



## GWICH'IN LAND AND WATER BOARD

Box 2018 Inuvik, NT X0E 0T0

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### WATER LICENCE

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

The Charter Community of Tsilgehtchic

(Licensee)

of General Delivery, Tsilgehtchic NT, X0E 0B0  
(Mailing Address)

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

Licence Number:	<u>G16L3-002</u>
Licence Type:	<u>"B" Renewal (former G99L3-004)</u>
Water Management Area:	<u>Northwest Territories 03</u>
Location:	<u>Tsilgehtchic, Northwest Territories Latitude 67° 26' 30" N; Longitude 133° 44' 20" W</u>
Purpose:	<u>Water Use &amp; Waste Disposal</u>
Description:	<u>Municipal Undertakings</u>
Quantity of water <u>not to be exceeded</u> :	<u>20, 000 cubic metres per year</u>
Effective Date of Licence:	<u>November 1, 2016</u>
Expiry Date of Licence:	<u>October 31, 2021</u>

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

Signed the 27<sup>th</sup> Day of October, 2016 on behalf of the Gwich'in Land and Water Board

Witness – Mr. Leonard DeBastien

Chair – Mr. Paul Sullivan

## PART A: SCOPE AND DEFINITIONS

### 1. Scope

- a) This Licence entitles the Charter Community of Tsiigehtchic to use water and dispose of Waste for municipal undertakings at Tsiigehtchic, Northwest Territories.
- b) This Licence is renewed 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 Commissioner in Executive Council under the *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.
- d) This Licence is issued subject to the conditions contained herein with respect to the use of Waters and deposit of Waste as prescribed in Section 10 and 11 of the *Act*.

### 2. Definitions

**“Act”** means the *Waters Act*;

**“Analyst”** means an Analyst designated by the Minister under Section 65 (1) of the *Act*;

**“Average Concentration”** means the discrete average of up to four consecutive analytical results submitted in any single calendar year to the Board in accordance with the sampling and analysis requirements specified in the “Surveillance Network Program”;

**“Bagged Toilet Wastes Disposal Facilities”** comprises the area within the Solid Waste Disposal Facility and associated structures designed to contain bagged toilet Wastes (honey bags);

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

**“Closure”** means the permanent dismantlement of one or more components of the Project with the intent of making the components incapable of its intended use. This includes the removal of associated equipment and structures used in the construction or maintenance of the Project;

**“Contingency Plan”** means a detailed program of action to establish a state of readiness that will enable prompt and effective response to possible Spill or system failure;

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

**“Hazardous Wastes”** mean those Wastes with properties such as flammability, corrosiveness, or inherent toxicity and can pose a variety of risks, from skin damage on contact, to the contamination of ground water, surface water, or soil as a result of leaching into the environment when improperly treated, stored, transported, or disposed of, or otherwise managed;

**“Inspector”** means an Inspector designated by the Minister under Section 65 (1) of the Act;

**“Minister”** means a duly appointed member of the Executive Council who is responsible for the Act;

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

**“Professional Engineer”** means a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientist, and whose principal field of specialization is appropriate to address the components of the undertaking at hand;

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

**“Reclamation”** means activities which facilitate the return of areas affected by the Waste Disposal Facilities to a viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment, human activities, and surrounding environment;

**“Regulations”** means Regulations promulgated pursuant to Section 63 of the Act;

**“Sewage”** means all toilet Wastes and Greywater;

**“Sewage Waste Disposal Facilities”** comprises the area and engineered structures designed to contain and treat Sewage as approved by the Board;

**“Sewage Sludge”** means the residual non-stabilized semi-solid material separated from Sewage as a result of a natural or other process at the Sewage Waste Disposal Facilities;

**“Solid Waste Disposal Facilities”** comprises the area and associated structures designed to contain solid Wastes as approved by the Board;

**“Spill”** means to allow or accidentally release Waste from containment vessels or structures into the receiving environment;

**“Spill Contingency Plan”** means a document, developed in accordance with Indian Affairs and Northern Development Canada’s Guidelines for Spill Contingency Planning (2007), that describes the set of procedures to be implemented to minimize the effects of a Spill;

**“Surveillance Network Program (SNP)”** means a monitoring program established to define environmental sampling and analysis requirements, as detailed in Annex A of this Licence, to collect water quality data, and to assess discharge quality, compliance with Licence terms and conditions, and the potential for impact on the environment;

**“Temporary Hazardous Waste Containment Facility”** means a bermed and lined area within the Solid Waste Disposal Facility constructed and maintained for the temporary storage of Hazardous Waste prior to treatment and/or disposal;

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

**“Unauthorized Discharge”** means a release or discharge of any Water or Waste not authorized under this Licence;

**“Waste ”** means any substance defined as Waste as defined by Section 1 of the Act;

**“Waste Disposal Facilities”** mean all facilities designated for the disposal of Waste, and includes the Sewage Waste Disposal Facilities and the Solid Waste Disposal Facilities;

**“Watercourse”** means a natural watercourse, body of water or water supply, whether usually containing water or not, and includes groundwater, springs, swamps, and gulches, as defined in the Waters Regulations;

**“Waters”** means any Waters as defined by Section 1 of the Act; and

**“Water Supply Facilities”** means all facilities designed to collect, treat and supply water for municipal purposes.

## **PART B: GENERAL CONDITIONS**

1. The Licensee shall file an Annual Report with the Board not later than March 31 of each year which shall contain the following information from the previous calendar year:
  - a) the monthly and annual quantities in cubic metres (m<sup>3</sup>) of fresh water obtained from all sources;
  - b) tabular summaries of all data generated under the "Surveillance Network Program (SNP)";
  - c) a discussion of any SNP exceedances that took place, including actions taken to identify the source of the exceedance and steps taken to prevent future exceedances
  - d) a list of Spills and Unauthorized Discharges;
  - e) a description of any Spill training and/or other operator training carried out;
  - f) a description of any Modifications or repairs done to the Water Supply and Waste Disposal Facilities, including all associated structures;
  - g) a description of any Sewage Sludge management activities undertaken;
  - h) a description of any Closure and Reclamation work completed during the year and an outline of any work anticipated for the next year;
  - i) a description of any studies requested by the Board that relate to Water use, Waste Disposal or Closure and Reclamation and a brief description of any future studies planned;
  - j) any updates and/or revisions to the:
    - i. approved Spill Contingency Plan;
    - ii. approved Solid Waste Disposal Facilities Operation and Maintenance Plan;
    - iii. approved Sewage Waste Disposal Facilities Operation and Maintenance Plan;
    - iv. approved Water Intake Facilities Operations and Maintenance Plan; and
  - k) any other details on Waste Disposal requested by the Board by November 1 of the year being reported.
2. The Licensee shall operate in accordance with the plans and programs approved pursuant to the conditions of this Licence and with any revisions to the plans and programs as may be made pursuant to the conditions of this Licence and as approved by the Board. If any plan is not approved by the Board, the Licensee shall revise the plan as requested by the Board.
3. 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.
4. The "Surveillance Network Program" and compliance dates specified in the Licence may be modified at the discretion of the Board.
5. The Licensee shall, by June 1, 2017, 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, by February 1, 2017, 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. Meters, devices or other such methods used for measuring the volumes of water obtained and Waste disposed and discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
8. The Licensee shall ensure a copy of this Licence is maintained at the municipal office at all times, and that all employees conducting work related to any facilities within the scope of this Licence are made aware of the appropriate sections of the Licence.

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

1. The Licensee shall obtain all fresh water from Tso Lake using the Water Supply Facilities, or sources otherwise approved by the Board.
2. The annual quantity of water taken for all purposes shall not exceed 20,000 cubic metres (m<sup>3</sup>).
3. The water intake hose used on the water pumps shall be equipped with a screen with a mesh size that is satisfactory to an Inspector and sufficient to ensure no entrainment of fish occurs.
4. The Water Supply Facilities shall be maintained and operated to the satisfaction of an Inspector.

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

1. The Licensee shall ensure that any unauthorized Waste(s) associated with this undertaking do not enter any Waters.
2. The Licensee shall immediately notify the Board and Inspector of the exceedance of any effluent quality criterion.

**Sewage**

3. The Licensee shall direct all Pumpout Sewage to the Sewage Waste Disposal Facilities or as otherwise approved by the Board.
4. All effluent discharged from the Sewage Waste Disposal Facilities at “Surveillance Network Program” Station Number 1557-4 shall meet the following effluent quality standards:

<b>Parameter</b>	<b>Maximum Average Concentration</b>
Suspended Solids	180 mg/L
BOD <sub>5</sub>	120 mg/L
Faecal Coliforms	1 x 10 <sup>6</sup> CFU/100mL

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

5. The Sewage Disposal Facilities shall be maintained and operated in such a manner as to prevent structural failure, and to the satisfaction of an Inspector.
6. The Licensee shall notify the Board and Inspector, in writing, at least thirty (30) days prior to initiating the removal and burial of Sludge and sediments originating from the Sewage Disposal Facility.
7. In the event that Sewage Sludge and sediments originating in the Sewage Disposal Facility require removal and burial at any time during the term of this Licence, such material shall be removed and buried in the area and in the manner described in the approved Operation and Maintenance Plan for the Sewage Disposal Facility, or as otherwise authorized in writing by the Board.
8. All bagged toilet Wastes (honey bags) shall be disposed of at the Bagged Toilet Waste Disposal Facilities to the satisfaction of an Inspector.

**Solid Waste**

9. The Licensee shall dispose of all solid Wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board.
10. The Solid Waste Disposal Facilities shall be maintained and operated to the satisfaction of an Inspector.
11. The Licensee shall undertake measures necessary to prevent the spread of windblown Waste to the



areas surrounding the Solid Waste Disposal Facilities.

12. The Licensee shall contain all Hazardous materials in such a manner as to minimize the potential for migration of contaminants into any Waters, to the satisfaction of an Inspector.
13. The Licensee shall not openly burn solid or liquid Waste, except in accordance with the guideline "*Municipal Solid Wastes Suitable for Open Burning*", developed by the Government of Northwest Territories (GNWT) - Department of Environment and Natural Resources.
14. The Licensee shall inform the Inspector at least 24 hours prior to the burning of any refuse.

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

1. The Licensee shall adhere to the Operations and Maintenance Plans submitted on September 23, 2016 until such a time as revised plans are approved by the Board.
2. The Licensee shall, by February 1 2017, submit to the Board for approval, an updated Operations and Maintenance Plan for the Solid Waste Disposal Facilities that includes the following outstanding information:
  - a) methods for the management of metal and recyclable materials, including the methods for the removal of refrigerants and fluids from discarded appliances and scrap vehicles.
  - b) a plan for the management of all new and existing Hazardous Waste including:
    - i. the design of a Temporary Hazardous Waste Containment Area
    - ii. detailed amounts and sources of Hazardous Waste that are, and are not accepted into the Solid Waste Disposal Facilities;
    - iii. a Hazardous Waste inventory that identifies the type, means of containment, and quantity of all Hazardous Waste being stored in the Temporary Hazardous Waste Containment Area; and
    - iv. location, timing and means of transport of all Hazardous Waste to an approved Hazardous Waste Disposal Facility.
  - c) a plan for the management of Surface Water within and around the facility that addresses:
    - i. the minimization of (i) contact water, (ii) leachate volume, and (iii) leachate strength; and
    - ii. methods for the prevention and restoration of erosion;
  - d) methods for the prevention of windblown debris;
  - e) methods and frequency of all site maintenance activities (i.e. daily, weekly, annually);
  - f) records of planned refuse burns, and notification to an Inspector prior to burning garbage; and;
  - g) appropriate site plans and/or drawings.
3. The Licensee shall, by May 1 2017, submit to the Board for approval, an updated Operations and Maintenance Plan for the Sewage Waste Disposal Facilities that includes, but is not limited to, the following outstanding information:
  - a) a plan for the measurement, management and disposal of sludge;
  - b) a plan for the inspection, grading and reshaping of access road and truck pad; and
  - c) appropriate site plans and/or drawings.
4. The Licensee shall implement the Operations and Maintenance Plans specified in Part E, Item 2 and 3 as and when approved by the Board.
5. The Licensee shall review the Operations and Maintenance Plans annually and modify the plans as necessary to reflect changes in design, operation and maintenance, or as otherwise required by the Board or Inspector. The proposed updates shall be submitted to the Board for approval.

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

1. The Licensee shall adhere to the Spill Contingency Plan submitted on September 23, 2016, until such a time as a revised plan is approved by the Board.
2. The Licensee shall, by August 1, 2017 submit to the Board for approval, an updated Spill Contingency Plan in accordance with the MVLWB Spill Contingency Plan Template for Municipal Water Licences, which includes the following outstanding information:
  - a) updated contact information
  - b) complete spill resource inventory, including location and volume of onsite spill kits
  - c) MSDS for all chemicals, fuels, and oils used in community operations
  - d) Appropriate site map(s) identifying the locations of each facility, and the locations of fuel and other hazardous materials stored at each site.
3. The Licensee shall review the Spill Contingency Plan annually, and if necessary, modify the plan to reflect changes in operation(s) and technology, chemicals or fuels, or as directed by the Board. Any updated Spill Contingency Plan shall be submitted to the Board for approval.
4. If, during the period of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
  - a) implement the approved Spill Contingency Plan;
  - b) report all Spills immediately via the (24) Hour NWT Spill Report Line (867) 920-8130 in accordance with the instructions contained in the NT-NU Spill Report Form;
  - c) report each Spill to the Board and an Inspector within 24 hours; and
  - d) submit to the Board and an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event. The detailed report shall include descriptions of root causes, response actions, and any changes to procedures to prevent similar occurrences in the future.
5. All Spills and Unauthorized Discharges of Water or Waste shall be reclaimed to the satisfaction of an Inspector.

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

1. The Licensee may, without written approval from the Board, carry out Modifications to the Water Supply Facilities or Solid 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 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 the 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;
  - d) An Inspector has authorized the proposed Modifications and provided a letter of notification to the Board; and
  - e) the Board has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part G, Item 1 have not been met may be carried out only with written approval from the Board.
3. Within ninety (90) days of the completion of the Modifications referred to in Part G, item 1, the Licensee shall submit to the Board as-built drawings stamped and signed by a Professional Engineer, which notes "final" or similar phrase.


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

1. A minimum of sixty (60) days prior to the construction of any dams, dykes or structures intended to contain, treat, withhold, divert or retain Water or Wastes, other than as contemplated in the Contingency Plan, the Licensee shall submit to the Board for approval a construction plan and a design report signed and stamped by a Professional Engineer, which notes "issued for construction" or similar phrase.
2. Construction of designed structures as described in Part H, Item 1, shall be carried out as accordance with the recommendations of the Professional Engineer responsible for the design, including, but not limited to, recommendations regarding field supervision and inspection requirements.
3. A minimum of ten (10) days prior to the commencement of construction of the structures referred to in Part H, Item 1, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the name and contact information for the construction superintendent.
4. Within ninety (90) days of the completion of the construction of the structures referred to in Part H, item 1, the Licensee shall submit to the Board an As-built Report which shall include as-built drawings stamped and signed by a Professional Engineer and descriptions and rationale for changes made that deviate from the final design drawings referred to in Part F, item 2, and notes "final" or similar phrase.
5. Any fill material used in the construction of any structures as described in Part H, Item 1, must be clean and free of contaminants, and from a source that has been approved in writing by an Inspector.

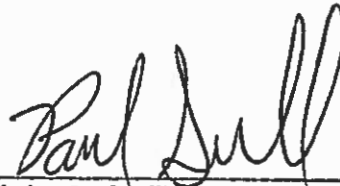
**PART I: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION**

1. The Licensee shall submit to the Board for approval a Closure and Reclamation Plan at least six (6) months prior to the Closure of any Water Supply, Sewage or Solid Waste Disposal Facilities. The Plan shall include, but not be limited to, the following:
  - a) a description of the current conditions, including photographs;
  - b) maps delineating all disturbed areas, borrow material locations, and site facilities;
  - c) contaminated site remediation;
  - d) the potential for groundwater contamination (leachate prevention);
  - e) consideration of altered drainage patterns;
  - f) type and source of cover materials;
  - g) future area use;
  - h) hazardous wastes removal, transportation and disposal;
  - i) an implementation schedule; and
  - j) a restoration monitoring plan.
2. The Licensee shall implement the Plan specified in Part I, Item 1 as and when approved by the Board.
3. The Licensee shall revise the Closure and Reclamation Plan referred to in Part I, Item 1 if not approved. The revised Plan shall be submitted to the Board for approval within six (6) months of receiving notification of the Board's decision.
4. Notwithstanding the time schedule referred to in the Closure and Reclamation Plan, the Licensee shall endeavour to carry out progressive Reclamation of areas, which are abandoned prior to the Closure of operations.
5. The Licensee shall complete the restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
6. Upon implementation of the Closure and Reclamation Plan, the Licensee shall provide to the Board updates of all Closure and Reclamation activities within the Annual Report as described in Part B, Item 1.
7. Compliance with the Closure and Reclamation Plan specified in this Licence does not limit the legal liability of the Licensee, other than liability arising from provisions of the Act and its Regulations.

**GWICH'IN LAND AND WATER BOARD**



Witness – Leonard DeBastien



Chair – Paul Sullivan

**SCHEDULE 1: ITEMS REQUIRING SUPPLEMENTAL INFORMATION  
AS REQUIRED THROUGH LICENCE CONDITIONS**

<b>Licence Condition</b>	<b>Item</b>	<b>Timeline for Submission</b>	<b>Requirement</b>
Part B, Item 1	Annual Report	Not later than March 31 of each year	Acceptance by Board
Part B, Item 5	Signage to inform the public of Water Supply and Waste Disposal Facilities	Not Later than February 1, 2017	Satisfaction of Inspector
Part B, Item 6	Signage to inform the public of SNP Stations	Not Later than June 1, 2017	Satisfaction of Inspector
Part D, Item 6	Notification to the Board and Inspector, in writing, prior to initiating Sludge removal	At least thirty (30) days prior	Notification
Part D, Item 14	Notification to the Inspector, prior to the burning of any refuse	At least twenty four (24) hours prior	Notification
Part E, Item 2	Updated Operation and Maintenance Plan for the Solid Waste Disposal Facilities	Not later than February 1, 2017	Approval by Board
Part E, Item 3	Updated Operation and Maintenance Plan for the Sewage Waste Disposal Facilities	Not later than May 1, 2017	Approval by Board
Part F, Item 2	Updated Spill Contingency Plan	Not later than August 1, 2017	Approval by Board
Part G, Item 1a	Notification to the Board in writing of proposed Modifications	At least sixty (60) days prior	Acceptance by Board
Part G, Item 3	Written notification of commencement to the Board and an Inspector	At least ten (10) days prior	Notification
Part G, Item 4	As-built drawings for Modifications	Within ninety (90) days of completion	Acceptance by Board
Part H, Item 1	Construction plan and design report	At least sixty (60) days prior	Approval by Board
Part H, Item 3	Written notification of commencement to the Board and an Inspector	At least ten (10) days prior	Notification
Part H, Item 4	As-built drawings for Construction	Within ninety (90) days of completion	Acceptance by Board
Part I, Item 1	Closure and Reclamation Plan	At least six (6) months prior to abandoning any Water Supply, Sewage or Solid Waste Disposal Facilities	Approval by Board



## GWICH'IN LAND AND WATER BOARD

Box 2018 Inuvik, NT X0E 0T0

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www.glwb.com

LICENSEE: Charter Community of Tsiigehtchic

LICENCE NUMBER: G16L3-002

EFFECTIVE DATE OF LICENCE: November 1, 2016

EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM (SNP): November 1, 2016

### SURVEILLANCE NETWORK PROGRAM

#### A. Location of Surveillance Stations

Station Number	Description
1557 -3	Raw Water Supply, Ts'oh Vàn Lake.
1557 -4	Sewage effluent from "E" Lake (at point of outflow).
1557 -5	Outflow from wetland "C" into Mackenzie River.
1557 -6	Run-off from Landfill to "E" Lake during times of overland flow

#### B. Sampling and Analysis Requirements

1. Water at Surveillance Network Program Station Number **1557-4** shall be sampled immediately after break-up of the Lake "E" Sewage Lagoon, and then prior to freeze up, and analyzed for the following parameters:

Ammonia Nitrogen	BOD <sub>5</sub>	Fecal Coliform
pH	Total Suspended Solids	Oil and Grease
Total Phenols	Total Cadmium	Total Chromium
Total Cobalt	Total Copper	Total Manganese
Total Nickel	Total Lead	Total Iron
Total Zinc	Total Mercury	



2. Water at Surveillance Network Program Station Number 1557-5 shall be sampled annually, during periods of flow, and analyzed for the following parameters:

Ammonia Nitrogen	BOD <sub>5</sub>	Fecal Coliform
pH	Total Suspended Solids	Oil and Grease

3. Water at Surveillance Network Program Station Number 1557-6 shall be sampled monthly, during periods of flow, and analyzed for the following parameters:

Ammonia Nitrogen	BOD <sub>5</sub>	Fecal Coliform
pH	Total Suspended Solids	Oil and Grease
Total Phenols	Total Cadmium	Total Chromium
Total Cobalt	Total Copper	Total Manganese
Total Nickel	Total Lead	Total Iron
Total Zinc	Total Mercury	

4. 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.
5. All analyses shall be performed in a laboratory approved by an Analyst.

#### C. Flow and Volume Measurement Requirements

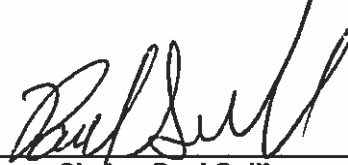
1. The monthly and annual quantities of water pumped from Surveillance Network Program Station Number 1557-3 shall be measured and recorded in cubic metres.

October 27, 2016

GWICH'IN LAND AND WATER BOARD



Witness – Leonard DeBastien



Chair – Paul Sullivan