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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 1BR-PEL1833

December 13, 2018

Laura D'Costa, P.Eng, M.Sc. Senior Project Manager
Directorate of Contaminated and Legacy Sites Project Delivery
Department of National Defence
101 Colonel By Drive Ottawa, Ontario K1A 0K2

Email: laura.dcosta@forces.gc.ca
alison.street@forces.gc.ca

RE: Replacement Water Licence No. 1BR-PEL1833

Dear Ms. D'Costa:

Please find attached **Licence No. 1BR-PEL1833** issued to the Department of National Defence (DND) 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 waters 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 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*. 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 s. 75 (1) (a) of the *Nunavut Planning and Project Assessment Act* (NuPPAA), the Board is not allowed to issue a permit or authorization for a project proposal that has not been submitted to the Nunavut Planning Commission (NPC) for its determination.

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 amendments as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment; however,

a minimum of sixty (60) days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are acknowledged by the Manager of Licensing.

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

Sincerely,

Lootie Toomasie
Nunavut Water Board
Chair

LT/sl/rqd

Enclosure: Licence No. **1BR-PEL1833**
Comments – INAC and ECCC

Cc: Kitikmeot Distribution List

¹ Indigenous and Northern Affairs Canada (INAC), October 19, 2017; and Environment and Climate Change Canada (ECCC), October 3, 2017.

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I Introduction

CAM-4, or the Pelly Bay Distant Early Warning (DEW) Line site, is operated by the Department of National Defence (DND) and is situated approximately twelve (12) kilometres southeast of Kugaaruk on the Simpson Peninsula in the Kitikmeot Region, Nunavut. The CAM-4 site was decommissioned in 1992. A Short Range Radar North Warning Site was constructed in 1990 about 200 m west of the original station.

A site investigation was conducted in 1997 and 1999 by UMA Engineering Ltd and the Environmental Sciences Group. An environmental cleanup of the site and facilities occurred from 2001 through 2007. Water and sewage requirements to support the reclamation project are provided by the Hamlet of Kugaaruk. Remediation of the CAM-4 site included the following activities:

- Demolition and removal of existing facilities not required for the North Warning System;
- Removal or remediation of contaminated soils;
- Remediation of landfills;
- Cleanup of surface debris;
- Construction, operation and closure of a landfarm;
- Construction of a Tier II Soil Disposal Facility;
- Construction of two Non-Hazardous Waste Landfills;
- Installation of Monitoring Wells and Thermistors; and
- Restoration of disturbed areas to a stable condition, shaped to match existing terrain.

Between 2007 and 2011, Phase I monitoring was carried out which consisted of annual on-site monitoring of the reclaimed landfills. The less frequent Phase II monitoring commenced in 2013. 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 2013), year 10 (completed in 2016), year 15 (2021) and year 25 (2031). Year 25 marks the end of Phase II monitoring. The next scheduled monitoring event at CAM-4 is the year 15 event in 2021.

II. File History

The NWB has issued three (3) Licences to the Project in the past. The first Licence No NWB5PEL0104, which was issued to the project on August 28, 2001. On February 19, 2003, the NWB received an application for amendment to allow for a Landfarm to be used to treat petroleum hydrocarbon contaminated soils. Following the public review period, the Board issued an amendment to the Licence on July 4, 2003.

On December 16, 2004 the NWB received a renewal application for NWB5PEL0104. The application was distributed for a 30-day review and on May 5, 2010 the NWB issued NWB5PEL0510, now referred to as 1BR-PEL0510.

On April 24, 2010, the NWB received an application to renew Licence 1BR-PEL0510. On October 22, 2010 the Board issued Licence no. 1BR-PEL1016 to permit on-going monitoring of reclamation measures completed in 2007, and allowed for the use of five (5) cubic metres of water per day and the deposit of waste in support of the monitoring program for an industrial undertaking at the former CAM-4, Pelly Bay site. This Licence expired on October 30, 2016 and it

III Application Procedural History

The Nunavut Water Board (NWB or Board) received an application dated July 13, 2017, from the Department of National Defence (DND) the above-mentioned application and supporting information (the Application) for the renewal and amendment of Type “B” water Licence No. 1BR-PEL1016, which included the following documents:

- NIRB Screening Decision, March 25 2003;
- NIRB Screening Exemption Decision, July 21, 2010;
- NPC Determination CAM-4-ILAE July 6, 2010
- NPC Exemption letter August 16, 2017;
- Monitoring Program CAM-4-ILAE;
- Application, July 13, 2017
- Executive Summary English CAM-4;
- Executive Summary Inuktitut CAM-4; and
- NWB Remote Camp Questionnaire CAM-4;
- Spill Contingency Plan CAM-4-ILAE;
- Topographic Map (NTS 057A07); and
- Letter to NWB Regarding WUL Application Signatures.

With respect to pre-licensing consideration, the NWB received on August 16, 2017, confirmation from the Nunavut Planning Commission (NPC) that the project proposal is located outside of the areas of the two approved land use plans currently in place and that the project is exempt from screening and from section 235 of the Nunavut Planning and Project Assessment Act (NuPPAA). Further, the NPC confirmed that the current proposal does not change the scope of the original and or previously amended project activities and, therefore, the exception noted in section 12.4.3 (a) and (b) of the Nunavut Agreement does not apply.

Following receipt and internal review, the NWB distributed the Application on September 7, 2017 for a thirty (30) day public review and comment period with the deadline for submissions set for October 7, 2017. Environment and Climate Change Canada (ECCC) submitted an email on October 3, 2017 stating that they had no comments on the renewal application. Indigenous and Northern Affairs Canada (INAC) requested for an extension and submitted comments on October 19, 2017. INAC, in its submission, requested confirmation if Landfarm monitoring would still be required, and lastly, that the Licensee submit all outstanding annual reports from 2010 – 2016. DND provided a response to the NWB addressing INAC’s comments on December 15, 2017.

During the comment review phase, the NWB requested clarification from DND on March 29, 2018 to address a recommendation made by the Applicant’s consultant (Arcadis) for an additional

monitoring event prior to 2021, and more generally for the NWB's purpose, to address the following requirement from the previous licence:

at this time, prior to the completion of Phase I monitoring, which is designed to confirm the establishment of chemical and thermal stability in the reclaimed landfills, the NWB finds that a six (6) year term is more appropriate. This shorter Licence term is intended to ensure that all necessary closure conditions are on track and functioning as designed early on in Phase II monitoring. The six (6) year term will allow the Licensee to complete Phase I monitoring, undertake an evaluation of all Phase I data, and will also allow for one Phase II verification monitoring event in 2014. The Licence term takes into account the additional time needed to synthesize the first part of Phase II monitoring into the program and make recommendations as may be necessary moving forward. (1BR-PEL1016 at Page 2)

On November 6 and 8, 2018 DND provided information to address the above requests made by the NWB.

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-PEL1833%20CAM%204/1%20APPLICATION/2017%20Renewal/>

IV Application Scope

The scope of the above-mentioned Application, as proposed by the Licensee, included a requested Licence term of twenty-five (25) to allow for the continuation of a long-term monitoring program at CAM-4. The Monitoring program includes:

- Station Area Non-hazardous Waste Landfill
- Tier II Soil Disposal Facility
- Upper Site Landfill
- Lower Site Non-Hazardous Waste Landfill
- Lower Site Landfill

The objective of the monitoring program is to collect sufficient information to assess the performance of the landfills from a geotechnical and environmental perspective. The landfill monitoring plan specifies the requirements for visual inspection, and chemical and thermal monitoring of landfills at CAM-4.

V General Consideration

The following sections provide an overview of the rationale for the Board's inclusion of certain terms and conditions in the Renewal Licence.

A. Term of the Licence

In accordance with s. 45 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, the NWB may issue a licence for a term not exceeding twenty-five (25) years. The Applicant requested a twenty-five (25) year term for the renewal Licence. The Board has reviewed the

Licensee's request and determining that a fifteen (15) year term for the licence is appropriate as it will allow the Licensee to complete Phase II monitoring and evaluate the results before determining Phase III monitoring requirements under a future licence application. At the time of the licence expiry in 2033, monitoring data would have been collected over an approximate 25-year period between 2007 and 2031, and will allow for a comprehensive evaluation of the reclamation program. According to the February 2016, CAM-4 *Pelly Bay Landfill Monitoring Program*, there are only two monitoring events left under Phase II monitoring and they are expected to occur in 2021 (year 15) and 2031 (year 25). Following those two monitoring events, and following submission of a comprehensive CAM-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 Cam-4. Consequently, the term granted is intended to reflect this approach.

B. 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 NWB has included on its website (ftp access site) a standardized form for annual reporting that licensees can use to submit annual reporting information, supplemented by other relevant details that may be specific to their projects. Copies of the NWB's generic Annual Reporting form can be obtained from its FTP site using the following Link:

<ftp://ftp.nwb-oen.ca/other%20documents/Standardized%20Forms/>

C. Water Use

The Licensee requested one (1) cubic metre per day in support of the monitoring activities proposed, which the Board considers reasonable and has granted under Part C, Item 1 in the Licence.

D. Waste Deposit

As the Project is going through the monitoring phase, it is expected that minor quantities of sewage, greywater, solid waste and empty barrels / fuel drums will be generated: The sewage and greywater will be disposed of in sumps while solid waste and empty barrels will be backhauled to an approved facility for disposal. Terms and conditions have been included under Part D in the Licence to ensure that the Licensee accordingly manages and tracks all waste generated by the project.

E. 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.

F. Closure and Reclamation

As the clean-up and remediation components of the site have been completed, the Licensee did not submit a closure and reclamation plan. Condition related to closure and reclamation of the site are included under Part J in the Licence.

G. Monitoring

The Licensee submitted an updated monitoring Plan (dated February 2016, CAM-4 *Pelly Bay Landfill Monitoring Program*) to the Board for consideration, which is approved under Part K, Item 1 in Renewal Licence.

In follow-up to the clarification requested by the NWB concerning the Arcadis recommendation for an additional monitoring event prior to 2021 to inspect Feature K at the Tier II Disposal Facility, DND provided a submission from Arcadis that concluded, upon further review with the CAM-4 Environmental Working Group, that an addition monitoring event was in fact not required.

Correspondence from DND on November 8, 2018 also noted that “all of the Environmental Working Group recommendations will be provided to the monitoring consultant to address in the field where possible during the next scheduled monitoring event in 2021; and “DND is working with the DEW Line Steering Committee to determine if any additional work will take place prior to 2021 at CAM-4. Based on Arcadis’s October 30, 2018 letter, no further action is currently anticipated, however this decision is yet to be finalized.” The November 8, 2018 correspondence also noted certain outstanding maintenance issue with monitoring equipment at CAM-4 that are planned to be addressed.

To provide the NWB and interested parties with additional certainty on the scope of work for the 2021 monitoring event, or should an additional event being carried out before 2021, the Licensee is required to submit the NWB for review in accordance with Part K, Item 2, a workplan detailing the scope of work planned for the next event at CAM-4.

DECISION

LICENCE NUMBER: 1BR-PEL1833

This is the decision of the Nunavut Water Board (NWB) with respect to an Application dated July 13, 2017 for the Replacement of a Water Licence made by the:

DEPARTMENT OF NATIONAL DEFENCE (DND)

to allow for the use of waters and the deposit of waste for the continuation of Landfill Monitoring Program at the CAM-4, Pelly Bay Former Distant Early Warning (DEW) Line site, located in the Kitikmeot Region of Nunavut, generally at the following geographical coordinates:

Project Location

Latitude: 68° 27' N to 89° 45' W

Camp

Coordinates to be provided at least ten (10) days prior to establishment.

DECISION

After having been satisfied that the Application was for a location that falls outside of an area with an approved Land Use Plan and that the project proposal is exempt from screening and section 235 of the *Nunavut Planning and Project Assessment Act* (NUPPAA) as determined by the Nunavut Planning Commission (NPC)², the NWB decided that the Application could proceed through the regulatory process. In accordance with s. 55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (Act) and Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* (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 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 *Nunavut Agreement* and the Act, waived the requirement to hold a public hearing, and determined that:

Licence No. 1BR-PEL1016 be replaced and amended by Licence No. 1BR-PEL1833 subject to the terms and conditions contained therein (Motion #: 2018-B1-033).

Signed this 13th day of December 2018 at Gjoa Haven, NU.

Lootie Toomasie
Nunavut Water Board, Chair

LT/sl/rqd

² Nunavut Planning Commission (NPC) Determination, August 16, 2017



**NUNAVUT WATER BOARD
REPLACEMENT WATER LICENCE**

Licence No. 1BR-PEL1833

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 (DND)

(Licensee)

101 COLONEL BY 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 renewal:

Licence Number/Type: **1BR-PEL1833 / TYPE "B"**

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

Project / Location: **CAM-4 – PELLY BAY, FORMER DEW LINE SITE,
KITIKMEOT REGION, NUNAVUT**

Classification: **INDUSTRIAL UNDERTAKING**

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

Quantity of Water use not
to Exceed: **ONE (1) CUBIC METRE PER DAY**

Date of Licence Issuance: **DECEMBER 13, 2018**

Expiry of Licence: **DECEMBER 12, 2033**

This Licence renewal, 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

This Licence allows for the use of water and the deposit of waste for an Industrial Undertaking classified as per Schedule 1 of the *Regulations* at the DEW Line Project, CAM-4 – Pelly Bay, located approximately 12 kilometres south of Kugaaruk in the Kitikmeot 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: **1BR-PEL1833**

“**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;

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

“**Applicant**” means the Licensee;

“**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;

“**Landfill**” comprises of the landfill locations, monitoring stations and associated structures identified in the Plan entitled “Pelly Bay Landfill Monitoring” Plan dated February 2010 and subsequent iterations of the plan;

“**Board**” means the Nunavut Water Board established under the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal 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 “Pelly Bay Landfill Monitoring” Plan dated February 2010;

“**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*;

“**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 July 13, 2017;

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

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

“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;

“Non-Hazardous Waste Landfill” comprises the landfill, adjacent monitoring wells and associated structures designed to contain non-hazardous solid waste as described in the Plan entitled “Pelly Bay Landfill Monitoring Plan, dated February 2010;

“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;

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

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

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

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

“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 No.1);

“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 No.1);

“Tier II Disposal Facilities” means the relevant facilities designed and constructed to contain and/or treat Tier II contaminated soil described in the Monitoring Plan;

“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);

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

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

“Waste Disposal Facilities” means the facilities designed to retain wastes including the Beach Landfill, Non Hazardous Waste Landfill, Northeast Landfill, NWS Landfill, Station Landfill, Tier II Soil Disposal Facility, USAF Landfill, and Landfarm;

“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 31st of March of the year following the calendar year being reported, containing the following information:
 - a. Tabular summaries for all data and information generated under the “Landfill Monitoring Program”;
 - b. A review and analysis of data collected during the “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;
 - e. A summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
 - 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 but not limited to 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 the 1st of November 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, 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.
 4. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
 5. 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.
 6. 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.
 7. The Licensee shall post signs in the appropriate areas identifying the locations of the Waste Management facilities, and the "Monitoring Program Stations". All postings shall be in the Official Languages of Nunavut.
 8. 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, CIRNAC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

9. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.
10. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the NWB is received and acknowledged by the Manager of Licensing.
11. 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 one (1) cubic metre of water per day for sampling and related purposes. Total quantity of water for all purposes under this Licence shall not exceed one (1) cubic metre per day.
2. Streams cannot be used as a water source unless authorized and approved by the Board in writing.
3. The Licensee shall not remove any material from below the ordinary High Water Mark of any water body unless authorized.
4. The Licensee shall implement sediment and erosion control measures to prevent the deposition of dust and/or sediment into water bodies, arising from contractor activities or on-site vehicular travel.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. Licensee shall backhaul to an approved waste disposal facility any waste generated by the project, that is not authorized for on-site disposal.
2. The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste and include this information within the Annual Report under Part B, Item 1. These records shall be made available to an Inspector upon request.
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 notice to an Inspector, at least ten (10) days prior to initiating any decant or discharge from the Waste Disposal Facilities.
5. The Licensee shall provide to the Board for, review, documented authorization from all communities in Nunavut receiving wastes from the CAM-4 – Pelly Bay Project prior to the backhauling and disposal of any wastes to those communities.
6. 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, if any constructed facilities designed to contain waste were to fail, repair such facilities immediately to the satisfaction of an Inspector.
2. 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.
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. 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, to the satisfaction of an Inspector

PART F: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURE AND OPERATIONS

1. The Licensee is authorized to establish a camp in support of the project.
2. The Licensee shall provide the Board and an inspector at least ten (10) day's notice prior to establishing the camp authorized under Part F, Item 1 in the licence
3. 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.
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 any water body is prohibited. These materials shall be disposed of above the ordinary high water mark in such a fashion that they do not enter the water.

PART G: CONDITIONS APPLYING TO DRILLING OPERATIONS

1. The Licensee is authorized to drill for the purpose of installing monitoring wells and related instrumentation.

PART H: CONDITIONS APPLYING TO CONSTRUCTION AND MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to any Water and Waste management facilities or infrastructure authorized under the licence 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. Modifications, 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 signed and stamped by an Engineer

PART I: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Board has approved the plan entitled *Spill Contingency Plan*, received on July 13, 2017, as additional information with the Application.
2. 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 facilities associated with this undertaking.
3. The Licensee shall ensure that any equipment maintenance and servicing be conducted only in designated areas and shall implement special procedures (such as the use of drip pans) to manage fluids, waste and contain potential spills.
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 Spill Line at (867) 920-8130 and to the INAC Water Resources Inspector at (867) 975-4295; and
 - c. Submit to the INAC Water Resources Inspector on each occurrence, a detailed report including the GPS location, no later than thirty (30) days after initially reporting the event.
5. The Licensee shall, in addition to Part I, Item 5, 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 J: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION

1. The Licensee shall complete all restoration work pertaining to the undertaking prior to the expiry of this Licence.
2. The Licensee shall backfill and restore, all temporary containment sumps, to the pre-existing natural contours of the land.
3. All disturbed areas shall be stabilized and re-vegetated as required, upon completion of work, and restored as practically as possible to a pre-disturbed state.

PART K: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Board has approved the Plan entitled *CAM-4, Pelly Bay Landfill Monitoring Program*, dated February 2016. The Licensee shall undertake the Landfill monitoring program in accordance with this approved Plan.
2. The Licensee shall submit to the Board for review, at least six (6) months prior to the next monitoring event in 2021, or earlier as may be determined by the Licensee, a Workplan detailing the monitoring and maintenance activities planned to address the observations made by the monitoring consultants during previous events, and monitoring oversights with respect to the Lower Site Landfarm.
3. The Licensee shall submit to the Board for approval, as part of the 2033 licence application, a comprehensive CAM-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.
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 in writing.
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 submit to the Board for review and acceptance a Quality Control / Quality Assurance (QA/QC) Plan at least thirty (30) days prior to conducting the next monitoring event scheduled for 2021. The Plan shall include a letter from an analyst conforming that the plan is acceptable for achieving the monitoring proposed.
7. An Inspector may impose additional monitoring requirements.
8. The Licensee shall include in the Annual Report, required under Part B, Item 1, all monitoring results and information required by this Part.