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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No: **1BR-BYR2040**

September 24, 2020

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RE: NWB Replacement Water Licence No: 1BR-BYR2040

Dear Ms. D'Costa and Ms. Street:

Please find attached Licence No: **1BR-BYR2040** issued to the Department of National Defence (DND) by the Nunavut Water Board (NWB or Board) 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 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 the use of Water and deposit of Waste must cease, or the Licensee may be in contravention of the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA or 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. It should be noted that in accordance with Section 75(1)(a) of the *Nunavut Planning and Project Assessment Act (NuPPAA)*, the Board is not allowed to issue a permit or authorization for any project proposal that has not been submitted to the Nunavut Planning Commission (NPC) in accordance with Section 76 of *NuPPAA*.

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.

Sincerely,

Lootie Toomasie
Nunavut Water Board
Chair

LT/sk/ri

Enclosure: Licence No: **1BR-BYR2040**

Cc: Distribution List – Kitikmeot

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DECISION

LICENCE NO: 1BR-BYR2040

This is the decision of the Nunavut Water Board (NWB) with respect to an Application received on August 4, 2020 for the renewal of a Water Licence made by:

DEPARTMENT OF NATIONAL DEFENCE

to allow for the use of Water and the deposit of Waste during the continued implementation of the *Post Construction Landfill Monitoring Program*, including the collection of soil and groundwater samples, at the former PIN-4 (Byron Bay) Distant Early Warning (DEW) Line Site, located within the Kitikmeot Region of Nunavut, generally at the following geographical coordinates:

Latitude: 68° 45' 30" N

Longitude: 109° 04' 12" W

DECISION

After having been satisfied that the Application is for a proposal that was previously reviewed by the Nunavut Planning Commission (NPC) and for which the conformity determination, dated July 16, 2013, remains applicable, and is exempt from the requirements for screening by the Nunavut Impact Review Board (NIRB)¹ as described within Section 12.4.3/ Schedule 12-1 of the *Nunavut Agreement*, subject to the terms and conditions recommended in the original March 29, 2007 Screening Decision Report No: 07DN010, the NWB decided that the application could proceed through the regulatory process. In accordance with Section 55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSTRA or Act)* and Article 13 of the *Nunavut Agreement*, 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 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 *Nunavut Agreement* and of the *Act*, decided to waive the requirement to hold a public hearing and determined that:

Licence No: 1BR-BYR1320 be replaced by Licence No: 1BR-BYR2040 subject to the terms and conditions contained therein (Motion No: 2020-B1-019).

Signed this 23rd day of SEPTEMBER, 2020 at Gjoa Haven, NU.

Lootie Toomasie
Nunavut Water Board, Chair
LT/sk/ri

¹ Nunavut Planning Commission (NPC) Conformity Determination, dated January 27, 2020.

I. INTRODUCTION

The PIN-4 (Byron Bay) Distant Early Warning (DEW) Line Site is a former auxiliary radar site located on the south coast of Victoria Island, approximately 160 kilometres west of Cambridge Bay within the Kitikmeot Region of Nunavut. The site was decommissioned in 1993 following replacement of the DEW Line system by the more modern North Warning System (NWS) and the construction of a NWS facility proximal to the former PIN-4 DEW Line site.

Following decommissioning of PIN-4 DEW Line site, two independent site assessments were conducted in 1989 and 1990. In addition, a detailed site investigation was conducted in 2004 to delineate the contamination identified in the site assessments and collect additional geophysical, geotechnical, debris and demolition information. Following these site assessments, the demolition of site facilities and environmental clean-up of the site commenced. The remediation activities at PIN-4 (Byron Bay) DEW Line site occurred between 2007 and 2012.

Although some general monitoring was conducted in 2011, the long-term monitoring of site commenced in 2013. This post-construction Landfill Monitoring Program consists of three phases and is undertaken in accordance with the Monitoring Program provided as part of the Application package. Phase I monitoring was carried out between 2013 and 2017 and consisted of annual on-site monitoring of the reclaimed landfills and the Tier II soil disposal facility. The less frequent Phase II monitoring commenced in 2019. Phase II monitoring is the verification of equilibrium conditions established in Phase I. The monitoring frequency in Phase II is reduced from Phase I and has been planned to be carried out according to the following schedule: year 7 (completed in 2019), year 10 (completed in 2022), year 15 (2027) and year 25 (2037). Year 25 marks the end of Phase II monitoring. The next scheduled monitoring event at PIN-4 is the year 10 event in 2022.

Decision on whether to continue the monitoring program as Phase III or terminate it upon completion of Phase II will likely be made after the 25-year period and following an assessment of performance carried out by the Department of National Defence (DND) – Nunavut Tunngavik Incorporated (NTI) Steering Committee. An Environmental Working Group (EWG) consisting of four members, two from DND and two from NTI, has been established to provide technical support to the Steering Committee.

II. FILE HISTORY

The following table provides a brief history of the Project with the NWB.

Table 1. Project Licensing History

| Licence No. | Date Issued | Comments |
|-------------|----------------|--|
| NWB5BYR0305 | April 18, 2003 | Initial Licence issued to the Defence Construction Canada (DCC) to allow for the use of Water (30m ³ per day) and disposal of Waste in support of activities that included the delineation of contaminants, camp mobilization and operation, and road construction. |

| | | |
|-------------|-----------------|--|
| 1BR-BYR0712 | July 23, 2007 | Renewal Licence issued to the DCC to allow for the continued use of Water (55m ³ per day) and the deposit of Waste in support of remediation activities at the PIN-4 DEW Line Site. |
| 1BR-BYR1320 | August 30, 2013 | Renewal Licence issued to the DCC to allow for the use of Water (1m ³ per day) in support of long-term monitoring activities at the PIN-4 DEW Line Site. |
| | May 25, 2020 | Licence assigned from DCC to the Department of National Defence (DND). |

III. PROCEDURAL HISTORY

On August 4, 2020, the Department of National Defence (DND) submitted to the Nunavut Water Board (NWB and Board) an Application requesting to renew and amend Water Licence No: 1BR-BYR1320. The following documents were included within the Application package:

- Application for Water Licence Amendment, dated August 4, 2020;
- NPC Determination, dated January 27, 2020;
- Executive Summary in English;
- Executive Summary in Inuktitut;
- Topographic Map;
- Landfill Monitoring Program for PIN-4;
- NWB Approval of monitoring modifications, dated December 12, 2019;
- Preliminary Phase II Summary, dated July 31, 2020; and
- Spill Contingency Plan, effective November 1, 2019.

On August 5, 2020, following a preliminary internal technical review, the NWB concluded that the Application met the requirements of section 48(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (Act)* and forwarded Notice of the Application to regulators and other interested parties. All parties were invited to make representations to the NWB by September 5, 2020.

On September 8, 2020, the NWB received a submission from Crown-Indigenous Relations and Northern Affairs (CIRNA)². CIRNA recommended to provide details on the Phase III Monitoring Program when available and to continue monitoring Zinc and Copper at the Northwest and Airstrip Landfills, respectively. The DND provided a same-day response³ clarifying that “*as per the requirements and schedule outlined in the DND-NTI DEW Line Agreements, the scope of Phase III monitoring has not yet been developed*” and that the “*DND has noted CIRNAC’s recommendation*”. Additionally, the DND indicated that the “*Landfill monitoring at PIN-4 will continue as per the requirements and schedule outlined in the DND-NTI DEW Line Agreements*.”

² G. Okonkwo (CIRNA) to R. Dwyer (NWB); RE: 200805 1BR-BYR1320 Amendment Renewal Water Licence Application by Department of National Defense - Byron Bay Project - Kitikmeot Region, dated September 8, 2020.

³ A. Street (DND) to G. Okonkwo (CIRNA); RE: 200805 1BR-BYR1320 Amendment Renewal Water Licence Application by Department of National Defense - Byron Bay Project - Kitikmeot Region, dated September 8, 2020.

This will include the analysis of zinc and copper in soil samples collected from the monitoring stations at the Northwest and Airstrip Landfills.”

All information received for the above-referenced Application can be accessed through the NWB’s public registry and ftp site using the following link:

<ftp://ftp.nwb-oen.ca/registry/1%20INDUSTRIAL/1B/1BR%20-%20Remediation/1BR-BYR2040%20PIN%204/1%20APPLICATION/2020%20Amend-Renew/>

Based on the results of the detailed assessment of the Application, including consideration of any potential accidents, malfunctions, or impacts to Water that the overall Project might have in the area, the Board has approved the Application and has issued Water Licence No: **1BR-BYR2040**.

IV. GENERAL CONSIDERATIONS

i. Term of the Licence

In accordance with s. 45 of the *Act*, the NWB may issue a licence for a term not exceeding twenty-five (25) years. The Applicant requested a twenty (20) year term for the renewal Licence. Given the current stage of the monitoring program and no concerns regarding the term requested from the interveners, the Board has decided to issue the Licence for the requested term of twenty (20) years, during which the Licensee will complete Phase II monitoring and will evaluate the results before determining Phase III monitoring requirements under a future licence application. At the time of the licence expiry in 2040, monitoring data would have been collected over an approximately 25-year period between 2013 and 2037, and will allow for a comprehensive evaluation of the reclamation program. According to the Preliminary Phase II Summary, dated July 31, 2020, there are only three monitoring events left under Phase II monitoring and they are expected to occur in 2022 (year 10), 2027 (year 15) and 2037 (year 25). Following these remaining monitoring events and following submission of a comprehensive PIN-4 Monitoring Program Review Report required for the next application (see **Part K, Item 3**) to evaluate the 25-year performance of the reclamation program and establish the long-term path forward for the site, a determination will be made regarding the next steps for PIN-4. Consequently, the term granted is intended to reflect this approach.

ii. Annual Report

In accordance with s. 14 (1) of the *Nunavut Waters Regulations*, requirements have been included under **Part B, Item 1** of the Licence for submission of annual reports detailing the activities carried out under the Project for the year preceding the one in which the report is filed. Annual reporting information is kept in the NWB’s public registry, as well as made available to interested persons upon request. The Board notes that the Licensee indicated in its Application that the Annual Report will be provided as a Monitoring Report for the applicable licence along with a summary table for all licences currently in care of DND. The NWB would like to emphasize that the NWB standardized form should be used for annual reporting at all times. This form can be supplemented by the Monitoring Program Report and any other relevant information specific to the Project. The NWB’s generic Annual Reporting form can be obtained from its FTP site using the following link:

iii. Water Use

The Licensee indicated that bottled Water will be brought to the site for drinking purposes and that surface Water use is not planned at this time, and that only groundwater will be extracted from the monitoring wells for sampling purposes. However, if required, additional freshwater may be extracted for use from a Water Supply Lake proximal to the seasonal camp facility to support the six to ten personnel supporting the Project. Additionally, the Licensee indicated that *“some surface Water might be required for possible future monitoring well repair/replacement/decommissioning activities that may occur at the site”* and that this *“surface Water would be collected from Water Supply Lake, or from one of the small unnamed surface Water bodies near the airstrip and/or landfills.”* The requirements for these potential future activities would be determined by the DND-NTI DEW Line Steering Committee.

The Board does not have any concerns with respect to the quantity of Water requested and has therefore set the maximum Water use for all purposes under this Licence at no more than five (5) cubic metres per day, to allow for some flexibility, under **Part C, Item 1** in the Licence. If the Licensee requires Water in quantities greater than that allowed under the Licence, the Licensee will be required to submit an Amendment Application to the Board for consideration.

iv. Deposit of Waste

The Licensee indicated that small amounts of Solid Non-Hazardous Waste will be generated during the monitoring activities. This Waste will be disposed of at an approved regulated off-site facility. Additionally, the Application stated that Sewage and Greywater generated by the camp facility will be disposed of in sumps. Terms and conditions have been included under **Part D** in the Licence to ensure that the Licensee manages and tracks all Waste generated by the Project accordingly.

v. Abandonment and Restoration

As the clean-up and remediation components of the site have been completed, the Licensee did not submit a closure and reclamation plan. However, it proposed to undertake extensive monitoring that would last until approximately 2037. Under **Part J** of the Licence, the Licensee is required to remove all equipment and any facilities associated with the Monitoring Program upon completion of the Monitoring Program.

vi. Monitoring

The Licensee is required to carry-out monitoring in accordance with the details provided in the *PIN-4, Byron Bay Landfill Monitoring Program* and the requirements of the DND-NTI Agreement. Please note that, as per **Part K, Item 2**, Table 1 of this Monitoring Program should be updated to reflect the current monitoring schedule. Additionally, the Board agrees with the recommendation provided by CIRNA² during the Application review and has included a requirement under **Part K, Item 3** of the Licence to submit, as part of the next Licence renewal

package, a comprehensive PIN-4 Monitoring Program Review Report to evaluate the 25-year performance of the reclamation program and establish the long-term path forward for the site.

vii. Spill Contingency Planning

A Spill Contingency Plan was submitted as additional information with the Application, which the Board has approved under **Part I, Item 1** of the Licence.



NUNAVUT WATER BOARD REPLACEMENT WATER LICENCE

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

DEPARTMENT OF NATIONAL DEFENCE

(Licensee)

60 MOODIE DRIVE, OTTAWA, ON K1A 0K2

(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:

Licence Number/Type: **1BR-BYR2040 / TYPE "B"**

Water Management Area: **SOUTHERN VICTORIA ISLAND WATERWATERSHED (38)**

Project/Location: **PIN-4, BYRON BAY LANDFILL MONITORING PROGRAM, KITIKMEOT REGION, NUNAVUT**

Classification: **INDUSTRIAL UNDERTAKING**

Purpose: **DIRECT USE OF WATER AND DISPOSAL OF WASTE IN SUPPORT OF LONG TERM MONITORING PROGRAM**

Quantity of Water use
not to Exceed: **FIVE (5) CUBIC METRES PER DAY**

Effective Date: **SEPTEMBER 23, 2020**

Expiry of Licence: **SEPTEMBER 22, 2040**

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

Lootie Toomasie
Nunavut Water Board, Chair

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

- a. This Licence allows for the use of Water and the deposit of Waste for an undertaking classified as Industrial as per Schedule 1 of the *Regulations* for the post-construction PIN-4, Byron Bay Landfill Monitoring Program at the former Byron Bay Distant Early Warning (DEW) Line Site, located approximately 160 kilometres east of Cambridge Bay within the Kitikmeot Region, Nunavut.
- b. This Licence is issued subject to the conditions contained herein with respect to the taking of Water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *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
- c. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

“**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 or plan;

“**Airstrip Landfill**” means the landfill, including monitoring stations, located approximately 100 metres east of the hangar, as depicted in Figure PIN-4.1 and described in the document entitled “*Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring*” dated December 2012;

“**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;

“**Applicant**” means the Licensee;

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

“**Board**” means the Nunavut Water Board established under the *Nunavut Agreement* and the *Act*;

“**Environmental Working Group**” means the group established to provide technical support to the Steering Committee comprised of qualified engineering and environmental scientists with expertise in environmental remediation and clean up in northern climates as described in the document “*Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring*” Plan, dated December 2012;

“**Effluent**” means treated or untreated liquid Waste material that is discharged into the environment from a structure such as a settling pond or following a treatment process;

“**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**” means the point at which the Licensee no longer exerts care and/or control over the quality and/or quantity of the Effluent from a treatment process;

“**Grab Sample**” means a single Water or wastewater sample taken at a time and place representative of the total discharge;

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

“**Hazardous Waste**” means Waste classified as “hazardous” by Nunavut Territorial or Federal Legislation, or as “dangerous goods” under the *Transportation of Dangerous Goods Act* at the time of clean-up;

“**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*;

“**Landfarm**” means an area designed to biologically treat Type B soils, as described in the Application for Water License filed by the Applicant on August 4, 2020;

“**Licensee**” means the individual or organization to which the Type “B” Water Licence No: 1BR-BYR2040 is issued or assigned;

“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, as described in the document entitled *“Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring”* dated December 2012;

“Non-Hazardous Waste Landfill” means the landfill, including monitoring stations, located in the existing borrow area that is situated immediately south of the garage pad and west of the module train, as depicted in Figure PIN-4.5 of and described in the document entitled *“Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring”* dated December 2012;

“North Landfill” means the landfill, including monitoring stations, covering the area of 500 m northeast of the station, along the main station access road near the junction with Chisholm Trail as depicted in Figure PIN-4.1 of and described in the document entitled *“Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring”* dated December 2012;

“Northwest Landfill” means the landfill, including monitoring stations, located approximately 300 metres directly north of the station area as depicted in Figure PIN-4.2 of and described in the document entitled *“Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring”* dated December 2012;

“NTI Agreement” means the *‘Agreement Between Nunavut Tunngavik Incorporated and Her Majesty the Queen in the Right of Canada, as Represented by the Minister of National Defence for the Clean-up and Restoration of Distant Early Warning Sites within the Nunavut Settlement Area-Environmental Provisions’* including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“Nunavut Agreement” 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;

“Post Construction Monitoring Plan” means the plan entitled *“Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring”* dated December 2012;

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

“Sewage” means all toilet Wastes and Greywater;

“Solid Waste” means non-hazardous waste, Type A soil, Tier I soil and Tier II soil;

“Solid Waste Disposal Facility” comprises the area and associated structures designed to contain solid Waste and to permanently isolate the contents of the disposal facility from the environment, as described in the Application for a Water Licence filed by the Applicant on August 4, 2020;

“Station Landfill” means the landfill facility, including monitoring stations, as depicted in Figure PIN-4.1 and described in the document entitled *“Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring”* dated December 2012;

“Sump or Sumps” means an excavation in impermeable soil for the purpose of catching or storing Water or Waste;

“Tier I Soil” means soil containing contaminant concentrations within the types and ranges defined as DCC Tier I in Appendix E of the NTI Agreement, including its preamble and schedules, and any amendments to that agreement made pursuant to it (see Table 2);

“Tier II Soil” means soil containing contaminant concentrations within the types and ranges defined as DCC Tier II in Appendix E of the NTI Agreement including its preamble and schedules, and any amendments to that agreement made pursuant to it (see Table 2);

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

“Type A Soil” means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of lubricating oil and grease (F3 – F4 Fractions);

“Type B Soil” means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of fuel oil and/or diesel fuel and /or gasoline (F1 – F2 Fractions);

“USAF Landfill” means the landfill, including monitoring stations, located 300 metres directly south of the station as depicted in Figure PIN-4.1 and described in the document entitled *“Water Use Licence Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring”* dated December 2012;

“Waste or Wastes” means Waste as defined in Section 85 (1) of the Act; and

“Waste Disposal Facilities” means all facilities designed to retain Wastes including the Northwest Landfill, North Landfill, Station Landfill, Non-Hazardous Waste Landfill, USAF Landfill, Tier II Soil Disposal Facility, and the Airstrip Landfill, as described in the Application for Water Licence filed by the Applicant on August 4, 2020.

“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 31st of the year following the calendar year being reported, which shall contain the following information:
 - a. Tabular summaries for all data and information generated under the Post-construction monitoring program;
 - b. A review and analysis of data collected during the PIN-4, Byron Bay Landfill Monitoring Program and a brief description of any future studies planned by the Licensee;
 - c. A summary of any abandonment and restoration work undertaken during the year and an outline of any work anticipated for the next year;
 - d. The results of any review conducted and any recommendations regarding any changes to the Monitoring Program and/or remediation requirements;
 - e. A summary of any studies requested by the Board that relate to wastewater reclamation, and a brief description of any future studies planned;
 - f. A list of unauthorized discharges and summary of follow-up actions taken;
 - g. If applicable, a description of any trenches and sumps excavated, including the following: GPS coordinates, dimensions, depth below active layer, and secondary containment features;
 - h. A public consultation/participation report describing consultation with local organizations and the residents of the nearby communities;
 - i. A brief summary of work done to address concerns or deficiencies listed in the inspection reports and/or compliance reports prepared by an Inspector;
 - j. An executive summary in English and Inuktitut of all plans, reports, or studies conducted under this Licence; and
 - k. Any other details on Water use or Waste disposal requested by the Board by November 1st of the year being reported.
2. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.

3. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
4. 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 shall become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
5. 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.
6. 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
 - (b) Inspector Contact:
Manager of Field Operations, CIRNA
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445
7. The Licensee shall submit 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.
8. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received and acknowledged by the Manager of Licensing.
9. This Licence is assignable as provided for in Section 44 of the *Act*.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee is authorized to withdraw up to five (5) cubic metres of Water per day for sampling, monitoring well repair, replacement or decommissioning activities and related

purposes. This Water can be obtained from Water Supply Lake or from one of the small unnamed surface Water bodies near the airstrip and landfills. Total quantity of Water for all purposes under this Licence shall not exceed five (5) cubic metres per day.

2. Streams cannot be used as a Water source unless authorized and approved by the Board in writing.
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 authorized by the Board.
5. The Licensee shall not do anything that will cause erosion to the banks of any body of Water and shall provide necessary controls to prevent such erosion.
6. The Licensee shall implement sediment and erosion control measures to prevent the deposition of dust and/or sediment into Water, arising from contractor activities or on-site vehicular travel.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee is not allowed to discharge effluent from the facilities approved under the Licence unless written authorization is obtained from the Board.
2. The Licensee shall backhaul and dispose of all Waste generated through the course of the operation at a licensed Waste disposal site.
3. The Licensee shall not transport any Hazardous Wastes prior to registering with the Government of Nunavut as a Waste generator and utilizing the prescribed manifests.
4. The Licensee shall provide to the Board documented authorization from all communities in Nunavut receiving Wastes from the site prior to any backhauling and disposal of Wastes from the PIN-4, Byron Bay Landfill Monitoring Program Project.
5. 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.
6. The Licensee shall contain all Greywater in a sump located at a distance of at least thirty one (31) metres above the ordinary High Water Mark of any Water body, at a site where direct flow into a Water body is not possible and no additional impacts are created, unless otherwise approved by the Board in writing.

7. The Licensee shall contain all toilet Wastes in latrine pits or use incineration, chemical, portable or composting toilets. Latrine pits shall be located at a distance of at least thirty-one (31) metres above the ordinary High Water Mark of any Water body, treated with lime and covered with native material to achieve the pre-existing natural contours of the land prior to abandonment.

PART E: CONDITIONS APPLYING TO THE UNDERTAKING

1. The Licensee shall conduct all activities 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.
2. The Licensee shall, if any constructed facilities designed to contain Waste were to fail, repair such facilities immediately to the satisfaction of an Inspector.
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 minimize disturbance to terrain, permafrost and drainage during movement of contractor's equipment and personnel around the site during post-closure monitoring activities.
5. All sites affected by sampling activities shall be stabilized, landscaped as necessary, and suitable erosion control measures implemented to minimize sediment deposition into watercourses located on or adjacent to the site.
6. The Licensee shall not deposit any Waste in any body of Water, or on the banks thereof.

PART F: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURES AND OPERATIONS

1. The Licensee shall not erect camps or store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use. Camps shall be located in a way to minimize impacts on surface drainage.
2. The Licensee shall provide to the Board and an Inspector the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) within thirty (30) days following any relocation of the camp facility allowed under this Licence.
3. The Licensee shall conduct all activities in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake corrective measures in the event of any impacts on surface drainage.
4. Winter lake and stream crossings, including ice bridges, shall be constructed entirely of Water, ice or snow, and shall be removed prior to spring break-up.

5. With respect to access road, pad construction or other earthworks, the deposition of debris or sediment into or onto any Water body is prohibited. These materials shall be disposed at a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a fashion that they do not enter the Water.
6. The Licensee shall not mobilize heavy equipment or vehicles unless the ground surface is capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles shall be suspended if rutting occurs

PART G: CONDITIONS APPLYING TO DRILLING OPERATIONS

1. The Licensee is authorized to drill for the purpose of installing monitoring wells.
2. The Licensee shall not conduct any land based drilling within thirty-one (31) metres of the ordinary High Water Mark of any Water body, unless otherwise approved by the Board in writing.
3. The Licensee shall dispose of all drill Waste, including Water, chips, muds and salts (CaCl₂) in any quantity or concentration, from land-based and on-ice drilling, in a properly constructed sump or an appropriate natural depression located at a distance of at least thirty one (31) metres from the ordinary High Water Mark of any adjacent Water body, where direct flow into a Water body is not possible and no additional impacts are created.

PART H: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
 - a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
 - b. such Modifications do not place the Licensee in contravention of 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.
2. Modification for which all of the conditions referred to in Part H, Item 1 have not been met can be carried out only with written approval from the Board.
3. 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.

PART I: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Licensee shall implement the Plan entitled “*Spill Contingency Plan – PIN-4*”, effective as of November 1, 2019, that was submitted as additional information with the Application and has been approved by the Board with the issuance of the Licence.
2. The Licensee shall ensure that any equipment maintenance and servicing is conducted only in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other Waste and contain potential spills.
3. All sumps and fuel caches shall be located a minimum of thirty one (31) metres above the ordinary High Water Mark of any adjacent Water body and inspected on a regular basis. The Licensee is encouraged to use some form of secondary containment on fuel and chemical storage associated with this undertaking.
4. If during the term of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
 - a. Employ the approved Spill Contingency Plan;
 - b. Report the spill immediately to the 24-Hour NWT/NU Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
 - c. For each spill occurrence, submit to the Inspector, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.
5. The Licensee shall, in addition to Part I, Item 4, regardless of the quantity of releases of harmful substances, report to the 24-Hour NWT/NU Spill Line if the release is near or into a Water body.

PART J: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION

1. The Licensee shall backfill and restore all sumps to the pre-existing natural contours of the land.
2. The Licensee shall remove from the site, all infrastructure and site materials, including all fuel caches, drums, barrels, buildings and contents, docks, Water pumps and lines, material and equipment prior to the expiry of this Licence.
3. All roads and airstrip, if any, shall be re-graded to match natural contour to reduce erosion.
4. The Licensee shall remove any culverts and restore the drainage to match the natural channel. Measures shall be implemented to minimize erosion and sedimentation.

5. In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.
6. Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to meet objectives as outlined in the Government of Nunavut's Environmental Guideline for Site Remediation, 2010. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.

PART K: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall undertake the Landfill Monitoring Program in accordance with the Plan entitled "*Water Use License Amendment and Renewal, PIN-4, Byron Bay Landfill Monitoring*", dated December 2012, that was approved by the Board with the issuance of the previous Water Licence.
2. The Licensee shall, within ninety (90) days from the date of issuance of this Licence, submit to the Board for review an updated version of the Plan referred to in Part K, Item 1 to ensure the monitoring dates are in line with those presented in the *Preliminary Phase II Summary*, dated July 31, 2020, that was submitted as part of the Application package.
3. The Licensee shall submit to the Board for review, as part of the next renewal application, a comprehensive PIN-4 Monitoring Program Review Report to evaluate the 25-year performance of the reclamation program in support of the proposed next steps and long-term requirements for the site. This Report shall be prepared by a Geotechnical Engineer and shall summarize data collected during Phase I and II monitoring, and include information on the integrity of the Waste Disposal Facilities. The Report shall also address whether the facilities have performed as expected and encased in permafrost. The Report must include an assessment of how the facilities are expected to perform in the long term as well as appropriate recommendations.
4. 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 the Board.
5. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
6. The Licensee shall include in the Annual Report, required under Part B, Item 1, all monitoring results and information required by this Part.
7. The Licensee shall ensure that tabular summaries for all data and information generated under the "Monitoring Program", as well as an analysis of data collected during the

“Monitoring Program,” are provided to the Board in the Annual Report, in accordance with Part B, Item 1.

8. An Inspector may impose additional monitoring requirements.

Table 2
(From CIRNA Abandoned Military Site Remediation Protocol)
DEW Line Clean-up Criteria (DCC)^a

| Substance | DCC Tier I^{bc} (mg/kg) | DCC Tier II^d (mg/kg) |
|------------------|--|--|
| Arsenic | - | 30 |
| Cadmium | - | 5.0 |
| Chromium | - | 250 |
| Cobalt | - | 50 |
| Copper | | 100 |
| Lead | 200 | 500 |
| Nickel | - | 100 |
| Zinc | - | 500 |
| PCB's | 1.0 | 5.0 |

- a. These criteria were adopted specifically for the cleanup of Arctic DEW Line Sites from the 1991 versions of the Quebec Soil Contamination Indicators and the Canadian Council of Ministers of the Environment Interim Canadian Environmental Criteria for Contaminated Sites.
- b. Soil criteria are given in parts per million, ppm.
- c. Soils containing lead and/or PCBs at concentrations in excess of DCC I, but less than DCC II, may be landfilled.
- d. Soils containing one or more substrates in excess of DCC II must be containerized - i.e. removed in a manner which precludes contact with the Arctic ecosystem.