retention pond prior to discharge at the landfill was taken on September 6, 2008. The results of this analysis are shown in Appendix B.

**E. A summary of construction activities conducted**

There is no record of construction activities conducted in 2008.

**F. A summary of any modification and/or major maintenance work and/or demolition work carried out and any associated structures**

There is no record of any modification or major maintenance work in 2008.

**G. A summary of all work carried out under the Managements Plans in accordance with this License**

The is no record of work carried out under the Management Plans in 2008

**H. A progress report and revisions to any studies requested by the Board that relate to waste management, water use or reclamation and a brief description of any future studies planned by the Licensee including an executive summary in terms understandable to the general public, translated into Inuktitut**

In 2008, the City began a sewage sludge composting pilot program to compost the sludge from the WWTP. Sludge was mixed with wood waste in chip form, put into rows and periodically aerated (mixed) at the landfill. After the composting cycle has been complete, the composted organics were to be used as cover material at the landfill. A report for the Sewage Sludge Composting Pilot Project will be completed in 2009.

**I. Any addendums to the approved Contingency Plans and the approved Operation and Maintenance Manuals**

There is no record of addendums to the approved Contingency Plans and Operation and Maintenance Manuals in 2008.

**J. A list and description of all spills and un-authorized discharges**

Table 4 provides a summary of all spills and un-authorized discharges that occurred in 2008, including volumes, Spill Report Line Identification Number and summaries of the follow-up actions taken. Copies of the spill reports can be found in Appendix C.

**Table 4. Summary of all spills and un-authorized discharges that occurred in 2008**

Spill Report ID No.	Date	Location	Description	Volume (m <sup>3</sup> )	Cause	Follow up Actions
08-003	January 2&3, 2008	Iqaluit	Sewage	0.1	Over filling sewage truck	NA
08-015	January 17, 2008	White Row Housing	Sewage	2	Rags clogged the catch basin	The sewer line was blasted and the roads crew cleaned up the site and disposed of contaminated material at the sewage lagoon.
08-123	April 8, 2008	Sewage Dump Point	Sewage	1.9	Broken camlock broke off under pressure	The area was scraped and sanded.
08-139	April 15, 2008	AV 400	Sewage	2	Sewer line was blocked	The line was blasted and the roads crew cleaned up the site and disposed of contaminated material at the sewage lagoon.



Spill Report ID No.	Date	Location	Description	Volume (m <sup>3</sup> )	Cause	Follow up Actions
08-324	July 8, 2008	City of Iqaluit Garage	Furnace Oil	0.15	Water truck backed into an overhead furnace	Spread absorbent to soak up fuel and put absorbent in barrels.
08-374	August 3, 2008	Manhole #2	Sewage	2	Rags blocking the outlet	The rags were removed. The contaminated soil was removed and disposed of at the sewage lagoon.
08-465	September 24, 2008	Manhole #9	Sewage	1.5 - 2	Rags and grease	The line was blasted and the roads crew cleaned up the site and disposed of contaminated material at the sewage lagoon.
08-479	October 3, 2008	Building 1342	Heating Oil	0.04	Tank leak	Tank was drained and the contaminated area was excavated and disposed of accordingly
08-594	December 19, 2008	Iqaluit	Transmission Fluid	0.023	Ruptured Hose	Contaminated snow was removed and disposed of in a 45 gallon drum. The drum is stored at the City of Iqaluit Garage.

**K. Any revisions to approved Closure and Reclamation Plans**

There is no record of revisions made to approved Closure and Reclamation Plans in 2008.

**L. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including and changes to implementation and scheduling.**

There is no record of closure and reclamation work undertaken in 2008.

**M. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector**

On July 19, 2008, there was an inspection at the WTP, WWTP and Landfill. The Inspector noted the following items that the City was required to complete prior to the 2009 inspection:

- Ensure sampling as listed in the Monitoring Program and appended schedule to the issued license are collected and results reported as required;
- Ensure proper segregation of hazardous wastes in the west 40 landfill;
- Proper monitoring of activities with the Municipality where hazardous wastes are found;
- Undertake the required operations to ensure proper segregation and containment of hazardous materials with the Bulk waste management facility;
- Ensure run-off and leachate from the West 40 landfill area is tested and if required treated prior to discharge to Koojesse Inlet;
- Store chemicals in the water treatment facility in a safe location;
- The Municipality was not submitted, as directed, the Operation plans;
- Submit the required Annual Report for 2007;
- Install and maintain the appropriate signage, and Surveillance Network Program (SNP);
- Develop and submit for approval a Quality Assurance/Quality Control Plan; and
- Submit the required conceptual Abandonment and Restoration Plans.

After the inspection, the City made sure to store chemicals for the WTP within the berms located in the WTP. Also, the City started to segregate hazardous material from the rest of the waste that enters the Landfill.

**N. Update on implementation of recommendations from any Dam Safety Inspection and/or Review**

There is no record of a dam safety inspection or review conducted in 2008.

- O. A brief update on the implementation plan of all facilities within the scope of this License including projected implementation and status of Phase II of the Wastewater Treatment Plant**

There is no information available on implementation plan progress made in 2008.

- P. Any details on water use or waste disposal requested by the Board by November 1<sup>st</sup> of the year being reported**

There is no record of requests made by the Board after November 1, 2008.

## **Appendices**

Appendix A - Water License Monitoring Program

Appendix B - Landfill Run-off Sampling Results

Appendix C - Spill Reports