

## GWICH'IN LAND AND WATER BOARD

Box 2018 Inuvik, NT X0E 0T0

Ph 867-777-4954

Fx 867-777-2304

www.glwb.com

### WATER LICENCE - Renewal

Pursuant to the *Mackenzie Valley Resource Management Act* and the *Northwest Territories Waters Act*, the Gwich'in Land and Water Board, hereinafter referred to as the Board, hereby grants to:

**Hamlet of Fort McPherson**

(Licensee)

of P.O. Box 57 Fort McPherson, NT X0E 0J0  
(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water subject to the restrictions and conditions contained in the *Northwest Territories Waters Act* and Regulations made thereunder and subject to and in accordance with the conditions specified in this Licence.

Licence Number:	<u>G03L3-001</u>
Licence Type:	<u>"B"</u>
Water Management Area:	<u>Northwest Territories 3</u>
Location:	<u>Fort McPherson, Northwest Territories</u>
Purpose:	<u>Municipal Water Use and Deposit of Waste</u>
Description:	<u>Municipal Undertaking</u>
Quantity of water <u>not to be exceeded</u> :	<u>60,000 Cubic Meters Per Year</u>
Effective Date of Licence:	<u>September 1, 2013</u>
Expiry Date of Licence:	<u>February 28, 2014</u>

This Licence issued and recorded at Inuvik includes and is subject to the annexed conditions.

Signed the 15<sup>th</sup> day of August, 2013 on behalf of the Gwich'in Land and Water Board

**Witness – Helga Harlander**

**Chair – Mr. Paul Sullivan**

## **PART A: SCOPE AND DEFINITIONS**

### **1. Scope**

- a) This Licence entitles the Hamlet of Fort McPherson to use water and dispose of waste for municipal undertakings at Fort McPherson, latitude 67°27' N and longitude 134°53' W, Northwest Territories.
- b) This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Northwest Territories Waters Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations.
- c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

### **2. Definitions**

In this Licence: **G03L3-001**

**“Act”** means the *Northwest Territories Waters Act*,

**“Analyst”** means an Analyst designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*,

**“Average Concentration” for Biochemical Oxygen Demand & Suspended Solids** means the arithmetic mean of four consecutive analytical results, or if less than four analytical results collected during a batch decant, the arithmetic mean of the analytical results collected, and as submitted to the Board in accordance with the sampling and analysis requirements specified in the “Surveillance Network Program”;

**“Average Concentration” for Faecal Coliforms** means the geometric mean of any four consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the “Surveillance Network Program”;

**“Bagged Toilet Waste Disposal Facilities”** comprises the area and associated structures designed to contain bagged toilet wastes (honey bags) as described in Article 4.3.7, and depicted in Figure 7, of the “Fort McPherson Water License Background Report”, June 2007, Earth Tech Canada Inc.

**“Board”** means the Gwich'in Land and Water Board established under Part 3 of the *Mackenzie Valley Resource Management Act*;

**“Commercial Waste Water”** means water and associated waste generated by the operation of a commercial enterprise, but does not include toilet water or greywater;

**“Freeboard”** means the vertical distance between water line and the lowest elevation of the effective water containment crest on a dam or dyke's upstream slope;

**“Geotechnical Engineer”** means a civil or geotechnical engineer familiar with and experienced in geotechnical practices in arctic conditions, registered or licensed to practice in the Northwest Territories.

**“Greywater”** means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

**“Inspector”** means an Inspector designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*,

**“Licensee”** means the holder of this Licence:

**“Minister”** means the Minister of Indian Affairs and Northern Development;

**“Modification”** means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion.

**“Pumpout Sewage”** means all toilet wastes and/or greywater collected by means of a vacuum truck for disposal at an approved facility;

**“Regulations”** means Regulations proclaimed pursuant to Section 33 of the *Northwest Territories Waters Act*,

**“Sewage”** means all toilet wastes and greywater;

**“Sewage Disposal Facilities”** comprises the area and engineered structures designed to contain sewage as described in Section 4.2, and depicted in Figures 4, 5 and 6, of the “Fort McPherson Water License Background Report”, June 2007, Earth Tech Canada Inc.

**“Solid Waste Disposal Facilities”** comprises the area and associated structures designed to contain solid wastes as described in Section 4.3, and depicted in Figure 7, of the “Fort McPherson Water License Background Report”, June 2007, Earth Tech Canada Inc.

**“Toilet Wastes”** means all human excreta and associated products, but does not include greywater;

**“Waste”** means waste as defined by Section 2 of the *Northwest Territories Waters Act*;

**“Waste Disposal Facilities”** means all facilities designated for the disposal of waste, and includes the Sewage Disposal Facilities, Solid Waste Disposal Facilities, and Bagged Toilet Wastes Disposal Facilities;

**“Water Supply Facilities”** comprises the area and associated intake infrastructure as described in Section 4.1, and shown in Figure 3 (schematic), of the “Fort McPherson Water License Background Report”, June 2007, Earth Tech Canada Inc.

**“Waters”** means any Waters as defined by Section 2 of the *Northwest Territories Waters Act*.

## **PART B: GENERAL CONDITIONS**

1. The Licensee shall file an Annual Report with the Board, with a copy to the Inspector, not later than March 31<sup>st</sup> of the year following the calendar year reported which shall contain the following information:
  - a) the monthly and annual quantities in cubic metres of fresh water obtained from all sources;
  - b) the monthly and annual quantities in cubic metres of each and all waste discharged;
  - c) the annual quantities of sewage solids removed from the sewage facilities for disposal;
  - d) a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures;
  - e) tabular summaries of all data generated under the "Surveillance Network Program", as approved by the Board;
  - f) a list of unauthorized discharges;
  - g) an outline of any spill training and communications exercises carried out;
  - h) a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
  - i) a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
  - j) any other details on water use or waste disposal requested by the Board by November 1<sup>st</sup> of the year being reported;
  - k) updates or revisions to the approved Operation and Maintenance Plans;
  - l) a map indicating all SNP locations
2. The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence.
3. The "Surveillance Network Program" and compliance dates specified in the Licence may be modified at the discretion of the Board.
4. Meters, devices or other such methods used for measuring the volumes of water used and waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
5. The Licensee shall, within sixty (60) days of the issuance of this Licence, post the necessary signs, where possible, to identify the stations of the "Surveillance Network Program". All postings shall be located and maintained to the satisfaction of an Inspector.

6. The Licensee shall, within sixty (60) days of issuance of this Licence, post signs in the appropriate areas to inform the public of Water Supply and Waste Disposal Facilities. All postings shall be located and maintained to the satisfaction of an Inspector.
7. The Licensee shall immediately report to the 24 Hour Spill Report Line (867)920-8130 any spills of Waste, which are reported to or observed by the Licensee, within the municipal boundaries or in the areas of the Water Supply or Waste Disposal Facilities.
8. The Licensee shall ensure a copy of this Licence is maintained at the municipal office at all times.
9. The Licensee shall submit to the Board for approval, no later than May 30, 2008, an action plan outlining what steps will be taken to consistently maintain the specified freeboard at the trucked sewage disposal facilities. A copy of the action plan shall be forwarded to the Inspector.
10. The Licensee shall prepare, and submit to the Board and Fisheries and Oceans Canada for approval, no later than March 28, 2008, terms of reference for a bio-physical assessment of the environment receiving the sewage effluent discharges, namely Sewage Lake and the lake and wetlands downstream from the trucked sewage retention lagoon. A copy of the terms of reference shall be forwarded to the Inspector.
11. The Licensee shall submit to the Board for approval, no later than October 30, 2009, a detailed plan outlining what steps will be taken to improve sewage treatment efficiency (trucked sewage system). The plan shall include, but not be limited to, measures to reduce Ammonia Nitrogen in the waste water effluent stream to meet the applicable water quality guideline (CCME - Canadian Water Quality Guideline for the Protection of Aquatic Life). A copy of the plan shall be forwarded to the Inspector.

#### **PART C: CONDITIONS APPLYING TO WATER USE**

1. The Licensee shall obtain all fresh water from Deep Water Lake using the Water Supply Facilities or as otherwise approved by the Board.
2. The Licensee may obtain water from Water Lake for use on an emergency basis upon approval by the Board.
3. The annual quantity of water used for all purposes shall not exceed 60,000 cubic metres.
4. The water intake hose, used on the water pumps, shall be equipped with a screen, in accordance with the most current edition of the Freshwater Intake End-of-Pipe Screen Guideline by Fisheries and Oceans Canada.

**PART D: CONDITIONS APPLYING TO WASTE DISPOSAL**

1. The Licensee shall direct all piped and pumpout Sewage to the Sewage Disposal Facilities or as otherwise approved by the Board.

2. All Sewage effluent discharged from the Sewage Disposal Facilities at "Surveillance Network Program" Station Number 1696-2 shall meet the following effluent quality standards:

PARAMETER	MAXIMUM AVERAGE CONCENTRATION
Suspended Solids	150 mg/L
BOD <sub>5</sub>	100 mg/L
Faecal Coliforms	2 x 10 <sup>5</sup> CFU/100mL

The Waste discharged shall have a pH between 6 and 9, and no visible sheen of oil and grease.

3. All Sewage effluent discharged from the Sewage Disposal Facilities at "Surveillance Network Program" Station Number 1696-3 shall meet the following effluent quality standards:

PARAMETER	MAXIMUM AVERAGE CONCENTRATION
Suspended Solids	35 mg/L
BOD <sub>5</sub>	30 mg/L
Faecal Coliforms	1 x 10 <sup>3</sup> CFU/100mL

The Waste discharged shall have a pH between 6 and 9, and no visible sheen of oil and grease.

4. A Freeboard limit of one (1.0) metre, or as recommended by a qualified geotechnical engineer and as approved by the Board, shall be maintained at all dykes and earthfill structures associated with the Sewage Disposal Facilities.

5. All bagged toilet wastes (honey bags) shall be disposed of at the Bagged Toilet Waste Disposal Facilities to the satisfaction of an Inspector.

6. The Licensee shall advise an Inspector at least ten (10) days prior to initiating the decant of the sewage lagoon.

7. The sewage lagoon shall be maintained and operated in such a manner as to prevent structural failure.

8. The Licensee shall maintain the Sewage Disposal Facilities to the satisfaction of an Inspector.

9. The Licensee shall dispose of all solid wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board.

## **PART E: CONDITIONS APPLYING TO MODIFICATIONS**

1. The Licensee may, without written approval from the Board, carry out modifications to the Water Supply and Waste Disposal Facilities provided that such modifications are consistent with the terms of this Licence and the following requirements are met:
  - a) the Licensee has notified the Board in writing, with a copy to the Inspector, of such proposed modifications at least sixty (60) days prior to beginning the modifications;
  - b) such modifications do not place the Licensee in contravention of either this Licence or the Act;
  - c) the Board has not, during the sixty (60) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
  - d) the Board has not rejected the proposed modifications.
2. Modifications for which all of the conditions referred to in Part E, Item 1 have not been met may be carried out only with written approval from the Board.
3. The Licensee shall provide to the Board, as well as the Inspector, with site plans of the modifications referred to in this Licence within ninety (90) days of completion of the modifications.

## **PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING**

1. If during the period of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:
  - a) advise an Inspector immediately via the 24 Hour NWT Spill Report Line (867) 920-8130; and
  - b) submit to an Inspector, and to the Board, a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.
2. If during the period of this Licence, the prescribed freeboard limit (as prescribed in Part D, Item 4) cannot be maintained, the Licensee shall:
  - a) advise an Inspector immediately
  - b) collect a sample and get the sample analyzed for parameters as prescribed in the attached SNP
  - c) submit to the Inspector for approval a written request to perform an emergency decant
3. The Licensee shall maintain drip trays to be utilized when refueling equipment.

## **PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION**

1. The Licensee shall submit to the Board for approval an Abandonment and Restoration Plan at least six (6) months prior to abandoning any sewage or solid waste facilities. The Plan shall include, but not be limited to:
  - a) contaminated site remediation;
  - b) leachate prevention;
  - c) an implementation schedule
  - d) maps delineating all disturbed areas, borrow material locations, and site facilities;
  - e) consideration of altered drainage patterns;
  - f) type and source of cover materials;
  - g) future area use; and
  - h) hazardous wastes.
  
2. The Licensee shall implement the Plan specified in Part G, Item 1 as and when approved by the Board.

## **PART H: CONDITIONS APPLYING TO CONSTRUCTION**

1. Construction of designed structures shall be carried out as approved by the Board.

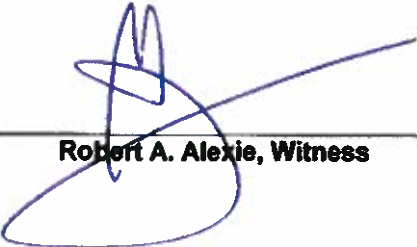
## **PART I: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE**

1. The Licensee shall, within six (6) months of the issuance of this Licence, submit to the Board, with a copy to the Inspector, for approval, a revised plan for the Operation and Maintenance of the Sewage and Solid Waste Disposal Facilities. The plan shall include but not be limited to the following:
  - a) frequency of inspection of dams, dykes and drainage courses;
  - b) removal of floating materials from the Sewage Disposal Facilities;
  - c) controlling effluent discharge quality;
  - d) runoff and drainage control within and around the facility, and restoration of erosion;
  - e) treatment of contaminated drainage;
  - f) prevention of windblown debris;



- g) managing hazardous waste;
- h) segregation of domestic, metal and recyclable waste materials;
- i) method and frequency of site maintenance, including burning where permitted; and
- j) alternatives designed to reduce burning.
- k) removal and disposal of sewage solids
- l) spill contingency plan

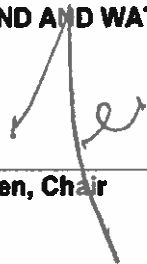
2. The Licensee shall implement the plan specified in Part I, Item 1 as and when approved by the Board.



---

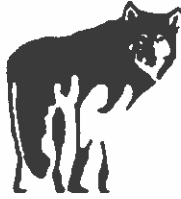
**Robert A. Alexie, Witness**

**GWICH'IN LAND AND WATER BOARD**



---

**Willard Hagen, Chair**



# Gwich'in Land and Water Board

Box 2018 Inuvik NT X0E 0T0

PH 867 777 7880 FX 867 777 7870

LICENSEE: Hamlet of Fort McPherson  
LICENCE NUMBER: G03L3-001  
EFFECTIVE DATE OF LICENCE: September 1<sup>st</sup>, 2007  
EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM (SNP): September 1<sup>st</sup>, 2007

## SURVEILLANCE NETWORK PROGRAM

### Part A: Location of Surveillance Stations

<u>Station Number</u>	<u>Description</u>
1696-1(a)	Water Lake raw water supply
1696-1(b)	Deep Water Lake raw water supply
1696-2	Effluent discharge at Sewage Decant Control Structure
1696-3	Outflow of Sewage Lake
1696-4	Final effluent discharge prior to entering Peel River (discontinued)
1696-5	Run-off from Solid Waste Disposal Facilities
1696-6	Effluent (combined stream) discharge prior to entering Peel River

### Part B: Sampling and Analysis Requirements

1. Water at Station Number 1696-2 shall be sampled a minimum of four times during the decant and analyzed for the following parameters:

pH	Suspended Solids
Faecal Coliforms	Ammonia Nitrogen
BOD <sub>5</sub>	CBOD*

\* required once the test is offered by the laboratory the Licensee typically uses

Oil and Grease shall be sampled if a sheen is detected.

2. Water at Station Number 1696-3 shall be sampled at least once per year<sup>1</sup> and analyzed for the following parameters:

---

<sup>1</sup> Sampling frequency changed February 10, 2012 from 'two times per year' to 'once per year'; sample location is not accessible during the summer months.

pH  
Faecal Coliforms  
BOD<sub>5</sub>

Suspended Solids  
Ammonia Nitrogen  
CBOD\*

\* required once the test is offered by the laboratory the Licensee typically uses

Oil and Grease shall be sampled if a sheen is detected.

3. Water at Station Numbers 1696-5 and 1696-6 shall be sampled two times per year, preferably in July and in October, and analyzed for the following parameters:

pH  
Faecal Coliforms  
Ammonia Nitrogen  
Phenol  
Total Mercury  
Total Chromium  
Total Copper  
Total Nickel  
Total Iron

Suspended Solids  
BOD<sub>5</sub>  
Nitrate/Nitrite  
Oil and Grease  
Total Cadmium  
Total Cobalt  
Total Manganese  
Total Lead  
Total Zinc

Oil and Grease shall be sampled monthly if a sheen is detected.

4. More frequent sample collection may be required at the request of an Inspector.
5. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standards Methods for the Examination of Water and Wastewater", or by such other methods approved by an Analyst.
6. All analyses shall be performed in a laboratory approved by an Analyst.

#### **Part C: Flow and Volume Measurement Requirements**


1. The monthly and annual quantities of water pumped from Surveillance Network Program Station Numbers 1696-1(a) and 1696-1(b) for municipal purposes shall be measured and recorded in cubic metres.
2. The annual quantities of sewage solids removed from the sewage disposal facility shall be measured and recorded.

#### **Part D: Reports**

1. The Licensee shall, unless otherwise requested by an Inspector, include all of the data and information required by the "Surveillance Network Program" in the Licensee's Annual Report.

Inuvik, February 10, 2012

  
Robert A. Alexie, Witness

**GWICH'IN LAND AND WATER BOARD**  
  
Paul Sullivan, Chair