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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 3BM-IGL1520/Renewal

March 31, 2015

Brian Flemming
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Government of Nunavut
Dept. Community and Government Services
P.O Box 379, Pond Inlet, NU X0A 0S0

E-mail: broy@gov.nu.ca

RE: NWB Renewal Licence No. 3BM-IGL1520

Dear Mr. Flemming and Mr. Roy;

Please find attached Licence No. **3BM-IGL1520** issued to Hamlet of Igloolik by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Land Claims Agreement or NLCA)*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee may be in contravention of the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three (3) months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public's interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment; however, a minimum of sixty (60) days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are

acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received by interested persons on issues identified. This information is attached for your consideration.¹

Sincerely,



Thomas Kabloona
Nunavut Water Board
Chair

TK/ce/ri

Enclosure: Licence No. **3BM-IGL1520**
Comments – AANDC

Cc: Qikiqtani Distribution List

¹ Aboriginal Affairs and Northern Development Canada (AANDC), September 11, 2014;

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DECISION

LICENCE NUMBER: 3BM-IGL1520

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a Licence renewal received on March 13, 2014, made by:

HAMLET OF IGLOOLIK

to allow for the use of water and deposit of waste during municipal activities by the Hamlet of Igloolik, located within the Qikiqtani Region of Nunavut at geographical coordinates as follows:

L a t i t u d e : 69°23'N and Longitude: 81°46'W

DECISION

After having been satisfied that the application was for a location that falls outside of an area with an approved Land Use Plan² as determined by the Nunavut Planning Commission (NPC) and exempt from the requirement for screening as described within Schedule 12-1 by the Nunavut Impact Review Board³ in accordance with Article 12 of the *Nunavut Land Claims Agreement (NLCA)*, the NWB decided that the application could proceed through the regulatory process. In accordance with S.55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (Act)* and Article 13 of the *NLCA*, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *NLCA* and of the *Act*, waived the requirement to hold a public hearing, and determined that:

Licence No. 3BM-IGL0911 be renewed as Licence No. 3BM-IGL1520 subject to the terms and conditions contained therein. (Motion #: 2014-B1-045)

Signed this 31st day of March, 2015 at Gjoa Haven, NU.



Thomas Kabloona
Nunavut Water Board, Chair

TK/ce/ri

² Nunavut Planning Commission (NPC) Conformity Determination, August 13, 2014.

³ Nunavut Impact Review Board (NIRB) Screen Exemption from Screening Decision, August 20, 2014

I. BACKGROUND

The Hamlet of Igloolik (Hamlet or Igloolik) is located on Igloolik Island in the northwest region of the Foxe Basin within the Qikiqtani Region of Nunavut, at the following coordinates: Latitude: 69°23'N and Longitude: 81°46'W. Igloolik is located within a zone of continuous permafrost and the island is composed of dolomitic conglomerates, with sandstone, dolostone and siltstone. The island is at a very low elevation with numerous ponds and an extensive tidal foreshore.

In 2014, the Hamlet of Igloolik has an estimated population of approximately 1,780. Existing Water Use and Waste Disposal Facilities include a freshwater intake pump, reservoir, truck fill station, a three cell sewage exfiltration lagoon system with a wetland, an older fourth sewage cell constructed prior to the three cell lagoon system, domestic landfill, and metallic waste landfill.

The Water Supply, Waste Water treatment by lagoon process and Waste Management systems within this Water Licence are at different stages with system upgrades and design/construction activities. The following is an update provided by the Licensee for each system:

Water Supply: This system consists of a Water Truck Fill Station, Water Storage Reservoir and an intake pipe from South Lake to the Water Storage Reservoir. The Licensee has indicated that the design and construction plans to expand the Water Storage Reservoir are currently on hold, pending capital fund approvals. The Board advises that an amendment application with construction drawings shall be submitted prior to the commencement of construction for the Water Supply system.

Wastewater Treatment by Lagoon: A three cell exfiltration lagoon is used to treat the entire wastewater produced annually in the Community. The older cell constructed prior to these three cells is still there and sometimes is used in case of emergency. The design for rehabilitation and improvement of the sewage lagoons is complete. The Licensee has expressed that the project is on hold. The Board advises that an amendment application with construction drawings shall be submitted prior to the commencement of construction for the Wastewater Treatment Facility.

Solid Waste Management: The solid waste management for the Hamlet is comprised of a domestic waste site and a metal waste site. The Licensee has expressed that the rehabilitation plans for the Waste Management Facilities is currently on hold due to funding. The Board advises that an amendment application with construction drawings shall be submitted prior to the commencement of construction or upgrades for the new Waste Management System.

II. FILE HISTORY

Information contained on the NWB's FTP site indicates that the Nunavut Water Board (NWB) has issued two licences to the Hamlet of Igloolik in past years.

Licences issued by the NWB to the Hamlet of Igloolik are the followings:

▪ ***Licence NWB3IGL0308***

This licence was issued on February 5, 2003 with an expiry date of August 31, 2008. The licence allowed for the use of 70,000 cubic metres of water annually and deposit of waste in support of a Municipal undertaking.

▪ ***Licence 3BM-IGL0911***

This licence was issued on July 10, 2009 with an expiry date of July 31, 2011. The licence allowed for the use of 70,000 cubic metres of water annually and deposit of waste in support of a Municipal undertaking.

III. PROCEDUAL HISTORY

The NWB received from the Government of Nunavut – Community Government Services (GN-CGS), on behalf of the Hamlet of Igloolik, the following application documents (Application) for the ten (10) year renewal of Licence 3BM-IGL0911, from March 13, 2014 to May 16, 2014:

- Hamlet Annual Reports 2009, 2010, 2011, 2012 and 2013
- Renewal Application Cover Letter, May 16 2014
- Hazardous Materials Spill Database, Baffin Spills in 2013
- Igloolik Bathymetric Survey, Arktis Solutions Incorporated, August 2011
- Igloolik Cover Letter to NWB Application March 2014
- Igloolik Water Licence Application March 2014
- Location of South Lake 2014
- Hamlet of Igloolik, Plan for Compliance Igloolik
- Technical Summary of Environmental Facilities under the Water License # 3BM-IGL 0911 (Part B:1.a) of the Hamlet of Igloolik, Baffin Region, Nunavut (in English & Inuktitut) March 2014
- Igloolik Water Supply Design Development ARKTIS March 2014
- CGS Letter to NWB for Igloolik May 2014
- Department of Community and Government Services Letter to NWB, May 16, 2014
- Igloolik Chemical Analysis of raw water 2008
- Igloolik Lab Final Report, Taiga Environmental Laboratory, September 04 2008
- Igloolik Operations and Maintenance Manual Water Truck Fill Station, 1980 (Chapter 1- 10)
- Design Development Report – Improvement of Water Supply System, Igloolik, Nunavut, 15 October 2011

Following receipt and an internal review, NWB distributed the Application for a thirty (30)-day comment period on August 12, 2014. On September 11, 2014, submission was received from Aboriginal Affairs and Northern Development Canada (AANDC).

The NWB has placed in its Public Registry copies of the Application and all comments received from interveners. This information can be accessed on the NWB's File Transfer Protocol (FTP) site using the following link (Username: **public**; Password: **registry**):

Based upon the results of the detailed assessment, including consideration of any potential accidents, malfunctions, or impacts to water that the overall project might have in the area, the Board approved the application and has renewed the Licence 3BM-IGL0911 as Licence 3BM-IGL1520.

IV. ISSUES

The following sections provide background information relevant to the terms and conditions included in this Licence, in the context of submissions received and/or the Board's rationale. Where appropriate, the Board has removed or modified terms and conditions associated with the previous licence, which are no longer applicable under this renewal Licence.

Term of the Licence

In accordance with s. 45 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA or the Act), the NWB may issue a licence for a term not exceeding twenty-five (25) years. In determining an appropriate term for a renewal licence, the Board generally takes into consideration several factors including intervenor's comments, the Licensee's compliance history, as well as the rationale contained in the Application.

The Licensee requested in its Application a ten (10) year term for the licence. The intervening party, AANDC, in their submissions recommended a renewal term of not more than five (5) years. The Board in examining the compliance history of the Licensee and the comments received from AANDC has granted a term of five (5) years to the Licence. In so doing, the Board believes and expects that the five-year terms will provide the Licensee with significant opportunities to prove that it can consistently abide by the terms and conditions in the licence overtime.

Moreover, it is noted that the Hamlet's actual daily water use may be higher than 300 cubic metres per day when filling the Water Storage Reservoir which could trigger a change of the Licence Type "B" to Type "A". The five (5) year term shall allow the Licensee to measure the daily water use during two (2) full years and help the Board to accurately determine the Type of Licence for the future renewal

Annual Report

Under the reporting section of the Licence, Part B, Item 1, the Licensee is required to submit, on an annual basis, a report pertaining to water use and waste deposit activities. Although the 2011-2013 reports submitted include useful information, the AANDC noted that the reporting requirements specified in Part B, Item 1 of the Licence were not being fully satisfied. The NWB concurs with AANDC's recommendations and requests that the Licensee supplement the standard NWB reporting forms with additional documentation in order to ensure that all monitoring requirements are satisfied. The Licensee is encouraged to develop its own annual reporting template. This template should include tabular summaries of monitoring data pursuant of Part B, Item 1 (a) of the Licence. The Licensee is encouraged to contact AANDC, the NWB, or the GN-CGS to discuss its licensed monitoring program. This reporting information will be kept in the NWB's public registry

and made available to interested persons upon request. Further, the NWB maintains annual reporting information on its FTP site, which can be accessed using the following link (username: **public** and password: **registry**): <ftp://ftp.nwb-oen.ca/1%20PRUC%20PUBLIC%20REGISTRY/>.

Water Supply Facilities

The Hamlet of Igloolik currently obtains its potable water from South Lake to annually supply an existing reservoir with a capacity of 65,000 cubic metres. The Licensee has indicated that the Hamlet's plans to expand the existing reservoir are currently on hold, pending capital fund approvals. Water is currently withdrawn during the months of August and September with a maximum authorized water use quantity of 70,000 cubic metres annually.

No concerns were raised by the parties in their written submissions as to the amount of water required by the Hamlet, the manner in which it is obtained or in the manner in which this water will be used.

In review of the application, the NWB relied on the new Nunavut Waters Regulations (Regulations) issued on April 18, 2013 and the definition of "Use" provided by the Act. All water taken from the South Lake, main water source to fill the reservoir would qualify under the definition as "use of water". Therefore, having given due consideration to the information presented during the review, the NWB has determined that water extracted from the source water supply, for any purposes, is considered as a Use of water and that the Licensee is requested to daily measure directly, on the source at the Freshwater Intake Pump, all freshwater used for all purposes. The Licensee shall also measure and on a daily, monthly and annual basis all freshwater used for all purposes at the Truck-fill Station.

The Licensee is also advised that according to the Schedule 2 of Regulations any use of 300 cubic metres or more per day and any use of waters related to the storage of 60,000 cubic metres or more water would require a Type "A" Water Licence. The Board has, therefore, set the maximum water usage for all purposes specified in this Licence at 81,208 cubic metres per year or up to 299 cubic metres per day for filling of the reservoir. Lastly, please note that the NWB has renewed the terms and conditions associated with water use by the Hamlet accordingly.

Sewage Disposal Facilities

The Hamlet of Igloolik currently provides trucked sewage services for the Community residents, businesses and institutions. No concerns were raised by the parties in their written submissions as to the manner in which the sewage is treated and disposed of. The NWB has renewed the terms and conditions associated with Sewage Disposal Facility accordingly. The NWB requests that the Licensee install flow-meters on the waste discharge pipelines by May 31, 2015 in order to accurately measure the sewage disposal volumes (of the year following the calendar year being reported) and comply with Part B, Item 1 and 4 of the current Licence. The NWB has also added a requirement that all inspection of engineered facilities related to the management of water and waste shall be carried by an Engineer (Civil, Municipal or Geotechnical) annually, in order to comply with Part F, item 3, the Licensee must ensure that it will provide annual Engineer reports within 60 days of inspections, including a cover letter outlining an implementation plan

addressing each of the Engineer's recommendations. The Board acknowledges that though no reports or cover letters have been provided to date, the Licensee has set forth, in the Igloolik Compliance Plan, a plan to comply with this condition in the future.

Finally, as part of the Sewage Disposal Facility Operation and Maintenance (O&M) Plan, the NWB requires that the Licensee include procedures and frequencies of inspections to be carried out to verify whether or not/when there is flow from the Sewage Disposal Facility. Visual inspections to verify flow from the Sewage Disposal Facility are required to ensure that the monitoring program under Part D, Item 2 of the Licence is initiated at the appropriate time and that the Inspector is notified upon its commencement.

Solid Waste Disposal Facilities

In the recently submitted *Technical Summary of the Environmental Facilities* document, the Hamlet expressed plans in 2014 to segregate hazardous wastes like batteries etc. The Board requests that the Hamlet submit an Operation and Maintenance (O&M) Plan for the Solid Waste Disposal Facilities that include procedures for the segregation, storage and eventual removal/disposal of hazardous wastes, including waste oil, and runoff management. The Licensee should note that a condition has been included in the licence for the submission of O & M Plan for the Solid Waste Disposal Facilities within ninety (90) days of issuance of this Licence under Part F, Item 1.

Operation & Maintenance Plans

In accordance with Part F, Item 1, of the expired licence, the Licensee was required to submit a Sewage Disposal Facility Operation and Maintenance (O&M) Plan (including the Sewage Sludge Management Plan, a Solid Waste Disposal Facility Operation and Maintenance (O&M) Plan, and a Spill Contingency Plan. These Plans need to be developed to the satisfaction of the NWB for the operation and maintenance of the facilities, the protection of the environment with regard to potential spills through day-to-day operations, and abandonment and restoration of various sites.

The Licensee has submitted a document entitled: Igloolik Operations and Maintenance Plan Water Truck Fill Station that needs to be updated to include an Abandonment & Restoration Planning, and Spill Contingency Planning. The renewed Licence has therefore continued to include the requirement to provide separate updated O&M Manuals for Water Supply and Waste Disposal Facilities, to the NWB within a set timeframe of issuance of the Licence. The NWB reviewed and deemed the short-term goals of the submitted Compliance Plan dated March 13 2014, as satisfactory. The NWB also reviewed the Department of Community and Government Services' Letter to NWB, dated May 16 2014, clarifying and answering the questions put forward by the Board on the submitted Compliance Plan by the Licensee.

The only comments received from interested parties were from the AANDC. AANDC indicated that the NWB should either require the Licensee to submit any outstanding Operational Plans before renewing the licence, or require the submissions within 90 days of renewing the licence. This includes plans for Operation and Maintenance of the Solid Waste Management and Sewage Disposal Areas, Abandonment and Restoration and Spill Contingency.

Taking into account the review of the application and comments received, the O&M

Manuals to be submitted are as follows, in accordance with Part F, Item 1 of the Licence:

- a. *Updates to the Water Storage and Distribution Facility Operation and Maintenance (O&M) Plan; Amendments required include:*
 - i. *An improved description of the technology and process;*
 - ii. *A detailed breakdown of maintenance work and schedule of work required for the system equipment (including the submersible pumps, intake screens, and valves);*
 - iii. *Revisions to the faded Intake Screen and Reservoir Fill Line Drawings (Drawing No. 78-IB7-101 to 106); and*
 - iv. *Submitted O & M details 1979 Service Contracts for the operating pumps, if these Service Contracts are still required please renew and update the submitted information.*
- b. *Sewage Disposal Facility Operation and Maintenance (O&M) Plan (including the Sewage Sludge Management Plan);*
- c. *Solid Waste Disposal Facility Operation and Maintenance (O&M) Plan; and*
- d. *Spill Contingency Plan;*

The purpose of the O&M Manuals noted above is to assist Hamlet staff in carrying out the procedures relating to their water distribution and waste disposal facilities. The O&M Manuals should demonstrate to the NWB that the Hamlet is capable of operating and maintaining the infrastructure related to water use and waste disposal to meet the requirements of the Licence. The O&M Manuals should be based, at a minimum on the various guidelines available (i.e. *Guidelines for the Preparation of an Operations and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories*, Duong and Kent, 1996) acceptable by NWB, and other regulatory guidelines as deemed appropriate.

Abandonment and Restoration Plan

General terms and conditions under Part G, Item 1 in the licence require the Licensee to submit an Abandonment and Restoration (A&R) Plan at least six (6) months prior to abandoning any facility under the scope of this renewal Licence. It should be noted that the Board is aware that the Licensee is contemplating abandoning the old water intake structure and pump house associated with the potable water treatment facilities. The Board expects that an appropriate A&R plan will be submitted in accordance with the terms and conditions in this licence.

Monitoring Plan

Although the 2011-2013 reports submitted include some of the required information, however, the reporting requirements specified in Part B, Item 1 of the Licence are not being fully satisfied. The Licensee needs to submit a relevant Monitoring and Quality Assurance / Quality Control (QA/QC) Plan for its operations, more detailed requirements for the QA/QC Plan are included in Part H, Item 9 and 10 of this Licence.

Engineered Drawings and Designs

The Licensee has stated that it will construct a new sewage lagoon, waste disposal facility, and expand its water reservoir once it secures the necessary capital funding. The Licensee shall refer to Part E of this Licence for the conditions applying to modifications and construction of the facilities included in this Licence. Part E Item 1 states that the Licensee

shall submit to the Board for approval in writing, for construction design drawings stamped by a qualified Engineer, sixty (60) days prior to the construction of any dams, dykes or structures intended to contain, withhold, divert or retain water or wastes. Part E, Item 4 of this Licence requires the Licensee to provide to the Board, for review, as-built plans and drawings, for facilities included under the scope of that licence, within ninety (90) days of completion of construction or, if already constructed, within ninety (90) days of issuance of the Licence.



NUNAVUT WATER BOARD WATER LICENCE RENEWAL

Licence No. 3BM-IGL1520

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

HAMLET OF IGLOOLIK

(Licensee)

P.O. BOX 30 IGLOOLIK NUNAVUT X0A 0L0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of waste for a period subject to restrictions and conditions contained within this Licence renewal:

Licence Number/Type: 3BM-IGL1520 TYPE "B"

Water Management Area: KINGORA WATERSHED - 20

Location: HAMLET OF IGLOOLIK
QIKIQTANI REGION, NUNAVUT

Classification: MUNICIPAL UNDERTAKING

Purpose: DIRECT WATER USE AND DEPOSIT OF WASTE

Quantity of Water use not
to Exceed: 81,208 CUBIC METRES *PER* ANNUM OR MAXIMUM OF
299 CUBIC METRES *PER* DAY

Date of Licence Issuance: MARCH 31, 2015

Expiry of Licence: MARCH 30, 2020

This Licence renewal, issued and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.

Thomas Kabloona,
Nunavut Water Board, Chair

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the use of water and the deposit of waste for a Municipal undertakings at the Hamlet of Igloolik, located within the Qikiqtani Region, Nunavut (Latitude: 69°23'N and Longitude: 81°46'W).

- a. 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 *Nunavut Waters and Nunavut Surface Rights Tribunal 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 subject to such requirements; and
- b. 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

“**Act**” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Addendum**” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report;

“**Amendment**” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“**Appurtenant Undertaking**” means an undertaking in relation to which a use of water or a deposit of waste is permitted by a licence issued by the Board;

“**Board**” means the Nunavut Water Board established under the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Effluent**” means treated or untreated liquid waste material that is discharged into the environment from a structure such as a settling pond, landfarm or a treatment plant;

“**Engineer**” means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2*

and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

“Existing Sewage Disposal Facilities” refers to the pre-upgraded Sewage Disposal Facilities under Licence 3BM-IGL1520 that comprised numerous ponds as identified in the Technical Summary Environmental Facilities Report March 2014;

“Existing Solid Waste Disposal Facilities” refers to the pre-upgraded Solid Waste Disposal Facilities under Licence 3BM-IGL1520 designated for the disposal of solid waste, as described in the renewal application dated March 13, 2014 and supplementary documents submitted with the application;

“Final Discharge Point” in respect of an effluent means an identifiable discharge point of a facility beyond which the operator of the facility no longer exercises control over the quality of the effluent;

“Freeboard” means the vertical distance between water line and the designed maximum operating height on the crest of a dam or dyke’s upstream slope;

“Geotechnical Engineer” means a professional engineer registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization with the engineering properties of earth materials in dealing with man-made structures and earthworks that will be built on a site. These can include shallow and deep foundations, retaining walls, dams, and embankments;

“Grab Sample” means an undiluted single water or wastewater sample, collected at a particular time and place that may be representative of the total substance being sampled, at the time and place it was collected.

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

“High Water Mark” means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

“Inspector” means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

“Licensee” means the holder of this Licence;

“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;

“Modified Sewage Disposal Facility” refers to the upgrade Sewage Disposal Facilities that comprises the Primary Sewage Lagoon and Retention Sewage Lagoon as identified on Drawing No. C-01, C-02 and C-04, Government of Nunavut Igloolik Waste Facilities, October 3, 2008, also as described in the renewal application dated March 13, 2014 and supplementary documents submitted with the application;

“Modified Solid Waste Disposal Facilities” referred to the up-graded Solid Waste Disposal Facilities designated for the disposal of solid waste, as identified on Drawing No. C-01, C-02 and C-04, Government of Nunavut Igloolik Waste Facilities, October 3, 2008 and modified as described in the renewal application dated March 13, 2014 and supplementary documents submitted with the application;

“Monitoring Program” means a monitoring program established to collect data on surface water and groundwater quality, to assess impacts of an appurtenant undertaking to the freshwater aquatic environment.

“Nunavut Land Claims Agreement (NLCA)” means the *“Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada”*, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“Regulations” means the *Nunavut Waters Regulations* SOR/2013-69 18th April, 2013;

“Retention Sewage Lagoon” is the secondary cell of the Modified Sewage Disposal Facilities and is identified within the drawings submission dated October 3, 2008, “Igloolik Sewage and Solid Waste Facilities”, specifically on Drawing No. C-01, Process Summary and drawing C-04, Sewage Lagoon Improvement Plan as described in the renewal application dated March 13, 2014 and supplementary documents submitted with the application;

“Sewage” means all toilet wastes and greywater;

“Sewage Wetland” comprises of the ‘Sewage Wetland’ Area Drawing No. C-01, ‘Wetland’ Drawing No. C-02 and ‘Proposed Wetland’ Drawing No. C-04, Government of Nunavut Igloolik Waste Facilities, October 3, 2008 as described in the renewal application dated March 13, 2014 and supplementary documents submitted with the application;

“Spill Contingency Plan” means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

“Sump or Sumps” A structure or depression that collects, controls, and filters liquid waste before it is released to the environment. This structure should be designed to prevent erosion while allowing percolation of liquid waste;

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

“**Waste**” means, as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means.

“**Waste Disposal Facilities**” consist of the Modified Sewage Disposal Facilities and the Modified Solid Waste Disposal Facilities as described in the renewal application dated March 13, 2014 and supplementary documents submitted with the application;

“**Water Supply Facilities**” comprises the area and associated intake infrastructure at Water Lake, the Intake Pump House and back-up truck fill station, the Water Treatment Plant, the Storage Tanks adjacent to the Water Treatment Plant and the Water Supply Pipe as described in the renewal application dated March 13, 2014 and supplementary documents submitted with the application;

“**Water**” or “**Waters**” means waters as defined in section 4 of the *Act*.

3. Enforcement

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31 of the year following the calendar year being reported, containing the following information:
 - a. an executive summary as required by Part B, Item 8;
 - b. tabular summaries of all data generated under the “Monitoring Program”;
 - c. the daily, monthly and annual quantities in cubic metres of fresh water obtained at the Water Supply Facilities;
 - d. the daily, monthly and annual quantities in cubic metres of all waste discharged;
 - e. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;

- f. a list of unauthorized discharges and summary of follow-up action taken;
 - g. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
 - h. any Addendum with updates or revisions for manuals and plans (i.e., *Operations and Maintenance Manuals/Plans*) as required by changes in operation and/or technology;
 - i. a summary of any studies or reports requested by the Board that relate to water use and waste disposal or restoration, and a brief description of any future studies planned; and
 - j. any other details on water use or waste disposal requested by the Board by November 1 of the year being reported;
2. The Licensee shall comply with the “Monitoring Program” described in this Licence, and any amendments to the “Monitoring Program” as may be made from time to time, pursuant to the conditions of this Licence.
 3. The “Monitoring Program” and compliance dates specified in the Licence may be modified at the discretion of the Board in writing.
 4. Meters, devices or other such methods as approved by the Board in writing, used for measuring the volumes of water used and waste discharged shall be installed, operated and maintained by the Licensee.
 5. The Licensee shall, within ninety (90) days following the first visit by the Inspector, following issuance of this Licence, post the necessary signs to identify the stations of the “Monitoring Program,” in the Official Languages of Nunavut.
 6. 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.
 7. The Licensee shall ensure a copy of this Licence is maintained at the Municipal Office at all times. Any communication with respect to this Licence and any notice provided to an Inspector, shall be made in writing to the attention of:

(a) Manager of Licensing:

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369
Email: licensing@nwb-oen.ca

(b) Inspector Contact:

Manager of Field Operations, AANDC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0

Telephone: (867) 975-4295
Fax: (867) 979-6445

8. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.
9. The Licensee shall ensure that all document(s) and correspondence submitted by the Licensee to the Board are received and acknowledged by the Manager of Licensing.
10. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.
11. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
12. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and condition imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
13. This Licence is not assignable except as provided in Section 44 of the Act.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all fresh water from South Lake using the Water Supply Facilities, to be stored in the Hamlet Reservoir, or as otherwise approved by the Board in writing.
2. The annual quantity of water used for all purposes shall not exceed 81,208 cubic metres annually or a daily quantity of water for all purposes shall not exceed 299 cubic metres.
3. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen.
4. The Licensee shall not remove any material from below the ordinary High Water Mark of any water body unless otherwise approved by the Board in writing.
5. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.

6. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.
7. The Licensee shall submit to the Board for approval in writing, at least thirty (30) days prior to the use of water in sufficient volume that the source water body may be drawn down, the following information: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall direct all Sewage to the Modified Sewage Disposal Facilities included under the scope of this licence.
2. The Licensee shall provide a minimum of ten (10) days' notice annually to an Inspector of the intent to discharge effluent from either the Modified Sewage Disposal Facilities.
3. All Effluent discharged from the Sewage Disposal Facility at Monitoring Program Station IGL-4, and IGL-5 shall meet the following Effluent quality standards:

Parameter	Maximum Concentration of Any Grab Sample
BOD ₅	100 mg/L
Total Suspended Solids	120 mg/L
Fecal Coliforms	1 x 10 ⁶ CFU/100mL
Oil and grease	No visible sheen
pH	between 6 and 9

4. The Licensee shall maintain at all times, a freeboard of at least 1.0 metre, or as recommended by a qualified engineer and as approved by the Board in writing, for all dams, dykes or other structures intended to contain, withhold, divert or retain water or wastes.
5. The Modified Sewage Disposal Facilities shall be maintained and operated in such a manner as to prevent structural failure.
6. The Licensee shall dispose of and permanently contain all solid wastes at the Modified Solid Waste Disposal Facilities, or as otherwise approved by the Board in writing.
7. The Licensee shall segregate and store all hazardous materials and/or hazardous waste within the Modified Solid Waste Disposal Facilities in such a manner as to prevent the

deposit of deleterious substances into any water, until such a time that the materials have been removed for proper disposal at an approved facility.

PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION

1. The Licensee shall submit to the Board for approval in writing, for construction design drawings stamped by a qualified Engineer, sixty (60) days prior to the construction of any dams, dykes or structures intended to contain, withhold, divert or retain water or wastes.
2. 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 of such proposed modifications at least sixty (60) days prior to beginning the modifications;
 - b. these modifications do not place the Licensee in contravention of 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; and
 - d. the Board has not rejected the proposed modifications.
3. Modifications for which all of the conditions referred to in Part E, Item 2, have not been met may be carried out only with written approval from the Board. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.
4. The Licensee shall provide to the NWB for review, as-built plans and drawings, stamped and signed by an Engineer, within ninety (90) days of completion of construction.
5. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
6. The Licensee shall implement and maintain sediment and erosion control measures prior to and during activities carried out under this Part, to prevent the release of sediment and minimize erosion.

PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

1. The Licensee shall submit to the Board for approval, within ninety (90) days of issuance of the Licence, Operations and Maintenance Manuals prepared where

appropriate, in accordance with the “Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996”. The following Manuals and Plans shall take into consideration the comments received during the application review process:

- a. Sewage Disposal Facility Operation and Maintenance (O&M) Plan (including the Sewage Sludge Management Plan;
 - b. Solid Waste Disposal Facility Operation and Maintenance (O&M) Plan; and
 - c. Spill Contingency Plan;
2. The Licensee shall review the Water Distribution Facility Operation and Maintenance (O&M) Plan. Changes in operation and technology should be modified accordingly. Revisions are to be submitted in the form of an Addendum to be included with the Annual Report. Additionally, the following specific amendments are required for the O&M:
 - a. An improved description of the technology and process;
 - b. A detailed breakdown of maintenance work and schedule of work required for the system equipment (including the submersible pumps, intake screens, and valves);
 - c. Revisions to the faded Intake Screen and Reservoir Fill Line Drawings (Drawing No. 78-IB7-101 to 106); and
 - d. Submitted O &M details 1979 Service Contracts for the operating pumps, if these Service Contracts are still required please renew and update the submitted information.
3. An inspection of all engineered facilities related to the management of water and waste shall be conducted by an Engineer (Civil, Municipal or Geotechnical) annually and before commissioning any facility. The Engineer’s report shall be submitted to the Board within sixty (60) days of the inspection, including a Cover Letter from the Licensee outlining an implementation plan addressing each of the Engineer’s recommendations.
4. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.
5. If, during the period of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:
 - a. employ the appropriate contingency measures as approved under the Operation and Maintenance Manuals for the Hamlet of Igloolik;
 - b. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
 - c. submit to the Inspector, a detailed report on each occurrence, not later than thirty (30) days after initially reporting the event, that provides the necessary information on the location (including the GPS coordinates), initial response action, remediation/clean-up, status of response (ongoing, complete), proposed disposal options for dealing with contaminated materials and preventative measures to be implemented.

PART G: CONDITIONS APPLYING TO ABANDONMENT, RESTORATION AND CLOSURE

1. The Licensee shall submit to the Board for approval an *Abandonment, Restoration and Closure Plan* at least six (6) months prior to abandoning any facilities or upon submission of the final design drawings for the construction of new facilities to replace existing ones. Where applicable, the Plan shall include information on the following:
 - a. water intake facilities;
 - b. the water treatment and waste disposal sites and facilities;
 - c. petroleum and chemical storage areas;
 - d. any site affected by waste spills;
 - e. leachate prevention;
 - f. an implementation schedule;
 - g. maps delineating all disturbed areas, and site facilities;
 - h. consideration of altered drainage patterns;
 - i. type and source of cover materials;
 - j. future area use;
 - k. hazardous wastes; and
 - l. proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.
2. The Licensee shall complete the restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
3. All disturbed areas shall be stabilized and re-vegetated as required, upon completion of work, and restored as practically as possible to a pre-disturbed state.

PART H: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall maintain Monitoring Program Stations at the following locations:

Monitoring Program Station Number	Description	Status
IGL-1	Raw water supply intake at South Lake	Active (Volume)
IGL-2	Runoff from Solid Waste Disposal Facility	Active (Water Quality)
IGL-3	Raw Sewage at Discharge point into the Sewage Disposal Facility	Not Active
IGL-4	Final control point from Sewage Disposal Facility	Active (Water Quality)
IGL-5	Final Effluent Discharge Point prior entering Foxe Basin	New (Water Quality)

2. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of water pumped at Monitoring Program Station IGL-1, for all purposes.
3. The Licensee shall sample at Monitoring Program Stations IGL-4 and IGL-5, monthly during periods of observed flow. Samples shall be analyzed for the following parameters:

Biochemical Oxygen Demand (BOD ₅)	Fecal Coliforms
Total Suspended Solids	pH
Conductivity	Nitrate-Nitrite
Oil and Grease (visual)	Total Phenols
Magnesium	Calcium
Sodium	Potassium
Chloride	Sulphate
Total Hardness	Total Alkalinity
Ammonia Nitrogen	Total Zinc
Total Cadmium	Total Iron
Total Cobalt	Total Manganese
Total Chromium	Total Nickel
Total Copper	Total Lead
Total Aluminum	Total Arsenic
Total Mercury	Total Organic Carbon (TOC)
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	

4. The Licensee shall sample at Monitoring Program Station IGL-2 once at the beginning, middle and near the end of discharge/run-off observed. . Samples shall be analyzed for the parameters under Part H, Item 3.

The Licensee shall measure and record the annual quantities of sewage solids removed from the Waste Water Treatment Plant along with the treatment/storage/disposal provided.

5. If additional Final Discharge Points are identified during the term of this Licence, the Licensee shall submit, along with the Annual Report, the following information:
 - a. Plans, specifications, geographic coordinates and a general description of each Final Discharge Point; and
 - b. A description of how each Final Discharge Point is designed and maintained, if required.
6. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board in writing.
7. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
8. The Licensee shall submit to the Board for review, within ninety (90) days of issuance of the Licence, a Quality Assurance/Quality Control Plan that conforms to the guidance document *Quality Assurance (QA) and Quality Control (QC) Guidelines For Use by Class "B" Licensees in Collecting Representative Water Samples in the Field*

and for Submission of a QAQC Plan INAC (1996). The Plan shall be acceptable to an accredited laboratory and include a covering letter from the accredited laboratory confirming acceptance of the Plan for analyses to be performed under the Licence.

9. The Licensee shall annually review the Quality Assurance/Quality Control Plan as required in Part H, Item 8 and modify the Plan as necessary. Proposed modifications shall be submitted to the accredited laboratory for approval.
10. Additional monitoring stations, sampling and analyses may be requested by an Inspector.
11. The Licensee shall include all of the data and information required by the “Monitoring Program” in the Licensee's Annual Report, as required per Part B, Item 1, or as requested by an Inspector.
12. Modifications to the Monitoring Program may be made only upon written approval from the Board. Requests for changes to the Monitoring Program should be forwarded to the NWB in writing, and should include the justification and appropriate evidence to support the change.