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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **1BR-FRA1730**

October 30, 2017

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Alison Street, P. Eng., Environmental Specialist
Directorate of Contaminated and Legacy Sites
Project Delivery
Department of National Defence
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Alison.street@forces.gc.ca

RE: NWB Replacement Licence No. 1BR-FRA1730

Dear Ms. D'Costa and Ms. Street:

Please find attached Replacement Licence No. 1BR-FRA1730 issued to Department of National Defence (DND) by the Nunavut Water Board (NWB or the 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 water use and waste disposal 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 any project proposal that has not been submitted to the Nunavut Planning Commission (NPC) in accordance with s. 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.

The NWB strongly recommends that the Licensee consult the comments received by Indigenous and Northern Affairs Canada (INAC), and Environment and Climate Change Canada (ECCC) on issues identified. This information is attached for your consideration¹.

Sincerely,

Lootie Toomasie
Nunavut Water Board
Chair

LT/sa/rd

Enclosure: Licence No. **1BR-FRA1730**
Comments – INAC, and ECCC

Cc: Kitikmeot Region Distribution List

¹ Indigenous and Northern Affairs Canada (INAC) and Indigenous and Northern Affairs Canada, September 11, 2017; and Environment and Climate Change Canada (ECCC), September 12, 2017.

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DECISION

WATER LICENCE NUMBER: 1BR-FRA1730

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:

DEPARTMENT OF NATIONAL DEFENCE

to allow for the use of Water and deposit of Waste during the implementation of the *Post Construction Monitoring Program*, including the collection of soil and groundwater samples at the former PIN-3 Lady Franklin Point Distant Early Warning (DEW) Line Site, located on Victoria Island within the Kitikmeot Region, Nunavut generally located at the geographical coordinates as follows:

Latitude: 68° 28' 33" N Longitude: 113° 13' 11" W (Project Location)

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 the requirement of screening from the NIRB and section 235 of the *Nunavut Planning and Project Assessment Act* as determined by the Nunavut Planning Commission²(NPC), 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 *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 of the *Act*, waived the requirement to hold a public hearing, and determined that:

Licence No. 1BR-FRA1016 be Replaced with Licence No. 1BR-FRA1730 issued subject to the terms and conditions contained therein (Motion #: 2017-B1-033).

SIGNED this 30th day of October, 2017 at Gjoa Haven, NU.

Lootie Toomasie
Nunavut Water Board, Chair
LT/sa/rd

² NPC letter, Re: NPC File# 148623 PIN-3 Lady Franklin Point Landfill Monitoring Program, dated August 9, 2017

LICENCE NO. 1BR-FRA1730

I. INTRODUCTION

Defence Construction Canada (DCC) held Water Licence 1BR-FRA1016 (the Expired Licence) that was issued on October 26, 2010 and expired on October 30, 2016. The Expired Water Licence authorized the use of Water and the deposit of Waste during the implementation of a long-term monitoring program, entitled *Post Construction Monitoring Program* at the former PIN-3 Lady Franklin Point Distant Early Warning (DEW) Line Site.

The former PIN-3 Lady Franklin Point DEW Line Site (PIN-3 DEW Line Site) is located on the southwest shore of Victoria Island near the Dolphin and Union Strait and the Coronation Gulf, approximately 105 km northeast of Kugluktuk.

The PIN-3 DEW Line Site was constructed in 1955 and was upgraded to become a North Warning System Long Range Radar Site in 1985. In year 2000, the facilities at site were destroyed by a fire; following the fire, the site was abandoned.

In 1989, the Department of National Defence (DND) started investigating the environmental conditions of the DEW Line Site. In 1991, the DEW Line Clean Up (DLCU) Protocol was developed in order to *provide a comprehensive strategy for assessing and remediating DND's DEW Line sites*³. In 1994, the DLCU Protocol was further updated to its present form.

Remediation work at site began in 2002 and was completed in 2004. The remediation work was designed in order to prevent chemical contamination from the DEW Line sites from entering the Arctic ecosystem, and also in order to restore the site to environmentally sound and stable conditions. Remediation work consisted of the following activities: demolition of infrastructure, remediation of chemically contaminated soils, stabilization of existing landfill sites, construction of new engineered landfills, and the shipment of certain contaminated soil and debris to southern disposal facilities. Examples of contamination found at site were the presence of hydrocarbon impacted soil and soil contaminated by heavy metals. During the cleanup, in addition to the already in place four landfills, two other facilities, a Non-Hazardous Waste Landfill for the disposal of non-hazardous wastes generated from demolition and a soil disposal facility for the disposal of Tier II contaminated soil (DCC Tier II Soil Disposal Facility) were constructed.

Two *Agreements* defined the remediation work at site. They are outlined as follows⁴:

1. *Agreement Between Nunavut Tunngavik Incorporated and Her Majesty 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 (NTI-DND Environmental Provisions, September 1998).*

³Letter from DND to the NWB, Re: Response to ECC's Letter Dated September 12, 2017, Titled "1BR-FRA – Defence Construction Canada – PIN-3 Lady Franklin (Point) Project – Long Term Monitoring Program, dated October 18, 2017

⁴Email from Laura D'Costa to the NWB, Re: 1BR-FRA Application for a Water Licence -request for clarification, dated October 6, 2017

2. *Agreement Between Nunavut Tunngavik Incorporated and Her Majesty in the Right of Canada, Represented by the Minister of National Defence With Respect to Economic Benefits for Inuit in the Clean-Up and Restoration of Distant Early Warning Sites Within the Nunavut Settlement Area (NTI-DND Economic Agreement, August 2001).*

Further to this, the Landfill Monitoring Program (LMP) commenced in 2005, after conclusion of remediation work. The LMP was designed by DND in cooperation with NTI in order to assess the performance of the landfills at site from both geotechnical and environmental perspectives. The following *Agreement* is related to the LMP:

Agreement Between Nunavut Tunngavik Incorporated and Her Majesty in the Right of Canada, Represented by the Minister of National Defence With Respect to the Phase II Post-Clean-up Monitoring of Distant Early Warning Sites Within the Nunavut Settlement Area (NTI-DND Monitoring Agreement, May 2005).

Six landfill areas are monitored under the Landfill Monitoring Program at the former PIN-3 DEW Line Site; they are:

- Non Hazardous Waste Landfill;
- Tier II Soil Disposal Facility;
- Main Landfill;
- North Landfill;
- NWS Landfill; and
- South Landfill.

The Landfill Monitoring Program consists of three phases; Phase 1 of the landfill monitoring program⁵ began in 2005 and it was completed in 2009. The objective of Phase 1 monitoring was to confirm that thermal and chemical equilibrium at site was achieved, and there were no stability issues. Phase 2 of monitoring started in 2011, in accordance with the approved Post Construction Landfill Monitoring Program⁶.

The Post Construction Monitoring Program consists of four main components to measure the performance of the landfills. These components are *visual Inspection, soil, groundwater and thermal monitoring*⁷.

The monitoring schedule at the former PIN-3 DEW Line Site landfills is provided in Table 1.

⁵ Dew Line Clean Up Project PIN-3 Lady Franklin Point Baseline Landfill Monitoring date

⁶ Post-Construction Landfill Monitoring Program: Lady Franklin Point DEW Line Site, June 9 2009

⁷ Project Executive Summary

Table 1: Monitoring Schedule at PIN 3 DEW Line Site³

| Monitoring Phase | No. of Years After Construction | Year | Water Licence No. |
|---|---------------------------------|------|-------------------|
| Phase 1: monitoring to confirm if equilibrium was achieved. The five-years term was selected on the basis that ground-temperature thermal regimes at these specific landfills require three to five years to reach equilibrium. | 1 | 2005 | NWB5FRA0209 |
| | 2 | 2006 | |
| | 3 | 2007 | |
| | 4 | 2008 | |
| | 5 | 2009 | |
| Phase 2 monitoring: verification of equilibrium conditions established in Phase 1. | 7 | 2011 | 1BR-FRA1016 |
| | 10 | 2014 | 1BR-FRA1730 |
| | 15 | 2019 | |
| | 25 | 2029 | |

According to the schedule, next monitoring event will take place in year 2019 (year 15). In 2029 (year 25) that marks the end of Phase II monitoring, a re-evaluation of the monitoring program will be conducted and Phase III may or may not begin, depending on the re-evaluation results. If approved, Phase III would involve the long-term monitoring of issues such liner integrity, permafrost stability, etc.

Furthermore, an Environmental Working Group (EWG) consisting of four members, two of them from DND and two from NTI has been created in order to review the monitoring program results and provide recommendations.

With regard to the NWB Water Licences, work at site was conducted under the provisions of Water Licences NWB5FRA0101 and then, NWB5FRA0209, followed by Water Licence 1BR-FRA1016 (the Expired Licence). The Expired Licence 1BR-FRA1016 was issued to Defence Construction Canada (DCC). DCC is also a Crown Corporation, which on behalf of DND managed the work at site during the term of the Expired Licence. At this time, work at site has shifted back to DND and because of that, DND has applied to be the Licence holder. On this basis, the Board deems to be most in accordance with the current situation to issue the Replacement Water Licence to DND, as requested by the Applicant. A brief summary of the file history is provided below:

Table 2: File History

| <i>Water Licence No.</i> | <i>Scope of the Licence</i> |
|--------------------------|---|
| NWB5FRA0101 | To allow for the use of Water and deposit of Waste associated with site investigation. |
| NWB5FRA0209 | To allow for the use of Water and deposit of Waste during decommissioning and clean-up of the PIN-3 DEW Line Site. Phase 1 Monitoring that began in 2005 and was completed in 2009 was also under the scope of this Licence. |
| 1BR-FRA1016 | To allow for the use of Water and deposit of Waste during the implementation of a Post Construction Monitoring Program at the PIN-3 DEW Line Site. Phase 2 monitoring that began in 2011 was under the scope of this Licence. The Licence expired on October 30, 2016 |

II. PROCEDURAL HISTORY

Requirements of the NWNSRTA, Nunavut Agreement and NuPPAA

Since the implementation of the Nunavut Planning and Project Assessment Act (NuPPAA), all project proposals must first be assessed by the Nunavut Planning Commission (NPC) and, if required, by the Nunavut Impact Review Board (NIRB) before proceeding to the permitting and approvals stages. The NWB shall not approve any water licence application until these requirements have been met. Further to that, the NWB does not proceed beyond the technical review stage of considering the Application until the NPC and the NIRB assessment processes are complete.

On August 9, 2017, NPC reviewed the Application and indicated that the Project is located outside of the area of an applicable Regional Land Use Plan; also that the Project activities were previously screened by the Nunavut Impact Review Board (NIRB)⁸ and that

“This Project Proposal is exempt from the Nunavut Planning and Project Assessment Act (NuPPAA)”

At the same time, it also indicated that since the scope of the project has not changed, the Project proposal is exempt from NIRB’s screening.

On this basis, the NWB considered the requirements of the NWNSRTA, the *Nunavut Agreement* and the *NuPPAA* fulfilled such that the NWB could continue processing the Application.

The Application Before the NWB

On August 11, 2017, the Nunavut Water Board acknowledged receipt on July 13, 2017 of a Water Licence Application (Application) by Department of National Defence (DND or the Licensee or the Applicant) for water use and waste deposit in support of the former PIN-3 DEW Line Site Monitoring Program; at the same time, it informed that the Application concluded the pre-licensing steps required under the *Nunavut Agreement*, the *NuPPA* and the *NWNSRTA*. The following documents were submitted to the NWB in support of the Application:

- 1BR-FRA1016 Application for Water Licence Renewal PIN 3, dated July 13, 2017;
- BR-FRA1016 Executive Summary English PIN 3;
- 1BR-FRA1016 Executive Summary Inuktitut PIN 3;
- 1BR-FRA1016 Monitoring Program PIN 3;
- 1BR-FRA1016 NWB Remote Camp Questionnaire PIN 3;
- 1BR-FRA1016 Spill Contingency Plan PIN 3;
- 1BR-FRA1016 NTS Map 87^a/7E;
- 1BR-FRA1016 Letter to NWB Regarding WUL Application Signatures.

Simultaneously, the Board invited interested parties to make representation directly to the NWB, with a deadline of September 11, 2017. On or before September 11, 2017, comments were provided by Indigenous and Northern Affairs Canada (INAC), and Environment and Climate Change Canada (ECCC).

⁸ NIRB File No. 01DN100, dated December 2002

III. GENERAL CONSIDERATIONS

A. Compliance with Licence 1BR-FRA1016

1. Annual Reports as per Part B Item 1 of the Licence

Under *Part B Item 1* of the Expired Licence, the Licensee is required to file, annually, an Annual Report on the Undertaking.

From years 2010 to 2016, only two monitoring events, one in year 2011 and the other in year 2014 were carried out. In this regard, the Licensee submitted on April 16, 2012 the “*Kitik 07 Final Report for the 2011 Collection of Landfill Monitoring Data at the PIN-3 Lady Franklin Point DEW Line Site, Nunavut*”, dated January 2012. And on March 23, 2016 it submitted “*The Collection of Landfill Monitoring Data at the Former PIN-3 DEW Line Site, Revised Final Report 2014, Defence Construction Canada*”, dated April 2015.

The Reports were opportunely forwarded to the distribution list for information; no comments were received on the submissions.

The NWB has completed a technical review of the Project 2011 and 2014 Annual Reports. The Annual Reports were found to be complete as submitted and meeting the reporting requirements of Licence 1BR-FRA1016.

2. Submission of As-Built Drawings for the Waste Disposal Facilities as per Part G, Item 4 of the Licence

Condition written under *Part G, Item 4* of the Expired Licence 1BR-FRA1016 required the Licensee

“*Submit to the Board for review as part of the 2010 Annual Report, final As-Built drawings stamped and signed by an Engineer for the Waste Disposal Facilities*”

On March 23, 2016 the NWB acknowledged receipt of a submission from the Licensee entitled Long Term Monitoring Reports and As-Built drawings for the DEW Line Sites for Water Licence 1BR-FRA1016. The drawings entitled “*PIN-3 Lady Franklin Point As-Built Drawings*”, dated January 2006 were forwarded to interested parties for information. No comments were received with regard to this submission.

Following this, the NWB considers that the Licensee is in compliance with this requirement.

3. Submission of a Preliminary Phase II Monitoring Summary Report as per Part J, Item 5 of the Licence

Also, requirements were included under *Part J, Item 5* of the Expired Licence 1BR-FRA1016 for the submission of a Summary Report summarizing data collected during Phase I and Phase II monitoring and providing an assessment of the integrity of the Waste Disposal Facilities.

The NWB has reviewed the information included in the “*Kitik 07 Final Report for the 2011 Collection of Landfill Monitoring Data at the PIN-3 Lady Franklin Point DEW Line Site, Nunavut*” (the 2011 Report), dated January 2012 and “*The Collection of Landfill Monitoring Data at the Former PIN-3 DEW Line Site, Revised Final Report 2014, Defence Construction Canada*” (the 2014 Report), dated April 2015.

The NWB considers that condition under *Part J, Item 5* of the Expired Licence is fulfilled by the submission of the 2012 and 2014 Reports. Therefore, the Licensee is in compliance with this requirement.

B. Term of Licence

In accordance with s.45 the *Nunavut Waters and Nunavut Surface Right Tribunal Act* (NWNSTRA), the NWB may issue a licence for a term not exceeding twenty-five years. In determining an appropriate term of a water licence, the Board considers a number of factors including, but not limited to Licensee compliance record and intervenor comments provided during the application review process.

The Applicant has requested a Licence’s term of twenty-five (25) years. Parties have not expressed concerns with respect to a Licence term of 25 years. However, the Board has decided to grant a 13 (thirteen) year –term licence; the term is consistent with the anticipated completion of Phase II monitoring. At the end of Phase II, the Monitoring Program will be reassessed and Phase III monitoring may or may not be carried out. Consequent with that, the Board deems to be most appropriate to also evaluate the renewal or cancellation of the Water Licence at the same time that the Monitoring Program is re-evaluated.

C. Annual Reporting

In accordance with s. 14 (1) of the Nunavut Regulations, requirements have been included under Part B, Item 1 of the Licensee for the submission of an annual report detailing the activities carried out under the Project for the year preceding one in which the report is filed. The Annual Reports are required for the purpose of ensuring that the NWB has an accurate annual update of the Licensee’s activities related to the use of Water and the deposit of Waste during a calendar year.

This information is maintained at the NWB Public Registry and is available to interested parties upon request. A “Standardized Form for Annual Reporting” may be used by the Licensee for the basic reporting requirements and is available from the NWB file transfer protocol (FTP) site under the Public Registry link at the NWB Website.

Website Public Registry:

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

This form provides the basis for annual reporting and format. However individual licences with project specific reporting requirements may need to provide information in addition to that of the standard form.

D. Water Use

The Expired Water Licence authorized the use of five (5) cubic metres *per day* for domestic use and sampling purposes in support of the Monitoring Program. The Applicant has indicated that the overall estimated quantity of water to be used is the same as that considered in the Expired Licence.

As indicated by the Applicant, bottled water will be used for drinking purposes; further to that a minimal amount of water will be required for other domestic use. Thus, water use will mainly be related to water samples collected from groundwater wells in a quantity less than 1 m³ per day during the monitoring campaign.

Accordingly, the NWB has set the maximum amount of water use for all purposes under this Licence *at 5 cubic meters of fresh water per day*.

E. Waste Management

As indicated by the Applicant drilling at site is not planned. However, there is a possibility that groundwater monitoring wells get damaged and may need to be replaced from time to time. In that case, drill cuttings, in a minimal amount would be left near the new wells. If there is not drilling, the only waste generated at site will be sewage, which will be deposited into a pit toilet and buried onsite. Any other waste will be disposed of at an approved regulated off-site facility at the end of the monitoring event.

F. Modifications

Under *Part H* of the Renewal Licence, standard conditions are included related to modifications. Likewise, under *Part H, Item 1*, the Licensee is required to submit to the Board for approval, issued for construction drawings at least sixty (60) days prior to commencing the construction or modification of any water or waste facility, and in accordance with *Part H, Item 4*, provide as-built plans and drawings of the construction and/or Modifications. These plans and drawings shall be stamped and signed by an Engineer.

G. Spill Contingency Planning

As indicated by the Applicant, the maximum amount of fuel at site will be one barrel containing 200 L of unleaded gasoline for refueling of the ATV. Also, the Applicant has included in the Application submission a Spill Contingency Plan that is approved by the Board under the relevant Part of this Licence.

H. Monitoring

The Applicant has included in the Application submission an updated Monitoring Program that is approved by the Board under the relevant Part of this Licence.



NUNAVUT WATER BOARD WATER LICENCE

Replacement Licence No. 1BR-FRA1730

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)

101 COLONEL BY DRIVE, OTTAWA, ON, K1A 0K2

(Mailing Address)

Herein after 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-FRA1730 / TYPE "B"**

Water Management Area: **SOUTHERN VICTORIA ISLAND WATERSHED NO. 38**

Location: **FORMER PIN-3, LADY FRANKLIN POINT DEW LINE SITE, 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**

Date of Licence Issuance: **OCTOBER 30, 2017**

Expiry of Licence: **OCTOBER 29, 2030**

This Licence renewal / amendment, 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 authorizes the use of Water in support of an Industrial Undertaking classified as per schedule 1 of the *Regulations*, for the *Post Construction Monitoring Program* at the former PIN-3 Lady Franklin Point Distant Early Warning (DEW) Line Site, located approximately 105 km northeast of Kugluktuk on the southwest shore of Victoria Island near the Dolphin and Union Strait and the Coronation Gulf, within the Kitikmeot Region, Nunavut, at the following general geographical coordinates:

Latitude: 68° 28' 33" N

Longitude: 113° 13' 11" W

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing *Regulations* are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and
- b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

In this Licence **1BR-FRA1730**

“**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 require an amendment;

“**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*;

“**Expired Water Licence**” means the 1BR-FRA1016 Water Licence;

“**Grab Sample**” means an undiluted quantity of material collected at a particular time and place and 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;

“**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);

“**Historical Landfills**” means the North Landfill, NWS Landfill and South Landfill Area as described in the application for renewal dated June 9, 2009 and in Figures PIN-3.3, PIN-3.4 and PIN-3.5;

“**ICP Scan**” means the laboratory method for determining trace metals in water through Emission Spectroscopy using inductively coupled plasma (including from approximately 22 to 32 elements, depending on the laboratory performing the analysis);

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

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

“**Main Landfill**” means the main landfill including monitoring wells and thermistors as described in the application for renewal dated June 9, 2009 and in Figure PIN-3.2;

“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 the plan entitled “Post-Construction Landfill Monitoring Program: Lady Franklin Point DEW Line Site” dated June 9, 2009.

“Non-Hazardous Waste Landfill” comprises the landfill and adjacent monitoring wells constructed in 2003 and closed in 2004 to contain Tier 1 Soil, Type A Soil, non-hazardous demolition debris, non-hazardous site debris, creosote treated timbers wrapped in polyethylene sheeting and bagged asbestos as described in the application for renewal dated June 9, 2009 and in Figure PIN-3.7;

“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;

“Replacement Water Licence” means this Licence, the 1BR-FRA1730 Water Licence;

“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;

“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.3);

“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.3);

“Tier II Soil Disposal Facility” means the facility constructed and closed in 2003 and described in the 2003 Annual report, containing approximately 4,923 cubic metres of Tier II contaminated soil defined as per Table No. 1 and includes adjacent monitoring wells and thermistors described in the application for renewal dated June 9, 2009 and in Figure PIN-3.6;

“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);

“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 Historical Landfills, Main Landfill, Tier II Soil Disposal Facility, the Non-Hazardous Waste 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 Monitoring Program;
 - b. A review and analysis of data collected during the 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 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 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;
 - 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 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, INAC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

4. 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.
5. 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.
6. This Licence is assignable as provided for in section 44 of the Act.
7. 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.
8. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
9. 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.
10. 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.
11. The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.

PART C: CONDITIONS APPLYING TO THE USE OF WATER

1. The Licensee is authorized to use water for domestic purposes and for the purpose of monitoring. Water withdrawn for domestic use shall come from Water Supply Lake or as otherwise approved by the Board in writing. Total quantity of water allowed for all purposes under this Licence shall not exceed five (5) cubic metres per day.
2. The Licensee shall not perform any work below the ordinary High Water Mark of any

water body unless authorized 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 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 shall locate areas designated for waste disposal at a minimum of thirty-one (31) metres from the ordinary High Water Mark of any water body such that the quality, quantity or flow of water is not impaired, unless otherwise approved by the Board in writing.
2. 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.
3. The Licensee shall contain all Toilet Wastes in latrine pits. 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.
4. The Licensee shall not practice on-site landfilling of domestic waste, unless otherwise approved by the Board in writing.
5. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding waters, unless otherwise approved by the Board in writing.
6. The Licensee shall backhaul and dispose of all solid Waste generated through the course of the operation at a licensed waste disposal site.
7. 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 to those communities.
8. 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.

PART E: CONDITIONS APPLYING TO THE UNDERTAKING

1. The Licensee shall, upon the failure of any constructed facilities designed to contain waste, repair such facilities immediately to the satisfaction of an Inspector.
2. The Licensee shall conduct all activities in such a way as to minimize impacts on surface drainage and immediately undertake any corrective measures in the event of any impacts on surface drainage.
3. The Licensee shall implement sediment and erosion control measures prior to and maintain such measures during monitoring and related activities to prevent entry of sediment into water.
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. Licensee shall not deposit any waste in any body of water, or on the banks thereof, which may impair the quality, quantity, or flow of water.

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 such as to minimize impacts on surface drainage.
2. 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.
3. 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 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.

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 ensure that all drill waste, including water, chips, muds and salts (CaCl₂) in any quantity or concentration from land based drilling, shall be disposed of 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 Non Hazardous Waste Landfill 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. such Modifications are consistent with the NIRB Screening Decision;
 - d. 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
 - e. 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 stamped by an Engineer.

PART I: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Board has approved with the issuance of this Licence the Plan entitled “*Spill Contingency Plan*” dated June 1, 2016 and submitted as additional information with the Application.
2. 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 motor fluids and other waste and contain potential spills.
3. The Licensee shall prevent any chemicals, petroleum products or wastes associated with

the project from entering water. All Sumps and fuel caches shall be located at a distance of at least thirty-one (31) metres from the ordinary High Water Mark of any adjacent water body and inspected on a regular basis.

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 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 NWT/NU Spill Line if the release is near or into a Water body.

PART J: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION OR TEMPORARY CLOSING

1. The Licensee shall ensure that any area disturbed as result of the undertaking is to 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 with the issuance of this Licence the Program entitled “*PIN-3, Lady Franklin Point Monitoring Program*”, dated February 2016 and submitted as additional information with the Application. The Licensee shall conduct monitoring at site according to this approved Program.
2. 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.
3. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
4. The Board and/or an Inspector may impose additional monitoring requirements.
5. The Licensee shall include in the Annual Report required under Part B, Item 1, all data,

monitoring results and information required by this Part.

6. The Licensee shall submit for Board information, at minimum six (6) months prior to the completion of the 25-year Long Term Monitoring Plan, a Final Report. The Final Report shall summarize data collected and assesses the integrity of the Non-Hazardous Waste Landfill, including recommendations for any maintenance or additional monitoring.

Table No.3
(From INAC Abandoned Military Site Remediation Protocol)
DEW Line Clean-up Criteria (DCC)^a

| Substance | DCCTierI^{bc} (mg/kg) | DCC Tier II^d (mg/kg) |
|------------------|--|--|
| Arsenic | - | 30 |
| Cadmium | - | 5.0 |
| Chromium | - | 250 |
| Cobalt | - | 50 |
| Copper | - | 100 |
| Lead | 200 | 500 |
| Mercury | - | 2.0 |
| 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.