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NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

**File No.: 3BM-YRB1621/**  
New Replacement – Amendment

December 16, 2016

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Nunavut Airport Operations  
GN-ED&T  
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**RE: NWB New Replacement – Amendment Licence No. 3BM-YRB1621**

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Dear Mr. McKay and Mr. Roy:

Please find attached Licence No. **3BM-YRB1621**, issued to the Government of Nunavut – Department of Economic Development and Transportation 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 Agreement)*. The terms and conditions of the attached Licence related to the use of Water and the deposit of Waste 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 deposit 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 Licensee should note that applications to amend and/or renew this Licence must satisfy the applicable and preceding requirements of the *Nunavut Planning and Project Assessment Act* (NuPPAA), before the NWB could formally commence processing any application received subsequent to the implementation of NuPPAA.

The NWB strongly recommends that the Licensee consult the comments received from interested parties on issues identified. This information is attached for your consideration.<sup>1</sup>

Sincerely,

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Thomas Kabloona  
Nunavut Water Board, Chair

TK/sj/vk

Enclosure: Licence No. **3BM-YRB1621**

Comments – INAC, ECCC

Cc: Qikiqtani Distribution List

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<sup>1</sup> Indigenous and Northern Affairs Canada (INAC), August 19, 2016; and Environment and Climate Change Canada (ECCC), August 19, 2016.

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## **Background**

Application is by the Government of Nunavut – Community and Government Services, on behalf of the Government of Nunavut – Department of Economic Development and Transportation (the Licensee), for the renewal, for a term of five (5) years, as well as the amendment of an expired, Type “B” Water Licence (Licence No. 3BM-YRB0308/NWB3YRB0308), to allow for the continued operation of a Sewage Disposal Facility (the Facility). The Facility in question is located within the Hamlet of Resolute Bay, in the Qikiqtani Region, Nunavut. The Licence under which the Facility operated was issued on November 30, 2003 and expired on November 30, 2008. The Expired Licence allowed for the use of Water and the deposit of Waste in support of a Municipal undertaking that included the operation of a potable water treatment facility, solid waste disposal facility, and sewage treatment facility. The scope of the Renewal-Amendment Application, however, excluded the portable water supply facility and several other facilities and/or activities either discontinued or currently covered under distinct licences issued to the Hamlet of Resolute Bay or other entities.

## **Procedural History**

Prior to submission of the above-referenced Application, the Licensee had provided several submissions for the Nunavut Water Board’s (the NWB or Board) considerations between the period 2008 – 2016. However, the documents considered by the Board, as the Application, consisted of several submissions including the water licence application form and supporting information received in 2016. It should be noted that due to the relatively long period of time that had elapsed between the expiry of Licence No. 3BM-YRB0308 and receipt of submissions that constituted the complete Renewal-Amendment Application, the NWB decided to consider the Application as a New Replacement – Amendment Application to reflect the discontinuity of an active water licence for the project for the relevant period.

The following is a list of the documents received in support of the Application for the New Replacement – Amendment Licence (the Application):

- Renewal and Amendment Application form;
- Operations and Maintenance Manual for the Resolute Bay Airport Existing Sewage Lagoon, April 2016;
- Effluent Quality Calculations for the Sewage Lagoon;
- Plan for Compliance for Licence No. NWB3YRB0308;
- Resolute Bay: Interim Sewage Treatment Plan for Discussion;
- Spill Contingency Plan Resolute Bay Airport Existing Sewage Lagoon;
- Community Inspection Report;
- Map of Resolute Bay Airport;
- Solid Waste Plan;
- Hamlet of Resolute Bay Airport Sewage Lagoon Quality Assurance / Quality Control (QA / QC) Plan;
- Project Proposal Summary for Resolute Bay Airport Sewage Lagoon (English);
- Project Proposal Summary for Resolute Bay Airport Sewage Lagoon (Inuktitut);
- GN-GCGS’ Cover Letter to NWB for Resolute Bay Airport;
- 2014 Annual Report for Resolute Bay Airport Sewage Lagoon;
- 2015 Annual Report for Resolute Bay Airport Sewage Lagoon;

- Resolute Bay Cover Letter, July 16, 2016;
- Effluent Flow Diagram;

Following the Board's receipt of the Application, a preliminary review was conducted, in which additional information was requested from and submitted by the Licensee, before distribution of the Application on July 19, 2016 for a thirty (30) day public review and/or comment period. Prior to the August 19, 2016 submission deadline, comments<sup>1</sup> were received from Indigenous and Northern Affairs Canada (INAC) and Environment and Climate Change Canada (ECCC).

INAC provided in its submission several comments and recommendations on topics that included but not limited to potable water use and sources, monitoring of Strip Lake, environmental assessment of the lagoon facility, application scope, outstanding compliance issues, and sewage/wastewater treatment options. Further, INAC requested in its submission that the Applicant provide responses to some of the issues that INAC identified. In response, the Applicant provided correspondence to address INAC's comments and concerns<sup>2</sup>. Following the Applicant's response, INAC provided a follow-up correspondence<sup>3</sup> that included additional comments and recommendations pertaining to the monitoring of Strip Lake, the sewage treatment system wetland, and the proposed term for New Replacement – Amended Licence if issued for the project. ECCC provided comments and recommendations on topics such as landfill leachate, sludge and sewage management, monitoring, and effluent quality.

On the topic of pre-licensing requirements, the NWB received a copy of the Nunavut Planning Commission's (NPC) Land Use Conformity Determination<sup>4</sup> for the Application on June 28, 2016, which stated that the project proposal was previously reviewed by the NPC and that NPC's May 28, 2009 conformity determination remains applicable. In addition, the NPC stated that the project is exempt from screening by the Nunavut Impact Review Board (NIRB) in accordance with section 12.4.3 of the NLCA, as the components or activities under the current scope of the project are not significant modifications to the project.

Access to all information received in support of the Application and generally pertaining to the file can be accessed through the NWB's File Transfer Protocol (FTP) site and Public Registry at the following link:

<ftp://ftp.nwb-oen.ca/../../registry/3%20MUNICIPAL/3B/3BM%20-%20Municipality/3BM-YRB0308/>.

### **Scope of application**

Included under the scope of the expired licence were the following activities and/or facilities: use of Strip Lake as a potable water supply source, operation of a solid waste disposal facility and operation of a sewage disposal facility. In its Application, the Licensee requested that the solid waste disposal facility and potable water treatment facility be exclude from the scope of any Replacement – Amended Licence issued for the undertaking. The excluded facilities are

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<sup>1</sup> Indigenous and Northern Affairs Canada (INAC), August 19, 2016; and Environment and Climate Change Canada (ECCC), August 19, 2016.

<sup>2</sup> Email from B. Roy, GN-CGS, to Licensing Department, NWB, Re: Responses to INAC Comments, August 23, 2016.

<sup>3</sup> Indigenous and Northern Affairs Canada (INAC), August 26, 2016.

<sup>4</sup> Nunavut Planning Commission (NPC) Determination, June 28, 2016.

appropriately included under the scope of Type “B” Licences No. 1BR-RBL1419, issued to Transport Canada, and Licence No. 3BM-RUT1520, issued to the Hamlet of Resolute Bay, respectively.

## **File History**

Both the NWB and the Northwest Territories Water Board (NWTWB) have, in the past, issued water licences to all or some aspects of the works, activities, and facilities associated with the undertaking. The following provides an overview of the licences previously issued to the undertaking:

- *Licence No. N4L3-1561*: This Licence was issued by the NWTWB to the Government of the Northwest Territories – Arctic Airports Division, on May 1, 1996 and expired on April 30, 2001. The Licence allowed for the use of 50,000 cubic metres of water annually and the deposit of waste for a municipal undertaking.
- *Licence NWB3YRB0308 (3BM-YRB0308)*: This Licence was issued by the Nunavut Water Board to the Government of Nunavut – Department of Community Government and Transportation, on November 30, 2003 and expired on November 30, 2008. The Licence allowed for the use of 600 cubic metres of water annually and the deposit of waste in support of a Municipal undertaking. This is the Licence being considered by the Board under the Application.

## **Issues for Consideration**

The following sections provide background information related to the terms and conditions included in this New Replacement – Amended Licence, in the context of the submission(s) received and/or the Board’s rationale. It should be noted that, where appropriate, the Board has removed or modified terms and conditions associated with the expired licence, which the Board considered not applicable under the New Replacement – Amended Licence.

### *Term of Licence*

In accordance with section 45 of the Act, the NWB may issue a licence for a term not exceeding twenty-five (25) years. In determining the appropriate term of a licence, the Board takes into consideration several factors including the Licensee’s past performance, compliance record and history, ability to comply with the terms and conditions included of a potential licence, interveners’ comments and recommendations, and more. The Licensee has requested a five (5) year term for any licence issued to the undertaking. INAC in its submission indicated that it supports the term requested by the Licensee, which the Board is also in agreement with. The Board has, therefore, granted the five (5) year term requested by the Applicant for the Replacement – Amended Licence. The Board believes that the term granted will provide the Licensee with adequate time to transition to a new, engineered facility expected to eventually replace the current Sewage Disposal Facility, under a future licence renewal or amendment application.

## **Annual Report**

Similar to conditions generally included in licences issued by the Board for similar undertakings, the NWB has included under, Part B, Item 1 of the Replacement – Amended Licence, requirements for the Licensee to submit to the Board for review, annually and prior to

the 31<sup>st</sup> of March following the year being reported, a report detailing water use and waste deposit activities for the preceding year. The Board includes these Annual Reports on its FTP sites as well as provide Annual Reporting information to interested parties/persons upon request.

The NWB has included on its website a standardized form for reporting that licensees can use to submit Annual Reporting information, supplemented by other relevant information. Copies of the NWB's generic Annual Reporting Form can be obtained for the Board's FTP site through the following Link:

<ftp://ftp-oen.ca/ADMINISTRATION/Standardized%20Forms/>.

### **Water Use**

Under the Expired Licence, the Licensee was authorized to use six hundred (600) cubic metres of water annually from Strip Lake. In its Application, the Licensee requested the exclusion of potable water use from any Licence issued to the undertaking as any potable water use that may be required, fourteen (14) cubic metres per day, is currently obtained and accounted for under Licence No 3BM-RUT1520, issued to the Hamlet of Resolute Bay. The Board has, however, authorized under Part C, Item 1 of this Licence, the use of one (1) cubic metre of water per day for sampling and monitoring purposes involving Strip Lake.

### **Waste Management**

#### *Sewage Treatment*

In its Application, the Licensee also requested the continued use of a four-cell, non-engineered, unlined, sewage lagoon facility and wetland area (Sewage Disposal Facility), located approximately five (5) kilometres from the Resolute Bay Airport, which was also included in the scope of the expired licence. The facility is used to treat wastewater generated by a subset of the Hamlet of Resolute Bay's residences and/or businesses. An evaluation of the lagoon system determined that the facility's capacity is inadequate to meet current demands. However, to partially address the capacity issues in the interim, the Licensee sometimes decant the facility twice annually. Effluent decanted from the lagoon travels through an approximately two (2) – kilometre long wetland area prior to entering the marine environment. Both intervening parties, ECCC and INAC, have provided several comments and recommendations regarding sewage lagoon facility or Sewage Disposal Facility.

ECCC in its submission stated that the high level of treatment provided by the airport sewage lagoon wetland system makes it preferable in terms of maximizing the treatment of trucked sewage. Although the facility experiences capacity issues, ECCC supports the Licensee's continued use of the facility pending sampling results to be obtained in the summer of 2017 and confirmation of the effluent quality reaching the marine environment. If, however, the sampling results indicate that the current treatment is inadequate, ECCC recommends that alternative sewage management process be evaluated. Further, given the capacity issues experienced by the facility, ECCC recommended that the Licensee evaluate methods to optimize wetland treatment of sewage effluent, including the timing of discharge to the wetland as well as retention time. Conditions have been included under Part D, Item 3 of the Licence, requiring the Licensee to submit to the Board for review, with ninety (90) days of completion of monitoring in the summer of 2017, a report summarizes and analyses the result in the context of ECCC's concerns. The report should also include details pertaining to alternative initiatives for

managing the sewage treated by the facility if sampling results determine that the facility's treatment regime is ineffective.

INAC stated in its submission that a full environmental assessment, as suggested by INAC in 2009, has not been undertaken for the facility. However, if the current option chosen is to continue using the lagoon facility and adjacent wetland, the wetland assessment report would satisfy the condition of an environmental assessment. The Licensee in response indicated that an extended monitoring program of the sewage effluent within the wetland area is planned in order to determine the efficiency of treatment.

While the Board agrees that the added monitoring proposed by the Licensee will provide details about the facility's treatment efficiency, the Board has included terms and conditions under Part G, Item 3 of the Licence, requiring the Licensee to undertake an environmental assessment of the site as part of any closure and reclamation procedures for the facility

#### Wetland

INAC recommended in its submission that if the wetland is to be included in the potential Renewed and Amended Licence, the Licensee should be required to submit a Final Wetland assessment report within a timeframe that is acceptable to the NWB. In its response to INAC's recommendation, the Licensee indicated that the wetland will continue to be used until a new wastewater treatment plant is constructed and commissioned. As the wetland and other components of the treatment system are not engineered and are expected to be phased out in the coming years, once a new water treatment facility is constructed, the Board believe that purposes of an assessment report at this point in time may be limited

#### Sludge

Detail included in the application states that one of the cells in the lagoon system is used to treat sludge generated by the facility. ECCC in its submission recommended that the Licensee conduct both depth measurement and sludge quality testing as well as evaluate design requirements regarding sludge removal to enhance the lagoon's performance. Further, any sludge removed should be analyzed and managed accordingly. Consistent these recommendations the NWB has included condition under Part D, Item 11 of the Licence for the Licensee to address this requirement.

#### Other

Both INAC and ECCC recommended that the Licensee implement measures to optimize treatment at the Sewage Lagoon Facility, including retention time, timing of discharge, and more. The Board encourages the Licensee to take this recommendation into consideration during operation of the facility.

#### Treatment Options

The Licensee included as part of its Application, a document entitled *Resolute Bay: Interim Sewage Management Plan for Discussion*, that included three (3) options for treating the sewage associated with the undertaking in the short-term, as it plans to construct a new wastewater treatment facility in 2019/2020. Option 1 focuses on continuing with the current treatment arrangement while Options 2 and 3 involve discharging the wastewater into the existing piped treatment system. Both intervening parties in their submissions commented on some or all of the options articulated by the Licensee.



EC indicated that it supports Option 1, the continued use of the sewage lagoon facility, pending next summer's sampling and confirmation of effluent quality reaching the receiving environment and that alternative treatment options should be considered based on the resultant effluent quality. INAC recommended that further details on any proposed interim arrangement to managed trucked sewage, Options 2 and 3, should be provided, such as the volume of sewage that will be diverted from the sewage lagoon system and the feasibility and capacity of the piped sewage system to handle additional volumes of raw sewage. In addition, INAC stated that the plan should include steps for transitioning to the proposed wastewater treatment plant as well as related target dates, preliminary planning, timelines, and design information for the proposed wastewater treatment plant. While the Board concurs with INAC that the information relevant to treatment Options 2 and 3 and the new wastewater treatment plant may be useful, it should be noted that the Licensee has decided to not pursue Options 2 and 3 or construct the new wastewater treatment plant under the scope of this Licence.

#### Solid Waste Management

The scope of the expired licence included the deposit of solid waste at a solid waste management facility. Based on the Application, the Licensee indicated that the solid waste deposit activities that were captured under the expired licence are now covered under a different water licence issued to the Hamlet of Resolute Bay. The Board has, therefore, removed with issuance of the Replacement–Amended Licence, conditions related to the deposit of solid waste.

#### **Management Plans/Manuals**

The Licensee has submitted the following management plans for consideration as part of its Application to renew and/or amend the Licence.

- *Plan for Compliance Licence No. NWB3YRB0306;*
- *Operation and Maintenance Manual for the Resolute Bay Airport Existing Sewage Lagoon, date April 2016;*
- *Hamlet of Resolute Bay Airport Sewage Lagoon Quality Assurance/Quality Control Plan, April 2016.*
- *Spill Contingency Plan, Resolute Bay Airport Existing Sewage Lagoon; dated April 2016; and*
- *Resolute Bay: Interim Sewage Management Plan for Discussion.*

The following sections discuss how the Board has treated the various management Plans in the New Replacement –Amended Licence:

#### Plan for Compliance

A Plan for compliance was included as part of the Application to amend the Licence, which the Board has accepted rather than approved, under Part B, Item 18 in the Licence, as the details and commitments included in the plan are not necessarily binding or under the purview of the NWB's mandated.

#### Operation and Maintenance Manual

The Licensee submitted the manual entitled *Operation and Maintenance Manual for the Resolute Bay Airport Existing Sewage Lagoon* dated, April 2016. The Board has approved the Plan under Part F, Item 1 in the Licence. The Licensee is, however, required to update the

Manual to address the following:

- a. Inclusion of description of how hazardous wastes and incompatible materials would be diverted from the wastewater system in order to minimize the effects of effluent on the receiving environment as well as a description of how these materials will be managed as recommended by ECCC.

#### Quality Assurance/ Quality Control Plan (QA/QC)

The plan entitled Quality Assurance Quality Control (QA/QC) Plan, including an acceptance letter from an accredited laboratory, was submitted as part of the Application. The Licensee is required to revised the plan within ninety (90) days of the Licence issuance, under Part H, Item 4 of Licence, to address ECCC's recommendations including:

- a. Inclusion of field blanks to assess the potential for contamination during sample collection, field duplicates to assess sampling precision as part of the plan, and a QA/QC program.

#### Spill Contingency Plan

The Plan entitled *Spill Contingency Plan, Resolute Bay Airport Existing Sewage Lagoon*; dated April 2016, submitted as additional information with the Application, was approved under Part F, Item 6 of the New Replacement – Amendment Licence.

#### Other

The document entitled *Resolute Bay: Interim Sewage Management Plan for Discussion* was neither approved nor accepted by the Board as this plan was submitted for discussion purposes mainly.

### **Geotechnical Inspection**

Consistent with licences issued for similar undertakings, the New Replacement – Amended Licence included conditions that allows for the inspection of municipal infrastructure to be conducted by a municipal engineer for most of the Licence's term. However, the inspection, one (1) year prior to expiry or at five (5) year intervals, whichever occurs first, must be conducted by a geotechnical engineer. The changes have been incorporated, under Part F, Items 4, and 5 of the New Replacement – Amended Licence terms and conditions.

### **Monitoring**

With respect to monitoring requirements, the Board has made some changes to address relevant recommendations provided by the Licensee and intervening parties based on the current scope of the undertaking. The Licensee proposed four monitoring stations, which include two existing stations and two new stations. The two existing stations, YRB-2 and YRB-3, are located in the wetland area. The two new stations, YRB-1a and YRB-1b, are located at Strip Lake and the Effluent discharge point, respectively.

In terms of intervener recommendations, ECCC suggested that a monitoring station be established downstream of the wetland area with relevant parameters and protocol to evaluate the quality of the effluent that is discharged to the marine environment. ECCC further stated that monitoring of YRB-2 and YRB-3 should be retained for comparison purposes. In addition, ECCC recommended that the proponent consider the Wastewater Systems Effluent Regulations

SOR/2012-139 and Fisheries Act Regulation 2012-06-29 in determining the Effluent quality limits at the end of the system. Although the aforementioned regulations do not apply in Nunavut, ECCC believes that the regulations will provide useful information for complying with section 36(3) of the *Fisheries Act*.

INAC in its submission recommended that the wetlands adjacent the sewage lagoon be considered part of the treatment system and that the monitoring program requirements and effluent criteria reflect this inclusion. In addition, INAC stated that the regulated final discharge point for the system should be YRB-3 and that a monitoring station should be placed where the sewage lagoon effluent ex-filtrates to the wetland. Further, INAC recommended inclusion of an additional sampling point for the wetland in order to confirm its efficacy, the discontinuation of monitoring station YRB-1 and the addition of monitoring station YRB-4.

Based on the Licensee's request, Interveners' submissions and other factors the Board has included the following changes to the Monitoring Program:

- Station YRB-1a has been added to monitor the integrity of Strip Lake;
- Station YRB-1 has been renamed YRB-1b to distinguish it YRB-1a; and
- Station YRB-4 has been added as the final discharge point from the wetland area

### **Compliance**

Based on information contained on the NWB's FTP site, INAC has issued several correspondence regarding compliance related issues associated with the licence. INAC's most recent letter on compliance was issued on December 14, 2015 in which INAC stated that the Licensee is required to take actions by a specific date to address all non-compliance issues.

### **Drawings**

As the sewage lagoon facility is a non-engineered facility, no engineering drawings and plans were created for the facility. The Licensee indicated that any future facility designed to replace the existing facility will include engineered designed plans and drawings.

### **Closure and Reclamation**

Based Application, the Licensee indicated that the facility will most likely operate for the entire term of the Licence. Consequently, a closure and reclamation plan was not submitted. The Board has included conditions under Part G, Item 1 in the licence for the submission of a Closure and Reclamation Plan to the Board for review and approval at least six (6) months prior to initiating closure and reclamation activities.

## DECISION

### LICENCE NUMBER: 3BM-YRB1621

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated March 6, 2015 for the Replacement and Amendment of an expired Type “B” Water Licence made by the:

#### GOVERNMENT OF NUNAVUT – DEPARTMENT OF ECONOMIC DEVELOPMENT AND TRANSPORTATION

to allow for the continued use of Water and deposit of Waste for a Municipal undertaking occurring within the municipal boundaries of the Hamlet of Resolute Bay, in the Qikiqtani Region of Nunavut, at the following general geographical coordinates:

Latitude: 74° 42’ 00” N      Longitude: 94° 50’ 00” W

### **DECISION**

After having been satisfied that the Application was in conformity with the North Baffin Regional Land Use Plan and exempt from the requirement for screening by the NIRB in accordance with section 12.4.3 of the *Nunavut Land Claims Agreement (NLCA)*, as determined<sup>5</sup> by the Nunavut Planning Commission (NPC), the NWB determined that the project could proceed through the NWB’s 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-YRB0308 be Amended and Replaced with Licence No. 3BM-YRB1621, subject to the terms and conditions contained therein (Motion #: 2016-B1-022.**

Signed this 16<sup>th</sup> day of December 2016 at Gjoa Haven, NU.

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Thomas Kabloona  
Nunavut Water Board, Chair

TK/sj/vk.

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<sup>5</sup> Nunavut Planning Commission (NPC), Land Use Conformity Determination, June 28, 2016 and October 5, 2009.



**NUNAVUT WATER BOARD**  
**WATER LICENCE NEW REPLACEMENT – AMENDMENT**

Licence No. 3BM-YRB1621

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

**THE GOVERNMENT OF NUNAVUT – DEPARTMENT OF ECONOMIC  
DEVELOPMENT AND TRANSPORTATION**

(Licensee)

**P.O BOX 560, RANKIN INLET, NUNAVUT X0C 0G0**

(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–YRB1621 / TYPE “B”**

Water Management Area: **BATHURST & CORNWALLIS ISLANDS  
WATERSHED (55)**

Location: **HAMLET OF RESOLUTE BAY, QIKIQTANI REGION,  
NUNAVUT**

Classification: **MUNICIPAL UNDERTAKING**

Purpose: **DIRECT USE OF WATER AND DEPOSIT OF WASTE**

Quantity of Water use not  
to exceed: **ONE (1) CUBIC METRE OF WATER PER YEAR  
(FOR SAMPLING PURPOSES ONLY)**

Date of Licence Issuance: **DECEMBER 16, 2016**

Expiry of Licence: **DECEMBER 15, 2021**

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 undertaking, by the Government of Nunavut – Department of Economic Development and Transportation, classified as per Schedule 1 of the *Regulations*, located in the Qikiqtani Region, Nunavut.

- 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**

In this Licence: 3BM-YRB1621

“**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*;

“**Final Discharge Point**” with respect to effluent means the stream from Finger Lake immediately prior to entry into Airport Lake;

“**Freeboard**” means the vertical distance between water line and crest on a dam or dyke’s upstream slope;

“**Geotechnical 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.

“**Grab Sample**” means an undiluted quantity of material 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;

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

“**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 18<sup>th</sup> April, 2013;

**“Secondary Containment”** means an impermeable structure, external to and separate from primary containment, which prevents unplanned spills of hazardous materials and provides a minimum capacity of 110% of the original vessel. Where multiple vessels are stored within the containment, it must provide a minimum capacity equal to the sum of the largest vessel and 10% of the aggregate volume of all other vessels located in the containment. This structure shall also provide containment and control of hoses and nozzles

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

**“Sewage Disposal Facility (SDF)”** comprises the area and engineered lagoon and decant structures designed to contain sewage and commercial waste water as described in the Application for Water Licence filed by the Applicant on December 5, 2001 and Application filed by the Licensee with the Board on July 16, 2016.

**“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;

**“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.

**“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 the 31<sup>st</sup> of March of the year following the calendar year being reported, containing the following information:
  - a. tabular summaries of all data generated under the “Monitoring Program” generated under Part H, and an indication of wastewater treatment levels upstream and downstream of the Wetland Area;
  - b. summary of modifications to the “Monitoring Program” in accordance with Part H, Item 10;
  - c. the annual quantity in cubic metres of any sludge removed from the Sewage Disposal Facility along with the treatment, storage, and disposal provided as required in Part H, Item 8;
  - d. a summary of modifications and/or major maintenance work carried out on the Sewage Disposal Facility, including all associated structures and facilities;
  - e. a list of unauthorized discharges and summary of follow-up action taken;
  - f. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
  - g. any updates or revisions for manuals and plans, including the Spill Contingency Plan, Quality Control/Quality Assurance Plan and Operations and Maintenance Manual, as required by changes in operation and/or technology, may be subject to Board acceptance and/or approval;
  - h. detailed minutes of any public consultation and participation with local organizations and the residents of the community regarding licence amendments;
  - 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 the 1<sup>st</sup> of November 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 maybe modified at the discretion of the Board in writing.
4. The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of Water use volumes and Waste discharged as required under Part H, Monitoring Program.
5. The Licensee shall, within ninety (90) days after the first visit by an Inspector, following issuance of this Licence, post the necessary signs to identify the stations of the “Monitoring Program”. All signage postings shall be in the Official Languages of Nunavut.

6. The Licensee shall immediately report to the 24-Hour Spill Report Line at (867) 920-8130, any spills of Waste, which are reported to or observed by the Licensee within the municipal boundaries including the areas of the Water Treatment or Waste Disposal Facilities.
7. The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence 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](mailto: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 an 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 NWB, 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. The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.
13. 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 conditions 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.

14. 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.
15. The compliance dates specified in the Licence may be modified upon approval of the Board in writing.
16. This Licence is assignable as provided for in section 44 of the *Act*.
17. The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.
18. The Board has accepted the plan for compliance submitted as additional information with the application.

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

1. The Licensee is authorized to use up to one (1) cubic metre of Water per year for sampling activities related to Strip Lake.
2. The Licensee shall not remove any material from below the ordinary High Water Mark of any Water body unless approved by the Board in writing.
3. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
4. The Licensee shall implement sediment and erosion control measures prior to and maintained as required during Hamlet operations, to prevent entry of sediment into water.

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

1. The Licensee shall direct all sewage generated under the scope of this Licence to the Sewage Disposal Facility or as otherwise approved by the Board in writing.
2. All Effluent discharged from the Sewage Disposal Facility at Monitoring Program Station YRB-3 and YRB-4 shall not exceed the following Effluent quality limits:

Parameter	Maximum Concentration of any Grab Sample
BOD <sub>5</sub>	120 mg/L
Total Suspended Solids	180 mg/L
Faecal Coliforms	1 x 10 <sup>6</sup> CFU/100mL
Oil and grease	No visible sheen

pH	between 6 and 9
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3. If the results of the 2017 monitoring program indicate exceedances in the Effluent criteria under Part D, Item 2, for Monitoring Stations YRB-3 and YRB-4, the Licensee shall submit to the Board for review, within ninety (90) days of receipt of the monitoring results, a report summarizing the results and detailing alternative initiatives developed to manage the facility's treatment effectiveness in the context of ECCC's recommendations.
4. The Licensee shall ensure that a Freeboard limit of 1.0 metre, or as recommended by a qualified Geotechnical Engineer and approved by the Board, is maintained at all dykes and earth-fill structures associated with the Sewage Disposal Facilities.
5. The Licensee shall advise an Inspector at least ten (10) days prior to initiating any decant of the Sewage Disposal Facility.
6. The Sewage Disposal Facilities shall be maintained to the satisfaction of an Inspector, and operated in such a manner as to prevent erosion and structural failure.
7. If, during the term of this Licence, additional Final Discharge Points are identified, the Licensee shall submit the information pertaining to the new Final Discharge Point, within thirty (30) days after the discharge point is identified and at least sixty (60) days prior to the release of Effluent through the new Final Discharge Point and/or proposed changes are made to a Final Discharge Point.
8. The Licensee shall backhaul and dispose of all hazardous wastes, waste oil and non-combustible waste generated through the course of the operation at a licensed waste disposal site.
9. The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste. These records shall be made available to an Inspector upon request
10. The Licensee shall implement measures to monitor the impact of leachate from any proximal Solid Waste Disposal Facility on the Sewage Disposal Facility.
11. The Licensee shall measure, annually, the depth and quality of the sludge generated by the Sewage Disposal Facility as well as implement measures to ensure adequate management of the sludge generated.

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

1. The Licensee shall submit to the Board for approval, for construction drawings stamped and signed by a qualified engineer, at least 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 Treatment and Waste Disposal Facilities provided that such modifications are consistent with the conditions and scope 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(a) through (d), have not been met, may only be carried out upon written approval from the Board.
4. The Licensee shall provide as-built plans and drawings of the Modifications or construction referred to in this Part within ninety (90) days of completion of the Modification or construction. These plans and drawings shall be stamped and signed by an Engineer.
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.

#### **PART F: CONDITIONS APPLYING TO OPERATIONS AND MAINTENANCE**

1. The Board has approved the Plan entitled *Operation and Maintenance Manual for the Resolute Bay Airport Existing Sewage Lagoon*, dated April 2016, that was submitted as additional information with the Application.
2. The Licensee shall revise the plan approved in Part F, Item 1 to include details on how hazardous waste and incompatible material will be diverted from the wastewater system.
3. The Licensee shall implement the Plan specified in Part F, Item 1 as and when approved by the Board in writing
4. An inspection of all engineered structures or facilities designed to contain, withhold, divert, or retain Water or Waste, shall be conducted by an appropriate Engineer, at least once annually, during the summer months (July/August) and/or during periods of flow. An Engineer's report shall be submitted to the Board within sixty (60) days of the date of inspection, including a cover letter from the Licensee outlining an implementation plan to address each of the Engineer's recommendations.
5. An inspection of all engineered facilities shall be conducted, during the summer period (July/August), by a Geotechnical Engineer in accordance with the Canadian Dam Safety

Guidelines, at least one (1) year prior to expiry of the Licence or at five (5) year interval, whichever occurs first. The Geotechnical 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 to address each of the Engineer's recommendations.

6. The Board has approved the Plan entitled *Spill Contingency Plan, Resolute Bay Airport Existing Sewage Lagoon*; dated April 2016.
7. 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 spill contingency measures as described in the Spill Contingency Plan of the Operation and Maintenance Manual for the Hamlet of Baker Lake;
  - b. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the INAC Manager of Field Operations 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 any preventative measures to be implemented.
8. The Licensee shall, in addition to Part F, Item 7, regardless of the quantity of releases of harmful substances, report to the NWT/NU Spill Line if the release is near or into a Water body.

## **PART G: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION**

1. The Licensee shall submit to the Board for approval in writing, at least six (6) months prior to abandoning any facilities and the construction of new facilities to replace existing ones, a Closure and Reclamation Plan that includes but is not limited, where applicable, to 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 uses;
  - k. hazardous wastes; and
  - l. a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.

2. The Licensee shall implement the plan specified in Part G, Item I as and when approved by the Board in writing.
3. The Licensee shall conduct and submit together with the Plan required in Part G, Item 1, an Environmental Assessment of the area occupied by the Sewage Disposal Facility including Wetland Area.
4. The Licensee shall complete the restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board in writing.
5. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.
6. 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 and implement the program as described in the table below and the conditions under this Part.

<b>Monitoring Program Station ID</b>	<b>Description</b>	<b>Frequency</b>	<b>Status</b>
YRB-1a (New)	Water Sampling Point at Strip Lake	Annually during Periods of Flow	Active (Water Quality )
YRB-1b (New)	Effluent from the Sewage Lagoon	<u>Volume</u> Monthly and Annually during Periods of Flow	Active (Volume) (Water Quality)
YRB-2	Effluent within the Wetland Area	<u>Water Quality</u> Monthly during periods of flow	Active (Water Quality)
YRB-3	Effluent within the Wetland Area	<u>Water Quality</u> Annually during periods	Active (Water Quality)
YRB-4	Effluent at the Final Discharge Point / Downstream of the Wetland	<u>Water Quality</u> Annually during periods of flow	Active (Water Quality)

2. The Licensee shall confirm the locations and GPS coordinates for all monitoring stations referred to in Part H, Item 1 with an Inspector.

3. The Licensee shall sample Monitoring Stations YRB-1a, YRB-1b, YRB-2, YRB-3, and YRB-4 for the following parameters in accordance with the frequency outlined in Part H, Item 1:

Biochemical Oxygen Demand BOD <sub>5</sub>	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 Mercury Total	Organic Carbon (TOC)
Total Aluminum	Total Arsenic
Carbonaceous Biochemical Oxygen Demand (cBOD)	

4. The Licensee shall revise and submit, within ninety (90) days of issuance of this Licence, the Plan entitled *Hamlet of Resolute Bay Airport Sewage Lagoon Quality Assurance/Quality Control Plan*, dated April 2016, submitted as additional information with the Application. The revised Plan shall include a letter of approval from a certified or an accredited laboratory.

5. The Licensee shall conduct all sampling, sample preservation and analyses 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 a laboratory certified by the Canadian Association for Laboratory Accreditation (CALA) and as otherwise acceptable to the Board.

6. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.

7. The Licensee shall measure and record in cubic metres the monthly and annual quantities of Effluent discharged at Monitoring Program Station Number YRB-4 into the receiving environment and water use for sampling Strip Lake.

8. The Licensee shall measure and record in cubic metres, the annual quantities of sewage solids removed from the sewage disposal facility.

9. The Licensee shall include all of the data and information required by the Monitoring Program in the Licensee's Annual Report, as required under Part B, Item 1.



10. 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 requested change.